

PREPARED FOR:



City of Sanger
1700 7th Street
Sanger, CA 93657

DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT (SCH#2018031047)

Sanger 2035 General Plan Update and North Academy Corridor Master Plan

February 2020

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Draft Program Environmental Impact Report

**Sanger 2035 General Plan Update and North Academy Corridor
Master Plan**

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Executive Summary

EXECUTIVE SUMMARY

Introduction

This Draft Environmental Impact Report (EIR) evaluates the potential impacts of the proposed Sanger 2035 General Plan Update and North Academy Corridor Master Plan, referred to as the “Proposed Project”. The Proposed Project was developed in response to policy direction provided by the City Council, Planning Commission, and community. This Draft EIR has been prepared on behalf of the City of Sanger, in accordance with the California Environmental Quality Act (CEQA). The City of Sanger is the lead agency for this EIR, as defined by CEQA.

An EIR is intended to inform decision-makers and the general public of the potential significant environmental impacts of a proposed project. The EIR also considers the availability of mitigation measures to minimize significant impacts and evaluates reasonable alternatives to the Proposed Project that may reduce or avoid one or more significant environmental effects. Based on the alternatives analysis, an environmentally superior alternative is identified.

This EIR is a program EIR that examines the potential effects resulting from implementing designated land uses and policies in the General Plan Update as well as from implementation of the North Academy Corridor Master Plan. The impact assessment evaluates the Proposed Project as a whole and identifies the broad, regional effects that may occur with its implementation. As a programmatic document, this EIR does not assess site-specific impacts, except for instances where specific analysis was performed for the North Academy Corridor Master Plan. These instances are noted in the document. Any future development anticipated by the Proposed Project would be subject to individual, site-specific environmental review, as required by State law. This EIR represents the best effort to evaluate the Proposed Project given its planning horizon through the year 2035. It can be anticipated that conditions will change; however, the assumptions used are the best available at the time of preparation and reflect existing knowledge of patterns of development.

Proposed Project

The Proposed Project is intended to respond directly to emerging trends and topics in Sanger since the preparation of the City’s current General Plan (adopted in 2003), and to ensure the City of Sanger can accommodate the potential population and job growth through the proposed General Plan’s horizon of 2035. The Proposed Project, which establishes a long-range planning

framework and policies, would fully replace the City's existing General Plan and provide a new North Academy Corridor Master Plan if certified by the City Council.

Planning Area

In addition to the City proper, state law requires that a municipality adopt a General Plan that addresses "any land outside its boundaries which in the planning agency's judgement bears relation to its planning (California Government Code Section 65300)." This includes the City's Sphere of Influence (SOI), which encompasses the unincorporated areas that are related to the City's current and desired land use planning and growth. The SOI includes all lands within the City's jurisdiction as well the area north of the City past State Route 180 and the area south of the City to the Kings River, as shown on Figure 2-2. For purposes of this EIR, the Study Area or "Project Area" includes all lands within the SOI, including the North Academy Corridor Master Plan Area.

Purpose

California Government Code Section 65300 requires each city and county in California to adopt a general plan "for the physical development of the county or city, and any land outside its boundaries which...bears relation to its planning." The Sanger 2035 General Plan Update can be considered the City's development constitution, containing both a statement of the community's vision of its long-term development as well as the policies to support that vision by guiding the physical growth of the City. The Proposed Project contains policies to guide decision-making related to development, housing, transportation, environmental quality, public services, parks, and open spaces. The Proposed General Plan Update and North Academy Corridor Master Plan are documents proposed to be adopted by the City Council that serve the following purposes:

- Guide City staff, the Planning Commission and City Council on land use, circulation, and capital improvement decisions;
- Establish phased growth boundaries intended to reduce sprawl and leapfrog development by directing growth to occur in a compact and contiguous fashion;
- Inform the public where certain types of development will occur in the community;
- Educate the public on how Sanger's resources will be managed; and
- Provide a basis for judging whether specific development proposals and public projects are in harmony with plan policies.

Objectives

The Proposed Project provides the basis for the City's land use and development policy and represents the basic community values, ideals, and aspirations that will govern development and conservation. The following Guiding Principles support the community vision and provide direction for the policies in the proposed General Plan.

- Project Sanger's future growth and make provisions for this growth through the General Plan;
- Create a unique and attractive city by investing in projects that will enhance Sanger's appearance and marketability;
- Provide a safe and pleasant environment and enhance property values throughout the community by avoiding and eliminating land use conflicts;
- Promote increased sales tax revenue in Sanger by providing sufficient land for a wide range of commercial uses;
- Protect and preserve natural resources, such as farmland, air and water quality and native vegetation, while facilitating growth of the community;
- Provide for a greater variety of housing choices and shopping opportunities and provide an adequate supply of housing opportunities, affordable to all economic segments of the community;
- Ensure that there are adequate public facilities to serve Sanger in the future;
- Ensure that Sanger's infrastructure system can effectively serve the land use framework;
- Enhance the character of Sanger by creating an improved and revitalized downtown area;
- Promote economic development and enhanced employment opportunities in Sanger by designing sufficient land for industrial uses, retail stores, and office parks;
- Recognize the changing conditions and trends in the planning area and market place and make appropriate amendments to the General Plan; and
- Recognize past land use approval actions and adopted land use policies.

Estimated Buildout

Buildout refers to the estimated amount of potential new development and corresponding growth in population and employment that is anticipated by the Proposed Project through the planning horizon year of 2035.

The General Plan proposes a growth rate of 1.7% which results in a year 2035 population of 35,202 residents – an increase of 10,074 residents from the 2015 population estimate.

To support the projected population the adjusted land demand projections are as follows:

- 111 acres of residential (single and multi-family);
- 49 acres of commercial;
- 0 acres of industrial;
- 16 acres of parks; and
- 84 acres of schools.

Proposed Project Alternatives and Environmentally Superior Alternative

The following alternatives are described and evaluated in Chapter 4 of this EIR and are summarized below.

Existing General Plan (No Project) Alternative

CEQA Section 15126.6(e) requires the discussion of the No Project Alternative “to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project.” The No Project scenario in this case consists of not adopting the 2035 General Plan while continuing to utilize the City’s existing General Plan. Under this alternative, all land use changes and boundary changes will not occur and development will continue to be governed by the existing General Plan.

The proposed General Plan Update would add up to 141 acres of undeveloped land for single and multi-family housing and 49 acres of undeveloped land for commercial development (note: the City already has 241 acres of undeveloped land that is zoned for industrial use, thus additional industrial land is not considered to be necessary at this time).

Under the No Project scenario, these additional acreages would not be added to the City and development would continue to occur under the existing General Plan document. The vast majority of the land within the expanded SOI is currently in agricultural use and is designated and zoned by Fresno County for continued agricultural use. Under the No Project Alternative, land within the expanded SOI would continue to be actively farmed; no urban development would occur.

Development would be expected to continue to occur within the City, however, any future development would have to be consistent with the existing Land Use Map shown in the City’s General Plan. As such, environmental impacts would still occur, notwithstanding the reduction of acreage available for development. However, some impacts may be reduced based on this Alternative.

Reduced Project Area (Elimination of Master Plan area)

The Reduced Project Area (Elimination of Master Plan Area) Alternative consists of removing the North Academy corridor Master Plan from the General Plan Update process. The General Plan Update would still occur, however the Master Plan area would be eliminated and no annexation of these lands would occur. The site would remain with its underlying land use designations and zoning and would remain in Fresno County.

The North Academy Corridor Master Plan is intended to guide urban development within a 285-acre planning area centered on Academy Avenue, north of the existing Sanger city boundary, extending to the intersection of Academy Avenue and State Route 180 (Kings Canyon Road). The annexation and development of this corridor was selected by the Sanger City Council as one of its top land use goals for action. It is important to note that the annexation of these lands is guided by a Memorandum of Understanding between the City of Sanger and Fresno County.

Elimination of the Master Plan would remove this area from consideration for annexation and/or from the proposed General Plan Update. Development could be expected to continue to occur within the Master Plan area, however, any future development would have to be consistent with the underlying land use and zoning designations. As such, environmental impacts would still occur, notwithstanding the reduction of acreage available for development as proposed by the General Plan Update. However, because of the reduced Project, some impacts may be reduced based on this Alternative.

Environmentally Superior Alternative

Based on a review of the alternatives evaluated in this EIR, the No Alternative would result in the fewest impacts on the environment. However, the No Project Alternative would not meet the City's Project objectives, as identified in this EIR.

Apart from the No Project Alternative, the the Reduced Project Alternative would be the Environmentally Superior alternative because it would result in less adverse physical impacts to the environment with regard to most environmental topics. However, the Reduced Project does not meet all of the Project objectives, particularly with regard to the financial feasibility of this alternative.

Only the No Project and Reduced Project Alternatives could potentially result in fewer impacts than the proposed Project's impacts. These Alternatives however, would not meet the objectives of the proposed Project. After this full, substantial, and deliberate analysis, the proposed Project remains the preferred alternative.

Areas of Controversy

During the drafting of the Proposed Project and this EIR, public agencies and members of the public were invited to provide feedback on the documents. No comments were made at the public meetings on the Proposed Project and no responses were received to the Notice of Preparation. As such, no topics have been identified as areas of controversy.

Impacts Summary

Table ES-1: Summary of Impacts and Mitigation Measures presents the summary of the significant impacts of the Project identified in the EIR and the Proposed Project mitigation measures that reduce these impacts to less than significant. Detailed discussions of the impacts and proposed policies or mitigation measures that would reduce impacts are in Chapter 3.

Table ES-1: Summary of Impacts and Mitigation Measures

Impact	Mitigation Measures	Significance before Mitigation	Significance after Mitigation
3.1 – Aesthetics			
3.1-1 Have a substantial adverse effect on a scenic vista?		Less than significant	N/A
3.1-2 Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?		Less than significant	N/A
3.1-3 Substantially degrade the existing visual character or quality of public views of the site and its surroundings? If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?		Less than significant	N/A
3.1-4 Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?		Less than significant	N/A
Cumulative Impacts		Less than significant	N/A
3.2 – Agricultural Resources			
3.2-1 Convert Prime Farmland, Unique Farmland, or Farmland of statewide Importance (Farmland), as shown on the maps prepared pursuant to the		Significant and unavoidable	N/A

Impact	Mitigation Measures	Significance before Mitigation	Significance after Mitigation
Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?			
3.2-2 Conflict with existing zoning for agricultural use, or a Williamson Act contract?		Significant and unavoidable	N/A
3.2-3 Conflict with existing zoning for, or cause rezoning of, forest land as defined in Public Resources Code section 12220(g)), timberland as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?		No impact	N/A
3.2-4 Result in the loss of forest land or conversion of forest land to non-forest use?		No impact	N/A
3.2-5 Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?		Significant and unavoidable	Significant and unavoidable
Cumulative Impacts		Significant, avoidable and cumulatively considerable	N/A
3.3 – Air Quality			
3.3-1 Would the project conflict with or obstruct implementation of the applicable air quality plan or result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?		Significant and unavoidable	Significant and unavoidable
3.3-2 Expose sensitive receptors to substantial pollution concentrations?		Significant and unavoidable	Significant and unavoidable
3.3-3 Result in other emissions (such as those leading to odors)	AIR-1: Developers within the Planning Area of projects that	Significant	Less than significant

Impact	Mitigation Measures	Significance before Mitigation	Significance after Mitigation
affecting a substantial number of people?	have the potential to generate significant odor impacts as determined through review of SJVAPCD odor complaint history for similar facilities and consultation with the SJVAPCD shall prepare an odor assessment and shall implement odor control measures recommended by the SJVAPCD or the City.		
Cumulative Impacts		Significant, unavoidable and cumulatively considerable	Significant, unavoidable and cumulatively considerable
3.4 – Biological Resources			
3.4-1 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 the U.S. Fish and Wildlife Service?	<p>BIO-1 (Preconstruction Surveys): Prior to construction activities in drainages and canals, a qualified biologist shall conduct a preconstruction survey for the Sanford's arrowhead during the May-October blooming period for this species.</p> <p>BIO-2 (Avoidance): If a Sanford's arrowhead population is identified within the construction zone, it shall be avoided by a minimum distance of 50 feet if possible. The avoidance area shall be identified on the ground with construction fencing, brightly-colored flagging, or other easily visible means.</p> <p>BIO-3 (Salvage): If it is not possible to avoid populations of Sanford's arrowhead identified within construction zones, a qualified biologist shall remove all individual plants to be impacted and relocate them to a suitable portion of the drainage/canal that is nearby but will not be impacted.</p> <p>BIO-4 (Minimization): Construction-related disturbance of grassland habitats within 400</p>	Significant	Less than significant

Impact	Mitigation Measures	Significance before Mitigation	Significance after Mitigation
	<p>feet of creeks, canals, ponds, and basins in the rural zone should occur between November 1 and May 31, or outside of the annual time frame in which gravid females in the project vicinity typically seek out nest sites and lay eggs, eggs incubate, and hatchlings emerge.</p> <p>BIO-5 (Preconstruction Surveys): If construction-related disturbance of grassland habitats within 400 feet of creeks, canals, ponds, and basins in the rural zone must occur between June 1 and October 31, a qualified biologist shall conduct preconstruction surveys for western pond turtle nests within 30 days prior to the start of construction. The presence of turtle eggshells and/or disturbed earth would indicate the potential presence of a nest. Such areas shall be carefully hand-excavated by the biologist to determine whether a nest is present.</p> <p>Preconstruction surveys for western pond turtles must also be conducted within 24 hours prior to the start of construction activities in inundated drainages or canals in either the urban or rural zone, and in inundated ponds or basins in the rural zone. These surveys shall encompass all aquatic habitat and surrounding uplands within 100 feet that are proposed for impact. Any turtles that are discovered during the preconstruction surveys shall be relocated to similar habitat outside of the impact area.</p>		

Impact	Mitigation Measures	Significance before Mitigation	Significance after Mitigation
	<p>BIO-6 (Avoidance of Active Nests): If the preconstruction surveys for western pond turtle nests identify one or more active nests, a 50-foot buffer shall be established around the nest(s). No construction personnel or equipment shall enter the avoidance area until after a qualified biologist has determined that the hatchlings have emerged.</p> <p>BIO-7 (Relocation of Turtle Eggs/Hatchlings): If it is not possible to avoid the active pond turtle nest(s), eggs and/or hatchlings shall be relocated to nearby suitable habitat in consultation with a qualified herpetologist.</p> <p>BIO-8 (Temporal Avoidance): In order to avoid impacts to nesting Swainson's hawks, construction activities in the rural zone shall occur, where possible, outside the nesting season, typically defined as March 1-September 15.</p> <p>BIO-9 (Preconstruction Surveys): If construction activities in the rural zone must occur between March 1 and September 15, a qualified biologist shall conduct preconstruction nest surveys for Swainson's hawks on and within ½ mile of the work area within 30 days prior to the start of construction. The survey shall consist of inspecting all accessible, suitable trees of the survey area for the presence of nests and hawks.</p> <p>BIO-10 (Avoidance of Active Nests): Should any active Swainson's hawk nests be discovered within the survey area, an appropriate disturbance-free buffer shall be established based on local conditions and</p>		

Impact	Mitigation Measures	Significance before Mitigation	Significance after Mitigation
	<p>agency guidelines. Disturbance-free buffers shall be identified on the ground with flagging, fencing, or by other easily visible means, and shall be maintained until a qualified biologist has determined that the young have fledged and are capable of foraging independently.</p> <p>BIO-11 (Take Avoidance Survey): A preconstruction “take avoidance” survey for burrowing owls shall be conducted by a qualified biologist between 14 and 30 days prior to the start of construction according to methods described in the Staff Report on Burrowing Owl Mitigation (CDFW 2012). The survey area shall include all suitable habitat on and within 200 meters of the construction zone, where accessible.</p> <p>BIO-12 (Avoidance of Active Nests): If construction activities are undertaken during the breeding season (February 1-August 31) and active nest burrows are identified within or near the construction zone, a 200-meter disturbance-free buffer shall be established around these burrows, or alternate avoidance measures implemented in consultation with CDFW. The buffers shall be enclosed with temporary fencing to prevent construction equipment and workers from entering the setback area. Buffers shall remain in place for the duration of the breeding season, unless otherwise arranged with CDFW. After the breeding season (i.e. once all young have left the nest), passive relocation of any</p>		

Impact	Mitigation Measures	Significance before Mitigation	Significance after Mitigation
	<p>remaining owls may take place as described below.</p> <p>BIO-13 (Avoidance or Passive Relocation of Resident Owls): During the non-breeding season (September 1-January 31), resident owls occupying burrows in the construction zone may either be avoided, or passively relocated to alternative habitat. If the project applicant chooses to avoid active owl burrows within the construction zone during the non-breeding season, a 50-meter disturbance-free buffer shall be established around these burrows, or alternate avoidance measures implemented in consultation with CDFW. The buffers shall be enclosed with temporary fencing and shall remain in place until a qualified biologist determines that the burrows are no longer active. If the project applicant chooses to passively relocate owls during the non-breeding season, this activity shall be conducted in accordance with a relocation plan prepared by a qualified biologist.</p> <p>BIO-14 (Compensatory Mitigation): The project applicant shall mitigate, at a 1:1 ratio, for all potential burrowing owl habitat removed within 600 meters of active burrowing owl burrows, as identified during the preconstruction surveys provided for in Mitigation Measure BIO-9. Potential burrowing owl habitat in the planning area generally includes agricultural fields (suitable for foraging), ruderal habitat (suitable for nesting), and non-native grassland habitat (suitable for nesting or</p>		

Impact	Mitigation Measures	Significance before Mitigation	Significance after Mitigation
	<p>foraging). Compensatory mitigation shall entail either (1) acquiring suitable replacement habitat in the project vicinity, to be preserved in perpetuity under conservation easement and managed according to the provisions of a long-term management plan, or (2) purchasing credits at a CDFW-approved burrowing owl conservation bank.</p> <p>BIO-15 (Preconstruction Surveys): A preconstruction survey for American badgers shall be conducted by a qualified biologist within 30 days of the start of construction.</p> <p>BIO-16 (Avoidance of Natal Dens): Should an active natal den be identified during the preconstruction surveys, a suitable disturbance-free buffer shall be established around the den and maintained until a qualified biologist has determined that the cubs have dispersed or the den has been abandoned.</p> <p>BIO-17 (Construction Timing): If feasible, project construction will occur outside of the avian nesting season, typically defined as February 1 to August 31.</p> <p>BIO-18 (Preconstruction Surveys): If construction must occur between February 1 and August 31, a qualified biologist shall conduct preconstruction surveys for active migratory bird nests within 14 days prior to the start of work. For projects within the urban zone, the survey area shall encompass the work area and accessible surrounding lands within 100 feet. For projects within the rural zone, the survey area shall encompass</p>		

Impact	Mitigation Measures	Significance before Mitigation	Significance after Mitigation
	<p>the work area and accessible surrounding lands within 250 feet.</p> <p>BIO-19 (Avoidance of Active Nests): Should any active nests be discovered within the survey area, the biologist shall identify a suitable disturbance-free buffer around the nest(s). Buffers shall be identified on the ground with flagging or fencing and shall be maintained until the biologist has determined that the young have fledged and are capable of foraging independently.</p> <p>BIO-20 (Temporal Avoidance): To avoid potential impacts to maternity bat roosts, removal of buildings, bridges, and large trees should occur outside of the period between April 1 and September 30, the time frame within which colony-nesting bats generally assemble, give birth, nurse their young, and ultimately disperse.</p> <p>BIO-21 (Preconstruction Surveys): If removal of buildings, bridges, or large trees is to occur between April 1 and September 30 (general maternity bat roost season), then within 30 days prior to their removal, a qualified biologist shall survey them for the presence of bats. The biologist shall look for individuals, guano, and staining, and shall listen for bat vocalizations. If necessary, the biologist will wait for nighttime emergence of bats from roost sites. If no bats are observed to be roosting or breeding, then no further action would be required, and construction could proceed.</p> <p>BIO-22 (Minimization): If a non-breeding bat colony is detected</p>		

Impact	Mitigation Measures	Significance before Mitigation	Significance after Mitigation
	<p>during preconstruction surveys, the individuals shall be humanely evicted under the direction of a qualified biologist to ensure that no harm or “take” of any bats occurs as a result of construction activities.</p> <p>BIO-23 (Avoidance of Maternity Roosts): If a maternity colony is detected during preconstruction surveys, the biologist shall identify a suitable disturbance-free buffer around the colony. The buffer shall remain in place until the biologist determines that the nursery is no longer active.</p>		
<p>3.4-2 Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?</p>	<p>BIO-24 (Tree Surveys): Both prior to and immediately following project activities in riparian habitat along the Kings River and Collins Creek, a qualified biologist shall conduct a tree survey within project boundaries. The location of each tree in the survey area shall be mapped, and species and diameter at breast height (DBH) recorded.</p> <p>BIO-25 (Riparian Mitigation and Monitoring Plan): If the follow-up tree survey determines that native riparian trees greater than 4 inches DBH have been removed by project activities, a qualified biologist shall prepare a riparian mitigation and monitoring plan that will provide a framework for required compensatory mitigation. The plan shall outline the required planting scenario, success criteria, and monitoring requirements.</p> <p>BIO-26 (Compensatory Mitigation): Compensatory mitigation shall be provided for the removal of</p>	Significant impact	Less than significant

Impact	Mitigation Measures	Significance before Mitigation	Significance after Mitigation
	<p>any native riparian tree 4 inches DBH or greater. Trees between 4 and 24 inches DBH shall be replaced on or immediately adjacent to the project site at a ratio of 3:1. Trees greater than 24 inches DBH shall be replaced on or immediately adjacent to the project site at a ratio of 10:1. The planting and subsequent monitoring effort shall be conducted in accordance with the riparian mitigation and monitoring plan provided for in Mitigation Measure BIO-25.</p>		
<p>3.4-3 Have a substantial adverse effect on state or federally-protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?</p>	<p>BIO-27 (Delineation of Jurisdictional Waters): Prior to the start of construction, a qualified biologist shall conduct a delineation of jurisdictional waters within and adjacent to the waterway(s) proposed for impact. The survey techniques, delineation report, and accompanying waters map shall meet the minimum standards of the USACE. The report and map shall be submitted to the USACE for purposes of obtaining a Preliminary Jurisdictional Determination or Approved Jurisdictional Determination, at the project applicant's discretion.</p> <p>BIO-28 (Clean Water Act Permitting): If it is determined that the waterway(s) to be impacted fall under the jurisdiction of the USACE, the project applicant shall obtain a Clean Water Act Section 404 permit and Section 401 Water Quality Certification, and shall adhere to all the provisions thereof, including compensatory mitigation requirements for loss of Waters of the U.S.</p>	Significant impact	Less than significant

Impact	Mitigation Measures	Significance before Mitigation	Significance after Mitigation
3.4-4 Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery site; (e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	BIO-24 through BIO-26	Significant impact	Less than significant
3.4-5 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	N/A
Cumulative Impacts		Less than cumulatively considerable	Less than cumulatively considerable
3.5 – Cultural Resources			
3.5-1 Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	CUL-1: Should any potentially significant cultural, historical, archaeological or fossil resources be discovered, no further ground disturbance shall occur in the area of the discovery until the Planning Director concurs in writing that adequate provisions are in place to protect these resources. Unanticipated discoveries shall be evaluated for significance by a certified professional archaeologist or paleontologist that meets the Secretary of the Interior's Professional Qualifications Standards. If significance criteria are met, then the project shall be required to perform data recovery, professional identification, radiocarbon dates as applicable, and other special studies; curate materials with	Significant	Less than significant

Impact	Mitigation Measures	Significance before Mitigation	Significance after Mitigation
	recognized scientific or educational repository; and provide a comprehensive final report as required by Senate Bill 18; California Historical Building Code (Title 24, Part 8); California Public Resources Code Sections 5020-5029.5, 5079-5079.65, 5097.9-5097.998, and 5097.98; and California State Health and Safety Code, Section 7050.5, as applicable.		
3.5-2 Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	CUL-1: see above	Significant	Less than significant
3.5-3 Disturb any human remains, including those interred outside of formal cemeteries?	CUL-2: If human remains are unearthed during excavation and/or construction activities, all activity shall cease immediately. No further disturbance shall occur until the County Coroner has made the necessary findings as to the origin and disposition pursuant to PRC Section 5097.98(b). If the human remains are determined to be of Native American decent, the coroner shall within 24 hours notify the Native American Heritage Commission (NAHC). The NAHC shall then contact the most likely descendent of the deceased Native American, who shall then serve as the consultant on how to proceed with the remains. Pursuant to PRC Section 5097.98(b), upon the discovery of Native American remains, the City shall ensure that the immediate vicinity, according to generally accepted cultural or archeological standards or practices, where the Native American human remains are located is not damaged or	Significant	Less than significant

Impact	Mitigation Measures	Significance before Mitigation	Significance after Mitigation
	disturbed by further development activity until the City has discussed and conferred with the most likely descendants regarding their recommendations.		
Cumulative Impacts		Less than cumulatively considerable	N/A
3.6 - Energy			
3.6-1 Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?		Less than significant	N/A
3.6-2 Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?		Less than significant	N/A
Cumulative Impacts		Less than cumulatively considerable	N/A
3.7 – Geology/Soils			
<p>3.7-1 Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:</p> <ul style="list-style-type: none"> i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. ii) Strong seismic ground shaking? iii) Seismic-related ground failure, including 		Less than significant	N/A

Impact	Mitigation Measures	Significance before Mitigation	Significance after Mitigation
liquefaction? iv) Landslides?			
3.7-2 Result in substantial soil erosion or the loss of topsoil?		Less than significant	N/A
3.7-3 Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?		Less than significant	N/A
3.7-4 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?		Less than significant	N/A
3.7-5 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	N/A
3.7-6 Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?	CUL-1: see above	Potentially Significant	Less than significant
Cumulative Impacts		Less than cumulatively considerable	N/A
3.8 – Greenhouse Gas Emissions			
3.8-1 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 gasses?	GHG-1: Until such time as the City adopts a Climate Action Plan, the City shall review and require all future development projects to be consistent with the GHG emissions impact analysis and mitigation framework developed by the SJVAPCD as part of its Climate Change Action Plan. Future projects which are not exempt from review under the Climate Change Action Plan framework shall demonstrate that GHG emissions reduction	Significant and unavoidable	Significant and unavoidable

Impact	Mitigation Measures	Significance before Mitigation	Significance after Mitigation
	measures have been included in the project design to reduce total emissions by 29 percent or the SJVAPCD emissions reduction threshold in effect at the time environmental review is being conducted for individual projects.		
Cumulative Impacts		Significant, unavoidable and cumulatively considerable	Significant, unavoidable and cumulatively considerable
3.9 – Hazards and Hazardous Materials			
3.9-1 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	N/A
3.9-2 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	N/A
3.9-3 Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?		Less than significant	N/A
3.9-4 For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?		Less than significant	N/A
3.9-5 Impair implementation of or physically interfere with an		Less than significant	N/A

Impact	Mitigation Measures	Significance before Mitigation	Significance after Mitigation
adopted emergency response plan or emergency evacuation plan?			
3.9-6 Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?		Less than significant	N/A
Cumulative Impacts		Less than cumulatively considerable	N/A
3.10 – Hydrology and Water Quality			
3.10-1 Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?		Less than significant	N/A
3.10-2 Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	HYD-1: Prior to exceeding existing water supply capacity for development projects subject to CEQA, the City will review projects on an individual basis, which will include an analysis of the following: Inventory of existing water demands; quantification of proposed water use; assessment of opportunities for enhanced water conservation; assessment of any shortfalls in future water demands; and identification of alternative water sources or other methods of achieving sufficient water use reduction and/or to achieve water balance. This analysis will be performed within the context of City's General Plan; the City's Municipal Code; State and federal regulations; and the requirements of the Sustainable Groundwater Management Plan / Groundwater Sustainability Plan.	Significant and unavoidable	Significant and unavoidable
3.10-3 Substantially alter the existing drainage pattern of the site or area, including through the alteration of the		Less than significant	N/A

Impact	Mitigation Measures	Significance before Mitigation	Significance after Mitigation
<p>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; or</p> <p>i. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or offsite;</p> <p>ii. 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</p> <p>iii. impede or redirect flood flows.</p>			
3.10-4 In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?		Less than significant	N/A
3.10-5 Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?		Less than significant	N/A
Cumulative Impacts		Significant, unavoidable and cumulatively considerable	N/A
3.11 – Land Use and Planning			
3.11-1 Physically divide an established community?		Less than significant	N/A
3.11-2 Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or		Less than significant	N/A

Impact	Mitigation Measures	Significance before Mitigation	Significance after Mitigation
mitigating an environmental effect?			
Cumulative Impacts		Less than cumulatively considerable	N/A
3.12 – Mineral Resources			
3.12-1 Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state or a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?		No impact	N/A
Cumulative Impacts		No impact	N/A
3.13 - Noise			
3.13-1 Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		Significant impact	N/A
3.13-2 Generation of excessive groundborne vibration or groundborne noise levels?		Less than significant	N/A
3.13-3 For a project located within the vicinity of a private airstrip or an airport land use plan or, where such plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?		Less than significant	N/A
Cumulative Impacts		Significant, unavoidable, and cumulatively considerable	N/A
3.14 – Population and Housing			
3.14-1 Induce substantial unplanned population growth in an area, either directly or indirectly?		Less than significant	N/A

Impact	Mitigation Measures	Significance before Mitigation	Significance after Mitigation
3.14-2 Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?		Less than significant	N/A
Cumulative Impacts		Less than cumulatively considerable	N/A
3.15 – Public Services			
3.15-1 Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection, police protection, schools, parks, or other public facilities?		Less than significant	N/A
Cumulative Impacts		Less than cumulatively considerable	N/A
3.16 - Recreation			
3.16-1 Would the project increase the use of exiting neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated OR does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?		Less than significant	N/A
Cumulative Impact		Less than cumulatively considerable	N/A
3.17 – Transportation/Traffic			
3.17-1 Conflict with a program plan, ordinance or policy addressing the circulation system,	TRA-1: When a land use development project is proposed, the City shall require the preparation of	Significant and unavoidable	Significant and unavoidable

Impact	Mitigation Measures	Significance before Mitigation	Significance after Mitigation
including transit, roadway, bicycle and pedestrian facilities?	<p>a traffic/transportation impact study (as directed by the City Engineer) when one or more of the following conditions occur:</p> <p>1) The proposed project requires an amendment to the Land Use Element of the General Plan; 2) The proposed project would result in substantial changes to the off-site transportation system; or 3) When certain traffic count criteria are met, such as if the project: a.) Exceeds 100 AM and/or PM peak hour trips (based on the trip generation rates identified in the ITE Trip Generation Manual) or b.) Generates more than 50 peak hour trips an existing City intersection.</p> <p>TRA-2: As determined by the City of Sanger, and as a condition of approval, the developer(s) of the North Academy Master Plan shall mitigate its fair share of transportation related impacts by paying the project's fair share of mitigation costs and/or constructing the improvements and receiving credits and reimbursements for the portion of construction for the following improvements:</p> <p><u>Existing Plus Project Intersection Deficiencies and Mitigations</u></p> <ul style="list-style-type: none"> Academy Avenue / Butler Avenue: Install traffic signal. Academy Avenue / California Avenue: Install All-way-stop control. Academy Avenue / Church Avenue: Install traffic signal. <p><u>Existing Plus Project Roadway Segment Deficiencies and Mitigations</u></p>		

Impact	Mitigation Measures	Significance before Mitigation	Significance after Mitigation
	<ul style="list-style-type: none"> Bethel Avenue between Florence Avenue and SR 180: Widen to 4 lanes. <u>Cumulative Plus Project Intersection Deficiencies and Mitigations</u> <ul style="list-style-type: none"> Academy Avenue / Florence Avenue: Monitor future operations. Bethel Avenue / SR 180: Install additional N/B left turn lane. <u>Existing Plus Project Roadway Segment Deficiencies and Mitigations</u> <ul style="list-style-type: none"> Academy Avenue between Butler and SR 180: Widen to 6 lanes. <p>The fair share amounts will be determined by the City and memorialized in a development agreement or other binding document.</p>		
3.17-2 Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	See TRA-1 and TRA-2 above	Significant and unavoidable	Significant and Unavoidable
3.17-3 Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?		Less than significant	N/A
3.17-4 Result in inadequate emergency access.		Less than significant	N/A
3.17-5 Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.		Less than significant	N/A

Impact	Mitigation Measures	Significance before Mitigation	Significance after Mitigation
Cumulative Impact		Cumulatively considerable	Cumulatively considerable
3.18 – Tribal Cultural Resources			
<p>3.18-1 Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:</p> <p>i) 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</p> <p>ii) 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 Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.</p>		Less than significant	N/A
Cumulative Impacts		Less than cumulatively considerable	N/A
3.19 – Utilities and Service Systems			
3.19-1 Require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power,		Less than significant	N/A

Impact	Mitigation Measures	Significance before Mitigation	Significance after Mitigation
natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?			
3.19-2 Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	HYD-1: Prior to exceeding existing water supply capacity for development projects subject to CEQA, the City will review projects on an individual basis, which will include an analysis of the following: Inventory of existing water demands; quantification of proposed water use; assessment of opportunities for enhanced water conservation; assessment of any shortfalls in future water demands; and identification of alternative water sources or other methods of achieving sufficient water use reduction and/or to achieve water balance. This analysis will be performed within the context of City's General Plan; the City's Municipal Code; State and federal regulations; and the requirements of the Sustainable Groundwater Management Plan / Groundwater Sustainability Plan.	Less than significant	Less than significant
3.19-3 Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?		Less than significant	N/A
3.19-4 Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?		Less than significant	N/A
3.19-5 Comply with federal, state, and local management and reduction statutes and		Less than significant	N/A

Impact	Mitigation Measures	Significance before Mitigation	Significance after Mitigation
regulations related to solid waste?			
Cumulative Impacts		Significant, unavoidable and cumulatively considerable	N/A
3.20 - Wildfire			
3.20-1 Would the project substantially impair an adopted emergency response plan or emergency evacuation plan, expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire, require the installation or maintenance of associated infrastructure that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment, or expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes, if the project were located in or near state responsibility areas or lands classified as very high fire hazard severity zones?		Less than significant	N/A
Cumulative Impact		Less than cumulatively considerable	N/A

Chapter 1

INTRODUCTION

CHAPTER ONE - INTRODUCTION

1.0 Introduction

This Environmental Impact Report (EIR) has been prepared on behalf of the City of Sanger (City) in accordance with the California Environmental Quality Act (CEQA). This chapter outlines the purpose of and overall approach to the preparation of the EIR for the City's General Plan Update and North Academy Corridor Master Plan (collectively referred to as the "Project"). Refer to Chapter Two – Project Description for the complete description of the Project.

The Sanger General Plan is the overarching policy document that guides land use, housing, transportation, infrastructure, community service, and other policy decisions through out the City. The General Plan includes the seven elements mandated by State law, to the extent that they are relevant locally, including: Land Use, Circulation, Housing, Conservation, Open Space, Noise and Safety. The General Plan contains the goals and policies that will guide future decisions within the City. It also identifies implementation programs that will ensure the goals and policies in the General Plan are carried out.

An EIR responds to the requirements of CEQA as set forth in Sections 15126, 15175, and 15176 of the CEQA Guidelines. The Planning Commission will use the EIR to make a recommendation to the City Council; the Council will then use the EIR to understand the potential environmental implications associated with adoption and implementation of the General Plan.

1.1 Purpose of EIR

The City of Sanger, as Lead Agency, determined that the Sanger General Plan Update and North Academy Master Plan is a "project" within the definition of CEQA, so the preparation of an EIR is required by CEQA 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 Sanger General Plan. The Draft EIR also discusses alternatives to the General Plan, and proposes mitigation measures that will offset, minimize, or otherwise avoid 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 Sanger.

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 environmental impacts of proposed development.

1.2 Types 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 will 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. 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.

1.3 Intended Uses of the EIR

The City of Sanger, 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 Sanger General Plan and subsequent implementation of projects consistent with the General Plan, as well as implementation of the Master 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, such as 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 agencies within Fresno County, including the Fresno Local Agency Formation Commission (LAFCO), which may use this EIR during the preparation of environmental documents and including decisions related to Municipal Service Reviews and Spheres of Influence relevant to Sanger. See Chapter 2.0 for additional information.

1.4 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 Sanger General Plan, implementation of future projects within Sanger may require permits and approvals from Trustee and Responsible Agencies. Trustee and Responsible Agencies are listed in Chapter 2.0.

1.5 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 Sanger circulated a Notice of Preparation (NOP) of an EIR for the proposed project on March 15, 2018 to trustee and responsible agencies, the State Clearinghouse (SCH #2018031047), and the public. A scoping meeting was held on March 28, 2018. No public or agency comments on the NOP related to the EIR analysis were presented or submitted during the scoping meeting.

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 also 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 Sanger 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 Sanger 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 fortyfive (45) days. Public comment on the Draft EIR will be accepted in written form. All comments or questions regarding the Draft EIR should be addressed to:

Tom Navarro, Community Development Director
City of Sanger
1700 7th Street
Sanger, CA 93657
TNavarro@ci.sanger.ca.us

Responses to Comments/Final EIR

Following the public review period, a Final EIR will be prepared. The Final EIR will respond to written comments received during the public review period and to oral comments during such review period.

Certification of the EIR/Project Consideration

The City of Sanger will review and consider the Final EIR. If the City finds that the Final EIR is "adequate and complete," 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 reject the project. A decision to approve the proposed project, for which this EIR identifies significant environmental effects, must be accompanied by written findings in accordance with State CEQA Guidelines Sections 15091 and 1509 and a statement of overriding consideration made in accordance with State CEQA Guidelines Section 15093. 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 Mitigation Monitoring and Reporting Program will be designed to ensure that these measures are carried out during project implementation, in a manner that is consistent with the EIR.

1.6 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, alternatives, significant irreversible environmental changes, growth-inducing impacts, and cumulative impacts. Discussion of the environmental issues addressed in the Draft EIR was established through review of environmental and planning documentation developed for the project, environmental and planning documentation prepared for recent projects located within the City of Sanger, 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 potential 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 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. Cumulative impacts are also addressed at the end of each impact section.

The following environmental topics are addressed in this EIR:

- Aesthetics
- Agricultural Forest Resources
- Air Quality

- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation and Traffic
- Tribal Resources
- Utilities and Services
- Wildfire

Chapter 4.0 – Project 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 5.0 – Other CEQA-Required Topics

Chapter 5.0 evaluates and describes the following CEQA required topics: growth-inducing effects, significant and irreversible effects, significant and unavoidable impacts, substantial adverse effects

on fish, wildlife, and plan species, substantial adverse effects on human beings, and effects not found to be significant.

Chapter 6.0 – Report Preparers

Chapter 7.0 lists all authors and agencies that assisted in the preparation of the Draft EIR, by name, title, and company or agency affiliation.

Appendices

This section includes the NOP and responses to the NOP in addition to biological, cultural, noise, and traffic technical studies.

1.7 – Summary of Comments Received on the Notice of Preparation

The City received no comment letters on the NOP.

Chapter 2

PROJECT DESCRIPTION

CHAPTER TWO – PROJECT DESCRIPTION

2.1 State General Plan Law

California Government Code Section 65300 et seq. requires every city and county in the State 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 City’s lead legal document in relation to growth, development, and resource management issues. Development regulations (e.g., zoning and subdivision standards and public improvement plans and projects, such as a Capital Improvement Program) 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, environmental justice and safety. At the discretion of each jurisdiction, the General Plan may combine these elements and may add optional elements relevant to the physical features and local concerns of the jurisdiction.

The California Government Code also requires that a General Plan 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 (California Government Code Section 65000 et seq.) establishes that zoning ordinances are required to be consistent with the general plan. 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]).

2.2 Background

The City of Sanger last updated its General Plan in 2003. In 2016, the City began the process of updating its 2003 General Plan by enlisting the service of Collins & Schoettler Planning Consultants to assist in preparation of the 2035 General Plan and associated documents.

Collins & Schoettler also retained the services of several consultants with expertise in specific areas, including

- GHD (formerly Omni-Means) – Transportation / Circulation

- New Economics & Advisory – Fiscal Analysis
- WJV Consultants - Noise
- Crawford & Bowen Planning, Inc. – Environmental Analysis

The Sanger 2035 General Plan Update was developed with extensive community input and reflects the community's vision for Sanger. A summary of the community outreach and public participation process is provided below.

Community Outreach and Participation

As part of the update process an extensive outreach process was conducted with various interest groups in the city and the community as a whole. Collins & Schoettler worked with the Sanger Planning Commission, who reviewed work and provided input and a series of public meetings were held to solicit input from the community. These groups worked to formulate goals, policies and objectives to guide Sanger's growth and to craft a map showing the location of future land uses in and around Sanger.

The Draft General Plan and General Plan Draft EIR will be reviewed at public meetings of the Planning Commission and City Council. The public is invited to attend these meetings where the General Plan will be presented to the City and where citizens and agencies can provide comments on the Draft EIR.

2.3 Project Location

Sanger is located in Fresno County in the eastern portion of the San Joaquin Valley. It is located south of State Route 180, an east-west highway that crosses the County and connects Mendota on the west to Sequoia/Kings Canyon National Parks on the east. The City is approximately 13 miles east of Fresno, the county seat of Fresno County. Other nearby cities include Fowler, Parlier, and Reedley. The unincorporated community of Del Rey is located 2½ miles southwest of Sanger. See Figure 2-1 Regional Map.

There are two boundaries that are important with respect to the Sanger General Plan Update:

1. **City Limits** – The City controls the use and development of land within the Sanger city limits. As of January 2017, Sanger's city limits contained 3,680 acres or 5.8 square miles. The location of the City limits boundary is shown in Figure 2-2 Planning Area Boundaries.
2. **Sphere of Influence** – The Sphere of Influence (SOI) is a line that is typically situated outside the City limits boundary and marks where the City is expected to grow (by

annexations). As of January 2018, Sanger’s SOI contained approximately 6,873 acres or 10.7 square miles. The location of the SOI is shown in Figure 2-2 Planning Area Boundaries.

This General Plan also proposes the establishment of phased growth boundaries for Sanger. These boundaries are intended to reduce sprawl and leapfrog development by directing growth to occur in a compact and contiguous fashion. The first growth boundary is the existing 2017 City limit boundary.

The City is also including the North Academy Corridor Specific Plan¹ located on the north side of the community in this process. This area represents additional commercial and mixed use development opportunities for the City which would result in sales tax and job generation. The Specific Plan area is generally centered along Academy Avenue, from the northern city limits to State Highway 180. The location of the Specific Plan area is shown in Figure 2-3 North Academy Corridor Master Plan Area. This area is proposed to be annexed into the City.

Study Area Boundaries

In addition to the City proper, state law requires that a municipality adopt a General Plan that addresses “any land outside its boundaries which in the planning agency’s judgement bears relation to its planning (California Government Code Section 65300).” This includes the City’s Sphere of Influence (SOI), which encompasses the unincorporated areas that are related to the City’s current and desired land use planning and growth. The SOI includes all lands within the City’s jurisdiction as well the area north of the City past State Route 180 and the area south of the City to the Kings River, as shown on Figure 2-2. For purposes of this EIR, the Study Area (also sometimes referred to as the “Planning Area” or “Project Area”) includes all lands within the SOI, including the North Academy Corridor Master Plan Area.

¹ Also referenced as North Academy Corridor Master Plan.

Figure 2-1: Regional Map

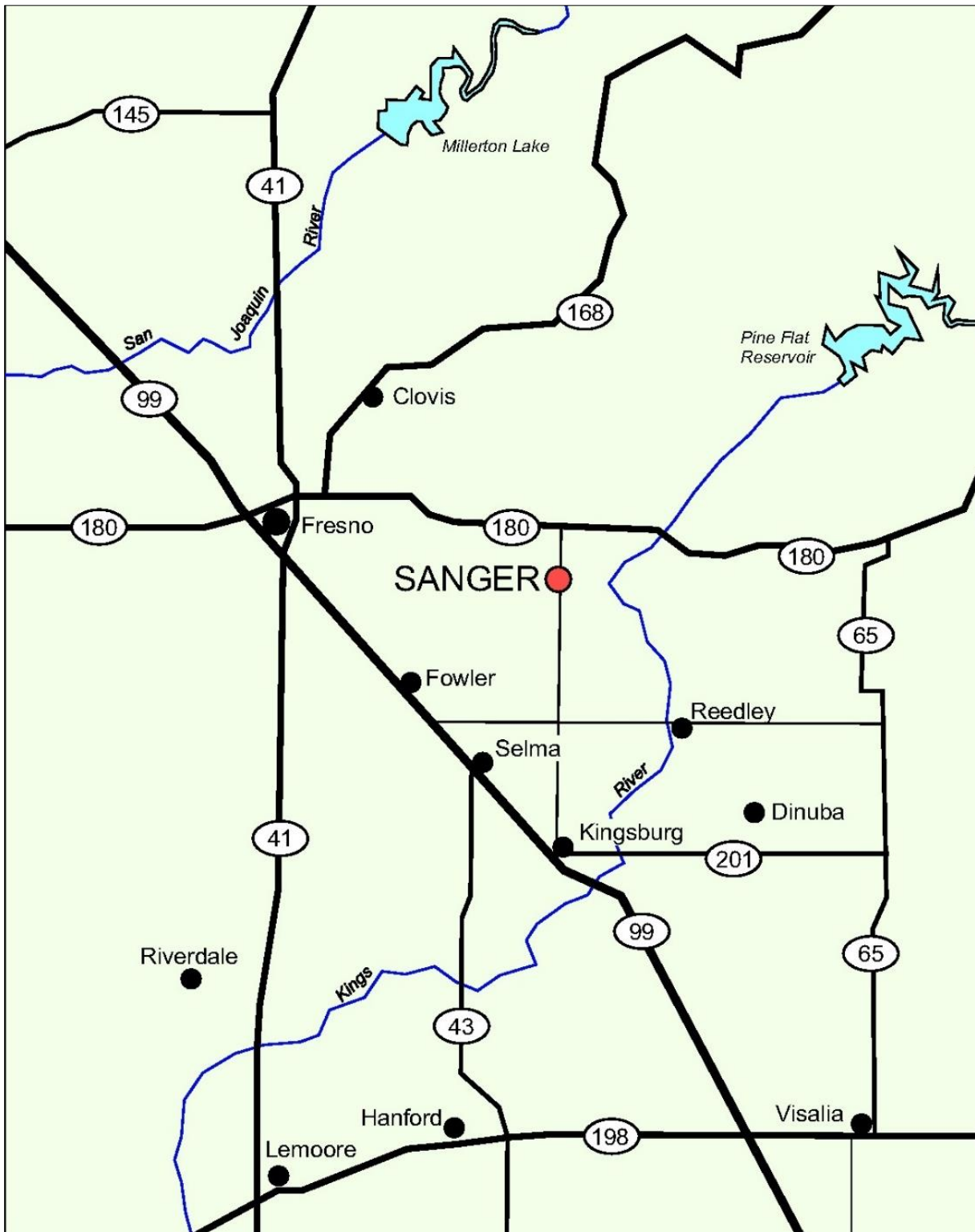
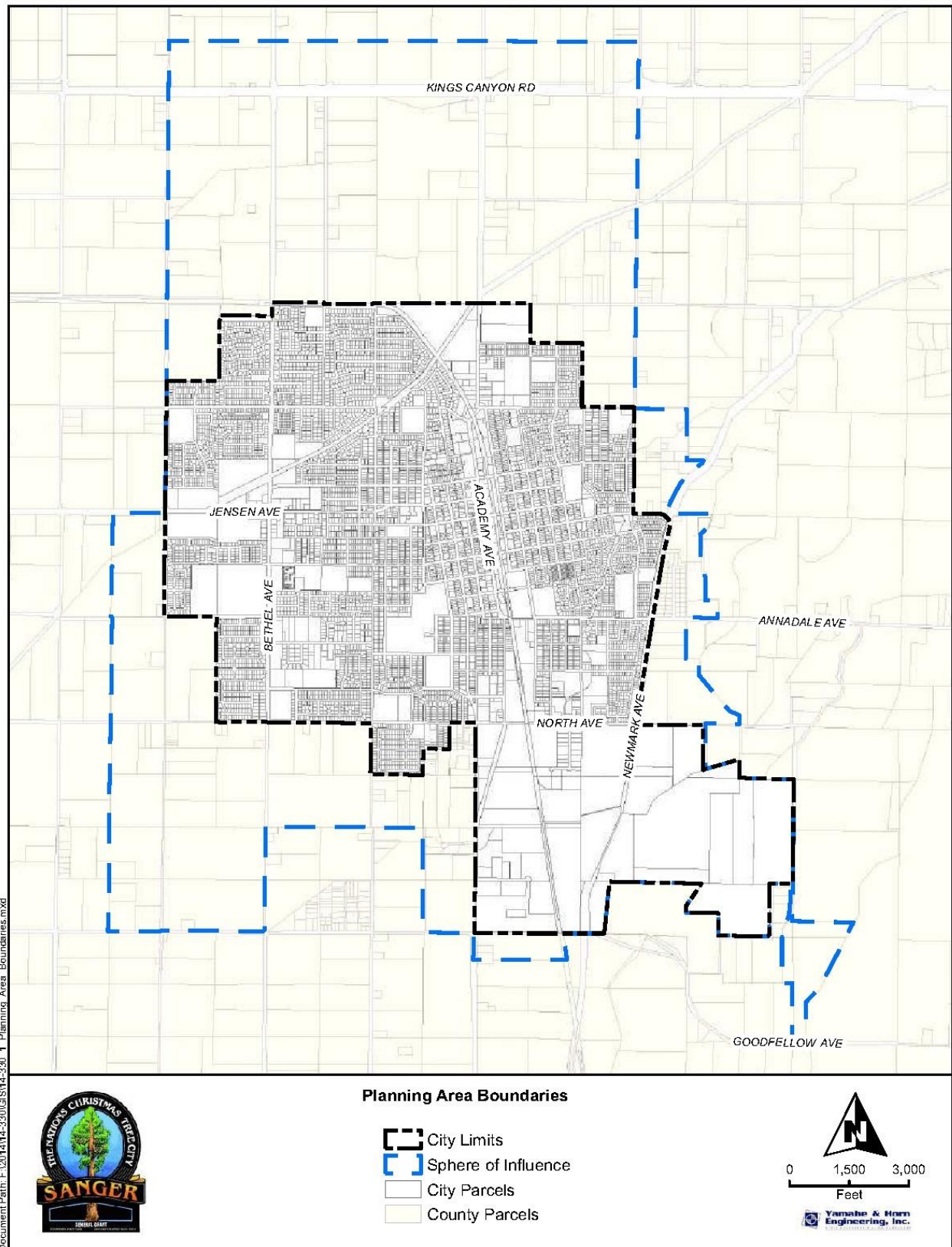


Figure 2-2: Planning Area Boundaries

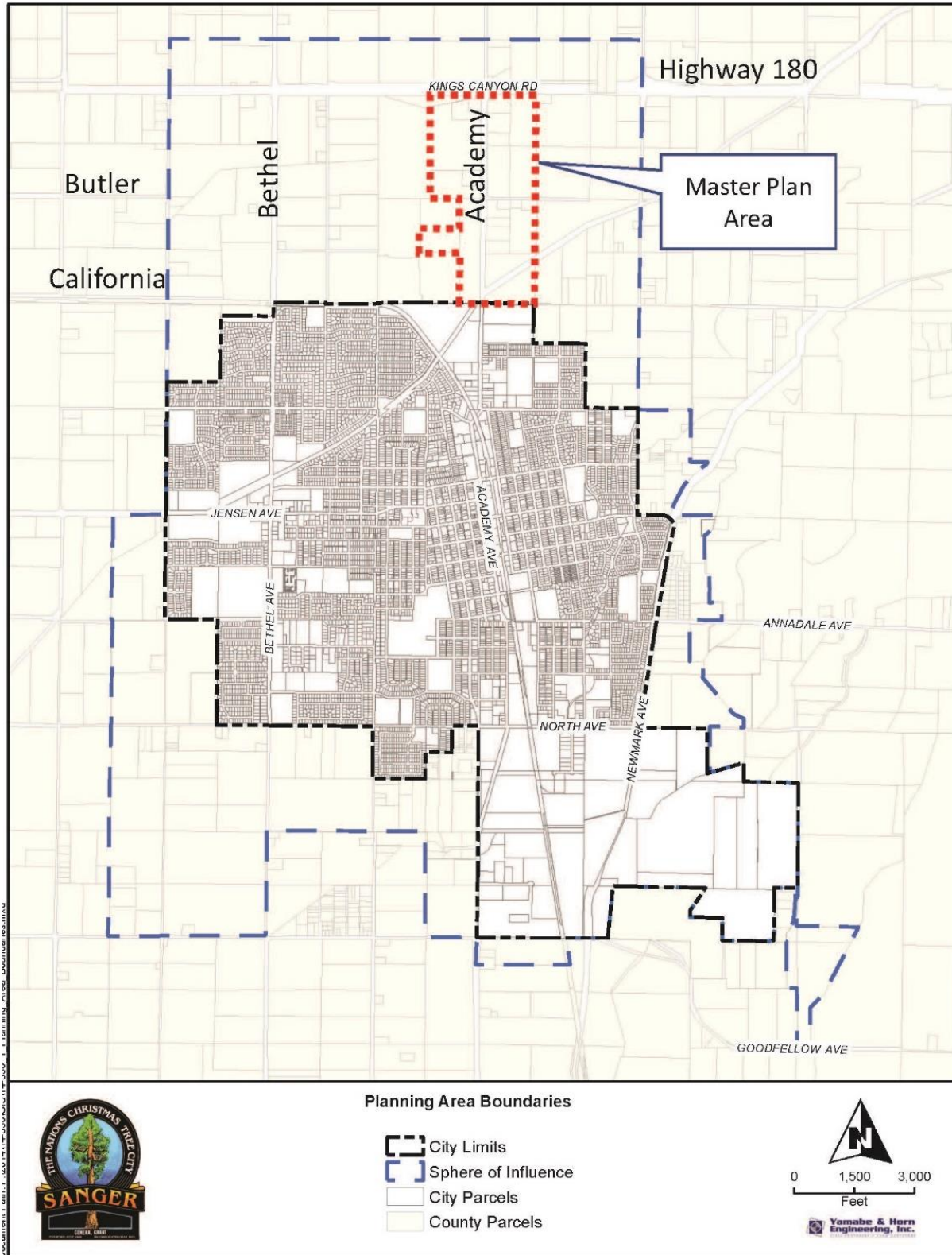


2.4 Project Objectives

A broad set of guiding objectives of the General Plan Update are as follows:

- Project Sanger's future growth and make provisions for this growth through the General Plan;
- Create a unique and attractive city by investing in projects that will enhance Sanger's appearance and marketability;
- Provide a safe and pleasant environment and enhance property values throughout the community by avoiding and eliminating land use conflicts;
- Promote increased sales tax revenue in Sanger by providing sufficient land for a wide range of commercial uses;
- Protect and preserve natural resources, such as farmland, air and water quality and native vegetation, while facilitating growth of the community;
- Provide for a greater variety of housing choices and shopping opportunities; Provide an adequate supply of housing opportunities, affordable to all economic segments of the community;
- Ensure that there are adequate public facilities to serve Sanger in the future;
- Ensure that Sanger's infrastructure system can effectively serve the land use framework;
- Enhance the character of Sanger by creating an improved and revitalized downtown area;
- Promote economic development and enhanced employment opportunities in Sanger by designating sufficient land for industrial uses, retail stores, and office parks;
- Recognize the changing conditions and trends in the planning area and market place and make appropriate amendments to the General Plan; and
- Recognize past land use approval actions and adopted land use policies.

Figure 2-3: North Academy Corridor Master Plan Area



Master Plan Objectives

The following overarching goals are established to provide guidance in the implementation of the North Academy Corridor Master Plan:

- Recognize the planning area’s unique position in Sanger as a gateway to the community;
- Facilitate a feasible land use pattern that is as free as possible from conflicts and which establishes uses that are complementary to one another.

2.5 Project Description

The “Project” under CEQA is the adoption of the 2035 General Plan Update and North Academy Corridor Master Plan; and implementation of the Goals, Objectives and Action Plans set forth therein (including any future annexations or other regulatory procedures required for implementation). The 2035 General Plan Update documents (referred to as “General Plan” or “GPU”) and the proposed General Plan and North Academy Corridor Master Plan (referred to as “Master Plan”) are herein incorporated by reference. The “Project” description in this Program EIR is a summary of those documents.

Contents of the General Plan (Summary)

The General Plan is divided into two parts: The General Plan Policy Document and the Community Profile.

The General Plan Policy Document consists of the following seven Elements:

1. **Land Use Element** – The Land Use element details how future land uses will be arranged and what form they will take.
2. **Circulation Element** – The Circulation element shows where future roadways will travel and what kinds of traffic roadways will likely carry. Other modes of transportation, like bicycles, walking and transit are also considered.
3. **Open Space & Conservation Element** – The Open Space/Parks & Conservation element plans for recreational needs and also sets forth policies to conserve resources, such as agricultural land and air quality.
4. **Housing Element** – The Housing element includes policies and action programs to ensure that housing is provided for all of Sanger’s income groups. (The Housing Element was adopted separately from this current General Plan Update process, but is part of the General Plan in its entirety).

5. **Safety Element** – The Safety element establishes policies to ensure future citizens and property are as free as possible from safety hazards.
6. **Noise Element** – the Noise element provides policies designed to minimize the impacts of noise on existing and future development.
7. **Environmental Justice Element** – this element provides policies to minimize negative environmental impacts on low income and minority neighborhoods.

Each Element contains Goals, Objectives and Action Plans that provide guidance to the City on how to direct change, manage growth, and manage resources over the 20-year life of the General Plan. The Action Plans are regulations, procedures, techniques or specific programs to be undertaken by the City to help achieve the specified goals and objectives.

The Community Profile document includes background information on the City of Sanger and is sectioned into three parts, each with its own subsections:

- Human Environment
- Physical Environment
- Resources

The proposed land use diagram is shown in Figure 2-4: Proposed General Plan Land Use Diagram. This map delineates where future land uses will be located in the community, through year 2035. The following generalized land use categories are established to implement the policies of the Sanger General Plan:

- Residential
- Commercial
- Industrial
- Public Facility
- Park/Open Space
- Agricultural / Urban Reserve

Relationship to Other Plans, Policies and Documents

In preparing and administering the Sanger General Plan, the City reviewed other applicable plans, policies and laws affect growth and development in the community. A brief summary of these documents is as follows:

Sanger Policies and Ordinances

- **Sanger Zoning Ordinance.** Part of the City’s Municipal Code, the zoning ordinance divides the city into various zones and regulates what types of uses are permitted and how property within each zone may be developed.
- **Sanger Subdivision Ordinance.** As part of the City’s Municipal Code, the subdivision regulations supplement and implement the requirements of State law and govern the subdivision of land within the City. The ordinance also specifies what types of improvements are required when lots are created, including, but not limited to streets, water, sewer, storm drainage, street lamps, parks and other public facilities.
- **Improvements Manual.** This document includes drawings that show how public improvements must be designed, including such items as streets, water, sewer, and storm drainage lines among other facilities.
- **Southeast Sanger Specific Plan.** This plan was adopted in 1983 and updated in 1999. The Plan establishes goals, objectives, land use patterns and circulation features to guide industrial development on nearly 740 acres of land south of North Avenue and east of Academy Avenue.
- **Sanger Design Standards and Guidelines** was adopted in 2006 and establishes standards and guidelines to guide the design and appearance of various types of development in the community. The Design Standards and Guidelines provide more flexibility, but are consistent with the minimum requirements set by the Zoning Ordinance.

Relationship to Other Local Agencies

Policies and standards are maintained by other agencies that may affect growth and development in Sanger. The most important include:

- **Fresno County General Plan.** Similar to Sanger’s General Plan, the County General Plan establishes policies to guide growth and development on unincorporated land around Sanger. Closely related to the General Plan, the Fresno County Zoning Ordinance regulates the use and development of land outside Sanger city limits.
- **Fresno Local Agency Formation Commission (LAFCo).** With respect to Sanger, this agency primarily reviews and takes action on requests for annexations of land. Among other requirements, LAFCo must find that the City can adequately serve development on land that is being annexed. The City of Sanger and County of Fresno have entered into a

tax sharing agreement that governs annexations. Whenever land is annexed from the County to the City, the tax sharing agreement provides a mechanism that divides a portion of property and sales tax between both agencies.

- **San Joaquin Valley Air Pollution Control District** maintains the San Joaquin Valley Air Quality Attainment Plan. This Plan includes policies and standards to improve air quality in the San Joaquin Valley Air Basin to ensure the basin meets state and federal air quality standards. The District has oversight with respect to development in Sanger, including regulations that pertain to businesses and industry that may generate air pollution. The District also has regulations to ensure that dust is controlled during the construction of new development.
- **Council of Fresno County Governments (Fresno COG)** acts as a voluntary association of local governments, providing a cooperative body for the discussion and resolution of issues which go beyond their individual boundaries. The COG works with cities and the County on a variety of common policies particularly related to transportation and air quality. The Regional Transportation Plan (RTP) is a document prepared by COG that establishes programs and policies for congestion management, transit, bicycles and pedestrians, roadways, and freight countywide, including Sanger.
- **Regional Water Quality Control Board** has jurisdiction over certain aspects of development related to water quality. In particular the Board regulates the operation of Sanger's wastewater treatment and disposal system. The Board also has jurisdiction over storm drainage and runoff from construction sites.
- **Consolidated Irrigation District** provides water for farming and ranching around the Sanger area. The District also controls irrigation canals in and around the City, including the Fowler Switch Canal.
- **Caltrans** controls the right-of-way of Highway 180, which traverses the northern portion of Sanger's Sphere of Influence. The highway was upgraded to a four-lane expressway several years ago and is ultimately planned for conversion to a freeway, with potential interchanges at Academy Avenue and Bethel Avenue.

Description of the General Plan Elements

1. Land Use Element

The Land Use Element is typically the most prominent of the seven mandatory elements of the General Plan. It, along with the proposed Land Use Diagram (Figure 2-4 Proposed 2035 General

Plan Land Use Diagram), identifies land use designations for each parcel within the City of Sanger and the SOI. It establishes building intensities and population densities within the Planning Area and establishes goals, objectives and policies the City will use to guide the character and future development in the community. Policies will pertain to a variety of land use issues that involve residential, commercial, industrial and public land uses.

The Land Use Element consists of six sections which are summarized herein:

1. Existing land use patterns and population trends;
2. Population and land use projections through the year 2035;
3. Land use designations and population densities;
4. Land use designation/zoning matrix which shows consistency between land use designations and zone districts;
5. Future land use diagram; and
6. Planning goals, objectives and policies.

Population and Land Demand Projections

In order to determine the amount of land needed for urban development in Sanger through the year 2035, population projections are required. Three population growth scenarios are provided in the plan which are based on past growth rates observed during various time periods in Sanger:

- Low (1.24%) This rate is based on Sanger's average annual population growth rate from 2005 to 2015;
- Medium (2.82%) This rate is based on Sanger's average annual growth rate from 2000 to 2010;
- High (3.6%). This growth rate is based on Sanger's average annual growth rate from 2000 to 2005.

These population projections are provided starting from the base year of 2015, which was provided by the California State Department of Finance. Each growth rate was then projected to the year 2035 as shown in Figure 2-5 Population Growth Projections.

Figure 2-4: Proposed 2035 General Plan Land Use Diagram

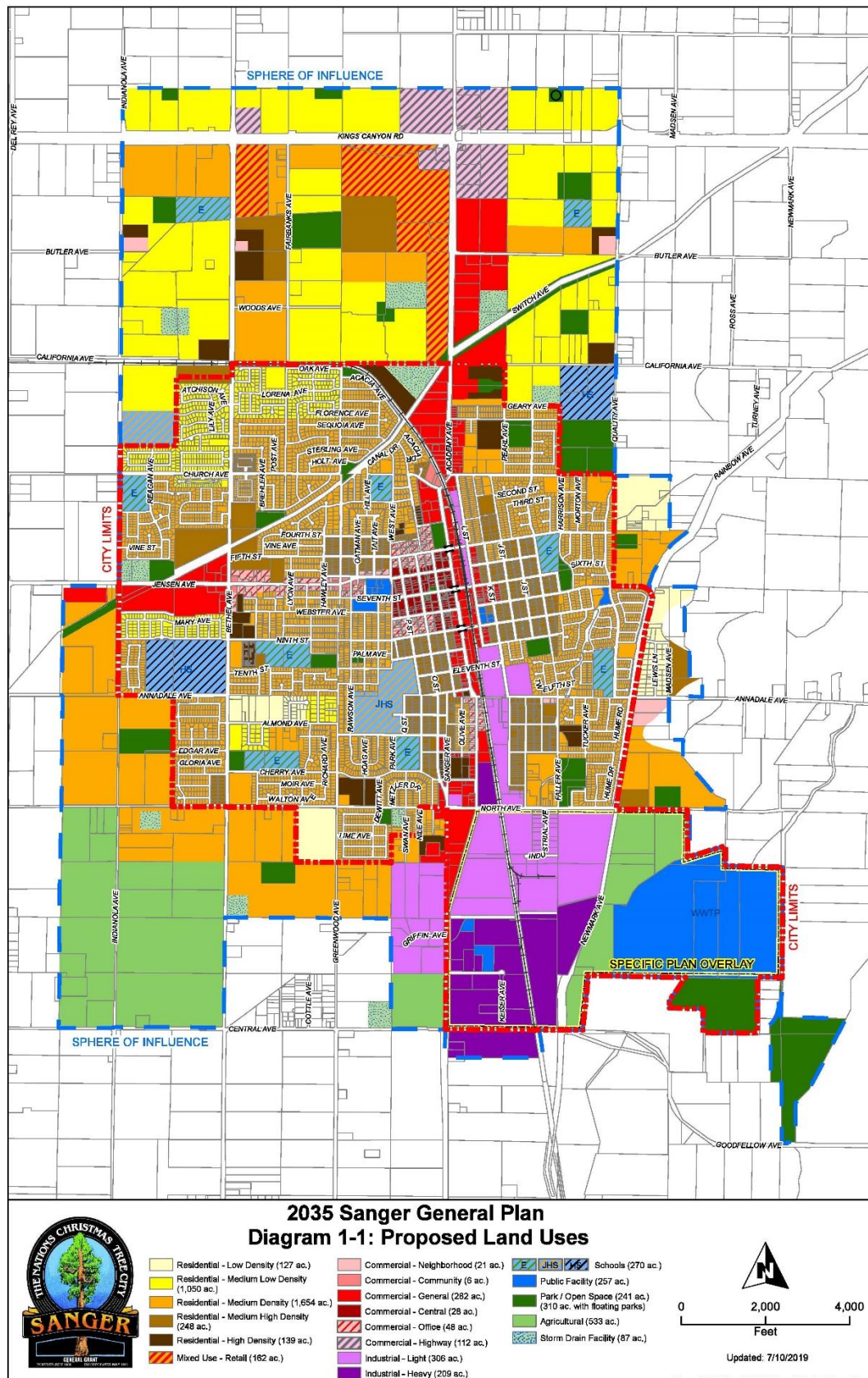
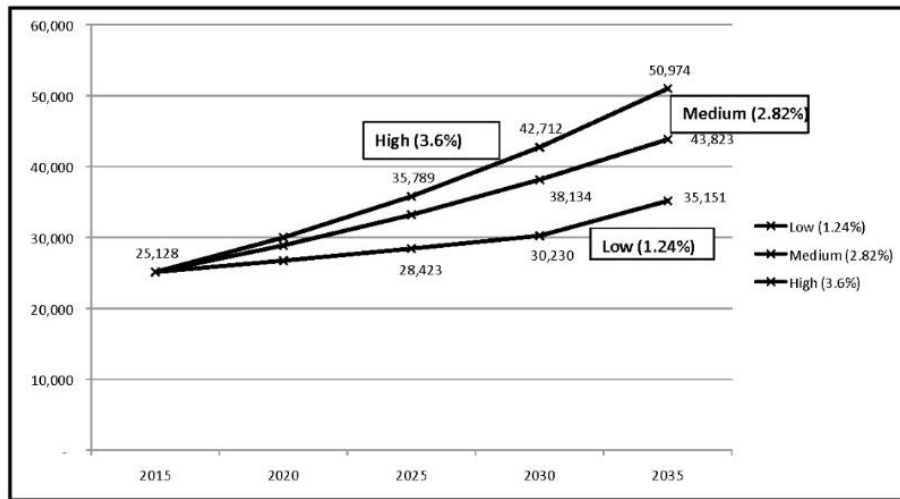


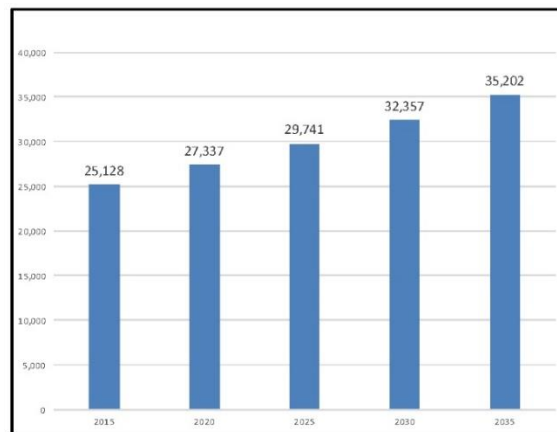
Figure 2-5: Population Growth Projections



Source: Collins & Schoettler, 2018.

As shown above, using various rates of growth, Sanger’s population by the year 2035 could range from about 35,150 to nearly 51,000. Given that the rates of growth during the early 2000’s were not sustainable, the General Plan proposes a lower growth rate of 1.7%, which is midway between the “low” and “medium” rates previously discussed. Using this growth rate results in population projections shown in Figure 2-6: Population Project at 1.7% Per Year.

Figure 2-6: Population Projection: 1.7% Per Year



The selected growth rate of 1.7% per year results in a year 2035 population of 35,202 residents – an increase of 10,074 residents.

Land Needed to Accommodate Population Growth Projections

Table 2-1 shows existing land use acreage within City limits and the SOI.

Table 2-1: Existing Land Use Acreage Within City Limits and the SOI

Land Use Category	Acres in City Limits	Percent of Total	Acres in SOI (not incld. City limits)	Percent of Total in SOI
Single-family residential	1,032	28%	61	2%
Multi-family residential	103	3%	11	0.3%
Mobile home parks	19	0.5%	6	0.2%
Commercial	122	3%	13	0.4%
Industrial	204	6%	56	2%
Public	603	16%	88	3%
Agriculture	243	7%	2,117	66%
Rural Residential	36	1%	83	3%
Vacant	332	9%	722	23%
ROW (streets and railroads)	986	26%	36	1%
Total	3,680	100%	3,193	100%

Source: Collins & Schoettler (2015). All figures are rounded.

Land demand projections have been determined taking into account the City's existing undeveloped land, projected population (35,202 in Year 2035), and other factors. Some of the existing land use designations will change during this General Plan update process, however, the City is likely to need additional lands to accommodate "full buildout" of the General Plan. Based on this analysis, it is estimated that the City will need an additional 290 acres of land as shown in Table 2-2. These acreages are included in the proposed 2035 General Plan Land Use Diagram (Figure 2-4).

Table 2-2: 2035 General Plan Adjusted Land Demand Projections

Land Use Category	Projected Land Demand (in acres)
Residential (single and multi-family)	111
Commercial	49
Industrial	0
Parks	16
Schools	84
Total	260

Source: Collins & Schoettler (2015). All figures are rounded.

1. Residential Land Demand Projections

To support the projected population of 35,302, a total of 2,745 additional dwelling units will be needed by 2035 (77% single family and 23% multi-family) as follows:

- Single-Family Residential (77% of 2,745 units) = 2,113 single family units will be needed by 2035.
- Multiple-Family Residential (23% of 2,745 units) = 631 multi-family units needed by 2035.

Up to 141 acres of additional undeveloped land will be needed for single- and multi-family residential development through the year 2035. This is based on an annual average growth rate of 1.7% per year through the year 2035, and takes into account existing undeveloped land zoned for residential use as well as expected residential densities. This assumes 3.67 persons per dwelling unit from the California Department of Finance (2015). See the Land Use Element of the General Plan for specific calculations used to determine the needed residential acreage.

2. Commercial Land Demand Projections

Commercial land demands are more difficult to forecast than are residential demands. Whereas residential land demands correspond directly to the number of units needed to house a given population, commercial land demands can vary widely depending on a given business. For example a 40,000 square foot store may employ 15 persons, while a 4,000 square foot restaurant may employ the same number. In addition, the "Amazon-effect" (internet sales) has caused many

retailers to go out of business (or reduce their number of stores). In larger cities, this trend has caused an over-supply of retail land and/or buildings.

A generally accepted method is to develop a ratio of the acres of existing commercial land uses and apply those to the future expected population.

Up to 49 acres of additional undeveloped land will be needed for commercial development. As of 2015 Sanger has 122 acres of developed commercial land. With a population of 25,128 this equals one acre of commercial land per 206 persons. By 2035 the population is expected to grow by 10,072 residents. At a ratio of one acre per 206 persons: $10,072 / 206 = 49$ acres of undeveloped land needed for commercial development through 2035. See the Land Use Element of the General Plan for specific calculations used to determine the needed commercial acreage.

There is great interest in facilitating commercial development around the intersection of State Highway 180 and Academy Avenue, on the north side of the community. This acreage will be above and beyond the general plan's projected demand for commercial lands because this type of commercial use is not directly dependent on Sanger's population increases but more on the traveling public; however, it is still assessed within this EIR. The Master Plan includes a description of commercial development in that area.

3. Industrial Land Demand Projections

Similar to the land demand projections for commercial uses, projections for industrial uses can be difficult. For example a very large plant may be staffed with only a few workers. On the other hand, a relatively small facility may employ many workers. A generally accepted method for projecting future industrial land demand is to develop a ratio between existing developed industrial acreage and future population.

Up to 89 acres of additional undeveloped land will be needed for industrial development. However, there are already 241 acres of undeveloped land zoned for industrial use in Sanger's existing city limits, so there is no current need for additional undeveloped land to be zoned or designated for industrial development through 2035. See the Land Use Element of the General Plan for specific calculations used to determine the needed industrial acreage.

4. Other Land Demand Projections

Park Land: Approximately 16 acres of additional undeveloped land based on 3 acres per 1,000 residents.

School Land: Approximately 84 acres of additional undeveloped land

2035 General Plan Land Use Designations

State planning law requires the General Plan to establish future land use categories and include standards for population density, where applicable. The following generalized land use categories are established to implement the policies of the Sanger General Plan.

- Residential
- Commercial
- Industrial
- Public Facility
- Park/Open Space
- Agricultural / Urban Reserve

These categories are further refined into more specific designations below. For example, the plan establishes five residential categories - these are based on the density of development, such as low, medium and higher residential densities, and so forth. For residential land use designations, maximum population densities are provided, as required by State law.

Residential Designations

There are five residential designations in the Sanger General Plan. The Table 2-3 lists these designations, the zoning that is consistent with each designation and a range of expected residential densities (e.g. units per acre):

Table 2-3: Residential Designations

Land Use Designation	Consistent Zoning	Average Density
Residential - Low Density	R-A or R-1-10	Up to 4.4 units per acre
Residential - Medium Low Density	R-1-10 or R-1-7.5	Up to 5.8 units per acre
Residential - Medium Density	R-1-6 or RM-2.5 or T-P	Up to 17.4 units per acre
Residential - Medium High Density	RM – 2.5 or RM – 1.5 or T-P	Up to 29 units per acre
Residential - High Density	RM – 1.5 or RM – 1.0	20 to 43.6 units per acre
Note: All density figures are net		

Full descriptions of each residential designation are included in the Land Use Element of the General Plan.

Commercial Land Use Designations

The General Plan proposes six commercial categories:

1. **Neighborhood Commercial** - This designation will allow for the development of small scale commercial developments within or nearby residential areas, that are designed to serve the daily needs of residents, such as groceries, laundry cleaning, cafes and similar uses. These developments should be within easy walking distance of most neighborhoods.
2. **Community Commercial** - This designation will provide for larger-scale shopping centers, intended to primarily provide commercial retail uses for the entire community and region.
3. **General Commercial** - This designation will provide for shopping centers, retail uses, offices and related uses, at appropriate locations. This designation also allows for some light manufacturing uses.
4. **Highway Commercial** - This designation is intended to provide for well-designed commercial development that provides services to travelers along the Highway 180 corridor. Uses such as lodging, restaurants, service stations, and specific retail uses are emphasized.
5. **Central Commercial** - This designation is intended to protect and foster downtown Sanger by strengthening the “downtown” atmosphere of stores typically fronting directly on the street with display windows catering to pedestrian shopping. On-site parking lots should be located to the rear or to the side of buildings.
6. **Office Commercial** - The Office Commercial designation provides for the creation of attractive office developments, whether in master-planned office parks or stand-alone buildings. This designation is also proposed for certain blocks around the core area that were previously zoned for multi-family residential. These blocks contain a number of older, architecturally significant homes that could be converted to attractive offices. Future residential development would still be allowed in these blocks but be subject to rigorous review to ensure high quality design.

Full descriptions of each commercial designation are included in the Land Use Element of the General Plan.

Mixed Use Designations

The General Plan proposes a Retail Mixed Use category.

Retail Mixed Use - This predominately retail land use designation is intended to build in flexibility for future projects to meet the changing needs of the City and marketplace. It shall generally be applied to land along Highway 180 and Academy corridor. The primary land use shall be any of the proposed six commercial categories. Secondary uses could be residential or industrial, but not to exceed 45 percent of a given parcel (or contiguous parcels).

Industrial Land Use Designations

The General Plan proposes two industrial categories:

1. **Light Industrial** - The Light Industrial designation is intended for less-intensive manufacturing and storage uses that do not generate higher levels of noise, glare, vibration, odors or hazards that could be a nuisance to surrounding properties.
2. **Heavy Industrial** - The Heavy Industrial designation provides for a full range of manufacturing and processing activities, as listed in the Sanger Zoning Ordinance. Uses developed in this designation may exhibit characteristics such as noise, vibration, odors or hazards that may make them unsuitable for the Light Manufacturing designation.

Full descriptions of each industrial designation are included in the Land Use Element.

Other Land Use Designations

Public Facilities - This designation is reserved for facilities that are operated by public agencies, including schools, the post office, City Hall, other City and school district-operated facilities and county offices.

Parks and Open Space - This designation is applied to lands that will remain generally free of buildings. Uses that would receive this designation include parks, playing fields, and lands with sensitive resources, such as land along the Kings River.

Agriculture / Urban Reserve - This designation is applied to lands that are being, or have the capacity to be, actively farmed but are within the planning area and may be eventually developed. This designation can be combined with other designations, as appropriate. For instance, it may be warranted to designate future residential lands as “Low Density Residential – Reserve” – in instances where it would not be appropriate to develop the land for a significant period of time. Further, this designation could also be applied to lands in agricultural areas that contain developed agriculturally related uses, such as packing houses, cold storage operations or other agriculturally-related businesses. The purpose of this designation is to protect agriculture from urban encroachment, maintain land in agriculture until the time is appropriate for conversion to urban uses, and to ensure that conflicts do not arise between agriculture and urban uses.

Land Use Element Goals, Objectives and Action Plans

The Land Use Element, as well as the other Elements of the General Plan described below, contains Goals, Objectives and Action Plans that provide guidance to the City on how to direct change, manage growth, and manage resources over the life of the General Plan. The Action Plans are regulations, procedures, techniques or specific programs to be undertaken by the City to help achieve the specified goals and objectives.

2. Transportation/Circulation Element

The Transportation/Circulation Element correlates closely with the Land Use Element, and identifies the general locations and extent of existing and proposed major roadways, 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 the planning area by a variety of transportation modes, including bicycle, pedestrian, rail and bus.

The Circulation Element of the 2035 General Plan is intended to provide guidance and specific actions to ensure the continued safe and efficient operation of Sanger’s circulation system. The Element is based on a fundamental philosophy that traffic conditions in the City can be managed through a comprehensive program of transportation planning, land use planning, and growth management strategies. This Element includes provisions for roadways, transit, aviation, pedestrian and bicycle transportation modes.

The Circulation Element responds directly to the Government Code [Section 65302(b)], which requires “a circulation element consisting of the general location and extent of existing and

proposed major thoroughfares, transportation routes, terminals, any military airports and ports, and other local public utilities and facilities, all correlated with the land use element of the plan.”

The Circulation Element provides a description of existing conditions in the City of Sanger of the following:

- Streets and Roadways – including traffic counts, level of service scores of intersections and road segments, and other information.
- Transit
- Bicycling
- Pedestrian Facilities
- Rail
- Aviation

The Circulation Element provides suggested roadway and intersection improvements necessary to accommodate the growth anticipated by the General Plan and Master Plan.

3. Conservation, Open Space, Parks and Recreation Element of the General Plan

The Conservation, Open Space, Parks and Recreation Element of the General Plan addresses the preservation of open space for the conservation of natural resources, and public health and safety related to open space and recreational opportunities and the conservation, development, and use of natural resources, riparian environments, native plant and animal species, soils, mineral deposits, cultural/historical resources, air quality, and alternative energy. It also details plans and measures for preserving open space for natural resources and the managed production of resources.

Open space, parks, and recreation facilities enhance the quality of life in a community. The creation and preservation of these types of resources is an important part of providing for the needs and welfare of a City. Conservation of open space and resources takes planning for the future. If these areas are not planned for at the present time and set aside for the future, a city runs the risk of losing them to development.

Open space lands are undeveloped areas that provide a low density perception in an urban area, define the edge of a community, and provide the sight lines that allow long distance vistas to the Sierra Nevada mountains, Kings River bottom, agriculture fields, or other local view-points. Most people think of open space as park areas, but a large portion of a city's open space is provided by residential yard areas and right-of-way along streets. The legal definition of open space land is found in California Government Code Section 65560 (b).

A park is an open area that provides an assortment of recreation and leisure opportunities for a community. A park can include community recreation parks, community centers, and other publicly-owned outdoor recreation areas. Parks can supply active as well as passive recreation opportunities. Activities can range from family picnics to organized sporting events. One of the primary purposes of parks is to contribute to Sanger's quality of life. The City accomplishes this through the provision of convenient, well-equipped and maintained sites and facilities, conservation of natural resources, and a comprehensive and quality program of recreational activities and services for all citizens of the community.

4. Housing Element

The Housing element includes policies and action programs to ensure that housing is provided for all of Sanger's income groups. (The Housing Element was adopted separately from this current General Plan Update process, but is part of the General Plan in its entirety. A separate CEQA document was prepared for the Housing Element).

5. Safety Element

The Safety element establishes policies to ensure future citizens and property are as free as possible from safety hazards. Following accidents and disasters, citizens are sometimes heard to ask, "How did this happen?" or "How can this be prevented from happening again?" or perhaps, "What is the government's policy to prevent or respond to such emergencies?"

The Safety Element in itself can not prevent natural and manmade disasters; however, it can provide standards that may help minimize the impacts of disasters on people and structural improvements in the area. It will also provide additional standards for planning structures that may be located in areas where there is a higher probability, or risk, of a disaster occurring.

Safety of the citizens of Sanger must be uppermost in the minds of the local decision-makers. This Element will provide a guideline towards developing a safer environment for the community. Local decisions related to zoning, subdivisions, entitlement permits and the like should be tied to this Element's identification of such hazards.

6. Noise Element

The Noise element provides policies designed to minimize the impacts of noise on existing and future development. The Noise Element is intended to minimize future noise conflicts, whereas a noise control ordinance resolves existing noise conflicts. A noise control ordinance may be used to address noise levels generated by existing local industrial, commercial, agricultural and residential uses which are not regulated by federal or state noise level standards. The regulation

of noise sources such as traffic on public roadways, railroad line operations and aircraft in flight is preempted by existing federal and/or state regulations, meaning that such sources generally may not be addressed by a local noise control ordinance. The Noise Element addresses the prevention of noise conflicts through the planning process.

The Noise Element is related to the Land Use, Circulation and Conservation, Open Space and Recreation Elements of the General Plan. Recognition of the interrelationship of the Noise Element and these three other mandated elements is necessary to prepare an integrated general plan and to implement actions to achieve an acceptable noise environment within the community as defined by the Noise Element.

7. Environmental Justice Element

This Element provides policies to minimize negative environmental impacts on low income and minority neighborhoods. The term “Environmental Justice” entered the lexicon of land use and planning in the 1980’s. At that time, concern began to be expressed about how land use decisions might be negatively affecting low-income neighborhoods, and communities composed of ethnic minorities. Examples included the siting of hazardous waste dumps, new industrial development, or new highways, located and developed in a way that imposes negative environmental impacts on these communities.

In California, these concerns have been incorporated into the State’s General Plan Guidelines, which require cities to prepare an Environmental Justice Element upon the next comprehensive General Plan update.

Description of the North Academy Corridor Master Plan

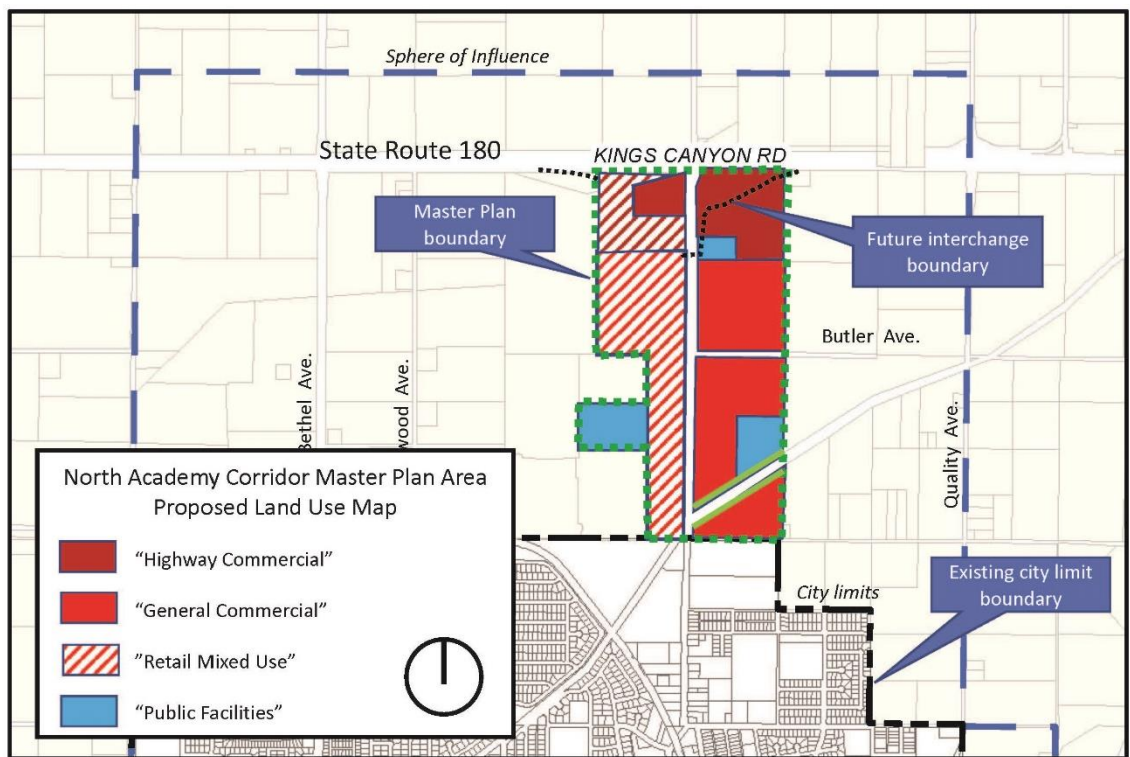
The North Academy Corridor Master Plan is intended to guide urban development within a 285-acre planning area centered on Academy Avenue, north of the existing Sanger city boundary, extending to the intersection of Academy Avenue and State Route 180 (Kings Canyon Road).

The annexation and development of this corridor was selected by the Sanger City Council as one of its top land use goals for action. It is important to note that the annexation of these lands is guided by a Memorandum of Understanding between the City of Sanger and Fresno County.

This Master Plan area comprises approximately 285 acres which proposes a variety of land uses along Academy Avenue and surrounding areas (See Figure 2-7 Master Plan Proposed Land Use Diagram). The Master Plan area is proposed to be annexed into the City limits of Sanger. The Master Plan is proposing the following land uses:

- Mixed Use Retail ~153 acres
- Neighborhood Commercial ~8 acres
- Medium Density Residential ~48 acres
- Medium High Density Residential ~ 17 acres
- High Density Residential ~ 4 acres
- Other areas such as open space and right-of-way ~ 55 acres

Figure 2-7: Master Plan Proposed Land Use Diagram



The site currently provides of a variety of land use designations including agricultural (155 acres), commercial (14 acres), residential (22 acres), public (4 acres), vacant (65 acres) and right-of-way (25 acres).

Table 2-4 shows the specific type land use change being proposed, as well as the associated acreage.

Table 2-4: Proposed Master Plan Land Use Changes

Original Land Use Designation	Proposed Land Use Designation	Acres*
General Commercial	Mixed Use Retail	54.2
Highway Commercial	Mixed Use Retail	37.5
Med. Low Density Residential	Residential - Medium Density	48.0
Med. Density Residential	Residential - Medium High Density	16.5
Neighborhood Commercial	Residential - High Density	4.1
High Density Residential	Commercial - Neighborhood	7.9
Med. Density Residential	Mixed Use - Retail	41.2
Med. Low Density Residential	Mixed Use - Retail	19.8

* the Master Plan area also includes approximately 55 acres of open space and right of way.

2.6 Uses of the EIR and Agency Approvals

The City of Sanger is the Lead Agency for the proposed Project. The Sanger 2035 General Plan Update and North Academy Corridor Master Plan will be presented to the Planning Commission and City Council for comment, review and consideration for adoption. The City Council has the sole discretionary authority to approve and adopt the General Plan Update. In order to approve the proposed Project, the City Council would consider the following actions:

- Certification of this Program EIR (State Clearinghouse #2018031047);
- Adoption of required CEQA findings for the above action including a statement of overriding considerations;
- Adoption of a Mitigation Monitoring and Reporting Program; and
- Approval of the Sanger 2035 General Plan Update and North Academy Corridor Master Plan.

Generally, implementing projects for which this EIR may be utilized include, but are not limited to:

- General Plan Amendments;
- Rezoning;
- Specific Plans;
- Tentative maps, variances, conditional use permits, and other land use permits;
- Approval of utility or infrastructure master plans;
- Approval and funding of public improvements projects;
- Approval of resource management plans;
- Fresno County LAFCo consideration of boundary changes requested by the City; and
- Permits issued by responsible/resource agencies.

As mandated by CEQA Guidelines Section 15124(d), this section contains a list of agencies that are expected to use the EIR in their decision-making, and a list of the approvals for which the EIR may be used. These lists include information that is known to the Lead Agency. A range of responsible and trustee agencies may utilize this EIR in the review of subsequent implementation activities over which that may have responsibility. A responsible agency is a public agency which has discretionary review approval power over a project (CEQA Guidelines Section 15381). A trustee agency is a state agency that has jurisdiction by law over natural resources affected by a project which are held in trust for the people of the state (CEQA Guidelines Section 15386). These responsible and trustee agencies may include, but are not limited to, the following:

- California Air Resources Board;
- California Department of Fish and Wildlife;
- California Department of Conservation;
- California Department of Forestry and Fire Protection;
- California Department of Housing and Community Development;
- California Department of Parks and Recreation;
- California Department of Toxic Substances Control;
- California Department of Transportation (Caltrans);
- California Public Utilities Commission;

- California State Lands Commission;
- California State Office of Historic Preservation;
- California State Water Resources Control Board;
- Central Valley Regional Water Quality Control Board;
- Council of Fresno County Governments;
- County of Fresno;
- County of Fresno Local Agency Formation Commission;
- San Joaquin Valley Unified Air Pollution Control Agency;
- U.S. Fish and Wildlife Service;
- United States Army Corps of Engineers; and
- Any Other Responsible or Trustee Agency.

2.7 Subsequent Use of the EIR

This EIR is a Program EIR (See Chapter One – Introduction for a description regarding the use of a Program EIR and CEQA streamlining). When considering approval of subsequent activities under the proposed General Plan and/or Master Plan, the City of Sanger would utilize this EIR as the basis in determining potential environmental effects and the appropriate level of environmental review, if any, or a subsequent activity. Projects or activities successive to this Program EIR may include, but are not limited to, the following:

- Annexations;
- Development Plan Approvals, such as tentative maps, variances, conditional use permits, and other land use permits;
- Development Agreements;
- General Plan Amendments;
- Rezonings;
- Specific Plans;
- Approval of utility or infrastructure master plans;
- Approval and funding of public improvements projects;
- Approval of resource management plans;
- Fresno County LAFCO consideration of boundary changes requested by the City; and
- Permits issued by responsible/resource agencies.

Chapter 3

IMPACT ANALYSIS

3.1 Aesthetics

This section of the DEIR identifies potential impacts of the proposed Project on visual character, scenic resources, views, scenic highways and sources of light and glare. No IS/NOP comment letters were received pertaining to Aesthetics.

Environmental Setting

Sanger and Surrounding Areas

Sanger is located in Fresno County, in California's Central Valley, approximately 13 miles east of Fresno, the County seat of Fresno County. The Sierra Nevada Mountain range is located to the east, creating a scenic setting for the City. Because of its setting and proximity to the mountains, Sanger is known as the "Christmas Tree City". Highway 180 runs north of the City in an east-west direction and connects areas to the west to the Sequoia and Kings Canyon National Parks. The Kings River is a major natural feature located approximately one mile east of the City. As of January 2017, the Sanger's city limits contained 3,680 acres or 5.8 square miles. The Sphere of Influence contained approximately 6,873 acres or 10.7 square miles.¹

Sanger's historic downtown was founded in 1887 on the Southern Pacific Railroad as the home of the Kings River Lumber Company. The company employed a third of Sanger's residents and was the biggest lumberyard in California. In the late 1880's and early 1890's, grapes and citrus orchards began replacing dry farmed wheat fields and cattle and hog ranches. The agricultural industry eventually replaced the lumber industry. Early packing sheds started in 1914 and grew in importance as Sanger was established as a food processing hub.²

The City's economy is based primarily on agriculture supported by retail and industrial development. Sanger's downtown is an area that is envisioned as a place for the community to shop, gather and socialize. In addition, an increasing number of residents choose Sanger's small town atmosphere and relatively affordable housing while working out of town in nearby areas.

Residential neighborhoods in the City are comprised of primarily single-family residences with older, mature, historic residences located closer to the downtown area. Multi-family residential complexes are located throughout the City as are a variety of commercial establishments, parks and some industrial facilities.

¹ Sanger 2035 GPU Land Use Element, Page 1-2.

² Sanger 2020 General Plan, Page 1.2.

Scenic Vistas

A scenic vista is a viewpoint that provides a distant view of highly valued natural or man-made landscape features for the benefit of the general public. Typical scenic vistas are locations where views of rivers, hillsides, and open space areas can be obtained as well as locations where valued urban landscape features can be viewed in the distance.

Neither the General Plan or the Fresno County General Plan designates specific scenic vistas within the City or in the immediate unincorporated areas adjacent to the City. However, scenic vistas from areas within the City are available. There are various locations throughout the eastern portion of the Planning Area that provide views of the Sierra Nevada foothills that are located north and west of the Planning Area. These distant views of the Sierra Nevada foothills are impeded many days during the year by the poor air quality in the region.

The scenic qualities of a community are composed of a mixture of natural and man-made features. The value or importance of these features to the public is dependent upon the visual quality of the view. Although a mostly subjective process, the US Forest Service has developed a rating system for classifying different views within a planning area. Originally this classification system was used by the Forest Service to classify views that contained primarily natural features. For purposes of the 2035 General Plan update, the City's General Plan consultants modified this classification system to include the urban landscape of Sanger. This is outlined in Chapter Three of the *Sanger General Plan Update, Part II: Community Profile* (Collins & Schoettler, 2018) document which was prepared as part of the General Plan update. It is provided in that document for illustrative purposes and is taken into consideration in the CEQA evaluation regarding Aesthetics, but is not a tool that is used to determine significance of an impact.³

State Scenic Highways

According to the California Department of Transportation Scenic Highway Program, there are no designated State Scenic Highways within Fresno County. There are three segments of Eligible State Scenic Highways within the County, the closest being SR 180 west of the City in the vicinity of Minkler towards the Kings Canyon National Park boundary.⁴ No eligible highways are within or adjacent to the City.

³ Sanger 2035 GPU, Part II: Community Profile, Pages 3-1 to 3-3 (Collins & Schoettler, 2018).

⁴ California Department of Transportation. <http://www.dot.ca.gov/design/lap/livability/scenic-highways/>. Accessed April 2018

Light and Glare

Daytime and nighttime glare is common in cities such as Sanger. Sources of glare include reflection of the sun off of buildings, car windshields, other highly reflective glass or metal surfaces, and off of nature surfaces such as lakes or rivers. All of these sources of daytime glare occur within the City.

Nighttime lighting is the primary source of glare that adversely affects nighttime views and creates sky glow. Typical sources of nighttime glare include high intensity lighting at playfields, lighting of commercial and industrial establishments, parking lots, vehicle lights, street lights and similar other sources.

Regulatory Setting

Title 24 Outdoor Lighting Standards

Title 24 Outdoor Lighting Standards were adopted by the State of California Energy Commission (CEC) (Title 24, Parts 1 and 6, Building Energy Efficiency Standards (Standards) on November 5, 2003 and went into effect on October 1, 2005. The changes included new requirements for outdoor lighting, which vary according to which “lighting Zone” the equipment is in. The CEC defines rural areas as Lighting Zone 2. Existing outdoor lighting systems are not required to meet these lighting allowances.

Scenic Highway Program

The California Scenic Highway Program was established by the state Legislature in 1963 for the purpose of protecting and enhancing the natural scenic beauty of California highways and adjacent corridors through special conservation treatment. The State Scenic Highway System includes a list of highways that are either eligible for designation as scenic highways or have been officially designated. The state laws governing the scenic highways program are found in the Streets and Highways Code Sections 260-263.

City of Sanger Regulations

The City currently utilizes the guidance provided in its General Plan and Zoning Ordinance that shape the design of new development. These are summarized below:

Land Use Element: “Sanger Community Design Standards Guidelines”. This includes landscaping guidelines, street medians, pedestrian corridors and other

similar mechanisms that foster an attractive, clean and well-maintained community.

The Land Use Element also includes Goals, Objectives, and Action Plans related to Parks and Open Space and to Scenic Qualities.

Code Enforcement: Includes street sweeping, trash pickup, maintenance of public spaces etc. Also includes enforcement of the State Housing Code. Other enforcement issues include the City’s vehicle abatement program / illegal truck parking, sign ordinance, and a fine program for property owners in violation.

**Community
Character and
Identity:**

This includes the Design Standards Guidelines mentioned above, “Welcome to Sanger” signage/landscaping, improvement of land uses along Academy Avenue, landscape buffers and other features.

New Development: Promotion of Smart Growth planning principles in order to discourage urban sprawl and the premature urbanization of agricultural land, and to create more livable neighborhoods. This includes the promotion of mixed-use development and amendments to the City’s zoning ordinance to incorporate mixed-use zone districts and downtown core areas.

Residential: This involves the removal of substandard homes from residential neighborhoods, rehabilitation of deteriorated homes, upgraded neighborhoods, maintenance ordinances, and compatible land uses such as where subdivisions meet commercial establishments. Multi-family development is to be well-designed and properly sited.

Commercial: Ensure that a full range of commercial development is provided, but designate appropriate places for certain commercial and industrial establishments while promoting development that is attractive and functional.

Downtown: Encourage an assortment of strategies, improvements and marketing options to inject energy, activity and novelty to the Downtown area. This might include farmers markets, highlighting architecturally-significant properties, attractive signage and streetscapes and other similar strategies.

- Industrial:** This includes locating industrial facilities to areas where it does not conflict with residential or other sensitive land uses such as schools, churches, hospitals, etc.
- Natural Resources:** Promote the proper use and care of the Kings River environs and other watercourses that traverse Sanger.

Thresholds of Significance

The thresholds of significance for this section are established by the CEQA Appendix G Checklist:

- 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?
- Substantially degrade the existing visual character or quality of public views of the site and its surroundings? 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: *Have a substantial adverse effect on a scenic vista?*

Less than Significant Impact. Full buildout of the General Plan and Master Plan area would result in changes to the visual character of the undeveloped portions of the City, including vacant infill parcels and within undeveloped portions of the Sphere of Influence and Master Plan areas. Visual conditions would change from agricultural and/or vacant lands to urban uses such as residential, commercial, parks, industrial, infrastructure or other developments. In addition, with an increase in development as proposed by the General Plan and Master Plan, the population would increase, and the City could incrementally lose some of its existing visual character or visual resources.

As described in the Environmental/Regulatory setting, there are no established scenic vistas located in the project area. There are various locations throughout the eastern portion of the Planning Area that provide views of the Sierra Nevada foothills that are located north and west of the Planning Area. These distant views of the Sierra Nevada foothills are impeded many days during the year by the poor air quality in the region. However, implementation of the City's

General Plan Land Use Policies, Zoning Ordinance and other regulations as described herein would ensure that impacts to scenic vistas resulting from the General Plan and Master Plan remains *less than significant*.

Mitigation Measures: None are required.

Impact 3.1-2: *Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?*

Less Than Significant Impact. As described above, there are no trees, rock outcroppings or historic buildings located on or near the City. According to the California Department of Transportation Scenic Highway Program, there are no designated State Scenic Highways within the City or Fresno County. There are three segments of Eligible State Scenic Highways within the County, the closest being SR 180 west of the City in the vicinity of Minkler towards the Kings Canyon National Park boundary.⁵ No eligible highways are within or adjacent to the City. Therefore, there is a *less than significant* impact.

Mitigation Measures: None are required.

Impact 3.1-3: *Substantially degrade the existing visual character or quality of public views of the site and its surroundings? If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?*

Less Than Significant Impact. Implementation of the General Plan and Master Plan would result in the conversion of agricultural and/or vacant land to urban uses. New development would incrementally reduce views to open agricultural land now available to some residents and businesses, but would also make such views available to residents and businesses at the new developing portions of the City. Views of the mountains and river areas will remain but may be incrementally reduced for some residents or visitors to the extent that new buildings might block or obscure some views. However, the City has developed goals, objectives and action plans regarding scenic qualities as follows:

Sanger Conservation, Open Space, Parks and Recreation Element: Scenic Qualities

Goals, Objectives, Action Plans

Goal:

⁵ California Department of Transportation. <http://www.dot.ca.gov/design/lap/livability/scenic-highways/>. Accessed April 2018

- I. Preserve and enhance the scenic qualities of the community by adopting standards regulating entryways, view preservation, building and site design and landscaping.

Objective:

1. The City should enhance its image by developing improvements within the City that improve the visual appearance of the community.

Action Plan:

- a. Undertake a beautification program along Academy and Jensen Avenues. These are the major routes through Sanger and some segments of these roadways give the City a less-than-desirable image. In addition to landscaping improvements within the right-of-way, work with individual property owners to make improvements to their sites, including landscaping, façade improvements such as new paint, window awnings, and new signs, and removal of blighted conditions – abandoned cars, dilapidated housing, old signage and junk that is visible from the public right-of-way.
- b. The City should design and construct a new streetscape along Academy and Jensen Avenues to improve Sanger’s image for persons entering the community. Improvements should include street trees, hardscape, pedestrian lighting, and wayfinding signage. Circulation improvements such as bulb-outs with brick cross walks as well as roundabouts could be installed at selected intersections.
- c. The City should improve the streetscape on the streets that connect the Downtown with the part of the original downtown located on the east side of Union Pacific Railroad tracks. These streets are 5th, 7th and 9th streets. These street segments should be pedestrian friendly, including shade, street lights and decorative hardscape.
- d. The City should effectively fund its code enforcement program so that blighted conditions in the community are eliminated or reduced in magnitude. This effort could be funded by CDBG funds, penalties and administrative funds.

Implementation of these policies would help ensure that impacts to the existing visual character or quality of the area remain *less than significant*.

Mitigation Measures: None are required.

Impact 3.1-4: *Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?*

Less Than Significant Impact. Nighttime lighting is necessary to provide and maintain safe, secure, and attractive environments; however, these lights have the potential to produce spillover light and glare and waste energy, and if designed incorrectly, could be considered unattractive. Light that falls beyond the intended area is referred to as “light trespass.” Types of light trespass include spillover light and glare. Minimizing all these forms of obtrusive light is an important environmental consideration. A less obtrusive and well-designed energy efficient fixture would face downward, emit the correct intensity of light for the use, and incorporate energy timers.

Spillover light is light emitted by a lighting installation that falls outside the boundaries of the property on which the installation is sited. Spillover light can adversely affect light-sensitive uses, such as residential neighborhoods at nighttime. Because light dissipates as it travels from the source, the intensity of a light fixture is often increased at the source to compensate for the dissipated light. This can further increase the amount of light that illuminates adjacent uses. Spillover light can be minimized by using only the level of light necessary, and by using cutoff type fixtures or shielded light fixtures, or a combination of fixture types.

Glare results when a light source directly in the field of vision is brighter than the eye can comfortably accept. Squinting or turning away from a light source is an indication of glare. The presence of a bright light in an otherwise dark setting may be distracting or annoying, referred to as discomfort glare, or it may diminish the ability to see other objects in the darkened environment, referred to as disability glare. Glare can be reduced by design features that block direct line of sight to the light source and that direct light downward, with little or no light emitted at high (near horizontal) angles, since this light would travel long distances. Cutoff-type light fixtures minimize glare because they emit relatively low-intensity light at these angles.

New development that would be allowed under the General Plan and Master Plan would result in new sources of light and glare, the intensity, type and locations of which would vary with the type of new development and its location. For example, public facilities such as active use parks will increase lighting to illuminate play areas for evening activities. An incremental increase in the amount of daytime glare created can be expected, but substantial increases would not be likely. Nighttime lighting would increase with a greater number of lighting sources to the extent that significant impacts from nighttime glare increases would be expected.

However, compliance with the City’s General Plan Policies as well as applicable ordinances related to lighting will help ensure that impacts remain *less than significant*.

Mitigation Measures: None are required.

Cumulative Impacts

Less Than Cumulatively Considerable. The scope for considering cumulative impacts to aesthetics are the geographic areas covered by the General Plan Update and Master Plan. As described above, construction of future development projects allowed under General Plan and Master Plan buildout would be required to be in compliance with the numerous policies and programs related to the preservation and enhancements of viewsheds and the protection of scenic resources. As such, the project would have a *less than cumulatively considerable impact* to visual and scenic resources.

3.2 Agricultural Resources

This section of the DEIR identifies potential impacts of the proposed Project pertaining to Agricultural Resources. No IS/NOP comment letters were received pertaining to this topic.

Environmental Setting

Sanger and Surrounding Areas

The economy of the Sanger area is very dependent upon agriculture and agriculturally-related industries. Approximately 2,330 acres¹ within Sanger's Sphere of Influence is currently used for intensive agricultural purposes, and the planning area is virtually surrounded by agricultural land. Much of the agricultural land within the planning area is considered "Prime" farmland and farmland of "statewide significance" by the California Department of Conservation's Important Farmland Mapping Program, as demonstrated in Figure 3.2-1² and Table 3.2-1.

Table 3.2-1: Farmland Designations Within the Sanger SOI

Land Designation	Acres in SOI	Acres Under Williamson Act in SOI
Prime Farmland	1,806	392
Farmland of Statewide Importance	488	61
Farmland of Local Importance	1,085	30
Unique Farmland	457	92
Farmland Total	3,836	575
Rural Residential Land	95	6
Semi-Agricultural and Rural Commercial Land	22	0
Nonagricultural and Natural Vegetation	36	0
Urban and Built-Up Land	2,797	0
Vacant or Disturbed Land	80	5
Other Total	3,030	11

Water supply is the other key factor in rating the quality of farmland. Prime farmland and farmland of statewide importance must have a constant, reliable source of water. Sanger and the land within its Sphere of Influence is within the Consolidated Irrigation District (CID). CID is

¹ Sanger 2035 GPU, Part II: Community Profile, Page 1-28 (Collins & Schoettler, 2018).

² Ibid. Pages 3-3 to 3-5.

comprised of 145,000 acres, the majority of which is in agricultural production. CID has water rights to the flow of the Kings River and storage rights in Pine Flat Reservoir. It is responsible for surface water distribution as well as management of multiple groundwater recharge facilities.

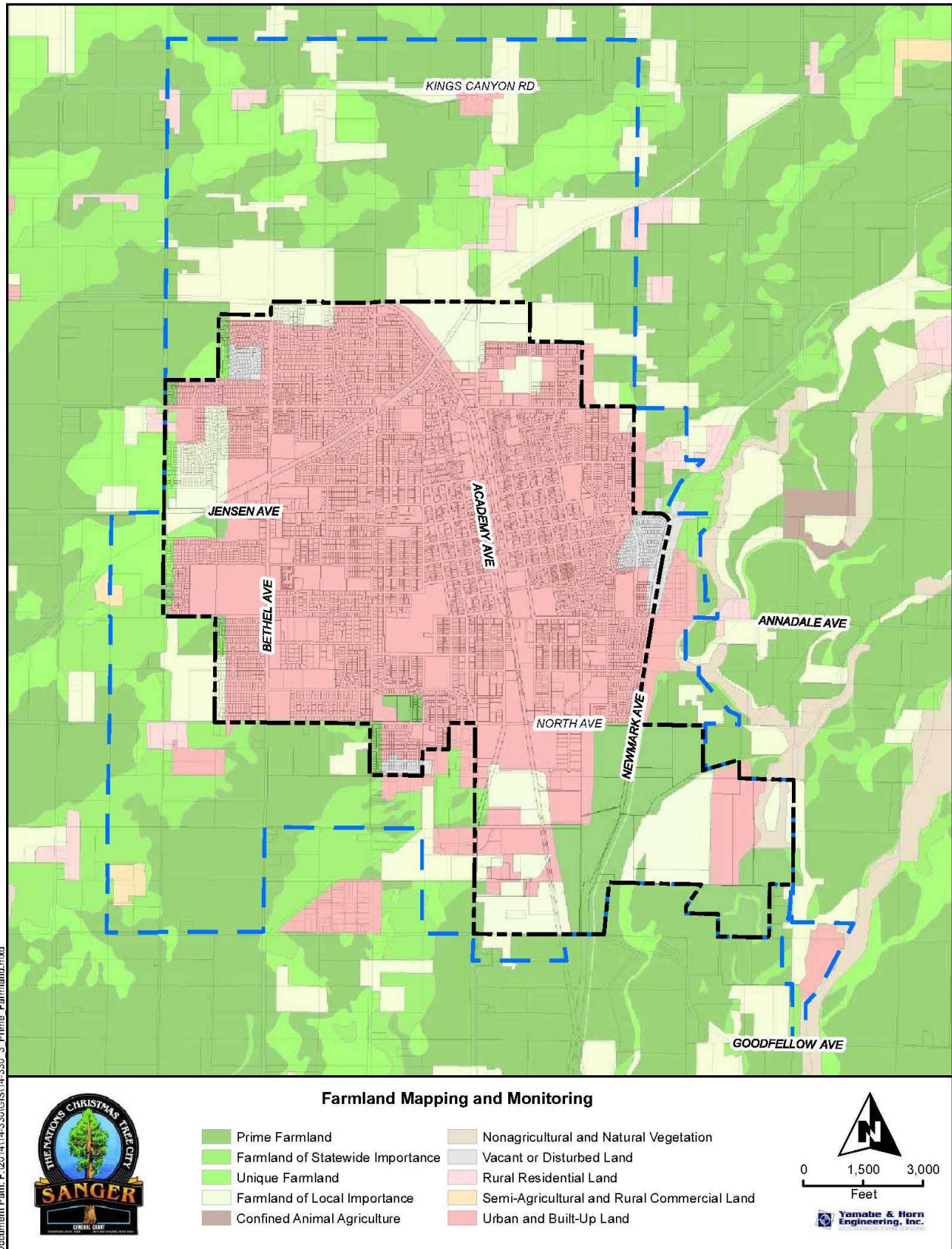
The primary crops grown in the Sanger area include stone fruits (peaches, nectarines, plums, cherries) citrus (oranges, lemons, grapefruits) almonds, table grapes and field crops such as tomatoes. To the east, extensive cattle grazing occurs in the foothills of the Sierra Nevada. The conversion of agricultural land to urban development is always a concern with Central Valley cities. Since 1990 Sanger has completed 18 annexations totaling 878 acres – much of this land formerly in agricultural use.

A recent report released by the State Department of Conservation indicated that irrigated farmland in California decreased by more than 91 square miles (58,587 acres) between 2010 and 2012. The highest-quality agricultural soils, known as Prime Farmland, comprised 81 percent of this loss. The report notes, however, that this rate of conversion was one of the lowest observed in recent years – due to the ongoing recession and its impact on development. During the period 2008 – 2010 Fresno County ranked sixth among the State’s 58 counties in terms of the amount of agricultural land lost to urbanization. However between 2010 and 2012 Fresno County had risen to third.³

There is no land located within the City or the existing SOI that is zoned or designated as forest land or timberland. Consequently, there is no further discussion required regarding the potential effects of implementing the proposed GPU on forest land or timberland.

³ Sanger 2035 GPU, Part II: Community Profile, Pages 3-3 to 3-5 (Collins & Schoettler, 2018).

Figure 3.2-1: Important Farmlands Map



Regulatory Setting

Farmland Protection Policy Act

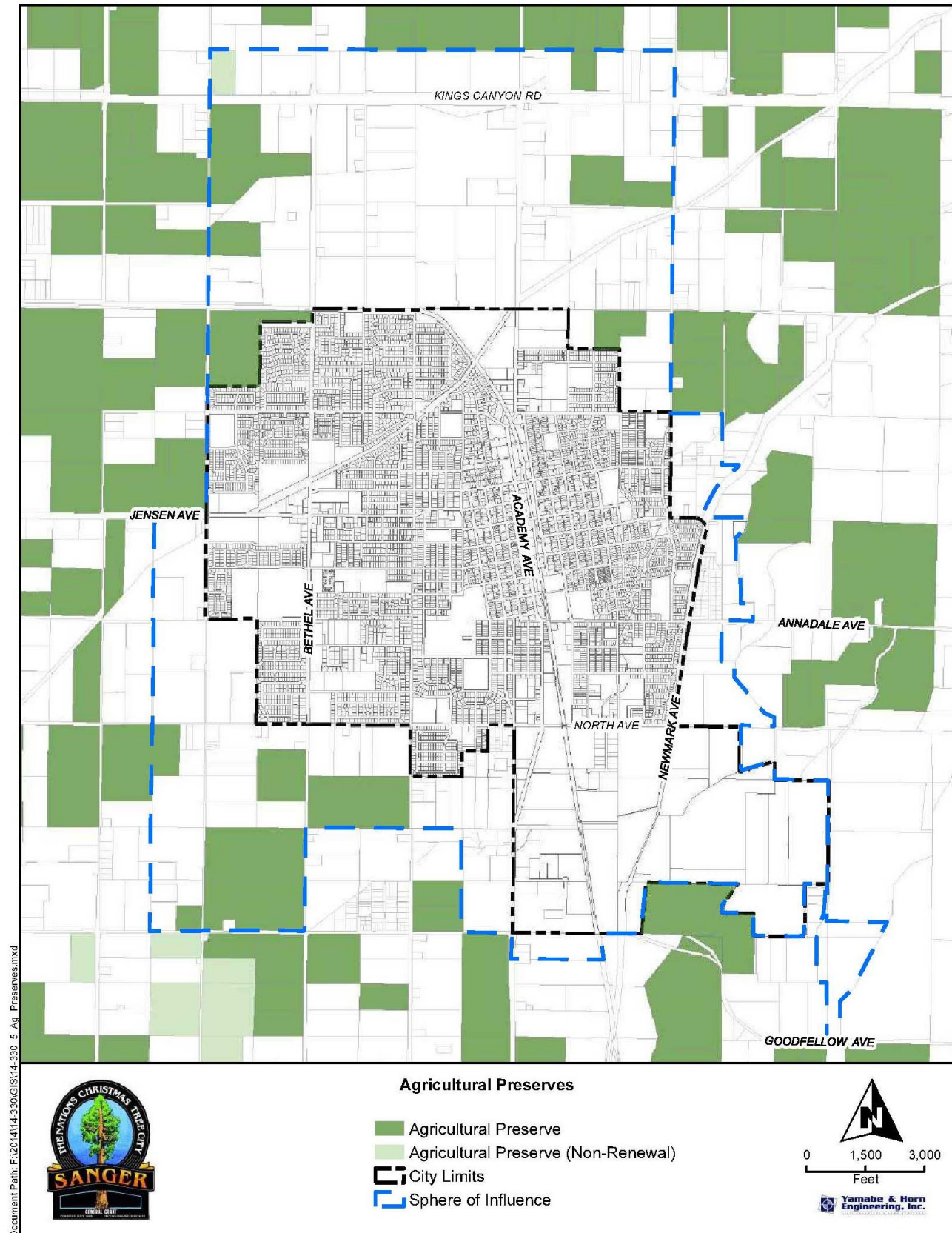
The federal Farmland Protection Policy Act, part of the Agriculture and Food Act of 1981, was passed in response to the National Agricultural Land Study of 1980-1981 which found that millions of acres of farmland were being converted in the U.S. each year and a related report which found that much of this conversion was the result of programs funded by the federal government. The intent of the Act is to minimize the impact that federal programs have on unnecessary and irreversible conversion of farmland to nonagricultural uses. It assures that – to the extent possible – federal programs are administered to be compatible with state and local government and private programs and policies to protect farmland.

Farmland Mapping and Monitoring Program

The California Department of Conservation uses the Natural Resources Conservation Service soil classifications to classify agricultural lands under the Farmland Mapping and Monitoring Program (FMMP). The FMMP was established in 1982 to assess the location, quality, and quantity of agricultural lands and the conversion of these lands. These designated agricultural lands are included in the farmland maps used in planning for the present and future of California's agricultural resources. The California Department of Conservation has a minimum mapping unit of 10 acres, with parcels that are smaller than 10 acres being absorbed into the surrounding classifications. The categories are described below. In addition to mapping existing farmland, the FMMP provides analysis of agricultural land use changes throughout California.

California Public Resources Code, Division 13 Environmental Quality, Section 21060.1 defines agricultural land for the purposes of assessing environmental impacts. Collectively, land classified as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance is referred to as “agricultural land.” These same classifications of farmland are described as Important Farmland under the FMMP and are also used in CEQA Guidelines Appendix G as the farmland classifications on which impacts on agricultural resources are to be evaluated.

Figure 3.2-2: Land Under Williamson Act Contract



Prime Farmland. This farmland has 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 necessary to produce sustained high yields. To be classified as Prime Farmland, the land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

Unique Farmland. This is farmland of lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated but may include non-irrigated orchards or vineyards as found in some climatic zones in California. The land must have been cropped at some time during the four years prior to the mapping date.

Farmland of Statewide Importance. This is farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. The land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

Farmland of Local Importance. This is farmland of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.

Grazing Land. Grazing land is land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities. The minimum contiguous mapping area for Grazing Land is 40 acres.

Urban and Built-up Land. Land occupied by structures with a building density of at least one building unit to 1.5 acres, or approximately six structures to a 10-acre parcel. This land is used for residential, industrial, commercial, institutional, public and transportation uses, and other developed purposes.

Other Land. Land not included in any other mapping category, including low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; animal confinement facilities; mines; and water bodies smaller than 40 acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.

Williamson Act

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use as a means of preserving California's prime agricultural lands from urbanization. Prime Farmland under the

Williamson Act includes land that qualifies as Class I and II under the Natural Resources Conservation Service classification of land. Through the voluntary contracts between landowners and a city or county, the owners agree to retain their lands in agricultural or other open space uses for a minimum of 10 years.

In return for entering into a Williamson Act contract, landowners receive property tax relief on the lands under contract. This relief is provided through the assessment of lands based upon their income-producing value rather than their market value, which may be considerably higher. Local governments receive an annual subvention of forgone property tax revenues from the state via the Open Space Subvention Act of 1971.

To remove a property from a Williamson Act contract, a landowner has two primary options as described below.

Non-renewal. Submittal of a non-renewal application is the most common means to exit a Williamson Act contract. Once the non-renewal form is recorded, the non-renewal period is approximately nine years. All of the contract restrictions remain in effect until the expiration date. To be valid in any contract year the Notice of Non-Renewal must be recorded prior to October 1st or the notice will not take effect until the following renewal date.

Request for Cancellation. Any landowner whose land is under Williamson Act contract may petition the board of supervisors or city council for cancellation of the contract. The board or council may grant tentative approval for cancellation of a contract only if it makes one of the following two findings based on substantial evidence:

- Cancellation is Consistent with the Williamson Act. Required findings:
 - Cancellation is for land on which a notice of non-renewal has been served pursuant to California Government Code Section 51245;
 - Cancellation is not likely to result in the removal of adjacent lands from agricultural use;
 - Cancellation is for an alternative use which is consistent with the applicable provisions of the city or county general plan;
 - Cancellation will not result in discontinuous patterns of urban development; and
 - There is no proximate non-contracted land which is both available and suitable for the use to which it is proposed the contracted land be put, or, that development of the contracted land would provide more contiguous patterns of urban development than development of proximate non-contracted land; or
- Cancellation is in the Public Interest. Required findings:

- Other public concerns substantially outweigh the objectives of this chapter; and
- There is no proximate non-contracted land which is both available and suitable for the use to which it is proposed the contracted land be put, or, that development of the contracted land would provide more contiguous patterns of urban development.

A proposed contract cancellation may be approved by a board of supervisors or city council only after it is reviewed and commented on by the California Department of Conservation. Cancellation of a Williamson Act contract generally requires that the landowner pay fees equal to 12.5 percent of the full market value of the property.

Fresno County General Plan and Zoning

In the Fresno County 2000 General Plan, County Wide Land Use Diagram (Figure LU-1a), Sanger is designated as a Community Plan Area, with all lands surrounding the City designated by the County as Agriculture and the land use is regulated by County agricultural zoning regulations. The exception is the Kings River Regional Plan Area located in the southeastern portion of the City along the river corridor. Allowed uses within the Agriculture land use designation include production of crops and livestock, and the location of necessary agriculture commercial centers, agricultural processing facilities, and certain nonagricultural activities.⁴

City of Sanger Regulations

The City currently utilizes the guidance provided in its General Plan and Zoning Ordinance that protect agricultural resources, as summarized below:

Land Use Framework: In pursuit of the community's vision of providing a permanent separation between Sanger and surrounding communities, policies are set forth to create an agricultural greenbelt. Various methods will be employed to create this agricultural greenbelt. The goals and policies section of this chapter sets forth specific measures to establish and maintain the agricultural greenbelt.⁵

Goal 1: Maintain physical separateness from other communities to avoid encroachment of urban land uses from surrounding jurisdictions.⁶

⁴ Fresno County 2000 General Plan. Table LU-1 – Land Use Designations and Development Intensity Standards. Page 2-25.

⁵ 2025 Sanger General Plan. Land Use and Urban Form Element. Page 2.5

⁶ Ibid. Page 2.17

Goal 2: Reduce urban sprawl and focus Sanger's future development inward from an adopted Sphere of Influence (SOI).⁷

Land Use Designation: The Agriculture designation is intended for the limited acreage in the City's SOI which will remain in agricultural. The minimum parcel size should be 20 acres which will require implementation of a new zoning district.⁸

Thresholds of Significance

The thresholds of significance for this section are established by the CEQA Checklist Item. Would the project:

- Convert Prime Farmland, Unique Farmland, or Farmland of statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?
- Conflict with existing zoning for agricultural use, or a Williamson Act contract?
- Conflict with existing zoning for, or cause rezoning of, forest land as defined in Public Resources Code section 12220(g)), timberland as defined by 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?
- 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: *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?*

Significant and Unavoidable. The City is not expanding the Sphere of Influence with this GPU. Under the GPU, however, full buildout would result in the direct conversion of approximately 1,827 acres of Important Farmland (comprised of Prime Farmland, Farmland of Statewide Significance, and Unique Farmland) to non-agricultural use (to calculate direct conversion

⁷ Ibid. Page 2.18

⁹ Ibid.. Page 2.13.

acreage: subtract 533 acres of agriculture under the proposed General Plan Land Use Map from 2,360 acres of existing agricultural land in Planning Area⁹). Various goals, objectives and action plans are identified in the 2035 GPU that will protect agricultural resources and are as follows:

Sanger General Plan: Agriculture Lands

Goals, Objectives, Action Plans

Goal:

I. Sanger will ensure that its primary economic base (agriculture) is protected.

Objective:

1. Urban uses, to the best extent possible, should be separated from agricultural uses by streets, railroads, canals or similar man-made or natural barriers.

Action Plan:

- a. Adoption of the Land Use Element and Land Use Map will implement this policy.
- b. Require new subdivisions adjacent to agricultural lands to establish a buffer of trees, landscaping, roads and/or walking trails, between these two types of uses.

Goal:

2. Encourage Fresno County to maintain large-lot agricultural zoning (20 acre minimum) on land within Sanger's Sphere of Influence.

Action Plan:

- a. The City of Sanger shall oppose any county development within its Sphere of Influence that creates parcels of land smaller than 20 acres.

Goal:

3. Promote a moderate increase in overall residential densities in Sanger's single-family residential districts so as to require less urbanization of surrounding agricultural lands.

⁹ 2030 Sanger General Plan Part II: Community Profile. Page 1-26. (Collins & Schoettler, 2018).

Action Plan:

- a. Promote the use of R-1-6 zone, where appropriate. The increased density permitted by this zone must be balanced with good design and proper maintenance to ensure that these new neighborhoods maintain their value and marketability.

Goal:

4. Establish a Right-to-Farm ordinance. Such an ordinance builds in protections for farmers and their agricultural operations.

Action Plan:

- a. The Planning Department shall prepare a right-to-farm ordinance and forward it for passage by the City Council.

Sanger General Plan: Growth Management

Goals, Objectives, Action Plans

Goal:

- I. Maintain Sanger as a small, prosperous, agriculturally-oriented city surrounded by farmland.

Objective:

1. To the extent possible, ensure that Sanger is surrounded by agricultural land that is zoned for large-parcel agriculture by Fresno County. (e.g. AE-20 [20 acre minimum parcel size, or larger]).

Action Plan:

- a. The City shall notify the County of Fresno that all land that surrounds Sanger and is within its Sphere of Influence should be classified to the AE-20 (or larger acreage) zone. Further the City shall discourage proposals for parcellation of these lands by the County to sizes smaller than 20 acres.

The above-noted policies are largely part of the growth management component of the GPU. By managing growth into agricultural areas in a measured way and ensuring that agricultural use of land within the proposed SOI remains viable until such time as the land is annexed and developed for non-agricultural use, the policies will serve to limit the premature conversion of

important farmland. However, the loss of 1,827 acres of agricultural land is still considered significant. Therefore, implementation of the policies will not prevent the ultimate conversion of such farmlands and the impact of conversion would be *significant and unavoidable*.

Mitigation Measures: No feasible measures in addition to the above objectives and action plans are available.

Impact 3.2-2: *Conflict with existing zoning for agricultural use, or a Williamson Act contract?*

Significant and Unavoidable Impact. County-zoned agricultural land within the proposed SOI would be converted to non-agricultural land uses as a result of full buildout of the GPU. This conflict with existing County zoning would be resolved through the annexation and pre-zoning process that project applicants would be required to undertake through the City and LAFCO. The pre-zoning process would be used to identify and establish new zoning on such lands that is consistent with the proposed land use as designated in the GPU. Approval of annexation and pre-zoning requests by LAFCO would result in the removal of County zoning from the subject lands.

583 acres of land within the existing SOI are currently under Williamson Act contract (including one property in non-renewal). Most of these properties consist of agricultural land that is classified as Important Farmland (Prime Farmland or Farmland of Statewide Importance), the conversion of which is generally considered to be a significant impact under CEQA. Some owners of land that is located within the SOI and that is under Williamson Act contract may already have filed a Notice of Non-Renewal. This action would result in removal of the land from the contract within 10 years of the date the notice was filed. Owners of other contracted land could file such notices over the short- to mid-term. In either case, provided these contracts have been terminated through non-renewal prior to the contracted land being developed, no conflict with Williamson Act contracts would occur. It is not uncommon for owners of farmland that is under Williamson Act contract to seek cancellation of their contract through the cancellation provisions of the Williamson Act (rather than termination of their contracts through the non-renewal process) when the financial benefits of doing so are perceived to outweigh the costs. Because land values for urban uses are higher than for agricultural uses, owners of farmland that have not previously filed for contract nonrenewal can initiate a contract cancellation process to remove contract constraints to developing their land with urban uses. This action would conflict with the intended purpose of the Williamson Act and would constitute a significant impact.

It is assumed that agricultural uses within the SOI would continue until such time as the City or future project developers request that such land be annexed into the City. Growth management

policies in the GPU would be implemented to avoid premature conversion of agricultural land to urban use. GPU Goals and Policies. Implementation of the range of GPU policies identified under impact 3.3-1 above will serve to minimize premature development of agricultural lands within the SOI. Since a significant amount of land within the SOI is under Williamson Act contract, avoiding premature development of such land would reduce conflicts with existing contracts. Avoiding premature conversion would also provide enhanced opportunity for owners of contracted land to file for a Notice of Non-Renewal such that contracts may be terminated before the subject properties are proposed for development. Nevertheless, it is possible that conflicts with Williamson Act contracted land may occur as it is also possible that some landowners would seek cancellation of their contracts in anticipation of the economic benefit to be derived from converting their land to urban uses. This impact would be *significant and unavoidable* even with implementation of GPU policies.

Mitigation Measures: No feasible measures in addition to the above objectives and action plans are available.

Impact 3.2-3: *Conflict with existing zoning for, or cause rezoning of, forest land as defined in Public Resources Code section 12220(g)), timberland as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?*

No Impact. The City of Sanger lies on the Central Valley floor, where there is no forest land within the Planning Area. As such, there are *no potential impacts* resulting from forest or timber land conflicts.

Mitigation Measures: None are required.

Impact 3.2-4: *Result in the loss of forest land or conversion of forest land to non-forest use?*

No Impact. As discussed above, there is no forest land within the Planning Area. There are *no impacts* to the loss of forest land or conversion of forest land to non-forest use.

Mitigation Measures: None are required.

Impact 3.2-5: *Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?*

Significant and Unavoidable Impact. As discussed in Impact 3.3-5, agricultural land within the Planning Area would be converted to non-agricultural land uses as a result of full buildout of the GPU. As such, impacts to farmland conversion resulting from the proposed Project would be

considered *significant and unavoidable*.

Mitigation Measures: None are required.

Cumulative Impacts

Significant, Unavoidable and Cumulatively Considerable. The scope for considering cumulative impacts to agricultural and forest resources are the geographic areas covered by the General Plan Update and Master Plan as well as all of Fresno County. Fresno County is the boundary for consideration of cumulative impacts on agricultural resources because land use decisions at the county level generally involve agricultural areas (as opposed to development within incorporated areas of the County) and most data regarding agriculture is aggregated at the county level. Cumulative development anticipated in the region may result in impacts to agricultural resources, including the permanent loss and or reduction of agricultural land. Subsequent projects implemented under the City's General Plan and Master Plan would be required to be consistent with the policies of the General Plan. The Conservation, Open Space, Parks and Recreation Element of the General Plan establishes policies that are designed to protect and conserve agricultural resources, as discussed above. New development would occur within significant agricultural areas located in the planning area and would contribute to the loss of viable agricultural land in the region. As such, the project would have a *significant and unavoidable and cumulatively considerable impact* on agricultural resources.

3.3 Air Quality

This section of the DEIR describes the regional air quality, current attainment status of the air basin, sensitive receptors, emission sources, and air quality impacts that are likely to result from GPU buildout. No IS/NOP comment letters were received pertaining to this topic.

Environmental Setting

San Joaquin Valley Air Basin

The following discussions on topography, climate, wind patterns, temperature, precipitation, humidity and fog in the San Joaquin Valley Air Basin (SJVAB) are taken from the San Joaquin Valley Air Pollution Control District's (SJVAPCD) Guidance for Assessing and Mitigating Air Quality (GAMAQI).¹

"[The SJVAB] consists of eight counties: Fresno, Kern (western and central), Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare... Cumulatively, these counties represent approximately 16 percent of California's geographic area, making the SJVAB the second largest air quality basin (based on area) as delineated by the California Air Resources Board (ARB). Air pollution in the SJVAB can be attributed to both human-related (anthropogenic) and natural (non-anthropogenic) activities that produce emissions. Air pollution from significant anthropogenic activities in the SJVAB includes a variety of industrial-based sources as well as on- and off-road mobile sources. Activities that tend to increase mobile activity include increases in population, increases in general traffic activity (including automobiles, trucks, aircraft, and rail), urban sprawl (which will increase commuter driving distances), and general local land management practices as they pertain to modes of commuter transportation. These sources, coupled with geographical and meteorological conditions unique to the area, stimulate the formation of unhealthy air.

The San Joaquin Valley's (SJV) topography and meteorology provide ideal conditions for trapping air pollution for long periods of time and producing harmful levels of air pollutants, including ozone and particulate matter. Low precipitation levels, cloudless days, high temperatures, and light winds during the summer in the SJV are conducive to high ozone levels resulting from the photochemical reaction of nitrogen oxides (NO_x) and volatile organic compounds (VOC). Inversion layers in the atmosphere during the winter can trap emissions of directly emitted PM_{2.5} (particulate matter that is 2.5 microns or less in diameter) and PM_{2.5}

¹ San Joaquin Valley Air Pollution Control District. *Guidance for Assessing and Mitigating Air Quality Impacts*. http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf. Accessed May 2018.

precursors (such as NO_x and sulfur dioxide (SO₂)) within the SJV for several days, accumulating to unhealthy levels. The region also houses the State's major arteries for goods and people movement, I-5 to the west and CA Highway 99 through the Central Valley (Valley), thereby attracting a large volume of vehicular traffic. Another compounding factor is the region's historically high rate of population growth compared to other regions of California. Increased population typically results in an even greater increase in vehicle activity and more consumer product use, leading to increased emissions of air pollution, including NO_x. In fact, mobile sources account for about 80% of the Valley's total NO_x emissions inventory. Since NO_x is a significant precursor for both ozone and PM_{2.5}, reducing NO_x from mobile sources is critical for progressing the Valley towards attainment of ozone and PM_{2.5} standards.

The geography of mountainous areas to the east, west and south, in combination with long summers and relatively short winters, contributes to local climate episodes that prevent the dispersion of pollutants. Transport, as affected by wind flows and inversions, also plays a role in the creation of air pollution.”²

Topography

“The climate of the SJV is modified by topography. This creates climatic conditions that are particularly conducive to air pollution formation... [The] SJV is surrounded by mountains on three sides and open to the Sacramento Valley and the San Francisco Bay Area to the north.

The SJVAB is the southern half of California's Central Valley and is approximately 250 miles long and averages 35 miles wide. The SJV is bordered by the Sierra Nevada Mountains in the east (8,000 to 14,491 feet in elevation), the Coast Ranges in the west (averaging 3,000 feet in elevation), and the Tehachapi mountains in the south (6,000 to 7,981 feet in elevation). There is a slight downward elevation gradient from Bakersfield in the southeast end (elevation 408 feet) to sea level at the northwest end where the valley opens to the San Francisco Bay at the Carquinez Straits. At its northern end is the Sacramento Valley, which comprises the northern half of California's Central Valley. The bowl-shaped topography inhibits movement of pollutants out of the valley.”³

² San Joaquin Valley Air Pollution Control District. *Guidance for Assessing and Mitigating Air Quality Impacts*. http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf. Pages 15-16. Accessed May 2018.

³ Ibid. Page 16.

Climate

“The SJV is in a Mediterranean Climate Zone. Mediterranean Climates Zones occur on the west coast of continents at 30 to 40 degrees latitude and are influenced by a subtropical high-pressure cell most of the year. Mediterranean Climates are characterized by sparse rainfall, which occurs mainly in winter. Summers are hot and dry. Summertime maximum temperatures often exceed 100 degrees F in the Valley.

The subtropical high-pressure cell is strongest during spring, summer and fall and produces subsiding air, which can result in temperature inversions in the Valley. A temperature inversion can act like a lid, inhibiting vertical mixing of the air mass at the surface. Any emissions of pollutants can be trapped below the inversion. Most of the surrounding mountains are above the normal height of summer inversions (1,500-3,000 feet).

Winter-time high pressure events can often last many weeks with surface temperatures often lowering into the thirty degree Fahrenheit range. During these events, fog can be present and inversions are extremely strong. These wintertime inversions can inhibit vertical mixing of pollutants to a few hundred feet.”⁴

Wind Patterns

“Wind speed and direction play an important role in dispersion and transport of air pollutants. Wind at the surface and aloft can disperse pollution by mixing and by transporting the pollution to other locations.

Especially in summer, winds in the Valley most frequently blow from the northwesterly direction. The region’s topographic features restrict air movement and channel the air mass towards the southeastern end of the Valley. Marine air can flow into the basin from the San Joaquin River Delta and over Altamont Pass and Pacheco Pass, where it can flow along the axis of the valley, over the Tehachapi pass, into the Southeast Desert Air Basin. The Coastal Range is a barrier to air movement to the west and the high Sierra Nevada range is a significant barrier to the east (the highest peaks in the southern Sierra Nevada reach almost halfway through the Earth’s atmosphere). Many days in the winter are marked by stagnation events where winds are very weak. Transport of pollutants during winter can be very limited. A secondary but significant

⁴ San Joaquin Valley Air Pollution Control District. *Guidance for Assessing and Mitigating Air Quality Impacts*. http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf. Pages 17. Accessed May 2018.

summer wind pattern is from the southeasterly direction and can be associated with nighttime drainage winds, prefrontal conditions and summer monsoons.

Two significant diurnal wind cycles that occur frequently in the Valley are the sea breeze and mountain-valley upslope and drainage flows. The sea breeze can accentuate the northwest wind flow, especially on summer afternoons. Nighttime drainage flows can accentuate the southeast movement of air down the valley. In the mountains during periods of weak synoptic scale winds, winds tend to be upslope during the day and downslope at night. Nighttime and drainage flows are especially pronounced during the winter when flow from the easterly direction is enhanced by nighttime cooling in the Sierra Nevada. Eddies can form in the valley wind flow and can re-circulate a polluted air mass for an extended period. Such an eddy occurs in the Fresno area during both winter and summer.”⁵

Temperature, Sunlight and Ozone Production

“Solar radiation and temperature are particularly important in the chemistry of ozone formation. The SJVAB averages over 260 sunny days per year. Photochemical air pollution (primarily ozone) is produced by the atmospheric reaction of organic substances (such as volatile organic compounds) and nitrogen dioxide under the influence of sunlight. Ozone concentrations are very dependent on the amount of solar radiation, especially during late spring, summer and early fall. Ozone levels typically peak in the afternoon. After the sun goes down, the chemical reaction between nitrous oxide and ozone begins to dominate. This reaction tends to scavenge the ozone in the metropolitan areas through the early morning hours, resulting in the lowest ozone levels, possibly reaching zero at sunrise in areas with high nitrogen oxides emissions. At sunrise, nitrogen oxides tend to peak, partly due to low levels of ozone at this time and also due to the morning commuter vehicle emissions of nitrogen oxides.

Generally, the higher the temperature, the more ozone formed, since reaction rates increase with temperature. However, extremely hot temperatures can “lift” or “break” the inversion layer. Typically, if the inversion layer doesn’t lift to allow the buildup of contaminants to be dispersed, the ozone levels will peak in the late afternoon. If the inversion layer breaks and the resultant afternoon winds occur, the ozone will peak in the early afternoon and decrease in the late afternoon as the contaminants are dispersed or transported out of the SJVAB.

⁵ San Joaquin Valley Air Pollution Control District. *Guidance for Assessing and Mitigating Air Quality Impacts*. http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf. Pages 17-18. Accessed May 2018.

Ozone levels are low during winter periods when there is much less sunlight to drive the photochemical reaction.”⁶

Temperature Inversions

“The vertical dispersion of air pollutants in the SJV can be limited by persistent temperature inversions. Air temperature in the lowest layer of the atmosphere typically decreases with altitude. A reversal of this atmospheric state, where the air temperature increases with height, is termed an inversion. The height of the base of the inversion is known as the “mixing height”. This is the level to which pollutants can mix vertically. Mixing of air is minimized above and below the inversion base. The inversion base represents an abrupt density change where little air movement occurs.

Inversion layers are significant in determining pollutant concentrations. Concentration levels can be related to the amount of mixing space below the inversion. Temperature inversions that occur on the summer days are usually encountered 2,000 to 2,500 feet above the valley floor. In winter months, overnight inversions occur 500 to 1,500 feet above the valley floor.”⁷

Precipitation, Humidity and Fog

“Precipitation and fog may reduce or limit some pollutant concentrations. Ozone needs sunlight for its formation, and clouds and fog can block the required solar radiation. Wet fogs can cleanse the air during winter as moisture collects on particles and deposits them on the ground. Atmospheric moisture can also increase pollution levels. In fogs with less water content, the moisture acts to form secondary ammonium nitrate particulate matter. This ammonium nitrate is part of the Valleys PM_{2.5} and PM₁₀ problem.

The winds and unstable air conditions experienced during the passage of winter storms result in periods of low pollutant concentrations and excellent visibility. Between winter storms, high pressure and light winds allow cold moist air to pool on the SJV floor. This creates strong low-level temperature inversions and very stable air conditions, which can lead to Tule fog. Wintertime conditions favorable to fog formation are also conditions favorable to high concentrations of PM_{2.5} and PM₁₀.”⁸

⁶ San Joaquin Valley Air Pollution Control District. *Guidance for Assessing and Mitigating Air Quality Impacts*. http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf. Page 18. Accessed May 2018.

⁷ Ibid. Page 19.

⁸ Ibid.

Regulatory Setting

Federal Clean Air Act

Congress established much of the basic structure of the Clean Air Act (CAA) in 1970, and made major revisions in 1977 and 1990. Six common air pollutants (also known as criteria pollutants) are addressed in the federal CAA. These are particulate matter, ground-level ozone, carbon monoxide, sulfur oxides, nitrogen oxides, and lead. EPA calls these pollutants criteria air pollutants because it regulates them by developing human health-based and/or environmentally based criteria (science-based guidelines) for setting permissible levels. The set of limits based on human health is called primary standards. Another set of limits intended to prevent environmental and property damage is called secondary standards.

The federal standards are called National Ambient Air Quality Standards (NAAQS). The air quality standards provide benchmarks for determining whether air quality is healthy at specific locations and whether development activities will cause or contribute to a violation of the standards. The criteria pollutants are:

- Ozone (O₃)
- Nitrogen dioxide (NO₂)
- Particulate matter (PM₁₀ and PM_{2.5})
- Carbon monoxide (CO)
- Sulfur dioxide (SO₂)
- Lead (Pb)

The NAAQS were set to protect public health, including that of sensitive individuals; thus, EPA is tasked with updating the standards as more medical research is available regarding the health effects of the criteria pollutants. Primary federal standards are the levels of air quality necessary, with an adequate margin of safety, to protect the public health.

The federal CAA requires states to adopt enforceable air quality plans to achieve the NAAQS. These attainment plans must also control emissions that drift across state lines and harm air quality in downwind states. Congress designed the law to minimize pollution increases from growing numbers of motor vehicles, and from new or expanded stationary sources. The Act requires new stationary sources to be built with best technology. The Act also contains specific provisions to address hazardous or toxic air pollutants; acid rain, ozone layer depleting chemical emissions, and regional haze. Congress also drafted the Act so that it could be used to address

pollutions project that emerge over time, such as the effects of greenhouse gases on global climate change.⁹

California Clean Air Act

The California Legislature enacted the California Clean Air Act (CCAA) in 1988 to address air quality issues of concern not adequately addressed by the federal CAA at the time. The California Air Resources Board (CARB) administers California Ambient Air Quality Standards (CAAQS) for the 10 air pollutants designated in the CCAA. The 10 state air pollutants are the six federal standards listed above as well as visibility-reducing particulates, hydrogen sulfide, sulfates, and vinyl chloride.

State Toxic Air Contaminant Programs

California regulates TACs primarily through the Tanner Act Toxics Act (AB 1807) (Tanner Act) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588) (Hot Spots Act). The Tanner Act sets forth a formal procedure for ARB to designate substances as TACs. This includes research, public participation, and scientific peer review before ARB can designate a substance as a TAC. To date, ARB has identified over 21 TACs, and adopted the EPA's list of HAPs as TACs. Most recently, diesel exhaust particulate was added to the ARB list of TACs. Once a TAC is identified, ARB then adopts an Airborne Toxics Control Measure for sources that emits 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 available control technology (BACT) to minimize emissions. None of the TACs identified by ARB have a safe threshold.

The Hot Spots Act requires that existing facilities that emit toxic substances above a specified level:

1. Prepare a toxic emission inventory;
2. Prepare a risk assessment if emissions are significant;
3. Notify the public of significant risk levels;
4. Prepare and implement risk reduction measures.

ARB 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

⁹ United States Environmental Protection Agency. 2013. *The Clean Air Act in a Nutshell: How it Works*. Website: http://www.epa.gov/air/caa/pdfs/CAA_Nutshell.pdf. Accessed May 2018.

equipment (e.g., tractors, generators). In February 2000, ARB adopted a new public transit bus fleet rule and emission standards for new urban busses. These new 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 with which transit agencies must demonstrate compliance with the urban transit bus fleet rule.

Notable milestones include the low sulfur diesel fuel requirement, and tighter emission standards for heavy-duty diesel trucks (2009) and off-road diesel equipment (2011) nationwide. Over time, the replacement of older vehicles will result in a vehicle fleet that produces substantially less TACs than under current conditions. Mobile-source emissions of TACs (e.g., benzene, 1-3 butadiene, diesel PM) have been reduced significantly over the last decade and will be reduced further in California through a progression of regulatory measures (e.g., Low Emission Vehicle/Clean Fuels and Phase II reformulated gasoline regulations) and control technologies. With implementation of ARB's Risk Reduction Plan, it is expected that diesel PM concentrations will be reduced by 75% in 2010 and 85% in 2020 from the estimated year 2000 level. Adopted regulations are also expected to continue to reduce formaldehyde emissions from cars and light-duty trucks. As emissions are reduced, it is expected that risks associated to exposure to the emissions will also be reduced.

San Joaquin Valley Air Pollution Control District

The San Joaquin Valley Air District (SJVAPCD) is a public health agency whose mission is to improve the health and quality of life for all Valley residents through efficient, effective and entrepreneurial air quality-management strategies. SJVAPCD's ten core values include: protection of public health; active and effective air pollution control efforts with minimal disruption to the Valley's economic prosperity; outstanding customer service; ingenuity and innovation; accountability to the public; open and transparent public process; recognition of the uniqueness of the Valley; continuous improvement; effective and efficient use of public funds; and respect for the opinions and interests of all Valley residents.¹⁰ To achieve these core values the SJVAPCD has adopted air quality plans pursuant to the California CAA and a

¹⁰ San Joaquin Valley Air Pollution Control District. About the District. http://www.valleyair.org/General_info/aboutdist.htm#Mission. Accessed May 2018.

comprehensive list of rules to limit air quality impacts. The air plans currently in effect in the SJVAB and specific rules that apply to the proposed Project are listed and described further below.

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

Attainment Plans

8-Hour Ozone Attainment Plan. The Air Basin is designated nonattainment of state and federal health-based air quality standards for ozone. “The deadline for the San Joaquin Valley to attain the 2008 8-hour ozone standard is December 31, 2031. This requires another 207.7 tons per day in NO_x reductions from stationary and mobile sources throughout the Valley.

Since 1992, the SJVAPCD has adopted numerous attainment plans to reduce ozone and particulate precursor emissions. The SJVAPCD has implemented these plans and adopted over 600 rules and rule amendments that have resulted in significant emissions reductions. Many of the SJVAPCD’s innovative rules and strategies, such as Indirect Source Review, Glass Melting Furnaces, and Conservation Management Practices, now serve as models for the rest of the nation. In addition to having the toughest air regulations in the nation, the SJVAPCD also has the most effective and efficient incentive grants program. Through implementation of SJVAPCD regulations and incentives, Valley businesses and residents have invested billions of dollars to reduce emissions. To date, the SJVAPCD’s incentive programs have invested a total of \$1.4 billion in public/private funding towards clean air projects, resulting in over 120,000 tons of emissions reduced.¹¹

“Despite strings of triple digit temperature and multiple wildfires, in 2015, the Valley experienced a record setting clean ozone season, achieving:

- Lowest 8-hour ozone design value on record for the Valley, the official metric used to measure progress towards meeting federal ozone standards
- Lowest number of days exceeding the federal 75 ppb 8-hour ozone standard
- Zero unhealthy days in the month of July
- Third consecutive year without violating the federal 1-hour ozone standard

¹¹ San Joaquin Valley Air Pollution Control District. 2016 Plan for the 2008 8-Hour Ozone Standard. June 16, 2016. Page ES-1. http://www.valleyair.org/Air_Quality_Plans/Ozone-Plan-2016/ES.pdf. Accessed May 2018.

- 91% reduction in Valley resident's exposure to high ozone concentrations above the 84-ppb standard since 2002 (73% reduction in population exposure for the 75-ppb standard)

As a part of the positive trend in ozone air quality, the Valley is also on track to meet the federal 8-hour ozone standard of 84 ppb ahead of the projected 2023 attainment date included in the 2007 Ozone Plan. With the ongoing improving trend in ozone air quality, EPA also recently approved the District's request for the 1-hour ozone clean data finding and has officially proposed to grant the San Joaquin Valley as attainment for the 1-hour ozone standard."¹²

2.5 Particulate Matter Attainment Plan. "The 2016 Moderate Area Plan for the 2012 PM_{2.5} Standard (2016 PM_{2.5} Plan) addresses the federal mandates for areas classified as "Moderate" nonattainment for the 2012 PM_{2.5} federal annual air quality standard of 12 µg/m³. This is the latest PM_{2.5} standard for which the Valley is classified as a Moderate nonattainment. On July 29, 2016, two months before the plan for the 2012 PM_{2.5} standard is due and decades after promulgation of the 1997 and 2006 PM_{2.5} Standards, EPA released the PM_{2.5} Implementation Rule that outlines the applicable requirements for preparation and submittal of the required PM_{2.5} attainment plans.

Consistent with the Guiding Principles adopted by the District Governing Board on August 18, 2016 and the provisions of the PM_{2.5} Implementation Rule, the 2016 PM_{2.5} Plan:

- Satisfies the mandate to submit a Moderate attainment plan due to EPA by October 2016
- Demonstrates impracticability of attaining the 2012 PM_{2.5} standard by the Moderate nonattainment area deadline of 2021
- Includes a request to reclassify the Valley to a Serious nonattainment area for the 2012 PM_{2.5} standard
- Satisfies all applicable federal Clean Air Act requirements for Moderate nonattainment areas
- Demonstrates that emissions are continuing to be reduced in the Valley.

In addition to the many attainment plans that the District has already developed and implemented, the District is mandated under the Clean Air Act to develop and adopt a number of new ozone and particulate matter plans in the coming years. With respect to PM_{2.5}, the Valley has now reached a point where it is subject to three federal PM_{2.5} standards with multiple

¹² San Joaquin Valley Air Pollution Control District. 2016 Plan for the 2008 8-Hour Ozone Standard. June 16, 2016. Page ES-3. http://www.valleyair.org/Air_Quality_Plans/Ozone-Plan-2016/ES.pdf. Accessed May 2018.

attainment plans required for each standard, leading to multiple overlapping requirements and deadlines as summarized below.

1997 PM_{2.5} Standard (24-hour 65 µg/m³ and annual 15 µg/m³)

- Serious Attainment Deadline: December 31, 2015
- 5% Plan due December 31, 2016

2006 24-hour PM_{2.5} Standard (35µg/m³)

- Serious Attainment Deadline: December 31, 2019
- Serious attainment plan due August 2017: Attainment demonstration requires a clean data finding for the consecutive three-year period of 2017 through 2019. This means that the 35 µg/m³ standard needs to be reached by 2017 or much lower concentrations must be achieved in 2018 or 2019. Given that the State's truck and bus regulation will not be fully implemented until after 2023 and that EPA imposition of a national standard for trucks and locomotives, even if contemplated by EPA, cannot be implemented in that timeframe, it is impossible to craft an approvable attainment plan. The Clean Air Act provides a mechanism for seeking an extension of up to five years. However, EPA's recent inaction on the extension request for the 1997 PM_{2.5} standard sets a hurdle that is not achievable for seeking an extension. Furthermore, attaining the standard by 2024 is highly unlikely even if EPA grants a five-year extension.

2012 Annual PM_{2.5} Standard (1235µg/m³)

- Moderate Attainment Deadline: December 31, 2021
- Moderate attainment plan due October 2016

The District can bump up to a Serious nonattainment classification with an attainment deadline of 2025 if a request is submitted by October 2016 and approved by EPA demonstrating that attainment by the Moderate deadline of 2021 is impracticable and that the District meets all other applicable requirements for Moderate areas. The attainment plan under a Serious classification will then be due four years after EPA approves reclassification to Serious. The Clean Air Act also provides a mechanism for seeking an extension of up to five years beyond the 2025 Serious attainment deadline. However, EPA's recent inaction on the extension request for the 1997 PM_{2.5} standard sets a hurdle that is not achievable for seeking an extension. Furthermore, attaining the standard by 2030 is highly unlikely even if EPA granted a five-year extension.

Under the antiquated provisions of the Clean Air Act, even though the District is already classified as Serious for the less stringent 1997 and 2006 PM_{2.5} standards, the District must still submit another attainment plan including a request to EPA to be classified as Serious for the more stringent 2012 PM_{2.5} Standard. Furthermore, even though attainment is not possible under a Moderate area classification, the Clean Air Act requires two plans to be submitted, one for a Moderate classification and another for a Serious classification for the same standard.”¹³

Rules and Regulations

The following SJVAPCD rules and regulations that may apply to projects that will occur during buildout of the planning area include but are not limited to the following:¹⁴

Rule 2201 – New and Modified Stationary Source Review. The purpose of this rule is to provide for the following:

- The review of new and modified Stationary Sources of air pollution and to provide mechanisms including emission trade-offs by which Authorities to Construct such sources may be granted, without interfering with the attainment or maintenance of Ambient Air Quality Standards; and
- No net increase in emissions above specified thresholds from new and modified Stationary Sources of all nonattainment pollutants and their precursors.

Rule 4002 – National Emissions Standards for Hazardous Air Pollutants. The purpose of the rule is to incorporate the National Emission Standards for Hazardous Air Pollutants from Part 61, Chapter I, Subchapter C, Title 40, Code of Federal Regulations and the National Emission Standards for Hazardous Air Pollutants for Source Categories from Part 63, Chapter I, Subchapter C, Title 40, Code of Federal Regulations to protect the health and safety of the public from HAPs, such as asbestos.

Rule 4102 – Nuisance. The purpose of this rule is to protect the health and safety of the public and applies to any source operation that emits or may emit air contaminants or other materials.

Rule 4601 – Architectural Coatings. The purpose of this rule is to limit Volatile Organic Compounds (VOC) emissions from architectural coatings. Emissions are reduced by limits on

¹³ San Joaquin Valley Air Pollution Control District. 2016 Moderate Area Plan for the 2012 PM_{2.5} Standard. September 15, 2016. Page ES-1-2. http://www.valleyair.org/Air_Quality_Plans/docs/PM25-2016/es.pdf. Accessed May 2018.

¹⁴ San Joaquin Valley Air Pollution Control District. 2015. Current District Rules and Regulations. <http://www.valleyair.org/rules/1ruleslist.htm>. Accessed May 2018.

VOC content of the various coatings and by requirements on coatings storage, cleanup, and labeling.

Rule 4641 – Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations. The purpose of this rule is to limit VOC emissions from asphalt paving and maintenance operations. If asphalt paving will be used, then the paving operations will be subject to Rule 4641.

Rule 4692 – Commercial Charbroiling. The purpose of this rule is to limit VOC and PM-10 emissions from commercial charbroiling.

Rule 4901 – Wood Burning Fireplaces and Wood Burning Heaters. The purpose of this rule is to limit emissions of carbon monoxide and particulate matter from wood burning fireplaces, wood burning heaters, and outdoor wood burning devices, and to establish a public education program to reduce wood burning emissions. All development that includes woodburning devices are subject to this rule.

Regulation VIII – Fugitive PM₁₀ Prohibitions. Rules 8011-8081 are designed to reduce PM₁₀ emissions (predominantly dust/dirt) generated by human activity, including construction and demolition activities, road construction, bulk materials storage, paved and unpaved roads, carryout and track-out, etc. All development projects that involve soil disturbance are subject to at least one provision of the Regulation VIII series of rules.

Rule 9410 – Employer Based Trip Reduction. The purpose of this rule is to reduce vehicle miles traveled (VMT) from private vehicles used by employees to commute to and from their worksites to reduce emissions of oxides of nitrogen (NO_x), volatile organic compounds (VOC) and particulate matter (PM).

Rule 9510 – Indirect Source Review. This rule reduces the impact of NO_x and PM₁₀ emissions from growth on the Air Basin. It applies to new developments expected to create a substantial amount of air pollution (i.e., greater than two tons per year of NO_x or PM₁₀). Permit applications are required for projects that meet any of the following:

- 50 residential units;
- 2,000 square feet of commercial space;
- 9,000 square feet of educational space;
- 10,000 square feet of government space;
- 20,000 square feet of medical or recreational space;
- 25,000 square feet of light industrial space;

- 39,000 square feet of general office space;
- 100,000 square feet of heavy industrial space; or
- 9,000 square feet of any land use not identified above.

Through the Indirect Source Review application, applicants must demonstrate how their projects will reduce construction phase NO_x and PM₁₀ emissions contained in vehicle exhaust by 20 percent and 45 percent, respectively, and operational NO_x and PM₁₀ emissions by 33.3 percent and 50 percent when compared to a project's unmitigated emissions. Developers are encouraged to mitigate emissions onsite but can also pay for offsite mitigation in accordance with the fee structure outlined in the rule. The payment of fees helps to mitigate the effects of emissions by contributing funds for area projects and programs including paving unpaved roads, "retiring" gross polluter vehicles, and upgrading dirty engines to cleaner models.

Role in CEQA

As a public agency, the Air District takes an active part in the intergovernmental review process under CEQA. In carrying out its duties under CEQA, the Air District may act as a Lead Agency, a Responsible Agency, or a Trustee/Commenting Agency depending on the approvals required by the District and other land use agencies.

"The District is always the Lead Agency for projects such as the development of District rules and regulations. The District may be Lead Agency for projects subject to District permit requirements. As discussed above, for projects triggering BACT, the District has discretionary approval in deciding how to permit the project. For projects subject to BACT, the District serves as Lead Agency when no other agency has principal responsibility for approving the project."¹⁵

"As a Responsible Agency, the District assists Lead Agencies by providing technical expertise in characterizing project-related impacts on air quality and is available to provide technical assistance in addressing air quality issues in environmental documents. When commenting on a Lead Agency's environmental analysis, the District reviews the air quality section of the analysis and other sections relevant to assessing potential impacts on air quality, i.e. sections assessing public health impacts. At the conclusion of its review the District may submit to

¹⁵ San Joaquin Valley Air Pollution Control District. *Guidance for Assessing and Mitigating Air Quality Impacts*. Page 50. http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf. Accessed May 2018.

the Lead Agency comments regarding the project air quality analysis. Where appropriate, the District will recommend feasible mitigation measures.”¹⁶

“As a Trustee Agency, the District assists Lead Agencies by providing technical expertise or tools in characterizing project-related impacts on air quality and identifying potential mitigation measures, and is available to provide technical assistance in addressing air quality issues in environmental documents. At the conclusion of its review the District may submit to the Lead Agency comments regarding the project air quality analysis. Where appropriate, the District will recommend feasible mitigation measures. The process is subject to change due to the District’s continuous improvements efforts.”¹⁷

As mentioned above, the Air District provides technical expertise and tools in characterizing project-related impacts. As this Project is a development plan to guide the growth of the community, it has no specific development project associated with it. As such, as new developments are identified, the County will work with the SJVAPCD through the CEQA process to identify and mitigate, if necessary, any potential adverse impacts to air quality.

Fresno Council of Governments

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

City of Sanger Regulations

The City of Sanger currently utilizes General Plan Amendment (GPA) 2009-01 (Air Quality Goals and Policies for the 2025 Sanger General Plan) to protect air quality in the planning area. This GPA contains 46 policies that guide development in the City with regards to public facility operations, transportation control measures, land use patterns, energy usage, site design, integrated planning, education, and coordination with local and regulating agencies. Guiding policies contained in the GPA are as follows:

¹⁶ San Joaquin Valley Air Pollution Control District. *Guidance for Assessing and Mitigating Air Quality Impacts*. Page 50. http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf. Accessed May 2018.

¹⁷ Ibid. Page 51.

Policy 1: The City shall determine project air quality impacts using analysis methods and significance thresholds recommended by the District.

Policy 2: The City shall reduce the air quality impacts of development projects that may be insignificant by themselves but are cumulatively significant.

Policy 3: The City shall encourage innovative mitigation measures to reduce air quality impacts by coordinating with the SJVAPCD, project applicants, and other interested parties.

Policy 4: The City shall consult with neighboring jurisdictions, affected agencies, and the SJVAPCD to address cross-jurisdictional and regional transportation and air quality issues.

Policy 5: The City shall coordinate with other jurisdictions and other regional agencies in the San Joaquin Valley to establish parallel air quality programs and implementation measures (trip reduction ordinances, indirect source programs, etc.).

Policy 6: The City shall consider air quality when planning land use and transportation systems to accommodate expected growth in the community.

Policy 7: All City submittals of transportation improvement projects to be included in regional transportation plans (RTP, RTIP, CMP, etc.) shall be consistent with air quality goals and policies of the General Plan.

Policy 8: The City shall consult with transit providers to determine project impacts on long range transit plans and ensure that impacts are mitigated.

Policy 9: The City shall work with Caltrans and the Fresno COG to minimize the air quality, mobility, and social impacts of large-scale transportation projects on existing neighborhoods.

Policy 10: The City shall work to improve the public's understanding of the land use, transportation, and air quality link.

Policy 11: The City shall encourage local public and private groups that provide air quality education programs.

Policy 12: City fleet vehicle operators shall replace or convert conventional fuel vehicles with clean fuel vehicles as rapidly as feasible.

Policy 13: The City shall support the use of teleconferencing in lieu of employee travel to conferences and meetings when feasible.

Policy 14: The City shall encourage departments to set up trip reduction programs for their employees.

Policy 15: The City shall consider measures to increase the capacity of the existing road network prior to constructing more capacity (additional lanes, etc.).

Policy 16: The City shall work with employers and developers to provide employees and residents with affordable transportation alternatives.

Policy 17: The City shall encourage state-of-the-art communication infrastructure linked to the rest of the world.

Policy 18: The City shall require residential projects and other sensitive receptors to be located an adequate distance from existing and potential sources toxic emissions such as freeways, industrial sites, and hazardous material locations.

Policy 19: The City shall require new air pollution point sources such as industrial, manufacturing, and processing facilities to be located an adequate distance from residential areas and other sensitive receptors.

Policy 20: The City shall work with the SJVAPCD to reduce particulate emissions from construction, grading, excavation, and demolition to the maximum extent feasible.

Policy 21: The City shall require all access roads, driveways, and parking areas serving new development to be constructed with materials that minimize particulate emissions and are appropriate to the scale and intensity of use.

Policy 22: The City shall reduce PM10 emissions from City-maintained facilities to the maximum extent feasible.

Policy 23: The City shall cooperate with the local building industry, utilities and the SJVAPCD to promote enhanced energy conservation standards for new construction.

Policy 24: The City shall encourage new residential, commercial, and industrial development to reduce air quality impacts from area sources and from energy consumption.

Policy 25: The City shall consider air quality and mobility when reviewing any proposed change to the land use pattern of the community.

Policy 26: The City shall encourage projects proposing pedestrian-oriented designs at suitable locations.

Policy 27: The City shall plan areas within 1/4 mile of activity centers for higher density development.

Policy 28: The City shall encourage mixed-use developments that provide a combination of residential, commercial services, employment, and cultural amenities.

Policy 29: The City shall promote the downtown as the primary pedestrian-oriented, specialty commercial and financial center in the city.

Policy 30: The City shall plan adequate neighborhood commercial shopping areas to serve new residential development.

Policy 31: The City shall encourage subdivision design that provides neighborhood parks in proximity to activity centers and schools.

Policy 32: The City shall work closely with the Sanger Unified School District to choose school sites and street systems that allow students to safely walk or bicycle from their homes.

Policy 33: The City shall plan park and ride lots to serve local commuters.

Policy 34: The City shall provide for an orderly outward expansion of new urban development so that it is contiguous with existing development, allows for the incremental expansion of infrastructure and public services, and minimizes impacts on the environment.

Policy 35: The City shall encourage infill of vacant parcels.

Policy 36: The City shall encourage project sites designed to increase the convenience, safety and comfort of people walking or cycling, and for future transit use.

Policy 37: The City shall review all subdivision street and lot designs, commercial site plans, and multifamily site plans to identify design changes that can improve access by transit, bicycle, and walking.

Policy 38: The City shall plan for a multi-modal transportation system that meets the mobility needs of the community and improves air quality.

Policy 39: The City shall vigorously pursue and use local, state, and federal funds earmarked for bicycle and transit improvements.

Policy 40: The City shall ensure to the extent feasible that pedestrian, bicycle, and automobile connections are maintained in existing neighborhoods affected by transportation and other development projects.

Policy 41: The City shall require transit improvements at sites deemed appropriate and necessary by the transit provider and consistent with long-range transit plans.

Policy 42: The City shall ensure that a comprehensive system of bikeways and pedestrian paths is planned and constructed in accordance with the adopted 2005 Bicycle Plan.

Policy 43: The City shall ensure that regional and commuter bikeways are extended to serve the community consistent with an adopted bikeway plan.

Policy 44: The City shall ensure that upgrades to existing roads (widening, curb and gutter, etc.) include bicycle and pedestrian improvements in their plans and implementation where appropriate.

Policy 45: The City shall require new major activity centers and commercial development to provide secure bicycle storage and parking facilities.

Policy 46: The City shall consider the long-term requirements of future transit alternatives such as express bus lanes, high speed rail, and regional transportation corridors and reserve appropriate right-of-way as appropriate.

Existing Conditions

The SJVAPCD, the Air Resources Board (ARB), and the U.S. National Park Service, and the Santa Rosa Rancheria in Lemoore operate an extensive air monitoring network to measure progress toward attainment of the EPA-established National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS). Ambient Air Quality Standards can be seen in Table 3.3-1, along with the potential pollutant health and atmospheric effects and sources.

Table 3. 3-1: National and State Ambient Air Quality Standards and Effects and Sources of Pollutants¹⁸

Pollutant	Averaging Time	State Standard	National Standard	Pollutant Health and Atmospheric Effects	Major Pollutant Sources
Ozone	1 hour	0.09 ppm	---	(a) Decrease of pulmonary function and localized lung edema in humans and animals; (b) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (c) Increased mortality risk; (d) Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (e) Vegetation damage; (f) Property damage.	Formed when reactive organic gases (ROG) and nitrogen oxides (NO _x) react in the presence of sunlight. Major sources include on-road motor vehicles, solvent evaporation, and commercial / industrial mobile equipment.
	8 hours	0.07 ppm ¹	0.075 ppm		
Carbon Monoxide	1 hour	20 ppm	35 ppm	(a) Aggravation of angina pectoris (chest pain) and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; (d) Possible increased risk to fetuses.	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9.0 ppm		
Nitrogen Dioxide	1 hour	0.180 ppm	0.010 ppm	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; (c) Contribution to	Motor vehicles, petroleum refining operations, industrial sources, aircraft, ships, and railroads.
	Annual Avg.	0.030	0.053 ppm		

¹⁸ California Environmental Protection Agency Air Resources Board. Ambient Air Quality Standards. <http://www.arb.ca.gov/research/aaqs/aaqs.htm>. Accessed May 2018.

Pollutant	Averaging Time	State Standard	National Standard	Pollutant Health and Atmospheric Effects	Major Pollutant Sources
				atmospheric discoloration - Colors atmosphere reddish-brown.	
Sulfur Dioxide	1 hour	0.25 ppm	75 ppb	Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma. Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient sulfur dioxide levels. It is not clear whether the two pollutants act synergistically or one pollutant alone is the predominant factor.	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	3 hours	---	0.5 ppm		
	24 hours	0.04 ppm	0.14 ppm		
	Annual Avg.	---	0.03 ppm		
Respirable Particulate Matter (PM10)	24 hours	50 mg/m ³	150 mg/m ³	(a) Exacerbation of symptoms in sensitive patients with respiratory or cardiovascular disease; (b) Declines in pulmonary function growth in children; (c) Increased risk of premature death from heart or lung diseases in the elderly. Daily fluctuations in PM2.5 levels have been related to hospital admissions for acute respiratory conditions, school absences, and increased medication use in children and adults with asthma.	Dust and fume-producing industrial and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	Annual Avg.	20 mg/m ³	---		
Fine Particulate Matter (PM2.5)	24 hours	---	35 mg/m ³		Fuel combustion in motor vehicles, equipment, and industrial sources; residential and agricultural burning; Also, formed from photochemical reactions of other pollutants, including NO _x , sulfur oxides, and organics.
	Annual Avg.	12 mg/m ³	15 mg/m ³		
Lead	Rolling 3-Month Average NAAQS/M	1.5 mg/m ³	0.15 mg/m ³	Lead accumulates in bones, soft tissue, and blood and can affect the kidneys, liver, and nervous system. It can cause	Present source: lead smelters, battery manufacturing & recycling facilities. Past

Pollutant	Averaging Time	State Standard	National Standard	Pollutant Health and Atmospheric Effects	Major Pollutant Sources
	Monthly Avg. State			impairment of blood formation and nerve conduction. The more serious effects of lead poisoning include behavior disorders, mental retardation, neurological impairment, learning deficiencies, and low IQs. Lead may also contribute to high blood pressure and heart disease.	source: combustion of leaded gasoline.
	Quarterly	---	1.5 mg/m ³		
Hydrogen Sulfide	1 hour	0.03 ppm	No National Standard	High levels of hydrogen sulfide can cause immediate respiratory arrest. It can irritate the eyes and respiratory tract and cause headache, nausea, vomiting, and cough. Long exposure can cause pulmonary edema.	Geothermal Power Plants, Petroleum Production and refining
Sulfates	24 hour	25 mg/m ³	No National Standard	(a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; (f) Property damage.	Produced by the reaction in the air of SO ₂ .
Visibility Reducing Particles	8 hour	Extinction of 0.23/km; visibility of 10 miles or more	No National Standard	Reduces visibility, reduced airport safety, lower real estate value, and discourages tourism.	See PM _{2.5} .
ppm = parts per million; mg/m ³ = micrograms per cubic meter. ¹ This concentration was approved by the Air Resources Board on April 28, 2005 and became effective May 17, 2006.					

The EPA and the ARB designate air basins where ambient air quality standards are exceeded as “nonattainment” areas. If standards are met, the area is designated as an “attainment” area. If there is inadequate or inconclusive data to make a definitive attainment designation, they are considered “unclassified.” National nonattainment areas are further designated as marginal,

moderate, serious, severe, or extreme as a function of deviation from standards. Current attainment designations for the SJVAB are provided in Table 3.3-2.

Table 3.3-2: San Joaquin Valley Attainment Status¹⁹

Pollutant	Designation	
	Federal Standards	State Standards
Ozone- 1 hr	No Federal Standard	Nonattainment/Severe
Ozone- 8 hr	Nonattainment/Extreme	Nonattainment
PM10	Attainment	Nonattainment
PM2.5	Nonattainment	Nonattainment
Carbon monoxide	Attainment/Unclassified	Attainment/Unclassified
Nitrogen dioxide	Attainment/Unclassified	Attainment
Sulfur dioxide	Attainment/Unclassified	Attainment
Lead (Particulate)	No Designation/Classification	Attainment
Hydrogen sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility-reducing particles	No Federal Standard	Unclassified
Vinyl chloride	No Federal Standard	Attainment

Criteria Pollutant Health Effects

Federal and state AAQS are established to protect the public from adverse impacts resulting from exposure to criteria pollutant emissions. Table 3.3-3 provides the health and atmospheric effects of each criteria pollutant, as well as the most common sources of each.

¹⁹ San Joaquin Valley Air Pollution Control District. 2016. Ambient Air Quality Standards & Valley Attainment Status. <https://www.valleyair.org/aqinfo/attainment.htm>. Accessed May 2018.

Table 3.3-3: Air Pollutant Effects and Sources^{20,21,22,23,24}

Pollutant	Health and Atmospheric Effects	Major Pollutant Sources
Ozone (O ₃)	(a) Decrease of pulmonary function and localized lung edema in humans and animals; (b) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (c) Increased mortality risk; (d) Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (e) Vegetation damage; (f) Property damage	Formed when reactive organic gases (ROG) and nitrogen oxides (NO _x) react in the presence of sunlight. Major sources include on-road motor vehicles and any sources that burn fuels, (e.g., gasoline, natural gas, wood, oil), solvent evaporation, petroleum processing and storage, pesticides, and commercial/industrial mobile equipment.
Respirable Particulate Matter (PM ₁₀)	a) Exacerbation of symptoms in sensitive patients with respiratory or cardiovascular disease; (b) Declines in pulmonary function growth in children; (c) Increased risk of premature death from heart or lung diseases in the elderly. Daily fluctuations in PM _{2.5} levels have been related to hospital admissions for acute respiratory conditions, school absences, and increased medication use in children and adults with asthma.	Dust and fume-producing industrial and agricultural operations, combustion of any fuel (including fireplaces), atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and
Fine Particulate Matter (PM _{2.5})		Fuel combustion in motor vehicles, equipment, and industrial sources; residential and agricultural burning; Also, formed from photochemical reactions of other pollutants, including NO _x , sulfur oxides, and organics.
Carbon Monoxide (CO)	a) Aggravation of angina pectoris (chest pain) and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions;	Internal combustion engines, primarily gasoline-powered motor vehicles, and any source that burns fuel such as heavy construction equipment, farming equipment and residential heating.

²⁰ California Air Resources Board. 2009. ARB Fact Sheet: Air Pollution Sources, Effects and Control. <http://www.arb.ca.gov/research/health/fs/fs2/fs2.htm>. Accessed May 2018.

²¹ California Air Resources Board. 2009. Vinyl Chloride. www.arb.ca.gov/research/aaqs/caaqs/vc/vc.htm. Accessed May 2018.

²² United States Environmental Protection Agency. 2009. *Ozone and Your Health*. EPA-456/F-09-001. <http://www.epa.gov/airnow/ozone-c.pdf>. Accessed May 2018.

²³ United States Environmental Protection Agency. 2011. Indoor Air Quality, An Introduction to Indoor Air Quality (IAQ), Volatile Organic Compounds (VOCs). www.epa.gov/iaq/voc.html. Accessed May 2018.

²⁴ United States Department of Health and Human Services, National Toxicology Program. 2014. Public Health Service. 13th Report on Carcinogens (RoC). http://ntp.niehs.nih.gov/ntp/roc/content/listed_substances_508.pdf. Accessed May 2018.

Pollutant	Health and Atmospheric Effects	Major Pollutant Sources
Nitrogen Dioxide (NO ₂)	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; (c) Contribution to atmospheric discoloration - Colors atmosphere reddish-brown.	Motor vehicles, petroleum refining operations, industrial sources, aircraft, ships, and railroads. See also Carbon Monoxide
Sulfur Dioxide (SO ₂)	Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma. Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient sulfur dioxide levels. It is not clear whether the two pollutants act synergistically, or one pollutant alone is the predominant factor.	Fuel combustion, coal or oil burning power plants and industries, oil refineries, chemical plants, sulfur recovery plants, and metal processing.
Lead	Lead accumulates in bones, soft tissue, and blood and can affect the kidneys, liver, and nervous system. It can cause impairment of blood formation and nerve conduction. The more serious effects of lead poisoning include behavior disorders, mental retardation, neurological impairment, learning deficiencies, and low IQs. Lead may also contribute to high blood pressure and heart disease.	Present source: metal smelters, battery manufacturing & recycling facilities; deterioration of lead paint. Past source: combustion of leaded gasoline.
Hydrogen Sulfide (H ₂ S)	High levels of hydrogen sulfide can cause immediate respiratory arrest. It can irritate the eyes and respiratory tract and cause headache, nausea, vomiting, and cough. Long exposure can cause pulmonary edema.	Geothermal Power Plants, Petroleum Production and refining
Sulfates	(a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; (f) Property damage.	Produced by the reaction in the air of SO ₂ .

Pollutant	Health and Atmospheric Effects	Major Pollutant Sources
Visibility Reducing Particles	Reduces visibility, reduced airport safety, lower real estate value, and discourages tourism.	See PM _{2.5} .
Vinyl Chloride	Short-term exposure to high levels of vinyl chloride in the air causes central nervous system effects, such as dizziness, drowsiness, and headaches. Long-term exposure through inhalation and oral exposure has resulted in liver damage. Cancer is a major concern from exposure to vinyl chloride via inhalation, as vinyl chloride exposure has been shown to increase the risk of a rare form of liver cancer in humans.	Vinyl Chloride

Toxic Air Contaminant Health Effects

A Toxic Air Contaminant (TAC) is defined as an air pollutant that may cause or contribute to an increase in mortality or serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations.

The California Almanac of Emissions and Air Quality presents the relevant concentration and cancer risk data for the ten TACs that pose the most substantial health risk in California based on available data. The ten TACs are acetaldehyde, benzene, 1,3-butadiene, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel particulate matter (DPM).²⁵

Some studies indicate that DPM poses the greatest health risk among the TACs listed above. A 10-year research program demonstrated that DPM from diesel-fueled engines is a human carcinogen and that chronic (long-term) inhalation exposure to DPM poses a chronic health risk.²⁶ DPM emissions are estimated to be responsible for about 70 percent of the total ambient air toxics risk.²⁷ In addition to increasing the risk of lung cancer, exposure to diesel exhaust can

²⁵ California Air Resources Board. The California Almanac of Emissions and Air Quality – 2013 Edition.

<https://www.arb.ca.gov/aqd/almanac/almanac13/almanac13.htm>. Accessed May 2018.

²⁶ California Air Resources Board. 1998. *The Toxic Air Contaminant Identification Process: Toxic Air Contaminant Emissions from Diesel-fueled Engines*. www.arb.ca.gov/toxics/dieseltac/factsht1.pdf. Accessed May 2018.

²⁷ California Air Resources Board. 2000. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-fueled Engines and Vehicles*. <http://www.arb.ca.gov/diesel/documents/rpfinal.pdf>. Accessed May 2018.

have other health effects. Diesel exhaust can irritate the eyes, nose, throat, and lungs, and it can cause coughs, headaches, lightheadedness, and nausea. Diesel exhaust is a major source of fine particulate pollution as well, and studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems.

Limited data on levels and health risks attributable to the top 10 TACs listed above are available from the ARB as part of their California Almanac of Emissions and Air Quality - 2009 Edition. As shown therein for data collected at the California Avenue air monitoring station in Bakersfield, cancer risks attributable to all of the listed TACs above with the exception of DPM have declined about 70 percent from the mid-1990s to 2007. Unfortunately, risks associated with DPM emissions are only provided for the year 2000 and have not been updated in the Almanac. The cancer risk from DPM alone was reported at 390 in a million in 2000 with a total risk from all TACs of 586 in a million.²⁸ According to the California Almanac of Emissions and Air Quality - 2013 Edition, overall statewide DPM emissions are forecasted to decline by 71 percent between 2000 and 2035 and in the SJVAB DPM is forecasted to decline by approximately 72 percent between 2010 and 2035.²⁹

Odors

Although offensive odors rarely cause any physical harm, they can be very unpleasant, leading to considerable stress among the public. Common types of facilities that have been known to produce odors include wastewater treatment facilities, chemical manufacturing plants, feed lots/dairies, composting facilities, landfills, and transfer stations. Odor impacts on residential areas and sensitive receptors are often closely scrutinized and consideration should be given to other land uses that are commonly used by large amounts of people, such as open space, recreational facilities and commercial centers. The GAMAQI states that an evaluation should be conducted for both of the following situations: 1) a potential source of objectionable odors is proposed for a location near existing sensitive receptors, and 2) sensitive receptors are proposed to be located near an existing source of objectionable odors.

²⁸ California Air Resources Board. The California Almanac of Emissions and Air Quality. 2009 Edition. San Joaquin Valley Air Basin Annual Average Concentrations and Health Risks. Page 5-69. <https://www.arb.ca.gov/aqd/almanac/almanac09/almanac2009all.pdf>. Accessed May 2018.

²⁹ California Air Resources Board. 2013b. *The California Almanac of Emissions and Air Quality – 2013 Edition*. <http://www.arb.ca.gov/aqd/almanac/almanac13/almanac13.htm>. Accessed May 2018.

Sensitive Receptors

The SJVAPCD defines Sensitive Receptors as “People that have an increased sensitivity to air pollution or environmental contaminants. Sensitive receptor locations include schools, parks and playgrounds, day care centers, nursing homes, hospitals, and residential dwelling unit(s). The location of sensitive receptors is needed to assess toxic impacts on public health.”³⁰

“The location of a development project is a major factor in determining whether the project will result in localized air quality impacts. The potential for adverse air quality impacts increases as the distance between the source of emissions and receptors decreases. Receptors include sensitive receptors and worker receptors. Sensitive receptors refer to those segments of the population most susceptible to poor air quality (i.e., children, the elderly, and those with pre-existing serious health problems affected by air quality). Land uses where sensitive individuals are most likely to spend time include schools and schoolyards, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential communities (these sensitive land uses may also be referred to as sensitive receptors). Worker receptors refer to employees and locations where people work. Impacts on sensitive receptors are of particular concern, because they are the people most vulnerable to the effects of air pollution.

From a health risk perspective there are basically two types of land use projects that have the potential to cause long-term public health risk impacts:

- Type A Projects: Land use projects that will place new toxic sources in the vicinity of existing receptors, and
- Type B Projects: Land use projects that will place new receptors in the vicinity of existing toxics sources.”³¹

Thresholds and Methods

Consistent with Appendix G of the CEQA Guidelines, the proposed Project 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;

³⁰ SJVAPCD. GAMAQI. http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf, Page 10. Accessed May 2018.

³¹ Ibid. Page 44.

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

The SJVAPCD (or Air District) is the applicable air pollution control district for the San Joaquin Valley Air Basin, which includes the City of Sanger. The Air District recommends air pollution thresholds that can be used by Lead Agencies in determining whether a proposed project could result in a significant air quality and health risk impacts in responding to the Appendix G CEQA Guideline thresholds shown above. These thresholds are designed to ensure that an individual new source does not contribute to, cause a violation of an ambient air quality standard, or expose sensitive receptors to substantial levels of air pollution as an individual project or cumulatively with other current and projected projects. The values of the individual significance thresholds have been defined based on scientific research and studies by the ARB and EPA and are protective of public health. If a project has the potential to exceed any adopted significance threshold, then the project should be considered significant.

Criteria Pollutant Significance Thresholds

To assess potential air quality impacts, Criteria pollutant significance thresholds follow two specifications: emission-based and air concentration-based. The Air District has established significance thresholds to assist Lead Agencies in determining whether a project may have a significant impact on air quality.³² Table 3.3-4 provides the criteria pollutant significant thresholds as identified in the Air District's Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI).

The Air District has three sets of significance thresholds based on the source of the emissions. According to the GAMAQI, "The District identifies thresholds that separate a project's short-term emissions from its long-term emissions. The short-term emissions are mainly related to the construction phase of a project and are recognized to be short in duration. The long-term emissions are mainly related to the activities that will occur indefinitely as a result of project operations."³³

³² San Joaquin Valley Air Pollution Control District. Guidance for Assessing and Mitigating Air Quality Impacts. March 19, 2015. Page 80, Table 2.

³³Ibid. Page 75

Table 3.3-4: District Criteria Pollutant Significance Thresholds³⁴

Pollutant/Precursor	Construction Emissions	Operational Emissions	
		Permitted Equipment and Activities	Non-Permitted Equipment and Activities
	Emissions (tpy)	Emissions (tpy)	Emissions (tpy)
CO	100	100	100
NOx	10	10	10
ROG	10	10	10
SOx	27	27	27
PM10	15	15	15
PM2.5	15	15	15

Odor Significance Thresholds

Odor impacts on residential areas and other sensitive receptors, such as hospitals, day-care centers, schools, etc., warrant the closest scrutiny, but consideration could also be given to other land uses where people may congregate, such as recreational facilities, worksites, and commercial areas.

Two situations create a potential for odor impact. The first occurs when a new odor source is located near an existing sensitive receptor. The second occurs when a new sensitive receptor locates near an existing source of odor. The SJVAPCD has determined the common land use types that are known to produce odors in the Basin. These types are shown in Table 3.3-5.

Table 3.3-5: District Screening Levels for Potential Odor Sources³⁵

Odor Generator	Distance
Wastewater Treatment Facilities	2 miles
Sanitary Landfill	1 mile
Transfer Station	1 mile
Composting Facility	1 mile
Petroleum Refinery	2 miles
Asphalt Batch Plant	1 mile

³⁴Ibid. Page 80, Table 2.

³⁵ San Joaquin Valley Air Pollution Control District. Guidance for Assessing and Mitigating Air Quality Impacts. March 19, 2015. Page 103.

Odor Generator	Distance
Chemical Manufacturing	1 mile
Fiberglass Manufacturing	1 mile
Painting/Coating Operations (e.g., auto body shop)	1 mile
Food Processing Facility	1 mile
Feed Lot/Dairy	1 mile
Rendering Plant	1 mile

According to the District's GAMAQI, analysis of potential odor impacts should be conducted for the following two situations:³⁶

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

For a project locating near an existing source of odors, the project should be identified as having a potentially significant odor impact if it is proposed for a site that is closer to an existing odor source than any location where there have been:

- More than one confirmed complaint per year averaged over a three-year period, or
- Three unconfirmed complaints per year averaged over a three-year period.

Projects meeting these criteria would provide an odor assessment to determine if the odor issues from the facilities have been resolved or if mitigation measures are available to reduce odor impacts to future residents.

Air Quality Methods

Growth due to implementation of the GPU buildout is expected to occur over the span of 20 years or more. With respect to air quality issues over the next 20 years, it is also expected that mitigation technology and environmental regulatory framework will change. Due to anticipated advances

³⁶ Ibid. Page 102

in air quality mitigation techniques, laws, and regulations, it is anticipated the changes will be made in the way that future air quality impacts are assessed. Present methods used for evaluating potential air quality impacts rely on both qualitative and quantitative analytical techniques. Quantitative techniques are limited in their ability and functionality to assess expected future growth impacts by using present day assumptions about the future technology and the regulatory environment.

In 2015, the SJVAPCD updated its Guidance for Assessing and Mitigating Air Quality Impacts. The following guidance is provided specifically for long-range planning documents, such as General Plans. “CEQA applies to a wide variety of projects. Complete general plan updates covering thousands of acres are discretionary projects and so are parcel maps and even site plans in some jurisdictions. The general plan often only identifies the eventual use of a parcel of land in vague terms. The site plan review may occur too late in the process and affect too small of an area to allow effective mitigation measures to be identified. In addition, differences in conditions at a site greatly influence the effectiveness of mitigation measures. The overall approach recommended by the District is to use policy statements, design standards, and community-wide programs at the general plan/specific plan level, and site-specific measures when the site-specific uses are proposed.”³⁷

Future specific development proposals would be evaluated when they are proposed. The California Emissions Estimator Model would be used to quantitatively model emissions given the availability of detailed project information, and specific projects would be reviewed within the context of the proposed GPU policies and City environmental and development review procedures.

Impacts and Mitigation Measures

Impact 3.3-1: *Would the project conflict with or obstruct implementation of the applicable air quality plan or result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?*

Significant and Unavoidable. Buildout of the proposed General Plan Update is anticipated to result in a population increase of approximately 40%, through 2035. Short-term emissions from construction activities associated with subsequent development, long-term emissions from

³⁷ SJVAPCD GAMAQI. Page 123. http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf. Accessed May 2018.

subsequent development operations, and emissions from an increase in Vehicle Miles Traveled (VMT) resulting from an increase in population, as further described below.

Construction Emissions

Construction of the growth anticipated by the proposed General Plan buildout has the potential to temporarily emit criteria air pollutant emissions through the use of heavy-duty construction equipment, and through vehicle trips generated by workers and haul trucks. In addition, fugitive dust emission would result from demolition and various soil-hauling activities. Mobile source emissions, primarily NO_x and PM emissions would result from the use of diesel-powered on-and off-road vehicles and equipment. Construction emissions can vary substantially from day-to-day, depending on the level of activity and the specific type of construction activity.

The exact emissions from construction of development anticipated by the proposed Project cannot be quantified without full detail of the development projects to be implemented and the extent to which mitigation can be applied. Individual projects anticipated by the proposed General Plan Update will be required to implement their own environmental review and therefore, it is unknown if short-term regional construction emissions would be significant and unavoidable.

Operational Emissions

Operation of the proposed Project would generate criteria air pollutant emissions from Project-generated vehicle trips traveling within the City, energy sources such as natural gas combustion, and area sources such as landscaping equipment and consumer projects usage. The on-road mobile sources related to General Plan buildout include passenger vehicles, onsite use of off-road equipment and delivery trucks. VMT data takes into account ridership, mode, and distance on freeways and local streets as provided in Chapter 3.16, Transportation.

Development under jurisdiction of the SJVAPCD is required to comply with the procedures and standards outlined in the air district's GAMAQI, which establishes a three-tiered approach to determining significance related to project-specific quantified ozone precursor emissions. Each tier requires a progressively more complex methodology in modeling and emissions calculations to determine significance of project-specific air quality impacts. Development projects will also be subject to the air district Indirect Source Rule thresholds and criteria designed to reduce operational NO_x and PM₁₀ emissions through on-site measures, an off-site fee, or a combination of the two. Application of the Indirect Source Rule requirements would further reduce operational impacts of the proposed GPU. It is unknown at this time the amount of future development that will be subject to this rule.

With respect to operational emissions, future development under the GPU would be required to comply with SJVAPCD and CARB regulations, Title 24 energy efficiency standards, and the proposed General Plan Update goals, objectives and action plans. However, as there is no way to determine the extent to which these regulations will be, or need to be implemented, nor the effectiveness of the mitigation for individual projects, it is impossible to determine if potential impacts would be reduced to below regulatory thresholds. As such, both short-term and long-term regional emissions would be considered *significant and unavoidable*.

Cumulative Emissions

The SJVAPCD states “if project specific emissions exceed the threshold of significance for criteria pollutants the project would be expected to result in a cumulatively considerable net increase of any criteria pollutant for which the District is in non-attainment under applicable Federal or State ambient air quality standards.”³⁸ As described in the Environmental Setting section, the San Joaquin Valley is in non-attainment under Federal and State standards for ozone and PM_{2.5} and State standards for PM₁₀. As quantifying emissions of future specific development projects is speculative, it cannot be determined if future project emissions would be under significance thresholds set by the SJVAPCD. Therefore, cumulative air quality impacts from future development are assumed to be *significant and unavoidable* for their potential to violate air quality standards and be inconsistent with air quality management plans.

Mitigation Measures. No feasible measures in addition to the above SJVAPCD Rules are available.

Impact 3.3-2: *Expose sensitive receptors to substantial pollution concentrations?*

Significant and Unavoidable. Criteria air pollutant emissions have the potential to result in health impacts on sensitive receptors located near new development within the Planning Area.

Local Operational Emissions

The SJVAPCD recommends the evaluation of localized air quality impacts on sensitive receptors in the immediate vicinity of the Project; however, the impacts are based on specific equipment and operations. Because the exact nature, location, and operation of the future developments are unknown, quantification of potential localized operational risk would be speculative. However, as operation of these future developments will occur within close proximity to sensitive receptors, there is the potential for localized emissions to exceed regulatory levels. Therefore, localized operational emissions with respect to the Proposed Project would be potentially significant.

³⁸ SJVAPCD. GAMAQI. Page 66. http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf. Accessed May 2018.

Toxic Air Contaminants

General Plan buildout would result in emissions of TAC, predominantly from diesel particulate emissions from on- and off-road vehicles during construction and from the operation of diesel fueled equipment or generators during operational activities. Because the exact nature, location, and operation of the future developments are unknown, and because health risk impacts from TACs are cumulative over the life of the nearby receptors, quantification of potential health risks would be speculative. However, as construction and operation of these future developments will occur within close proximity to sensitive receptors, there is the potential for risk to exceed regulatory levels. Therefore, health risk with respect to the development anticipated by the proposed Project would be potentially significant.

Health Impacts

Without knowing the exact specifications for all projects that may be developed under the GPU, there is no way to accurately calculate the potential for health impacts from the overall Proposed Project. Individual projects will be required to provide their own environmental assessments to determine health impacts for the construction and operation of their projects. Because there is no way to determine the potential for these projects to affect health of sensitive receptors within the City of Sanger, the proposed Project would result in potentially significant health impacts.

The proposed goals, objectives, and action plans of the General Plan listed below would potentially reduce emissions, which could potentially reduce impacts related to conflicts with an applicable air quality plan.

Sanger General Plan: Environmental Justice Element

Goals, Objectives, Action Plans

Goal:

I. Reduce health risks in disadvantaged neighborhoods, related to air pollution.

Objective:

1. Health and air quality issues shall be considered as a part of all land use decisions.

Action Plans:

a. Locate new stationary sources of emissions so as to minimize impacts on sensitive and uses where feasible.

- b. Require stationary sources of emissions to use feasible mitigation measures to minimize emissions that could have potential impacts on air quality.
- c. Require new development within 500 feet of industrial uses to include feasible measures such as separation/setbacks, landscaping, barriers, ventilation systems, air filters/cleaners and or other effective measures to minimize potential impacts from air pollution.
- d. Consider air quality impacts, including cumulative impacts, from existing and new development when making land use decisions.
- e. Designate truck routes that avoid sensitive land uses, where feasible.
- f. Encourage smoke-free work places, multi-family housing, parks and other outdoor gathering places to reduce exposure to second-hand smoke.
- g. Distribute information about best practices to reduce and/or eliminate sources of indoor air pollution.
- h. Require planting of trees to help filter air and reduce heat buildup (which necessitates the use of more energy for cooling, thereby increasing air emissions.)
- i. Review and revise the Zoning Ordinance to discourage or eliminate land uses that may emit high levels of air pollution in industrial zones, which are located nearby sensitive land uses.

Sanger General Plan: Transportation/Circulation Element

Goals, Objectives, Action Plans

Goal:

I. Develop a comprehensive circulation system that is coordinated with planned land use patterns contained in the *Land Use Element*.

Objective:

5. The City's transportation system shall be designed, constructed, operated, and implemented in a manner that maintains a high level of environmental quality.

Action Plan:

- a. Using the latest available and most current industry-standard technology, the City of Sanger shall mitigate, to the extent practicable, any negative environmental effects on air quality and ambient noise levels resulting from circulation improvements.

With respect to local operational emissions, and construction and operational toxic air contaminant emissions and health impacts, future development under the General Plan Update would be required to comply with the SJVAPCD and CARB regulations, Title 24 energy efficiency standards, and the proposed General Plan Update goals, objectives and action plans. However, there is no way to determine the extent to which these regulations will be, or need to be implemented, nor the effectiveness of the mitigation for individual projects. Therefore, localized operational impacts, construction and operational health and toxic air impacts would remain *significant and unavoidable*.

Mitigation Measures. No feasible measures in addition to the above objectives and action plans are available.

Impact 3.3-3: *Result in other emissions (such as those leading to odors affecting a substantial number of people?*

Less Than Significant with Mitigation Incorporation. Construction activity associated with General Plan buildout will require the operation of equipment which may generate exhaust from either gasoline or diesel fuel. Construction of new buildings will also require the application of architectural coatings and the paving of roads which would generate odors from materials such as paints and asphalt. These odors are of a temporary or short-term nature and quickly disperse.

It is possible that future industrial uses could be sources of odors that affect sensitive land uses such as residential areas. However, future development with such potential will be evaluated through the City's development review and CEQA process and will be in accordance with the guiding policies outlined in GPA 2009-01. These project evaluation processes would be used to identify potential for odor generation and potential for residents, employees, school children and others to be adversely affected.

As discussed above, according to the District's GAMAQI, analysis of potential odor impacts should be conducted for the following two situations:³⁹

³⁹ SJVAPCD. GAMAQI. http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf. Page 102. Accessed May 2018.

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

For a project locating near an existing source of odors, the project should be identified as having a potentially significant odor impact if it is proposed for a site that is closer to an existing odor source than any location where there have been:

- More than one confirmed complaint per year averaged over a three-year period, or
- Three unconfirmed complaints per year averaged over a three-year period.

Projects meeting these criteria would provide an odor assessment to determine if the odor issues from the facilities have been resolved or if mitigation measures are available to reduce odor impacts to future residents.

The General Plan Update does not have policies or implementing measures that address potential conflicts in land uses that could result in odor complaints; however, compliance with the SJVAPCD's odor analysis and Mitigation Measure AIR-1 would reduce odor impacts to *less than significant*.

Mitigation Measures

AIR-1: Developers within the Planning Area of projects that have the potential to generate significant odor impacts as determined through review of SJVAPCD odor complaint history for similar facilities and consultation with the SJVAPCD shall prepare an odor assessment and shall implement odor control measures recommended by the SJVAPCD or the City.

Cumulative Impacts

Significant, Unavoidable and Cumulatively Considerable. The scope for considering cumulative impacts to air quality is the geographic areas covered by the San Joaquin Valley Air Basin. Construction of the individual development projects allowed under the land use designations of the City's General Plan and Master Plan would lead to moderate increases in vehicle trips on local roadways, increases in energy consumption, and increases in air quality emissions from mobile stationary sources. The General Plan Update would allow growth of new residential land uses that would be sensitive receptors and new non-residential land uses that are

a potential for new emissions sources. The proposed General Plan includes many Goals, Objectives and Action Plans that promote the reduction of air emissions.

The San Joaquin Valley Air Pollution Control District (SJVAPCD) states “if project specific emissions exceed the threshold of significance for criteria pollutants the project would be expected to result in a cumulatively considerable net increase of any criteria pollutant for which the District is in non-attainment under applicable Federal or State ambient air quality standards.”⁴⁰ As described in the Environmental Setting section above, the San Joaquin Valley is in non-attainment under Federal and State standards for ozone and PM_{2.5} and State standards for PM₁₀. As emissions of future specific development projects cannot be quantified, it cannot be determined if future project emissions would be under significance thresholds set by the SJVAPCD. Therefore, the projects contribution to cumulative air quality is considered *significant, unavoidable and cumulatively considerable*.

⁴⁰ SJVAPCD. GAMAQI. Page 66. http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf. Accessed May 2018.

3.4 Biological Resources

This section of the DEIR addresses the biological resources present within the City of Sanger General Plan Planning Area (Planning Area). Biological resources information, including the existing conditions and environmental setting for the Planning Area is based on the technical report prepared by Live Oak Associates, and attached as Appendix A to this EIR.

The section includes a discussion of the special-status species that may potentially occur within the Planning Area as well as sensitive habitats in the Planning Area. This section also identifies the potential impacts of implementing the proposed City of Sanger General Plan on such resources, proposed General Plan objectives and policies that reduce the identified impacts, and mitigation measures where appropriate.

Environmental Setting

Regional Setting

The City of Sanger is located in the southeastern San Joaquin Valley of California, approximately five miles west of the base of the Sierra Nevada foothills. The San Joaquin Valley is bordered by the Sierra Nevada to the east, the Tehachapi Mountains to the south, the California coastal ranges to the west, and the Sacramento-San Joaquin Delta to the north.

Like most of California, the San Joaquin Valley (and the planning area) experiences a Mediterranean climate. Warm, dry summers are followed by cool, moist winters. Summer temperatures in the project vicinity commonly exceed 100 degrees Fahrenheit, and the relative humidity is generally very low. Winter temperatures rarely exceed 70 degrees Fahrenheit. Annual precipitation in the project vicinity is about 11 inches, most of which falls between the months of October and March. Nearly all precipitation falls in the form of rain.

The principal drainage in the vicinity of Sanger is the Kings River, which originates in the Sierra Nevada and flows in a north-south direction past the planning area, bordering the planning area at its southeastern corner. The Kings River in the vicinity of the planning area follows a natural drainage channel and supports a relatively intact riparian corridor. Collins Creek, a tributary to the Kings River, flows through the southeastern portion of the planning area, and converges with the Kings River at the planning area's southeastern corner. Within the planning area, Collins Creek flows through an engineered channel, and supports intermittent riparian vegetation.

Lands surrounding the planning area are dominated by agricultural and rural residential uses.

Planning Area

Sanger's city limits contain 3,680 acres or 5.8 square miles and the surrounding Sphere of Influence contains approximately 6,873 acres, or 10.7 square miles.¹ The approximately 6,873-acre Planning Area consists primarily of a mosaic of urban, agricultural, and rural residential lands. Riparian habitat associated with the Kings River and Collins Creek occurs in the southeastern portion of the Planning Area and is contained largely within the fenced facility of the City's wastewater treatment plant and an adjacent City-owned natural area. Topographically, much of the site is relatively level, ranging in elevation from approximately 385 feet National Geodetic Vertical Datum (NGVD) at the northeast corner of the planning area to 325 feet NGVD at the southeast corner of the planning area.

Biotic Habitats and Land Uses

Seven biotic habitats and land uses were identified within the planning area: urban, agricultural, rural developed, ruderal, non-native grassland, drainage/canal, and artificial ponds and basins, as seen in Figure 3.4-1. These habitats/land uses, along with their constituent plant and animal species, are described in detail in the following sections.

Urban. The urban footprint of Sanger is developed with single- and multi-family residential units, commercial units, schools, industrial and manufacturing plants and warehouses, transportation corridors, city parks, and other developments and infrastructure associated with urbanized communities. Sanger also includes a number of small undeveloped lots that are similar to surrounding urban areas in terms of habitat function and value, and are therefore included in the urban land use type. However, large expanses of vacant land within city limits were separately classified as ruderal.

Vegetation within urban areas is dominated by non-native ornamental trees, shrubs, forbs and grasses. Vacant lots within the urban footprint may contain naturalized non-native grasses and forbs such as horseweed (*Erigeron canadensis*), prickly lettuce (*Lactuca serriola*), red-stemmed filaree (*Erodium cicutarium*), and foxtail barley (*Hordeum murinum* ssp. *leporinum*).

Animals typically occurring in urban environments are well adapted to the presence of humans. In general, urban areas provide limited habitat for reptiles and amphibians; however, Pacific chorus frogs (*Pseudacris regilla*) may breed and forage in wet areas associated with residential areas or parks, and western fence lizards (*Sceloporus occidentalis*) likely occur here.

¹ Sanger 2035 GPU Land Use Element, Page 1-2.

Various bird species are expected to use the urban footprint of Sanger. Birds known to occur in this portion of the planning area include house sparrows (*Passer domesticus*), rock pigeons (*Columba livia*), mourning doves (*Zenaida macroura*), western scrub jays (*Aphelocoma californica*), American robins (*Turdus migratorius*), American crows (*Corvus brachyrhynchos*), and northern mockingbirds (*Mimus polyglottos*), among others. Raptors such as red-tailed hawks (*Buteo jamaicensis*) and Cooper's hawks (*Accipiter cooperi*) may occur in this area as well.

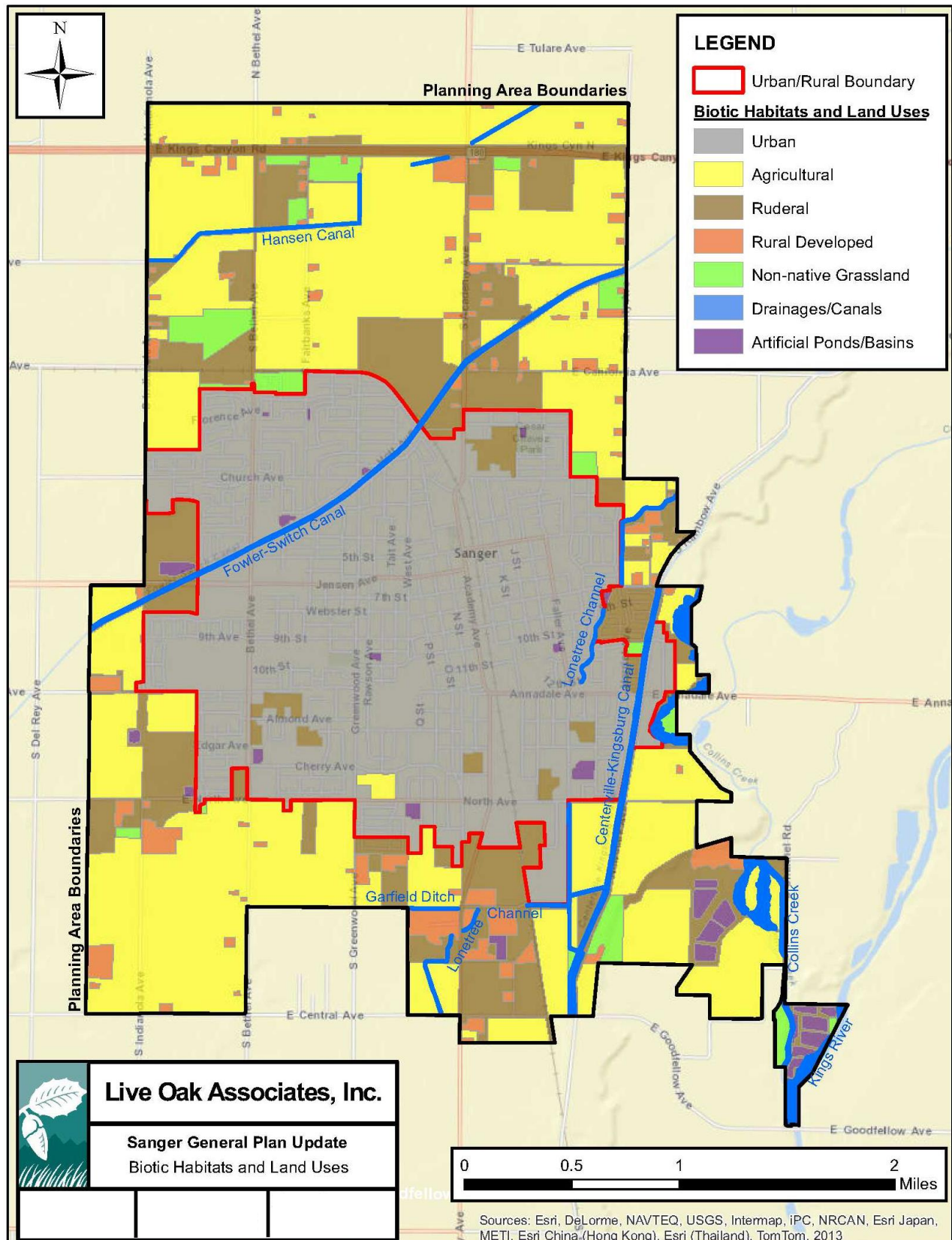
Mammals occurring in the urban footprint of Sanger may include house mice (*Mus musculus*), Norway rats (*Rattus norvegicus*), raccoons (*Procyon lotor*), and Virginia opossums (*Didelphis virginiana*), all of which are common to urban environments and likely breed and forage within the urban area for human generated food.

Agricultural. A large portion of the planning area consists of actively farmed agricultural land including orchards, vineyards, row crops, and grain. Common weedy non-native grasses and forbs found in agricultural fields in the Sanger area include horseweed, prickly lettuce, slender wild oats (*Avena barbata*), foxtail barley, Russian thistle (*Salsola tragus*), shepherd's purse (*Capsella bursa-pastoris*), and stinging nettle (*Urtica dioica*).

Compared to natural habitats, managed agricultural lands provide relatively low habitat value for wildlife due to intensive management practices and lack of vegetative diversity. Annual management practices such as discing and harvesting would eliminate breeding and foraging habitat for many small birds and mammals native to the region. The application of chemical pesticides may also pose a threat to such species at various times of the year.

Although none were observed, reptiles may potentially occur in the agricultural fields. The sparse cover described above, the likelihood of rodent burrows to occur in this habitat, and the presence of fluctuating populations of invertebrate and rodent prey make the site suitable for at least one native species of lizard, the western fence lizard, and several species of snake, including the gopher snake (*Pituophis catenifer catenifer*) and California kingsnake (*Lampropeltis getulus californiae*).

Figure 3.4-1: Biotic Habitats and Land Uses



Common resident avian species known to forage in agricultural fields in the Sanger area include the northern mockingbird, European starling (*Sturnus vulgaris*), western meadowlark (*Sturnella neglecta*), red-tailed hawk, northern harrier (*Circus cyaneus*), killdeer (*Charadrius vociferus*), and American crow. Winter migrants may include the ferruginous hawk (*Buteo regalis*), yellow-rumped warbler (*Setophaga coronata*), and white-crowned sparrow (*Zonotrichia leucophrys*). Orchards may be used for nesting by American robins, mourning doves, and Anna's hummingbirds (*Calypte anna*), among other species.

Small mammals occur in agricultural lands such as those of the planning area, but populations would be highly variable depending on the crop, disturbance regime, and time of year. Freshly plowed or cultivated fields barren of vegetation provide little cover for most terrestrial vertebrates. Burrowing rodents such as California ground squirrels (*Spermophilus beecheyi*) and Botta's pocket gophers (*Thomomys bottae*) would be more likely to occur in orchards and vineyards, where ground disturbance occurs less frequently, than in frequently tilled agricultural fields. Deer mice (*Peromyscus maniculatus*) and California voles (*Microtus californicus*) are relatively common in agricultural lands.

Common mammalian predators attracted to these small mammals would likely be limited to coyotes (*Canis latrans*) and red foxes (*Vulpes vulpes*) as these species are well-adapted to human disturbance. Various bat species, including the pallid bat (*Antrozous pallidus*) and Mexican free-tailed bat (*Tadarida brasiliensis*), may forage over the site for flying insects.

Rural Developed. Outside of the urban footprint of Sanger, agricultural lands are interspersed with rural residences and several small commercial/industrial complexes. These rural developed lands include homes and other structures, landscaping, driveways and parking areas, and, in some cases, small pastures and ruderal areas adjacent to buildings. Given the scope of this investigation and the scale of the planning area, all the habitat types of each rural developed property were not delineated. Landscaping observed around many homes was extensive and often comprised mature non-native trees and shrubs. Horticultural species include conifers such as coast redwood (*Sequoia sempervirens*) and deodar cedar (*Cedrus deodora*); broad leaved trees such as sweet gum (*Liquidambar styraciflua*), fruitless mulberry (*Morus alba*), London plane trees (*Platanus acerifolia*), and European olive (*Olea europea*); and various shrubs such as oleander (*Nerium oleander*), crape myrtle (*Lagerstroemia* sp.), and low-growing junipers (*Juniperus* sp.).

Scrap piles provide suitable cover for the same reptile species that would be found in the surrounding agricultural areas. Avian species expected in this habitat include a mix of the same species that would be found in nearby urban and agricultural areas. Residential

landscaping provides cover and nesting opportunities for resident birds such as western scrub jays, house finches (*Carpodacus mexicanus*), house sparrows, and northern mockingbirds. The cover provided by horticultural trees and shrubs can also be important to migrants passing through the area during spring and fall. Larger trees in this area provide nesting habitat for raptors such as red-tailed hawks and red-shouldered hawks (*Buteo lineatus*).

Small mammals that commonly occur in rural developed areas include California ground squirrels, deer mice, Norway rats, and house mice. Botta's pocket gophers and broad-footed moles (*Scapanus latimanus*) are regularly found in garden beds and lawns. Bats of various species may roost in residential buildings and forage overhead. Mammalian predators in this area would include the coyote, raccoon, and striped skunk (*Mephitis mephitis*).

Ruderal. The ruderal land use type includes disturbed habitats such as deep-ripped fields, construction sites, barren land, and travel corridors. Given the scope of this investigation and the scale of the planning area, roads were generally not mapped as ruderal habitat, but were included with adjacent land uses. Within the urban footprint of Sanger, only large expanses of ruderal land were mapped as such; small vacant lots would be expected to be functionally similar to surrounding urban development, and were therefore classified as urban.

Ruderal lands of the planning area contain no vegetation or a sparse cover of common weeds such as Bermuda grass (*Cynodon dactylon*), black mustard (*Brassica nigra*), and Russian thistle (*Salsola tragus*). Although the wildlife habitat value of ruderal lands is relatively low, these lands can support some wildlife species. Amphibians such as the Pacific tree frog and western toad (*Bufo boreas*) may disperse through ruderal lands during the winter and spring. Common reptiles such as the western fence lizard and gopher snake could potentially use ruderal habitats of the planning area. Mourning doves, northern mockingbirds, and house finches could be expected to occur on these ruderal lands, as could the disturbance-tolerant killdeer, which often nests on gravel or bare ground.

Small mammals that would be expected to occur on ruderal lands of the project site include California ground squirrels and Botta's pocket gophers. Mammalian predators with the potential to occur on ruderal lands of the site include disturbance-tolerant species such as the raccoon, coyote, and Virginia opossum.

Non-native Grassland. Seventeen expanses of non-native grassland were identified within rural portions of the planning area. Most of these grasslands are located within the agricultural mosaic, on leveled land that was presumably once used for cultivation. Four expanses of grassland identified during the field survey are located outside of the agricultural grid. Three are associated with rural residences and appear to be in use as livestock pastures, while the fourth borders a network of basins that were once used by the City as wastewater treatment ponds. These grasslands, like all others in the planning area, appear to have been subjected to intensive disturbance over the years, and are not representative of natural grassland habitats found elsewhere in the San Joaquin Valley. Vernal pools and swales are absent from all grasslands of the planning area.

The grassland habitats of the planning area are dominated by grasses and forbs of European origin. Grass species typical of non-native grasslands in the vicinity of Sanger include ripgut brome (*Bromus diandrus*), soft chess brome (*Bromus hordeaceus*), wild oats (*Avena fatua*), and rattail fescue (*Vulpia myuros*). Common forbs associated with these grass species include red-stem filaree, broad-leaf filaree (*Erodium botrys*), and smooth cat's-ear (*Hypochaeris glabra*).

Grasslands of the planning area provide suitable habitat for a number of amphibian and reptile species. Common reptile species likely to forage and seek cover in this habitat include common side-blotched lizards (*Uta stansburiana*), western whiptails (*Aspidoscelis tigris*), gopher snakes, common kingsnakes (*Lampropeltis getulus*), and western rattlesnakes (*Crotalus viridis*). Amphibian species expected to occur in the non-native grasslands of the planning area include the western toad, which could aestivate (oversummer) in rodent burrows of this habitat type.

Raptors known to utilize grassland habitats within the planning area include the red-tailed hawk and American kestrel (*Falco sparverius*). The northern harrier would also be expected in this habitat. These species prey on the reptiles and small birds and mammals of the planning area. Other resident avian species expected in this habitat include common ravens (*Corvus corax*), mourning doves, and western meadowlarks. Spring and summer migrants that frequent these grasslands would include barn swallows (*Hirundo rustica*) and western kingbirds. Common winter migrants attracted to grasslands of the region include savannah sparrows (*Passerculus sandwichensis*), American pipits (*Anthus rebescens*), and Say's phoebes (*Sayornis saya*).

A number of small mammal species would be expected to use grasslands of the planning area, including California ground squirrels, Botta's pocket gophers, California voles, deer

mice, and house mice. Large mammalian species expected to use this habitat type include the coyote and gray fox (*Urocyon cinereoargenteus*). Various species of bats would be expected to forage over the grasslands.

Drainage/Canal. This habitat consists of natural drainages, engineered canals and ditches, and associated riparian habitat. The two natural drainages of the planning area are the Kings River and Collins Creek, both of which pass through the planning area near its southeast corner, flowing generally from north to south. The Kings River is perennially inundated and follows its original, meandering course. The river is lined with riparian trees and shrubs including valley oak (*Quercus lobata*), Fremont's cottonwood (*Populus fremontii*), red willow (*Salix laevigata*), blue elderberry (*Sambucus nigra*), and tree tobacco (*Nicotiana glauca*). By contrast, Collins Creek carries seasonal flows, and within the planning area has been realigned to a relatively straight course within an engineered channel. The banks contain brushy riparian vegetation including blue elderberry and sandbar willow (*Salix exigua*), but riparian trees are generally absent, save near the creek's confluence with the Kings River. The creek's original course is evident in the Sanger Wastewater Treatment Facility, where remnant riparian woodland habitat meanders between the sprayfields 500-1,000 feet west of the engineered channel.

Five engineered canals and ditches pass through the planning area, the Fowler-Switch Canal, Centerville-Kingsburg Canal, Hansen Canal, Lonetree Channel, and Garfield Ditch. All engineered canals and ditches of the planning area flow generally from northeast to southwest, carry seasonal flows, and appear intensively maintained. Vegetation is generally sparse in the engineered canals and ditches; however, at the time of the field survey, inundated portions of the Centerville-Kingsburg Canal, Hansen Canal, and Lonetree Channel were densely vegetated with sprangletop (*Leptochloa* sp.), Canadian horsetweed, and several other species. Riparian trees including Fremont's cottonwood and valley oak occur sporadically along the Fowler-Switch Canal and Centerville-Kingsburg Canal. Most of the canals and ditches of the planning area have earthen beds and banks. The Centerville-Kingsburg Canal has a cement-lined bed with earthen banks for a portion of its reach through the planning area.

Drainages and canals of the planning area provide potential breeding habitat for amphibians such as western toads, Pacific chorus frogs, and bullfrogs (*Rana catesbiana*) during the spring. These species, in turn, would attract common garter snakes (*Thamnophis sirtalis*) and aquatic garter snakes (*Thamnophis atratus*) to forage in this

habitat. Other reptiles that may utilize this habitat include the western fence lizard and Gilbert skink (*Eumeces gilberti*).

The presence of amphibians may attract wading birds such as the great egret (*Ardea alba*) and great blue heron (*Ardea herodias*). Dabbling ducks such as the mallard (*Anas platyrhynchos*) would be attracted to areas of still water. A number of avian species may forage and breed in the riparian corridor along the Kings River and remnant riparian areas marking the original channel of Collins Creek. These include songbirds such as the western scrub jay, house finch, and spotted towhee (*Pipilo maculatus*), woodpeckers such as the northern flicker (*Colaptes auratus*) and Nuttall's woodpecker (*Picoides nuttallii*), and game birds such as the mourning dove and California quail (*Callipepla californica*). Raptors such as the red-tailed hawk and red-shouldered hawk would nest in riparian trees in these areas.

Riparian habitat often facilitates the movement and persistence of small and large mammal populations. Muskrats (*Ondatra zibethicus*) may inhabit aquatic habitat and creek banks within the riparian zone, and raccoons commonly forage along watercourses. A number of bat species frequently forage over aquatic areas. Larger mammal species such as the gray fox and coyote may drink from and forage in these areas.

Artificial Ponds and Basins. Artificial ponds and basins in the planning area include stormwater detention basins, tailwater basins, residential ponds, and waste treatment ponds. Waste treatment ponds comprise five actively used ponds within the Sanger Wastewater Treatment Facility, as well as a number of basins in the City-owned natural area near the confluence of Collins Creek and the Kings River that were previously used for this purpose, but are now retired. While larger ponds and basins have been identified in Figure 3, small ponds within rural residential areas were not mapped given the scope of this investigation.

Vegetation characteristics within these areas are variable and dependent on the depth of the feature, the function of the feature, as well as the inundation and maintenance regimes. Vegetation communities associated with ponds and basins within the planning area consist of riparian vegetation described in Section 2.3.6 as well as wetland vegetation. Wetland vegetation associated with some ponds and lakes may include broadleaf cattail (*Typha latifolia*), tall flatsedge (*Cyperus eragrostis*), knotweed (*Persicaria lapathifolia*), and barnyard grass (*Echinochloa crus-gali*).

Various species of fish could use this habitat. Largemouth bass (*Micropterus salmoides*), bluegill (*Lepomis macrochirus*), green sunfish (*Lepomis cyanellus*), and mosquito fish (*Gambusia affinis*) are commonly found in similar aquatic habitats throughout California. The margins of artificial lakes and basins provide habitat for various amphibian and reptile species. Pacific chorus frogs, bullfrogs, and western toads would breed in such places, especially where emergent vegetation provides cover for both young and adults. These species would in turn attract common garter snakes and aquatic garter snakes to forage in this habitat.

Ponds and basins also provide habitat for a number of avian species. Great egrets and great blue herons may occasionally forage along the shallows of the shoreline for the various fish and amphibian species mentioned above. A variety of waterbirds such as greater yellowlegs (*Tringa melanolueca*), black-necked stilt (*Himantopus mexicanus*), American coot (*Fulica americana*), ruddy duck (*Oxyara jamaicensis*), northern shoveler (*Anas clypeata*), and mallard are expected to use this habitat within the planning area. Other avian species expected in this habitat include the black phoebe (*Sayornis nigricans*), which often forages over the water's edge, and the barn swallow and cliff swallow (*Petrochelidon pyrrhonota*), both of which forage over open water.

Relatively few mammals are found in such habitats, but several species may come here to drink and occasionally forage along the shallow portions of the shoreline. Muskrats often inhabit perennial aquatic habitat itself, and raccoons commonly forage along the shore. A number of bat species probably forage over these areas at various times of year.

Special Status Plants and Animals

Several species of plants and animals within the state of California have low populations and/or limited distributions. Such species may be considered “rare” and are vulnerable to extirpation as the state’s human population grows and the habitats these species occupy are converted to agricultural and urban uses. State and federal laws have provided the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting the diversity of plant and animal species native to the state. A sizable number of native plants and animals have been formally designated as “threatened” or “endangered” under state and federal endangered species legislation. Others have been designated as candidates for such listing. Still others have been designated as “species of special concern” by the CDFW. The California Native Plant Society (CNPS) has developed its own set of lists of native

plants considered rare, threatened, or endangered.² Collectively, these plants and animals are referred to as “special status species.”

The *California Natural Diversity Data Base*³ was queried for special status species occurrences in the nine USGS 7.5-minute quadrangles containing and surrounding the planning area (*Sanger, Clovis, Round Mountain, Piedra, Wahtoke, Reedley, Selma, Conejo, and Malaga*). These species, and their potential to occur within the planning area, are listed in Tables 3.4-1 through 3.4-3. Sources of information for this table included *California's Wildlife, Volumes I, II, and III*⁴, *Special Animals*⁵, *Special Vascular Plants, Bryophytes, and Lichens*⁶, and *The California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California*.⁷

Table 3.4-1: List of Special Status Plant Species That Occur, Or May Occur, in the Planning Area Vicinity

Species	Status	Habitat	Occurrence in the Planning Area
Succulent Owl's Clover (<i>Castilleja campestris succulenta</i>)	FT, CE CNPS 1B	Occurs in vernal pools of the Central Valley, often in acidic soils; blooms April-May; elevation 160-2460 ft.	Absent. Vernal pools are absent from the planning area.
California Jewel-flower (<i>Caulanthus californicus</i>)	FE, CE, CNPS 1B	Occurs in chenopod scrub, pinyon and juniper woodland, and sandy valley and foothill grassland; blooms February–May; elevation 250-3,300 ft.	Unlikely. All grassland habitats of the planning area are disturbed and would be marginal, at best, for this species. Moreover, California jewel-flower populations in the Fresno area are presumed extirpated.
San Joaquin Valley Orcutt Grass (<i>Orcuttia inaequalis</i>)	FE, CE CNPS 1B	Occurs in the Central Valley in deep vernal pools with prolonged inundation; blooms April-September; elevation 100-2480 ft.	Absent. Vernal pools are absent from the planning area.
San Joaquin Adobe Sunburst (<i>Pseudobahia peirsonii</i>)	FT, CE, CNPS 1B	Occurs in grasslands of the Sierra Nevada foothills in heavy clay soils of the Porterville and Centerville series; blooms	Absent. Suitable heavy clay soils are absent from the planning area.

² California Native Plant Society (CNPS). 2015. Online inventory of rare and endangered vascular plants of California (v7-12dec). <http://cnps.site.aplus.net/cgi-bin/inv/inventory.cgi>. Accessed December 2015.

³ California Department of Fish and Wildlife (CDFW). 2016. California Natural Diversity Data Base. The Resources Agency, Sacramento, CA.

⁴ Zeiner, David C., William F. Laudenslayer, Kenneth Mayer and Marshal White, ed. 1988-1990. California's Wildlife. Volume I, Amphibians and Reptiles. Department of Fish and Game. Sacramento, CA.

⁵ California Department of Fish and Wildlife (CDFW) 2016. Special Animals List. Periodic publication. January 2016. 51 pp.

⁶ California Department of Fish and Wildlife (CDFW) 2016 Special Vascular Plants, Bryophytes, and Lichens List. January 2016. Quarterly publication. 126 pp.

⁷ California Native Plant Society (CNPS). 2015. Online inventory of rare and endangered vascular plants of California (v7-12dec). <http://cnps.site.aplus.net/cgi-bin/inv/inventory.cgi>. Accessed December 2015.

Species	Status	Habitat	Occurrence in the Planning Area
		March-April; elevation 300-2,625 ft.	
Keck's Checkerbloom (<i>Sidalcea keckii</i>)	FE CNPS 1B	Occurs in blue oak woodland and valley and foothill grassland habitats in clay or serpentine soils; blooms April-June; elevation 250-2150 ft.	Absent. Blue oak woodland habitat is absent from the planning area, and grassland habitats are marginal, at best, due to past and ongoing human disturbance. The nearest known occurrences are 10-11 miles northeast of the planning area in large blocks of grassland / blue oak woodland habitat.
Greene's Tuctoria (<i>Tuctoria greenei</i>)	FE, CR, CNPS 1B	Occurs in vernal pools of the Central Valley; blooms May-September; elevation 100-3510 ft.	Absent. Vernal pools are absent from the planning area.
Spiny-sepaed Button Celery (<i>Eryngium spinosepalum</i>)	CNPS 1B	Occurs in vernal pools and valley and foothill grasslands of the San Joaquin Valley and the Tulare Basin; blooms April-May; elevation 330-840 ft.	Unlikely. Vernal pools are absent from the planning area, and all grassland habitats would be marginal, at best, for this species due to past and ongoing human disturbance.
Forked Hare-leaf (<i>Lagophylla dichotoma</i>)	CNPS 1B	Occurs in cismontane woodland and valley and foothill grasslands; blooms April-Sept.; elevation 160-2500 ft.	Unlikely. Grassland habitats of the planning area would be marginal, at best, for this species due to past and ongoing human disturbance.
Madera Leptosiphon (<i>Leptosiphon serrulatus</i>)	CNPS 1B	Occurs in cismontane woodland, foothill grasslands, and lower montane forest from Madera County south through Kern County; blooms April-May; elevation 1,000-4,300ft.	Unlikely. Grassland habitats of the planning area would be marginal, at best, for this species due to past and ongoing human disturbance. Moreover, the planning area is located below this species' typical elevational range.
Sanford's Arrowhead (<i>Sagittaria sanfordii</i>)	CNPS 1B	Occurs in freshwater marshes and swamps of the Central Valley; blooms May-October; elevation up to 2000 ft.	Possible. Several documented occurrences of this species are reported in canals, ditches, and detention basins in and around the Fresno/Clovis area.
California Satintail (<i>Imperata brevifolia</i>)	CNPS 2B	This perennial grass occurs in chaparral, coastal sage scrub, creosote bush scrub, and wetland/riparian habitats; blooms September-May; elevation 600-4,000 ft.	Absent. The planning area is situated below the lower elevational limit for this species.
Caper-fruited Tropicocarpum (<i>Tropicocarpum capparideum</i>)	CNPS 1B	Occurs in valley and foothill grassland habitats; blooms March-April; elevation up to 1,500 ft.	Unlikely. Grassland habitats of the planning area would be marginal, at best, for this species due to past and ongoing human disturbance. Moreover, populations of this species in the Fresno area are believed to be extirpated.

Table 3.4-2: Animal Species Listed as Threatened or Endangered Under the Federal or State Endangered Species Acts

Species	Status	Habitat	Occurrence in the Planning Area
Vernal Pool Fairy Shrimp (<i>Branchinecta lynchi</i>)	FT	Occurs in vernal pools, grass or mud-bottomed swales, and basalt depression pools.	Absent. Vernal pools are absent from the planning area.
Valley Elderberry Longhorn Beetle (VELB) (<i>Desmocerus californicus dimorphus</i>)	FT	Lives in mature elderberry shrubs of California's Central Valley and Sierra foothills.	Present. Suitable habitat for this species in the form of elderberry shrubs occurs within the planning area, particularly in the riparian areas associated with Collins Creek and the Kings River, and the CNDDDB lists a 1991 occurrence of VELB within the planning area along Collins Creek.
California Tiger Salamander (CTS) (<i>Ambystoma californiense</i>)	FT, CT	Found primarily in annual grasslands; requires vernal pools for breeding and rodent burrows for aestivation. May aestivate up to 1.3 miles away from breeding habitat.	Unlikely. Vernal pools and other suitable breeding ponds are absent from the planning area, and most grassland habitat of the site occurs within the agricultural mosaic on leveled land that was presumably once in cultivation. The few areas of grassland located outside of the agricultural mosaic are highly disturbed. Overall, the land uses and disturbance regimes of the planning area are not compatible with CTS life history and habitat requirements. The closest known occurrences of this species are located more than 4 miles to the northeast of the planning area in contiguous grassland with vernal pools.
Swainson's Hawk (<i>Buteo swainsoni</i>)	CT	This breeding-season migrant to California nests in mature trees in riparian areas and oak savannah, and occasionally in lone trees at the margins of agricultural fields. Requires adjacent foraging areas such as grasslands or alfalfa fields supporting rodent populations.	Possible. Agricultural fields and grasslands outside of urban Sanger provide suitable foraging habitat for this species, and mature trees in less developed areas offer suitable nesting habitat. The closest documented nesting occurrences of this species are located more than 10 miles from the planning area, however.
Western Yellow-billed Cuckoo (<i>Coccyzus americanus occidentalis</i>)	FC, CE	Occurs in valley foothill and desert riparian habitats in scattered locations in California. Requires extensive gallery riparian forests for nesting.	Unlikely. Riparian habitats associated with Collins Creek and the Kings River could theoretically be used for nesting; however, this species has not been observed in the area for over 100 years.
Least Bell's Vireo (<i>Vireo bellii pusillus</i>)	FE, CE	Breeding migrant to California; current breeding distribution extends from Santa Clara	Possible. Riparian habitats associated with Collins Creek and the Kings River are suitable for nesting

Species	Status	Habitat	Occurrence in the Planning Area
		County to the north and San Diego County to the south. Nests in early- to mid-successional riparian habitats.	by this species; however, this species has not been observed in the area for over 100 years.
Tricolored Blackbird (<i>Agelaius tricolor</i>)	CE	Nests colonially near fresh water in dense cattails or tules, or in thickets of willows or shrubs. Forages in grassland and cropland areas.	Possible. Tricolored blackbirds could potentially forage in agricultural lands of the planning area, and nest in riparian habitats associated with Collins Creek and the Kings River. The closest known occurrence of this species is approximately 4 miles northeast of the planning area.
Townsend's Big-eared Bat (<i>Corynorhinus townsendii</i>)	CCT, CSC	Found throughout California. Primarily a cave-dwelling species, but may also roost in tunnels, buildings, and other human-made structures.	Possible. This species could roost in bridges or buildings in less developed portions of the planning area, and forage over agricultural lands or riparian habitats. There are no documented occurrences of this species within 10 miles of the planning area.
San Joaquin Kit Fox (<i>Vulpes macrotis mutica</i>)	FE, CT	Found in desert alkali scrub and annual grasslands; may forage in adjacent agricultural habitats. Use underground dens for thermoregulation, cover, and reproduction. Dens are either self-dug or modified rodent burrows.	Unlikely. The CNDDDB lists two kit fox occurrences within 10 miles of the planning area, including one mapped generally to the center of Sanger in the 1980s. However, intensive land uses of the planning area and surrounding lands are generally not compatible with kit fox life history and habitat requirements.

**Table 3.4-3: Animal State Species of Special Concern or Fully Protected
Endangered Species Act**

Species	Status	Habitat	Occurrence in the Planning Area
Western Spadefoot (<i>Spea hammondi</i>)	CSC	Mainly occurs in grasslands of San Joaquin Valley. Vernal pools or other temporary wetlands are required for breeding. Aestivates in underground refugia such as rodent burrows, typically within 1,200 ft. of aquatic habitat.	Unlikely. Vernal pools and other suitable breeding ponds are absent from the planning area, and most grassland habitat of the site occurs within the agricultural mosaic on leveled land that was presumably once in cultivation. The few areas of grassland located outside of the agricultural mosaic are highly disturbed. Overall, the land uses and disturbance regimes of the planning area are not compatible with spadefoot life history and habitat requirements. The closest known occurrence of this species is located approximately 5 miles northeast of

Species	Status	Habitat	Occurrence in the Planning Area
			the planning area in contiguous grassland.
Western Pond Turtle (<i>Actinemys marmorata</i>)	CSC	Occurs in open, slow-moving water or ponds with rocks and logs for basking. Nesting occurs in open areas, on a variety of soil types, and up to ¼ mile away from water.	Likely. This species may occur in natural or constructed aquatic environments within the planning area.
Northern Harrier (<i>Circus cyaneus</i>)	CSC	Frequents meadows, grasslands, open rangelands, freshwater emergent wetlands. Nests on ground, generally in wet areas, although grassland, pasture, and cultivated fields may be used.	Possible. This species could forage in agricultural fields and grasslands of the planning area. The planning area does not contain wetlands or marshes offering high-quality nest habitat for this species; however, grasslands and agricultural fields of the planning area could theoretically be used.
White-Tailed Kite (<i>Elanus leucurus</i>)	CFP	Occurs in savanna, open woodlands, marshes, desert grassland, and cultivated fields. Prefer lightly grazed or ungrazed fields for foraging.	Possible. Agricultural fields and grasslands outside of urban Sanger provide suitable foraging habitat for this species, and mature trees in less developed areas offer suitable nesting habitat.
Burrowing Owl (<i>Athene cunicularia</i>)	CSC	Frequents open, dry annual or perennial grasslands, deserts, and scrublands characterized by low growing vegetation. Dependent upon burrowing mammals, most notably the California ground squirrel, for nest burrows.	Possible. Burrowing owls could theoretically nest and roost in grassland and ruderal habitats of the planning area in which California ground squirrel burrow complexes are present, and forage in these habitats or adjacent agricultural lands. However, all habitats of the planning area are marginal, at best, for this species due to past and ongoing human disturbance. There are no known occurrences of burrowing owl in the vicinity of the planning area; the closest occurrence in the CNDDDB is nearly 6 miles northeast of the planning area in contiguous grassland.
Long-eared Owl (<i>Asio otus</i>)	CSC	Frequents riparian woodlands and forests of California.	Possible. Possible nesting and roosting habitat is present in riparian trees associated with Collins Creek and the Kings River.
Loggerhead Shrike (<i>Lanius ludovicianus</i>)	CSC	Frequents open habitats with sparse shrubs and trees, other suitable perches, bare ground, and low herbaceous cover. Nests in riparian areas, desert scrub, and agricultural hedgerows.	Possible. Less developed portions of the planning area provide potential foraging and nesting habitat for this species.

Species	Status	Habitat	Occurrence in the Planning Area
Pallid Bat (<i>Antrozous pallidus</i>)	CSC	Found in grasslands, chaparral, and woodlands, where it feeds on ground- and vegetation-dwelling arthropods, and occasionally take insects in flight. Prefers to roost in rock crevices, but may also use tree cavities, caves, bridges, and buildings.	Possible. Grasslands and riparian habitats of the planning area are suitable for foraging by this species, and potential roosting may occur in hollows of large trees, bridges, and buildings.
Western Mastiff Bat (<i>Eumops perotis</i>)	CSC	Found in open, arid to semi-arid habitats, where it feeds on insects in flight. Roosts most often in crevices in cliff faces, but may also use high buildings, bridges, and tunnels.	Possible. This species may forage over open habitats of the planning area, but suitable roosting habitat is absent.
American Badger (<i>Taxidea taxus</i>)	CSC	Uncommon resident statewide; most abundant in drier open stages of most shrub, forest, and herbaceous habitats.	Possible. Badgers could potentially den and forage in rural grassland and ruderal habitats of the planning area. The closest occurrence of this species was documented approximately 7 miles to the northwest in 1987, in what was at that time the residential outskirts of Clovis.

Legend for Tables 3.4-1 through 3.4-3

Occurrence Terminology:

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

Status Codes:

FE	Federally Endangered	CE	California Endangered
FT	Federally Threatened	CT	California Threatened
FPE	Federally Endangered (Proposed)	CCT	California Threatened (Candidate)
FPT	Federally Threatened (Proposed)	CFP	California Fully Protected
FC	Federal Candidate	CSC	California Species of Special Concern

CNPS Listing:

1A	Plants presumed extinct in California.
1B	Plants rare, threatened, or endangered in California and elsewhere.
2	Plants rare, threatened, or endangered in California, but more common elsewhere.

Special status species occurrences within 3.1 miles (5 kilometers) of the planning area are depicted in Figure 3.4-2, while San Joaquin kit fox (*Vulpes macrotis mutica*) occurrences within 10 miles of the planning area are depicted in Figure 3.4-3.

Endangered, Threatened, or Special Status Plant and Animal Species Meriting Further Discussion

Valley Elderberry Longhorn Beetle

Ecology of the species. The USFWS listed the valley elderberry longhorn beetle (VELB) (*Desmocerus californicus dimorphus*) as a threatened species under provisions of the Federal Endangered Species Act in 1980 after alteration of the species' habitat reduced the known populations of the beetle to a few areas in the Central Valley. Based on the apparent recovery of the VELB following its listing, the USFWS issued a proposal in October 2012 to remove it from the Federal List of Endangered and Threatened Wildlife (50 CFR Part 17). However, in September 2014, the proposed rule was withdrawn based on a determination by the USFWS that the rule did not analyze the best available information. Current scientific understanding indicates that the VELB range is not as extensive as was represented in the proposed rule. The USFWS now considers the range of the VELB to extend from Tehama County on the north to Fresno County on the south; previously, the range was thought to extend as far south as Kern County.

Figure 3.4-2: Special Status Species in the Planning Area

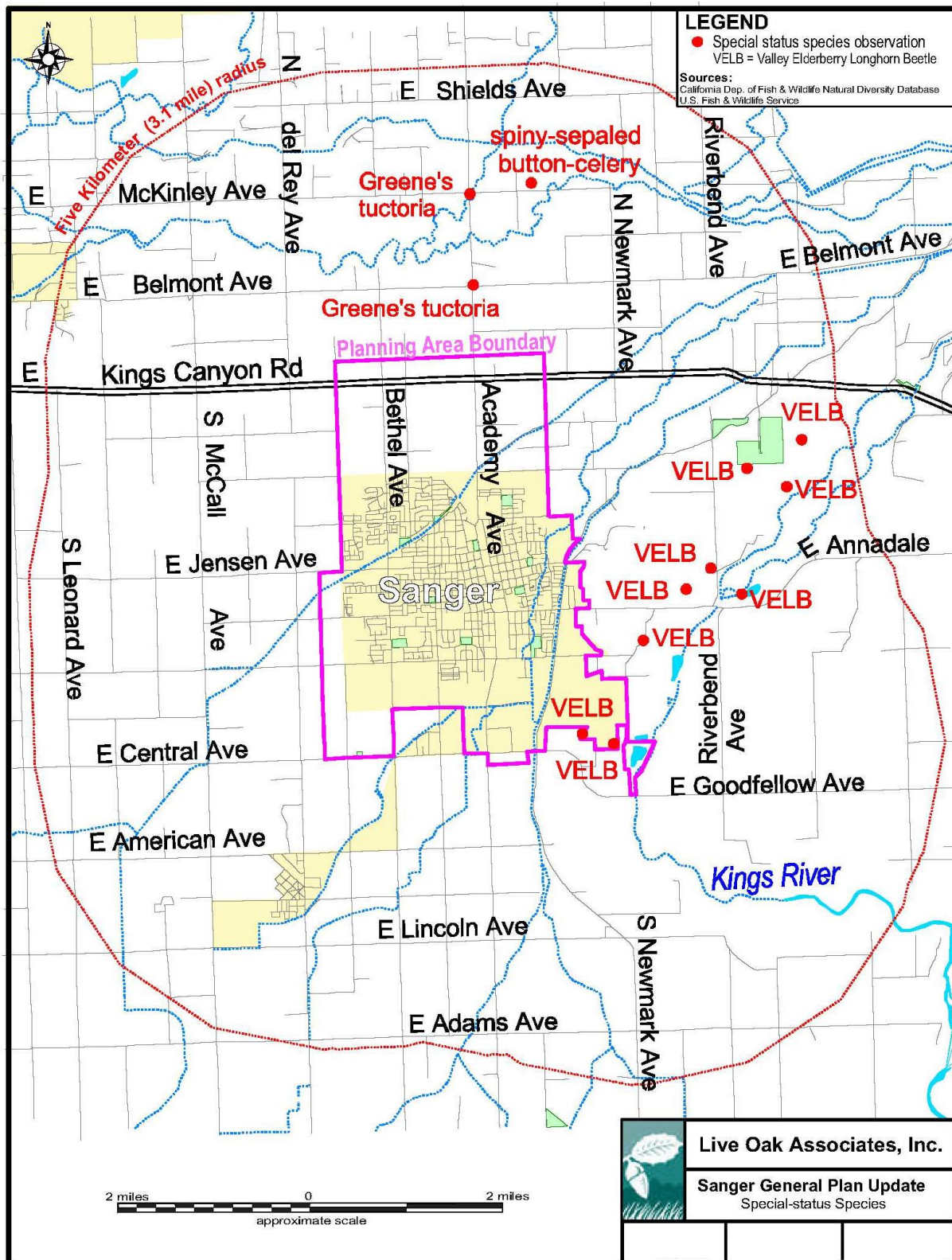
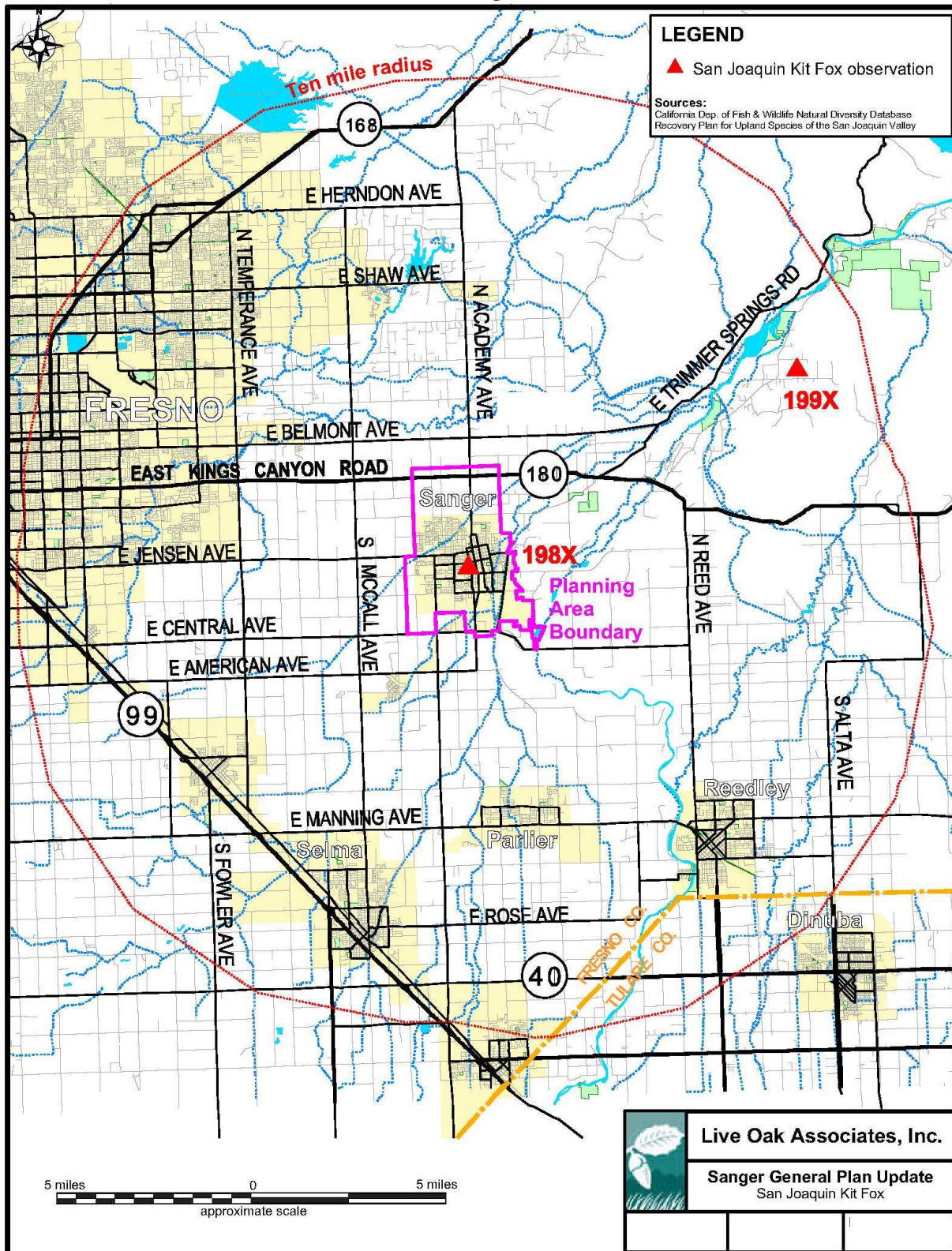


Figure 3.4-3: San Joaquin Kit Fox Occurrences in the Planning Area



The VELB is generally found along waterways and in floodplains that support blue elderberry shrubs, as both larvae and adults feed only on this plant. After mating in June, female VELB lay their eggs in crevices of elderberry bark. Upon hatching, the larvae tunnel into the stems of the shrub, where they spend 1-2 years eating the interior wood. The larvae metamorphose into adults in the springtime, exiting the elderberry shrubs through holes chewed through the wood. Because the exit holes persist, they can be used as an indicator of past and/or present VELB usage. Although VELB are not known to be strong fliers, they may fly up to two miles when intact elderberry habitat is available. The dispersal capabilities of the VELB are little known; however, in the Central Valley it is likely they follow drainage courses where elderberries regularly grow.

Potential to occur onsite. At the time of the field survey, numerous elderberry shrubs were observed along the banks of Collins Creek and the Kings River; on the levees between the retired basins in the City-owned natural area; and south of Annadale Avenue where it crosses the eastern boundary of the planning area into a riparian floodplain. Because a comprehensive elderberry survey was not conducted, it is possible that elderberry shrubs occur in other portions of the planning area, as well. The CNDDB lists two VELB occurrences near the southeastern boundary of the planning area; the first was recorded within the planning area in 1991 in riparian habitat associated with Collins Creek, and the second was recorded approximately 130 feet outside of the planning area in 1998, along an access road between agricultural fields. Seven additional VELB occurrences were recorded within 3 miles of the planning area, all in riparian habitat associated with the Kings River and Collins Creek. Most of the occurrences were observations of VELB exit holes, but one occurrence was an observation of a female VELB laying eggs on a host plant. Based on the available evidence, VELB are likely present in elderberry shrubs of the planning area.

California Tiger Salamander and Western Spadefoot

Ecology of the species. The California tiger salamander (CTS) (*Ambystoma californiense*) is listed as state and federally threatened. The CTS occurs in areas within Madera and Fresno Counties where vernal pool complexes are located within extensive grassland habitats. Vernal pools that hold water for 3-4 months of the winter and spring provide likely breeding habitat for the CTS. The CTS larvae mature in these vernal pools as they begin to dry in April and May. The young adult CTS leave the drying pools to find the burrows of California ground squirrels and pocket gophers in which to aestivate (oversummer). While CTS may wander a mile or more from the biological evaluation

breeding habitat in search of aestivation habitat, studies of CTS aestivation indicate that 95% of all postbreeding adult salamanders aestivate within 0.4 mile of breeding habitat.⁸

The western spadefoot (*Spea hammondi*) was historically found in California throughout the Central Valley, in the Coast Ranges and coastal lowlands from San Francisco Bay to Mexico. This species has been extirpated from many historic locations due to loss of the habitat it requires—vernal pools associated with chaparral, short grass plains, and coastal sage scrub—and is now listed as a California Species of Special Concern.

The western spadefoot typically breeds between January and May in seasonal ponds occurring in chaparral, short grass plains or coastal sage scrub. For the larvae to survive, development must be complete before the ponds dry. Mostly active at night, the spadefoot has adapted to digging in sandy soils and finding refugia in small mammal burrows, creating aestivation habitat that protects it from hot, arid daytime conditions. This species may be inactive for periods of eight to nine months, and may not reach maturity for two years. Little is known about the distance that the western spadefoot ranges from aquatic habitat for dispersal and aestivation, but current research suggests the species typically remains within 1200 feet of aquatic habitat.⁹

Potential to occur onsite. The planning area encompasses a mosaic of agricultural, urban, and rural residential land uses generally not compatible with CTS or western spadefoot life history and habitat requirements. However, these species could theoretically occur within the planning area if suitable breeding and aestivation habitat were present. Rodent burrows of the planning area offer potential aestivation habitat for the CTS and western spadefoot; these were most frequently observed during the field survey in ruderal areas, on the banks of canals and basins, and in grasslands used as pastures. In order for CTS or western spadefoot to utilize rodent burrows of the planning area for aestivation, they would have to be breeding nearby, and would need relatively unimpeded access to the planning area.

As described, vernal pools are absent from the planning area. A number of artificial ponds and basins are present, but none appear to have an inundation regime that would support

⁸ Trenham, P. C., and H. B. Shaffer. 2005. Amphibian upland habitat use and its consequences for population viability. *Ecol Appl* 15: 1158-1168.

⁹ Semlitsch, R.D. and J. R. Brodie. 2003. Biological criteria for buffer zones around wetlands and riparian habitats for amphibians and reptiles. *Conservation Biology* 17(5):1219-1228.

breeding by the CTS or western spadefoot, and those ponds that are permanently inundated are expected to be unsuitable due to the presence of bullfrogs and other predators. Lands surrounding the planning area within the 1.3-mile maximum distance that CTS have been documented from breeding habitat comprise a mixture of intensive agricultural and rural residential uses, and do not appear to include any remnant grassland habitats within which CTS or spadefoot would be likely to have persisted. Although these lands were not surveyed, it is anticipated that any ponds or basins occurring within would be functionally similar to those of the planning area and therefore unsuitable as breeding habitat for CTS and spadefoot. In the unlikely event that individuals of either of these species were present in a basin or pond within 1.3 miles of the planning area, they would have to cross a number of barriers in order to access potential aestivation habitat in the planning area, including agricultural fields, orchards, vineyards, roads, canals, and/or the Kings River. Given the absence of suitable breeding habitat from the planning area, the presumed absence of breeding habitat and abundance of landscape barriers on surrounding lands, and the general unsuitability of agricultural and residential uses for CTS and spadefoot, these species are highly unlikely to occur within the planning area.

Western Pond Turtle

Ecology of the species. The western pond turtle (*Actinemys marmorata*) is the only native aquatic, freshwater turtle in California and normally associates with permanent or nearly permanent aquatic habitats, including streams, lakes, and ponds. Historically, this species occurred in Pacific Coast drainages from Washington to Mexico. This species occurs in aquatic habitats with 1) basking sites such as rocks and logs, 2) dense stands of submergent or emergent vegetation, 3) abundant aquatic invertebrate resources, 4) suitable nearby nesting sites, and 5) a lack of native and exotic predators.^{10,11} This species can move along streams up to 3.1 miles (5 kilometers) in a short period of time, and they can tolerate at least seven days without water.

¹⁰ Jennings, M. R. and M. P. Hayes. 1994. Amphibian and Reptile Species of Special Concern in California. California Department of Fish and Game, Final Report.

¹¹ Bury, R. B. 1972. Habits and home range of the Pacific pond turtle, *Clemmys marmorata* in a stream community. Ph.D. Thesis, Univ. of California, Berkeley.

Potential to occur onsite. The Kings River and various artificial ponds of the planning area offer suitable habitat for this species, and the western pond turtle would be expected to occur in these locations regularly or from time to time.^{12,13}

Swainson's Hawk

Ecology of the species. The Swainson's hawk (*Buteo swainsoni*) is a large, long-winged, broad-tailed hawk with a high degree of mate and territorial fidelity. It is a breeding season resident of California, arriving at nesting sites in March or April. The young hatch sometime between March and July and fledge 4 to 6 weeks later. By October, most birds have left for wintering grounds in South America. In the Central Valley, Swainson's hawks typically nest in large trees along riparian systems, but may also nest in oak groves, lone trees, trees in agricultural fields, and mature roadside trees. Nest sites are typically located adjacent to suitable foraging habitat. Swainson's hawks forage in large, open fields with abundant prey, including grasslands or lightly grazed pastures, alfalfa and other hay crops, and certain grain and row croplands. Their designation as a California Threatened species is based on population decline due in part to loss of foraging habitat to urban development.¹⁴

Potential to occur onsite. As reported in Table 3.4-2, the CNDDB does not list any nesting occurrences of the Swainson's hawk in the vicinity of the planning area; the nearest such occurrence is over 10 miles away. However, Swainson's hawks are becoming increasingly common within the Central Valley and have been observed in grassland and agricultural habitats adjacent to the Fresno/Clovis Metropolitan Area numerous times in recent years by LOA biologists. It is therefore possible that Swainson's hawks use, or will at some point in the future use, mature trees in rural portions of the planning area for nesting, and agricultural fields and grassland habitats of the planning area for foraging.

Burrowing Owl

Ecology of the species. The burrowing owl (*Athene cunicularia*) is primarily a grassland species, but may also occur in open shrub lands, grazed pastures, and occasionally

¹² Jennings, M. R. and M. P. Hayes. 1994. Amphibian and Reptile Species of Special Concern in California. California Department of Fish and Game, Final Report.

¹³ Bury, R. B. 1972. Habits and home range of the Pacific pond turtle, *Clemmys marmorata* in a stream community. Ph.D. Thesis, Univ. of California, Berkeley.

¹⁴ California Department of Fish and Game (CDFG). 1994. Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (*Buteo swainsoni*) in the Central Valley of California. November 8, 1994. Nongame Bird and Mammal Section Report No. 94.18.

agricultural lands. The primary indicators of suitable habitat appear to be burrows for roosting and nesting and relatively short vegetation, with only sparse areas of shrubs or taller vegetation. Burrowing owls roost and nest in the burrows of California ground squirrels, and occasionally also badger, coyote, or fox. The burrowing owl diet includes a broad array of arthropods, small rodents, birds, reptiles, and amphibians. The burrowing owl was designated a California Species of Special Concern in 1978 following long-term population decline, primarily due to loss of habitat to development and agricultural practices.

Potential to occur onsite. Burrowing owls could potentially occur in rural portions of the planning area, nesting and roosting in grassland or ruderal habitats, and foraging in agricultural fields. However, the mosaic of intensive agricultural and residential uses dominating the rural outskirts of Sanger are generally not favorable for the burrowing owl, and the CNDDDB does not list any burrowing owl occurrences in the vicinity of the planning area.

San Joaquin Kit Fox

Ecology of the species. By the time the San Joaquin kit fox (SJKF) (*Vulpes macrotis mutica*) was listed as federally endangered in 1967 and California threatened in 1971, it had been extirpated from much of its historic range. The smallest North American member of the dog family (*Canidae*), the kit fox historically occupied the dry plains of the San Joaquin Valley, from San Joaquin County to southern Kern County.¹⁵ Local surveys, research projects, and incidental sightings indicate that kit fox currently occupy available habitat on the San Joaquin Valley floor and in the surrounding foothills. Core SJKF populations are located in the natural lands of western Kern County, the Carrizo Plain Natural Area in San Luis Obispo County, and the Ciervo-Panoche Natural Area in western Fresno and eastern San Benito Counties.¹⁶ A number of satellite populations are described for the San Joaquin Valley floor, including populations in western Merced and southwestern Fresno, Kings, and Tulare Counties; however, most such populations are isolated and/or declining.¹⁷

¹⁵ Grinnell, J., J.S. Dixon and J.M. Linsdale. 1937. Fur-bearing mammals of California. Vol. 2. Univ. California Press, Berkeley.

¹⁶ U.S. Fish and Wildlife Service. 1998. Recovery Plan for Upland Species of the San Joaquin Valley, California. Region 1, Portland, Oregon.

¹⁷ U.S. Fish and Wildlife Service. 2010. San Joaquin Kit Fox (*Vulpes macrotis mutica*) 5-year Review: Summary and Evaluation. Sacramento Fish and Wildlife Office, Sacramento, CA.

The SJKF prefers habitats of open or low vegetation with loose soils. In the southern and central portion of the Central Valley, kit fox are found in valley sink scrub, valley saltbrush scrub, upper Sonoran subshrub scrub, and annual grassland. Kit fox may also be found in grazed grasslands, urban settings, and in areas adjacent to tilled or fallow fields.¹⁸ They require underground dens to raise pups, regulate body temperature, and avoid predators and other adverse environmental conditions.¹⁹ In the central portion of their range, they usually occupy burrows excavated by small mammals such as California ground squirrels. The SJKF is primarily carnivorous, feeding on black-tailed hares, desert cottontails, rodents, insects, reptiles, and some birds.

Potential to occur onsite. Kit fox have almost never been documented in the vicinity of Sanger. The CNDDDB lists two occurrences of SJKF within ten miles of the planning area, as demonstrated in Figure 3.4-3. One was mapped generally to Sanger in the 1980s, and the other was mapped approximately eight miles northeast of the planning area, on agricultural lands near Piedra, in the early 1990s. Neither occurrence record contains information as to the habitat in which the observation was made, identifying characteristics of the animal(s) observed, credentials of the individual making the observation, or even the year of the observation. The planning area is located more than 50 miles from the nearest SJKF core population in the Ciervo-Panoche region, and 40-50 miles from the nearest extant satellite populations in southwestern Fresno, Kings, and Tulare Counties. Finally, as discussed, the planning area encompasses and is surrounded by a mosaic of agricultural and developed lands generally not suitable for the SJKF. For these reasons, the kit fox is considered unlikely to occur within the planning area.

Sensitive Habitats

Sensitive habitats include those that are of limited distribution, distinguished by significant biological diversity, home to special status plant and animal species, or of importance in maintaining water quality or sustaining flows. Examples of sensitive habitats in the vicinity of the planning area would include vernal pools and various types of riparian forest.

¹⁸ U.S. Fish and Wildlife Service. 1998. Recovery Plan for Upland Species of the San Joaquin Valley, California. Region 1, Portland, Oregon.

¹⁹ Golightly, R. T. and R. D. Ohmart. 1984. Water economy of two desert canids: coyote and kit fox. *Journal of Mammalogy* 65:51–58.

The planning area supports several areas of riparian woodland associated with the Kings River and Collins Creek. In addition to being considered a sensitive habitat, riparian areas are also recognized by the California Department of Fish and Wildlife (CDFW) as having special value for a diversity of native flora and fauna. Riparian habitat, once extensive throughout the San Joaquin Valley, has been eliminated throughout much of its former range and is now relatively uncommon.

Wildlife Movement Corridors

Many terrestrial animals need more than one biotic habitat in order to perform all of their biological activities. With increasing encroachment of humans on wildlife habitats, it has become important to establish and maintain linkages, or movement corridors, for animals to be able to access locations containing different biotic resources that are essential to maintaining their life cycles. Terrestrial animals use ridges, canyons, riparian areas, and open spaces to travel between their required habitats.

The importance of an area as a “movement corridor” depends on the species in question and its consistent use patterns. Animal movements generally can be divided into three major behavioral categories:

- Movements within a home range or territory;
- Movements during migration; and
- Movements during dispersal.

While no detailed study of animal movements has been conducted for the planning area, knowledge of the site, its habitats, and the ecology of the species potentially occurring onsite permits reasonable predictions about the types of movements occurring in the region and whether or not development of the planning area would constitute a significant impact to animal movements.

The planning area contains portions of the Kings River, Collins Creek, and riparian woodland habitat associated with these waterways. Portions of Collins Creek within the planning area have been realigned and cleared of riparian vegetation, which has resulted in a disrupted riparian corridor not conducive to use as a travel route by most wildlife species. However, the Kings River functions as an important wildlife movement corridor. A number of wildlife species are expected to make use of this corridor for regular and seasonal movements. For example, elevational migrant birds travel along the Kings River corridor between breeding grounds in the Sierra Nevada and wintering grounds in the

Central Valley. North-south migrant birds may use the river corridor as a resting and/or feeding point during migration. The valley elderberry longhorn beetle has been documented along the Kings River riparian corridor, where it carries out its life cycle in elderberry shrubs and likely disperses through riparian habitat associated with the river and its tributaries.

Regulatory Setting

Federal, State and Local Regulations

Federal Endangered Species Act

The federal Endangered Species Act (ESA) protects fish and wildlife species and their habitats that have been identified by the National Marine Fisheries Service (NMFS) or U.S. Fish and Wildlife Service (USFWS) as threatened or endangered. Endangered refers to species, subspecies, or distinct population segments (DPSs) that are in danger of extinction through all or a significant portion of their range. Threatened refers to species, subspecies, or DPSs that are likely to become endangered in the near future.

ESA is administered by USFWS and NMFS. In general, NMFS is responsible for protection of listed marine species and anadromous fish, and USFWS is responsible for other listed species. Implementation of any project that may result in take of any species protected by ESA would be subject to approval and oversight by NMFS and USFWS, as relevant, and subject to the terms and conditions of any biological opinion (BO) from that agency. Compliance with the terms and conditions of the BOs would further ensure that no implemented project would jeopardize the continued existence of any threatened or endangered species. Relevant ESA provisions are summarized below.

Section 9

ESA Prohibitions ESA Section 9 prohibits the take of any fish or wildlife species listed under ESA as endangered. Take of threatened species also is prohibited under Section 9, unless otherwise authorized by federal regulations.¹ Take, as defined by ESA, means “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” Harm is defined as “any act that kills or injures the species, including significant habitat modification.” In addition, Section 9 prohibits removing, digging up, cutting, and maliciously damaging or destroying federally listed plants on sites under federal jurisdiction.

Section 7

ESA Authorization Process for Federal Actions ESA Section 7 provides a means for authorizing take of threatened and endangered species by federal agencies. Under Section 7, the federal agency conducting, funding, or permitting an action

Federal Migratory Bird Treaty Act of 1918

The Migratory Bird Treaty Act (16 U.S.C. 704) makes it unlawful to “take” (kill, harm, harass, etc.) any migratory bird listed in 50 Code of Federal Regulations 10, including their nests, eggs, or products. Migratory birds include geese, ducks, shorebirds, raptors, songbirds, and many other species.

Federal Clean Water Act Section 404

Section 404 of the Federal Clean Water Act (CWA) regulates the discharge of dredged material, placement of fill material, or excavation within waters of the United States and authorizes the Secretary of the U.S. Army, through the Chief of Engineers, to issue permits for such actions. “Waters of the United States” are defined by the CEQ as “rivers, creeks, streams, and lakes extending to their headwaters and any associated wetlands.” Wetlands are defined by the CEQ as “areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions.” The permit review process entails an assessment of potential adverse effects on U.S. Army Corps of Engineers (USACE) jurisdictional waters of the United States and wetlands. Within the Planning Area, the Kings River and Collins Creek are known Waters of the U.S.

Federal Clean Water Act Section 401

The mission of the California Regional Water Quality Control Board (RWQCB) is to develop and enforce water quality objectives and implement plans that will best protect the beneficial uses of the State’s waters, recognizing local differences in climate, topography, geology, and hydrology. Section 401 of the CWA requires that:

“any applicant for a Federal permit for activities that involve a discharge to waters of the State, shall provide the Federal permitting agency a certification from the State in which the discharge is proposed that states that the discharge will comply with the applicable provisions under the Federal Clean Water Act.”

Before the USACE will issue a Section 404 permit, the Project Applicant must apply for and receive a Section 401 water quality certification from the RWQCB. A complete application for 401 Certification will include a detailed Water Quality Management Plan (WQMP) that addresses the key water quality features of the Project to ensure the integrity of water quality in the area during and after construction.

Under separate authorities granted by state law (i.e. the Porter-Cologne Water Quality Control Act), a RWQCB may choose to regulate discharges of dredge or fill materials by issuing or waiving (with or without conditions) Waste Discharge Requirements (WDRs), a type of state discharge permit, instead of taking a water quality certification action. Processing of a WDR is similar to that of a Section 401 certification; however, the RWQCB has slightly more discretion to add conditions to a project under the Porter-Cologne Water Quality Control Act than under the federal CWA.

California Endangered Species Act

The California Endangered Species Act (CESA) generally parallels the main provisions of the FESA and is administered by the CDFW. Its intent is to prohibit take and protect state-listed endangered and threatened species of fish, wildlife, and plants. Unlike its federal counterpart, CESA also applies the take prohibitions to species petitioned for listing (state candidates). Candidate species may be afforded temporary protection as though they were already listed as threatened or endangered at the discretion of the Fish and Game Commission. Unlike the FESA, CESA does not include listing provisions for invertebrate species. Under certain conditions, CESA has provisions for take through a 2081 permit or Memorandum of Understanding. In addition, some sensitive mammals and birds are protected by the State as Fully Protected Species. California Species of Special Concern are species designated as vulnerable to extinction due to declining population levels, limited ranges, and/or continuing threats. This list is primarily a working document for the CDFW's California Natural Diversity Data Base (CNDDDB) project which maintains a database of known and recorded occurrences of sensitive species. Informally listed taxa are not protected per se, but warrant consideration in the preparation of biological resources assessments.

State of California—Section 1602 of the California Fish and Game Code

Streambeds and other drainages that occur within the Planning Area are subject to regulation by the CDFG. The CDFG considers most drainages to be “streambeds” unless it can be demonstrated otherwise. A stream is defined as a body of water that flows at

least periodically or intermittently through a bed or channel with banks and supports fish or other aquatic life. This includes watercourses having a surface or sub-surface flow that supports, or has supported, riparian vegetation. CDFG jurisdiction typically extends to the edge of the riparian canopy, and therefore, usually encompasses a larger area than Corps jurisdiction.

State of California – Porter Cologne Act

The State Water Quality Control Board has ruled after the U.S. Supreme Court decisions to reduce the federal jurisdiction over Waters of the U.S., that the State would require that a Waste Discharge Report be required for any discharge of waste, including fill, into “waters of the state”, other than those projects requiring a federal Section 404 permit and the State’s Section 401 Certification of the federal permit, under the authority of the Porter Cologne Act. This essentially extends the State’s assumption of the NPDES program, by modifying the definition of waste. The Regional Water Quality Control Board is responsible for issuing Waste Discharge Permits.

State of California—Section 1602 of the California Fish and Game Code

Section 1602 of the California Fish and Gem Code requires any entity (e.g., person, state or local government agency, or public utility) which proposes a project that will substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waster, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake, to first notify the California Department of Fish and Wildlife (CDFW) of the project. The CDFW will review the project as it affects streambed habitats within the project area. The CDFW may then place conditions on the Section 1602 clearance to avoid, minimize, and mitigate the potentially significant adverse effects within CDFW jurisdictional limits.

State of California—Sections 3503, 3503.5, and 3800 of the California Fish and Game Code

These sections of the Fish and Game Code prohibit the “take or possession of birds, their nests, or eggs.” Disturbance that causes nest abandonment and/or loss of reproductive effort (killing or abandonment of eggs or young) is considered a “take.” Such a take would also violate Federal law protecting migratory birds.

Incidental Take Permits (*i.e.*, Management Agreements) are required from the CDFW for projects that may result in the incidental take of species listed by the State of California as

endangered, threatened, or candidate species. The permits require that impacts to protected species be minimized to the extent possible and mitigated to a level of insignificance.

State of California—2800 et seq. of the California Fish and Game Code- Natural Community Conservation Planning Act

This section of the Fish and Game Code outlines the methodology taken to establish Natural Community Conservation Plans (NCCP); however, there are no NCCP's in effect for the Planning Area.

California Native Plant Society

The California Native Plant Society (CNPS) is a private plant conservation organization dedicated to the monitoring and protection of sensitive species in California. CNPS has compiled an inventory comprising information focusing on geographic distribution and qualitative characterization of Rare, Threatened, or Endangered vascular plant species of California. Sensitive species that occur or potentially could occur within the Planning Area are based on one or more of the following: (1) the direct observation of the species during one of the biological surveys; (2) a record reported in the CNDDDB; and (3) the project Planning Area is within known distribution of a species and contains appropriate habitat.

Fresno County General Plan Open Space and Conservation Element

The Open Space and Conservation Element of the Fresno County General Plan includes goals concerning the conservation of wetlands and riparian areas, fish and wildlife habitats, and valuable vegetation resources. These goals are supported by numerous policies and implementation programs. Relevant policies are summarized as follows: 1) the County shall support the “no-net-loss” wetlands policies of the USACE, USFWS, and CDFW, and shall require new development to fully mitigate the loss of regulated wetlands, 2) the County shall require new development to be designed in such a manner that pollutants and siltation do not significantly degrade the area, value, or function of wetlands, 3) the County shall require new developments to preserve and enhance native riparian habitat unless public safety concerns require removal of habitat, and shall require riparian protection zones around natural watercourses, 4) the County shall identify and conserve remaining upland habitat areas adjacent to wetland and riparian areas that are critically important to wildlife species associated with those wetland and riparian areas, 5) where practicable, the County shall support efforts to avoid

the “net” loss of important wildlife habitat, and should preserve in a natural state those areas defined as habitats for rare and endangered animal and plant species, 6) if loss of important habitat for special status species or other valuable wildlife resources cannot be avoided, the County shall impose adequate mitigation, 7) the County shall require adequate buffer zones between construction activities and significant wildlife resources, 8) the County shall promote methods of pest control on croplands bordering sensitive habitats that do not place special status species at risk, e.g. SJKF, 9) the County shall support the preservation of significant areas of natural vegetation, e.g. oak woodlands, riparian areas, and vernal pools, and 10) the County shall require that new developments preserve natural woodlands to the maximum extent possible.

Thresholds of Significance

The thresholds of significance for this section are established by the CEQA Checklist Item. In accordance with Appendix G of the CEQA Guidelines, the proposed Project would have a significant environmental impact if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the 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, or regulations, or by the California Department of Fish and Game or the U.S. 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 site;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;

- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Impacts and Mitigation Measures

Impact 3.4-1: *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 the U.S. Fish and Wildlife Service?*

Less than Significant Impact with Mitigation Incorporation. The Sanger GPU and North Academy Corridor Master Plan provide a framework for sustainable growth within a 6,900-acre planning area that, at present, contains extensive agricultural and other undeveloped land. It is assumed that, by 2035, some or all these lands will be converted to residential, commercial, and industrial uses to accommodate full buildout. As outlined in Tables 3.4-1 and 3.4-2, certain regionally occurring special status species have the potential to occur in the planning area. The City has developed goals, objectives and action plans regarding the protection of special status plant and animal species as follows:

Sanger 2035 General Plan Update – Conservation, Open Space, Parks and Recreation Element

Goals, Objectives and Action Plans

Issue Five: Conservation

Goal: II. Protect endangered plant and animal species and their habitat.

Objective:

1. The Kings River and adjacent lands are recognized as wildlife habitat. The Land Use map designates lands along the Kings River to remain primarily undeveloped, in open space.

Action Plans:

- a. The Land Use Map designates land along the Kings River as “Open Space”.
- b. The City of Sanger should actively coordinate with the County of Fresno to ensure that the Kings River environs are protected against incompatible uses.

Objective:

2. Prevent new development from impacting endangered plant and animal species.

Action Plan:

- a. The City will refer projects that may have an impact on endangered plant and animal species to appropriate State and Federal agencies, as required by law, such as the California Department of Fish and Wildlife, and the U.S. Fish and Wildlife Service. Projects that may impact wetlands or “waters of the United States” will be referred to the U.S. Army Corps of Engineers. The Kings River channel is legally considered to be “Waters of the United States”.

Even with implementation of these goals, objectives and action plans, significant impacts to these species could result from direct or indirect impacts as the planning area is built-out. Mitigation measures BIO-1 through BIO-23 are included to reduce any impacts to these protected species to *less than significant*.

Mitigation Measures:Stanford’s Arrowhead

Mitigation measures BIO-1, BIO-2 and BIO-3 shall be required for projects in either the urban or rural zone (as depicted on Figure 3.4-1) that will directly impact drainages and canals, save cement-lined canals.

BIO-1 (Preconstruction Surveys): Prior to construction activities in drainages and canals, a qualified biologist shall conduct a preconstruction survey for the Sanford’s arrowhead during the May-October blooming period for this species.

BIO-2 (Avoidance): If a Sanford’s arrowhead population is identified within the construction zone, it shall be avoided by a minimum distance of 50 feet if possible. The avoidance area shall be identified on the ground with construction fencing, brightly-colored flagging, or other easily visible means.

BIO-3 (Salvage): If it is not possible to avoid populations of Sanford’s arrowhead identified within construction zones, a qualified biologist shall remove all individual plants to be impacted and relocate them to a suitable portion of the drainage/canal that is nearby but will not be impacted.

Western Pond Turtle

Mitigation Measures BIO-4 through BIO-7 shall be required for projects that will directly impact inundated drainages or canals (as depicted in Figure 3.4-1) in either the urban or rural zone, inundated ponds and basins (Artificial Ponds/Basins in Figure 3.4-1) within the rural zone, and/or grassland habitats (see “Non-native Grassland in Figure 3.4-1) within 400 feet of creeks, canals, ponds, and basins in the rural zone.

BIO-4 (Minimization): Construction-related disturbance of grassland habitats within 400 feet of creeks, canals, ponds, and basins in the rural zone should occur between November 1 and May 31, or outside of the annual time frame in which gravid females in the project vicinity typically seek out nest sites and lay eggs, eggs incubate, and hatchlings emerge.

BIO-5 (Preconstruction Surveys): If construction-related disturbance of grassland habitats within 400 feet of creeks, canals, ponds, and basins in the rural zone must occur between June 1 and October 31, a qualified biologist shall conduct preconstruction surveys for western pond turtle nests within 30 days prior to the start of construction. The presence of turtle eggshells and/or disturbed earth would indicate the potential presence of a nest. Such areas shall be carefully hand-excavated by the biologist to determine whether a nest is present.

Preconstruction surveys for western pond turtles must also be conducted within 24 hours prior to the start of construction activities in inundated drainages or canals in either the urban or rural zone, and in inundated ponds or basins in the rural zone. These surveys shall encompass all aquatic habitat and surrounding uplands within 100 feet that are proposed for impact. Any turtles that are discovered during the preconstruction surveys shall be relocated to similar habitat outside of the impact area.

BIO-6 (Avoidance of Active Nests): If the preconstruction surveys for western pond turtle nests identify one or more active nests, a 50-foot buffer shall be established around the nest(s). No construction personnel or equipment shall enter the avoidance area until after a qualified biologist has determined that the hatchlings have emerged.

BIO-7 (Relocation of Turtle Eggs/Hatchlings): If it is not possible to avoid the active pond turtle nest(s), eggs and/or hatchlings shall be relocated to nearby suitable habitat in consultation with a qualified herpetologist.

Swainson's Hawk

The following mitigation measures shall be implemented for future projects in the planning area's rural zone, as depicted in Figure 3.4-1.

BIO-8 (Temporal Avoidance): In order to avoid impacts to nesting Swainson's hawks, construction activities in the rural zone shall occur, where possible, outside the nesting season, typically defined as March 1-September 15.

BIO-9 (Preconstruction Surveys): If construction activities in the rural zone must occur between March 1 and September 15, a qualified biologist shall conduct preconstruction nest surveys for Swainson's hawks on and within ½ mile of the work area within 30 days prior to the start of construction. The survey shall consist of inspecting all accessible, suitable trees of the survey area for the presence of nests and hawks.

BIO-10 (Avoidance of Active Nests): Should any active Swainson's hawk nests be discovered within the survey area, an appropriate disturbance-free buffer shall be established based on local conditions and agency guidelines. Disturbance-free buffers shall be identified on the ground with flagging, fencing, or by other easily visible means, and shall be maintained until a qualified biologist has determined that the young have fledged and are capable of foraging independently.

Burrowing Owl

The following mitigation measures shall be required for future projects in ruderal habitat (see "Ruderal" on Figure 3.4-1) or grassland habitat (see "Non-native Grassland" on Figure 3.4-1) in the rural zone of the planning area.

BIO-11 (Take Avoidance Survey): A preconstruction "take avoidance" survey for burrowing owls shall be conducted by a qualified biologist between 14 and 30 days prior to the start of construction according to methods described in the *Staff Report on Burrowing Owl Mitigation* (CDFW 2012). The survey area shall include all suitable habitat on and within 200 meters of the construction zone, where accessible.

BIO-12 (Avoidance of Active Nests): If construction activities are undertaken during the breeding season (February 1-August 31) and active nest burrows are identified within or near the construction zone, a 200-meter disturbance-free buffer shall be established around these burrows, or alternate avoidance measures

implemented in consultation with CDFW. The buffers shall be enclosed with temporary fencing to prevent construction equipment and workers from entering the setback area. Buffers shall remain in place for the duration of the breeding season, unless otherwise arranged with CDFW. After the breeding season (i.e. once all young have left the nest), passive relocation of any remaining owls may take place as described below.

BIO-13 (Avoidance or Passive Relocation of Resident Owls): During the non-breeding season (September 1-January 31), resident owls occupying burrows in the construction zone may either be avoided, or passively relocated to alternative habitat. If the project applicant chooses to avoid active owl burrows within the construction zone during the non-breeding season, a 50-meter disturbance-free buffer shall be established around these burrows, or alternate avoidance measures implemented in consultation with CDFW. The buffers shall be enclosed with temporary fencing and shall remain in place until a qualified biologist determines that the burrows are no longer active. If the project applicant chooses to passively relocate owls during the non-breeding season, this activity shall be conducted in accordance with a relocation plan prepared by a qualified biologist.

BIO-14 (Compensatory Mitigation): The project applicant shall mitigate, at a 1:1 ratio, for all potential burrowing owl habitat removed within 600 meters of active burrowing owl burrows, as identified during the preconstruction surveys provided for in Mitigation Measure BIO-9. Potential burrowing owl habitat in the planning area generally includes agricultural fields (suitable for foraging), ruderal habitat (suitable for nesting), and non-native grassland habitat (suitable for nesting or foraging). Compensatory mitigation shall entail either (1) acquiring suitable replacement habitat in the project vicinity, to be preserved in perpetuity under conservation easement and managed according to the provisions of a long-term management plan, or (2) purchasing credits at a CDFW-approved burrowing owl conservation bank.

American Badger

Mitigation Measures BIO-15 and BIO-16 shall be required for future projects in ruderal habitat (see “Ruderal” on Figure 3.4-1), grassland habitat (see “Non-native Grassland” on Figure 3.4-1), or drainages or canals (see “Drainage/Canal” on Figure 3.4-1) in the rural zone of the planning area.

BIO-15 (Preconstruction Surveys): A preconstruction survey for American badgers shall be conducted by a qualified biologist within 30 days of the start of construction.

BIO-16 (Avoidance of Natal Dens): Should an active natal den be identified during the preconstruction surveys, a suitable disturbance-free buffer shall be established around the den and maintained until a qualified biologist has determined that the cubs have dispersed or the den has been abandoned.

Tricolored Blackbird, Northern Harrier, White-tailed Kite, Long-eared Owl, Loggerhead Shrike, and Other Nesting Migratory Birds and Raptors

The following measures are required for all future projects in the planning area.

BIO-17 (Construction Timing): If feasible, project construction will occur outside of the avian nesting season, typically defined as February 1 to August 31.

BIO-18 (Preconstruction Surveys): If construction must occur between February 1 and August 31, a qualified biologist shall conduct preconstruction surveys for active migratory bird nests within 14 days prior to the start of work. For projects within the urban zone, the survey area shall encompass the work area and accessible surrounding lands within 100 feet. For projects within the rural zone, the survey area shall encompass the work area and accessible surrounding lands within 250 feet.

BIO-19 (Avoidance of Active Nests): Should any active nests be discovered within the survey area, the biologist shall identify a suitable disturbance-free buffer around the nest(s). Buffers shall be identified on the ground with flagging or fencing and shall be maintained until the biologist has determined that the young have fledged and are capable of foraging independently.

Pallid Bat, Western Mastiff Bat, Townsend's Big-eared Bat, and Other Roosting Bats

Mitigation Measures BIO-20 through BIO-23 shall be required for all future projects in the planning area that will remove buildings, bridges, or large trees.

BIO-20 (Temporal Avoidance): To avoid potential impacts to maternity bat roosts, removal of buildings, bridges, and large trees should occur outside of the period between April 1 and September 30, the time frame within which colony-nesting bats generally assemble, give birth, nurse their young, and ultimately disperse.

BIO-21 (Preconstruction Surveys): If removal of buildings, bridges, or large trees is to occur between April 1 and September 30 (general maternity bat roost season), then within 30 days prior to their removal, a qualified biologist shall survey them for the presence of bats. The biologist shall look for individuals, guano, and staining, and shall listen for bat vocalizations. If necessary, the biologist will wait for nighttime emergence of bats from roost sites. If no bats are observed to be roosting or breeding, then no further action would be required, and construction could proceed.

BIO-22 (Minimization): If a non-breeding bat colony is detected during preconstruction surveys, the individuals shall be humanely evicted under the direction of a qualified biologist to ensure that no harm or “take” of any bats occurs as a result of construction activities.

BIO-23 (Avoidance of Maternity Roosts): If a maternity colony is detected during preconstruction surveys, the biologist shall identify a suitable disturbance-free buffer around the colony. The buffer shall remain in place until the biologist determines that the nursery is no longer active.

Impact 3.4-2: *Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?*

Less than Significant with Mitigation Incorporation. As discussed in the Environmental Setting Section, and in Appendix A, the Kings River and Collins Creek within the planning area support riparian habitat of considerable value to native wildlife species. Any future project-related loss of riparian habitat along these natural drainages would be likely to adversely affect native wildlife, both in terms of direct impacts and contribution to cumulative loss of riparian habitat in the region. Potential loss of riparian habitat along the Kings River and Collins Creek is considered significant; however, implementation of mitigation measures BIO-24 through BIO-26 will reduce impacts to less than significant.

Elsewhere within the planning area, the Fowler-Switch Canal and Centerville-Kingsburg Canal contain isolated riparian trees along their banks, but are not characterized by intact riparian habitat with the potential to support a diversity of native wildlife. Impacts to riparian habitat associated with the potential loss of trees along the Fowler-Switch Canal and Centerville-Kingsburg Canal are therefore considered less than significant.

Impacts are considered to be *less than significant* with the incorporation of Mitigation Measures BIO-24 through BIO-26.

Mitigation Measures: The following measures are required for future projects that will remove riparian vegetation along the Kings River and Collins Creek.

BIO-24 (Tree Surveys): Both prior to and immediately following project activities in riparian habitat along the Kings River and Collins Creek, a qualified biologist shall conduct a tree survey within project boundaries. The location of each tree in the survey area shall be mapped, and species and diameter at breast height (DBH) recorded.

BIO-25 (Riparian Mitigation and Monitoring Plan): If the follow-up tree survey determines that native riparian trees greater than 4 inches DBH have been removed by project activities, a qualified biologist shall prepare a riparian mitigation and monitoring plan that will provide a framework for required compensatory mitigation. The plan shall outline the required planting scenario, success criteria, and monitoring requirements.

BIO-26 (Compensatory Mitigation): Compensatory mitigation shall be provided for the removal of any native riparian tree 4 inches DBH or greater. Trees between 4 and 24 inches DBH shall be replaced on or immediately adjacent to the project site at a ratio of 3:1. Trees greater than 24 inches DBH shall be replaced on or immediately adjacent to the project site at a ratio of 10:1. The planting and subsequent monitoring effort shall be conducted in accordance with the riparian mitigation and monitoring plan provided for in Mitigation Measure BIO-25.

Impact 3.4-3: *Have a substantial adverse effect on state or federally-protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?*

Less Than Significant Impact with Mitigation Incorporation. As discussed, the planning area contains a portion of the Kings River and Collins Creek, both of which are known to fall under the jurisdiction of the USACE. The planning area also contains portions of a number of canals and ditches that may be claimed by the USACE based on hydrological connectivity to the Kings River and other Waters of the U.S.

The City has developed goals, objectives and action plans regarding the protection of jurisdictional waters as described in Impact 3.4-2 of this EIR; however, any future projects

within these waterways have the potential to result in significant impacts to the Waters of the U.S. per the provisions of CEQA. Implementation of Mitigation Measure BIO-27 and BIO-28 will reduce any potential impacts to *less than significant*.

Mitigation Measures:

BIO-27 (Delineation of Jurisdictional Waters): Prior to the start of construction, a qualified biologist shall conduct a delineation of jurisdictional waters within and adjacent to the waterway(s) proposed for impact. The survey techniques, delineation report, and accompanying waters map shall meet the minimum standards of the USACE. The report and map shall be submitted to the USACE for purposes of obtaining a Preliminary Jurisdictional Determination or Approved Jurisdictional Determination, at the project applicant's discretion.

BIO-28 (Clean Water Act Permitting): If it is determined that the waterway(s) to be impacted fall under the jurisdiction of the USACE, the project applicant shall obtain a Clean Water Act Section 404 permit and Section 401 Water Quality Certification, and shall adhere to all the provisions thereof, including compensatory mitigation requirements for loss of Waters of the U.S.

Impact 3.4-4: *Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery site; (e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*

Less Than Significant Impact with Mitigation. The planning area contains a portion of the Kings River, which is known to function as an important movement corridor for wildlife in the region. The remaining drainages and canals of the planning area are not expected to function in this capacity. As discussed in Appendix A, portions of Collins Creek within the planning area have been realigned and cleared of riparian vegetation, resulting in a discontinuous riparian corridor not conducive to travel by most wildlife species. The planning area's canals and ditches are largely devoid of riparian vegetation, and do not offer the cover typical of most terrestrial wildlife movement corridors.

If future projects in the planning area remove riparian habitat associated with the Kings River, the river's value as a wildlife movement corridor may decrease. Such an impact would be considered significant under CEQA. Potential impacts to the Kings River riparian corridor were considered in Impact 3.4-2 and mitigation measures BIO-24 through BIO-26 were included to reduce impacts to less than significant. As such, any

impacts wildlife movement are considered to be *less than significant* with the incorporation of Mitigation Measure BIO-24 through BIO-26.

Mitigation Measures: BIO-24 through BIO-26, as described above.

Impact 3.4-5: *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 proposed Project site and the surrounding vicinity are not part of any adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan. As such, the construction and operation of the proposed Project would have *no impact* on any adopted habitat conservation plan.

Mitigation Measures: None are required.

Cumulative Impacts

Less Than Cumulatively Considerable. The scope for considering cumulative impacts to biological resources are the geographic areas covered by the General Plan Update and Master Plan as well as all of Fresno County. Development in Fresno County and the San Joaquin Valley has resulted in a decline of many plant and animal species. Buildout in the Planning Area may result in impacts to biological resources, including the permanent loss of habitat for special-status species, direct and indirect impacts to special-status species, and reduction and degradation of sensitive habitat. Subsequent projects implemented under the City's General Plan and North Academy Corridor Master Plan would be required to be consistent with their respective policies. The Conservation, Open Space, Parks and Recreation Element of the General Plan establishes Goals, Objectives and Action Plans that are designed to protect and observe special status species and their habitat, as discussed above and implementation of Mitigation Measures BIO-1 through BIO-28 will ensure that impacts remain **less than cumulatively considerable** to biological resources.

3.5 Cultural Resources

This section of the DEIR identifies potential impacts of the proposed Sanger 2035 General Plan Update and Master Plan on cultural, archaeological and historical resources.

Cultural resources include prehistoric-era archaeological sites, historic-era archaeological sites, Native American traditional cultural properties, sites of religious and cultural significance, and historical buildings, structures, objects, and sites. The importance of any single cultural resource is defined by the context in which it was first created, current public opinion and modern yet evolving analysis. From the analytical perspective temporal and geographic considerations help to define the historical context of the Planning Area.

A California Historical Resources Information System (CHRIS) search was conducted and is included as Appendix B. Tribal consultations pursuant to SB 18 and AB 52 are addressed in Section 3.18 – Tribal Cultural Resources. No IS/NOP comment letters were received pertaining to this topic.

Environmental Setting

Natural Environment

The Kings River corridor was an important Native American habitation and resource-gathering area, both prehistorically and historically. Several tribes fished for salmon, gathered acorns and other food and fiber resources, held ceremonies, and collected basketry materials along this stretch of the river.

The San Joaquin River is the prominent hydrologic feature that drains the southern half of the Great Valley into San Francisco Bay. The sharp peaks of the Sierra Nevada effectively block moisture moving eastward from the coast, resulting in a higher level of precipitation on the western slopes. Smaller east-west-trending rivers, like the Kings River, immediately adjacent to the Project area, drain the Sierra Nevada range before converging on the San Joaquin River. The Kings River and its smaller tributaries would have provided habitat for an abundance of food resources such as aquatic plants, fish, beaver, and other animals hunted prehistorically and historically.¹

¹ Applied Earthworks, Inc. Cultural Resources Inventory for the Cricket Hollow Boat Launching Facility Project on the Kings River in Reedley, Fresno County, California.

Ethnographic Resources

The Northern Valley Yokuts inhabited the marshy regions of the upper half of the San Joaquin Valley, and were situated near major waterways, building on low mounds to prevent spring flooding. Ethnographic evidence indicates that these villages were occupied for the majority of the year and abandoned for short periods as the residents left to engage in seasonal resource gathering.²

In prehistoric times the Petachie, Gashowu, Wakichi and Kechayi of the Yokuts occupied the valley floor on the floodplains and creeks and rivers. Salmon fishing, acorn gathering and other hunting and gathering activities were conducted throughout the area by various tribes.

The Spanish missions established in the coastal areas in the 1700's had been an early influence on the Valley Indians. In 1833 an epidemic, possibly Malaria, infected the local Indian population and Indian life was further influenced by miners arriving in 1848. In 1851, soldiers arrived as part of the Mariposa Indian war and built a military post on the south bank of the San Joaquin River two miles above Friant. Native Americans in the area were involved as laborers in various railroad projects from 1891 through the early 1930's.³

Historical Resources

A records search at the California Historical Resources Information System (CHRIS) was performed (See Appendix B) for the 2035 General Plan Update area. The results are summarized herein.

According to the records search, there are 18 recorded cultural resources within the project area. Additionally, there is one known but unrecorded resource within the project area. These resources consist primarily of historic era canals and single-family residences. They also include a prehistoric lithic scatter, an historic era railroad, and an historic era farm. There are no recorded cultural resources within the project area or radius that are listed in the National Register of Historic Places, the California Register of Historical Resources, the California Points of Historical Interest, California Inventory of Historic Resources, or the California State Historic Landmarks.⁴

The Southern Pacific Railroad right-of-way and the 40-50 block town center are most likely to have historic properties significant to the history of the City. Out-lying farmsteads, irrigation

² Ibid.

³ Sanger GPU Part II: Community Profile, Page 3-18 (Collins & Schoettler, 2018).

⁴ CHRIS Search Results, April 28, 2016.

canal, trails, roadways, schools, labor campsites, and other historical resource locations are also important to preserving the communities' history.

In addition to the CHRIS, the Fresno County Historic Landmarks and Records Advisory Commission (FCHLRAC) has identified and designated eight historic sites⁵ within the City of Sanger:

- The Rheingans Home (1904), 1390 S. Highland Avenue, Sanger
- The Gerner Home (1903), 7659 E. Jensen Avenue, Sanger
- Campbell Residence (1910), 21143 E. Weldon Avenue, Sanger
- Sanger Women's Club (1912), 1610 Seventh Street, Sanger
- Sanger Depot Museum (1887), 1800 Jensen Avenue, Sanger
- First United Methodist Church (1922), 1612 9th Street, Sanger
- Frankenau Residence (1892), 521 I Street, Sanger
- Miller House (Not Available), 3700 S. Newmark Avenue, Sanger

Because the recognition and designation of historic properties is an ongoing process, there are additional properties in the Planning Area that have some type of historical merit, but have not yet been designated as historic.

Regulatory Setting

Federal Regulations

National Historic Preservation Act (1966)

The National Historic Preservation Act (NHPA) is the most prominent federal law dealing with historic preservation. The 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

⁵ Fresno County Public Library, Fresno County List of Historic Places. 2015.
<http://www.fresnolibrary.org/hlrc/Index%20of%20Historical%20Sites%20in%20Fresno%20County.pdf>. Accessed April 2016.

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 the NEPA requirements concerning cultural resources can be addressed through compliance with Section 106 of the NHPA process.

Provisions of NHPA establish a National Register of Historic Places (The National Register) maintained by the National Park Service, the Advisory Council on Historic Preservation, State Offices of Historic Preservation, and grants-in-aid programs. At the federal level, the Office of Historic Preservation (OHP) carries out reviews under Section 106 of the National Historic Preservation of 1966, as amended.

State Regulations

In the State of California, the process of reviewing projects and decisions that may impact cultural resources including historic, archaeological, and paleontological resources is conducted under several different federal, state, and local laws. CEQA requires that public agencies consider the effects of their actions on historical resources eligible for listing on the California Register of Historical Resources.

Additionally, California Public Resources Code 5024 requires consultation with OHP when a project may impact historical resources located on State-owned land. California State law (SB 18) requires cities and counties to notify and consult with California Native American Tribes about proposed local land use planning decisions for the purpose of protecting Traditional Tribal Cultural Places (“cultural places”).

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 CEQA documents. 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.

Health and Safety Code, Section 7050.5

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 (NAHC). CEQA Guidelines (Public Resources Code Section 5097) 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 NAHC.

California Government Code 65352.3-5, Local Government – Tribal Consultation California Government Code Sections 65092, 65351, 65352, 65352.3 and 65352.4, formally known as Senate Bill (SB) 18.

These regulations regulate the consultation with California Native American tribes having traditional lands located within the jurisdiction of applicable cities and counties. The intent of the underlying legislation was to provide all California Native American tribes that are on the contact list maintained by the Native American Heritage Commission, an opportunity to consult with specific local governments for the purpose of preserving and protecting their sacred places. Such consultations apply to the preparation, adoption and amendment of general plans.

The Notice of Preparation, which briefly describing the proposed General Plan, including a map of the project area, was sent to the State Clearinghouse which notifies Native American representatives of the opportunity to comment on the proposed General Plan Project. To date, no comments or concerns have been received.

California Historical Resources Information System (CHRIS)

The California Historical Resources Information System (CHRIS) is a statewide system for managing information on the full range of historical resources identified in California. CHRIS is a cooperative partnership between the citizens of California, historic preservation professionals, twelve Information Centers, and various agencies. This system bears the following responsibilities: integrate newly recorded sites and information on known resources into the California Historical Resources Inventory; furnish information on known resources and surveys to governments, institutions, and individuals who have a justifiable need to know; and supply a list of consultants who are qualified to do work within their area.

Typically, the initial step in addressing cultural resources in the project review process involves contacting the appropriate Information Center to conduct a record search. A record search should

identify any previously recorded historical resources and previous archaeological studies within the project area, as well as provide recommendations for further work, if necessary. Depending on the nature and location of the project, the project proponent or lead agency may be required to contact appropriate Native American representatives to aid in the identification of traditional cultural properties.

If known cultural resources are present within the Planning Area, or if the Planning Area has not been previously investigated for the presence of such resources, the Information Center may recommend a survey for historical, archaeological, and paleontological sites. Cultural resources that may be adversely affected by an undertaking should be evaluated for significance. For archaeological sites, a significance evaluation typically involves conducting test excavations. For historical sites or standing structures, historical research should be conducted and an architectural evaluation may be warranted. If significant, the resource should be protected from adverse impacts. Data recovery excavations may be warranted in the case of unavoidable damage to archaeological sites. If human burials are present, the appropriate coroner's office should be contacted. A professional archaeologist and appropriate Native American representatives should also be consulted.

When an initial study identifies the existence, or the probable likelihood, of Native American human remains within the project, a lead agency shall work with the appropriate Native Americans as identified by the Native American Heritage Commission as provided in Public Resources Code 5097.98. The applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains and any items associated with Native American burials with the appropriate Native Americans as identified by the Native American Heritage Commission.

California Environmental Quality Act (CEQA)

CEQA is applicable to discretionary actions by state or local lead agencies. Under CEQA, lead agencies must analyze impacts to cultural resources. Significant impacts under CEQA occur when "historically significant" or "unique" cultural resources are adversely affected, which occurs when such resources could be altered or destroyed through project implementation. Historically significant cultural resources are defined by eligibility for or by listing in the California Register of Historical Resources (CRHR). In practice, the federal NRHP criteria for significance applied under Section 106 are generally (although not entirely) consistent with CRHR criteria (see PRC § 5024.1, Title 14 CCR, Section 4852 and § 15064.5(a)(3)).

Local

Sanger Conservation Element

The City currently utilizes the guidance provided in its General Plan Conservation Element that protects cultural resources, as provided below:

Goal 6: Identify and preserve the City's cultural and archaeological resources.

Policy

1. Identify and protect cultural and archaeological resources within the City of Sanger.

Implementation

- A. Investigate potential sources of grant funding for the maintenance of historic, cultural, and archaeological inventories, and the acquisition of resources for cultural and educational purposes.
- B. Actively solicit technical and financial assistance from the State and Federal governments for purposes of undertaking a survey of potential cultural and archaeological resources in Sanger.
- C. Consult with State and Federal agencies, and Native American organizations in evaluating the location and significance of cultural and archaeological resources in the City.
- D. Utilize appropriate State and Federal standards when evaluating cultural and archaeological resources found in the City.

Policy

2. Designate, preserve, and enhance cultural structures and landmarks contributing to the cultural, historic, and architectural character.

Implementation

- E. Support the efforts of the Fresno County Historic Landmarks and Records Advisory Commission and other relevant organizations in the preservation of historic sites in the Planning Area. Protect and encourage restoration and rehabilitation of historic and architecturally significant buildings and landmarks.

F. Encourage various historical and educational societies, as well as other appropriate organizations, in their efforts to improve the public's recognition of its cultural heritage.

G. Protect historical resources during development to ensure that physical characteristics are not demolished or materially altered. Require as part of the permit process that structures over 50 years old be analyzed for historic value. Require that feasible measures are implemented to mitigate significant adverse changes in the significance of a historical resource. Mitigation measures must be fully enforceable through permits, conditions, agreements, or other measures (CEQA Guidelines section 15064.5(b)(3-5).

Policy

3. Ensure protection of archaeological resources during construction.

Implementation

H. Evaluate the extent of on-site archaeological resources through archival research, site surveys, and necessary supplemental testing as part of the initial environmental assessment on each potentially significant site. Determine whether the resources are "unique," as defined by Public Resources Code section 21083.2.

I. Require that archaeological resources are preserved, whenever possible. Preservation may include the following (reference CEQA Guidelines 15126.4(b)(3)(B)):

- Planning of construction to avoid archeological sites;
- Incorporating a significant site within parks or open space;
- Depositing a layer of chemically stable soil over the site; and,
- Deeding the site into a permanent conservation easement.

J. When preservation of archaeological resources is not possible, require that significant data be recovered. A data recovery plan shall be required and adopted prior to any excavation, and shall provision the means for the adequate recovery of any scientifically consequential information regarding the site (reference CEQA Guidelines 15126.4(b)(3)(C-D)).

Thresholds of Significance

In accordance with Appendix G to the State CEQA Guidelines, the project would have a significant impact on cultural resources if it would cause any of the following conditions to occur:

- Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5; or
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5; or
- Disturb any human remains, including those interred outside of dedicated cemeteries.

Under CEQA, significant cultural resources are those archaeological resources and historical properties that:

- Are associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- Are associated with the lives of persons important in our past;
- Embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of an important creative individual, or possess high artistic values; or
- Have yielded, or may be likely to yield, information important in prehistory or history.

Unique resources under CEQA, in slight contrast, are those that represent:

An archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person (PRC § 21083.2(g)).

Preservation in place is the preferred approach under CEQA to mitigating adverse impacts to significant or unique cultural resources.

Impacts and Mitigation Measures

Impact 3.5-1: *Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?*

Impact 3.5-2: *Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?*

Less Than Significant With Mitigation. As previously described, according to the records search, there are 18 recorded cultural resources within the project area. Additionally, there is one known but unrecorded resource within the project area. These resources consist primarily of historic era canals and single-family residences. They also include a prehistoric lithic scatter, an historic era railroad, and an historic era farm. There are no recorded cultural resources within the project area or radius that are listed in the National Register of Historic Places, the California Register of Historical Resources, the California Points of Historical Interest, California Inventory of Historic Resources, or the California State Historic Landmarks.⁶

The Southern Pacific Railroad right-of-way and the 40-50 block town center are most likely to have historic properties significant to the history of the City. Out-lying farmsteads, irrigation canal, trails, roadways, schools, labor campsites, and other historical resource locations are also important to preserving the communities' history.

The City has developed goals, objectives and action plans to protect development from potential impacts to sensitive cultural resources as follows:

Sanger General Plan: Conservation, Open Space, Parks and Recreation Element

Goals, Objectives, Action Plans

Goal:

VII. Ensure that historic, archaeological and paleontological resources are protected as the City continues to grow and develop.

⁶ CHRIS Search Results, April 28, 2016.

Objective:

1. Identify and protect cultural and archaeological resources within the City and Sphere of Influence.

Action Plan:

- a. Investigate potential sources of grant funding for the maintenance of historic, cultural and archaeological inventories and the acquisition of resources for cultural and educational purposes.
- b. Actively solicit technical and financial assistance from State and Federal governments for the purposes of undertaking a survey of potential cultural and archaeological resources in the City.
- c. Consult with State and Federal agencies and also Native American organizations in evaluating the location and significance of cultural and archaeological resources in the City.
- d. Support efforts of the Fresno County Historic Landmarks and Records Advisory Commission and other relevant organizations in the preservation of historic sites in the City and Sphere of Influence.
- e. Encourage and support various historical and educational societies in their efforts to improve the public's recognition of historic resources and cultural heritage.
- f. When development is proposed, require that structures over 50 years old be analyzed for historic value and implement feasible measures to mitigate significant adverse changes to historic resources.

Objective:

2. Ensure the protection of archaeological and paleontological resources during construction.

Action Plan:

- a. During the development application process, evaluate the potential for on-site archaeological and paleontological resources through appropriate archival research, site surveys and supplemental testing, as appropriate.

- b. Require that archaeological and paleontological resources are preserved whenever possible, through various measures including planning of construction to avoid resource sites, incorporating significant sites into parks and open space lands, depositing a layer of chemically-stable soil over the site, or deeding the site into a permanent conservation easement.
- c. When preservation of archaeological and paleontological resources is not possible, require that significant data be recovered. A data recovery plan shall be required and adopted prior to any excavation and shall provision the means for the adequate recovery of any scientifically consequential information regarding the site.

Buildout of the 2035 General Plan and Master Plan would occur on existing disturbed lands as well as vacant, agricultural, or unused lands. Development of previously undisturbed areas would therefore potentially discover sensitive historical, archaeological or cultural resources. This would be a potentially significant impact. However, mitigation measure CUL-1 included herein will reduce the impact to a *less than significant* level. In addition, individual projects in the future would be subject to site-specific cultural resource analysis (including potential field surveys) as determined to be necessary by the City.

Mitigation Measures:

CUL-1: Should any potentially significant cultural, historical, archaeological or fossil resources be discovered, no further ground disturbance shall occur in the area of the discovery until the Planning Director concurs in writing that adequate provisions are in place to protect these resources. Unanticipated discoveries shall be evaluated for significance by a certified professional archaeologist or paleontologist that meets the Secretary of the Interior's Professional Qualifications Standards. If significance criteria are met, then the project shall be required to perform data recovery, professional identification, radiocarbon dates as applicable, and other special studies; curate materials with recognized scientific or educational repository; and provide a comprehensive final report as required by Senate Bill 18; California Historical Building Code (Title 24, Part 8); California Public Resources Code Sections 5020-5029.5, 5079-5079.65, 5097.9-5097.998, and 5097.98; and California State Health and Safety Code, Section 7050.5, as applicable.

Impact 3.5-3: *Disturb any human remains, including those interred outside of formal cemeteries?*

Less Than Significant With Mitigation. California Health and Safety Code Section 7050.5, CEQA Section 15064.5, and Public Resources Code Section 5097.98 mandate the process to be followed in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery. Specifically, California Health and Safety Code Section 7050.5 requires that in the event that human remains are discovered within a project site, disturbance of the site shall remain halted until the coroner has conducted an investigation into the circumstances, manner and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the Public Resources Code. If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes or has reason to believe the human remains to be those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission. Although soil-disturbing activities associated with development in accordance with the proposed project could result in the discovery of human remains, compliance with existing law would ensure that impacts to human remains would not be significant.

Buildout of the 2035 General Plan and Master Plan would occur on existing disturbed lands as well as vacant, agricultural, or unused lands. Development of previously undisturbed areas would therefore potentially uncover human remains. This would be a potentially significant impact. However, mitigation measure CUL-2 included herein will reduce the impact to a *less than significant* level.

Mitigation Measures

CUL-2: If human remains are unearthed during excavation and/or construction activities, all activity shall cease immediately. No further disturbance shall occur until the County Coroner has made the necessary findings as to the origin and disposition pursuant to PRC Section 5097.98(b). If the human remains are determined to be of Native American decent, the coroner shall within 24 hours notify the Native American Heritage Commission (NAHC). The NAHC shall then contact the most likely descendent of the deceased Native American, who shall then serve as the consultant on how to proceed with the remains. Pursuant to PRC Section 5097.98(b), upon the discovery of Native American remains, the City shall ensure that the immediate vicinity, according to generally accepted cultural or archeological standards or practices, where the Native American human remains are located is not damaged or disturbed by further development activity until the City has

discussed and conferred with the most likely descendants regarding their recommendations.

Cumulative Impacts

Less Than Cumulatively Considerable. The scope for considering cumulative impacts to cultural resources are the geographic areas covered by the General Plan Update and Master Plan as well as all of Fresno County. Development in Fresno County and the San Joaquin Valley has likely resulted in the loss or degradation of historic and/or archaeological resources. Construction of future development projects allowed under the land use designations of the City's General Plan and North Academy Corridor Master Plan may result in the discovery and removal of cultural resources, including archaeological, paleontological, historical, and Native American resources and human remains. As discussed above, future development would require project-specific surveys for potential resources and to evaluate any resources discovered during construction activities. Implementation of mitigation measures, as discussed above will avoid and/or minimize a cumulative loss of these resources if they are found during project activities and would reduce impacts associated with cumulative development to a less than significant level. As such, the proposed projects impact to cultural and tribal resources would be **less than cumulatively considerable**.

3.6 Energy

This section of the DEIR identifies potential impacts of the proposed Project pertaining to Energy. No IS/NOP comment letters were received pertaining to this topic.

Environmental Setting

Electricity

Electricity, a consumptive utility, is a man-made resource. The production of electricity requires the consumption or conversion of energy resources, including water, wind, oil, gas, coal, solar, geothermal, and nuclear resources, into energy. The delivery of electricity involves a number of system components, including substations and transformers that lower transmission line power (voltage) to a level appropriate for on-site distribution and use. The electricity generated is distributed through a network of transmission and distribution lines commonly called a power grid. Conveyance of electricity through transmission lines is typically responsive to market demands.

Pacific Gas & Electric provides energy to the City of Sanger in the form of natural gas and electricity. PG&E's network provides natural gas and electric service to approximately 16 million people. It owns 106,81 circuit miles of electric distribution lines and 18,466 circuit miles of interconnected transmission lines.

Energy Usage

Energy usage is typically quantified using the British Thermal Unit (BTU). Total energy usage in California was 7,830 trillion BTU's in 2016 (the most recent year for which this specific data is available), which equates to an average of 199 million BTU's per capita. Of California's total energy usage, the breakdown by sector is 39 percent transportation, 24 percent industrial, 19 percent commercial, and 18 percent residential. Electricity and natural gas in California are generally consumed by stationary users such as residences and commercial/ industrial facilities, whereas petroleum consumption is generally accounted for by transportation-related energy use.¹ In 2017, taxable gasoline sales (including aviation gasoline) in California accounted for 15,540,154,774 gallons of gasoline.²

¹ U.S. Energy Information Administration, California State Profile and Energy Estimates. <https://www.eia.gov/state/print.php?sid=CA>. Accessed May 2019.

² California Department of Tax and Fee Administration, Fuel Taxes Statistics and Report: Net Taxable Gasoline Gallons. <http://www.cdtfa.ca.gov/taxes-and-fees/MVF-10-Year-Report.pdf>. Accessed May 2019.

The electricity consumption attributable to Fresno County from 2007 to 2017 is shown in Table 3.6-1, Electricity Consumption in Fresno County 2007-2017. As indicated in Table 6-1, energy consumption in Fresno County varied approximately 11 percent over the last ten years.

Table 3.6-1: Electricity Consumption in Fresno County 2007 – 2016³

Year	kWh consumed
2007	7104.831911
2008	7117.527728
2009	7077.931828
2010	6903.406765
2011	6885.947936
2012	7382.287061
2013	7512.7302013
2014	7685.759978
2015	7686.428478
2016	7625.323456
2017	7460.825952

Natural Gas

Natural gas is a combustible mixture of simple hydrocarbon compounds (primarily methane) that is used as a fuel source. Natural gas consumed in California is obtained from naturally occurring reservoirs, mainly located outside the State, and delivered through high-pressure transmission pipelines. The natural gas transportation system is a nationwide network, and, therefore, resource availability is typically not an issue. Natural gas provides almost one-third of the state's total energy requirements and is used in electricity generation, space heating, cooking, water heating, industrial processes, and as a transportation fuel.

³ California Energy Commission. Energy Reports. Electricity Consumption by County. <https://ecdms.energy.ca.gov/elecbycounty.aspx>. Accessed June 2019.

Natural gas is provided to the Planning Area by Pacific Gas and Electric. The natural gas consumption attributable to Fresno County from 2007 to 2017 is provided in Table 3.6-2, Natural Gas Consumption in Fresno County 2007-2017. Natural gas consumption in Fresno County varied up to 25% between 2007 and 2017.

Table 3.6-2: Natural Gas Consumption in Fresno County 2007 – 2017⁴

Year	Millions of Therms consumed
2007	297.956718
2008	278.153542
2009	271.420613
2010	283.287216
2011	295.766511
2012	306.172217
2013	300.248652
2014	294.968519
2015	299.981914
2016	285.421137
2017	341.199319

While specific energy and natural gas usage is not available for the City of Sanger, data can be extrapolated by a per capita use. The U.S. Census Bureau provides population estimates for the year 2018 for both Fresno County and the City of Sanger. While energy and natural gas consumption data is available for the years 2007 through 2017, using the 2018 population data will provide a reasonable estimate of Sanger’s electricity and natural gas usage. In 2018, the City

⁴ California Energy Commission. Energy Reports. Gas Consumption by County.
<http://www.ecdms.energy.ca.gov/gasbycounty.aspx> Accessed June 2019.

of Sanger constitutes approximately 2.55% of Fresno County's population⁵ and as such, the available consumption data is multiplied by 2.55% to provide consumption data for the City of Sanger, as provided in Table 3.6-3.

Table 3.6-3: Electricity and Natural Gas Consumption in Sanger 2007 – 2017

Year	Natural Gas (Millions of Therms consumed)	Electricity (kWh consumed)
2007	7.598	181.173
2008	7.093	181.497
2009	6.921	180.487
2010	7.224	176.037
2011	7.542	175.592
2012	7.807	188.248
2013	7.656	191.575
2014	7.522	195.987
2015	7.650	196.004
2016	7.278	194.446
2017	8.701	190.251

⁵ United States Census Bureau. Quick Facts: Sanger city, California; Fresno County, California <https://www.census.gov/quickfacts/fact/table/sangercitycalifornia,fresnocitycalifornia,fresnocountycalifornia/PST045219>. Accessed June 2019.

Transportation Energy

According to the CEC, transportation accounts for nearly 37 percent of California’s total energy consumption in 2014.⁶ In 2018, California consumed 15.5 billion gallons of gasoline and 3.1 billion gallons of diesel fuel.⁷ Petroleum-based fuels currently account for 90% of California’s transportation energy sources⁸; however, the state is now working on developing flexible strategies to reduce petroleum use. Accordingly, gasoline consumption in California has declined.

According to the Board of Equalization (BOE), statewide taxable sales figures indicate a total of 15,584 million gallons of gasoline and 3,124 million gallons of diesel fuel were sold in 2017.⁹ Although exact estimates are not available by County, retail fuel outlet survey data indicates Fresno County accounted for approximately 2.35 percent and 1.4 percent of total statewide gasoline and diesel sales, respectively, in 2017.

Regulatory Setting

Federal

Federal Energy Policy and Conservation Act

In 1975, Congress enacted the Energy and Policy Conservation Act, which established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the act, the National Highway Traffic Safety Administration (NHTSA) is responsible for establishing additional vehicle standards.

Corporate Average Fuel Economy (CAFE) Program

The Corporate Average Fuel Economy (CAFE) Program was enacted by Congress in 1975. The purpose of the program is to reduce the consumption of energy by increasing the fuel economy of cars and light trucks.

⁶ California Energy Commission. 2016 Integrated Energy Policy Report Update. Docket #16-IEPR-01. Page 4. https://www.energy.ca.gov/2016_energy_policy/. Accessed May 2019.

⁷ California Department of Tax and Fee Administration. January 2019 – Motor Vehicle Fuel 10 Year Reports and Taxable Diesel Gallons 10 Year Report. <https://www.cdtfa.ca.gov/taxes-and-fees/spftrpts.htm>. Accessed May 2019.

⁸ California Energy Commission. Draft Staff Report. 2017-2018 Investment Plan Update for the Alternative and Renewable Fuel and Vehicle Technology Program. Page 7. <https://www.energy.ca.gov/2016publications/CEC-600-2016-007/CEC-600-2016-007-SD.pdf>. Accessed May 2019.

⁹ California Energy Commission. California Retail Fuel Outlet Annual Reporting (CEC-A15) Results. https://www.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html. Accessed June 2019.

Energy Policy Act of 2005

This Act addresses energy efficiency; renewable energy requirements; oil, natural gas and coal; alternative-fuel use; tribal energy, nuclear security; vehicles and vehicle fuels, hydropower and geothermal energy, and climate change technology. The Act provides revised annual energy reduction goals (two percent per year beginning in 2006), revised renewable energy purchase goals, federal procurement of Energy Star or Federal Energy Management program-designated products, federal green building standards, and fuel cell vehicle and hydrogen energy system research/demonstration.

Energy Independence and Security Act of 2007

This Act set increased CAFE standards for motor vehicles and includes the following provisions related to energy efficiency:

- Renewable fuel standards (RFS)
- Appliance and lighting efficiency standards
- Building energy efficiency

This Act requires increasing levels of renewable fuels to replace petroleum. The U.S. EPA is responsible for developing and implementing regulations to ensure transportation fuel sold into the US contains a minimum volume of renewable fuel.

The RFS programs regulations were developed in collaboration with refiners, renewable fuel products, and other stakeholders and were created under the Energy Policy Act of 2005. The RFS program established the first renewable fuel volume mandate in the US. As required under the act, the original RFS program required 7.5 billion gallons of renewable fuel to be blended into gasoline by 2012. Under the Act, the RFS program was expanded in several key ways that laid the foundation for achieving significant reductions of GHG emissions through the use of renewable fuels, for reducing imported petroleum, and for encouraging the development and expansion of the nation's renewable fuels sector. The updated program is referred to as RFS2 and includes the following:

- EISA expanded the RFS program to include diesel, in addition to gasoline;
- EISA increase the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022;
- EISA established new categories of renewable fuel and set separate volume requirements for each one; and

- EISA required by the U.S. EPA to apply lifecycle GHG performance threshold standards to ensure that each category of renewable fuel emits fewer GHGs than the petroleum fuel it replaces.¹⁰

Additional provisions of the EISA address energy savings in government and public institutions, promoting research for alternate energy, additional research in carbon capture, international energy programs, and the creation of “green jobs.”

Federal Vehicle Standards

In 2009, the NHTSA issued a final rule regulating fuel efficiency and GHG emissions from cars and light-duty trucks for model year 2011; and, in 2010, the EPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012–2016.

In 2010, President Obama issued a memorandum directing the Department of Transportation, Department of Energy, EPA, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, EPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017–2025 light-duty vehicles. The proposed standards projected to achieve 163 grams per mile of carbon dioxide (CO₂) in model year 2025, on an average industry fleetwide basis, which is equivalent to 54.5 miles per gallon if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021, and NHTSA intends to set standards for model years 2022–2025 in a future rulemaking.

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, the EPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014 – 2018. The standards for CO₂ emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the EPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by 6 to 23 percent over the 2010 baselines.

In August 2016, the EPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018–2027 for certain trailers, and model years 2021–2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work

¹⁰ U.S. EPA. Renewable Fuel Standard Program. Overview for Renewable Fuel Standard. <https://www.epa.gov/renewable-fuel-standard-program/overview-renewable-fuel-standard>. Accessed June 2019.

trucks. The final standards are expected to lower CO₂ emissions by approximately 1.1 billion MT and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program.¹¹

In August 2018, The USEPA and NHTSA released a notice of proposed rulemaking called Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks (SAFE Vehicles Rule). This rule would modify the existing CAFE standards and tailpipe carbon dioxide emissions standards for passenger cars and light trucks, and establish new standards covering model years 2021-2026. SAFE standards are expected to uphold model year 2020 standards through 2026.¹²

State of California

Integrated Energy Policy Report

Senate Bill 138 (Bowen Chapter 568, Statutes of 2002) requires the California Energy Commission to prepare a biennial integrated energy policy report that assesses major energy trends and issues facing the state's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the state's economy; and protect public and safety (Public Resources Code §25301(a)).

The 2016 Integrated Energy Policy Report¹³ (IEPR) was published in February 2017, and continues to work towards improving electricity, natural gas, and transportation fuel energy use in California. The 2016 IEPR focuses on a variety of topics such as including the environmental performance of the electricity generation system, landscape-scale planning, transportation fuel supply reliability issues, and the California Energy Demand Forecast.

State of California Energy Action Plan

The CEC initially adopted the Energy Action Plan in 2003, which identified emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The CEC's goal for the Energy Action Plan is to ensure that adequate,

¹¹ U.S. Department of Transportation. Briefing Room. EPA and DOT Finalize Greenhouse Gas and Fuel Efficiency Standards for Heavy-Duty Trucks. <https://www.transportation.gov/briefing-room/epa-and-dot-finalize-greenhouse-gas-and-fuel-efficiency-standards-heavy-duty-trucks>. Accessed June 2019.

¹² U.S. Department of Transportation. SAFE. The Safer Affordable Fuel-Efficient 'SAFE' Vehicles Rule. <https://www.nhtsa.gov/corporate-average-fuel-economy/safe>. Accessed June 2019.

¹³ California Energy Commission. 2016 Integrated Energy Policy Report Update. https://www.energy.ca.gov/2016_energy_policy/. Accessed June 2019.

reliable, and reasonably-priced electrical power and natural gas supplies, including prudent reserves, are achieved and provided through policies, strategies, and actions that are cost-effective and environmentally sound for California's consumers and taxpayers. The plan called 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 identified a number of strategies, including assistance to public agencies and fleet operators and encouragement of urban designs that reduce vehicle miles traveled and accommodate pedestrian and bicycle access.

Integrated Energy Policy Report

In 2002, Senate Bill 1389 was passed that requires the CEC to prepare the Integrate Energy Policy Report that assesses major energy trends and issues facing the state's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources, protect the environment, ensure reliable, secure, and diverse energy supplies. The report is required to be prepared every two years. Information from the Energy Action Plan was incorporated into this policy report and the Energy Action Plan was no longer updated.

California's Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24)

Residential and Nonresidential Buildings in 1978 in response to a legislative mandate to reduce energy consumption in California. Although not originally intended to reduce GHG emissions, increased energy efficiency and reduced consumption of electricity, natural gas, and other fuels would result in fewer GHG emissions from residential and nonresidential buildings subject to the standard. The standards are updated periodically to allow for the consideration and inclusion of new energy efficiency technologies and methods.

Part 11 of the Title 24 Building Standards Code is referred to as the California Green Building Standards Code (CALGreen Code). The purpose of the CALGreen Code is to "improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a positive environmental impact and encouraging sustainable construction practices in the following categories: (1) planning and design; (2) energy efficiency; (3) water efficiency and conservation; (4) material conservation and resource efficiency; and (5) environmental air quality." The CALGreen Code is not intended to substitute or be identified as meeting the certification requirements of any green building program that is not established and adopted by the California Building Standards Commission (CBSC).

CALGreen contains both mandatory and voluntary measures. For nonresidential land uses, there are 39 mandatory measures including, but not limited to, exterior light pollution reduction,

wastewater reduction by 20 percent, and commissioning of projects over 10,000 square feet. Two tiers of voluntary measures apply to nonresidential land uses, for a total of 36 additional elective measures.

California's Building Energy Efficiency Standards are updated on an approximately three-year cycle. Starting in 2020, the 2019 standards will improve upon existing standards, focusing on three key areas: proposing new requirements for installation of solar photovoltaics for newly constructed low-rise residential buildings; updating current ventilation and Indoor Air Quality (IAQ) requirements; and extending Title 24 Part 6 to apply to healthcare facilities. The 2019 Building Energy Efficiency Standards are approximately 53 percent more efficient than the 2016 Title 24 Energy Standards for residential development and approximately 30 percent more efficient for nonresidential development.

Executive Order B-30-15

Executive Order B-30-15, 2030 Carbon Target and Adaptation, issued by Governor Brown in April 2015, set a target of reducing GHG emissions by 40 percent below 1990 levels in 2030. To achieve this ambitious target, Governor Brown identified five key goals for reducing GHG emissions in California through 2030:

- Increase the amount of renewable electricity provided state-wide to 50 percent;
- Double energy efficiency savings achieved in existing buildings and make heating fuels cleaner;
- Reduce petroleum use in cars and trucks by up to 50 percent;
- Reduce emissions of short-lived climate pollutants; and
- Manage farms, rangelands, forests, and wetlands to increasingly store carbon.

Senate Bill (SB) 375 (Sustainable Communities and Climate Protection Act)

In January 2009, California SB 375, known as the Sustainable Communities and Climate Protection Act, went into effect. The objective of SB 375 is to better integrate regional planning of transportation, land use, and housing to reduce sprawl and ultimately reduce GHG emissions and other air pollutants. SB 375 tasks CARB to set GHG reduction targets for each of California's 18 regional Metropolitan Planning Organizations (MPOs). Each MPO is required to prepare a Sustainable Communities Strategy (SCS) as part of their Regional Transportation Plan (RTP). The SCS is a growth strategy in combination with transportation policies that will show how the MPO will meet its GHG reduction target. If the SCS cannot meet the reduction goal, an Alternative Planning Strategy may be adopted that meets the goal through alternative development, infrastructure, and transportation measures or policies.

In 2010, CARB released the proposed GHG reduction targets for the MPOs. The proposed reduction targets for the Fresno COG region were five percent by year 2020 and ten percent by year 2035 through September of 2018, then six percent by 2020 and 13 percent by 2035 beginning in October of 2018.¹⁴

Renewables Portfolio Standard Program

In 2002, California established its Renewables Portfolio Standard (RPS) Program, with the goal of increasing the percentage of renewable energy in the state's electricity mix to 20 percent of retail sales by 2017. The 2003 Integrated Energy Policy Report recommended accelerating that goal to 20 percent by 2010, and the 2004 Energy Report Update further recommended increasing the target to 33 percent by 2020. The state's Energy Action Plan also supported this goal. In 2006 under Senate Bill 107, California's 20 percent by 2010 RPS goal was codified. The legislation required retail sellers of electricity to increase renewable energy purchases by at least one percent each year with a target of 20 percent renewables by 2010. Publicly owned utilities set their own RPS goals, recognizing the intent of the legislature to attain the 20 percent by 2010 target.

In 2008, Governor Schwarzenegger signed Executive Order S-14-08 requiring that "all retail sellers of electricity shall serve 33 percent of their load with renewable energy by 2020." The following year, Executive Order S-21-09 directed CARB to enact regulations to achieve the goal of 33 percent renewables by 2020.

In 2015, Governor Brown signed Senate Bill 350 to codify ambitious climate and clean energy goals. One key provision of SB 350 is for retail sellers and publicly owned utilities to procure "half of the state's electricity from renewable sources by 2030."

The State's RPS program was further strengthened by SB 100 in 2018. SB 100 revised the State's RPS Program to require retail sellers of electricity to serve 50 percent and 60 percent of the total kilowatt-hours sold to retail end-use customers be served by renewable energy sources by 2026 and 2030, respectively, and to require that 100 percent of all electricity supplied come from renewable sources by 2045.

¹⁴ California Air Resources Board. Regional Plan Targets. <https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-program/regional-plan-targets>. Accessed June 2019.

Executive Order B-55-18

In 2018, Governor Brown signed EO B-55-18 to achieve carbon neutrality by moving California to 100 percent clean energy by 2045. This Executive Order also includes specific measures to reduce GHG emissions via clean transportation, energy efficient buildings, directing cap-and-trade funds to disadvantaged communities, and better management of the state's forest land.

Low Carbon Fuel Standard Regulation

CARB initially approved the Low Carbon Fuel Standard (LCFS) regulation in 2009, identifying it as one of the nine discrete early action measures in the 2008 Scoping Plan to reduce California's GHG emissions. The LCFS regulation defines a Carbon intensity, or "CI," reduction target (or standard) for each year, which the rule refers to as the "compliance schedule." The LCFS regulation requires a reduction of at least 10 percent in the CI of California's transportation fuels by 2020 and maintains that target for all subsequent years.

CARB has begun the rulemaking process for strengthening the compliance target of the LCFS through the year 2030. For a new LCFS target, the preferred scenario in the 2017 Scoping Plan Update identifies an 18 percent reduction in average transportation fuel carbon intensity, compared to a 2010 baseline, by 2030 as one of the primary measures for achieving the state's GHG 2030 target. Achieving the SB 32 reduction goals will require the use of a low carbon transportation fuels portfolio beyond the amount expected to result from the current compliance schedule.¹⁵

Advanced Clean Cars Program

In 2012, CARB approved the Advanced Clean Cars (ACC) Program (formerly known as Pavley II) for model years 2017-2025. The components of the ACC program are the Low-Emission Vehicle (LEV) regulations and the Zero-Emission Vehicle (ZEV) regulation. The program combines the control of smog, soot, and global warming gases with requirements for greater numbers of zero-emission vehicles into a single package of standards. By 2025, new automobiles under California's Advanced Clean Car program will emit 34 percent less global warming gases and 75 percent less smog-forming emissions.

¹⁵ California Air Resources Board. CARB amends Low Carbon Fuel Standard for wider impact. <https://ww2.arb.ca.gov/index.php/news/carb-amends-low-carbon-fuel-standard-wider-impact>. Accessed June 2018.

EO B-48-18, issued by Governor Brown in 2018, establishes a target to have five million ZEVs on the road in California by 2030. This Executive Order is supported by the State's 2018 ZEV Action Plan Priorities Update, which expands upon the State's 2016 ZEV Action Plan. While the 2016 plan remains in effect, the 2018 update function as an addendum, highlighting the most important actions State agencies are taking in 2018 to implement the directives of EO B-48-18.

City of Sanger

The City currently utilizes the guidance provided in its General Plan that minimizes wasteful energy consumption, as summarized below:

Circulation and Transportation Element:

Goal 3: The City's transportation system shall be maintained, designed, constructed, operated and implemented in a manner which provides a roadway network which supports the economy and maintain personal mobility and promotes safety, convenience, and efficiency.

Policy 2: Transportation system improvements and operations shall be located and designed to promote utilization of the existing system, intermodal coordination and give priority to energy-conservation.¹⁶

Thresholds of Significance

Consistent with Appendix G of the CEQA Guidelines, the proposed Project will have a significant impact related to energy if it will:

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

Impacts and Mitigation Measures

Impact 3.6-1: *Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?*

Less Than Significant. Project implementation would likely increase the demand for electricity and natural gas within the Planning Area and gasoline consumption in the region during

¹⁶ 2025 Sanger General Plan. Circulation and Transportation Element. Page 4.29

construction and operation of new land use developments. Under the 20-year buildout period of the GPU with a 1.7% population growth rate, the City of Sanger is expected to increase by an additional 10,074 residents, which is a population increase of 39.80% from 2018 population estimates. Utilizing the same extrapolation as described in the Environmental Setting portion of this section, annual energy use at GPU buildout is provided in Table 3.6-4.

Table 3.6-4: Annual Electricity and Natural Gas Annual Consumption in Sanger at GPU Buildout

Natural Gas (Millions of Therms consumed)	Electricity (kWh consumed)
12.164	265.971

Electricity

Construction Use. Temporary electric power would be required at various construction sites throughout the Planning Area as growth occurs under the Project. Electricity would be consumed by lighting and electronic equipment located in trailers used by construction crews, and by small, off-road equipment used during construction activities. However, the electricity used for such activities would be temporary and would have a negligible contribution to the overall energy consumption in the Planning Area.

Operational Use. Development allowed by the Project would require electricity for multiple uses, including, but limited to building heating and cooling, lighting, appliance use (washer, dryer, microwave), and other electronics (television).

Natural Gas

Construction Use. Substantial natural gas consumption is not anticipated to occur during construction activities that could occur with Project implementation. Fuels used for construction would generally consist of diesel and gasoline, which are discussed in the next section “Diesel and Gasoline Fuel”. Potential natural gas use during construction activities allowed by Project growth would not substantially contribute to overall energy consumption in the Planning Area, and would not be unnecessary, inefficient, or wasteful.

Operational Use. Natural gas consumption during Project operations would be required for various purposes, such as building heating and cooling.

Although growth may be occurring within the Planning Area under the Project, new development and land use turnover would be required to comply with statewide mandatory energy requirements outlined in Title 24, Part 6, of the California Code of Regulations (the CALGreen Code), which could decrease estimated electricity and natural gas consumption in new and retrofitted structures. Furthermore, energy consumed by development in the Planning Area could continue to be subject to the regulations described in the Regulatory Setting of this Section. For these reasons, the electrical and natural gas energy that would be consumed by the Project is not considered unnecessary, inefficient, or wasteful.

Diesel and Gasoline Fuel

Construction Use. Diesel and gasoline fuels, also referred to as petroleum, would be consumed during construction activities as the Planning Area experiences new development. Fuel use by construction equipment would be the primary energy resource consumed during construction activities, and VMT associated with the transportation of construction materials (e.g., deliveries) and worker trips would also result in petroleum consumption. Whereas on-site, heavy-duty construction equipment and delivery trucks would predominantly use diesel fuels, construction workers would generally rely on gasoline-powered vehicles to travel to and from construction sites. State regulations such as LCFS would reduce the carbon intensity of transportation-related fuels, and all construction projects would be required to comply with CARB's Airborne Toxic Control Measures, which, for example, restrict heavy-duty diesel vehicle idling to five minutes. Since petroleum use during construction would be temporary at each location, necessary for construction activities, and subject to mandatory regulations described above, it would not be unnecessary, wasteful or inefficient.

Operational Use. Vehicle fuel consumption associated with Project operation would occur over the next approximately 20 years and would primarily be attributable to people traveling to or from the City for work, shopping, school, or other reasons. Growth under the proposed Project would increase VMT in the region, however, fuel consumption would generally decrease as vehicle fuel efficiency increases to meet State GHG reduction goals.

Numerous regulations are in place that require and encourage fuel efficiency. For example, CARB has adopted an approach to passenger vehicles by combining the control of smog-causing pollutants and GHG emissions into a single, coordinated package of standards. The approach also includes efforts to support and accelerate the number of plug-in hybrids and ZEVs in California. In addition, per the requirements identified in SB 375, CARB adopted a regional goal to reduce GHG's by 35 percent by 2045.

Vehicle fuel in the Planning Area is not anticipated to significantly increase during GPU buildout due fuel efficiency standards enacted at the State level and because of the growth strategies utilized in planning the General Plan Land Use map described in the GPU Land Use Element and as described below:

Contiguous Growth – Growth in Sanger should strive to be contiguous (next to) existing developed areas – rather than leap-frog across undeveloped or agricultural land.

Concentric Growth: Growth should be concentric to the core of the community to ensure that downtown Sanger remains at the heart of the City.

Compact Growth: Growth should be compact to prevent the community from sprawling onto productive agricultural land in an inefficient manner. Compact growth also tends to utilize city infrastructure more efficiently.

Core Growth: Sanger’s downtown and adjacent older residential neighborhoods constitute the “Core” of the community. This geographical area should house most of Sanger’s public buildings, eateries, offices and future hotels. Further most of Sanger’s public events should be held in this area.

Control Growth: The control of growth often resides with zoning guidelines; however, growth lines can also control the outward urbanization by promoting “infill” rather than “sprawl”.

As such, petroleum consumption associated with implementation of the Project would not be considered unnecessary, inefficient, or wasteful.

As described above, the consumption of electricity, natural gas, and vehicle fuel resources would be necessary to accommodate the planned level of growth envisioned by the Project. The use of energy resources in the Planning Area would become substantially more efficient over time with the change in land uses envisioned by the Project and the application of more stringent regulations that reduce energy usage. Various goals, objectives and action plans are identified in the 2035 GPU that will protect energy efficiency and are as follows:

Sanger General Plan: Transportation/Circulation

Goals, Objectives, Action Plans

Goal:

I. Develop a comprehensive circulation system that is coordinated with planned land use patterns contained in the Land Use Element.

Objective:

7. Transportation system improvements and operations shall be located and designed to promote utilization of the existing system, intermodal coordination and give priority to energy-conservation.

Sanger General Plan: Safety Element

Goals, Objectives, Action Plans

Goal:

I. Work to reduce emissions of greenhouse gases that contribute to global climate change.

Objective:

2. Promote energy efficient building construction and operation through:

- a. Solar power systems
- b. Passive solar design, such as streets in future subdivisions that are oriented east-west
- c. Tree-shaded streets
- d. Drought tolerant landscaping
- e. Good street connectivity in new subdivisions
- f. Cool roofs

Objective:

3. Promote the reduction of the City's greenhouse gas emissions, which can include the following:

- a. Purchasing low/no emissions vehicles
- b. Promote ride sharing

- c. Recycling the maximum amount of materials
- d. Converting street parkways with lawn to bark chips or drought tolerant ground covers
- e. Support state efforts to reduce greenhouse gas emissions
- f. Installing solar power systems on City buildings

Compliance with the above-noted policies and mandatory federal and state regulations will reduce potential unnecessary, inefficient, or wasteful uses of energy resources. Additionally, Mitigation Measure GHG-1, as discussed in Chapter 3.8 – Greenhouse Gas Emissions requires all future development to either be consistent with mitigation framework developed by the SJVAPCD or to demonstrate that GHG emissions reductions have been included in project design to reduce total emissions by 29 percent. A reduction in greenhouse gas emissions will in turn reduce inefficiencies in energy usage. However, implementation of the City’s General Plan Policies, Goals and other regulations as described herein would ensure that impacts relating to energy remain *less than significant*.

Mitigation Measures

None Required.

Impact 3.6-2: *Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?*

Less Than Significant. Title 24, California’s Energy Efficiency Standards for Residential and Non-residential Buildings, was established by the CEC in 1978 in response to a legislative mandate to create uniform building codes to reduce California’s energy consumption and provide energy efficiency standards for residential and non-residential buildings through the State, including the City of Sanger. In 2019, the CEC updated Title 24 standards with more stringent requirements. The 2019 Standards were incorporated within the California Building Code and are expected to substantially reduce the growth in electricity and natural gas use. Additional savings result from the application of the Standards on building alterations. For example, requirements for cool roofs, lighting, and air distribution ducts are expected to save additional electricity. These savings are cumulative, doubling as years go by. Additionally, starting in 2020, all new homes constructed in

California are required to include solar panels, per the CEC's 2019 Building Energy Efficiency Standards.¹⁷

In addition to being in compliance with federal and state regulations, the GPU itself provides policies that are designed specifically to reduce energy consumption or to reduce other types of pollutants that have the co-benefit of reducing energy consumption, as discussed in Impacts 3.6-1 and 3.8-1. Any impacts related to conflicting or obstructing a state or local plan for renewable energy or energy efficiency would be *less than significant*.

Mitigation Measures

None Required.

Cumulative Impacts

Less Than Cumulatively Considerable. The scope for considering cumulative impacts to energy are the geographic areas covered by the General Plan Update and Master Plan as well as all of the San Joaquin Valley. Development associated with buildout of the Planning Area would require the consumption of electricity, natural gas, and vehicle fuel resources to accommodate growth. As discussed above, new development and land use turnover would be required to comply with statewide mandatory energy requirements outlined in Title 24, Part 6, of the California Code of Regulations (the CALGreen Code), which could decrease estimated electricity and natural gas consumption in new and retrofitted structures. Furthermore, energy consumed by development in the Planning Area could continue to be subject to the regulations described in the Regulatory Setting of this Section. For these reasons, the electrical and natural gas energy that would be consumed by the Project is not considered unnecessary, inefficient, or wasteful. Impacts are *less than cumulatively considerable*.

¹⁷ California Energy Commission, Energy Commission Adopts Standards Requiring Solar Systems for New Homes, First in Nation, May 9, 2018. https://www.energy.ca.gov/releases/2018_releases/2018-05-09_building_standards_adopted_nr.html. Accessed May 2019.

3.7 Geology/Soils

This section of the DEIR identifies potential impacts of implementing the proposed Project on geology and soils. No IS/NOP comment letters were received pertaining to this topic.

Environmental Setting

Topography

The Sanger planning area is located on topography that is nearly level, with a gradual slope downward from northeast to southwest. Elevations range from about 320 to 415 feet above sea level. Local variations in slope of six to ten feet to the mile are typical. An exception is the banks and floodplain of the Kings River in the eastern portion of the community. The bluff of the river drops ten to fifteen feet in portions. The floodplain of the river generally lays about 25 to 35 feet below the elevation of the downtown Sanger.¹

Soils

The U.S. Department of Agriculture and Natural Resources Conservation Service rates soils according to a classification system to demonstrate the suitability of soils for most types of crops. The rating system uses Roman numerals from I to VIII, where Class I soils have slight limitations that restrict use and Class VIII soils have the greatest limitations for commercial crop production.

Most soils in the Sanger area fall within Class I to III rankings (meaning they are very valuable for agriculture). Class I soils include:

- Grangeville fine sandy loam (1 to 1 percent slopes)
- Greenfield sandy loam (0 to 3 percent slopes)
- Hanford fine sandy loam
- Hesperia fine sandy loam
- Ramona loam
- Ramona sandy loam

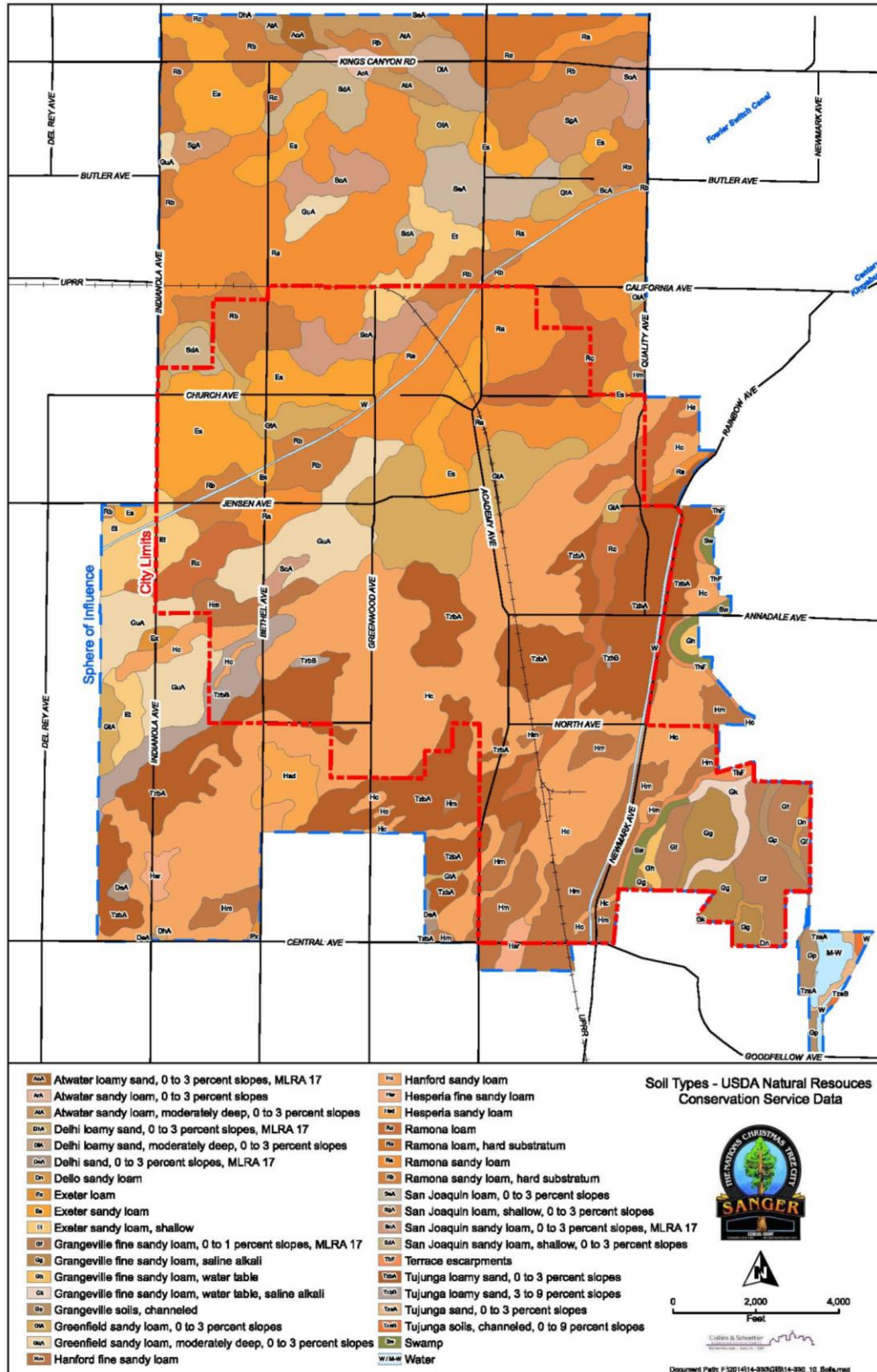
¹ Sanger 2035 GPU, Part II: Community Profile, Pages 2-1 to 2-7 (Collins & Schoettler, 2018).

Soils in the Sanger area are described by the Soil Survey of Eastern Fresno County prepared by the Soil Conservation Service, Department of Agriculture and Figure 3.5-1 describes soils locations within the planning area. The general soil maps of these surveys show 11 major soil groups in the Sanger area: the Atwater, Delhi, Dello, Exeter, Grangeville, Greenfield, Hanford, Hesperia, Ramona, San Joaquin and Tujunga series. These series and specific soils are described in more detail below.²

- The Atwater series consists of deep, well-drained coarse textured and moderately coarse textured soils that formed in stabilized old dunes of wind-sorted material.
- The Delhi series consists of deep, somewhat excessively drained, rapidly permeable, coarse textured soils formed in wind-laid deposits of uniformly sorted sandy material.
- The Dello series consists of deep soils that formed under somewhat poorly drained to poorly drained conditions from permeable, coarse-textured, granitic alluvium or wind laid sands.
- The Exeter series consists of well drained soils having a medium textured, weakly defined subsoil that overlies a strongly cemented silica-iron hardpan at a moderate depth. These soils developed in granitic alluvium of intermediate aged terraces of the Kings River and small streams draining the foothills.
- The Grangeville series consists of moderately coarse textured soils that formed in recent granitic alluvium where drainage was somewhat poor. These soils have moderately rapid permeability and lack a subsoil.
- The Greenfield series are deep, well-drained and moderately coarse textured and have a moderately permeable subsoil. These soils formed in young granitic alluvium that is poorly sorted and contains many coarse particles.
- The Hanford series consists of well-drained, fertile moderately coarse textured soils formed in recent granitic alluvium. These soils lack a subsoil but are some of the best soils for farming in the survey area.

² Sanger 2035 GPU, Part II: Community Profile, Pages 2-2 to 2-6 (Collins & Schoettler, 2018).

Figure 3.7-1: Soils Map



- The Hesperia series consistent of well drained moderately coarse textured soils that formed in granitic alluvium. These soils are typically located on the central parts of the young fans of the Kings River.
- The Ramona series consists of well drained soils that formed in moderately coarse textured old granitic alluvium. They comprise a large part of the low alluvial terraces in the Sanger area.
- The San Joaquin series consists of well-drained soils formed from old granitic alluvium. These soils have a thin clay layer in the subsoil and are moderately deep to a strongly cemented hardpan.
- The Tujunga series consists of excessively drained loamy sand and sandy soils that formed in recent alluvium derived from granitic rocks. These soils occupy flood plains and fans of rivers and smaller streams.

The characteristics of individual soil types in the Sanger area for farming and development are listed in Table 3.7-1.

Expansive Soils

The NRCS delineates soil units and compiles soils data as part of the National Cooperative Soil Survey. Linear extensibility (also known as shrink-swell potential or expansive potential) 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 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 6-9 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.³

The linear extensibility of the soils within the Sanger planning area range from low to low-moderate, as provided in Table 3.7-1.

³ NRCS. UC Davis. California Soil Resource Lab. <https://casoilresource.lawr.ucdavis.edu/gmap/help/defn-linear-extensibility.html>. Accessed May 2018.

Table 3.7-1: Soils in the Sanger Planning Area

Soil Type	Land Capability Classification (1)	Storie Index (2)	Building Site Limitations	Shrink/Swell Potential	Corrosion Potential
Atwater loamy sand, 0 to 3 percent slopes	III	70	Moderate to severe	Low	Low
Atwater sandy loam, moderately deep, 0 to 3 percent slopes	III	52	Moderate to severe	Low	Low
Delhi loamy sand, 0 to 3 percent slopes	III	72	Severe	Low	Low
Delhi loamy sand, moderately deep, 0 to 3 percent slopes	III	77	Severe	Low	Low
Delhi sand, 0 to 3 percent slopes	IV	51	Severe	Low	Low
Dello sandy loam	III	45	Severe	Low	Low
Exeter loam	III	45	Severe	Low	Low
Exeter sandy loam	III	42	Severe	Low	Low
Grangeville fine sandy loam, 0 to 1 percent slopes	I	90	Severe	Low	High
Grangeville fine sandy loam, saline alkali	II	72	Severe	Low	High
Grangeville fine sandy loam, water table	II	60	Severe	Low	High
Grangeville fine sandy loam, water table, saline alkali	II	48	Severe	Low	High
Grangeville soils, channeled	II	36	Severe	Low	High
Greenfield sandy loam, 0 to 3 percent slopes	I	90	Moderate to severe	Low	Low
Greenfield sandy loam, moderately deep, 0 to 3 percent slopes	III	67	Moderate	Low	Low
Hanford fine sandy loam	I	100	Moderate to severe	Low	Low
Hanford sandy loam	II	95	Moderate to severe	Low	Low
Hesperia fine sandy loam	I	100	Moderate to severe	Low	Low
Hesperia sandy loam	II	95	Moderate to severe	Low	Low
Ramona loam	I	85	Moderate	Low-Moderate	Moderate
Ramona loam, hard substratum	II	65	Moderate	Low-Moderate	Moderate
Ramona sandy loam	I	77	Moderate	Low-Moderate	Moderate
San Joaquin loam, 0 to 3 percent slopes	III	31	Severe	Low-Moderate	High
San Joaquin loam, shallow, 0 to 3 percent slopes	III	23	Severe	Low-Moderate	High
Terrace escarpments	VIII	10	Moderate	NA	Low
Tujunga loamy sand, 0 to 3 percent slopes	III	76	Severe	Low	Low
Tujunga loamy sand, 3 to 9 percent slopes	III	68	Severe	Low	Low
Tujunga sand, 0 to 3 percent slopes	IV	54	Severe	Low	Low
Tujunga soils, channeled, 0 to 9 percent slopes	IV	36	Severe	Low	Low

Source: Soil Survey Eastern Fresno Area, 1971
(United States Department of Agriculture, Soil Conservation Service)

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. The Department of Conservation Division of Mines and Geology has mapped naturally occurring asbestos in Fresno County. There are no mapped deposits of naturally occurring asbestos within the Sanger planning area.⁴ The nearest deposits are located in central Fresno County, northwest of Millerton Lake.

Corrosivity

Corrosivity refers to potential soil-induced electrochemical or chemical action that could corrode or deteriorate concrete, reinforcing steel in concrete structures, and bare-metal structures exposed to these soils. The rate of corrosion is related to factors such as soil moisture, particle size distribution, and the chemical composition and electrical conductivity of the soil. The natural soils found in the planning area range from low to high corrosivity, as seen in Table 3.7-1. The materials used in the construction of modern infrastructure is typically designed to resist the effects of corrosion over the design life of the infrastructure. Additionally, native soils are typically replaced by engineered backfill which generally has a low corrosive potential.

Geology

Sanger is located in the east center of the Great Valley of California, a nearly flat northwest-southeast trending basin approximately 450 miles long by 50 miles wide. The basin is bordered by Mesozoic plutonic, volcanic, and metamorphic rocks of the Sierra Nevada mountains on the east and by Mesozoic and Cenozoic metamorphic and sedimentary rocks of the Coast Ranges on the west. The original basin underlying the valley gradually filled with waterborne sediments, largely derived from the erosion of the Sierra Nevada (and to a lesser extent from the Coast Ranges). The Kings River is the main water channel in the planning area and drains nearly 1,700 square miles of the central Sierra Nevada mountain range. Alluvial fans formed by this river are the largest geomorphic features of the Sanger area. The formation of these fans resulted in mostly

⁴ Department of Conservation. Division of Mines and Geology. Open-File Report 2000-19. A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos. August 2000. ftp://ftp.consrv.ca.gov/pub/dmg/pubs/ofr/ofr_2000-019.pdf. Accessed May 2018.

flat regional topography, except for some areas adjacent to the river where geologic forces (including river erosion) have caused relatively significant elevation variations.⁵

Seismicity

The Sanger area is subject to ground shaking from earthquakes generated by California's numerous faults, although there are no known faults within or adjacent to the planning area. Major faults that lay on the west side of the Central Valley include the San Andreas, Ortigalita, Calaveras, Hayward, Coalinga and Rinconada. Major faults to the east (primarily on the east side of the Sierra Nevada mountains) include the Owens Valley Fault, Kern Front Fault Groups, White Wolf Fault and the Kern Canyon Fault.

Fresno County is comprised of nine seismic zones, as defined in the Five County Seismic Safety Element (FCSSE) (prepared and adopted in 1974 by the five counties of the southern San Joaquin Valley and their cities). These zones are differentiated by the level of ground motion that can reasonably be anticipated from earthquakes on the principal fault systems affecting the five county area. The generalized location of these zones is shown in the map below. This exhibit shows that Sanger is located within the "V1" (Valley-1) zone. The FCSSE states that the V1 zone is:

"characterized by a relatively thin section of sedimentary rock overlying a granitic basement. Amplification of shaking that would affect low to medium-rise structures is relatively high, but the distance to either of the faults that are the expected sources of the shaking is sufficiently great that the effects should be minimal. The requirements of Zone II of the Uniform Building Code should be adequate for normal facilities."

This data indicates that Sanger is located in a "lower" risk area in terms of seismic activity. Building standards contained in the Uniform Building Code for Zone II should be adequate for protection from earthquake events that may affect Sanger.⁶

According to the FCSSE, Sanger is most likely to be affected by the White Wolf fault about 62 miles to the southeast in the Sierra Nevada; the Owens Valley Fault about 70 miles east of the City, and the San Andreas Fault, which lies within the Coast Range mountains, about 85 miles west/southwest of Sanger. The distance from these faults to Sanger is sufficient enough that the City is somewhat protected from the most severe forms of damage that would result from an

⁵ Sanger 2035 GPU, Part II: Community Profile, Pages 2-1 to 2-7 (Collins & Schoettler, 2018).

⁶ Sanger 2035 General Plan Safety Element. Page 5-3.

earthquake.⁷ Sanger is not located in a designated “Special Studies Zone” under the Alquist-Priolo Special Studies Zone Act of 1972.

Regulatory Setting

Federal Regulations

Earthquake Hazards Reduction Act

The Earthquake Hazards Reduction Act was enacted in 1997 to “reduce the risks to life and property from future earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards and reduction program.” To accomplish this, the act established the National Earthquake Hazards Reduction Program (NEHRP). This program was significantly amended in November 1990 by the National Earthquake Hazards Reduction Program Act (NEHRPA), which refined the description of agency responsibilities, program goals, and objectives.

NEHRP’s mission includes improved understanding, characterization, and prediction of hazards and vulnerabilities; improvement of building codes and land use practices; risk reduction through post-earthquake investigations and education; development and improvement of design and construction techniques; improvement of mitigation capacity; and accelerated application of research results.

The NEHRPA designates FEMA as the lead agency of the program and assigns it several planning, coordinating, and reporting responsibilities.

State Agencies and Regulations

Seismic Hazards Mapping Act

“Under the Seismic Hazards Mapping Act, the State Geologist is responsible for identifying and mapping seismic hazards zones as part of the California Geologic Survey (CGS). The CGS provides zoning maps of non-surface rupture earthquake hazards (including liquefaction and seismically induced landslides) to local governments for planning purposes. These maps are intended to protect the public from the risks associated with strong ground shaking, liquefaction, landslides or other ground failure, and other hazards caused by earthquakes. For projects within seismic hazard zones, the Seismic Hazards Mapping Act requires developers to conduct

⁷ Sanger 2035 General Plan Safety Element. Page 5-3.

geological investigations and incorporate appropriate mitigation measures into project designs before building permits are issued.”

California Building Code

“The California Building Code is another name for the body of regulations known as the California Code of Regulations (C.C.R.), Title 24, Part 2, which is a portion of the California Building Standards Code. Title 24 is assigned to the California Building Standards Commission, which, by law, is responsible for coordinating all building standards.

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist- Priolo Earthquake Fault Zoning Act (formerly the Alquist- Priolo Special Studies Zone Act), signed into law December 1972, requires the delineation of zones along active faults in California. The purpose of the Alquist-Priolo Act is to regulate development on or near active fault traces to reduce the hazards associated with fault rupture and to prohibit the location of most structures for human occupancy across these traces.

City of Sanger Regulations

The City currently relies on the guidance provided in its General Plan and Zoning Ordinance that includes policies to protect development with regards to geologic hazards. These policies are as follows:

Safety Element: Evaluate proposed projects and land use policy decisions based on the environmental hazards identified in this element. Low intensity/occupancy uses (such as agricultural production, recreational uses, or wildlife habitat preservation) shall be preferred in hazard areas.

Continue to maintain the City’s Emergency Operations Plan to ensure the safety of residents and to prevent damage to the built and natural environment.

Continue to update/adopt building code standards for Seismic Zone II as described in the Uniform Building Code.

Thresholds of Significance

The thresholds of significance for this section are established by the CEQA Checklist Item.

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

Impacts and Mitigation Measures

Impact 3.7-1: *Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:*

- i) *Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.*
- ii) *Strong seismic ground shaking?*
- iii) *Seismic-related ground failure, including liquefaction?*
- iv) *Landslides?*

Less Than Significant. Buildout under the GPU would result in new development and introduce additional population that could be exposed to seismic hazards. No known active faults are located within the SOI and no Alquist-Priolo Earthquake Fault Zoning has been established by

the State of California within the planning area. As such, hazards from fault rupture hazards are considered unlikely.

Future development within the SOI will likely be subject to ground shaking during a seismic event, which could have potential to cause direct and indirect damage to building and infrastructure and to cause injury. The increased exposure of new development and people to risks from seismic shaking is a potentially significant impact.

Hazards associated with ground failure/liquefaction during a seismic shaking event are generally considered to be less than significant, as soils characteristics and depth to groundwater conditions within the proposed SOI do not generally indicate a heightened potential for ground failure/liquefaction risk. Nevertheless, it is possible that site specific conditions exist within the SOI where potential for liquefaction could be elevated. Therefore, impacts from liquefaction are potentially significant.

Since the City is located on the level San Joaquin Valley floor, risks from landslides throughout the proposed SOI would generally be minimal and potential impacts on new development would be less than significant. However, slopes do occur along the margins of the Kings River, at the southernmost portion of the planning area. Should new development to be permitted along these slopes, slope failure during a seismic event or from loading slopes where soils become saturated during a storm event is possible. This would be a potentially significant impact.

The City has developed goals, objectives and action plans to protect development from potential geologic hazards as follows:

Sanger Land Use Element: Safety

Goals, Objectives, Action Plans

Goal:

I. Minimize the danger to the residents of Sanger from seismic events.

Objective:

1. The City shall ensure that all new and rehabilitated structures are constructed to meet adequate building standards.

Action Plan:

a. The City of Sanger shall continue to update/adopt building code standards for Seismic Zone II as described in the Uniform Building Code.

b. The City shall continue the abatement/rehabilitation of unreinforced masonry buildings.

Objective:

2. The City shall review the State Mining and Geology Board's publications which define Special Studies Zones for areas along fault lines, and incorporate information into local regulations, as appropriate.

Action Plan:

a. The Planning Department shall review State Mining and Geology maps as they are updated.

Objective:

3. The City of Sanger shall continue the abatement/rehabilitation of dangerous buildings as defined by the Uniform Housing Code.

Action Plan:

a. The building department shall identify dangerous buildings and target them for abatement or rehabilitation, through the process outlined in the Uniform Housing Code.

The goals, objectives and action plans noted above would make sure that all development would be developed in accordance with the seismic safety standards contained in the California Building Code, would ensure that development occurring as a result of the General Plan Update buildout would not be potentially impacted by geologic and seismic hazards. Impacts would *be less than significant*.

Mitigation Measures: None are required.

Impact 3.7-2: *Result in substantial soil erosion or the loss of topsoil?*

Less Than Significant Impact. Buildout of the General Plan would allow development and improvement projects that would involve some land clearing, mass 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.

The development of any onsite or offsite storm drainage facilities (e.g. new or expanded channels or peak attenuation facilities such as swales or basins) would permanently alter existing topography. Side slopes of channels or excavations during construction can be eroded by natural forces if proper slope angles are not maintained. Future projects would also result in the addition of impervious surfaces within the Planning Area, and depending on the location of the project, could possibly result in the alteration of topographic features at the project site. The alteration of topographic features could lead to increased erosion by creating unstable rock or soil surfaces, by changing the permeability or runoff characteristics of the soil, or by modifying or creating new pathways for drainage. Because much of the Planning Area is relatively flat and the locations of projects that would substantially alter topography are limited, there would be minimal geotechnical effects related to erosion.

As future development and infrastructure projects are considered by the City of Sanger, each project will be evaluated for conformance with the California Building Code, the 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.⁸ 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. As such, potential impacts associated with erosion including the loss of topsoil would be *less than significant*.

Mitigation Measures: None are required.

Impact 3.7-3: *Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?*

Less Than Significant Impact. The only known areas of soil/geologic instability within the SOI are the slopes within and along the margins of the Kings River corridor; however, as seen in Table

⁸ California Water Board. State Water Resources Control Board. Construction Stormwater Program. Construction General Permit Order. https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.html. Accessed May 2018.

3.7-1, soils in the planning area have moderate to severe building limitations. As previously discussed, impacts associated with liquefaction, lateral spreading, and landslides would be less than significant. Portions of the San Joaquin Valley have been subject to land subsidence or collapse due to groundwater and petroleum extraction. Damage caused by subsidence or collapse has been restricted principally to significant changes in gradients of canals and aqueducts, and breakage of deep-water well casings. Within the San Joaquin Valley, subsidence or collapse is concentrated in the southern part and the west side of the valley where rainfall is sparse and groundwater recharge is minimal. Although subsidence or collapse is a significant concern in western Fresno County, as well as other portions of the Valley, the Planning Area is not known to be subject to such subsidence or collapse hazards. Implementation of goals, objectives and action plans discussed in the proposed GPU and in Impact 3.7-1 above will serve to mitigate potential impacts from construction and/or development activities on unstable soils to a *less than significant* level.

Mitigation Measures: None are required.

Impact 3.7-4: *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?*

Less Than Significant Impact. As described in Table 3.7-1, the majority of soils in the planning area have a low or low to moderate shrink/swell potential. Implementation of goals, objectives and action plans discussed in Impact 3.5-1 would serve to mitigate any potential impacts resulting from development on expansive soils. As future projects in conformance with the General Plan are proposed, preliminary soil reports are required to be prepared to identify potential site-specific soil issues such as expansive soils and include foundation support and grading parameters in the project design. Impacts would be *less than significant*.

Mitigation Measures: None are required.

Impact 3.7-5: *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 Impact. The City of Sanger provides wastewater collection and treatment for its residents and businesses. The existing sewer system is comprised of a network of approximately 80 miles of sewer pipelines ranging from 6 to 30 inches in diameter and includes four lift stations and associated force mains. Wastewater is conveyed by the collection system to the City's Wastewater Treatment Plant (WWTP) located southeast of the urban area, east of Newmark Avenue and south of North Avenue, adjacent to the Kings River. There are no proposed use of septic tanks or alternative waste disposal systems that are proposed to be utilized

for new development under the General Plan. However, the soils in the area are capable of supporting septic tanks. There are no additional environmental impacts, apart from those disclosed in the relevant chapters of this EIR, which are anticipated to occur. Thus, the impact would remain *less than significant*.

Mitigation Measures: None are required.

Impact 3.7-6: *Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?*

Less than Significant Impact with Mitigation. Paleontological resources are valued for the information they yield about the history of the earth and its past ecological settings. A review of the cultural and historical resources was provided in Section 3.5 and 3.17, Cultural Resources and Tribal Resources, respectively. The Project Area includes all lands within the SOI, including the North Academy Corridor Master Plan Area, and is a mix of developed land, agricultural land, and undeveloped land. There are currently no unique geologic features located in the Project Area.

While the discovery of paleontological resources in the Project Area is considered unlikely, General Plan buildout would adhere to PRC Section 21083.2 which requires all earth-disturbing work to be temporarily suspended or redirected until a qualified paleontologist has evaluated the nature and significance of the records, in accordance with federal, State, and local guidelines. In addition, Mitigation Measure CUL-1 would be implemented in the case of any inadvertent discoveries. With adherence to these regulatory requirements and measures, impacts would be *less than significant*.

Mitigation Measure: CUL-1, as described in Section 3.5.

Cumulative Impacts

Less Than Cumulatively Considerable. The scope for considering cumulative impacts to geology and soils is generally site-specific rather than cumulative in nature because each project site has different geological considerations that would be subject to review. Construction of the individual development projects allowed under City's General Plan and Master Plan may result in risks associated with geology and soils. For example, there will always be a chance that a fault located anywhere in the state (or region) could rupture and cause seismic ground shaking. Additionally, grading, excavation, removal of vegetation cover, and loading activities associated with construction activities could temporarily increase runoff, erosion, and sedimentation.

While some cumulative impacts may occur in the region as individual projects are constructed, the City's General Plan goals, objectives and action plans, as well as State and federal regulations (all of which are identified in in Section 3.7, Geology and Soils), will reduce the risk to people in the region. Considering the protection granted by local, state, and federal agencies and their requirements for the seismic design, as discussed above, the overall cumulative impact would not be significant. The proposed project's incremental contribution to cumulative geologic and soil impacts would be **less than cumulatively considerable**.

3.8 Greenhouse Gas Emissions

This section of the DEIR discusses regional greenhouse gas (GHG) emissions and climate change impacts that could result from implementation of the proposed Project. It provides a background discussion of greenhouse gases and effects of global climate change and organized with an existing setting, regulatory setting, and impact analysis. No IS/NOP comment letters were received pertaining to this topic.

Environmental Setting

The United States Environmental Protection Agency (EPA) refers to climate change as, "...any significant change in the measures of climate lasting for an extended period of time. In other words, climate change includes major changes in temperature, precipitation, or wind patterns, among other effects, that occur over several decades or longer."¹ The United Nations, Intergovernmental Panel on Climate Change (IPCC) refers to climate change as, "a change in the state of the climate that can be identified (e.g. using statistical tests) by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer. It refers to any change in climate over time, whether due to natural variability or because of human activity. This usage differs from that in the United Nations Framework Convention on Climate Change (UNFCCC), where climate change refers to a change of climate that is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and that is in addition to natural climate variability observed over comparable time periods."²

The United Nations Intergovernmental Panel on Climate Change (IPCC) predicted that the global mean temperature change from 1990 to 2100 could range from 1.1 degrees Celsius (°C) to 6.4°C. Regardless of analytical methodology, global average temperatures and sea levels are expected to rise under all scenarios.³ The report also concluded that "[w]arming of the climate system is unequivocal," and that "[m]ost of the observed increase in global average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic greenhouse gas concentrations."

¹ U.S. Environmental Protection Agency. Climate Change: Basic Information. <https://www.epa.gov/climatechange/climate-change-basic-information#Change>. Accessed May 2018.

² United Nations, Intergovernmental Panel on Climate Change. 2007. *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. Page 30. http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr.pdf. Accessed May 2018.

³ United Nations, Intergovernmental Panel on Climate Change. 2001. *Climate Change 2001: The Scientific Basis. Summary for Policymakers*. http://www.grida.no/publications/other/ipcc_tar/?src=/climate/ipcc_tar/wg1/005.htm. Accessed May 2018.

Greenhouse Gasses

Scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as GHG, to the atmosphere. Climate change is the variation of earth's climate over time, whether due to natural variability or as a result of human activities. The primary source of these GHG is fossil fuel use.

The six GHGs defined by Assembly Bill (AB) 32 (discussed further in the Regulatory Environment section) include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). The physical properties and common sources of these GHGs are described in Table 3.8-1. A seventh greenhouse gas, nitrogen trifluoride (NF₃) was added to Health and Safety Code section 38505(g)(7) as a greenhouse gas of concern.⁴ Other greenhouse gases include water vapor, ozone, and aerosols. Black carbon (BC) emissions also have important impacts on public health, the environment, and the Earth's climate. BC is a significant component of particle pollution, which has been linked to adverse health and environmental impacts through decades of scientific research. BC has been linked to a range of climate impacts, including increased temperatures, accelerated ice and snow melt, and disruptions to precipitation patterns.⁵

Table 3.8-1: Description of Greenhouse Gases⁶

Greenhouse Gas	Description and Physical Properties	Sources
Nitrous Oxide (N₂O)	Nitrous oxide (laughing gas) is a colorless greenhouse gas. It has a lifetime of 114 years. Its global warming potential is 310.	Microbial processes in soil and water, fuel combustion, and industrial processes.
Methane (CH₄)	Methane is a flammable gas and is the main component of natural gas. It has a lifetime of 12 years. Its global warming potential is 21.	Methane is extracted from geological deposits (natural gas fields). Other sources are landfills, fermentation of manure, and decay of organic matter.

⁴ California Environmental Protection Agency. Air Resources Board. Assembly Bill 32 Overview.

<http://www.arb.ca.gov/cc/ab32/ab32.htm> Accessed May 2018.

⁵ U.S. Environmental Protection Agency. Report to Congress on Black Carbon. March 2012. Executive Summary.

<https://www3.epa.gov/airquality/blackcarbon/2012report/ExecSummary.pdf>. Page 1. Accessed November 2019.

⁶ Compiled from a variety of sources, primarily from: United Nations, Intergovernmental Panel on Climate Change. 2007. *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. Page 30. http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr.pdf. Accessed May 2018.

Greenhouse Gas	Description and Physical Properties	Sources
Carbon dioxide (CO₂)	Carbon dioxide (CO ₂) is an odorless, colorless, natural greenhouse gas. Carbon dioxide's global warming potential is 1. The concentration in 2005 was 379 parts per million (ppm), which is an increase of about 1.4 ppm per year since 1960.	Natural sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources are from burning coal, oil, natural gas, and wood.
Chlorofluorocarbons (PFCs)	These are gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. They are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth's surface). Global warming potentials range from 3,800 to 8,100.	Chlorofluorocarbons were synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. They destroy stratospheric ozone. The Montreal Protocol on Substances that Deplete the Ozone Layer prohibited their production in 1987.
Hydrofluorocarbons (HFCs)	Hydrofluorocarbons are a group of greenhouse gases containing carbon, chlorine, and at least one hydrogen atom. Global warming potentials range from 140 to 11,700.	Hydrofluorocarbons are synthetic manmade chemicals used as a substitute for chlorofluorocarbons in applications such as automobile air conditioners and refrigerants.
Perfluorocarbons (PFCs)	Perfluorocarbons have stable molecular structures and only break down by ultraviolet rays about 60 kilometers above Earth's surface. Because of this, they have long lifetimes, between 10,000 and 50,000 years. Global warming potentials range from 6,500 to 9,200.	Two main sources of perfluorocarbons are primary aluminum production and semiconductor manufacturing.
Sulfur hexafluoride (SF₆)	Sulfur hexafluoride (SF ₆) is an inorganic, odorless, colorless, and nontoxic, nonflammable gas. It has a lifetime of 3,200 years. It has a high global warming potential, 23,900.	This gas is manmade and used for insulation in electric power transmission equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas.

Greenhouse Gas	Description and Physical Properties	Sources
Nitrogen trifluoride (NF3)	Nitrogen trifluoride (NF3) was added to Health and Safety Code section 38505(f)(7) as a greenhouse gas of concern. It has a high global warming potential of 17,200	This gas is used in electronics manufacture for semiconductors and liquid crystal displays.

Individual GHG compounds have varying global warming potential and atmospheric lifetimes. Carbon dioxide, the reference gas for global warming potential, has a global warming potential (GWP) of one. The GWP of a GHG is a measure of how much a given mass of a greenhouse gas is estimated to contribute to global warming. To describe how much global warming a given type and amount of greenhouse gas may cause, the carbon dioxide equivalent (CO2e) is used. The calculation of the carbon dioxide equivalent is a consistent methodology for comparing greenhouse gas emissions since it normalizes various greenhouse gas emissions to a consistent reference gas, CO2. For example, CH4 has a GWP of 21 which indicates that CH4 has 21 times greater warming effect than CO2 on a molecule-per-molecule basis. CO2e is the mass emissions of an individual GHG multiplied by its GWP.

Emissions Inventories

In 2017, U.S. greenhouse gas emissions totaled 6,456.7 million metric tons of carbon dioxide equivalents, or 5,742.6 million metric tons of carbon dioxide equivalents after accounting for sequestration from the land sector.

Emissions decreased from 2016 to 2017 by 0.5 percent (after accounting for sequestration from the land sector). This decrease was largely driven by a decrease in emissions from fossil fuel combustion, which was a result of multiple factors, including a continues shift from coal to natural gas and increased use of renewables in the electric power sector, and milder weather that contributed to less overall electricity use.

Greenhouse gas emissions in 2017 (after accounting for sequestration from the land sector) were 13 percent below 2005 levels.⁷

⁷ U.S. Environmental Protection Agency. Greenhouse Gas Emissions. Inventory of U.S. Greenhouse Gas Emissions and Sinks. <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks>. Accessed November 2019.

Effects of Climate Change

Globally, climate change has the potential to impact numerous environmental resources through potential, though uncertain, impacts related to future air temperatures and precipitation patterns. The projected effects of global warming on weather and climate are likely to vary regionally, but are expected to include the following direct effects⁸:

- Higher maximum temperatures and more hot days over nearly all land areas;
- Higher minimum temperatures, fewer cold days and frost days over nearly all land areas;
- Reduced diurnal temperature range over most land areas;
- Increase of heat index over land areas; and
- More intense precipitation events.

Also, there are many secondary effects that are projected to result from global warming, including global rise in sea level, impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity. While the possible outcomes and the feedback mechanisms involved are not fully understood, and much research remains to be done, the potential for substantial environmental, social, and economic consequences over the long term may be great.⁹

Regulatory Setting

Intergovernmental Panel on Climate Change

In 1988, the United Nations and the World Meteorological Organization established the Intergovernmental Panel on Climate Change to assess the scientific, technical and socio-economic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts, and options for adaptation and mitigation.

United Nations Framework Convention on Climate Change (Convention)

On March 21, 1994, the United States joined a number of countries around the world in signing the Convention. Under the Convention, governments gather and share information on greenhouse gas emissions, national policies, and best practices; launch national strategies for addressing greenhouse gas emissions and adapting to expected impacts, including the provision

⁸ United Nations, Intergovernmental Panel on Climate Change. 2001. *Climate Change 2001: The Scientific Basis*. Website: https://www.ipcc.ch/ipccreports/tar/wg1/pdf/WGI_TAR_full_report.pdf. Accessed May 2018.

⁹ Ibid.

of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change.

The Paris Agreement

The Paris Agreement is an agreement within the United Nations Framework Convention on Climate Change (UNFCCC), dealing with greenhouse gas emissions mitigation, adaptation, and finance, signed in 2016. The Paris Agreement's long-term goal is to keep the increase in global average temperature to well below 2 degrees C, above pre-industrial levels; and to limit the increase to 1.5 degrees C, since this would substantially reduce the risks and effects of climate change. In June 2017, President Trump announced his intention to withdraw the United States from the agreement. Under this agreement, the earlier effective date of withdrawal for the U.S. is November 2020.

United States Environmental Protection Agency Greenhouse Gas Endangerment Findings

"On December 7, 2009, Administrator Lisa Jackson signed a final action, under Section 202(a) of the Clean Air Act, finding that six key well-mixed greenhouse gases constitute a threat to public health and welfare, and that the combined emissions from motor vehicles cause and contribute to the climate change problem."¹⁰

"The Administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases — carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆) — in the atmosphere threaten the public health and welfare of current and future generations."¹¹

Corporate Average Fuel Economy (CAFE) Standards

Established by the US Congress in 1975, the CAFE standards reduce energy consumption increasing the fuel economy of cars and light trucks. The National Highway Traffic Safety Administration (NHTSA) and US EPA jointly administer the CAFE standards. The US Congress has specified that CAFE standards must be set at the "maximum feasible level" with consideration given to: (1) technological feasibility; (2) economic practicality; (3) effect of other standards on fuel economy; and (4) need for the nation to conserve energy.

¹⁰ United States Environmental Protection Agency. Climate Change. Climate Change Regulatory Initiatives. <https://www.epa.gov/climatechange/climate-change-regulatory-initiatives>. Accessed May 2018.

¹¹ United States Environmental Protection Agency. Climate Change. Endangerment and Cause or Contribute Findings for Greenhouse Gases under the Section 202(a) of the Clean Air Act. <https://www.epa.gov/climatechange/endangerment-and-cause-or-contribute-findings-greenhouse-gases-under-section-202a>. Accessed May 2018.

Fuel efficiency standards for medium- and heavy-duty trucks have been jointly developed by US EPA and NHTSA. The Phase 1 heavy-duty truck standards apply to combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles for model years 2014 through 2018, and result in a reduction in fuel consumption from 6 to 23 percent over the 2010 baseline, depending on the vehicle type. US EPA and NHTSA have also adopted the Phase 2 heavy-duty truck standards, which cover model years 2021 through 2027 and require the phase-in of a 5 to 25 percent reduction in fuel consumption over the 2017 baseline depending on the compliance year and vehicle type.

Vehicle Emissions Standards

In 1975, Congress enacted the Energy Policy and Conservation Act, which established the first fuel economy standards for on-road motor vehicles in the US. Pursuant to the act, US EPA and Nation Highway Traffic Safety Administration (NHTSA) are responsible for establishing additional vehicle standards. In 2012, standards were adopted for model year 2017 through 2025 for passenger and light-duty trucks. Under the standards, by 2025 vehicles are required to achieve 54.5 mpg GHG reductions are achieved exclusively through fuel economy improvements) and 163 grams CO₂ per mile. According to US EPA, a model year 2025 vehicle would emit one-half of the GHG emissions as compared to emissions from a model year 2010 vehicle. California harmonized its vehicle efficiency standards through 2025 with the federal standards.

In 2017, US EPA issued its Mid-Term Evaluation of the GHG emissions standards, finding that would be practical and feasible for automakers to meet the model year 202-2025 standards through a number of existing technologies. In 2018, US EPA revised its 2017 determination, and issued a proposed rule that would maintain the 2020 Corporate Average Fuel Economy (CAFE) and C₂ standards for model years 2021 through 2026. The estimated CAFE and CO₂ standards for model year 2020 are 43.7 mpg and 204 grams of CO₂ per mile for passenger car and 31.3 mpg and 284 grams of CO₂ per mile for light trucks, projecting an overall industry average of 37 mpg, as compared to 46.7 mpg under the standards issued in 2012. In 2019, California, joined by 16 other states and the District of Columbia, filed a petition challenging the US EPA's proposed rule to revise the vehicle emissions standards, arguing that US EPA had reached erroneous conclusions about the feasibility of meeting the existing standards. As of April 9, 2019, the case was pending, and oral arguments had not been scheduled. Accordingly, due to the uncertainty of future federal regulations, this analysis assumes that the existing CAFÉ standards will remain unchanged.

State Regulations

Executive Order S-3-05

“Executive Order S-3-05 was signed by Governor Schwarzenegger on June 1, 2005. This executive order established [GHG] emission reduction targets for California. Specifically, the executive order established the following targets:

- By 2010, reduce GHG emissions to 2000 levels.
- By 2020, reduce GHG emissions to 1990 levels.
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

The executive order additionally ordered that the Secretary of the California Environmental Protection Agency (Cal EPA) would coordinate oversight of the efforts among state agencies made to meet the targets and report to the Governor and the State Legislature biannually on progress made toward meeting the GHG emission targets. Cal EPA was also directed to report biannually on the impacts to California of global warming, including impacts to water supply, public health, agriculture, the coastline, and forestry, and prepare and report on mitigation and adaptation plans to combat these impacts.

Assembly Bill 32: California Global Warming Solutions Act of 2006

In 2006, California passed the California Global Warming Solutions Act of 2006 (Assembly Bill 32; California Health and Safety Code Division 25.5, Sections 38500, et seq.), which requires the CARB to design and implement emission limits, regulations, and other measures, such that feasible and cost-effective statewide GHG emissions are reduced to 1990 levels by 2020.

In December 2007, CARB approved the 2020 emission limit of 427 million metric tons of CO₂ equivalents (CO₂e) of greenhouse gases.¹² The 2020 target of 427 million metric tons of CO₂e requires the reduction of 169 million metric tons of CO₂e, or approximately 30 percent, from the State’s projected 2020 emissions of 596 million metric tons of CO₂e (business-as-usual).

Also in December 2007, CARB adopted mandatory reporting and verification regulations pursuant to AB 32. The regulations became effective on January 1, 2009, with the first reports covering 2008 emissions. The mandatory reporting regulations require reporting for certain types of facilities that make up the bulk of the stationary source emissions in California. Currently, the draft regulation language identifies major facilities as those that generate more than 25,000 metric tons/year of CO₂e. Cement plants, oil refineries, electric-generating facilities/providers, cogeneration facilities, and hydrogen plants and other stationary

¹² California Air Resources Board. 2007. Staff Report. California 1990 Greenhouse Gas Level and 2020 Emissions Limit. November 16, 2007. <https://www.arb.ca.gov/cc/inventory/1990level/1990level.htm>. Accessed May 2018.

combustion sources that emit more than 25,000 metric tons/year CO₂e, make up 94 percent of the point source CO₂e emissions in California.¹³

In June, 2008, CARB published its *Climate Change Draft Scoping Plan*.¹⁴ The *Climate Change Draft Scoping Plan* reported that CARB met the first milestones set by AB 32 in 2007: developing a list of early actions to begin sharply reducing greenhouse gas emissions; assembling an inventory of historic emissions; and establishing the 2020 emissions limit. After consideration of public comment and further analysis, CARB adopted the *Climate Change Scoping Plan* (Scoping Plan) in December, 2008.¹⁵ The Scoping Plan proposes a set of actions designed to reduce overall carbon emissions in California. Key elements of the Scoping Plan include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- Achieving a Statewide renewables energy mix of 33 percent;
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;
- Establishing targets for transportation-related greenhouse gas emissions for regions throughout California, and pursuing policies and incentives to achieve those targets;
- Adopting and implementing measures pursuant to existing State laws and policies, including California’s clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State’s long-term commitment to AB 32 implementation.¹⁶

The *Scoping Plan* notes that “[a]fter Board approval of this plan, the measures in it will be developed and adopted through the normal rulemaking process, with public input”.¹⁷

The *Scoping Plan* states that local governments are “essential partners” in the effort to reduce greenhouse gas emissions, and that they have “broad influence and, in some cases, exclusive jurisdiction” over activities that contribute to greenhouse gas emissions. Local governments may contribute to significant direct and indirect greenhouse gas emissions through their planning and permitting processes, local ordinances, outreach and education efforts, and municipal

¹³ California Air Resources Board. 2007. Staff Report. California 1990 Greenhouse Gas Level and 2020 Emissions Limit. November 16, 2007. <https://www.arb.ca.gov/cc/inventory/1990level/1990level.htm>. Accessed May 2018.

¹⁴ California Air Resources Board. 2008. (includes edits made in 2009) Climate Change Scoping Plan, a framework for change. <http://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm>. Accessed May 2018. Page ES-1.

¹⁵ Ibid.

¹⁶ California Air Resources Board. First Update to the AB 32 Scoping Plan. <https://www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm>. Accessed May 2018.

¹⁷ California Air Resources Board. First Update to the AB 32 Scoping Plan. <https://www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm>. Accessed May 2018.

operations. Many of the proposed measures to reduce greenhouse gas emissions rely on local government actions. The plan encourages local governments to reduce greenhouse gas emissions by approximately 15 percent from current levels by 2020.¹⁸

The *Scoping Plan* also included recommended measures that were developed to reduce greenhouse gas emissions from key sources and activities while improving public health, promoting a cleaner environment, preserving our natural resources, and ensuring that the impacts of the reductions are equitable and do not disproportionately impact low-income and minority communities. These measures also put the State on a path to meet the long-term 2050 goal of reducing California's greenhouse gas emissions to 80 percent below 1990 levels. These measures were presented to and approved by the CARB on December 11, 2008.

The total reduction for the recommended measures is 174 million metric tons/year of CO₂e, slightly exceeding the 169 million metric tons/year of CO₂e of reductions estimated to be needed in the Scoping Plan. The measures in the Scoping Plan approved by the Board will be developed over the next two years and be in place by 2012.

The First Update to the Scoping Plan was approved by the Board on May 22, 2014, and builds upon the initial Scoping Plan with new strategies and recommendations. The First Update identifies opportunities to leverage existing and new funds to further drive GHG emission reductions through strategic planning and targeted low carbon investments. The First Update defines ARB's climate change priorities for the next five years, and also sets the groundwork to reach long-term goals set forth in Executive Orders S-3-05 and B-16-2012. The Update highlights California's progress toward meeting the "near-term" 2020 GHG emission reduction goals defined in the initial Scoping Plan. It also evaluates how to align the State's "longer-term" GHG reduction strategies with other State policy priorities for water, waste, natural resources, clean energy, transportation, and land use."¹⁹

2017 CARB Climate Change Scoping Plan

In response to SB 32 and the 2030 GHG reduction target, CARB approved the 2017 Climate Change Scoping Plan Update (2017 Scoping Plan Update) in 2017. The 2017 Scoping Plan Update outlines the proposed framework of action for achieving the 2030 GHG target of 40 percent reduction in GHG emissions relative to 1990 levels. The 2017 Scoping Plan Update identifies key sectors of the state's implementation strategy, which includes improvements in low carbon energy, industry, transportation sustainability, natural and working lands, waste management and water. Through a combination of data synthesis and modeling, CARB determined that the statewide emissions limit is 260 MMTCO₂e and that further commitments will need to be made to achieve an additional reduction of 50 MMTCO₂e beyond current policies and programs. The cornerstone of the 2017 Scoping Plan Update is an expansion of the Cap-and-Trade Program

¹⁸ Ibid.

¹⁹ California Air Resources Board. First Update to the AB 32 Scoping Plan. <https://www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm>. Accessed May 2018.

(discussed further below) to meet the aggressive 2030 GHG emissions goal and ensure achievement of the 2030 limit set forth by E.O. B-30-15.

The 2017 Scoping Plan Update's strategy for meeting the state's 2030 GHG target incorporates the full range of legislative actions and state-developed plans that have relevance to the year 2030, including the following:

- Extending the LCFS beyond 2020 and increasing the carbon intensity reduction requirement to 18 percent by 2030;
- SB 350, which increases the RPS to 50 percent by 2030 and requires the CEC to establish annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas final end uses of retail customers by 2030. These targets may be achieved through energy efficiency savings and demand reductions from a variety of programs, including but not limited to appliance and building energy efficiency standards and a comprehensive program to achieve greater energy efficiency standards in existing buildings;
- The 2016 Mobile Source Strategy is estimated to reduce consumption of petroleum-based fuels by 50 percent;
- The Sustainable Freight Action Plan to improve freight efficiency and transition to zero-emission freight handling technologies;
- SB 1383, which requires a 50 percent reduction in anthropogenic black carbon and a 40 percent reduction in hydrofluorocarbon and methane emissions below 2013 levels by 2030; and
- AB 398, which extends the state Cap-and-Trade Program through 2030.

In the 2017 Scoping Plan Update, CARB recommends statewide targets of no more than six MT CO₂e per capita by 2030 and no more than two metric tons CO₂e per capita by 2050. CARB acknowledges that because the statewide per capita targets are based on the statewide GHG emissions inventory that includes all emissions sectors in the state (including large industrial sources covered under the state's cap and trade program), they are not applicable for use at the local level. Rather, it is appropriate for local jurisdictions to derive evidence-based local per-capita goals based on local emissions sectors and growth projections.

SB 1368

In 2006, the Senate Legislature adopted Senate Bill (SB) 1368, which was subsequently signed into law by the Governor. SB 1368 directs the California Public Utilities Commission to adopt a performance standard for greenhouse gas emissions for the future power purchases of California utilities. SB 1368 seeks to limit carbon emissions associated with electrical energy consumed in California by forbidding procurement arrangements for energy longer than five years from resources that exceed the emissions of a relatively clean, combined cycle natural gas power plant.

Senate Bill 97

Governor Schwarzenegger signed Senate Bill (SB) 97, a CEQA and greenhouse gas emission bill, into law on August 24, 2007. SB 97 requires the Governor's Office of Planning and Research (OPR) to prepare CEQA guidelines for the mitigation of GHG emissions, including, but not limited to, effects associated with transportation or energy consumption. The Resources Agency certified and adopted the guidelines on December 31, 2009 and submitted them for review by the Office of Administrative Law.

Governor's Office of Planning and Research (OPR)

Consistent with SB 97, on June 19, 2008, OPR released its Technical Advisory on CEQA and Climate Change, which was developed in cooperation with the Resources Agency, the California Environmental Protection Agency (Cal/EPA), and the ARB. The Technical Advisory offers the informal interim guidance regarding the steps lead agencies should take to address climate change in their CEQA documents, until CEQA guidelines are developed pursuant to SB 97 on how state and local agencies should analyze, and when necessary, mitigate greenhouse gas emissions (OPR). According to OPR, lead agencies should determine whether greenhouse gases may be generated by a proposed project, and if so, quantify or estimate the GHG emissions by type and source. Second, the lead agency must assess whether those emissions are individually or cumulatively significant. When assessing whether a project's effects on climate change are "cumulatively significant" even though project specific GHG contribution may be individually limited, the lead agency must consider the impact of the project when viewed in connection with the effects of past, current, and probable future projects. Finally, if the lead agency determines that the GHG emissions from the project as proposed are potentially significant, it must investigate and implement ways to avoid, reduce, or otherwise mitigate the impacts of those emissions.²⁰

Assembly Bill 1493 – Pavley Regulations

On September 24, 2009, the California Air Resources Board (CARB) adopted amendments to the "Pavley" regulations that reduce greenhouse gas emissions in new passenger vehicles from 2009 through 2016. These amendments are part of California's commitment toward a nation-wide program to reduce new passenger vehicle GHGs from 2012 through 2016. As discussed previously, the federal government adopted standards for model year 2012 through 2016 light-duty vehicles. In addition, US EPA and US Department of Transportation (USDOT) have adopted GHG emission standards for model year 2017 through 2025 vehicles. These standards are slightly different from the state's standards, but the state of California has agreed not to contest them, in part due to the fact that while the national standard would achieve slightly fewer reductions in

²⁰ SJVAPCD. Final Staff Report Addressing Greenhouse Gas Emission Impacts Under the California Environmental Quality Act. <http://www.valleyair.org/Programs/CCAP/12-17-09/1%20CCAP%20-%20FINAL%20CEQA%20GHG%20Staff%20Report%20-%20Dec%2017%202009.pdf>. Accessed May 2018.

California, the national standard would achieve greater reductions nationally and is stringent enough to meet state GHG emission reduction goals.

California Assembly Bill (AB) 341

In 2011, Assembly Bill 341 requires that integrated waste management plans set a policy goal of reducing not less than 75% of solid waste to be diverted from landfill disposal by 2020. AB 341 also requires that any business that generates more than 4 cubic yards of commercial solid waste per week to arrange for recycling services.

Senate Bill 375

Senate Bill 375 (Stats. 2880, Ch. 728) 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).

Title 20

California Code of Regulations, Title 20: Division 2, Chapter 4, Article 4, Sections 1601-1608: Appliance Efficiency Regulations regulates the sale of appliances in California. The Appliance Efficiency Regulations include standards for both federally regulated appliances and non-federally regulated appliances. Twenty-three categories of appliances are included within the scope of these regulations. The standards within these regulations apply to appliances that are sold or offered for sale in California, except those sold wholesale in California for final retail sale outside the state and those designated and sold exclusively for use in recreational vehicles or other mobile equipment.

Title 24 and the CALGreen Building Code

Title 24 is the California Building Standards code and is updated every three years. The last update was in 2019. CalGreen is one of 12 parts of Title 24. CalGreen is a set of mandatory green building standards for new construction that went into effect throughout California on January 1, 2020. These building standards apply to all new public and privately-constructed commercial and residential buildings. CALGreen is referred to officially as the California Green Building Standards Code and includes a matrix of mandatory requirements tailored to residential and non-residential building classifications, as well as two sets of voluntary measures (CALGreen Tier 1 and Tier 2) that provide a host of more stringent sustainable building practices and features. Among the key mandatory provisions are requirements that new buildings:

- Reduce indoor potable water use by at least 20% below current standards;
- Recycle or salvage at least 50% of construction waste;
- Utilize low VOC-emitting finish materials and flooring systems;
- Install separate water meters tracking non-residential buildings' indoor and outdoor water use;
- Utilize moisture-sensing irrigation systems for larger landscape areas;

- Receive mandatory inspections by local officials of building energy systems, such as HVAC and mechanical equipment, to verify performance in accordance with specifications in non-residential buildings exceeding 10,000 square feet;
- Requires electric vehicle charging infrastructure for new parking areas and additions to existing parking; and
- Requires shade trees to provide shade to 50% of new surface parking areas and additions to surface parking areas within 15 years, and shade to 20% of landscape areas and hardscape areas within 15 years.

Low Carbon Fuel Standard

In 2007, Executive Order S-01-07 mandates that the state: (1) establish a statewide goal to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020; and (2) adopt a Low Carbon Fuel Standard (LCFS) for transportation fuels in California. The overall goal of the LCFS is to lower the carbon intensity of California transportation fuel. The 2017 Scoping Plan Update calls for the LCFS to reduce fuel carbon intensity by at least 18 percent by 2030. In 2018, CARB extended the LCFS program to 2030, making significant changes to the design and implementation of the Program including a doubling of the carbon intensity reduction to 20 percent by 2030.

CARB's Advanced Clean Car Program

The Advanced Clean Cars Emissions-Control Program was approved by CARB in 2012 and is closely associated with the Pavley regulations. The program requires a greater number of zero-emission vehicle models for years 2015 through 2025 to control smog, soot, and GHG emissions. This program includes the Low-Emissions Vehicle (LEV) regulations to reduce criteria air pollutants and GHG emissions from light-and medium-duty vehicles; and the Zero-Emissions Vehicle regulations (ZEV) to require manufactures to produce an increasing number of pure ZEV's (meaning battery and fuel cell electric vehicles) with the provision to produce plug-in hybrid electric vehicles (PHEV) between 2018 and 2025.

Cap-and-Trade Program

Initially authorized by AB 32, and extended through the year 2030 with the passage of AB 398 in 2017, the California Cap-and-Trade Program is a core strategy that the state is using to meet its GHG reduction targets for 2020 and 2030, and ultimate achieve an 80% reduction from 1990 levels by 2050. CARB designed and adopted the California Cap-and-Trade Program to reduce GHG emissions from "covered entities" (e.g., electricity generation, petroleum refining, cement production, and large industrial facilities that emit more than 25,000 metric tons CO₂e per year), setting a firm cap on statewide GHG emissions and employing market mechanisms to achieve reductions. Under the Cap-and-Trade program, an overall limit is established for GHG emissions from capped sectors. The statewide cap for GHG emissions from the capped sectors commenced in 2013. The cap declines over time. Facilities subject to the cap can trade permits to emit GHGs.

SB 1383 (Short lived Climate Pollutants)

In 2016, SB 1383 required statewide reductions in short-lived climate pollutants (SLCPs) across various industry sectors. SLCPs covered under AB 1383 include methane, fluorinated gases, and black carbon – all GHGs with a much higher warming impact than carbon dioxide and with the potential to have detrimental effects on human health. SB 1383 requires the CAARB to adopt a strategy to reduce methane by 40 percent, hydrofluorocarbon gases by 40 percent, and anthropogenic black carbon by 50 percent below 2013 levels by 2030. The methane emission reduction goals include a 75 percent reduction in the level of statewide disposal of organic waste from 2014 levels by 2025.

Regional Agencies

San Joaquin Valley Air Pollution Control District

The San Joaquin Valley Air District has jurisdiction over eight counties in California’s Central Valley: San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare and the San Joaquin Valley Air Basin portion of Kern. The Air District “is a public health agency whose mission is to improve the health and quality of life for all Valley residents through efficient, effective and entrepreneurial air quality- management strategies.”²¹

“On December 17, 2009, the San Joaquin Valley Air Pollution Control District (District) adopted the guidance: Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA and the policy: District Policy – Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency. The guidance and policy rely on the use of performance-based standards, otherwise known as Best Performance Standards (BPS), to assess significance of project specific greenhouse gas emissions on global climate change during the environmental review process, as required by CEQA.

Use of BPS is a method of streamlining the CEQA process of determining significance and is not a required emission reduction measure. Projects implementing BPS would be determined to have a less than cumulatively significant impact. Otherwise, demonstration of a 29 percent reduction in GHG emissions, from business-as-usual, is required to determine that a project would have a less than cumulatively significant impact. The guidance does not limit a lead agency’s authority in establishing its own process and guidance for determining significance of project related impacts on global climate change.”²²

²¹ San Joaquin Valley Air Pollution Control District. About The District.
http://www.valleyair.org/General_info/aboutdist.htm#Mission. Accessed May 2018.

²² San Joaquin Valley Air Pollution Control District. Climate Change Action Plan.
http://www.valleyair.org/Programs/CCAP/CCAP_menu.htm. Accessed May 2018.

Thresholds of Significance

San Joaquin Valley Air Pollution Control District Significance Criteria

The effects of project specific GHG emissions are cumulative, and unless appropriately reduced or mitigated, their incremental contribution to global climatic change could be considered significant. Valley land-use agencies adopting this guidance as policy for addressing GHG impacts under CEQA as a lead agency will require all new projects with increased GHG emissions to implement performance-based standards, or otherwise demonstrate that project specific GHG emissions have been reduced or mitigated by at least 29%.

- Projects determined to be exempt from the requirements of CEQA would be determined to have a less than significant individual and cumulative impact for GHG emissions and would not require further environmental review, including analysis of project specific GHG emissions. Projects exempt under CEQA would be evaluated consistent with established rules and regulations governing project approval and would not be required to implement BPS.
- Projects complying with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions within the geographic area in which the project is located would be determined to have a less than significant individual and cumulative impact for GHG emissions. Such plans or programs must be specified in law or approved by the lead agency with jurisdiction over the affected resource and supported by a CEQA compliant environmental review document adopted by the lead agency. Projects complying with an approved GHG emission reduction plan or GHG mitigation program would not be required to implement BPS.
- Projects implementing Best Performance Standards would not require quantification of project specific GHG emissions. Consistent with CEQA Guideline, such projects would be determined to have a less than significant individual and cumulative impact for GHG emissions.
- Projects not implementing Best Performance Standards would require quantification of project specific GHG emissions and demonstration that project specific GHG emissions would be reduced or mitigated by at least 29%, compared to Business-as-Usual (BAU*), including GHG emission reductions achieved since the 2002-2004 baseline period. Projects achieving at least a 29% GHG emission reduction compared to BAU would be determined to have a less than significant individual and cumulative impact for GHG.
- Notwithstanding any of the above provisions, projects requiring preparation of an Environmental Impact Report for any other reason would require quantification of project specific GHG emissions. Projects implementing BPS or achieving at least a 29% GHG emission reduction compared to BAU would be determined to have a less than significant individual and cumulative impact for GHG.

In summary, the use of BPS streamlines the significance determination process by pre-quantifying the emission reductions that would be achieved by a specific GHG emission reduction measure and pre-approving the use of such a measure to reduce project-related GHG emissions. Establishing BPS also streamlines the CEQA review process by providing project

proponents, lead agencies and the public with clear guidance on how to reduce GHG emission impacts. Thus, project proponents would be able to incorporate project specific GHG reduction measures during the initial project design phase, which could reduce project specific GHG impacts to less than significant levels.²³

Methodology and Assumptions

The proposed General Plan Update and the Master Plan are planning-level documents with no specific project, project construction dates, or specific construction plans identified. Therefore, quantification of emissions associated with buildout cannot be specifically determined at this level of review. Based on the proposed land use designations, a reasonable buildout scenario has been assumed or purposes of programmatic analysis.

Impacts and Mitigation Measures

Impact 3.8-1: *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 gasses?*

Significant and Unavoidable Impact. Implementation of the proposed GPU will result in a substantial increase in GHGs that could have a significant impact on the environment. As proposed, General Plan buildout will accommodate an additional 10,074 future residents. The GPU has projected that the City will need an additional 290 acres of land to accommodate full buildout as follows:

- Residential – 141 acres
- Commercial – 49 acres
- Industrial – 0 acres
- Parks – 16 acres (at 3 acres per 1,000 residents)
- Schools – 84 acres

The increase in development that would be enabled with implementation of the proposed GPU will result in a corresponding increase in GHGs relative to existing conditions. The additional sources of GHGs would mirror those produced under existing development conditions and reflect those that are typical within a City. Sources of substantial additional GHGs would include, but are not limited to:

- Construction activities associated with new development would generate a significant volume of GHGs

²³ SJVAPCD. Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA. <http://www.valleyair.org/Programs/CCAP/12-17-09/3%20CCAP%20-%20FINAL%20LU%20Guidance%20-%20Dec%2017%202009.pdf>. Page 5. Accessed May 2018.

- Mobile source emissions from passenger vehicles and trucks would continue to be the primary source of new GHG emissions. Then the short-term, primarily from operation of on-road and off-road vehicles.
- Demand for electrical energy and natural gas will also increase substantially relative to existing conditions. Electrical energy use in buildings will be the primary source of increased demand. Production of additional electricity will result in increased GHG emissions generated by fossil-fuel based power plants. Combustion of natural gas by residential, commercial, and school uses will result in direct GHG emissions.
- Additional demand for water will be created, with a substantial increase in electricity demand for water extraction, pumping, and delivery.
- Implementation of the proposed GPU would likely result in the removal of trees and in the disturbance/covering of soils. Tree removal, tree planting, elimination of agricultural crop production, and disturbance of soil can result in changes to the amount of CO₂ that is sequestered on the project site and result in the release stored CO₂.

The proposed GPU contains goals, objectives, and action plans that will serve to reduce GHG emissions as summarized below:

Sanger General Plan: Safety Element

Goals, Objectives, Action Plans

Goal:

I. Work to reduce emissions of greenhouse gases that contribute to global climate change.

Objective:

1. Consider adopting a Climate Action Plan.

Action Plan:

a. The City shall seek funding for preparation of a Climate Action Plan and present it to the City Council for consideration of its approval.

Objective:

2. Promote energy efficient building construction and operation through:

Action Plan:

a. Solar systems

b. Passive solar design, such as streets in future subdivisions that are oriented east-west

c. Tree-shaded streets

d. Drought tolerant landscaping

e. Good street connectivity in new subdivisions.

f. Cool roofs

Objective:

3. Promote the reduction of the City's greenhouse gas emissions, which can include the following:

Action Plan:

- a. Purchasing low/no emissions vehicles
- b. Promote ride sharing
- c. Recycling the maximum amount of materials
- d. Converting street parkways with lawn to bark chips or drought tolerant ground covers
- e. Support State efforts to reduce greenhouse gas emissions.
- f. Installing solar systems on City buildings

As described above, a goal of the proposed Sanger General Plan Update is to prepare and adopt a Climate Action Plan (CAP), which is a programmatic GHG emission reduction plan. CEQA Guidelines Section 15183.5 identifies that an adequate GHG reduction plan must:

- Quantify existing and projected community-wide greenhouse gas emissions;
- Establish greenhouse gas emissions reduction targets over the life of the plan which, if achieved, would render the community's greenhouse gas emissions to be less than significant;
- Identify and analyze the greenhouse gas emissions resulting from sources in the community;
- Identify a set of specific, enforceable measures that, collectively, will achieve the emissions targets;
- Establish a mechanism to monitor the plan's progress and to require amendment if the plan is falling short; and
- Be adopted in a public process following environmental review.

The future analysis of the GHG impacts of individual development projects proposed within the City can be simplified if a programmatic plan such as a CAP has been prepared and adopted that identifies how GHG emissions from all future development within the City can be mitigated. Once the City prepares a qualified CAP, individual project proponents would have the opportunity to incorporate GHG reduction measures identified in the CAP into their projects. By doing so, the GHG emissions impacts of their projects would be determined to be less than significant, both at a project-specific and cumulative level. This streamlines the environmental review process for individual projects by avoiding detailed analysis of GHG emissions generation and reduction measures for individual projects. Adoption of a CAP would allow the City to demonstrate consistency with the intent of the GHG emission targets identified in AB 32 and the Scoping Plan.

In lieu of the City having prepared a CAP, the most applicable plan, policy or regulation adopted for the purpose of reducing GHG emissions is the SJVAPCD's CCAP. As described previously,

the CCAP guidance and more specifically, guidance provided in the SJVAPCD's Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA and the district policy Addressing GHG Emission Impacts for Stationary Source Projects under CEQA When Serving as the Lead Agency²⁴, can be utilized by lead agencies as guidance for reviewing and conditioning new individual development projects to reduce their GHG impacts to less than significant. The guidance for land use projects is designed to assist local agencies. While the City is not required to rely on the guidance, in the absence of an alternative framework for reducing GHG emissions from new development, the guidance is a useful tool whose use by the City would be useful in reducing GHG emissions from new development. However, the proposed GPU does not contain policy that specifically identifies that it would use SJVAPCD guidance as a tool for GHG emissions reduction in the interim until such time as it adopts a CAP.

The proposed Project would be consistent with key state plans and regulatory requirements referenced in the 2017 Scoping Plan Update designed to reduce statewide emissions. According to the 2017 Scoping Plan Update, reductions needed to achieve the 2030 target are expected to be achieved by increasing the RPA to 50 percent of the State's electricity by 2030, greatly increasing the fuel economy of vehicles and the number of zero-emission or hybrid vehicles, reducing the rate of growth in VMT, supporting alternative transportation options, and increasing the use of high efficiency appliances, water heaters, and HVAC systems. The proposed Project would not impede implementation of these potential reduction strategies identified by CARB, and it would benefit from statewide and utility-provider efforts towards increasing the portion of electricity provided from renewable resources. The proposed Project would utilize energy efficient appliances and equipment, as required by Title 24, and would encourage the establishment of EV charging stations to support the future use of electric and hybrid-electric vehicles by employees and visitors.

The City recognizes; however, that it may not be possible for all individual projects to feasibly achieve GHG emissions reductions that are consistent with SJVAPCD guidance (29 percent or greater) or consistent with the GHG reduction measures that would be included the City's future CAP. Consequently, it may not be possible for the City to achieve cumulative GHG emission reductions that are consistent with AB 32 and the Scoping Plan. Consequently, impacts of implementing the proposed GPU and North Academy Corridor Master Plan will be *significant and unavoidable*.

Mitigation Measures:

- GHG-1. Until such time as the City adopts a Climate Action Plan, the City shall review and require all future development projects to be consistent with the GHG emissions

²⁴ SJVAPCD. Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA. December 17, 2009. <https://www.valleyair.org/Programs/CCAP/12-17-09/3%20CCAP%20-%20FINAL%20LU%20Guidance%20-%20Dec%2017%202009.pdf>. Accessed May 2018.

impact analysis and mitigation framework developed by the SJVAPCD as part of its Climate Change Action Plan. Future projects which are not exempt from review under the Climate Change Action Plan framework shall demonstrate that GHG emissions reduction measures have been included in the project design to reduce total emissions by 29 percent or the SJVAPCD emissions reduction threshold in effect at the time environmental review is being conducted for individual projects.

Cumulative Impact

Significant, Unavoidable and Cumulatively Considerable. The scope for considering cumulative impacts to greenhouse gases is the geographic areas covered by the San Joaquin Valley Air Basin. The analysis above provides a cumulative-level analysis of GHG emission impacts and the project's consistency with applicable plans, policies, and regulations adopted for the purpose of reducing the emissions of greenhouse gases. The analysis discusses that General Plan buildout will accommodate an additional 10,074 future residents and will need an additional 290 acres of land to be converted to residential, commercial, park, and school land uses. While goals, objectives and action plans are proposed in the GPU to reduce GHG emissions, it is not known if these actions would reduce GHG emissions to less than significant levels. Therefore, the projects contribution to cumulative Greenhouse Gas emissions is considered *significant, unavoidable and cumulatively considerable*.

3.9 Hazards and Hazardous Materials

This section of the DEIR identifies potential impacts of the proposed Project pertaining to hazards and hazardous materials, proximity to airports/schools, and assessment of wildfire risk. No IS/NOP comment letters were received pertaining to this topic.

Hazards include man--made or natural materials or man--made or natural 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. Hazards to humans can also existing from natural or human induce wildfire and air traffic accidents.

Environmental Setting

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 include a variety of substances such as lubricants, herbicides and pesticides, solvents, gasoline, household cleaning products, refrigerants and radioactive substances. Some are common to industrial and commercial process, while others are commonly used in households. A hazardous waste is simply the spent or used hazardous material that requires disposal. Improper transport, storage, handling, use and disposal of hazardous wastes can have significant impacts on the environment and human health.

Hazardous Sites

The Cortese List is a planning document used by the State, local agencies, and land owners 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) and the State Water Resources Board are responsible for a portion of the information contained in the Cortese List.

Other State and local government agencies are required to provide additional hazardous material release information for the Cortese List.

DTSC 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 includes: Permitted–Operating, Post---Closure Permitted, and Historical Non---Operating.

According to the DTSC, there are six cleanup sites within a five-mile radius of Sanger, as provided in Table 3.9-1. One of the six sites, HS Mann Metal Waste Company, is an active state response site, and is approximately 0.6 miles southwest of the Sanger planning area. The other five sites are either inactive, certified clean, or no further action is needed.

Table 3.9-1: Sanger Cleanup Sites¹

ENVIROSTOR ID	PROJECT NAME	STATUS	PROJECT TYPE
60002132	Del Rey / North Site	No Further Action	School Investigation
10880003	ELEMENTARY SCHOOL SITE	Certified	School Cleanup
10330038	H S MANN METAL WASTE COMPANY	Active	State Response
60000583	Proposed Sanger West Elementary School	Inactive - Needs Evaluation	School Investigation
10490072	SANGER DISPOSAL SITE	No Further Action	Evaluation
60002138	Sanger Unified Alternative Education Site	No Further Action	School Investigation

GeoTracker is the California Water Resource 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. There are 40 locations with a Sanger address that are listed in the GeoTracker database for Leaking Underground Storage

¹ California Department of Toxic Substances Control. EnviroStor data management.
<http://www.envirostor.dtsc.ca.gov/public/map/?myaddress=sanger+california>. Accessed May 2018.

Tanks (LUST). Thirty-six of the locations have undergone LUST cleanup and the State has closed the case.

Wildfire Hazards

The agricultural lands that surround the existing urbanized portions of the City have a low level of wildland fire hazard, as they are not characterized as having a high fuel load. The threat of wildland fire hazard within the urbanized areas of the City is also low for the same reason. Significant wildland fire hazards exist in the County primarily in the foothills of the Sierra Nevada where fuel loads can be high. Given the low fuel loads within the planning area, wildland fires would not have an impact on existing development or future development within the Sanger planning area. According to the Fresno County Multi-Hazard Mitigation Plan, Sanger is not within a moderate, high or very-high zone of population at risk to wildfire.²

Airports

The City of Sanger does not have a municipal airport and no airports is located in the SOI or is planned to be built. The nearest commercial airport is Fresno Yosemite International Airport. Fresno Yosemite International Airport is a joint civil-military public airport in eastern Fresno, approximately 10 miles northwest of the City of Sanger via State Route 180/Peach Avenue.

The airport covers 2,150 acres and has two runways and one helipad. The airport is the air transport center for the San Joaquin Valley, with flights to airline hubs throughout the Western United States. International flights to/from Mexico are also available. Fresno Yosemite International Airport is also home to the Fresno Air National Guard Base and the 144th Fighter Wing (114 FW) of the California Air National Guard.³

Schools

Sanger Unified School District provides public education facilities in Sanger and the surrounding area. Current attendance in the district is approximately 11,360. Table 3.9-2 provides school names and locations.

² Fresno County Multi-Hazard Mitigation Plan. Page 4.235 (2018).

³ Sanger 2035 GPU, Part II: Community Profile, Page 1-50 (Collins & Schoettler, 2018).

Table 3.9-2: Sanger Unified School District Schools

Campus	Location
Centerville Elementary	48 South Smith Ave.
Community Day	818 L St.
Del Rey Elementary	10620 Morro St.
Fairmont Elementary	3095 North Greenwood Ave.
Hallmark Charter	2445 Ninth St.
Jackson Elementary	1810 Third St.
Jefferson Elementary	1110 Tucker St.
John S. Wash Elementary	6350 East Ln. Ave.
Kings River High (Continuation)	1801 Seventh St.
Lincoln Elementary	1700 14th St.
Lone Star Elementary	2617 South Fowler Ave.
Madison Elementary	2324 Cherry St.
Quail Lake Environmental Charter	4087 North Quail Lake Dr.
Ronald W. Reagan Elementary	1586 South Indianola
Sanger Academy Charter	2207 Ninth St.
Sanger High	1045 Bethel Ave.
Sequoia Elementary	1820 South Armstrong Ave.
Taft High	1801 Seventh St.
Washington Academic Middle	1705 Tenth St.
Wilson Elementary	610 Faller St.

Solid Waste Information System

The Solid Waste Information System (SWIS) is a database of solid waste facilities that is maintained by the California Integrated Waste Management Board (CIWMB). The SWIS data identifies active, planned and closed sites. The City of Sanger has two facilities listed; the closed Sanger Disposal Site (City Yard) located at 3199 S. Ross Ave (west of wastewater treatment plant) and the active Sanger Public Works Yard located at 333 North Avenue in Sanger. The active Sanger Public Works Yard is a transfer/processing facility with a permitted capacity of 3,700 tons per year of solid waste.⁴

Fresno County Multi-Hazard Mitigation Plan

The purpose of the Fresno County Multi-Hazard Mitigation Plan is to reduce or eliminate long-term risk to people and property from hazards. Fresno County and the other participating jurisdictions developed this multi-hazard mitigation plan to make the County and its residents less vulnerable to future hazard events. This plan was prepared pursuant to the requirements of the Disaster Mitigation Act of 2000 so that Fresno County would be eligible for the Federal Emergency Management Agency's (FEMA) Hazard Mitigation Assistance Grants, including Pre-Disaster Mitigation and Hazard Mitigation Grant programs as well as lower flood insurance premiums (in jurisdictions that participate in the National Flood Insurance Program's Community Rating System). The plan was originally developed in 2007-2008 and FEMA approved in 2009. The plan was comprehensively updated in 2017-2018. The County followed a planning process in alignment with FEMA guidance during its original development and update, which began with the formation of a hazard mitigation planning committee (HMPC) comprised of key county, city, and district representatives and other stakeholders. The HMPC conducted a risk assessment that identified and profiled hazards that pose a risk to Fresno County, assessed the County's vulnerability to these hazards, and examined the capabilities in place to mitigate them. The County is vulnerable to several hazards that are identified, profiled, and analyzed in this plan. Floods, wildfires, severe weather, drought, and agricultural hazards are among the hazards that can have a significant impact on the County. Based on the risk assessment, the HMPC identified goals and objectives for reducing the County's vulnerability to hazards. To meet identified goals and objectives, the plan recommends a number of mitigation actions that include actions specific to each participating jurisdiction. This plan has been formally adopted by the County and the participating jurisdictions and will be updated every five years at a minimum.

⁴ California Department of Resources Recycling and Recovery (CalRecycle). SWIS Facility/Site Listing. <http://www.calrecycle.ca.gov/SWFacilities/Directory/SearchList/List?COUNTY=Fresno>. Accessed May 2018.

Standardized Emergency Management System (SEMS)

Standardized emergency management system (SEMS) is a structure for coordination between the government and local emergency response organizations. It provides and facilitates the flow of emergency information and resources within and between the organizational levels of field response, local government, operational areas, regions and state management. SEMS facilitates priority setting, integrated coordination, effective flow of resources and information between all stakeholders. SEMS incorporates the use of the Incident Command System (ICS), Master Mutual Aid Agreement (MMAA), Operational Area (OA) concept and multi-agency and interagency coordination. State agencies and local government units are to use SEMS in order to become eligible for reimbursement costs led by the state's disaster assistance program.

Regulatory Setting

Federal Agencies and Regulations

Hazardous Materials Transportation Act

The Hazardous Materials Transportation Act of 1975 (HMTA) as amended, is the major transportation-related statute affecting DOE. The objective of the HMTA according to the policy stated by Congress is "... to improve the regulatory and enforcement authority of the Secretary of Transportation to protect the Nation adequately against risks to life and property which are inherent in the transportation of hazardous materials in commerce." The HMTA empowered the Secretary of Transportation to designate as hazardous material any "particular quantity or form" of a material that "may pose an unreasonable risk to health and safety or property."

Regulations apply to "... any person who transports, or causes to be transported or shipped, a hazardous material; or who manufactures, fabricates, marks, maintains, reconditions, repairs, or tests a package or container which is represented, marked, certified, or sold by such person for use in the transportation in commerce of certain hazardous materials."⁵

Superfund

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), commonly referred to as "Superfund", was enacted on December 11, 1980. The purpose of CERCLA was to provide authorities with the ability to respond to uncontrolled releases of hazardous substances from inactive hazardous waste sites that endanger public health and the

⁵ United States Department of Labor. Occupational Safety and Health Administration. Transporting Hazardous Materials. https://www.osha.gov/SLTC/trucking_industry/transportinghazardousmaterials.html. Accessed May 2018.

environment. CERCLA established prohibitions and requirements concerning closed and abandoned hazardous waste sites, provided for liability of persons responsible for releases of hazardous waste at such sites, and established a trust fund to provide for cleanup when no responsible party could be identified. Additionally, CERCLA provided for the revision and republishing of the National Contingency Plan (NCP) that provides the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants. The NCP also provides for the National Priorities List, a list of national priorities among releases or threatened releases throughout the United States for the purpose of taking remedial action.

Superfund Amendments and Reauthorization Act SARA amended CERCLA on October 17, 1986. This amendment increased the size of the Hazardous Response Trust Fund to \$8.5 billion, expanded EPA's response authority, strengthened enforcement activities at Superfund sites; and broadened the application of the law to include federal facilities. In addition, new provisions were added to the law that dealt with emergency planning and community right to know. SARA also required EPA to revise the Hazard Ranking System to ensure that the system accurately assesses the relative degree of risk to human health and the environment posed by sites and facilities subject to review for listing on the National Priorities List.

Federal Insecticide, Fungicide and Rodenticide Act

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) provides for federal regulation of pesticide distribution, sale, and use. All pesticides distributed or sold in the United States must be registered (licensed) by EPA. Before EPA may register a pesticide under FIFRA, the applicant must show, among other things, that using the pesticide according to specifications "will not generally cause unreasonable adverse effects on the environment." 7 U.S.C. Section 136 et seq.

Federal Emergency Management Act (FEMA)

The National Flood Insurance Act (1968) makes available federally subsidized flood insurance to owners of flood-prone properties. To facilitate identifying areas with flood potential, Federal Emergency Management Agency (FEMA) has developed Flood Insurance Rate Maps (FIRM) that can be used for planning purposes.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) gives EPA the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the

management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances.

HSWA - the Federal Hazardous and Solid Waste Amendments - are the 1984 amendments to RCRA that focused on waste minimization and phasing out land disposal of hazardous waste as well as corrective action for releases. Some of the other mandates of this law include increased enforcement authority for EPA, more stringent hazardous waste management standards, and a comprehensive underground storage tank program.

State Agencies & Regulations

California Environmental Protection Agency (Cal/EPA) Department of Toxic Substance Control (DTSC)

Cal/EPA has regulatory responsibility under Title 22 of the California Code of Regulations (CCR) for administration of the state and federal Superfund programs for the management and cleanup of hazardous materials. The DTSC is responsible for regulating hazardous waste facilities and overseeing the cleanup of hazardous waste sites in California. The Hazardous Waste Management Program (HWMP) regulates hazardous waste through its permitting, enforcement and Unified Program activities. HWMP maintains the EPA authorization to implement the RCRA program in California, and develops regulations, policies, guidance and technical assistance/training to assure the safe storage, treatment, transportation and disposal of hazardous wastes. The State Regulatory Programs Division of DTSC oversees the technical implementation of the state's Unified Program, which is a consolidation of six environmental programs at the local level, and conducts triennial reviews of Unified Program agencies to ensure that their programs are consistent statewide and conform to standards.

Hazardous Substance Account Act (1984), California Health and Safety Code Section 25300 ET SEQ (HSAA)

This act, known as the California Superfund, has three purposes: 1) to respond to releases of hazardous substances; 2) to compensate for damages caused by such releases; and 3) to pay the state's 10 percent share in CERCLA cleanups. Contaminated sites that fail to score above a certain threshold level in the EPA's ranking system may be placed on the California Superfund list of hazardous wastes requiring cleanup.

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
- 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.

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 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 Fire Code

The California Fire Code (CFC) is Part 9 of Title 24, California Code of Regulations, also referred

to as the California Building Standards Code. The CFC incorporates the 2009 International Fire Code of the International Code Council with necessary California amendments. The purpose of the CFC is to establish the minimum requirements consistent with nationally recognized good practices to safeguard the public health, safety and general welfare from the hazards of fire, explosion or dangerous conditions in new and existing buildings, structures and premises, and to provide safety and assistance to fire fighters and emergency responders during emergency operations.

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 of the Health and Safety Code establishes Department of Toxic Substances Control (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 of the Health and Safety Code 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 and UBC Section 13000 *et seq.*

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 UBC 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)

Establishes requirements related to the transportation of explosives in quantities greater than

1,000 pounds, including licensing and route identification.

California Public Utilities Commission (CPUC)

CPUC is the State agency charged with ensuring the safety of freight railroads, intercity and commuter railroads, and highway-railroad crossing in the State of California. CPUC performs these railroad safety responsibilities through the Railroad Operations and Safety Branch (ROSB) of the Safety & Enforcement Division. ROSB's mission is to ensure that California communities and railroad employees are protected from unsafe practice on freight and passenger railroads by enforcing state and federal rail safety rules, regulations, and inspection efforts; and by carrying out proactive assessments of potential risks before they create dangerous conditions. ROSB investigates rail accidents and safety related complaints, and recommends safety improvements to the Commission, railroads, and the federal government as appropriate. In addition to enforcing California Public Utilities Code and CPUC General Orders, ROSB inspectors enforce FRA regulations in a state/federal enforcement partnership.

Cal/EPA Cortese List

The provisions in Government Code Section 65962.5 are commonly referred to as the "Cortese List" (after the Legislator who authored the legislation that enacted it). The list, or a site's presence on the list, has bearing on the local permitting process as well as on compliance with the California Environmental Quality Act (CEQA). The Cortese List identifies the following:

- Hazardous Waste and Substance Sites
- Cease and desist order Sites
- Waste Constituents above Hazardous Waste Levels outside the Waste Management Unit Sites
- Leaking Underground Tank (LUST) Cleanup Sites
- Other Cleanup Sites
- Land Disposal Sites
- Military Sites
- WDR Sites
- Permitted Underground Storage Tank (UST) Facilities Sites
- Monitoring Wells Sites
- DTSC Cleanup Sites
- DTSC Hazardous Waste Permit Sites

Local

Fresno County

The Fresno County Environmental Health Department implements the Hazardous Waste Generator Program and the Hazardous Waste Treatment/Tiered Permit Program throughout Fresno County. The purpose of these programs is to ensure that all hazardous waste generated in Fresno County businesses are properly handled, recycled, treated, stored and disposed. Environmental Health staff inspects facilities that generate hazardous waste, investigates reports of illegal hazardous waste disposal, and responds to emergency spills of hazardous chemicals. Environmental Health staff also participates in public education programs to inform industries and residents about the laws and regulations relating to the safe disposal of hazardous waste.

Facilities that store, use or handle hazardous materials above reportable amounts are required to prepare and file a Hazardous Materials Business Plan for the safe storage and use of chemicals. In the event of an emergency, firefighters, health officials, planners, public safety officers, health care providers and others rely on the Business Plan. Implementation of the Business Plan should prevent or reduce damage to the health and safety of people and the environment when a hazardous material is released.

San Joaquin Valley Air Pollution Control District

The San Joaquin Valley Air District (SJVAPCD) is a public health agency whose mission is to improve the health and quality of life for all Valley residents through efficient, effective and entrepreneurial air quality-management strategies. SJVAPCD's ten core values include: protection of public health; active and effective air pollution control efforts with minimal disruption to the Valley's economic prosperity; outstanding customer service; ingenuity and innovation; accountability to the public; open and transparent public process; recognition of the uniqueness of the Valley; continuous improvement; effective and efficient use of public funds; and respect for the opinions and interests of all Valley residents.⁶ To achieve these core values the SJVAPCD has adopted air quality plans pursuant to the California CAA and a comprehensive list of rules to limit air quality impacts. The air plans currently in effect in the SJVAB and specific rules that apply to the proposed Project are listed and described further below.

The SJVAPCD is responsible for controlling emissions primarily from stationary sources. The SJVAPCD, in coordination with the eight countywide transportation agencies, is also

⁶ San Joaquin Valley Air Pollution Control District. About the District.
http://www.valleyair.org/General_info/aboutdist.htm#Mission. Accessed May 2018.

responsible for developing, updating, and implementing air quality attainment plans for the SJVAB. The SJVAPCD also regulates asbestos demolition and other hazardous materials handling.

Certified Unified Program Agency (CUPA)

The California Environmental Protection Agency designates specific local agencies as Certified Unified Program Agencies (CUPA), typically at the county level. In Fresno County, the County Health Services Department Hazardous Materials Division is responsible for the County's Certified Unified Program Agency (CUPA) programs. Each designated CUPA is responsible for the implementation of six statewide programs within its jurisdiction. These programs include:

- Underground storage of hazardous substances (USTs)
- Hazardous Materials Business Plan (HMP) requirements
- Hazardous Waste Generator requirements
- California Accidental Release Prevention (Cal---ARP) program
- Uniform Fire Code hazardous materials management plan
- Above Ground Storage Tanks (Spill Prevention Control and Countermeasures Plan only)

Implementation of these programs involves:

- Permitting and inspection of regulated facilities
- Providing educational guidance and notice of changing requirements stipulated in State or Federal laws and regulations
- Investigations of complaints regarding spills or unauthorized releases
- Administrative enforcement actions levied against facilities that have violated applicable laws and regulations

City of Sanger Regulations

The City currently utilizes the guidance provided in its General Plan and Zoning Ordinance that protects residents and development from exposure to hazardous materials. See below:

Safety Element: Continue to maintain the City's Emergency Operations Plan to ensure the safety of residents and to prevent damage to the built and natural environment.

Land Use and Urban Form Element: Prohibit, whenever feasible, the use of hazardous materials and airborne chemicals within 1,000 ft. of residential areas.

In addition, the Sanger Municipal Code section 82-210 requires an owner or operator to notify the City of a hazardous waste discharge and section 38-7.2 declares hazardous or toxic waste substances a nuisance if not properly contained.

Thresholds of Significance

The thresholds of significance for this section are established by the CEQA Checklist Item.

- Create a significant hazard through transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions involving the release 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 within one-quarter mile of an existing or proposed school
- Located on a list of hazardous materials site
- Located within an airport land use plan
- Interfere with an adopted emergency response plan or emergency evacuation plan
- Wildland Fire Risk

Impacts and Mitigation Measures

Impact 3.9-1: *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 Impact. Buildout of the proposed General Plan would result in increased urban development in the Sanger planning area and a corresponding increase in the use, storage, transport, and disposal of hazardous materials by residents, commercial businesses, and industry. This will increase the potential for significant public health and environmental hazards from these activities as well as from the accidental release of hazardous materials.

Grading and excavation of sites for new development may expose construction workers and the public to known or potentially unknown hazardous substances present in the soil or groundwater. However, new development on contaminated areas that would occur as a result of implementation of the General Plan would be required to be remediated (i.e. cleaned up), prior to the commencement of construction activities. These activities would be under the supervision of DTSC, Fresno County Division of Environmental Health and/or the Regional Water Quality Control Board, depending on the site characteristics. Potential soil contamination in these areas

must be properly identified and cleaned up prior to any development activities on any of these sites to prevent exposure of people and the environment to these hazards. As urban development progresses onto existing agricultural land, transport, use and storage of agricultural chemicals now used on that land will be eliminated.

As development occurs in the Planning Area, existing structures may need to be demolished and new buildings will be constructed. Demolition of existing buildings in the Planning Area could expose persons working or living in the Planning Area to potentially hazardous materials including, but not limited to, asbestos and lead from lead-based paints. Various regulations and guidelines pertaining to abatement of, and protection from, exposure to asbestos and lead have been adopted for demolition activities. These requirements include: San Joaquin Valley Air Pollution Control District requirements for demolitions and renovations; Construction Safety Orders 1529 (pertaining to asbestos); and 1532.1 (pertaining to lead) from Title 8 of CCR, Part 61, Subpart M of the Code of Federal Regulations (pertaining to asbestos); and lead exposure guidelines provided by HUD. In California, asbestos and lead abatement must be performed and monitored by contractors with appropriate certifications from the State Department of Health Services. In addition, the California Occupational Safety and Health Administration (Cal/OSHA) has regulations concerning the use of hazardous materials, including requirements for safety training, availability of safety equipment, hazardous materials exposure warnings, and emergency action and fire prevention plan preparation. Cal/OSHA enforces the hazard communication program regulations, which include provisions for identifying and labeling hazardous materials, describing the hazards of chemicals and documenting employee-training programs. All demolition that could result in the release of lead and/or asbestos must be conducted according to Cal/OSHA standards.

Additionally, it is also possible that underground storage tanks (USTs) that were in use prior to permitting and record keeping requirements may be present throughout the Planning Area. If an unidentified underground storage tank were uncovered or disturbed during construction activities, it would need to be sealed and abandoned in place or removed. Removal activities could pose both health and safety risks, such as the exposure of workers, tank handling personnel, and the public to tank contents or vapors. Potential risks, if any, posed by USTs would be minimized by managing the tank according to Fresno County standards as enforced and monitored by the Department of Public Health.

Threats to public health and safety from continued use of agricultural chemicals in locations adjacent to existing or future development within the SOI are possible. Threats from chemical use or spills are possible. The City does not have regulatory authority of the use and handling of

agricultural chemicals as this authority is reserved for the California EPA, California Department of Toxic Substances Control, and the County. It is anticipated that implementation of the proposed General Plan update could result in the exposure of persons to hazards and/or hazardous materials during construction as well as during the life of the General Plan. To reduce potential project-specific impacts regarding routine transport, use, or disposal of hazardous materials in the City of Sanger, the General Plan Update includes the following objectives and policies:

Sanger Safety Element: Hazardous Land Use Relationships

Goals, Objectives, Action Plans

Goal:

- I. Minimize the potential for hazardous land use relationships through proper land use planning.

Objective:

1. Residential development in close proximity to industrial zones and the wastewater treatment plant shall be avoided.

Action Plan:

- a. Adoption and implementation of the Land Use map prevents residential development from encroaching too close to industrial zones and the wastewater treatment plant.

Objective:

2. Review the zoning ordinance (and amend as necessary) to ensure adequate safeguards are in place to reduce/eliminate hazardous relationships.

Action Plan:

- a. The City Planner shall work with the Planning Commission to review the Zoning Ordinance's standards as they pertain to minimizing hazardous land use relationships and initiate the process to make any necessary amendments.

Objective:

3. Businesses that use, produce, or generate any type of hazardous materials shall be conducted in a safe manner.

Action Plan:

- a. The City shall require that proposals for developments using, producing, or generating hazardous materials, such as cold-storage facilities; include an emergency preparedness plan acceptable to the City. All new industrial uses shall be required to prepare and file a Business Plan as required by the Fresno County Health Department.

In addition, the Sanger Municipal Code section 82-210 requires an owner or operator to notify the City of a hazardous waste discharge and section 38-7.2 declares hazardous or toxic waste substances a nuisance if not properly contained.

The land use policies described above will support the separation of land uses that typically use and store higher quantities and more diverse types of hazardous materials (primarily industrial uses) from residential and commercial uses. These policies should help to buffer areas of higher human presence/activity from hazardous materials releases should they occur within areas designated for heavy industrial use.

All existing and future development within the City will continue to be bound by County, state, and federal regulations regarding the transportation, storage, use and handling of hazardous materials. This includes continued use and application of agriculture related hazardous materials in areas adjacent to existing and proposed development. Through implementation of the above-noted policies; enforcement of the City's related zoning regulations and County, state, and federal enforcement of the hazardous materials regulations for which they are responsible, impacts on public health and safety from use and/or accidental release of hazardous materials would be reduced to a *less than significant* level.

Mitigation Measures: None required.

Impact 3.9-2: *Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?*

Less Than Significant Impact. The General Plan land use element includes land use designations, but does not propose actual 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 land use designations 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 commercial or industrial. The General Plan land use element does not include any commercial or industrial uses immediately adjacent to an

existing or proposed school. Additionally, there are no known existing commercial or industrial businesses that are known to emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one---quarter mile of a school.

All hazardous materials would 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 the Bay Area Air Quality Management District, Regional Water Quality Control Board, and Department of Toxic Substances Control, and the Fresno County 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. Compliance with all existing regulations and hazard mitigation plans as well as General Plan policies and implementation measures would ensure that the impact would be *less than significant*.

Mitigation Measures: None required.

Impact 3.9-3: *Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?*

Less Than Significant Impact. There are six sites within a five-mile radius of the Sanger planning area that are included as cleanup sites on the DTSC EnviroStor database. There are 40 locations with a Sanger address that are listed in the GeoTracker database for Leaking Underground Storage Tanks (LUST), 36 of which have undergone LUST cleanup and the State has closed the case. The City of Sanger has one active solid waste facility and one closed solid waste facility listed in the California Integrated Waste Management Board database.

The above-mentioned sites are subject to various State and federal laws and regulators, including the CERCLA, EPA, DTSC, and RWQCB. 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 (whether previously documented or not) without appropriate measures to contain or mitigate the existing contamination. State and federal regulations ensure that existing hazards, including those associated with known hazardous materials sites, are addressed prior to development.

The General Plan includes policies and implementation measures that are intended to reduce the risk of hazards associated with hazardous materials, as provided in Impact 3.8-1. Before a development would be permitted to occur on such a site, the site would be required to be

remediated and mitigated for on-site hazardous materials to a level that would permit development onsite. Implementation of the General Plan, including the above goals, objectives and action plans, would help ensure a *less than significant* impact with regard to this issue.

Mitigation Measures: None are required.

Impact 3.9-4: *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?*

Less Than Significant Impact. 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.

The City of Sanger does not have a municipal airport. The nearest commercial airport is Fresno Yosemite International (FYT) Airport. Fresno Yosemite International Airport is a joint civil-military public airport in eastern Fresno, approximately 10 miles northwest of the City of Sanger via State Route 180/Peach Avenue. Due to the distance to FYT, impacts due to safety hazards resulting from nearby airports would be *less than significant*.

Mitigation Measures: None are required.

Impact 3.9-5: *Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*

Less Than Significant Impact. Buildout of the proposed General Plan would allow for a variety of new development, including residential, commercial, industrial, and public service projects, which would result in increased jobs and population in the City of Sanger. Roads and infrastructure improvements would occur to accommodate the new growth. Goals, objectives and action plans regarding emergency preparedness are outlined in the Safety Element of the proposed General Plan update, as provided below:

Sanger Safety Element: Emergency Preparedness

Goals, Objectives, Action Plans

Goal:

- I. Keep Sanger prepared to respond to emergencies that can be reasonably expected to occur in or around the planning area.

Objective:

1. Maintain an emergency preparedness team composed of City Department heads. Coordinate with heads of other local agencies to provide a coordinated response to emergencies, including Sanger Police and Fire Departments, Fresno County Sheriff's Department, Sanger Unified School District, Consolidated Irrigation District and other agencies as may be appropriate. Require that this team meet on a twice-yearly basis to review emergency preparedness tactics, share information, discuss needs and develop action plans to address those needs. Issues to be explored include:

- Establishing emergency shelters at key locations, such as the community center, school campuses, etc. Ensure these facilities are stocked (or will be stocked) with emergency supplies such as blankets, water and food.
- Ensuring key roadways stay clear in the event that evacuation is necessary. Map 5-2 establishes primary and secondary evacuation routes from the City.
- Lines of communication are open in the event that equipment or manpower must be shared between agencies.
- Other issues that may be identified.

Future projects are not anticipated to remove or impede evacuation routes and the proposed General Plan does not have land uses, goals, objectives or action plans that conflict with emergency response or evacuation plans. Through consistency and adherence to the proposed General Plan goals, objectives and action plans, implementation of the General Plan would have a *less than significant* impact with regard to this issue.

Mitigation Measures: None are required.

Impact 3.9-6: *Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?*

Less Than Significant Impact. As described in the environmental setting of this Chapter, and further discussed in Section 3.20, the Project is located such that it has minimal risk of wildland fires. The Sanger planning area is either developed with urban uses or with active agriculture. No wildlands exist in the planning area or in the immediate vicinity of the planning area. As such, any impacts resulting from wildland fires would be *less than significant*.

Mitigation Measures: None are required.

Cumulative Impacts

Less Than Cumulatively Considerable. The scope for considering cumulative impacts to hazards and hazardous materials is generally site-specific rather than cumulative in nature because each project site has different hazardous considerations that would be subject to review. Construction of the individual development projects allowed under the land use designations of the General Plan may involve the transportation, use, and/or disposal of hazardous materials, which may involve the use of equipment that contains hazardous materials (e.g., solvents and fuels, diesel-fueled equipment), or the transportation of excavated soil and/or groundwater containing contaminants from areas that are identified as being contaminated. Furthermore, some will inevitably transport or use hazardous materials within ¼ mile of a school, or other sensitive receptors such as hospitals and residences.

While some cumulative impacts will occur in the region as individual projects are constructed, the City's goals, objectives and action plans, as well as State and federal regulations, will reduce the risk to people in the City and surrounding area. Considering the protection granted by local, State and federal agencies and their requirements for the use of hazardous materials in the region, as discussed above, the overall cumulative impact would be less than significant. As such, the proposed project's incremental contribution to cumulative hazards and human health impacts would be *less than cumulatively considerable*.

3.10 Hydrology and Water Quality

This section of the DEIR identifies potential impacts of the proposed Project pertaining to hydrology, flooding and flood hazards, storm water management, and water supply and water quality. The City updated and adopted its Urban Water Management Plan (2015) in Fall 2018. Background information from that document is included in this EIR analysis and references to specific information from that document are used to support the analysis. Other sources of technical information include the Kings Basin Water Authority 2015 Annual Report, the Kings Basin Water Authority Integrated Regional Water Management Plan (2012), as well as the Groundwater Sustainability Plan (GSP) developed under the Sustainable Groundwater Management Act (SGMA) and adopted by the City in December 2019. No IS/NOP comment letters were received pertaining to this topic.

Environmental Setting

The planning area is located in the southeastern San Joaquin Valley of California, approximately five miles west of the base of the Sierra Nevada foothills. The San Joaquin Valley is bordered by the Sierra Nevada to the east, the Tehachapi Mountains to the south, the California coastal ranges to the west, and the Sacramento-San Joaquin Delta to the north.

Kings Basin

The City of Sanger extracts groundwater from the Kings Groundwater Subbasin (Subbasin), which lies within the San Joaquin Valley Basin of the Tulare Lake Hydrological Region. The Kings Subbasin is also identified as Subbasin 5-22.08 by the Department of Water Resources (DWR) Bulletin 118 (2003 Update). The DWR's Bulletin 18 contains a detailed description of the Kings Subbasin and its characteristics and conditions.

Covering a surface area of approximately 976,000 acres (1,530 square miles), the Kings Subbasin straddles portions of both the Sacramento and San Joaquin Valleys in Fresno, Kings, and Tulare County. The Subbasin is bordered to the north by the San Joaquin River, on the south by the southern fork of the Kings River and the northern boundaries of the Empire West Side Irrigation District and Kings County Water District, southern boundaries of Laguna, Consolidated, and Alta Irrigation Districts, and western boundary of Stone Corral Irrigation District. The eastern boundary of the Subbasin is the alluvium-granite rock of the Sierra Nevada. The western boundary is the eastern boundaries of the Delta-Mendota and Westside subbasins.

The Subbasin is primarily comprised of marine deposits from periodic inundation of the Pacific Ocean and continental deposits from erosion of surrounding mountains. The principal aquifers

consist of unconsolidated continental deposits (older deposits from the Tertiary and Quaternary age overlain with younger deposits from the Quaternary age), and coarse oxidized deposits of the alluvium. Quaternary deposits consist of older alluvium, lacustrine and marsh deposits, younger alluvium, flood-basin deposits, and sand dunes. The older alluvium is the most important aquifer in the Subbasin and yields from these wells can reach above 3,000 gpm. The flood-basin, lacustrine, and marsh deposits located in the western part of the sub-basin consist of silt and clay that restrict vertical movement of water and do not produce appreciable wells. In the Sanger area, the soils are typically coarse sands with high percolation rates and specific yields, but areas of clay soils exist in some areas.

The City of Sanger is located along the eastern side of the Central Valley, in a geological setting that has favorable properties in terms of water supply. The eastern side of the Central Valley is comprised of a thick basin-fill sequence of materials derived from erosions of the Sierra Nevada mountains. These deposits are coarse-grained and become finer grained to the west, where the river canyons draining the Sierra Nevada enter the basin.

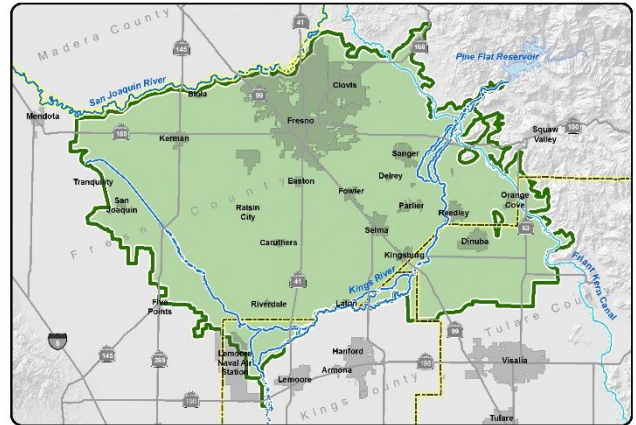
The deposits underneath the City of Sanger are primarily from a secondary alluvial fan unit deposited by the Kings River and are characterized by unconsolidated sand, gravel, and cobbles with minor lenses of fine sand, silt and clay. These materials have a large surface infiltration rate and can transmit water very readily. The majority of the Kings Subbasin has good groundwater quality, with most quality issues occurring along the west side of the Subbasin. With the City near the east side, water quality is good and most of the water wells in the Sanger area are screened in the upper 300-feet of this coarse alluvial deposit.

The Kings Subbasin is primarily located within an agricultural area, which has historically used both surface water and groundwater for irrigation purposes, while groundwater is primarily used for municipal water supplies. Water use in the Kings Subbasin exceeds the natural supply causing the Subbasin to operate under overdraft conditions for many years. The continued groundwater overdraft and urban growth pressures in the region call for improved water resources management in the Kings Subbasin.

Groundwater in the Sanger area generally flows in a southwesterly direction away from the foothills. The rate and direction of flow is influenced locally by pumping from Fresno and other nearby municipalities, by seepage into or out of the Kings River, and by local variation in aquifer properties.¹

¹ Draft Sanger UWMP Update (2015), pages 36-37.

Much of the Kings Basin is developed for agriculture and crops through a network of canals that deliver water to agricultural lands and groundwater recharge facilities. Most crops require irrigation during the dry season, and irrigated lands within the basin cover about 480,000 acres. There are two primary sources of surface water for the Kings Basin, the Kings River and the San Joaquin River via the Friant-Kern Canal. Surface water supply is largely dependent on the volume of snowpack in the Sierra Nevada Mountains that feeds rivers and canals.



Due to insufficient water supplies, the Kings Basin has been operating under overdraft conditions for many years with an annual overdraft of an estimated 160,000 acre feet per year (AFY) when averaging the total change in groundwater volume from 1964 – 2015.² The effects of the driest 4-year period on record continue to be evident in the estimated annual change in groundwater storage. The groundwater storage was estimated to decrease by more than 1,000,000 acre feet from 2014 to 2015.³ Some western areas of the basin rely exclusively on groundwater pumping. As a result, pumping in this area creates a steep groundwater gradient from east to west, resulting in the movement of water towards the lower parts of the Kings Basin.

Groundwater Management

The City relies 100% on local groundwater for its water supplies. The San Joaquin Valley Basin is not an adjudicated basin; therefore, there are no limitations placed on groundwater pumpage volumes, but groundwater must be beneficially used. The City is responsible for monitoring groundwater levels, quantities, and quality of its portable supply wells and makes all information available to the community of Sanger, agencies, and stakeholders, including the State of California.

Several agencies and water suppliers within Fresno County have adopted groundwater management plans in accordance with the September 2002 California Senate Bill (SB) No. 1938, which amends Sections 10753 and 10795 of the California Water Code (CWC). The City of Sanger

² Kings Basin Water Authority. 2015 Annual Report. (2016)

³ Ibid. Page 3.

is within the limits of CID, and in 2014, the City signed a Cooperative Agreement with the District to implement a Groundwater Management Plan (GWMP) under the provisions of Assembly Bill 3030 and SB 1938. The GWMP calls for annual reviews of groundwater conditions and as conditions dictate, additional supplies will be acquired to augment current groundwater recharge options. The objectives of CID's March 2009 GWMP have been developed to monitor, protect and sustain groundwater within the region.

As part of the GWMP, CID developed a Mitigation and Banking Program (CID Program). The Program is comprised of a list of proposed projects and management actions, which include programs, policies, and agreements that need to be funded and implemented. CID worked with the community to finalize these projects, programs, policies, and agreements based on the findings and actions related to the overall Groundwater Mitigation Banking Program. CID proposes to develop, own, operate, and maintain the groundwater banking facilities and manage the banked groundwater on behalf of overlying land owners and participants in the program. The Cooperative Agreement signed in 2014 is the City of Sanger's agreement to be a participant in the program by payment of annual fees into an account to fund groundwater recharge projects as part of the CID's GWMP. See further information within this section pertaining to the Sustainable Groundwater Management Act (SGMA).

While the City's existing limits are within CID's boundary, the City's SOI includes approximately 1,485 acres within the boundary of the Fresno Irrigation District (FID). As growth expands to the north, the City will be required to annex properties and provide water service within the second irrigation district's boundary. The City plans to work with FID to develop a Cooperative Agreement or Memorandum of Understanding to manage any potential groundwater impacts that could be created by the City.

The City is also a member of the Upper Kings Integrated Regional Water Management Plan (IRWMP). The IRWMP is a collaborative effort between 54 public, private, and non-governmental agencies to manage water resources in the Kings Groundwater region. The Plan is an important part of groundwater management, as it seeks to integrate the program with groundwater quality, flood management, and other goals and objectives to enhance and preserve all beneficial water uses in the region. As a member of IRWMP, the City anticipates a much greater coordination with all water suppliers and users in the near future.

Groundwater has been at the forefront of the State's water supply concerns more recently due to the rapid decline in groundwater levels and storage, land subsidence, seawater intrusion and degradation of groundwater quality over the last few years. The severity of these issues ultimately led to legislature to draft three bills which were signed by the Governor on September

16, 2014, and laid the foundation for the Sustainable Groundwater Management Act (SGMA). SGMA became effective on January 1, 2015 and established a framework of priorities and requirements to help local agencies sustainably manage groundwater within a basin or Subbasin (basin). As required by SGMA, each groundwater basin is to develop a Groundwater Sustainability Agency (GSA), a Groundwater Sustainability Plan (GSP) and attain sustainability within twenty years. The statewide use of groundwater supplies will inevitably change over the next few years, as GSP guidelines are developed and GSA's create plans to fit their unique circumstances.

On May 25, 2017, the City of Sanger adopted Resolution 2017-001, approving the formation of a Joint Powers Agreement (JPA) with other local agencies to create the South Kings GSA. The primary purpose of the JPA is to facilitate a cooperative and ongoing working relationship among the Cities of Parlier, Fowler, Selma and Kingsburg and to develop and implement mutually beneficial approaches and strategies for implementing the Act in the Kings subbasin. The JPA also desires to facilitate contracts with other agencies, both current and prospective, overlying the subbasin, in order to coordinate with the GSA to implement a GSP and satisfy the requirements of the Act. The South Kings GSA is responsible for the preparation of a GSP by January 31, 2020.⁴ The City of Sanger adopted the GSP on December 3, 2019. The intent of the GSP is to achieve groundwater sustainability within the Kings Subbasin by 2040, as required by the SGMA. For further discussion on SGMA and the GSP, please refer to Impact Section 3.10-5.

Overdraft Conditions

The 2003 update to the DWR Bulletin 118 identifies groundwater overdraft as the condition of a groundwater basin or subbasin in which the amount of water withdrawn by pumping exceeds the amount of water that recharges the basin over a period of years, during which, the water supply conditions approximate average conditions. Conditions of critical overdraft result in undesirable impacts which can include land subsidence, groundwater depletion, and/or chronic lowering of groundwater levels. All basins designated as high or medium priority and subject to critical conditions of overdraft are required to be managed under a groundwater sustainability plan or coordinated groundwater sustainability plans by January 31, 2020.

In Chapter 6 of Bulletin 118, the DWR identifies the Kings Subbasin as a critically overdrafted subbasin; the conditions were not reevaluated for the 2003 update to Bulletin 118. Overdraft conditions in the Kings Subbasin were previously estimated by the Kings River Conservation District (KRCD) to be an average of 52,462 MG/year from 1964-2004, with approximately 3.2

⁴ Draft Sanger UWMP Update (2015), pages 38-39.

million gallons of groundwater mined in the last 50 years or so. The KRCD models also projects that overdraft conditions will average around 3,975 MG/year through 2035. According to the California Statewide Groundwater Elevation Monitoring Program (CASGEM) June 2014 Final Bains Prioritization Results, 127 out of California's 515 groundwater basins and subbasins are on a "high" or "medium" priority on overdraft conditions. The Kings Subbasin scored a 22.8, resulting in a "high" priority designation and with a ranking system of one being the highest priority, the Subbasin is currently ranked 17 out of the 515 basins in California.

The region faces many water management challenges including groundwater overdraft, surface water shortages in dry years, and groundwater quality problems in certain areas. Groundwater overdraft is generally considered the largest regional problem with the current plan area overdraft estimated to be 100,000 to 150,000 acre-feet/year. The majority of groundwater elevation decline has created groundwater depression on the west side of the Kings Subbasin and underneath the metropolitan area of the Cities of Fresno and Clovis. In recent years, these cities have embarked on large infrastructure improvement projects to build surface water treatment plants and distribution systems to reduce reliance on groundwater pumping. As these plans continue to be implemented and reach full build-out, the overdraft condition in this area will be significantly mitigated. Correcting overdraft in the Kings Subbasin through regional efforts will ultimately lead to overall maintenance and improvement in the quantity, quality and cost of development of groundwater resources in the region.

In October 2013, Kenneth D. Schmidt and Associates prepared the Report entitled "Groundwater Pumping, Recharge, and Consumptive Use in the Proposed City of Sanger Sphere of Influence." According to this Report, the average rate of water-level decline in groundwater wells located in the Sanger area is approximately 0.2 feet per year. This rate water-level decline will ultimately result in a groundwater overdraft of approximately 300 acre-feet per year once the City reaches full development of their SOI.

Within the 145,000-acre portion of the Kings Subbasin that CID encompasses, the annual overdraft for the 40-year period of 1964 to 2001 was approximately 24,000 acre-feet. CID's long-term plan to eliminate the portion of groundwater overdraft within their GWMP area is to coordinate both the conveyance capacity of key canal segments, along with new canal interties for increased ability to purchase and transport Section 215 floodwater for recharge to existing or proposed recharge basins. The ultimate subbasin management objective is to reduce the overdraft by 50,000 acre-feet per year, which would require a long-term goal of 1,200 acres of recharge pond area within CID and an additional 500 cubic feet per second (cfs) of increased canal conveyance capacity.

According to the Kenneth D. Schmidt and Associates 2013 Report, full development of the City of Sanger's SOI would result in a water deficit of approximately 4,050 acre-feet per year (assuming no canal water from CID is used or recharged in the City's SOI). It has been recommended that canal water from CID be used directly for non-potable use or recharged in the City's storm water basins to make up this deficit. Engineering experience in the Fresno area indicates that this amount of water could be recharged in about four to six moderately sized storm water basins.

Currently, the City of Sanger is engaged in groundwater recharge projects and activities that reduce the consumptive use of groundwater and are intended to relieve and eliminate long term overdraft of the Kings subbasin. For example, treated wastewater from the City's Wastewater Treatment Plant (WWTP) is directed to recharge basins where it percolates into the soil and recharges the groundwater table. The City also maintains multiple storm water percolations basins that also provide groundwater recharge, although the volume has not been quantified. The percolated wastewater and stormwater is subsequently pumped as groundwater for local crop irrigation.

The SGMA established a framework of priorities and requirements to help local agencies sustainably manage groundwater within a basin. As required by SGMA, each groundwater basin is to develop a GSA, a GSP, and achieve groundwater sustainability within twenty years after adopting a GSP. A major benefit of forming GSA's is the elimination of long-term groundwater overdraft. As previously state above, the City has joined other local agencies in the formation of the South Kings GSA. By 2020, the GSA will adopt a regionally based GSP to achieve groundwater sustainability within the Kings Subbasin by 2040.⁵

Historical Pumping

The City is not restricted to a specific volume of groundwater from the Kings subbasin. The amount of groundwater pumped in the last five years has been sufficient to meet the City's demands. Table 3.10-1 below shows historic groundwater pumping from 2011 – 2015. This is the most recent data available from the City's most recently adopted Urban Water Management Plan.

⁵ Draft Sanger UWMP Update (2015), pages 39-40.

Table 3.10-1: Groundwater Volume Pumped

Alluvial Basin – Kings Subbasin	Groundwater Volume Pumped (acre feet per year)				
	2011	2012	2013	2014	2015
	1,757	1,905	2,045	1,886	1,687

According to CID's 2009 GWMP, groundwater levels within the City of Sanger tend to remain fairly consistent, with little or no change from 1950 to 2000. Since 2000, spring water levels provided by CASGEM show that groundwater levels have dropped by approximately 30 feet; 0 to 20 feet in the northern portion of the City and 20 to 40 feet within the southern limits of the City. This decline in groundwater levels has contributed slightly to a lower pumping capacity at several of the City's wells, but it has not resulted in the need to install any new wells to meet the City's water supply.⁶

Groundwater Banking

Currently, groundwater banking is not practiced within the City's service area. However, the City signed a Cooperative Agreement with CID in 2014, which established an agreement that the City would join the District's Groundwater Mitigation Banking Program. The City's participation in the Program includes the installation of annual fees into an account, which in turn fund groundwater recharge projects within CID's boundary. As part of the District's Groundwater Mitigation Banking Program, the City will continue to mitigate and offset the total amount of groundwater it uses.

⁶ Draft Sanger UWMP Update (2015), page 42.

Kings River

The Kings River is the major source of surface water in the region and is a major contributor to groundwater recharge. The Kings River originates in the Sierra Nevada Mountains near the Inyo County line. The upper portion of the river feeds into Pine Flat Lake (a 1,000,000 acre-feet reservoir constructed by the U.S. Army Corps of Engineers). There are two uncontrolled creeks, Hughes Creek and Mill Creek that flow into the Kings River below Pine Flat Dam, which can add significant flow to the river. Years 2014-15 were the driest years on record with only 361,000 acre-feet of runoff (inclusive of precipitation, snowpack and river flow) of the Kings River and the past four years have been the driest 4-year period on record with regard to acre feet of runoff.⁷



The Kings River flows in a north-south direction past the planning area, bordering the planning area at its southeastern corner. It eventually branches to the north toward Mendota Pool and to the south toward the Tulare Lakebed in Kings County.

Sanger General Plan Update Area

The approximately 6,900-acre planning area consists primarily of a mosaic of urban, agricultural, and rural residential lands. The City's population in 2015 was 24,270. The main water user within the planning area is single family residential, followed by multi-family residential, commercial, industrial, and institutional/government. There are 6,610 active service connections provided by the City.⁸

The City is within the boundaries of the Consolidated Irrigation District (CID). CID is comprised of 145,000 acres, the majority of which is in agricultural production. CID has water rights to the flow of the Kings River and storage rights in Pine Flat Reservoir.⁹ They are responsible for surface water distribution as well as management of multiple groundwater recharge facilities. CID actively manages local water use through conjunctive use (combined management of surface water and groundwater supplies and storage). The intentional use of surface water in lieu of

⁷ Kings Basin Authority. 2015 Annual Report. Page 2. (2016)

⁸ Draft Sanger UWMP Update (2015), page 11.

⁹ Case Study: Consolidated Irrigation District Recharge Program

groundwater pumping is part of the CID conjunctive use operations. In drier years, for example, growers irrigate with available surface water supplies supplemented by pumping of recharged groundwater.

Water Supply and Demand

The City of Sanger obtains 100 percent of the City's water supply from groundwater. The City currently does not use recycled water to meet any of their water demands. The *City of Sanger's 2015 Urban Water Management Plan* (UWMP) includes past, current, and projected water use in five-year increments. The City will determine the reliability of their projected water supply based upon that information. The 2015 UWMP also identifies the water use by sector. The City breaks down metered water deliveries into single family residential, multi-family residential, commercial, and industrial. Institutional water use is included in the commercial category. The City considers water used by governmental buildings and landscape areas, including City medians and parks, to be non-revenue water that is not metered. Tables 3.10-2 and 3.10-3 contain the actual and projected water demands respectively¹⁰.

Table 3.10-2: Demands for Potable and Raw Water – Actual

Use Type	2015 Actual		
	Additional Description	Level of Treatment When Delivered	Volume (acre feet per year)
Single Family	6,175 Service Connections	Drinking Water	914
Multi Family*	41 Service Connections	Drinking Water	73
Commercial / Institutional	387 Service Connections	Drinking Water	303
Industrial	7 Service Connections	Drinking Water	313
Losses**	Unaccounted Water	Drinking Water	84
Total			1,687
Notes: * Includes one un-metered service connection ** For projection purposes, losses or unaccounted water represents the volume of water that is produced and distrusted, but are not metered or sold to customers.			

¹⁰ Draft Sanger UWMP Update (2015), page 16.

Table 3.10-3: Demands for Potable and Raw Water - Projected

Use Type	Projected Water Use (acre feet per year)				
	2020	2025	2030	2035	2040
Single Family	981	1,049	1,118	1,118	1,259
Multi Family	78	83	88	94	100
Commercial / Institutional	325	347	370	393	417
Industrial	336	359	383	407	431
Losses	84	84	84	48	84
Total	1,804	1,922	2,043	2,166	2,291

Table 3.10-4 provides a summary of the City's potable water demand projections. Recycled water is not included in the City's potable water demand and the City does not have any plans to use recycled water as a potable source in the foreseeable future.

Table 3.10-4: Total Water Demands (acre feet per year)

	2015	2020	2025	2030	2035	2040
Potable and raw water	1,687	1,804	1,922	2,043	2,166	2,291
Recycled water demand	0	0	0	0	0	0
Total	1,687	1,804	1,922	2,043	2,166	2,291

Groundwater Recharge

The City of Sanger operates its own storm water collection system, which includes numerous ponding basins. The storm water ponding basins allow water to percolate and recharge the groundwater basin. In addition, the City operates its own secondary effluent percolation basins, which also recharge the groundwater basin. The Kings River is a major contributor to groundwater recharge in the planning area. CID operates over 50 dedicated recharge basins with a surface area of approximately 1,300 acres along the Kings River's alluvial plain. Average pond recharge is approximately 30,000 acre feet per year, ranging from zero in the driest of years, to a maximum of 187,000 acre feet. The sandy soils in the CID area make their ponds capable of

recharging over 1,200 acre feet per day. In addition, seepage from the bottom of canals and ditches contributes to additional recharge.

Water Quality

Surface water quality in the basin region generally has high quality water due to its origin in the uplands of the Sierra Nevada Mountains.¹¹ The Kings Basin is covered by the Basin Plan that addresses the surface water quality issues of the Kings River. Most contaminants occur from surface or subsurface agricultural drainage. As the Kings River collects agricultural return flows in the Valley, the instream water quality gradually declines but is still considered of high quality.

Groundwater in the region is of the following types: calcium sodium, sodium calcium, and calcium bicarbonate type ¹². The most widely detected pesticide in groundwater is the nematodecide dibromochloropropane (DBCP).¹³ Its detection in groundwater is attributable to crop applications (vineyards and stone fruits) of this pesticide that occurred up until the late 1970's when its use was discontinued. In general, pesticides in groundwater of the east side of the Valley are more prevalent than in groundwater of the west side of the Valley. Groundwater summary statistics note that the Kings Basin contains public supply wells that exceed MCLs for certain constituents.¹⁴ The City is currently in compliance with the RWQCB established limits.

Drainage and Storm Water Disposal

The topography of the planning area is generally flat. Storm water runoff drains through a surface and subsurface collection system. Storm water in Sanger is piped to storm water percolation basins and is not treated at the WWTP. The storm water ponding basins allow water to percolate and recharge the groundwater basin.

¹¹ Kings Basin Water Authority. IRWMP Page 3-35 (2012).

¹² Ibid. Page 3-36.

¹³ Ibid. Page 3-37.

¹⁴ Ibid. Page 3-38.

Flooding and Dam Failure

A portion of the planning area is located in a dam failure flood inundation area from the Pine Flat Dam. Areas along the Kings River could be subject to inundation in the event that the dam were to fail. The Pine Flat Dam was completed in 1954 and impounds the Kings River at Pine Flat Reservoir. The dam is constructed of concrete and is built for flood control, irrigation, recreation, and water conservation. It is owned and operated by the U.S. Army Corps of Engineers.



Small portions of the City are located in the FEMA-designated 100-Year Flood Hazard Area. A 100-year flood has a one percent chance of occurrence during any given year and is the flood magnitude that requires Federal Insurance Administration regulations. A swath of land east of Academy Avenue is located within this flood designation, as well as some smaller pockets in the southwestern part of the City. The remainder of the City is outside the 100-Year Flood Hazard Area. Please refer to Figure 3.10-1 which shows the flood zones within the City of Sanger.

Regulatory Setting

Federal Agencies & Regulations

Clean Water Act

The Clean Water Act (CWA) is intended to restore and maintain the chemical, physical, and biological integrity of the nation's waters (33 CFR 1251). The regulations implementing the CWA protect waters of the U.S. including streams and wetlands (33 CFR 328.3). The CWA requires states to set standards to protect, maintain, and restore water quality by regulating point source and some non-point source discharges. Under Section 402 of the CWA, the National Pollutant Discharge Elimination System (NPDES) permit process was established to regulate these discharges.

Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) was established to protect the quality of drinking water in the United States. The SDWA focuses on all waters either designed or potentially designed for drinking water use, whether from surface water or groundwater sources. The SDWA and subsequent amendments authorized the EPA to establish health-based standards, or maximum

contaminant levels (MCLs), for drinking water to protect public health against both natural and anthropogenic contaminants. All owners or operators of public water systems are required to comply with these primary (health-related) standards.

Federal Emergency Management Agency (FEMA)

The National Flood Insurance Act (1968) makes available federally subsidized flood insurance to owners of flood-prone properties. To facilitate identifying areas with flood potential, Federal Emergency Management Agency (FEMA) has developed Flood Insurance Rate Maps (FIRM) that can be used for planning purposes.

National Pollutant Discharge Elimination System

The EPA has published regulations establishing storm water permit application requirements under the Clean Water Act. The National Pollutant Discharge Elimination System (NPDES) program controls and reduces pollutants to water bodies from point and non-point discharges. The EPA has published regulations establishing storm water permit application requirements under the Clean Water Act. The NPDES program controls and reduces pollutants to water bodies from point and non-point discharges.

Projects that disturb more than one acre of land during construction are required to file a notice of intent to be covered under the State NPDES General Construction Permit for discharges of storm water associated with construction activities. The NPDEA construction permit requires implement both construction and post construction phase storm water pollution best management practices. The State NPDES General Construction Permit requires development and implementation of a Storm Water Pollution Prevention Plan (SWPPP) that uses storm water “Best Management Practices” to control runoff, erosion, and sedimentation from the site both during and after construction. The SWPPP has two major objectives: 1) help identify the sources of sediments and other pollutants that affect the quality of storm water discharges; and 2) to describe and ensure the implementation of practices to reduce sediment and other pollutants in storm water discharges.

State Agencies & Regulations

State Water Resources Control Board

The State Water Resources Control Board (SWRCB), located in Sacramento, is the agency with jurisdiction over water quality issues in the State of California. The SWRCB is governed by the Porter-Cologne Water Quality Act (Division 7 of the California Water Code), which establishes the legal framework for water quality control activities by the SWRCB. The intent of the Porter-

Cologne Act is to regulate factors which may affect the quality of waters of the State to attain the highest quality which is reasonable, considering a full range of demands and values. Much of the implementation of the SWRCB's responsibilities is delegated to its nine Regional Boards. The proposed Project site is located within the Central Valley Region. The state board protects water quality through designation of beneficial uses, establishment of water quality objectives, and administration of the NPDES permit program for storm water and construction site runoff. Regional boards are also responsible for providing permits under Section 401 of the Clean Water Act.

California Water Code

The Federal CWA places the primary responsibility for the control of surface water pollution and for planning the development and use of water resources with the states, although this does establish certain guidelines for the States to follow in developing their programs and allows the Environmental Protection Agency to withdraw control from states with inadequate implementation mechanisms.

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 State Water Resource Control Board (SWRCB) and each of the RWQCBs power to protect water quality, and is the primary vehicle for implementation of California's responsibilities under the Federal CWA. 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.

The Water Code Section 13260 requires all dischargers of waste that may affect water quality in waters of the state to prepare and provide a water quality discharge report to the RWQCB. Section 13260a-c is as follows:

- (a) Each of the following persons shall file with the appropriate regional board a report of the discharge, containing the information that may be required by the regional board:
 - (1) A person discharging waste, or proposing to discharge waste, within any region that could affect the quality of the waters of the state, other than into a community sewer system.
 - (2) A person who is a citizen, domiciliary, or political agency or entity of this state discharging waste, or proposing to discharge waste, outside the boundaries of the state in a manner that could affect the quality of the waters of the state within any region.
 - (3) A person operating, or proposing to construct, an injection well.
- (b) No report of waste discharge need be filed pursuant to subdivision (a) if the requirement is waived pursuant to Section 13269.
- (c) Each person subject to subdivision (a) shall file with the appropriate regional board a report of waste discharge relative to any material change or proposed change in the character, location, or volume of the discharge.

Water Code section 10910 (SB 610)

Water Code section 10910 (SB 610) requires a water supply assessment to evaluate whether total projected water supplies will meet the projected water demand for certain development projects that are otherwise subject to CEQA review. Existing law identifies those projects as (a) a residential development of more than 500 dwelling units; (b) a shopping center or business employing more than 1,000 persons or having more than 500,000 square feet of floor space; (c) a commercial office building employing more than 1,000 persons or having more than 250,000 square feet; (d) a hotel or motel with more than 500 rooms; (e) an industrial or manufacturing establishment housing more than 1,000 persons or having more than 650,000 square feet or 40 acres; (f) a mixed use project containing any of the foregoing; or (g) any other project that would have a water demand at least equal to a 500 dwelling unit project. The proposed project would not be subject to the provision of Water Code section 10910 (SB 610) because it does not exceed the threshold amount of square footage or anticipated employee generation for a shopping center.

Regional Water Quality Board

The Regional Water Quality Control Board (RWQCB) administers the National Pollutant Discharge Elimination System (NPDES) storm water-permitting program in the Central Valley region, including Sanger. Construction activities on one acre or more are subject to the permitting requirements of the NPDES General Permit for Discharges of Storm Water Runoff Associated with Construction Activity (General Construction Permit). The General Construction Permit requires the preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The plan will include specifications for Best Management Practices (BMPs) that will be implemented during proposed Project construction to control degradation of surface water by preventing the potential erosion of sediments or discharge of pollutants from the construction area. The General Construction Permit program was established by the RWQCB for the specific purpose of reducing impacts to surface waters that may occur due to construction activities. BMPs have been established by the RWQCB in the California Storm Water Best Management Practice Handbook (2003), and are recognized as effectively reducing degradation of surface waters to an acceptable level. Additionally, the SWPPP will describe measures to prevent or control runoff degradation after construction is complete, and identify a plan to inspect and maintain these facilities or project elements.

Sustainable Groundwater Management Act

Section 65352.5(a)

For General Plans: Section 65350.5 requires planning agencies to review prior to adopting new or amended general plan:

- a. An adoption of, or update to, a groundwater sustainability plan or groundwater management plan pursuant to Part 2.74 (commencing with Section 10720) or Part 2.75 (commencing with Section 10750) of Division 6 of the Water Code or groundwater management court order, judgment or decree.
- b. An adjudication of water rights.
- c. An order or interim plan by the State Water Resources Control Board pursuant to Chapter 11 (commencing with Section 10735) of Part 2.74 of Division 6 of the Water Code.

Kings Basin Integrated Regional Water Management Plan

The Kings Basin Integrated Regional Water Management Plan (IRWMP) defines problems and issues; regional goals and objectives; water management strategies; and projects to enhance the

beneficial uses of water for the Kings Basin Region. Now in its second edition, the current IRWMP is the outcome of a more than two-year collaborative planning process that included a Disadvantaged Community (DAC) pilot study, extensive stakeholder involvement and numerous meetings among various work groups and participants. The final plan document was adopted by the Kings Basin Water Authority Board of Directors on October 17, 2012.¹⁵

Water Code section 10910 (SB 610) requires a water supply assessment to evaluate whether total projected water supplies will meet the projected water demand associated with the project.

Local

Sanger 2035 General Plan Update – Land Use Element

Goals, Objectives and Action Plans

Issue Eleven: Infrastructure

- I. Adequately develop and finance infrastructure systems.
 1. Undertake a study periodically to update Sanger's development impact fees for sewer, water and storm drainage fees.
 - a. The City should periodically commission a consultant to prepare a study of Sanger's development impact fees including sewer, water and storm drainage. The fees should be reviewed every two years to ensure that the fees keep pace with the cost of these services.
 2. The City will not approve new development without a determination that the City's water system has or will have sufficient capacity to serve the development without reducing water service to other properties, or negatively impacting local water pressures.
 3. The annexation of a Disadvantaged Unincorporated Community (DUC) will trigger the City's installation of sewer, water and storm drainage improvements within the Community. Said improvements shall be financed by connection fees charged to the owners of property in the DUC.

¹⁵ Kings Basin Water Authority. <http://www.kingsbasinauthority.org/governance/governing-documents/irwmp/> accessed May 2018.

- a. The City Engineer shall evaluate the infrastructure costs of serving a Disadvantaged Unincorporated Community, and report these findings to the City Council.
4. The City shall prepare an update to its water, sewer and storm drainage master plans in order to properly and efficiently serve future development provided for by the Land Use Element.
 - a. The City shall pursue funding sources to prepare the aforementioned master plans.
 - b. The modification of the City's development impact fees shall be consistent with the State Mitigation Fee Act, which requires a clear nexus between fees and their purpose.
5. The City should continue to seek state and federal grants for the upgrading and expansion of its infrastructure systems.
 - a. The City Manager shall continue to have staff or consultants pursue grants or loans for the financing of infrastructure including low interest loans from USDA.

II. Maintain, rebuild and upgrade infrastructure systems.

1. The City shall update its 5-Year Capital Improvement Program to ensure that its infrastructure system can accommodate the urban growth prescribed by the Land Use Element.
 - a. The 5-year capital improvement program shall be updated, and input from the community invited.
2. The City should work with the private sector to participate in the upgrading of off-site infrastructure improvements when adjacent land is being considered for development.
 - a. From time to time, the City may work with a developer to upgrade a part of the infrastructure or street system that is not part of the project being developed.
3. The City should focus on upgrading infrastructure and road improvements in certain parts of the Downtown with a particular focus on 5th, 7th and 9th Streets

on the east side of the Union Pacific Railroad as well as land on both sides of L Street.

- a. The City Engineer should evaluate these areas to determine if there are projects that should be added to Sanger's 5-year capital improvement program.

Sanger Municipal Code

The City's Municipal Code also provide guidance and regulations pertaining to protection of groundwater. This includes Article V – Urban Stormwater Quality Management, whose purpose is to ensure the health, safety, and general welfare of citizens, and to protect and enhance the quality of the city's watercourses, water bodies, and wetlands pursuant to and consistent with all applicable state and federal laws related to stormwater management, including, but not limited to, the clean water act (33 USC 1251 et seq.), the national pollution discharge elimination system regulations (40 CFR 122 et seq.) and the city's stormwater discharge permit for small municipal storm sewer systems (MS4). This article shall be known as and may be referred to as the City of Sanger Urban Stormwater Quality Management Ordinance.

Chapter 34 (Floods) of the Municipal Code provides methods of reducing flood losses. The purpose of the Chapter is to promote public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas of the City.

Methodology

The analysis considered current conditions of the Sanger area, buildout as proposed by the General Plan Update and Master Plan, and applicable laws, regulations and guidelines pertaining to hydrology and water quality. Various databases, planning documents (including the City's adopted 2015 Urban Water Management Plan), and maps were reviewed to assist in the environmental evaluation. Specific references are noted in the text. In accordance with CEQA, the effects of a project are evaluated to determine if they will result in significant adverse impacts on the environment. The criteria used to determine the significance of an impact to hydrology and water quality are based on the Environmental Checklist in Appendix G of the State CEQA Guidelines and identified below.

Thresholds of Significance

Hydrology and water quality impacts resulting from the proposed Project are considered significant if the project would:

- Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality; or
- Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin; or
- 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; or
 - 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; or
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Impacts and Mitigation Measures

Impact 3.10-1: *Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?*

Less Than Significant. Buildout of the General Plan and Master Plan areas could potentially result in surface and groundwater quality degradation during both construction and operational phases of development. The predominant types of development that would occur within the Planning Area are potential sources of non-point water pollution that could result in degradation of water quality. Non-point sources of water pollution refer to those that are diffuse in nature and cannot be traced to a specific “end-of-pipe” location. Non-point sources of water quality pollution in urban environment that would be created with buildout of the proposed General Plan generally consist of contaminants such as oil, grease, pesticides, fertilizer, solid waste and

sediment that are deposited on impervious surfaces such as streets, parking lots, and driveways. These contaminants can be carried in storm water to directly surface water bodies or discharged via the City's storm water system to receiving waters. Construction activities are also a source of nonpoint contaminants such as sediment eroded from construction sites, oil, and grease. Most urban and construction activity contaminants also have potential to percolate through the soil and contaminate groundwater.

Construction activities associated with buildout of the Planning Area would result in ground-disturbing activities such as grading, excavation, placing fill, trenching, etc. Such earthmoving activities would increase the potential for erosion and sedimentation, particularly during storm events. Additionally, construction equipment and vehicles could deposit constituents such as fuels and exhaust into the environment that could be conveyed within stormwater runoff to surface waters or groundwater. Construction activities use concrete, solvents, glues, oils, paints, and generate trash, all of which, if they come into contact with rainfall or stormwater runoff can cause pollution in stormwater. While temporary, all of these construction activities and products, including ground-disturbing construction activities could still result in the pollution of stormwater runoff that leaves the construction site that could contribute to downstream surface waters or groundwater degradation.

However, there are regulatory mechanisms in place that would reduce the effects of construction activities on water quality, including the National pollutant Discharge Elimination System (NPDES) Construction General Permit. Development within the Planning Area would be required to comply with the requirements of the NPDES Construction General Permit. Any development project disturbing one or more acres of soil must obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activities. Construction activities subject to the Construction General Permit includes clearing, grading and other ground-disturbing activities such as stockpiling or excavation. The Construction General Permit requires development and implementation of a Storm Water Pollution Prevention Plan.

Development under the General Plan Update would result in new industrial, commercial, residential and mixed-use land uses. As new development occurs within the proposed Planning Area, the potential for increased surface and groundwater quality degradation will increase; new construction activities will take place, new development will bring an increase in use of contaminants that have potential to degrade water quality, and new impervious surfaces will be created result in increased storm water runoff that will be discharged directly to surface or ground water or indirectly through the City's storm water system, including to the Kings River and facilities operated by the irrigation district.

The City operates a storm drainage system that provides drainage facilities for most of the urban area. The system is comprised primarily of gutter flow to pipelines that range in size from 8 to 36 inches. Drainage is channeled through storm drain lines to a series of storage basins or irrigation canals and pipelines. There are approximately ten retention basins located throughout the City's service area, ranging in capacity from under one acre foot to over 100 acre feet.

The City does not currently have a storm drainage master plan and storm drain facilities are designed either on a drainage sub-area or piece-meal basis. If permanent storm drainage facilities are not available to serve a proposed development the developer must install temporary on-site facilities or permanent drainage facilities. Developers are also required to pay the City's storm drain impact fee. Funds accumulated in this account are used to make capital storm drainage improvements throughout the City.¹⁶

The City's Municipal Service Review document indicates that each storm drainage basin will serve approximately 500 to 600 acres (about ½ square mile).

The City has developed the following policies pertaining to water quality standards and waste discharge requirements:

Sanger Conservation Element

Goals, Objectives, Action Plans

Goal:

- III. Protect groundwater underlying Sanger from uses that would potentially adversely impact this resource.

Objective:

- 1. The City should discourage the development of industrial and heavy commercial uses that could potentially leach chemicals into the aquifer that underlies Sanger.

Action Plan:

¹⁶ Sanger GPU Part II: Community Profile, page 1-31.

- a. Through the City's site plan review process, the City Engineer will require design, improvements and conditions so that proposed industrial uses will not pollute the aquifer.
- b. Any proposed use that generates effluent that exhibits high levels of BOD (biological oxygen demand) or other hard to treat effluent constituents shall be pretreated prior to on-site storage or disposal into the City's sewer system.
- c. The City should seek to purchase surface water rights in order to sink this water in locations upstream from the city's well fields. Further, the City should coordinate with Consolidated Irrigation District (CID) to identify locations within the City's Sphere of Influence that could be used for recharge basins.

Sanger Municipal Code

The City's Municipal Code also provide guidance and regulations pertaining to protection of groundwater. This includes Article V – Urban Stormwater Quality Management, whose purpose is to ensure the health, safety, and general welfare of citizens, and to protect and enhance the quality of the city's watercourses, water bodies, and wetlands pursuant to and consistent with all applicable state and federal laws related to stormwater management, including, but not limited to, the Clean Water Act (33 USC 1251 et seq.), the national pollution discharge elimination system regulations (40 CFR 122 et seq.) and the City's stormwater discharge permit for small municipal storm sewer systems (MS4). This article shall be known as and may be referred to as the City of Sanger Urban Stormwater Quality Management Ordinance.

Chapter 34 (Floods) of the Municipal Code provides methods of reducing flood losses. The purpose of the Chapter is to promote public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas of the City.

In addition, the City requires that future development shall be required to connect to City storm drain facilities and that such facilities are consistent with the City Engineer's requirements and other rules and regulations pertaining to water quality. These include, but are not limited to:

- Best Management Practices (BMPs)
- Compliance with NPDES requirements
- Compliance with RWQCB rules and regulations

Implementation of the General Plan Action Plans and required development consistency with BMPs, NPDES requirements, and RWQCB rules and regulations will ensure that impacts on water quality from buildout of the General Plan and Master Plan is *less than significant*. Regarding waste discharge requirements, please refer to the Utilities section of this DEIR for that environmental impact evaluation.

Mitigation Measures: None are required.

Impact 3.10-2: *Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?*

Significant and Unavoidable. Sanger obtains its potable water exclusively from groundwater extraction. Buildout of the General Plan and Master Plan areas will result in increase in demand for groundwater. Impacts of groundwater extraction are generally not localized within a project site or in the case of the proposed GPU, within the boundaries of the proposed expanded SOI. Rather, such impacts are cumulative in nature as the boundaries of an affected groundwater basin are typically significant broader than that of the subject project being evaluated for its impacts on groundwater. Hence, this discussion of the impacts of the proposed GPU is inherently focused on its incremental, cumulative contribution to impacts on groundwater conditions within the much broader Kings Basin.

With the adoption of the Water Conservation Act of 2009, also known as the SB X7-7, the State is required to set a goal of reducing urban water use by 20 percent by the year 2020. Each retail urban water supplier must determine baseline water use during their baseline period and also target water use for the years 2015 and 2020 in order to help the State achieve the 20 percent reduction.

As described previously, the Kings Basin from which the City draws its water supply is in an overdraft condition. The depth to groundwater has been decreasing over time and can be expected to continue to decrease as demand for groundwater increases. The three main factors contributing to the cumulative overdraft conditions include: 1) groundwater pumping to meet agricultural water demand when surface water diversions are inadequate to fully meet the crop water requirements; 2) high reliance on groundwater for all demands in much of the western parts of Kings Basin; and 3) urban development and reliance on groundwater once lands are converted to urban use from agricultural uses.

While efforts are underway throughout the Kings Basin to address the overdraft problem, it is unlikely that the measures being implemented will be sufficient to bring the basin into equilibrium through the Sanger General Plan buildout year (2035).

As previously discussed, groundwater levels in the Kings Basin will generally continue to decline, though the degree of decline would vary across areas within the basin. Additional cumulative urban demand through the year 2035 would result in lower groundwater levels when compared to existing conditions. Since agriculture relies mostly on surface water, the difference between existing groundwater levels and levels in 2035 is not significant where land use remains predominantly agricultural.

The City's historic extraction of groundwater is illustrative of one of the three main causes of cumulative groundwater overdraft in the Kings Basin as noted above – urban development that is reliant on groundwater for water supply. While the City's historic contribution to the cumulative regional overdraft condition has been small, the contribution within an overdrafted groundwater basin is notable. Groundwater overdraft conditions in the Sanger area reflect cumulative overdraft conditions within the broader groundwater basin within which the City is located.

City of Sanger Water Supply

Water pumped from the City's underlying aquifer has historically been the only source of potable water supply. The City's network of wells has been expanded over the years with a total of fifteen wells having been drilled and placed into service, although not all the wells have been in service simultaneously. Water supply for the City is currently supplied from eight active wells, Nos. 25, 02A, 06, 07, 09, 11, 12, and 14. A ninth well, Well No. 08, is currently used as a standby. The City is capable of producing approximately 4,711 MG of water per year from eight wells, with an average depth of 235 feet. The actual volume of groundwater pumped in 2015 was 1,687¹⁷ acre feet.

The City operates four granular activated carbon water treatment plants to remove DBCP from the raw groundwater. The water from the treatment plants and other City wells are chlorinated prior to delivery to City customers. The City's potable water supply meets all State and Federal requirements. The water system is monitored on a 24-hour basis for pressure and flow in the water distribution through an alarm monitoring system.

The City is planning to add a new 0.75 MG storage tank. The storage tank will be used to blend water from the standby well with other water in the City's distribution system. With the addition of this new storage tank, Well No. 8 will be moved from standby position to active supply well. As population and development within the City increases, additional wells and a storage tanks

¹⁷ Draft Sanger UWMP Update (2015), page 54.

will be added to the water system to meet the growing demand. Table 3.10-5 shows the projected water supply through 2040. Projected water supply is based on the population growth rates presented in the 2015 UWMP.

Table 3.10-Water Supplies - Projected¹⁸

Groundwater Supply	Projected Water Supply (acre feet per year)									
	2020		2025		2030		2035		2040	
	Reasonably Available Volume	Total Right or Safe Yield	Reasonably Available Volume	Total Right or Safe Yield	Reasonably Available Volume	Total Right or Safe Yield	Reasonably Available Volume	Total Right or Safe Yield	Reasonably Available Volume	Total Right or Safe Yield
	1,804	1,804	1,922	1,922	2,043	2,043	2,166	2,166	2,291	2,291

The available water supply is equal to the water demand shown in Table 3.10-4, as the City only pumps the groundwater that is needed to equal its demand.

Implementation of the City's policies will incrementally reduce the City's incremental cumulative impact on groundwater by encouraging groundwater recharge, limiting development where a demonstrated source of water is not available, ensuring continued participation in regional integrated water resources planning and project development, facilitating water conservation, and protecting groundwater quality. However, buildout of the proposed General Plan and Master Plan areas would substantially increase the City's demand for groundwater resources that are being extracted from an overdrafted groundwater basin by agricultural and urban uses.

Cumulative overdraft conditions are generally expected to worsen as develop occurs as projected in the City's General Plan Update. Overdraft conditions are expected to worsen in significant part due to increased urban demand. Implementation of the noted policies would not likely off-set the City's impact on overdraft of groundwater resources. Consequently, implementation of the proposed GPU would result in a significant and unavoidable impact from depletion of groundwater resources. Mitigation would be required to avoid or reduce the City's additional contribution to groundwater overdraft impacts.

To further reduce the incremental contribution of the General Plan and Master Plan buildout on groundwater resources, the City implements the following policies and measures:

¹⁸ Draft Sanger UWMP Update (2015). Page 55.

Stormwater

The City of Sanger owns and operates a stormwater collection system which consists of a network of pipelines and numerous stormwater percolation basins. The City provides storm drainage collection and disposal services to all developed areas and is divided into drainage sub-area. Each sub-area has its own collection system and ponding basin that drains stormwater by evaporation and percolation. Percolated stormwater is subsequently pumped as groundwater for local crop irrigation.

As part of the Cooperative Agreement signed with CID, a portion of the City's storm drain system maintains beneficial connections to adjoined CID canals. Many of the City's stormwater percolation basins have lift stations which pump stormwater into several CID canals. Water flows through the unlined canals and recharges the underground groundwater basin by infiltration. Stormwater that remains in the canals long enough to reach CID's recharge facilities, is then diverted, and used for agricultural purposes.

According to the 2013 Report prepared by Kenneth D. Schmidt and Associates, storm water runoff from approximately 282 acres of urban area in the City of Sanger is discharged directly to CID's canals. Although this water does not benefit the City's SOI, it contributes to the groundwater recharge of the Kings Basin, which is estimated to be approximately 900 acre-feet per year.¹⁹ This has the functional effect of offsetting some of the water used by the City within a regional context.

Wastewater and Recycled Water

The City of Sanger also owns and operates a citywide wastewater collection and treatment system. The City does not currently recycle effluent discharged from their wastewater treatment facilities; however, the City will coordinate any future recycled water plans with local water, wastewater, groundwater, and planning agencies within and near the City's service area.

The City does not currently treat any wastewater to disinfected tertiary water standards to allow it to be used as a component of its water supply. However, the City's domestic wastewater is treated and disposed of in percolation ponds, which percolates into the soil and is used to recharge the groundwater table. By way of this process, the majority of the treated domestic wastewater is recycled as groundwater recharge and subsequently pumped for local crop irrigation.

¹⁹ Draft Sanger UWMP Update (2015), page 42.

Currently, all of the effluent from the City's Industrial WWTP is reused through the irrigation of approximately 140 acres of alfalfa crop. This reuse of effluent also reduces the demand of other water supplies available to the area (primarily groundwater) and provides additional groundwater recharge.²⁰

As previously stated in the above sections, the City's water recycling options include using recycled water for the irrigation of non-potable crops and groundwater recharged through the use of percolation ponds at the City's Lincoln Ponds. As previously stated above, the City has used approximately 164 MG of recycled industrial effluent over the last five years for agricultural irrigation. According to the City's 2005 UWMP, the City estimated that approximately 68 MG of recycled water from the Industrial WWTP would be used for agricultural reclamation.

As of May 2018, the City is seeking grant funding to evaluating the feasibility of recycling treated effluent from the Domestic WWTP on nearby land. A feasibility study would be required to determine the necessary plant improvements and distribution system items needed to deliver recycled water, including the estimated total cost and amount of time it would take to implement a recycled water system. At this time, it is unclear if a recycled water system will be implemented within the planning horizon of the 2015 UWMP.

Future Water Projects

The City plans to construct a new 0.75 MG storage tank and pipeline as well as two new groundwater wells and an additional 0.75 MG storage tank in the next 15 years.²¹

Urban Water Management Plan Updates

The City intends to update its Urban Water Management Plan every 5 years as required by the California Water Code and the Urban Water Management Planning Act of 1983.

Initial amendments to the UWMPA required that total projected water use be compared to water supply sources over the next 20 years, in 5-year increments. Recent DWR guidelines also suggest projecting through a 25-year planning horizon to maintain a 20-year timeframe until the next UWMP update has been completed and for use in developing Water Supply Assessments.

Other amendments require that UWMPs include provisions for recycled water use, demand management measures, and a water shortage contingency plan. Recycled water was added in the reporting requirements for water usage and figures prominently in the requirements for

²⁰ Draft Sanger UWMP Update (2015), page 47.

²¹ Ibid. Page 52.

evaluation of alternative water supplies, when future projections predict the need for additional water supplies. Each urban water purveyor must coordinate the preparation of the water shortage contingency plan with other urban water purveyors in the area, to the extent practicable. Each water supplier must also describe their water demand management measures that are being implemented, or scheduled for implementation.

In addition to the UWMPA and its amendments, there are several other regulations that are related to the content of the UWMP. In summary, the key relevant regulations are:

- AB 1420: Requires implementation of demand management measures (DMMs)/best management practices (BMPs) and meeting the 20 percent reduction by 2020 targets (mandated by SBx7-7) to qualify for water management grants or loans.
- AB 1465: Requires water suppliers to describe opportunities related to recycled water use and stormwater recapture to offset potable water use.
- Amendments Senate Bill (SB) 610 (Costa, 2001), and SB 221 (Daucher, 2001), which became effective beginning January 1, 2002, require counties and cities to consider information relating to the availability of water to supply new large developments by mandating the preparation of further water supply planning (Daucher) and Water Supply Assessments (Costa).
- SB 1087: Requires water suppliers to report single family residential (SFR) and multifamily residential (MFR) projected water use for planned lower income units separately.
- Amendment SB 318 (Alpert, 2004) requires the UWMP to describe the opportunities for development of desalinated water, including but not limited to, ocean water, brackish water, and groundwater, as long-term supply.
- AB 105 (Wiggins, 2004) requires urban water suppliers to submit their UWMPs to the California State Library.
- SBx7-7: Requires development and use of new methodologies for reporting population growth estimates, base per capita use, and water conservation. This water bill also extended the 2010

Sustainable Groundwater Management Act

The City is also required to comply with the Sustainable Groundwater Management Act. Specifically, for General Plans: Section 65350.5 requires planning agencies to review prior to adopting new or amended general plan:

- a. An adoption of, or update to, a groundwater sustainability plan or groundwater management plan pursuant to Part 2.74 (commencing with Section 10720) or Part 2.75 (commencing with Section 10750) of Division 6 of the Water Code or groundwater management court order, judgment or decree.
- b. An adjudication of water rights.
- c. An order or interim plan by the State Water Resources Control Board pursuant to Chapter 11 (commencing with Section 10735) of Part 2.74 of Division 6 of the Water Code.

SB 610 Water Supply Assessments

SB 610 requires any city or county to consider a water supply assessment prepared for that development to determine whether projected water supplies available to the proposed project are sufficient to meet the project's anticipated demand. The threshold requiring analysis is 500 equivalent residential units. Additionally, effective January 1, 2002, SB 221 prohibits a city or county from approving development agreements, parcel maps, or tentative tract maps for any subdivision with more than 500 units unless a sufficient water supply is, or will be, available for the subdivision prior to its completion. Individual development projects will be subject to these requirements as they are submitted.

Conclusion: The Project is projected to increase groundwater extraction to meet future demands and this increase could result in significant impacts to groundwater levels within the Kings Sub-basin. Implementation of the City's General Plan Update goals, objectives and action plans as well as measures discussed herein could reduce or avoid the potentially significant impact that would result from increased pumping of groundwater from a groundwater basin that is in overdraft condition. However, until such time as the City is able to implement the UWMP water conservation measures therein and/or implement the groundwater management plan in compliance with the Sustainable Groundwater Management Act, due to the technical and financial feasibility of developing a plan in conjunction with other nearby cities, agencies, water authorities, water purveyors and others, the impact is determined to be *significant and unavoidable*. See also the discussion in Impact 3.10-5 pertaining to compliance with the Sustainable Groundwater Management Act. Implementation of Mitigation Measure HYD-1 will

help reduce impacts of the General Plan Update on groundwater overdraft, but the impact remains significant and unavoidable.

Mitigation Measures: In addition to the requirements imposed by the City's General Plan Update; the City's Municipal Code; State and federal regulation; and the requirements of the Sustainable Groundwater Management Plan / Groundwater Sustainability Plan; the City will require the following mitigation:

HYD-1 Prior to exceeding existing water supply capacity for development projects subject to CEQA, the City will review projects on an individual basis, which will include an analysis of the following: Inventory of existing water demands; quantification of proposed water use; assessment of opportunities for enhanced water conservation; assessment of any shortfalls in future water demands; and identification of alternative water sources or other methods of achieving sufficient water use reduction and/or to achieve water balance. This analysis will be performed within the context of City's General Plan; the City's Municipal Code; State and federal regulations; and the requirements of the Sustainable Groundwater Management Plan / Groundwater Sustainability Plan.

Impact 3.10-3: *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:*

- i. *result in substantial erosion or siltation on- or off—site; or*
- ii. *substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or offsite;*
- iii. *create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or*
- iv. *impede or redirect flood flows.*

Less Than Significant. As identified above, development activities associated with buildout of the proposed project would result in ground-disturbing activities typical of urban development such as grading, excavation, placing fill, trenching, spoil pile storage, and backfilling of trenches which could alter the drainage pattern of the area. In addition, as part of that new development, substantial areas of new impervious surfaces will be created through construction of roads, parking lots, building roofs, etc. These impervious areas will replace pervious soils that are largely in agricultural use and could potentially alter the existing drainage pattern of the area.

The volume of stormwater produced under buildout conditions will substantially increase.

As new development occurs, new stormwater infrastructure would need to be developed within new growth areas to convey and dispose of the increase in storm water runoff to minimize the potential of local flooding. Uncontrolled storm water runoff could also flow over soil surfaces, thereby resulting in increased erosion and siltation of downstream water bodies, such as the Kings River.

There are regulatory mechanisms in place that would reduce the effects of construction activities on drainage patterns to reduce the impacts of erosion, siltation, runoff (including polluted runoff), flooding, or impacts on storm drainage. These include:

- The City of Sanger grading plan check process. This is a review process that requires anyone who develops property to: i) properly grade their property in accordance with the CA Building Code; and ii) submit a grading plan showing the proposed grading of the development.
- The National Pollutant Discharge Elimination System (NPDES) Construction General Permit. The NPDES program helps control siltation in stormwater by regulating sources of erosion at construction sites that would result in the discharge of silt laden stormwater from the site and into subsequent receiving waters during both construction and operations activities.
- The review of the grading plan for a proposed development within the Planning Area will disclose any plan to alter the course of any creek, stream, or irrigation canal. The City will require any other reviews, permits, and agreements be obtained prior to allowing the grading to proceed. Such reviews could include the U.S. Army Corps of Engineers; U.S. Fish & Wildlife Service; CA Department of Fish & Wildlife; the Central Valley Flood Protection Agency, the CA Water Resources Control Board; the Central Regional Water Quality Control Board; the Consolidated Irrigation District; and the Alta Irrigation District. The list of possible permits and/or agreements include the Clean Water 401 and 404 permits, Endangered Species or Habitat Plan, Section 1602 Streambed Alteration Agreements, and Irrigation Canal Encroachment permits.

The City operates a storm drainage system that provides drainage facilities for most of the urban area. The system is comprised primarily of gutter flow to pipelines that range in size from 8 to 36 inches. Drainage is channeled through storm drain lines to a series of storage basins or irrigation canals and pipelines. There are approximately ten retention basins located throughout the City's service area, ranging in capacity from under one acre foot to over 100 acre feet.

The City does not currently have a storm drainage master plan and storm drain facilities are designed either on a drainage sub-area or piece-meal basis. If permanent storm drainage facilities are not available to serve a proposed development the developer must install temporary on-site facilities or permanent drainage facilities. Developers are also required to pay the City's storm drain impact fee. Funds accumulated in this account are used to make capital storm drainage improvements throughout the City.²² The proposed General Plan Update includes a comprehensive set of Goals, Objectives and Action plans to ensure that adequate storm water facilities are maintained.

In addition, the City requires that future development shall be required to connect to City storm drain facilities and that such facilities are consistent with the City Engineer's requirements and other rules and regulations pertaining to placement and attributes of storm water infrastructure. These include, but are not limited to:

- Best Management Practices (BMPs)
- Compliance with California building codes
- Compliance with RWQCB rules and regulations
- Compliance with City policies, regulations, procedures and ordinances
- Compliance with regulatory agencies (State and federal) pertaining to project permitting activities

As discussed, the City requires new development to install adequate stormwater infrastructure. Compliance with the City's storm water rules, regulations and standards, and implementation of BMPs, building code requirements, and RWQCB rules and regulations will ensure that impacts to drainage patterns and stormwater facilities from buildout of the General Plan and Master Plan is *less than significant*.

Mitigation Measures: None are required.

Impact 3.10-4: *In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?*

Less Than Significant Impact. Small portions of the City are located in the FEMA-designated 100-Year Flood Hazard Area. A 100-year flood has a one percent chance of occurrence during any

²² Sanger GPU Part II: Community Profile, page 1-31.

given year and is the flood magnitude that requires Federal Insurance Administration regulations. A swath of land east of Academy Avenue is located within this flood designation, as well as some smaller pockets in the southwestern part of the City. The remainder of the City is outside the 100-Year Flood Hazard Area. See Figure 3.10-1 FEMA Flood Zones.

The major source of flood threat in Sanger is the Kings River. Fortunately, this threat is confined mostly within the floodplain of the river, located east of the urban area, at a lower elevation. The General Plan minimizes the risk of flooding from the river by prohibiting most kinds of development near the river.

New development under the General Plan and Master Plan could potentially place housing within a 100-year flood hazard area. In addition, Placement of structures or other improvements has potential to impede flood flows. Implementation of the proposed General Plan and Master Plan would result in significant impacts from exposing people to flood risks and from impeding flood flows if future development within the boundaries of 100- year flood hazard zones is not managed consistent with regulations and policies designed to protect against such hazards.

The City's Safety Element provides the following:

Goals, Objectives, Action Plans

Goal:

I. Minimize the danger to people and property from flooding.

Objective:

1. For existing undeveloped areas in flood zones, encourage uses that are not susceptible to flood damage; uses that do not propose permanent structures that could impede the flow of flood waters. For uses that are susceptible to flood damage, require mitigation measures such as raised floor elevation, anchoring of buildings, maintenance of floodways, etc.

Action Plan:

- a. Adoption of the Land Use map helps to implement the foregoing objective. To the extent practical, the Land Use map has been designed to preclude vulnerable land uses from being located within flood zones - particularly in the Kings River bottom.

- b. The City should review its flood zone regulations (and if necessary amend them) to ensure they comply with current federal flood regulations.

Objective:

- 2. Coordinate with the U.S. Army Corps of Engineers on safety and evacuation plans for flooding resulting from releases of water from Pine Flat Dam.

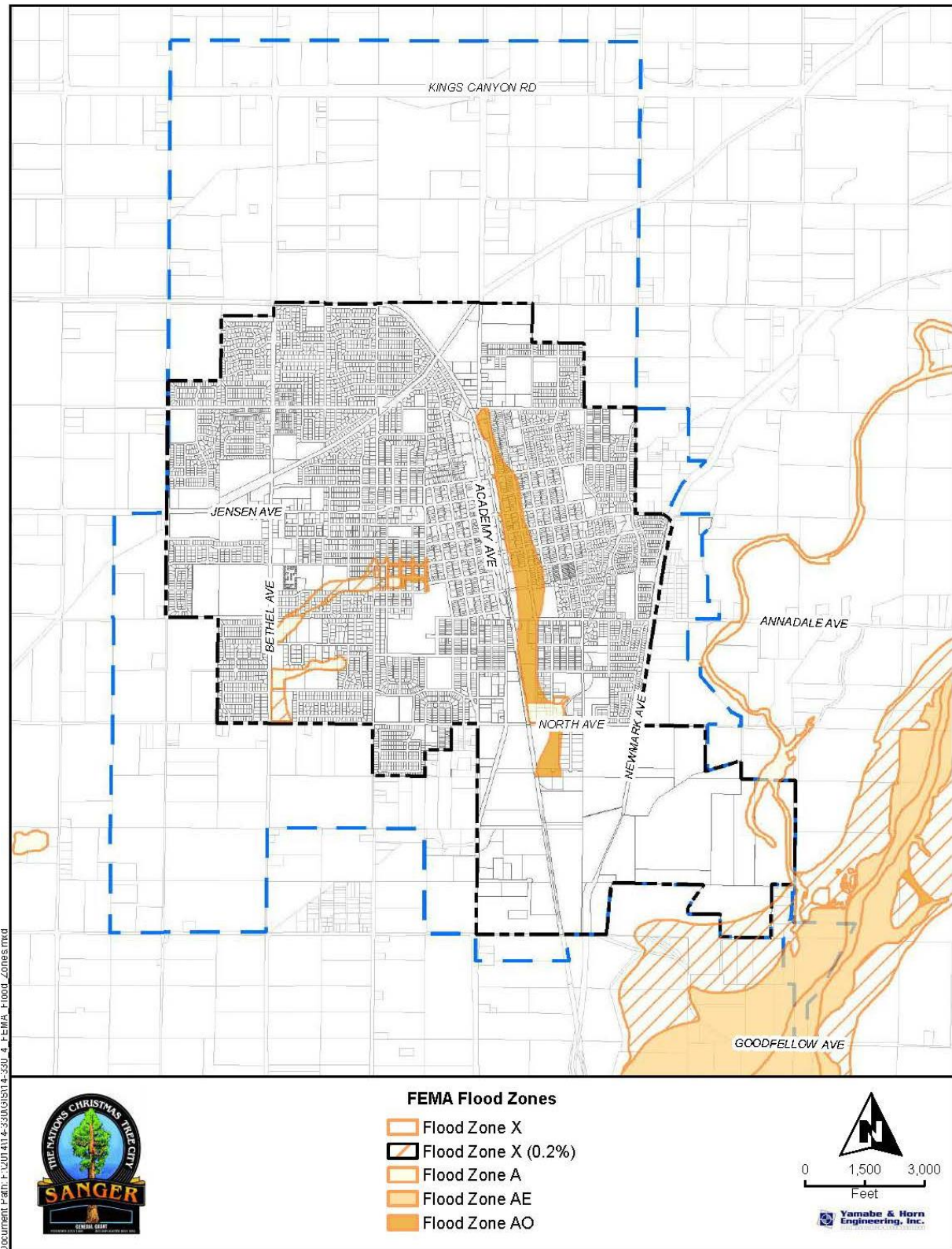
Action Plan:

- a. The Police and Fire Departments will maintain communication with the Fresno County Office of Emergency Services and Army Corps of Engineers.

With implementation of the proposed General Plan Update policies as well as the City's Municipal Ordinance, and ensuring that new development meets existing regulation and design requirements for promoting flood protection, impacts from flooding to or from buildout of the General Plan and Master Plan is *less than significant*.

Mitigation Measures: None are required.

Figure 3.10-1: FEMA Floodplain Map



Impact 3.10-5: *Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?*

Less Than Significant. Several agencies and water suppliers within Fresno County have adopted groundwater management plans in accordance with the September 2002 California Senate Bill (SB) No. 1938, which amends Sections 10753 and 10795 of the California Water Code (CWC). CID provides services within a portion of the City's SOI and adjacent areas, and in 2014, the City signed a Cooperative Agreement with the District to implement a Groundwater Management Plan (GWMP) under the provisions of Assembly Bill 3030 and SB 1938. The GWMP calls for annual reviews of groundwater conditions and as conditions dictate, additional supplies will be acquired to augment current groundwater recharge options. The objectives of CID's March 2009 GWMP have been developed to monitor, protect and sustain groundwater within the region.

As part of the GWMP, CID has developed a Mitigation and Banking Program (CID Program). The Program is comprised of a list of proposed projects and management actions, which include programs, policies, and agreements that need to be funded and implemented. CID is working with the community to finalize these projects, programs, policies, and agreements based on the findings and actions related to the overall Groundwater Mitigation Banking Program. CID proposes to develop, own, operate, and maintain the groundwater banking facilities and manage the banked groundwater on behalf of overlying land owners and participants in the program. The Cooperative Agreement signed in 2014 is the City of Sanger's agreement to be a participant in the program by payment of annual fees into an account to fund groundwater recharge projects as part of the CID's GWMP. The General Plan Update does not conflict with this Program.

While the City's existing limits are within CID's service area, the City's SOI includes approximately 1,485 acres within the service area of the Fresno Irrigation District (FID). As growth expands to the north, the City will be required to annex properties and provide water service within the second irrigation district's boundary. The City plans to work with FID to develop a Cooperative Agreement or Memorandum of Understanding to manage any potential groundwater impacts that could be created by the City.

The City is also a member of the Upper Kings Integrated Regional Water Management Plan (IRWMP). The IRWMP is a collaborative effort between 54 public, private, and non-governmental agencies to manage water resources in the Kings Groundwater region. The Plan is an important part of groundwater management as it seeks to integrate the program with groundwater quality, flood management, and other goals and objectives to enhance and preserve all beneficial water uses in the region. As a member of IRWMP, the City anticipates a much greater coordination with all water suppliers and users in the near future.

Groundwater has been at the forefront of the State’s water supply concerns more recently due to the rapid decline in groundwater levels and storage, land subsidence, seawater intrusion and degradation of groundwater quality over the last few years. The severity of these issues ultimately led to legislature to draft three bills which were signed by the Governor on September 16, 2014, and laid the foundation for the Sustainable Groundwater Management Act (SGMA). SGMA became effective on January 1, 2015 and established a framework of priorities and requirements to help local agencies sustainably manage groundwater within a basin or Subbasin (basin). As required by SGMA, each groundwater basin is to develop a Groundwater Sustainability Agency (GSA), a Groundwater Sustainability Plan (GSP) and attain sustainability within twenty years. The statewide use of groundwater supplies will inevitably change over the next few years, as GSP guidelines are developed and GSA’s create plans to fit their unique circumstances.

On May 25, 2017, the City of Sanger adopted Resolution 2017-001, approving the formation of a Joint Powers Agreement (JPA) with other local agencies to create the South Kings GSA. The primary purpose of the JPA is to facilitate a cooperative and ongoing working relationship among the Cities of Parlier, Fowler, Selma and Kingsburg and to develop and implement mutually beneficial approaches and strategies for implementing the Act in the Kings subbasin. The JPA also desires to facilitate contracts with other agencies, both current and prospective, overlying the subbasin, in order to coordinate with the GSA to implement a GSP and satisfy the requirements of the Act. The South Kings GSA will be responsible for the preparation of a GSP by January 31, 2020.²³ The City of Sanger adopted the GSP on December 3, 2019. The intent of the GSP is to achieve groundwater sustainability within the Kings Subbasin by 2040, as required by the SGMA.

The GSP is organized as follows:

1. **Introduction** – Provides introductory information about the GSP process.
2. **Plan Area** – Describes the member agencies, relation to planning documents and communication.
3. **Basin Setting** – Describes groundwater conditions, water budget, water supply for augmentation, hydrogeologic conceptual model, and management areas.
4. **Sustainable Management Criteria** – Describes the sustainability goal of the GSA and includes a description of thresholds, undesirable results and measurable objectives.
5. **Monitoring Network** – In conjunction with Section 4 – Sustainable Management Criteria, this section describes the existing monitoring network of facilities.

²³ Draft Sanger UWMP Update (2015), pages 38-39.

6. **Projects and Management Actions** – Describes projects implemented by GSA or members, as well as potential projects.
7. **Implementation** – Describes potential costs, the data management system and annual reporting requirements.

As previously discussed, the City adopted the GSP on December 3, 2019. As identified herein, the City's General Plan Update contains does not conflict with or obstruct implementation of the GSP. Thus, the impact is *less than significant*.

Mitigation Measures: None are required.

Cumulative Impacts

Significant, Unavoidable and Cumulatively Considerable. The scope for considering cumulative impacts to hydrology and water quality are the geographic areas covered by the General Plan Update and Master Plan as well as the areas served by the Kings Groundwater Subbasin from which cities and other jurisdictions in the vicinity obtain their water supply. Construction of the individual development projects allowed under the land use designations of the General Plan has the potential to have construction-related water quality impacts, drainage impacts, and potential impacts to flooding, erosion, or siltation from the alteration of drainage patterns. While some individual impacts could occur in the region as individual projects are constructed, the goals, objectives and action plans in the General Plan Update and the North Corridor Academy Master Plan, as well as State and federal regulations, will substantially reduce water quality and drainage-related impacts. Considering the protection granted by local, State, and federal agencies and their permit and monitoring requirements discussed above, the overall cumulative impact to water quality and drainage would not be significant.

Sanger obtains its potable water exclusively from groundwater extraction. Buildout of the General Plan and Master Plan areas will result in increase in demand for groundwater. Impacts of groundwater extraction are generally not localized within a project site or in the case of the proposed General Plan update, within the boundaries of the SOI. Rather, such impacts are cumulative in nature as the boundaries of an affected groundwater basin are typically significant broader than that of the subject project being evaluated for its impacts on groundwater. The basin from which the City obtains its water is in a state of overdraft. Cumulative overdraft conditions are generally expected to worsen in significant part due to increased urban demand. Implementation of the noted policies, regulations, water reduction measures, and compliance with Groundwater Sustainability Plan (per SGMA) would likely off-set much, if not all of the City's impact on overdraft of groundwater resources. However, since groundwater impacts are quantified regionally, the City of Sanger is only in a position to affect groundwater usage and recharge within its jurisdiction.

Consequently, since there are other agencies and jurisdictions involved, the City cannot ensure that other agencies and jurisdictions will implement the required measures to obtain groundwater sustainability. Consequently, implementation of the proposed General Plan update and Master Plan would result in a significant and unavoidable impact from depletion of groundwater resources at the cumulative level.

Therefore, the projects contribution to water supply impacts is considered *significant and unavoidable and cumulatively considerable*.

3.11 Land Use and Planning

This section of the DEIR evaluates land use compatibility within the Sanger General Plan and Master Plan areas including residential, commercial, office, public facilities, mixed use, industrial, open space, agriculture, and other uses. In addition, this section discusses whether the General Plan Update or Master Plan would cause a division within an established community. The potential impacts from the implementation of the project are described, and mitigation measures are provided, if required. No IS/NOP comments were received pertaining to land use.

Environmental Setting

Planning Area

The impact evaluation area for Land Use and Planning is the City's sphere of influence (SOI), which is inclusive of the North Academy Corridor Master Plan area and referred to as the Planning Area. As of January 2017, Sanger's SOI contained approximately 6,873 acres or 10.7 square miles. Subtracting the acreage of the city limits boundary from the Sphere of Influence indicates there are 3,193 acres of land outside the city limits but within the Sphere of Influence. The location of the SOI is shown in Figure 2 in Chapter Two – Project Description. Table 3.11-1 shows existing land use acreage within City limits and the SOI.

Table 3.11-1: Existing Land Use Acreage Within City Limits and the SOI.

Land Use Category	Acres in City Limits	Percent of Total	Acres in SOI (not incld. City limits)	Percent of Total in SOI
Single-family residential	1,032	28%	61	2%
Multi-family residential	103	3%	11	0.3%
Mobile home parks	19	0.5%	6	0.2%
Commercial	122	3%	13	0.4%
Industrial	204	6%	56	2%
Public	603	16%	88	3%
Agriculture	243	7%	2,117	66%
Rural Residential	36	1%	83	3%

Vacant	332	9%	722	23%
ROW (streets and railroads)	986	26%	36	1%
Total	3,680	100%	3,193	100%

Source: Collins & Schoettler (2015). All figures are rounded.

General land use patterns

Over the years Sanger has expanded outward from the original township generally centered around 7th Street and the railroad. The downtown area is centered in the original township along with vestiges of industrial uses (mostly packing houses) situated along the right-of-way of the railroad. In fact, the railroad corridor is almost entirely occupied by industrial and commercial uses.

The City's earliest residential neighborhoods developed in a ring around the downtown core and these areas are now interspersed with commercial, industrial and public uses.

Residential Development

Residential development is found in all four quadrants of the City. The bulk of residential development is dominated by single family homes – accounting for nearly 1,100 acres. Multi-family development is interspersed throughout each quadrant, from duplexes to larger apartment complexes. Multi-family development covers about 113 acres.

Commercial Development

Major commercial development occurs in the downtown area, along the Academy Avenue corridor and along the Jensen Avenue corridor. The downtown area is characterized by offices, banks, restaurants and small retail uses. Larger shopping centers are situated in outlying areas of the community, including along Jensen Avenue in the vicinity of Bethel Avenue, south Academy at North Avenue, and North Academy south of Church Avenue.

Industrial Development

Industrial uses in Sanger began with lumber-processing sheds along the railroad in the late 1800's. As lumbering subsided, packing warehouses were developed along the railroad corridor to accommodate the vast fruit and vegetable production occurring in the area. The railroad corridor still serves as the primary area for industrial development in the City. This focus has broadened

in the southern part of the community, as the Sanger Technology Park was developed in the 1980's, south of North Avenue.

Agriculture

Sanger is situated in the leading agricultural county in the nation. The City is surrounded by agricultural uses – primarily field and tree crops. Approximately 2,330 acres within the Sphere of Influence is currently in agricultural development. Primary crops that are grown include grapes, citrus, stone fruit and row crops. Agriculture is the dominant land use in the planning area.

Public Uses

There are a number of public (government) uses throughout the planning area, including school campuses, parks, Sanger City Hall, the wastewater treatment plant, public works facility and others. These uses cover approximately 690 acres.

Rights of Way

Rights of Way are those lands devoted to streets and the railroad, with the bulk being for streets. Approximately 986 acres of land are used for street and railroad rights-of-way.

Regulatory Setting

Federal Regulations

There are no federal regulations pertinent to local land use and planning.

State Regulations and Policies

The Cortese-Knox-Hertzberg Local Government Reorganization Act

The Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 (Government Code Section 56300 et seq.) governs the establishment and revision of local government boundaries. The Act was a comprehensive revision of the Cortese-Knox-Hertzberg Local Government Reorganization Act of 1985. The Act is a policy of the state to encourage orderly growth and development that are essential to the social, fiscal, and economic well-being of the state. The intent of the Act is to promote orderly development while balancing competing state interests of discouraging urban sprawl, preserving open space and prime agricultural lands, and efficiently extending government services. The Act had previously established the County Local Agency Formation Commission (LAFCO), which gave it authority to consider and approve city and special district annexation, dissolution, and formation.

California Land Conservation Act

The California Land Conservation Act, better known as the Williamson Act, was enacted by the State Legislature in 1965 to encourage the preservation of agricultural lands. Under the provisions of the act, landowners agreeing to keep their lands under agricultural production for a minimum of ten years receive property tax adjustments. Williamson Contracts limit the use of the properties to agricultural, open space, and other compatible use, Williamson Act lands are assessed based on their agricultural value, rather than their potential market value under nonagricultural uses.

Regional Land Use Regulations and Policies

Fresno County Local Agency Formation Commission

Local Area Formation Commissions (LAFCOs) review proposals for the formation of new local governmental agencies and for changes in the organization of existing agencies. The objectives of the Fresno County LAFCO are to: encourage orderly formation of local governmental agencies, preserve agricultural land resources and to discourage urban sprawl. The Fresno County LAFCO assists in balancing the competing needs in the region for efficient services, affordable housing, economic opportunity, and conservation of natural resources. In addition, the Fresno County LAFCO considers effects that development may have on existing agricultural land and in doing so guides development toward vacant urban land and away from agricultural preserves. The Fresno County LAFCO also discourages urban sprawl (i.e. irregular and disorganized growth occurring without apparent design or plan).

Thresholds of Significance

In accordance with Appendix G to the State CEQA Guidelines, the project would have a significant impact on land use as follows:

- Physically divide an established community?
- Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Impacts and Mitigation Measures

Impact 3.11-1: *Physically divide an established community?*

Less Than Significant. There are no established communities (other than the City of Sanger) within the Sanger SOI. However, future development within the SOI could divide established rural land uses that are located in the outer areas of the SOI. Irregular rural patterns could constrain efficient development in the SOI and could cause lifestyle conflicts between the existing rural residents and the newly developed urban land uses. It is anticipated that as full buildout of the General Plan Update and Master Plan occurs within the rural areas, there could be continuing conflicts between existing and new land uses and could create a division of existing rural established communities. The General Plan includes objectives and action plans to reduce these land use conflicts and provide for future orderly development to reduce the potential to divide established communities. Refer to the land use policies in Impact Section 3.11-2 herein. Implementation of these objectives and action plans would ensure that the impact remains *less than significant*.

Mitigation Measures: None required.

Impact 3.11-2: *Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?*

Less Than Significant. It is anticipated that as full buildout of the General Plan and Master Plan occurs within the rural areas, there could be continuing conflicts with land use plans, policies and regulations. Full buildout would result in a substantial amount of additional development throughout the SOI. This development would include infill and underutilized development within the existing City limit and development within rural/agriculture areas located outside the City and within the SOI.

As discussed in the Project Description and in Chapter 3.14 – Population and Housing, the City of Sanger’s population was 25,128 people in 2015. Using the growth rate of 1.7% per year (as previously discussed), Sanger’s population is estimated to be 35,202 people in year 2035, an increase of 10,074 people.

Land demand projections have been determined taking into account the City’s existing undeveloped land, projected population, and other factors, as shown in Chapter Two – Project Description. Some of the existing land use designations will change during this General Plan update process, however, the City is likely to need additional lands to accommodate “full buildout” of the General Plan. Based on this analysis, it is estimated that the City will need an additional 290 acres of land as follows:

- Residential: 141 acres
- Commercial: 49 acres

- Industrial: 0 acres
- Parks: 16 acres (at 3 acres per 1,000 residents)
- Schools: 84 acres

The proposed land use map is shown in Figure 2-4 in Chapter Two – Project Description. This map delineates where future land uses will be located in the community, through year 2035. The following generalized land use categories are established to implement the policies of the Sanger General Plan:

- Residential
- Commercial
- Industrial
- Public
- Open Space
- Agricultural / Urban Reserve

Development under the General Plan and Master Plan would require consistency with the goals, objectives and action plans of the General Plan. Adherence to these goals, objectives and actions plans of the General Plan (listed below) would ensure that potential land use conflicts remain less than significant.

Sanger General Plan Land Use Element - Issue One: Community Image / Urban Design

Goals, Objectives, Action Plans

Goal:

II. Foster a community that is free of land use conflicts.

Objective:

1. Legal, non-conforming land uses should not be allowed to be enlarged physically or operationally (unless the expansion does not increase the degree of non-conformity).

Action Plan:

- a. The City Planner shall ensure that legal non-conforming uses are not permitted to expand.

Objective:

2. The city shall actively enforce existing zoning and building regulations that preclude or eliminate uses of land or buildings that present conflicts for adjacent properties.

Action Plan:

- a. The City Planner shall analyze proposed land uses to ensure they do not present the possibility of land use conflicts.

Objective:

3. The city shall ensure that commercial uses do not operate in residential neighborhoods unless the operator of the commercial use has obtained a home occupation permit from the city.

Action Plan:

- a. The City Planner and Code Enforcement Officer shall enforce this policy.

Objective:

4. The city should develop an urban growth strategy that minimizes the impact of urban uses on adjacent agricultural operations.

Action Plan:

- a. To the extent practical, the Land Use map shall use roadways, ditches, railroads, creeks and other physical features to separate urban uses from existing agricultural operations.
- b. The City shall explore implementing a development impact fee that pays for the purchase of agricultural easements outside Sanger's Sphere of Influence. Such easements would be used to form a greenbelt around the community, curb sprawl and ensure that Fresno and Sanger do not grow together. Said fee would be a condition of annexation into the city or subdivision of land.

- c. The General Plan Land Use map establishes phased growth boundaries that are designed to promote compact, concentric growth, rather than sprawl and leapfrog development.

Issue Two: Growth Management

Goals, Objectives, Action Plans

Protecting Sanger's Boundaries

Goal:

- I. Maintain Sanger as a small, prosperous, agriculturally-oriented city surrounded by farmland.

Objective:

- 1. To the extent possible, ensure that Sanger is surrounded by agricultural land that is zoned for large-parcel agriculture by Fresno County. (e.g. AE-20 [20-acre minimum parcel size, or larger]).

Action Plan:

- a. The City shall notify the County of Fresno that all land that surrounds Sanger and is within its Sphere of Influence should be classified to the AE-20 (or larger acreage) zone. Further, the City shall discourage proposals for parcelization of these lands by the County to sizes smaller than 20 acres.
- b. Fresno County shall continue to refer applications for urban development (subdivisions, commercial or industrial development) on lands within the Sanger Sphere of Influence to the City for comment and review. All development occurring within these areas must be annexed and developed within city limits, consistent with the Sanger General Plan and city development standards.

Goal:

- II. Ensure that Sanger's future growth promotes a compact, contiguous and concentric urban form.

Objective:

1. Sanger should promote infill of vacant land currently within the city limits prior to considering future annexations.

Action Plan:

- a. The City should set an infill objective prior to consideration of additional annexations. For example, an objective could be established that land slated for residential development would not be annexed into the city until less than 10 years supply of vacant land (including vacant lots) had been reached.
- b. The City should promote residential development in Sanger's northeast and southeast quadrants. These quadrants have lower populations and fewer residential units than the northwest and southwest quadrants. If "concentric" development around the downtown is to be promoted, these two quadrants require additional development. A cursory acreage survey of Sanger's residential development showed that approximately 39 percent of the city's residential development was in the southwest quadrant; 32 percent in the northwest quadrant; 17 percent in the southeast quadrant and 12 percent in the northeast quadrant.
- c. To promote additional residential development in Sanger's northeast and southeast quadrants the city could promote growth-inducing or growth-attracting land uses including, a neighborhood commercial node, a new park or school, a public building, or a private facility such as an assisted living complex, affordable housing complex or a senior housing facility.

New Development

Goal:

- III. Promote Smart Growth planning principles in order to discourage urban sprawl and the premature urbanization of agricultural land, and to create more livable neighborhoods.

Objective:

1. The City shall integrate Sanger's Community Design Standards and Guidelines into Sanger's Zoning Ordinance to implement smart growth, neo-traditional design standards. These standards will:
 - promote moderate increases in residential densities;
 - narrower, tree lined streets and shorter blocks to slow traffic and promote walking;
 - better connectivity in and between neighborhoods; and
 - site and architectural design that emphasizes a humanized, pedestrian-oriented environment, as opposed to an automobile-oriented environment.

Objective:

2. New urban development should occur on undeveloped properties which are closer to the existing built-up area or which are in-fill parcels.

Action Plan:

- a. The City should promote in-fill development and development of lands immediately adjacent to existing urbanized areas before allowing development of outlying lands. New residential development could be granted a density bonus (using a specialized overlay zone) with special design standards.

Objective:

3. The City should promote mixed-use development where appropriate. Mixed use projects typically combine residential and commercial uses in the same building or site.

Action Plan:

- a. The City shall amend its Zoning Ordinance to incorporate a Mixed-Use Zone District (or add Mixed Use as a permitted use in specific zones.
- b. The City should identify sites in the downtown core where mixed use development would be appropriate. A new development area

that could be explored for mixed-use would be the L Street corridor.

Objective:

4. Housing units should be permitted in the upper stories of downtown buildings.

Action Plan:

- a. The Zoning Ordinance should be amended to permit residential units in upper floors of buildings in the downtown area.

Issue Three: Residential Neighborhoods

Goals, Objectives, Action Plans

New Development

Goal:

- IV. Protect existing and future neighborhoods from incompatible land uses.

Objective:

1. The Land Use map has been designed to minimize potential land use conflicts. In general, the City should avoid placing certain uses next to or nearby one another, such as:
 - Residential next to industrial uses;
 - Industrial uses next to schools, hospitals, clinics, rest homes and similar uses;
 - Wastewater treatment plant next to residential uses, offices and certain commercial uses;
 - Service commercial uses (e.g. auto repair) next to residential uses.

Action Plan:

- a. Utilize the above guidelines in reviewing General Plan amendments and zone changes for new proposed uses.

Objective:

2. Through the Site Plan Review and Conditional Use Permit processes, ensure that the city's zoning ordinance regulations do not permit uses or designs that will be incompatible with residential neighborhoods.

Action Plan:

- a. The City Planner shall review projects for land use compatibility, based on the guidelines outlined above.

Multi-family development

Goal:

- I. Multi-Family development shall be well-designed, well-maintained and properly sited.

Objective:

1. The City shall implement the Sanger Community Design Standards Guidelines to promote good multi-family residential design. Multiple family residential projects should be designed to avoid the appearance of an apartment "complex". To the degree practical, multi-family units shall be designed to mimic the appearance of single-family homes or town homes. Individual units should feature front porches to allow residents to enjoy and participate in the neighborhood environment.

Action Plan:

- a. The City Planner will work with the Planning Commission to implement the design guidelines.

Objective:

2. Multi-family developments shall be required to enter into a maintenance agreement with the City prior to occupancy. A maintenance agreement provides the City the legal ability to ensure general maintenance activities are performed on a regular basis, addressing issues such as landscaping, accumulation of junk, inoperable vehicles, broken windows, etc.

Action Plan:

- a. The Zoning Ordinance shall be amended to incorporate this standard. The standard shall then be applied to all future multi-family projects proposed in Sanger.

Objective:

3. Duplex and triplex buildings may be integrated into single-family residential subdivisions, on corner lots by means of a conditional use permit or a condition of a planned unit development.

Action Plan:

- a. The Zoning Ordinance shall be amended to incorporate this land use.

Objective:

4. Multi-family development may be permitted along the periphery of land otherwise designated for single-family subdivision, along Collector and Arterial streets, where there would otherwise be a masonry wall around the perimeter of a single-family development (see below). Units should face the main street with doors, windows and porches. Vehicular access should be from the rear via a lane that parallels the collector or arterial street.

Issue Four: Commercial Development

Goals, Objectives, Action Plans

Goal:

- I. Ensure that a full range of commercial development is provided for in Sanger.

Objective:

1. The General Plan Land Use map designates sufficient land to accommodate projected commercial development through the planning period.
2. Continue to monitor commercial land demand and accommodate requests to re-designate land for commercial development as demand warrants, subject to the following guidelines:

Action Plan:

- a. The site has direct access to a major street, such as Jensen and Academy Avenues or the downtown area.
- b. Development of the site for commercial use would not negatively impact adjacent residential uses, in terms of traffic, noise, glare or other characteristics.

Objective:

3. Allow service commercial uses (such as auto repair, etc.) to be located in Sanger's industrial areas and along certain blocks adjacent to the Union Pacific Railroad.

Action Plan:

- a. Amend Sanger's Zoning Ordinance to provide for service commercial uses in Sanger's industrial zone districts.

Objective:

4. Establish a highway commercial presence at the intersections of Academy, Bethel and State Highway 180.

Action Plan:

- a. Annex land around the Academy and State Highway 180 intersection. This intersection shall be designated "Highway Commercial" by the Land Use Element.

Objective:

5. Designate a neighborhood commercial center in the northeast and southeast quadrants of Sanger. These commercial centers should not exceed five acres in size and should contain two or more neighborhood commercial uses (e.g. groceries, service station, restaurant, barber/beauty shop, laundromat, coffee shop, bakery, etc.).

Action Plans:

- a. Identify on the Land Use map a neighborhood commercial node in the southeast and northeast quadrants. These nodes should be located on a corner lot with one of the streets classified as a collector roadway. The node shall not exceed five acres in size.
- b. The design and construction of a neighborhood commercial center shall comply with the Sanger's Community Design Standards Guidelines.

Issue Six: Industrial Development

Southeast Industrial Specific Plan

This specific plan was adopted in 1983 (later updated in 1999) by Sanger in order to guide the design of industrial development that would occur. The specific plan should be revisited to ensure that these design standards are still appropriate today.

Goals, Objectives, Action Plans

Goal:

- I. Designate sufficient land to accommodate industrial development in Sanger.

Objective:

1. The Land Use map designates land to accommodate industrial development in Sanger through the year 2035.

Goal:

- II. Ensure that new industrial development does not conflict with existing or planned uses, and that this type of development complies with new energy and water conservation strategies and legislation.

Objective:

1. The City shall review zoning standards to ensure that adequate measures are in place to achieve this goal.

Action Plan:

- a. When warranted, the City shall require the establishment of buffers, incorporating landscaping, walls or other effective measures.

Objective:

2. The City shall reevaluate the Southeast Industrial Specific Plan to ensure that it promotes development design that is in concert with current local and state regulations.

Action Plan:

- a. The City planner shall review and report to the Planning Commission about possible amendments to the Specific Plan based on environmental conditions, design issues and recent legislation.

Objective:

3. The City Engineer will review each industry that wishes to locate in Sanger to ensure that the project will not have an adverse impact on Sanger's sewer or water systems.

Action Plan:

- a. The City Engineer will require industries that generate high-strength industrial effluent to mitigate this impact by either pre-treating the effluent or by paying an appropriate wastewater impact fee to defray the city's cost of treating the effluent. New industries locating within the Sphere of Influence shall discharge to the City's wastewater treatment plant. Any industries considered for on-site pre-treatment and discharge shall be subject to Waste Discharge Requirements of the Regional Water Quality Control Board and to review under the California Environmental Quality Act.

Objective:

4. New industrial uses will be processed through Sanger's site plan review process, or Conditional Use Permit process (as applicable) to ensure that

they do not conflict with surrounding land uses or adversely impact the health and safety of the community.

Action Plan:

- a. The Sanger Planning Commission shall apply conditions to industrial projects that will ensure that surrounding land uses and the community will not be adversely impacted.

Issue Ten: Agricultural Lands

Goals, Objectives, Action Plans

Goal:

- I. Sanger will ensure that its primary economic base (agriculture) is protected.

Objective:

1. Urban uses, to the best extent possible, should be separated from agricultural uses by streets, railroads, canals or similar man-made or natural barriers.

Action Plan:

- a. Adoption of the Land Use Element and Land Use Map will implement this policy.
- b. Require new subdivisions adjacent to agricultural lands to establish a buffer of trees, landscaping, roads and/or walking trails, between these two types of uses.

Objective:

2. Encourage Fresno County to maintain large-lot agricultural zoning (20-acre minimum) on land within Sanger's Sphere of Influence.

Action Plan:

- a. The City of Sanger shall oppose any county development within its Sphere of Influence that creates parcels of land smaller than 20 acres.

Objective:

3. Promote a moderate increase in overall residential densities in Sanger's single-family residential districts so as to require less urbanization of surrounding agricultural lands.

Action Plan:

- a. Promote the use of R-1-6 zone, where appropriate. The increased density permitted by this zone must be balanced with good design and proper maintenance to ensure that these new neighborhoods maintain their value and marketability.

Objective:

4. Establish a Right-to-Farm ordinance. Such an ordinance builds in protections for farmers and their agricultural operations.

Action Plan:

- a. The Planning Department shall prepare a right-to-farm ordinance and forward it for passage by the City Council.

Objective:

5. Establish residential growth boundary lines within the Sphere of Influence. These growth boundary lines will promote "in-fill" by requiring a certain amount of vacant residential land to be developed prior to the City opening development onto land outside the current growth line.

Action Plan:

- a. The land use map shall establish two growth lines within Sanger's sphere of influence.

Issue Eleven: Infrastructure

Goals, Objectives, Action Plans

Goal:

I. Adequately develop and finance infrastructure systems.

Objective:

1. Undertake a study periodically to update Sanger's development impact fees for sewer, water and storm drainage fees.

Action Plan:

- a. The City should periodically commission a consultant to prepare a study of Sanger's development impact fees including sewer, water and storm drainage. The fees should be reviewed every two years to ensure that the fees keep pace with the cost of these services.

Objective:

2. The City will not approve new development without a determination that the City's water system has or will have sufficient capacity to serve the development without reducing water service to other properties, or negatively impacting local water pressures.
3. The annexation of a Disadvantaged Unincorporated Community (DUC) will trigger the City's installation of sewer, water and storm drainage improvements within the Community. Said improvements shall be financed by connection fees charged to the owners of property in the DUC.

Action Plan:

- a. The City Engineer shall evaluate the infrastructure costs of serving a Disadvantaged Unincorporated Community, and report these findings to the City Council.

Objective:

4. The City shall prepare an update to its water, sewer and storm drainage master plans in order to properly and efficiently serve future development provided for by the Land Use Element.

Action Plan:

- a. The City shall pursue funding sources to prepare the aforementioned master plans.
- b. The modification of the City's development impact fees shall be consistent with the State Mitigation Fee Act, which requires a clear nexus between fees and their purpose.

Objective:

5. The City should continue to seek state and federal grants for the upgrading and expansion of its infrastructure systems.

Action Plan:

- a. The City Manager shall continue to have staff or consultants pursue grants or loans for the financing of infrastructure including low interest loans from USDA.

Goal:

- II. Maintain, rebuild and upgrade infrastructure systems.

Objective:

1. The City shall update its 5-Year Capital Improvement Program to ensure that its infrastructure system can accommodate the urban growth prescribed by the Land Use Element.

Action Plan:

- a. The 5-year capital improvement program shall be updated, and input from the community invited.

Objective:

2. The City should work with the private sector to participate in the upgrading of off-site infrastructure improvements when adjacent land is being considered for development.

Action Plan:

- a. From time to time, the City may work with a developer to upgrade a part of the infrastructure or street system that is not part of the project being developed.

Objective:

- 3. The City should focus on upgrading infrastructure and road improvements in certain parts of the Downtown with a particular focus on 5th, 7th and 9th Streets on the east side of the Union Pacific Railroad as well as land on both sides of L Street.

Action Plan:

- a. The City Engineer should evaluate these areas to determine if there are projects that should be added to Sanger's 5-year capital improvement program.

Implementation of these policies and measures will ensure that impacts remain *less than significant*.

Mitigation Measures: None are required.

Cumulative Impacts

Less Than Cumulatively Considerable. Cumulative land use and planning impacts, such as the potential for conflicts with adjacent land uses and consistency with adopted plans and regulations, are typically site- and project-specific. New development and redevelopment projects would be designed to complement the character of existing communities and provide connectivity between existing development and new development within the cumulative analysis area. As described in detail in this section and Section 3.14 (Population and Housing), the proposed Land Use Element and implementing Policies address the preservation of the identify and qualities of the City's residential neighborhoods through assuring that all new development, renovation or remodeling are harmoniously designed and operated to integrate with the existing neighborhood. Future projects would be reviewed for consistency with adopted land use plans and regulations.

The proposed project has been developed to be largely consistent with adopted plans and regulations. Subsequent development projects would be required to be consistent with all applicable policies, standards, and regulations, including those land use plans, policies, and regulations adopted to mitigate environmental effects by the City, as well as those adopted by

agencies with jurisdiction over components of future development project. The project is not anticipated to result in significant conflicts with land use plans, policies, or regulations that have jurisdiction over the project. The project's contribution to cumulative land use planning impacts is *less than cumulatively considerable*.

3.12 Mineral Resources

This section of the DEIR describes impacts on City mineral resources associated with the urban development envisioned under the buildout of the 2035 General Plan. No IS/NOP comment letters were received pertaining to this topic.

Environmental Setting

Fresno County has been a leading producer of minerals because of the abundance and wide variety of mineral resources that are present in the County. Extracted resources include aggregate products (sand and gravel), fossil fuels (oil and coal), metals (chromite, copper, gold, mercury, and tungsten), and other minerals used in construction or industrial applications (asbestos, high-grade clay, diatomite, granite, gypsum, and limestone).¹ The Kings River is a principal sand and gravel producing location; however, aggregate and petroleum are considered Fresno County's most significant extractive mineral resources.²

The only significant known mineral resource in the Sanger area has been sand and gravel mining along the Kings River bottom. The nearest operations are approximately three miles northeast of the Planning Area, where Vulcan Materials operates an open-pit sand and gravel facility off Highway 180, near the unincorporated community of Centerville. There is an abandoned sand and gravel facility approximately one and a half miles east of Sanger on the north side of Annadale Avenue.³

Regulatory Setting

Mineral Resource Zones

Sections 2761(a) and (b) and 2790 of the Surface Mining and Reclamation Act (SMARA) provide for a mineral lands inventory process termed classification-designation. The California Division of Mines and Geology, and the State Mining and Geology Board are the state agencies responsible for administering this process. The primary objective of the process is to provide local agencies, such as cities and counties, with information on the location, need, and importance of minerals within their respective jurisdictions. It is also the intent of this process, through the adoption of Draft General Plan mineral resource management policies, that this information be considered in future local land-use planning decisions. Areas are classified on the basis of geologic factors,

¹ Fresno County General Plan Update EIR. February 2002. Page 4.11-1.

² Fresno County General Plan Update Background Report. October 2000. Figure 7-8 and page 7-64.

³ Sanger 2035 GPU Conservation, Open Space, Parks and Recreation Element. Page 4-6.

without regard to existing land use and land ownership. The areas are categorized into four MRZs. Of the four categories, lands classified as MRZ-2 are of the greatest importance because they identify significant mineral deposits of a particular commodity. MRZ-3 areas are also of interest because they identify areas that may contain additional resources of economic importance. Areas designated by the Mining and Geology Board as "regionally significant" are incorporated by regulation into Title 14, Division 2 of the California Code of Regulations. Such designations require that a lead agency's land use decisions involving designated areas are made in accordance with its mineral resource management policies, and that they consider the importance of the mineral resource to the region or the state as a whole and not just the lead agency's jurisdiction.

Thresholds of Significance

The thresholds of significance for this section are established by the CEQA Appendix G Checklist:

- Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?
- Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

Impacts and Mitigation Measures

Impact 3.12-1: *Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state or a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?*

No Impact. Full buildout of the General Plan would result in land use changes and an increase in population in the Planning Area. As described in the Environmental Setting, there are no known mineral resources within the Planning Area, and as such, the Draft 2035 General Plan Update does not contain any goals or policies that address mineral resources. No loss of availability to known mineral resources would occur as a result of General Plan buildout. There would be *no impact*.

Mitigation Measures: None are required.

Cumulative Impacts

No Cumulative Impact. The scope for considering cumulative impacts to mineral resources is generally site-specific rather than cumulative in nature because each project site has different mineral-related considerations that would be subject to review. As discussed above, there are no known mineral resources within the Planning Area and as such, buildout of the General Plan would not cumulatively impact any known mineral resources. There is **no cumulatively considerable impact**.

3.13 Noise

This section of the DEIR evaluates the potential for noise and groundborne vibration impacts resulting from implementation of General Plan Update and Master Plan. This includes the potential for the proposed Project to result in impacts associated with a substantial temporary and/or permanent increase in ambient noise levels in and around Sanger; exposure of people to excessive noise levels, groundborne vibration, or groundborne noise levels; and whether this exposure is in excess of standards established in the local general plan or noise ordinance. No IS/NOP comments were received pertaining to noise.

The 2035 Sanger General Plan Noise Element was prepared with assistance from WJV Acoustics and contains technical information which is used herein to support the environmental analysis. In addition, WJV Acoustics prepared an Environmental Noise Assessment specific to the Master Plan. This report is included as Appendix C.

Fundamentals of Sound and Environmental Noise

Sound is technically described in terms of amplitude (loudness) and frequency (pitch). The standard unit of sound amplitude measurement is the decibel (dB). The decibel scale is a logarithmic scale that describes the physical intensity of the pressure vibrations that make up any sound. The pitch of the sound is related to the frequency of the pressure vibration. Since the human ear is not equally sensitive to a given sound level at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted decibel scale (dBA) provides this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear.

Noise, on the other hand, is typically defined as unwanted sound. A typical noise environment consists of a base of steady ambient noise that is the sum of many distant and indistinguishable noise sources. Superimposed on this background noise is the sound from individual local sources. These can vary from an occasional aircraft or train passing by to virtually continuous noise from, for example, traffic on a major highway. Table 3.13-1, Representative Environmental Noise Levels, illustrates representative noise levels in the environment.

Table 3.13-1: Representative Environmental Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	—110—	Rock Band
Jet Fly-over at 100 feet		
	—100—	
Gas Lawnmower at 3 feet		
	—90—	
		Food Blender at 3 feet
Diesel Truck going 50 mph at 50 feet	—80—	Garbage Disposal at 3 feet
Noisy Urban Area during Daytime		
Gas Lawnmower at 100 feet	—70—	Vacuum Cleaner at 10 feet
Commercial Area		Normal Speech at 3 feet
Heavy Traffic at 300 feet	—60—	
		Large Business Office
Quiet Urban Area during Daytime	—50—	Dishwasher in Next Room
Quiet Urban Area during Nighttime	—40—	Theater, Large Conference Room (background)
Quiet Suburban Area during Nighttime		
	—30—	Library
Quiet Rural Area during Nighttime		Bedroom at Night, Concert Hall (background)
	—20—	
		Broadcast/Recording Studio
	—10—	
Lowest Threshold of Human Hearing	—0—	Lowest Threshold of Human Hearing
<i>Source: California Department of Transportation, Technical Noise Supplement, October 1998.</i>		

Several rating scales have been developed to analyze the adverse effect of community noise on people. Since environmental noise fluctuates over time, these scales consider that the effect of noise upon people is largely dependent upon the total acoustical energy content of the noise, as well as the time of day when the noise occurs. Those that are applicable to this analysis are as follows¹:

1. A-Weighted Sound Level: All sound levels referred to in this policy document are in A-weighted decibels. A-weighting de-emphasizes the very low and very high frequencies of sound in a manner similar to the human ear. Most community noise standards utilize A-weighting, as it provides a high degree of correlation with human annoyance and potential adverse health effects.
2. Community Noise Equivalent Level (CNEL): The time-weighted average sound level during a 24-hour day, obtained after addition of approximately 5 dB to sound levels during the evening hours (7:00 p.m.- 10:00 p.m.) and 10 dB to sound levels during the

¹ Sanger 2035 General Plan Noise Element (2018), page 6-2.

nighttime hours (10:00 p.m.-7:00 a.m.). The State of California requires that aircraft noise exposure be defined in terms of the annual average CNEL.

3. Day/Night Average Sound Level (DNL/Ldn): The timeweighted average sound level during a 24-hour day, obtained after addition of 10 dB to sound levels during the nighttime hours (10:00 p.m.-7:00 a.m.). The DNL and CNEL are similar descriptors of the community noise environment and are generally considered to be equivalent within ± 1.0 dB.
4. Equivalent Sound Level (Leq): The sound level containing the same total energy as a time varying signal over a given period. Leq is typically calculated over 1, 8 and 24-hour sample periods.
5. New Development: Projects requiring land use or building permits, but excluding remodeling or additions to existing structures.
6. Noise-Sensitive Land Use: Residential land uses, transient lodging, schools, libraries, churches, hospitals and nursing homes.
7. Outdoor Activity Areas: Patios, decks, balconies, outdoor eating areas, swimming pool areas, yards of dwellings and other areas which have been designated for outdoor activities and recreation.
8. Stationary Noise Source: Any fixed or mobile source *not* preempted from local control by federal or state regulations. Examples of such sources include agricultural, industrial and commercial facilities and vehicle movements on private property.

Noise environments and consequences of human activities are usually well represented by median noise levels during the day, night, or over a 24-hour period. Environmental noise levels are generally considered low when the CNEL is below 60 dBA, moderate in the 60–70 dBA range, and high above 70 dBA. Noise levels greater than 85 dBA can cause temporary or permanent hearing loss. Examples of low daytime levels are isolated, natural settings with noise levels as low as 20 dBA and quiet suburban residential streets with noise levels around 40 dBA. Noise levels above 45 dBA at night can disrupt sleep. Examples of moderate level noise environments are urban residential or semi-commercial areas (typically 55–60 dBA) and commercial locations (typically 60 dBA). People may consider louder environments adverse, but most will accept the higher levels associated with noisier urban residential or residential-commercial areas (60–75 dBA) or dense urban or industrial areas (65–80 dBA).

Under controlled conditions, in an acoustics laboratory, the trained (enhanced listening abilities) healthy human ear is able to discern changes in sound levels of 1 dBA, when exposed to steady, single frequency “pure tone” signals in the mid-frequency range. Outside of such controlled conditions, the trained ear can detect changes of 2 dBA in normal environmental noise. It is

widely accepted that in the community noise environment the average healthy ear can barely perceive CNEL noise level changes of 3 dBA. CNEL changes from 3 to 5 dBA may be noticed by some individuals who are extremely sensitive to changes in noise. A 5 dBA CNEL increase is readily noticeable, while the human ear perceives a 10 dBA CNEL increase as a doubling of sound.

Noise levels from a particular source generally decline as distance to the receptor increases. Other factors, such as the weather and reflecting or barriers, also help intensify or reduce the noise level at any given location. A commonly used rule of thumb for roadway noise is that for every doubling of distance from the source, the noise level is reduced by about 3 dBA at acoustically “hard” locations (i.e., the area between the noise source and the receptor is nearly complete asphalt, concrete, hard-packed soil, or other solid materials) and 4.5 dBA at acoustically “soft” locations (i.e., the area between the source and receptor is normal earth or has vegetation, including grass). Noise from stationary or point sources is reduced by about 6 to 7.5 dBA for every doubling of distance at acoustically hard and soft locations, respectively. Noise levels are also generally reduced by 1 dBA for each 1,000 feet of distance due to air absorption. Noise levels may also be reduced by intervening structures – generally, a single row of buildings between the receptor and the noise source reduces the noise level by about 5 dBA, while a solid wall or berm reduces noise levels by 5 to 10 dBA. The normal noise attenuation within residential structures with open windows is about 17 dBA, while the noise attenuation with closed windows is about 25 dBA.² There are several methods of reducing perceived noise levels including, but not limited to distance, setbacks, barriers, ground absorption, landscaping, site design, building facades, etc.

Fundamentals of Environmental Groundborne Vibration

Vibration is sound radiated through the ground. Vibration can result from a source (e.g., train operations, motor vehicles, machinery equipment, etc.) causing the adjacent ground to move, thereby, creating vibration waves that propagate through the soil to the foundations of nearby buildings. This effect is referred to as groundborne vibration. The peak particle velocity (PPV) or the root mean square (RMS) velocity is usually used to describe vibration levels. PPV is defined as the maximum instantaneous peak of the vibration level, while RMS is defined as the square root of the average of the squared amplitude of the level. PPV is typically used for evaluating potential building damage, while RMS velocity in decibels (VdB) is typically more suitable for evaluating human response.

² National Cooperative Highway Research Program Report 117, Highway Noise: A Design Guide for Highway Engineers, 1971.

The background vibration velocity level in residential areas is usually around 50 VdB. The vibration velocity level threshold of perception for humans is approximately 65 VdB. A vibration velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels for many people. Most perceptible indoor vibration is caused by sources within buildings, such as the operation of mechanical equipment, movement of people, or the slamming of doors. Typical outdoor sources of perceptible groundborne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the groundborne vibration from traffic is rarely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration velocity level, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings.

The general human response to different levels of groundborne vibration velocity levels is described in Table IV.I-2, Human Response to Different Levels of Groundborne Vibration.

Table 3.13-2: Human Response to Different Levels of Groundborne Vibration

Vibration Velocity Level	Human Reaction
65 VdB	Approximate threshold of perception for many people.
75 VdB	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find that transportation-related vibration at this level is unacceptable.
85 VdB	Vibration acceptable only if there are an infrequent number of events per day.
<i>Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment, May 2006.</i>	

Environmental Setting

City of Sanger

There are three potentially significant sources of community noise within the City of Sanger. These sources include traffic on major local roadways, commercial/industrial facilities and operations on the San Joaquin Valley Railroad (SJVR).

Community Noise Survey

A community noise survey was conducted as part of the General Plan Update process. The purpose of the community noise survey was to document existing background (ambient) noise levels at representative locations within the City that are both near and removed from obvious noise sources. Long-term (24-hour) ambient noise level measurements were conducted at five (5) locations (sites LT1 through LT5 in Figure 3.13-1). Four (4) residences and one (1) commercial business location were selected for the survey. The monitoring site locations are provided in

Figure 3.13-1. Noise measurements were conducted continuously for 24 hours using automated sound level analyzers. The following locations were selected:

- LT1: 1401 J Street
- LT2: 206 O Street
- LT3: 2381 Moir Drive
- LT4: 2182 3rd Street
- LT5: 1216 Academy Avenue

Measured Ldn values at the community noise survey sites were in the range of 52-66 dBA during the noise measurement period. The highest measured Ldn occurred at LT 5 due its proximity to Academy Avenue, the SJVRR and a railroad grade crossing at Annandale Avenue. The lowest measured Ldn occurred at LT 2, which is a residence in a quiet neighborhood.³

Major Stationary Noise Sources

The production of noise is an inherent part of many industrial, commercial and agricultural processes, even when the best available noise control technology is applied. Noise production within industrial or commercial facilities is controlled indirectly by federal and state employee health and safety regulations (OSHA and Cal-OSHA), but exterior noise emissions from such operations have the potential to exceed locally acceptable standards at nearby noise-sensitive land uses.

Existing Traffic Noise Exposure

The Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA-RD-77-108) was used to develop Ldn contours for major local roadways. The FHWA Model is an analytical method favored by most state and local agencies, including Caltrans, for highway traffic noise prediction. The FHWA Model is based upon reference energy emission levels for automobiles, medium trucks (2 axles) and heavy trucks (3 or more axles), with consideration given to vehicles volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA Model was developed to predict hourly Leq values for free-flowing traffic conditions, and is generally considered to be accurate within

³ Sanger 2035 General Plan Noise Element, page 6-3.

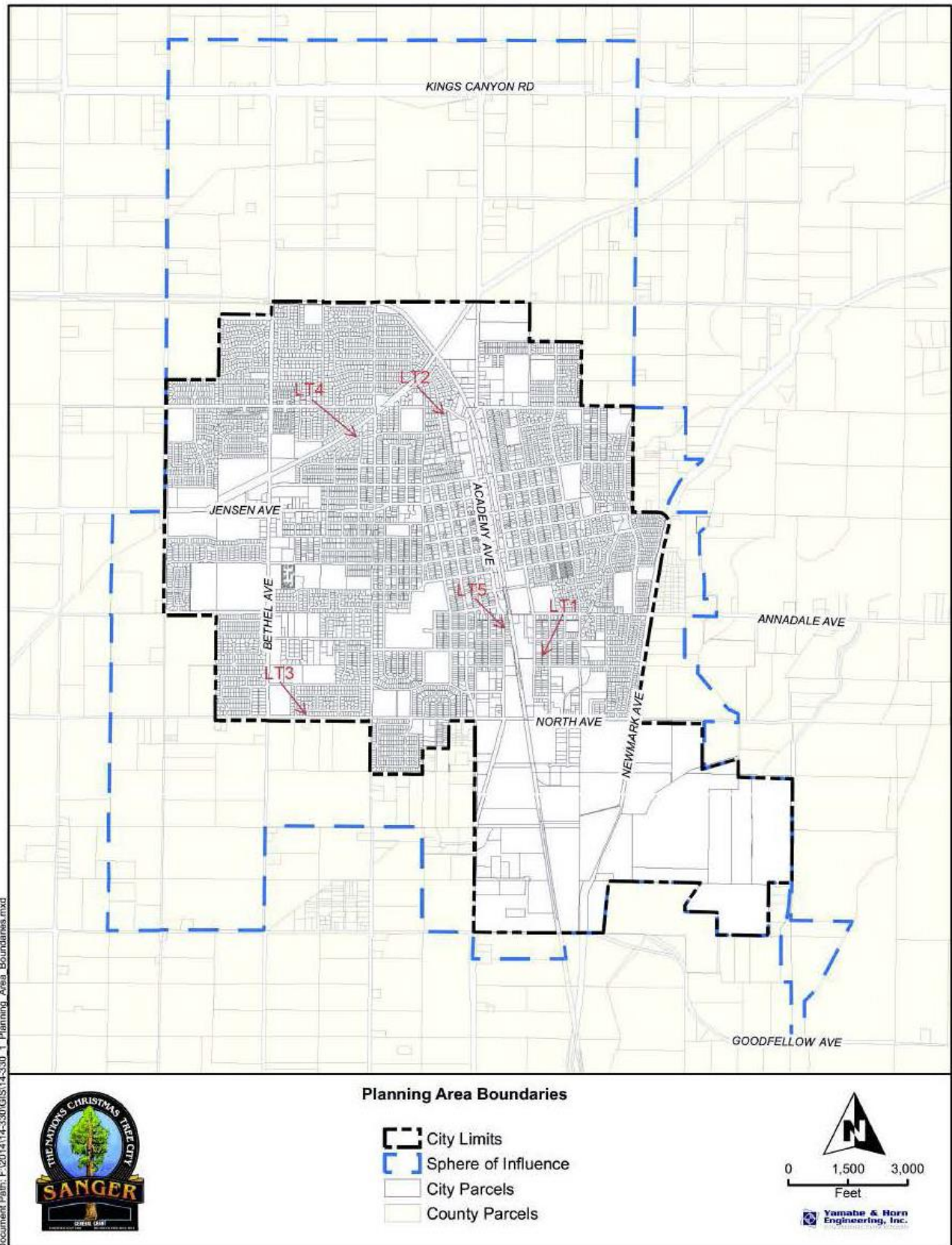
±1.5 dB. The FHWA Model assumes a clear view of traffic with no shielding at the receiver location. Table 3.13-3 summarizes distances to Ldn contours for existing traffic conditions in tabular form. Traffic noise exposure information is generalized for flat terrain and the absence of acoustical shielding or reflections that may be caused by site-specific conditions.

Table 3.13-3: Distance (feet) to Generalized Noise Exposure Contours – Existing Conditions

Roadway	Segment	60 dB L _{dn}	65 dB L _{dn}
North Avenue	Bethel Avenue to Brehler Avenue	77	36
	Sanger Avenue to Academy Avenue	75	35
	J Street to Faller Avenue	55	25
Annandale Avenue	J Street to I Street	68	31
8 th Street	J Street to I Street	34	16
Jenson Avenue	Bethel Avenue to Lyon Avenue	127	59
	N Street to Academy Avenue	107	50
Bethel Avenue	Lorena Avenue to Sterling Avenue	98	46
	Jensen Avenue to 9th Street	155	72
Greenwood Avenue	Jensen Avenue to 7th Street	47	22
	Cherry Avenue to 14th Street	32	15
West Avenue	3rd Street to 4th Street	14	7
P Street	13th Street to 14th Street	19	9
Academy Avenue	State Route 180 to Butler Avenue	161	75
	Florence Avenue to Church Street	138	64
	7th Street to 8th Street	101	47
	Cherry Avenue to North Avenue	98	45
	Commerce Avenue to Central Avenue	114	53
J Street	5th Street to Jensen Avenue	10	5
Faller Street	10th Street to 11th Street	31	15
State Route 180	McCall Avenue to Bethel Avenue	458	213
	Bethel Avenue to Academy Avenue	464	215
	Academy Avenue to Newmark Avenue	385	179

Source: WJV Acoustics, Inc.
Omni Means
Caltrans

Figure 3.13-1: Community Noise Survey Monitoring Sites



Railroad Noise Exposure

The San Joaquin Valley Railroad (SJVR) line passes through Sanger in a north-south direction, and generally runs along the east side of Academy Avenue, until the north side of town where it crosses over Academy Avenue and turns toward the west.

According to the SJVR, approximately two (2) freight trains pass through Sanger daily, and can occur at any hour of the day. Grade crossings are located at several locations within the city. Train engineers are required to sound the warning horn when approaching within approximately 1000 feet of a grade crossing. Train noise levels are therefore higher at locations near grade crossings.

Railroad noise exposure within the City of Sanger was calculated based using the above-described formula, operations data from the SJVR, noise level measurements obtained at site LT5, and noise level data from similar studies conducted along the SJVR in the central San Joaquin Valley. It was assumed for the calculations that train operations may occur at any time of the day or night and that operations are equally distributed over a 24-hour day. At locations within 1,000 feet of a grade crossing, the calculated distance to the 65 dB Ldn contour is approximately 200 feet from the center of the tracks. At distances greater than 1000 feet from a grade crossing, the calculated distance to the 65 dB Ldn contour is 50 feet from the center of the tracks. Calculated distances are generalized and do not take into consideration site-specific conditions such as acoustic shielding or reflections caused by nearby buildings.

Regulatory Setting

Federal Regulations

Noise Standards

There are no federal noise standards that directly regulate environmental noise related to the construction or operation of the proposed project. With regard to noise exposure and workers, the Office of Safety and Health Administration (OSHA) regulations safeguard the hearing of workers exposed to occupational noise.

Vibration Standards

The Federal Transit Administration (FTA) has adopted vibration standards that are used to evaluate potential building damage impacts related to construction activities. The vibration damage criteria adopted by the FTA are shown in Table 3.13-4, Construction Vibration Damage Criteria.

Table 3.13-4: Construction Vibration Damage Criteria

Building Category	PPV (in/sec)
I. Reinforced-concrete, steel or timber (no plaster)	0.5
II. Engineered concrete and masonry (no plaster)	0.3
III. Non-engineered timber and masonry buildings	0.2
IV. Buildings extremely susceptible to vibration damage	0.12
<i>Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment, May 2006.</i>	

In addition, the FTA has also adopted standards associated with human annoyance for groundborne vibration impacts for the following three land-use categories: (1) Vibration Category 1 – High Sensitivity, (2) Vibration Category 2 – Residential, and (3) Vibration Category 3 – Institutional. The FTA defines Category 1 as buildings where vibration would interfere with operations within the building, including vibration-sensitive research and manufacturing facilities, hospitals with vibration-sensitive equipment, and university research operations. Vibration-sensitive equipment includes, but is not limited to, electron microscopes, high-resolution lithographic equipment, and normal optical microscopes. Category 2 refers to all residential land uses and any buildings where people sleep, such as hotels and hospitals. Category 3 refers to institutional land uses such as schools, churches, other institutions, and quiet offices that do not have vibration-sensitive equipment, but still have the potential for activity interference.

Under conditions where there are an infrequent number of events per day⁴, the FTA has established thresholds of 65 VdB for Category 1 buildings, 80 VdB for Category 2 buildings, and 83 VdB for Category 3 buildings.

Under conditions where there are an occasional number of events per day⁵, the FTA has established thresholds of 65 VdB for Category 1 buildings, 75 VdB for Category 2 buildings, and 78 VdB for Category 3 buildings. No thresholds have been adopted or recommended for commercial, office, and industrial uses.

Federal Office of Noise Abatement and Control

⁴ The Federal Transit Administration, Transit Noise and Vibration Impact Assessment (May 2006) defines “Infrequent Events” as “fewer than 30 vibration events of the same kind per day.” Page 8-3.

https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA_Noise_and_Vibration_Manual.pdf. Accessed July, 2016.

⁵ The Federal Transit Administration, Transit Noise and Vibration Impact Assessment (May 2006) defines “Occasional Events” as “between 30 and 70 vibration events of the same source per day.” Page 8-3.

https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA_Noise_and_Vibration_Manual.pdf. Accessed July, 2016.

The Federal Office of Noise Abatement and Control (ONAC) was initially tasked with implementing the Noise Control Act adopted in 1972. However, the ONAC has since been eliminated, leaving the development of federal noise policies and programs to other federal agencies and interagency committees. For example, the Occupational Safety and Health Administration (OSHA) limits noise exposure of workers to 90 dB Leq or less for 8 continuous hours, or 105 dB Leq or less for one continuous hour. The Department of Transportation assumed a significant role in noise control through its various operating agencies. The Federal Aviation Administration regulates noise associated with aircraft, and the Federal Highway Association regulates noise of the highway system. As the federal government has preempted the setting of standards for noise levels that can be emitted by transportation generated through the transportation systems, local agencies are limited to addressing noise abatement ordinances or land use planning.

State Regulations

California State Building Code

The State Building Code, Title 24, Part 2 of the State of California Code of Regulations establishes uniform minimum noise insulation performance standards to protect persons within new buildings which house people, including hotels, motels, dormitories, apartment houses and dwellings other than single-family dwellings. Title 24 mandates that interior noise levels attributable to exterior sources shall not exceed 45 dB Ldn or CNEL in any habitable room.

Title 24 also mandates that for structures containing noise-sensitive uses to be located where the Ldn or CNEL exceeds 60 dB, an acoustical analysis must be prepared to identify mechanisms for limiting exterior noise to the prescribed allowable interior levels. If the interior allowable noise levels are met by requiring that windows be kept closed, the design for the structure must also specify a ventilation or air conditioning system to provide a habitable interior environment

Local Regulations

City of Sanger 2035 General Plan Noise Element

Government Code Section 65302(g) requires that a noise element be included in the General Plan of each county and city in the State. The Noise Element of the City of Sanger General Plan is intended to provide a framework within which future planning and noise mitigating decisions would be made and implemented. In addition, the Noise Element is intended to provide a set of correlated procedural guidelines and criteria to be used by the City planning and engineering departments to minimize noise conflicts in existing situations and in new developments.

Implementation of the Noise Element is to be achieved through improved planning and zoning regulations reflecting quantified noise criteria, development of noise abatement strategies, introduction of noise criteria in the building code, application of noise regulations controlling stationary and moving noise sources, and practical tools which can be used in the day-to-day activities of the City.

Applicable Sanger 2035 General Plan Policies

As the population of Sanger grows, as will the potential for increased noise exposure at noise-sensitive land uses. Establishing acceptable noise exposure levels for various noise-sensitive land uses is therefore essential.

Table 3.13-5 and Table 3.13-6 provide exterior noise levels that are considered to be “normally” acceptable for the described land use categories. The exterior noise level standards are to be applied to outdoor activity areas. Outdoor activity areas generally include backyards of single-family residences, individual patios or decks of multifamily developments and common outdoor recreation areas of multi-family developments. The intent of the exterior noise level requirement is to provide an acceptable noise environment for outdoor activities and recreation.

Additionally, Table 3.13-5 provides acceptable interior noise levels for noises attributable to exterior sources. The interior noise level standards are consistent with those provided by the California State Building Code (Title 24 of the California Code of Regulations) and are intended to provide an acceptable noise environment for indoor communication and sleep.

Table 3.13-5: Maximum Allowable Noise Exposure – Transportation Noise Sources
Ldn or CNEL, dBA

Land Use Category	Outdoor Activity Areas ¹	Interior Spaces
Residential-Low Density Single Family,	65	45
Multi-Family, Duplex, Mobil Homes	65	45
Transient Lodging-Motels, Hotels	65	45
Hospitals and Nursing Homes	65	45
Churches and Meeting Halls	--	45
Office Buildings, Schools, Libraries and	--	45

¹Where the location of the outdoor activity areas is unknown or is not applicable, the exterior noise level standard shall be applied to the boundary of the planned or zoned noise-sensitive use.

**Table 3.13-6: Maximum Allowable Noise Exposure – Stationary Noise Sources
Ldn or CNEL, dBA**

Outdoor Activity Areas ¹	Daytime (7:00 a.m. to 10:00 p.m.)	Nighttime
Hourly Leq, dBA	55	50
Maximum (Lmax), dBA	75	65

¹Where the location of the outdoor activity areas is unknown or is not applicable, the exterior noise level standard shall be applied to the boundary of the planned or zoned noise-sensitive use.

The following goals, objectives and action plans were developed during the General Plan Update process and are applicable to the CEQA analysis:

Noise Element

Goals, Objective, Action Plans

- I. Effectively minimize excessive exposure to noise from environmental sources.
 1. Include consideration of environmental noise in the long-range planning process to minimize potential conflicts between sensitive uses and existing or proposed noise sources.
 - a. Require a site-specific noise study to be conducted by a qualified acoustical consultant for all proposed new noise-sensitive land uses located within areas where existing or future noise levels may exceed those provided in Table 3.13-5 or Table 3.13-6.
 - b. Require a site-specific noise study to be conducted by a qualified acoustical consultant when new stationary noise sources are proposed in areas near existing noise-sensitive land uses if the project may result in noise levels that exceed those provided in Table 3.13-6.
 - c. Minimize increases in transportation noise exposure levels for existing noise-sensitive land uses through thoughtful design of new or modified roadways as to minimize traffic-related increases in noise exposure levels that may exceed those provided in Table 3.13-5.
 - d. Avoid the development of new noise-sensitive land uses near commercial or industrial zoned areas where future activities may result in noise levels that may exceed those provided in Table 3.13-6.

- e. Designate truck routes to minimize heavy truck and business-related vehicle traffic near residential and other noise-sensitive land uses.
2. Require effective noise mitigation in the design of new sensitive uses and noise sources through the project review and approval process.
 - a. Provide appropriate mitigation measures when new noise-sensitive land uses are proposed in areas where a site-specific noise study has indicated that existing or future noise levels may exceed those provided in Table 3.13-5 or Table 3.13-6. Appropriate mitigation measures may include increased setback distances between the proposed noise-sensitive land use and the noise source(s), construction of sound walls and/or the inclusion of noise-reducing construction materials (i.e. sound-rated windows).
 - b. Provide appropriate mitigation measures when a site-specific noise study has indicated that new stationary noise sources may result in noise levels that exceed those provided in Table 3.13-6 at existing noise-sensitive land uses. Appropriate mitigation measures may include increased setback distances between the proposed stationary noise source and existing noise-sensitive land uses, construction of sound walls and/or limited hours of operation.
3. Encourage the City police department to enforce existing laws regarding noise levels generated by stationary noise sources and motor vehicles operated within the city.
 - a. Enforce noise standards established in the City's Municipal Code.
4. Continue to enforce sections of the building code pertaining to the noise insulation of new multi-family residences.
 - a. Ensure interior noise level standards provided in Table 3.13-5 are enforced for new multi-family residential developments proposed in areas where existing or future exterior noise levels may exceed exterior standards provided in Table 3.13-5. Interior noise level standards provided in Table 3.13-5 are consistent with those provided by the California State Building Code (Title 24 of the California Code of Regulations) and are intended to provide an acceptable noise environment for indoor communication and sleep.

5. The City should work to minimize noise levels associated with construction activities.
 - a. Limit hours of construction to between the hours of 6:00 a.m. and 10:00 p.m., Monday through Saturday.
 - b. Prohibit construction activities on Sundays and Holidays.
 - c. Reduce noise associated with construction activities by requiring all construction equipment to be properly maintained and muffled.
 - d. Require the placement of stationary noise-producing equipment be located as far as possible from existing noise-sensitive land uses.

City of Sanger - Noise Ordinance Chapter 38, Section 38-7.2 (Nuisance)

The City of Sanger enforces noise restrictions under Ordinance No. 1010, Chapter 38, Section 38-7.2 (Nuisance) as follows:

- (18) The occurrence of excessive noise, as defined herein. Excessive noise is that noise or sound emanating from any property which is loud, unusual or unnecessary and which disturbs the peace or quiet of nearby property or which would cause annoyance or discomfort to a reasonable person of normal sensitivity in the area. Excessive noise includes the use or operation of any radio receiving set, television set, musical instrument, phonograph or stereo, or any other machine or device which produces or reproduces sound in such a manner as to unreasonably disturb the peace, quiet and comfort of neighboring residents. Excessive noise also includes the sound, cry, bark or other vocal behavior of any animal or fowl that is kept or maintained, or allowed to be kept or maintained, on any property and which causes two or more persons from residences to complain.

In addition, the following special noise regulations shall constitute nuisances whenever they occur between the hours of ten p.m. and six a.m. the next morning. This limitation shall extend until eight a.m. on Sunday mornings.

- (A) Noise from Construction Activities. It is unlawful for any person within five hundred feet from any occupied residence to operate

equipment or perform any out of doors construction or repair work on any building, structure or other building or repair project;

- (B) Noise from Commercial Activities. It is unlawful for any person within five hundred feet from any occupied residence to operate equipment, including, but not limited to parking lot cleaning and sweeping machines, leaf blowers, and mowing machines. This section does not prohibit the loading or unloading of commercial vehicles;
- (C) Noise from Vehicles. It is unlawful for any person to violate any section of the California Vehicle Code as to the use of an automobile horn.

Thresholds of Significance

In accordance with Appendix G to the State CEQA Guidelines, the project would have a significant impact on noise if it would cause any of the following conditions to occur:

- Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Generation of excessive groundborne vibration or groundborne noise levels;
- Expose people residing or working in the project area to excessive noise levels, for projects located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport.

CEQA does not define what constitutes a substantial increase in noise levels. Some guidance is provided by the 1992 findings of the Federal Interagency Committee on noise (FICON), which assessed changes in ambient noise levels resulting from aircraft operations. The FICON recommendations are based upon studies that relate aircraft and traffic noise levels to the percentage of persons highly annoyed by the noise. The rationale for the FICON recommendations is that it is possible to consistently describe the annoyance of people exposed to transportation noise in terms of the DNL (or CNEL). Annoyance is a summary measure of the

general adverse reaction of people to noise that results in speech interference, sleep disturbance, or interference with other daily activities.

Although the FICON recommendations were specifically developed to address aircraft noise impacts, they are used in this analysis for all transportation noise sources that are described in terms of cumulative noise exposure metrics such as the DNL or CNEL. Table 3.13-7 summarizes the FICON recommendations.

Table 3.13-7: Measures of Substantial Noise Increase for Transportation Sources

Ambient Noise Level Without Project (DNL/CNEL)	Significant Impact Assumed to Occur if the Project Increases Ambient Noise Levels By:
<60 dB	+ 5 dB or more
60-65 dB	+3 dB or more
>65 dB	+1.5 dB or more
Source: FICON, 1992, as applied by WJV Acoustics, Inc.	

For noise sources that are not transportation related, which usually includes commercial or industrial activities and other stationary noise sources, it is common to assume that a 3-5 dB increase in noise levels represents a substantial increase in ambient noise levels. This is based on laboratory tests that indicate that a 3 dB increase is the minimum change perceptible to most people, and a 5 dB increase is perceived as a “definitely noticeable change.”

Construction Noise and Vibration

The City’s Noise Element limits construction activities between the hours of 6:00 a.m. and 10:00 p.m., Monday through Saturday. Construction is prohibited on Sundays and federal holidays. In addition, there are noise-muffling guidelines and a requirement that noise-producing equipment be located as far away from noise-sensitive land uses as possible.

There are no state or federal standards that specifically address construction vibration. Additionally, the City of Sanger General Plan does not specifically provide vibration guidelines or standards. Some guidance is provided by the Caltrans Transportation and Construction Vibration Guidance Manual⁴. The Manual provides guidance for determining annoyance potential criteria and damage potential threshold criteria. These criteria are provided below in Tables 3.13-8 and 3.13-9, and are presented in terms of peak particle velocity (PPV) in inches per second (in/sec).

Table 3.13-8: Guideline Vibration Annoyance Potential Criteria

Human Response	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Barely Perceptible	0.04	0.01
Distinctly Perceptible	0.25	0.04
Strongly Perceptible	0.9	0.1
Severe	2.0	0.4
Source: WVJ Acoustics.		

Table 3.13-9: Guideline Vibration Damage Potential Threshold Criteria

Structure and Condition	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile, historic buildings, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5
Source: WVJ Acoustics.		

Impacts and Mitigation Measures

Impact 3.13-1: *Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*

Significant Impact. Implementation and buildout of the 2035 General Plan and Master Plan will result in new sources of noise and in a potential increase in noise intensity from existing sources of noise. New and increased sources of noise would likely result in an increase in the number of people exposed to higher noise levels. The primary new sources of noise or sources of increased noise levels include mobile sources such as traffic and rail operations, stationary sources such as industrial and commercial sources, and short-term sources such as construction equipment and activities. Noise sensitive uses located at the urban/agricultural fringe of the City would continue to be affected by intermittent sources of noise from agricultural operations.

Short-Term Construction Impacts

Construction noise generated from development activities associated with buildout of the General Plan and Master Plan would typically occur intermittently and vary depending upon the nature or phase (e.g., demolition, land clearing, grading, excavation, erection) of construction. Noise produced by construction equipment such as earthmovers, material handlers, and portable generators can reach high levels. Generally, the grading phase of construction involves the most equipment and generates the highest noise levels, although noise ranges are usually similar across all construction phases.

Typical construction equipment noise levels are provided in Table 3.13-10. As shown, noise levels generated by individual pieces of construction equipment generally range from approximately 75 dBA to 90 dBA maximum at 50 feet. Typical operating cycles vary by equipment type and specific activity, although cycles generally involve two minutes of full power, followed by three to four minutes at lower settings. Depending on the equipment required and duration of use, average-hourly noise levels associated with construction activity typically ranges from roughly 65 to 90 dBA Leq at 50 feet. The highest noise levels are generally associated with grading and excavation phases (FHWA 2006).

Table 3.13-10: Typical Construction Noise Levels

Type of Equipment	dBA at 50 ft	
	Without Feasible Noise Control	With Feasible Noise
Dozer or Tractor	80	75
Excavator	88	80
Scraper	88	80
Front End Loader	79	75
Backhoe	85	75
Grader	85	75
Truck	91	75

The distinction between short-term construction noise impacts and long-term operational noise impacts is a typical one in both CEQA documents and local noise ordinances, which generally recognize the reality that short-term noise from construction is inevitable and cannot be mitigated beyond a certain level. Thus, local agencies frequently tolerate short-term noise at levels that they would not accept for permanent noise sources. A more severe approach would be impractical and might preclude the kind of construction activities that are to be expected from time to time in urban environments. Most residents of urban areas recognize this reality and expect to hear construction activities on occasion.

The City's General Plan Noise Element provides the following construction noise reduction measures:

- a. Limit hours of construction to between the hours of 6:00 a.m. and 10:00 p.m., Monday through Saturday.
- b. Prohibit construction activities on Sundays and Holidays.
- c. Reduce noise associated with construction activities by requiring all construction equipment to be properly maintained and muffled.
- d. Require the placement of stationary noise-producing equipment be located as far as possible from existing noise-sensitive land uses.

Long-Term Project Impacts

Implementation and buildout of the 2035 General Plan and Master Plan will result in new potential sources of non-stationary (vehicle/roadway) and stationary noise.

Roadway Noise Sources – General Plan Buildout

Based on existing noise measurements taken in the City (See Table 3.13-3), as well as on existing and future noise modeling as shown in Table 3.13-11, noise levels in excess of existing standards set forth by the City of Sanger currently occur and would continue to occur throughout the City, potentially affecting residential and other noise-sensitive uses. Based on Table 3.13-11, future noise levels along many major roadway segments could exceed the City's existing 65 dBA L_{dn} standard for adjacent residential and other noise-sensitive land uses. Future development activities within the City would result in higher land use densities, which would result in increased traffic volumes and increases in commercial and industrial uses that would incrementally increase noise levels in some areas. Substantial noise level exposures can also be expected from trains.

**Table 3.13-11: Distance (feet) to Generalized Noise Exposure Contours
Future (2035) General Plan Buildout Conditions**

Roadway	Segment	60 dB L _{dn}	65 dB L _{dn}
North Avenue	Bethel Avenue to Brehler Avenue	60	41
	Sanger Avenue to Academy Avenue	89	28
	J Street to Faller Avenue	60	40
Annandale Avenue	J Street to I Street	85	37
8 th Street	J Street to I Street	79	31
Jenson Avenue	Bethel Avenue to Lyon Avenue	67	107
	N Street to Academy Avenue	230	63
Bethel Avenue	Lorena Avenue to Sterling Avenue	136	76
	Jensen Avenue to 9th Street	164	78
Greenwood Avenue	Jensen Avenue to 7th Street	168	24
	Cherry Avenue to 14th Street	51	7
West Avenue	3rd Street to 4th Street	15	11
P Street	13th Street to 14th Street	24	6
Academy Avenue	State Route 180 to Butler Avenue	14	134
	Florence Avenue to Church Street	289	135
	7th Street to 8th Street	292	71
	Cherry Avenue to North Avenue	154	82
	Commerce Avenue to Central Avenue	177	119
J Street	5th Street to Jensen Avenue	256	10
Faller Street	10th Street to 11th Street	22	16
State Route 180	McCall Avenue to Bethel Avenue	34	548
	Bethel Avenue to Academy Avenue	1180	418
	Academy Avenue to Newmark Avenue	901	401

Source: WJV Acoustics, Inc.
Omni Means
Caltrans

Stationary Noise Sources – General Plan Buildout

The production of noise is an inherent part of many industrial, commercial and agricultural processes, even when the best available noise control technology is applied. Noise production within industrial or commercial facilities is controlled indirectly by federal and state employee health and safety regulations (OHSa and Cal-OSHA), but exterior noise emissions from such operations have the potential to exceed locally acceptable standards at nearby noise-sensitive land uses.

The following discussion provides generalized information concerning the relative noise impacts of five (5) major industrial noise sources within the City of Sanger. The industrial uses identified for study were International Paper Company (1000 Muscat Avenue), Pitman Farms/Sanger Poultry (1489 K Street), Algonquin Power Company (1125 Muscat Avenue), Sanger Cold Storage (1150 K Street) and Fresno Fab-Tech (1035 K Street). Other industrial or commercial noise sources may exist within the City, but such sources were not identified at the time of the study. Noise measurements were conducted at each of the above-referenced industrial operations on March 17, 2015. Based upon those measurements, worst-case 50 and 55 dBA hourly Leq contours were calculated. Table 3.13-12 summarizes noise level measurements and calculations for each of the identified industries.

Table 3.13-12: Measured and Calculated Noise Levels, Selected Stationary Sources

Industry	Distance	L_{eq} , dBA	L_{max} , dBA	Distance to 50 dBA, L_{eq}	Distance to 55 dBA, L_{eq}
International Paper Company 1000 Muscat Avenue	150'	61.1	64.5	538'	302'
Pitman Farms/Sanger Poultry 1489 K Street	100'	68.0	74.9	794'	447'
Algonquin Power Company 1125 Muscat Avenue	250'	73.9	77.4	3917'	2202'
Sanger Cold Storage 1150 K Street	175'	68.3	70.4	1439'	809'
Fresno Fab-Tech 1035 K Street	150'	59.2	70.6	433'	243'
Source: WJV Acoustics, Inc.					

Table 3.13-12 shows that the generalized 50 dBA L_{eq} contour can be as far as 3,900 feet from the center of the Algonquin Power Company plant. In practice, it may not be possible to discern plant noise at distances greater than 750-1000 feet during most times of the day because of other community noise sources (traffic, etc.), and the effects of atmospheric conditions. Additionally, noise levels (and contour distances) described in Table 3.13-12 do not represent the noise levels in every direction around the sources. The generalized contour distances described in Table 3.13-12 should be used as a screening device to determine when potential noise-related land use conflicts may occur, and when site-specific studies should be required to properly evaluate noise at a given noise-sensitive receiver location.

Even with incorporation of the best available noise control technology, noise emanating from industrial uses can be substantial and exceed local noise standards. These noise sources can be continuous and may contain tonal components that may be annoying to nearby receptors.

In an effort to address noise impacts in the City, the General Plan Update includes the following policies designed to reduce noise impacts from all noise sources:

- I. Effectively minimize excessive exposure to noise from environmental sources.
 1. Include consideration of environmental noise in the long-range planning process to minimize potential conflicts between sensitive uses and existing or proposed noise sources.
 - a. Require a site-specific noise study to be conducted by a qualified acoustical consultant for all proposed new noise-sensitive land uses located within areas where existing or future noise levels may exceed those provided in Table 3.13-5 or Table 3.13-6.

- b. Require a site-specific noise study to be conducted by a qualified acoustical consultant when new stationary noise sources are proposed in areas near existing noise-sensitive land uses if the project may result in noise levels that exceed those provided in Table 3.13-6.
 - c. Minimize increases in transportation noise exposure levels for existing noise-sensitive land uses through thoughtful design of new or modified roadways as to minimize traffic-related increases in noise exposure levels that may exceed those provided in Table 3.13-5.
 - d. Avoid the development of new noise-sensitive land uses near commercial or industrial zoned areas where future activities may result in noise levels that may exceed those provided in Table 3.13-6.
 - e. Designate truck routes to minimize heavy truck and business-related vehicle traffic near residential and other noise-sensitive land uses.
- 2. Require effective noise mitigation in the design of new sensitive uses and noise sources through the project review and approval process.
 - a. Provide appropriate mitigation measures when new noise-sensitive land uses are proposed in areas where a site-specific noise study has indicated that existing or future noise levels may exceed those provided in Table 3.13-5 or Table 3.13-6. Appropriate mitigation measures may include increased setback distances between the proposed noise-sensitive land use and the noise source(s), construction of sound walls and/or the inclusion of noise-reducing construction materials (i.e. sound-rated windows).
 - b. Provide appropriate mitigation measures when a site-specific noise study has indicated that new stationary noise sources may result in noise levels that exceed those provided in Table 3.13-6 at existing noise-sensitive land uses. Appropriate mitigation measures may include increased setback distances between the proposed stationary noise source and existing noise-sensitive land uses, construction of sound walls and/or limited hours of operation.
- 3. Encourage the City police department to enforce existing laws regarding noise levels generated by stationary noise sources and motor vehicles operated within the city.

- a. Enforce noise standards established in the City's Municipal Code.
4. Continue to enforce sections of the building code pertaining to the noise insulation of new multi-family residences.
 - a. Ensure interior noise level standards provided in Table 3.13-5 are enforced for new multi-family residential developments proposed in areas where existing or future exterior noise levels may exceed exterior standards provided in Table 3.13-5. Interior noise level standards provided in Table 3.13-5 are consistent with those provided by the California State Building Code (Title 24 of the California Code of Regulations) and are intended to provide an acceptable noise environment for indoor communication and sleep.

As noted above the City of Sanger also enforces noise impacts through its Noise Ordinance Chapter 38, Section 38-7.2 (Nuisance).

North Academy Corridor Master Plan Noise Impacts

The Environmental Noise Assessment (Appendix C) was prepared to address the Master Plan area specifically and included site-specific ambient noise measurements in the Master Plan vicinity. The Master Plan would include a variety of new residential land uses which may have the potential to be exposed to transportation and non-transportation noise levels that could exceed the City's applicable noise level standards. The location, design and types of residential products were not known at the time this analysis was prepared. A detailed acoustical analysis should be prepared by a qualified acoustical consultant once site-specific details are proposed for new residential land uses within the Master Plan area. Appropriate mitigation measures should be incorporated into project design to ensure new noise-sensitive land uses are not exposed to noise levels that exceed the City's applicable noise level standards. These include:

- Appropriate project site planning and design
- Sound walls or acoustic barriers
- Noise insulating construction measures
- Increased setbacks from roadway

Sources of operational noise from commercial and retail land uses would typically include parking lot vehicle movements, truck movements, mechanical/HVAC systems, fast-food

restaurant drive-thru speakers, loading dock activities and trash compactors. Noise levels associated with such sources should be assessed when project-specific details are available in regard to proposed tenants of commercial and retail land use spaces. All commercial and retail activities within the proposed project site should comply with the City's applicable noise level standards. Once specific land uses have been identified and proposed, a detailed acoustical analysis should be prepared by a qualified acoustical consultant if noise impacts are expected to occur. The acoustical analysis should identify project related noise levels as they may affect nearby noise-sensitive land uses, and should provide appropriate mitigation measures to be applied to ensure compliance with the City's noise level standards. These include:

- Appropriate project site planning and design
- Sound walls or acoustic barriers
- Limited hours of operation

The implementation of the North Academy Corridor Master Plan would not be expected to result in any significant increases in project-related traffic noise exposure at existing noise-sensitive land uses. Site specific noise impacts to proposed new residential land uses should be analyzed once specific project details are known or proposed. Additionally, potential noise impacts that may result from proposed commercial and retail land uses to existing off-site noise-sensitive land uses as well as proposed noise-sensitive land uses should be analyzed once specific details are known or proposed in regard to specific commercial and retail land uses. Construction noise and vibration is not expected to result in a significant impact if the construction guidelines and restrictions provided in the City of Sanger General Plan Update are imposed.

Conclusion

The City's Noise Ordinance and Noise Element measures and action plans that are designed to reduce the effects of noise, would in most instances, reduce noise impacts to less than significant levels. However, these proposed noise reduction measures are ultimately limited, as even advanced policies and measures are limited in what they can do to remediate or reduce the magnitude of noise effects on many existing noise-sensitive land uses in areas with current high noise exposures or where substantial noise increases are expected. Thus, the continuing exposure of existing noise-sensitive land uses to noise levels in excess of standards established by the City, or to substantial noise increases as a result of future growth according to the General Plan Update, would be considered a potentially significant impact. Therefore, long-term project impacts associated with the exposure of persons to or the generation of noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies would be *significant*.

Mitigation Measures: No feasible mitigation measures are available. Refer to the General Plan Goals, Objectives and Action Plans described herein for required noise reducing measures.

Impact 3.13-2: *Generation of excessive groundborne vibration or groundborne noise levels?*

Less Than Significant. The dominant sources of man-made vibration in Sanger are construction equipment and rail cars. Typical construction equipment vibration levels at distances of 25 feet and 100 feet are summarized by Table 3.13-13.

Tale 3.13-13: Typical Vibration Levels During Construction

Equipment	PPV (in/sec)	
	@ 25'	@ 100'
Bulldozer (Large)	0.09	0.011
Bulldozer (Small)	0.003	0.0004
Loaded Truck	0.08	0.01
Jackhammer	0.04	0.005
Vibratory Roller	0.2	.03
Loaded Trucks	0.08	.01
Source: WJV Acoustics		

Construction activities associated with buildout of the General Plan and Master Plan would likely require the use of various tractors, trucks, and jackhammers. Based on the vibration levels provided in Table 3.13-13, ground vibration generated by common construction equipment would be generally less than 0.09 inches per second ppv at 25 feet. Given that much of the construction activities would occur on vacant parcels in sparsely to moderately developed areas, the nearest offsite structures to a particular project site would likely be located in excess of 25 feet from construction activities. As a result, predicted vibration levels at the nearest offsite structures would not exceed even the conservative threshold for “fragile” buildings of 0.2 in/sec ppv for transient sources of vibrations, or the conservative threshold of 0.1 in/sec ppv for continuous/frequently intermittent sources. Additionally, the General Plan would allow for infill development in more densely developed areas where offsite structures would be more prevalent. Even during these occurrences, the mandatory buffers set forth by the City of Sanger Development Code (e.g., setbacks, easements, right-of-ways) would ensure that in most cases onsite and offsite structures would be separated by at least 25 feet, and thus construction activities would be buffered by at least 25 feet from existing offsite structures. Therefore, short-term construction and long-term project impacts associated with groundborne vibration would be less than significant.

Rail Operations: The Federal Transit Administration identifies the high range for commuter rail vibration at 85 VdB. No specific impact criteria exist for freight railroads. However, the significantly greater length, weight and axle loads of freight trains may make the vibration level significantly higher than light rail. In addition, the frequency and duration of events must be taken into consideration. In general, if the event is infrequent (less than 30 a day) and the level reaches 65 VdB, sensitive receptors will be affected. If a vibration level in a residence reaches 85 VdB, regardless of the frequency, most people will be strongly annoyed by the vibration. Ground vibration from trains may exceed the Federal Transit Administration guidelines if new residential buildings are constructed within 100 feet of the railroad tracks (this distance may be less depending on the VdB level, frequency, and duration).

Existing land uses along the railroad tracks in Sanger are a mix of commercial and industrial development. However, along the northern north/west area of Sanger, the railroad is adjacent to some single-family housing units. Any new development within 100 feet of railroad tracks will be subject to site-specific evaluation pertaining to vibration associated with the railroad tracks. New buildings will be required to adhere to rules and regulations pertaining to vibration impacts as set forth in the California Building Code and other regulatory documents. Therefore, the impact is *less than significant* and no mitigation is required.

Mitigation Measures: No feasible mitigation measures are available. Refer to the General Plan Goals, Objectives and Action Plans described herein for required vibration reducing measures.

Impact 3.13-3: *For a project located within the vicinity of a private airstrip or an airport land use plan or, where such plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?*

Less Than Significant. The City of Sanger does not have a municipal airport. The nearest commercial airport is Fresno Yosemite International (FYI) Airport. Fresno Yosemite International Airport is a joint civil-military public airport in eastern Fresno, approximately 10 miles northwest of the City of Sanger via State Route 180/Peach Avenue. Due to the distance to FYI, impacts due to noise from nearby airports would be *less than significant*.

Mitigation Measures: None are required.

Cumulative Impacts

Significant, Unavoidable and Cumulatively Considerable. The scope for considering cumulative impacts to noise is generally site-specific rather than cumulative in nature because each project site has different noise considerations that would be subject to review. Impacts from elevated

noise only would exist where there are sensitive noise receptors that be adversely affected by exposure to elevated noise. Future development within the spheres of influence of nearby jurisdictions could increase noise exposure of noise sensitive receptors to elevated noise levels. Construction of the individual development projects allowed under the land use designations of the City's General Plan may result in the generation of site-specific noise increases from stationary noise sources, and may contribute incrementally to noise from mobile sources. Additionally construction noise from individual development projects allowed under the proposed Project will likely result in the generation of site-specific noise increases.

As discussed, buildout of the Planning Area would contribute to an exceedance of the City's noise standards. Goals, Objectives and Action Plans included in the GPU and North Academy Corridor Master Plan would reduce noise associated with buildout in the Planning Area; however, the continuing exposure of existing noise-sensitive land uses to noise levels in excess of standards established by the City would be considered a *significant and unavoidable* and *cumulatively considerable* contribution to noise.

3.14 Population and Housing

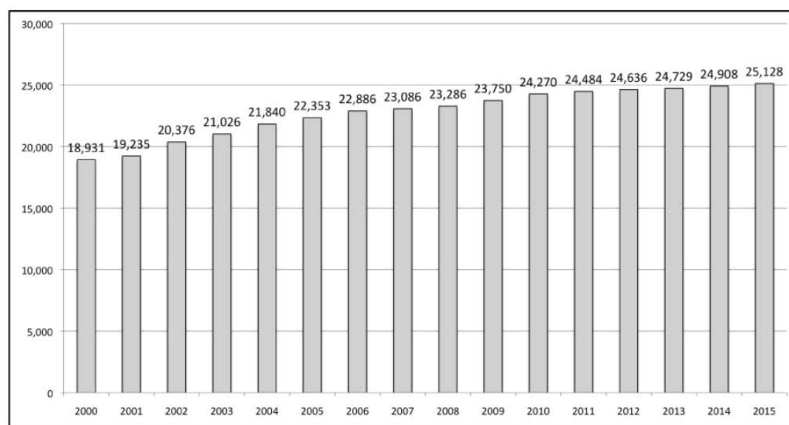
This section of the DEIR evaluates the potential environmental effects related to population and housing associated with implementation of the proposed General Plan Update and Master Plan. The analysis includes a review of population, employment, employees and housing. As part of the General Plan Update process, the City prepared the *City of Sanger: Commercial Land Demand Study* (New Economics & Advisory, 2015), see Appendix A of the Sanger General Plan Update Part II: Community Profile. This study considered how much land would be needed for commercial development, including office and retail. This information assists the City when making determinations about land use designations while balancing the existing population as well as future population growth trends. The *Land Demand Study* is incorporated herein by reference and is summarized in portions of the environmental analysis where applicable.

Environmental Setting

Population

Sanger's population has shown a steady increase during the last 30 years. The population in 2015 stood at 25,128, compared to 18,931 persons in 2000 (See Figure 3.14-1 Population Estimates 2000 – 2015). Population growth is one of the central factors for establishing policies and determining new areas for development. For purposes of preparing the General Plan, population projections were developed representing low, medium and high estimates.¹

Figure 3.14-1: Population Estimates 2000 - 2015²



¹ Sanger GPU Part II: Community Profile, page 1-3, (2018).

² U.S. Census Bureau, CA Dept. of Finance; Collins & Schoettler, 2016

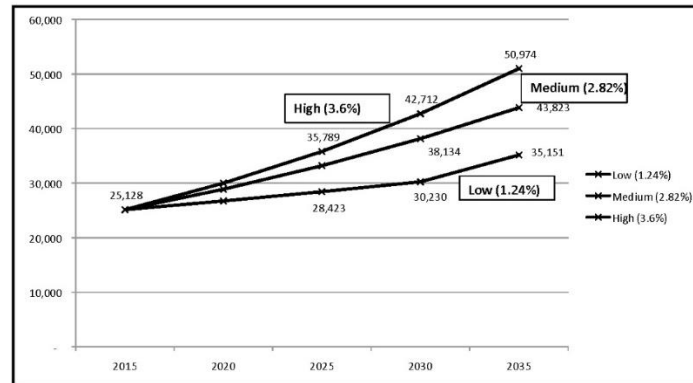
Figure 3.14-2: Population Growth Projections³

Figure 3.14-2 shows various population projections for Sanger beginning in 2015 and extending 20 years through 2035. These projections are based on past actual growth rates over various periods in Sanger’s recent history and represent projections of “low”, “medium” and “high” amounts as follows:⁴

The **Low Rate** is 1.24% per year and is based on Sanger’s growth rate from the years 2005 to 2015. Sanger has observed this “low growth rate since the economic depression that occurred in the mid-2000’s after the mortgage crisis and worldwide financial meltdown. Projecting this rate to the year 2035 would result in an increase of about 10,000 residents over Sanger’s existing population.

The **Medium Rate** is 2.82% per year and is based on Sanger’s growth rate from the years 2000 – 2010. This rate included years of high and low growth rates observed during significant residential building and the years immediately after the economy crashed. Applying this growth rate would increase the population by about 18,700 persons by the year 2035.

The **High Rate** is 3.6% per year and is based on Sanger’s growth rate from the years 2000 to 2005. This was the period of greatest residential growth in Sanger, however it ultimately proved unsustainable. This rate of growth would result in an increase of about 25,850 persons – more than doubling Sanger’s existing population.

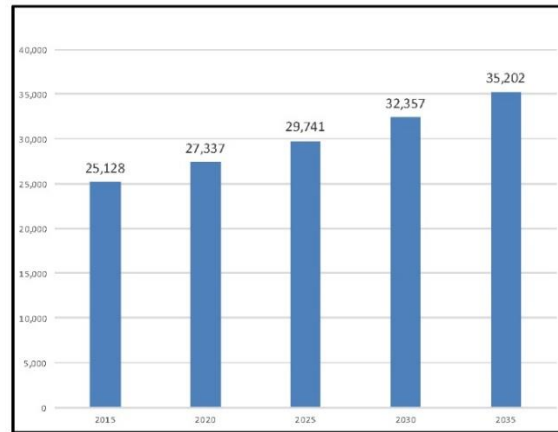
As shown above, using various rates of growth, Sanger’s population by the year 2035 could range from about 35,000 to nearly 51,000. Given the rates of growth during the early 2000’s were not sustainable, this General Plan proposes a lower growth rate of 1.7%, which is midway between

³ Collins & Schoettler, 2018.

⁴ Sanger GPU Part II: Community Profile, pages 1-4 and 1-5, (2018).

the “low” and “medium” rates previously discussed. Using this growth rate results in population projections shown below:

Figure 3.14-3: Population Projection: 1.7% Per Year



The selected growth rate of 1.7% per year results in a year 2035 population of 35,202 residents – an increase of 10,074 residents.⁵

Employment

The greatest employment category in Sanger is related to education and health care – employing over 22% of the workforce. Agriculture employs the second greatest percentage at 18%. Other major categories include manufacturing (8%), retail (8%) and wholesale (7%). While agriculture is a significant component of the workforce, this sector can be vulnerable to a variety of issues including water supply, weather, global and trade policies, and others. One of Sanger’s stated goals in the General Plan Update is to continue to seek opportunities to diversify the local economy, thereby ensuring that it is more stable in the long term.

As of 2015, the top ten major employers in Sanger include:⁶

- Sanger Unified School District – 1,097 employees
- Sanger Poultry Processing – 750
- Wal-Mart Super Center – 339
- ADCO Manufacturing – 150
- International Paper – 145

⁵ Sanger GPU Land Use Element, page 2-3 (2018).

⁶ Sanger GPU Part II: Community Profile, page 1-8 (2018).

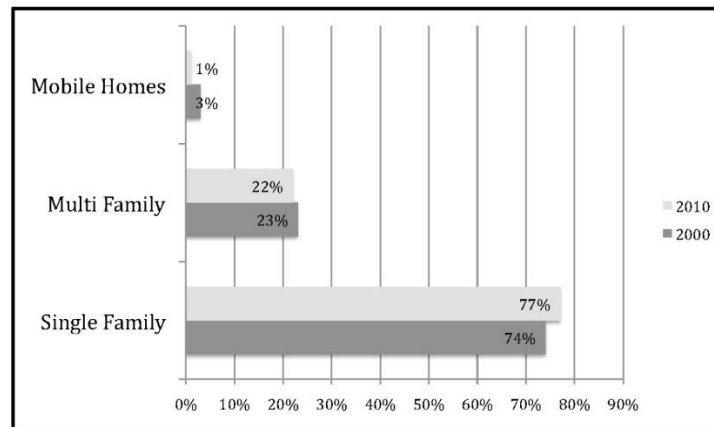
- Initiative Food – 140
- California TusFrame – 125
- Del Monte Fresh Produce – 115
- City of Sanger – 110
- Gong’s Southgate Market - 54

Housing

Type

Figure 3.14-4 illustrates changes in the makeup of Sanger’s housing stock between 2000 and 2010. The percentage of single family units increased from 74% in 2000 to 77% in 2010. Correspondingly, the percentage of multi-family dwellings (apartments) decreased from 23% to 22% during the same time period. In the meantime, the percentage of mobile homes decreased from 3% to only 1%. The increase in the number of single family homes occurred during the housing boom of the early 2000’s.

Figure 3.14-4: Dwelling Units by Type⁷



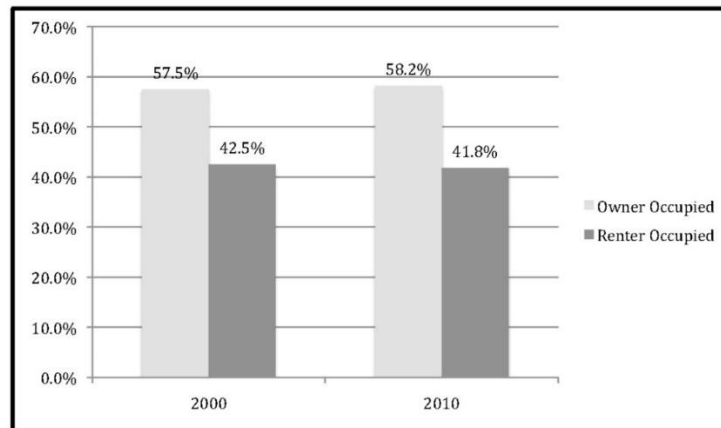
Tenure

Tenure refers to whether a dwelling is occupied by its owner or is rented out to another party. Knowledge of housing tenure is important for planning purposes so that a community can appropriately plan for adequate areas for both owner- and renter-occupied housing. In Sanger,

⁷ U.S. Census, 2000-2010

the percentage of owner-occupied dwellings has remained about the same from 2000 to 2010 – with a slight increase in the percentage of owner-occupied units versus renter-occupied units. This has occurred despite the significant increase in the number of single family homes constructed since 2000.

Figure 3.14-5: Housing Tenure⁸



Vacancy

The 2010 Census (the most recent year for which data are available) showed that Sanger had a residential vacancy rate of 6.3 percent. This compared to a vacancy rate of 3.7% in 2000. A lower vacancy rate may signify a lack of available housing, while a higher vacancy rate may indicate a market that is oversupplied with available dwellings. The average vacancy rate in Fresno County in 2010 was 13.68%. In nearby Reedley, the 2010 vacancy rate was 4.34%.⁹

Housing Starts

Sanger has averaged about 51 residential units per year (46 single family units and 7 multi family units) between 2006 and 2015.¹⁰ Development activity has slowed significantly since the development boom of the early 2000's.

Regulatory Setting

Federal Agencies & Regulations

⁸ U.S. Census. 2000-2010.

⁹ Sanger GPU Part II: Community Profile, page 1-12, (2018).

¹⁰ Ibid., page 1-14.

US Department of Housing and Urban Development (HUD)

HUD’s mission is to create strong, sustainable, inclusive communities and quality affordable homes for all. HUD is working to strengthen the housing market to bolster the economy and protect consumers; meet the need for quality affordable rental homes; utilize housing as a platform for improving quality of life; build inclusive and sustainable communities free from discrimination; and transform the way HUD does business.¹¹

State Agencies & Regulations

California Department of Housing and Community Development (HCD)

HCD’s mission is to “[p]rovide leadership, policies and programs to preserve and expand safe and affordable housing opportunities and promote strong communities for all Californians.”¹² “In 1977, the State Department of Housing and Community Development (HCD) adopted regulations under the California Administrative Code, known as the Housing Element Guidelines, which are to be followed by local governments in the preparation of local housing elements. AB 2853, enacted in 1980, further codified housing element requirements. Since that time, new amendments to State Housing Law have been enacted.

California Relocation Assistance Act

The State of California adopted the California Relocation Assistance Act (*California Government Code* §7260 et seq.) in 1970. This State law, which follows the federal Uniform Relocation Assistance and Real Property Acquisition Act, requires public agencies to provide procedural protections and benefits when they displace businesses, homeowners, and tenants in the process of implementing public programs and projects. This State law calls for fair, uniform, and equitable treatment of all affected persons through the provision of relocation benefits and assistance to minimize the hardship of displacement on the affected persons.

Local Agencies & Regulations

Fresno Multi-Jurisdictional 2015 – 2023 Housing Element

California Housing Element law requires every jurisdiction to prepare and adopt a housing element as part of general plans, including Sanger. In California it is typical for each city or county to prepare and maintain its own separate general plan and housing element. However, Fresno

¹¹ U.S. Department of Housing and Urban Development, Mission, <http://portal.hud.gov/hudportal/HUD?src=/about/mission>.

¹² California Department of Housing and Community Development, Mission, <http://www.hcd.ca.gov/mission.html>.

County and 12 of the 15 cities in Fresno County, with the help of the Fresno Council of Governments (FCOG), prepared a Multi-Jurisdictional Housing Element for the fifth round of housing element updates. The Multi-Jurisdictional Housing Element provides an opportunity for countywide housing issues and needs to be more effectively addressed at the regional level rather than just at the local level. Regional efforts also provide the opportunity for the local governments in the county to work together to accommodate the Regional Housing Needs Allocation (RHNA) assigned to the Fresno County region. In addition, economies of scale can result in significant cost savings to jurisdictions preparing a joint housing element.

The primary objective of the Housing Element is to prepare a regional plan addressing housing needs through a single certified housing element for all 13 participating jurisdictions (including Sanger). The Fresno County Multi-Jurisdictional Housing Element represents an innovative approach to meeting State Housing Element law and coordinating resources to address the region's housing needs. The regional housing element approach, while tested in a few counties with fewer jurisdictions, will be a major undertaking for FCOG and the 13 jurisdictions. The following jurisdictions are participating in the effort: Fresno County, Clovis, Coalinga, Fowler, Huron, Kerman, Kingsburg, Mendota, Parlier, Reedley, San Joaquin, Sanger, and Selma.

State Housing Element requirements are framed in the California Government Code, Sections 65580 through 65589, Chapter 1143, Article 10.6. The law requires the State Department of Housing and Community Development (HCD) to administer the law by reviewing housing elements for compliance with State law and by reporting its written findings to the local jurisdiction. Although State law allows local governments to decide when to update their general plans, State Housing Element law mandates that housing elements be updated every eight years. The Multi-Jurisdictional Housing Element covers the planning period of December 31, 2015 through December 31, 2023. The Housing Element included: 1) an identification and analysis of existing and projected local housing needs; 2) an identification of resources and constraints; and 3) goals, policies, and implementation programs for the rehabilitation, maintenance, improvement, and development of housing for all economic segments of the population.¹³ The Regional Housing Element was adopted in 2016.

Sanger Housing Element (Appendix 2L of the Fresno Multi-Jurisdictional 2015 – 2023 Housing Element)

Adequate Sites

¹³ Fresno Multi-Jurisdictional Housing Element Final Draft, January 2016, page 1-1.

Program 3: Provision of Adequate Sites¹⁴

The City of Sanger will provide for a variety of housing types and ensure that adequate sites are available to meet its Regional Housing Needs Allocation (RHNA) of 2,411 units. As part of the Housing Element update, the City has developed a parcel-specific inventory of sites suitable for future residential development. The suitability of these sites has been determined based on the development standards in place and their ability to facilitate the development of housing to meet the needs of the City's current and future residents.

Timeframe and Objectives:

- Maintain and annually update the inventory of residential land resources.
- Provide the inventory on the City website and make copies available upon request.
- Monitor development and other changes in the inventory to ensure the City has remaining capacity consistent with its share of the regional housing need.
- Actively participate in the development of the next RHNA Plan to better ensure that the allocations are reflective of the regional and local land use goals and policies.

Program 4: Rezoning for RHNA¹⁵

The City's sites capacity (as of 2016) has a total shortfall of 1,456 units for meeting its Fourth and Fifth Cycle RHNA obligations. This shortfall is comprised of 796 lower-income units and 336 moderate-income units from the Fourth Cycle RHNA and 284 lower income units and 169 moderate-income units from the Fifth Cycle RHNA.

To meet the shortfall, the City has and/or will rezone adequate acreage within its City Limits. Per State law, the City must rezone to accommodate the unaccommodated need from the Fourth Cycle RHNA within one year of the Housing Element adoption due date, and must accommodate the Fifth Cycle RHNA within three years of the actual Housing Element adoption date. In accordance with State law, the City will rezone enough land to cover the unaccommodated need from the Fourth Cycle of 796 lower-income units and 336 moderate-income units within one year of adoption of the Housing Element. The City will rezone enough land to cover the remaining Fifth Cycle unaccommodated need of 284 lower-income units and 40 moderate income units within three years of adoption of the Housing Element. Sanger has identified 27 potential rezone

¹⁴ Fresno Multi-Jurisdictional Housing Element Final Draft, Appendix 2L: City of Sanger, page 2L-3 (2016).

¹⁵ Ibid.

sites, summarized in Table 2L-7 and shown in Figure 2L-1. These sites, if rezoned to RM-1.5, have a capacity for 3,523 units. Given the City's remaining need, the City will only need to rezone some of the candidate sites in order to meet its RHNA.

Rezoning to accommodate the RHNA shortfall for lower-income units must meet the following requirements:

- Sites must be rezoned to permit owner-occupied and rental multi-family housing by right without discretionary review of the use or density; and
- Sites must be zoned with a minimum density of 20 units per acre and be large enough to accommodate at least 16 units per site.
- At least 50 percent of the lower income RHNA shortfall must be permitted on sites designated for exclusively residential uses.

Timeframe and Objectives:

- Rezone enough land to cover the unaccommodated need from the Fourth Cycle of 796 lower income units and 336 moderate-income units within one year of the Housing Element due date (completed).
- Rezone enough land to cover the remaining Fifth Cycle unaccommodated need of 284 lower income units and 40 moderate-income units within three years of adoption of the Housing Element.

Program 5: Monitoring of Residential Capacity (No Net Loss)¹⁶

The City will monitor the consumption of residential acreage and development on non-residential sites included in the inventory to ensure an adequate inventory is available to meet the City's RHNA obligations. To ensure sufficient residential capacity is maintained to accommodate the RHNA, the City will develop and implement a formal ongoing (project-by-project) evaluation procedure pursuant to Government Code Section 65863. Should an approval of development result in a reduction of capacity below the residential capacity needed to accommodate the remaining need for lower income households, the City will identify and if

¹⁶ Fresno Multi-Jurisdictional Housing Element Final Draft, Appendix 2L: City of Sanger, page 2L-3 (2016).

necessary rezone sufficient sites to accommodate the shortfall and ensure “no net loss” in capacity to accommodate the RHNA.

Timeframe and Objectives:

- Develop and implement a formal evaluation procedure pursuant to Government Code Section 65863 by 2016.
- Monitor and report through the HCD annual report process.
- If rezoning/upzoning is required to replenish the sites inventory for meeting the RHNA shortfall, the sites shall be large enough to accommodate at least 16 units per site at a minimum density of 20 units per acre, and shall be rezoned within two years.

The City’s adopted Housing Element also includes a number of programs and objectives, summarized herein as follows:

Program 7: Affordable Housing Incentives. The City continues to have needs for affordable housing for lower income households, especially for seniors, disabled (including persons for developmental disabilities), farmworkers, the homeless, and those at imminent risk of becoming homeless. The City will continue to work with housing developers to expand affordable housing opportunities.

Program 8: Farmworker Housing. The farming industry is the foundation of the County’s economy base. According to the USDA, National Agricultural Statistics Service (NASS) 2012, about 58,600 workers were employed in farm labor throughout the County, indicating a significant need to provide housing for farmworkers and their families, particularly during peak harvest seasons.

Program 9: Preserving Assisted Housing. None of the assisted affordable rental projects in Sanger are at risk of converting to market rate housing by 2025. Nevertheless, the City will continue to monitor status of affordable housing projects and other affordable housing agreements (such as density bonus agreements).

Program 10: Encourage and Facilitate Accessory Units (Second Units). A second unit (sometimes called an “accessory dwelling unit” or “granny flat”) is an additional self-contained living unit either attached to or detached from the primary residential unit on a single lot. It has cooking, eating, sleeping, and full sanitation facilities. Second units can be an important source of affordable housing given that they typically are smaller and have no associated land costs. The City permits second units in a ministerial fashion in all residential zones.

Program 11: Zoning Code Amendments. In compliance with State laws, the City will amend its Zoning Code to address the provision of a variety of housing options, especially housing for special needs groups.

Program 12: Lot Consolidation and Lot Splits. The City's vacant sites inventory is comprised of parcels of varying sizes, from small lots of less than half acre or large lots of over 20 acres; either case presents unique challenges to residential development, especially to multifamily housing development. The City will encourage lot consolidation or lot splitting to promote the efficient use of land for residential development pursuant to the Subdivision Map Act.

Program 13: Monitoring of Planning and Development Fees. The City charges various fees to review and process development applications. Such fees may add to the cost of housing development.

Housing Quality

Program 14: Fresno County Housing Assistance Rehabilitation Program (HARP). This program provides loans to qualifying homeowners in the unincorporated County and participating cities for the improvement of their homes. The City of Sanger is a participating city. Eligible improvements include energy efficiency upgrades and installations, health and safety and hazard corrections, and accessibility modifications. Loan terms under this program vary according to household income and the improvements and repairs that are needed.

Program 15: Fresno County Rental Rehabilitation Program (RRP) This program provides no interest loans to qualifying property owners in the unincorporated County and participating cities for making improvements to their rental properties. The City of Sanger is a participating city. Eligible improvements include repairing code deficiencies, completing deferred maintenance, lead-based paint and asbestos abatement, HVAC repairs, energy efficiency upgrades, accessibility modifications, and kitchen and bathroom upgrades.

Program 16: Code Enforcement. The City's Code Enforcement is in charge of enforcing the City's building codes with the objective of protecting the health and safety of residents.

Housing Assistance

Program 17: Fresno County Homebuyer Assistance Program (HAP) City of Sanger participates in the County's Homebuyer Assistance Program. This program assists lower income families with purchasing their first home by providing a zero interest, deferred payment loan that does not exceed 20 percent of the purchase price of the single-family residence (plus loan closing

costs). Households earning up to 80 percent AMI in unincorporated Fresno County and participating cities are eligible for this program.

Program 18: First-Time Homebuyer Resources. Sanger residents have access to a number of homebuyer assistance programs offered by the California Housing Finance Agency (CalHFA).

Program 19: Energy Conservation. The City promotes energy conservation in housing development and rehabilitation.

Program 20: Housing Choice Vouchers. The Housing Choice Voucher (HCV) Program extends rental subsidies to extremely low and very low-income households, including families, seniors, and the disabled. The program offers a voucher that pays the difference between the current fair market rent (FMR) as established by the HUD and what a tenant can afford to pay (i.e. 30 percent of household income). The Fresno Housing Authority administers the housing choice voucher program in Fresno County.

Program 21: Fair Housing. Residents in the Central Valley, including Fresno County, can access fair housing services provided by the Fair Housing Council of Central Valley (FHCCC). FHCCC offers mediation, counseling, advocacy, research, and fair housing training and workshops for residents as well as housing providers. Other fair housing resources include the Fresno Housing Authority, Fair Housing and Equal Opportunity (FHEO) division of HUD, and the State Department of Fair Employment and Housing (DFEH). The City will assist in promoting fair resources available in the region.

Thresholds of Significance

The thresholds of significance for this section are established by the CEQA Checklist Item.

- *Induce substantial unplanned population growth in an area, either directly or indirectly?*
- *Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?*

Impacts and Mitigation Measures

Impact 3.14-1: *Induce substantial unplanned population growth in an area, either directly or indirectly?*

Less Than Significant Impact. Sanger's population would increase if development identified in the General Plan Update and Master Plan is implemented. Using a base year of 2015, the City of Sanger's population was 25,128 people. Using the growth rate of 1.7% per year (as previously

discussed), Sanger's population is estimated to be 35,202 people in year 2035, an increase of 10,074 people. This number is the basis of the analysis in the General Plan and is the assumption used to identify potential environmental impacts of inducing population growth.

New jobs in Sanger and the surrounding areas would be created by development of commercial, industrial and other employment generated uses. This in-turn would attract people to live in Sanger (population growth), which would result in the need for additional residential housing. The General Plan Land Use map illustrates where potential commercial and industrial growth might occur, particularly along North Academy Corridor Master Plan Area. The number of new jobs that could potentially be created if all of the lands within the General Plan and Master Plan areas are built out is difficult to estimate because it is unknown exactly what type of commercial/industrial businesses will come and also how many employees they might require. However, as previously discussed, the City prepared the *City of Sanger: Commercial Land Demand Study* (New Economics & Advisory, 2015), see Appendix A of the Sanger General Plan Update Part II: Community Profile, which provides information about commercial trends and employment opportunities in Sanger. This information was used to help determine the amount and location of certain land use designations. Please refer to that document for a detailed description of potential job/employment opportunity numbers. For purposes of evaluating the environmental impact of population growth in Sanger under CEQA, the question becomes whether or not the General Plan will induce population beyond what the City has or will plan for and/or can accommodate at full buildout of the General Plan (inclusive of new commercial/employment opportunities).

Based on the proposed Land Use designations and Master Planning documents associated with this General Plan update, it is determined that the proposed project (build-out of the General Plan and Master Plan) will not induce population growth beyond that which will be needed to fulfill future employment opportunities and/or housing developments that have the potential to occur during the planning horizon of this General Plan update (Year 2035). The environmental impacts of the growth of the commercial, industrial, and residential areas of the City are evaluated within this EIR in other sections (e.g. air quality, traffic, noise, water use, biological impacts, etc.). Therefore, the project will have a *less than significant* impact occurring from inducement of population.

Mitigation Measures: None are required.

Impact 3.14-2: *Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?*

Less Than Significant Impact. Implementation of the project (buildout of the General Plan and Master Plan) includes potential development on vacant land. Development could also occur within areas that would be redeveloped. Implementation of the proposed General Plan could potentially result in removal of existing residential units and/or displacement of people if there are occupied residential units that would be removed as a result of new development. However, implementation of the General Plan would also result in an increase in housing units available for those residences that would be removed during future development under the General Plan. Prior to any displacement, a relocation analysis must be prepared in accordance with federal and/or state law. Implementation of the General Plan and Master Plan would not necessitate construction of replacement housing in addition to the housing that is planned under the proposed General Plan Update. Therefore, there is a *less than significant impact* on the displacement of housing and/or people, necessitating the construction of housing within the City.

Mitigation Measures: None are required.

Cumulative Impacts

Less Than Cumulatively Considerable. Cumulative population and housing are typically site- and project-specific. As discussed above, based on the proposed Land Use designations and Master Planning documents associated with this General Plan update, it is determined that the proposed project (build-out of the General Plan and Master Plan) will not induce population growth beyond that which will be needed to fulfill future employment opportunities and/or housing developments that have the potential to occur during the planning horizon of this General Plan update (Year 2035). Under cumulative conditions, individual projects may require removal of homes and result in the displacement of people and housing; however, these effects are not cumulatively considerable because there is adequate replacement housing allowed under the General Plan. The project's contribution to cumulative population and housing impacts are *less than cumulatively considerable*.

3.15 Public Services

This section of the DEIR identifies potential impacts associated with the City's police/fire protection services, emergency services, and other public facilities. No IS/NOP comment letters were received pertaining to this topic.

Environmental Setting

Fire Services

Fire protection within the City of Sanger is provided by the Sanger Fire Department, which is headquartered at the Sanger Civic Center in downtown Sanger. The Department also has a mutual aid agreement with the Fresno County Fire Protection District (FCFPD) for support services around the City (and inside city limits when requested). The nearest FCFPD station is located on Academy Avenue approximately one mile north of the current city limit boundary. The City and County have entered into a transition agreement which compensates the District for lost property taxes when property is annexed to the City. The Department also has aid agreements with Selma and Kingsburg.

The City currently has 23 fire fighters including a chief, one captain and two lieutenants and two administrative staff. The City also works to train cadets from Fresno City College's Fire Fighters Institute. Of the 24 fire fighters, 17 are trained paramedics. The department operates three shifts per day to provide 24 hour coverage; shifts for employees are two days on and four days off.

The Department operates three Type 1 fire engines, three ambulances and four support vehicles. The Department plans to replace one fire engine in the near future. The Department desires to acquire a ladder truck but the costs of doing so are currently prohibitive.

The Fire Department has a goal that 95 percent of calls have a four minute response time from the time of alarm, and the Department has been meeting this goal.

The Department has reported that it has experienced low water pressure and low flow at times when wells are off line and there is high demand for water - typically during warmer months. There are plans to install a new above-ground water tank at the intersection of Church and J Streets to supplement water pressure. The desired water pressure in all neighborhoods is at least 40 to 45 pounds per square inch.

The Department does not track calls for service by type however there are currently about 3,800 calls for service per year. Overall the Department believes the number of calls over the past ten

years has increased about six to eight percent per year – 85 percent of calls are for medical purposes while 15 percent are fires or other.

According to the Fire Department Sanger's Insurance Service Office (ISO) rating is 4 with areas outside the City scoring higher. The City's rating reflects qualified personnel and equipment but could be higher if the City were able to obtain a ladder truck.

The Fire Department provides other services such as hazardous materials ("hazmat") response as well as nuisance abatement (such as for weed control and other fire-related issues). The Department also works closely with Sanger's Code Enforcement Division to coordinate activities. Finally the Department is involved with public education efforts aimed at increasing knowledge about fire prevention and improving public safety.

The 2003 General Plan noted that the City was considering building an additional fire station at the corner of Greenwood and Woods Avenue in the north part of the City – to better respond to growth that was poised to occur in that area. Since the Great Recession of the mid 2000's growth has fallen off significantly and the station was never built. The City will need to evaluate current growth patterns and determine when and where a new station would be warranted.

Police Services

Law enforcement within the City limits is provided by the Sanger Police Department, located at Sanger City Hall at 1700 7th Street in downtown Sanger. A separate Investigations Unit is housed at 1789 Jensen Avenue.

As of late 2015, the police department employed 32 personnel, including a chief, captain, five sergeants, 4 corporals, 17 officers, one records personnel, 2 community service officers and one animal control officer. There are currently eight officer vacancies. The Department also has a volunteer complement of two reserve officers and four volunteers. One officer is a School Resource Officer and is assigned to Sanger Unified School District campuses. There are also two K-9 officers. The current ratio of officers to citizens is one officer per 698 citizens. The City does not have an adopted policy regarding service level.

Sanger has mutual aid agreements with the Fresno County Sheriff's Department, California Highway Patrol and other neighboring cities. Areas outside Sanger are patrolled by the Sheriff's Department, though they sometimes ask Sanger PD for assistance. The California Highway Patrol patrols State Highway 180 and other County roads in the Sanger vicinity.

The Department conducts a variety of outreach efforts and events, including traffic, distracted driver and Click It or Ticket enforcement details. Other activities include National Night Out

events, Department open house, child safety seat courses and gang intervention and education, K9 demonstrations, traffic, pedestrian and educational events. Finally, the Department has an Explorer Post with 18 members and hosts interns from CSU-Fresno and Fresno Pacific University.

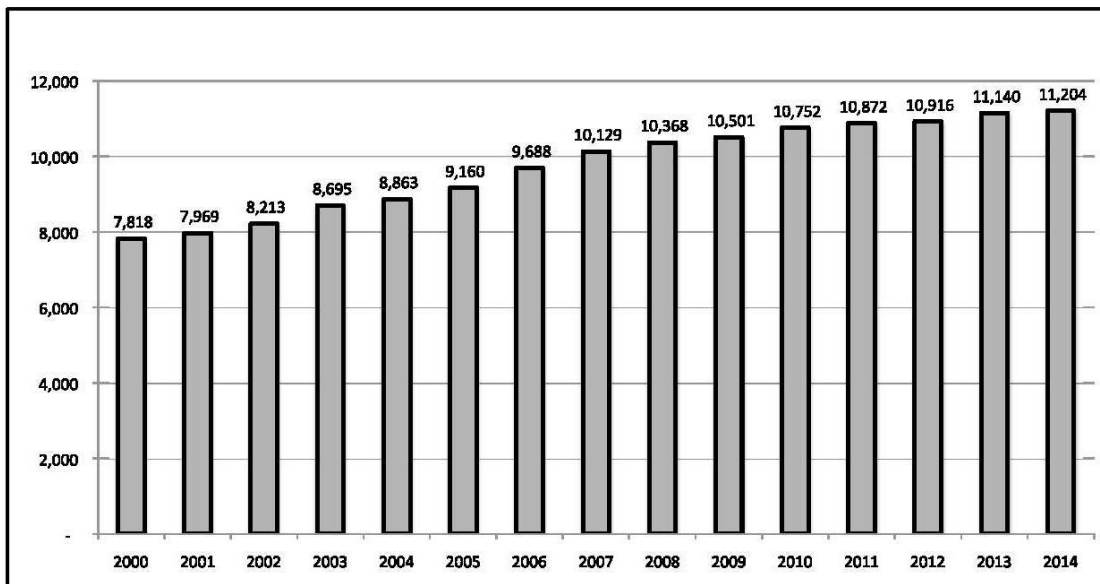
Schools

Sanger Unified School District provides public education facilities in Sanger and the surrounding areas. The District covers 180 square miles and serves a population of around 35,000. In addition to the City of Sanger, the district serves the unincorporated communities of Centerville, Del Rey, Fairmont, Lone Star, Tivy Valley and portions of the Sunnyside area of the City of Fresno. Current attendance in the district is about 11,360 students. There are currently 14 elementary schools, a middle school and a high school. There are two K-8 and one K-12 charter site. In addition, there is an education continuation school, an alternative education independent study school, a community day school, and an adult school. Of these, eleven campuses are inside Sanger's city limits, including the high school and middle school. Table 3.14-1 lists existing campuses.¹

Enrollment

Figure 3.15-1 shows enrollment trends for Sanger Unified School District. Since 2000 the annual growth rate has been about 2.4 percent. Since 2010 the growth rate has slowed to about 0.8% per year.

Figure 3.15-1: Sanger Unified School District Enrollment Trends



¹ Sanger 2035 GPU, Part II: Community Profile, Pages 1-19 to 1-22. (Collins & Schoettler, 2018)

Table 3.15-1: Existing Schools

Campus	Location	Grades	Enrollment (2014-2015)
Centerville Elementary	48 South Smith Ave.	K-6	240
Community Day	818 L St.	7-12	41
Del Rey Elementary	10620 Morro St.	K-6	264
Fairmont Elementary	3095 North Greenwood Ave.	K-8	472
Hallmark Charter	2445 Ninth St.	K-12	399
Jackson Elementary	1810 Third St.	K-5	407
Jefferson Elementary	1110 Tucker St.	K-5	404
John S. Wash Elementary	6350 East Ln. Ave.	K-6	508
Kings River High (Continuation)	1801 Seventh St.	7-12	77
Lincoln Elementary	1700 14th St.	K-5	421
Lone Star Elementary	2617 South Fowler Ave.	K-6	380
Madison Elementary	2324 Cherry St.	K-5	458
Quail Lake Environmental Charter	4087 North Quail Lake Dr.	K-8	547
Ronald W. Reagan Elementary	1586 South Indianola	K-5	475
Sanger Academy Charter	2207 Ninth St.	K-8	608
Sanger High	1045 Bethel Ave.	9-12	2,734
Sequoia Elementary	1820 South Armstrong Ave.	K-6	492
Taft High	1801 Seventh St.	K-12	110
Washington Academic Middle	1705 Tenth St.	6-8	1,722
Wilson Elementary	610 Faller St.	K-5	445

The School District contracted with Odell Planning and Research to prepare enrollment projections and a future needs analysis, as well as justification for development impact fees that will be used to fund new schools. The “Enrollment Projections and Future School Needs Study (2013-2022)” uses an annual growth rate of 1.38% per year, which results in a total enrollment of 12,514 students by the year 2022. This represents an increase of 1,598 students from the 2012 enrollment. According to District officials, all campuses are currently at or above their design capacity. In order to offset the impacts of growth, Sanger Unified currently charges \$3.57 per square foot for residential development and \$0.54 per square foot for commercial and industrial development. These fees were set based on the aforementioned O’dell study prepared in 2013. In terms of future campuses in the Sanger area the District owns an 11.7 acre parcel at the northeast

corner of North and Del Rey Avenues. There is currently no timetable for the development of this site.

College Facilities

Sanger is within the boundaries of the State Center Community College District, which operates five campuses within Fresno and Madera counties, covering nearly 5,750 square miles that also includes portions of Tulare and Kings counties. Reedley College and Fresno City College are the two community colleges located nearest to Sanger. According to the District nearly 1,100 students from Sanger attend District colleges. Reedley College offers some courses at Sanger High School. Two four-year colleges are located in Fresno. California State University at Fresno provides students with a four-year degree, as well as many graduate programs. Fresno Pacific University is a private, four-year liberal arts university and provides both four-year degrees and graduate programs. Fresno is also home to the San Joaquin College of Law.²

Parks

A comprehensive discussion of parks can be found in Section 3.16 – Recreation, of this draft EIR.

Libraries

The Fresno County Library Department operates a branch in Sanger located in the downtown at the Sanger Civic Center (1812 Seventh Street). The Library Department operates 39 branches throughout Fresno County, including in each city and several unincorporated communities. There are 16 branches in the Fresno/Clovis metropolitan area. The Sanger branch is open six days a week and contains books, periodicals, internet access and a conference room available to the public.³

Regulatory Setting

State Regulations

California Occupational Safety and Health Administration

In accordance with California Code of Regulations Title 8 Sections 1270 “Fire Prevention” and 6773 “Fire Protection and Fire Equipment,” the California Occupational Safety and Health

² Sanger 2035 GPU, Part II: Community Profile, Pages 1-19 to 1-22. (Collins & Schoettler, 2018)

³ Ibid. Page 1-25.

Administration (Cal- OSHA) has established minimum standards for fire suppression and emergency medical services (EMS). The standards include, but are not limited to, guidelines on the handling of highly combustible materials, fire hose sizing requirements, restrictions on the use of compressed air, access roads, and the testing, maintenance and use of all firefighting and emergency medical equipment.

City Emergency Response/Evacuation Plans

The State of California passed legislation authorizing the Office of Emergency Services (OES) to prepare a Standard Emergency Management System (SEMS) program, which sets forth measures by which a jurisdiction should handle emergency disasters. Non-compliance with SEMS could result in the State withholding disaster relief from the non-complying jurisdiction in the event of an emergency disaster.

California Fire Code

The California Fire Code (CFC) contains regulations relating to construction, maintenance, and use of buildings. Topics addressed in the code include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions intended to protect and assist fire responders, industrial processes, and many other general and specialized fire-safety requirements for new and existing buildings and the surrounding premises. The CFC also contains specialized technical regulations related to fire and life safety.

California Health and Safety Code

State fire regulations are set forth in Sections 13000 et seq. of the California Health and Safety Code, which includes regulations for building standards, fire protection and notification systems, fire protection devices such as extinguishers, smoke alarms, high-rise buildings, childcare facility standards, and fire suppression training.

California Department of Education

The California Department of Education (CDE) School Facilities Planning Division (SFPD) prepared a School Site Selection and Approval Guide that provides criteria for locating approximate school sites in the State of California. Specific recommendations for school size are provided in the School Site Analysis and Development Guide. Certain health and safety requirements for school site selection are governed by state regulations and the policies of the SFPD relating to:

- Proximity to airports, high-voltage power transmission lines, railroads, and major roadways;
- Presence of toxic and hazardous substances;
- Hazardous facilities and hazardous emissions within one-quarter mile;
- Proximity to high-pressure natural gas lines, propane storage facilities, gasoline lines, pressurized sewer lines, or high-pressure water pipelines;
- Noise;
- Results of geological studies or soil analyses; and
- Traffic and school bus safety issues.

Local

City of Sanger Regulations

The City currently relies on the guidance provided in its General Plan and Zoning Ordinance that shape and design public facilities for the City of Sanger. These policies are summarized below:

OSRPF Element:

The City shall require new development to pay its fair share for the extension of police and fire services in order to maintain City services in order to maintain City service standards, including personnel and capital improvements costs.

Ensure adequate police protection by providing adequate personnel and equipment in order to achieve a response time of five minutes for critical life-threatening emergencies.

Ensure adequate fire protection by providing adequate personnel and equipment in order to achieve a response time of 5-minutes for critical life-threatening emergencies.

Provide community-oriented programs and services to further promote fire safety in the community.

Cooperate and coordinate with Sanger Unified School District to obtain and maintain public school sites in Sanger. The City shall continue to support the Sanger Unified School District in providing quality education facilities that will accommodate project changes in student enrollment.

Thresholds of Significance

The thresholds of significance for this section are established by the CEQA Checklist Item.

- Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

Fire protection?

Police protection?

Schools?

Parks?

Other public facilities?

Impacts and Mitigation Measures

Impact 3.15-1: *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection, police protection, schools, parks, or other public facilities?*

Less Than Significant Impact. Development accommodated under the General Plan Update would result in additional residents and businesses in the City, including residential, commercial, schools, parks and office uses. As described in Chapter 2, full buildout of the proposed General Plan would increase the City's population by an estimated 1.24% to a high of 3.6% residents.

As the demand for services increases, there will likely be a need to increase staffing and equipment in order to maintain acceptable service ratios, response times, and other performance standards. New or expanded service structures (e.g., offices, maintenance and administrative builds, schools, parks, fire department, etc.) may be needed to accommodate adequate staffing, equipment, and appropriate facilities to serve growth in the City.

Development and growth facilitated by the Sanger General Plan would result in increase demand for public services, including fire protection, law enforcement, schools, parks, libraries, and other public and governmental services. The General Plan includes the following goals, objectives and action plans to ensure that public services are provided at acceptable levels and to ensure that development and growth does not outpace the provision of public services.

Sanger General Plan: Public Facilities

Goals, Objectives, Action Plans

Goal:

I. Public facilities should be located in the core of the community, when possible.

Objective:

1. Public facilities should be directed to locate in the downtown area, as practical. Existing downtown public facilities should be encouraged to remain in the downtown. In addition, the design of public facilities should be carefully considered as these types of buildings can help set the standard for good architectural design.

Action Plan:

a. The City Manager and City Planner will implement this goal on an ongoing basis.

Goal:

II. The city should pursue the development of a sports park adjacent to the wastewater treatment facility.

Objective:

1. The sports park could include soccer fields, passive recreation facilities, baseball fields, running track, and other amenities that the community might desire.

Action Plan:

- a. The City Manager should involve other organizations in the community as well as the school district in regards to exploring this recreational opportunity.

Goal:

III. Public facilities should make an aesthetic statement in terms of appearance and architectural style.

Objective:

1. When new public buildings and facilities are developed, the City should take an opportunity to set the tone it expects for the community in terms of quality design that reflects Sanger's history and "sense of place".

Action Plan:

- a. The City shall require public facilities to be processed through Sanger's Site Plan Review or Conditional Use Permit process, as applicable.

Goal:

IV. Improve library facilities in Sanger.

Objective:

1. Work with the Fresno County Library to continue to update and modernize the public library in Sanger.

Action Plan:

- a. The City Manager shall coordinate with the Fresno County Library to achieve this goal.

Sanger General Plan: Public Facilities

Goals, Objectives, Action Plans

Goal:

I. Promote neighborhood-based schools.

Objective:

1. The City, Sanger Unified School District and the community should all be involved in the design and location of schools.

Action Plan:

- a. To the greatest extent possible, schools should be multi-purpose in nature.
- b. As appropriate, schools should be available for use by the community during non-school hours. This is particularly true of outdoor facilities such as athletic fields.
- c. Schools should be designed to accommodate some of the community's recreational needs, like playing fields, hard courts and running tracks.

Goal:

II. Work to develop schools that are easily accessible and free from land use and circulation conflicts.

Objective:

1. Future schools should be located in areas of the community where they are easily accessible for school-aged students via walking and cycling.

Action Plan:

- a. Future schools should be designed so that they can be easily-accessed from adjacent residential developments.
- b. Future schools should be designed so that students can be easily dropped off by their parents. Turnouts should be provided in front of all new schools for student drop-offs and pick-ups.
- c. Bus drop-off zones should be separate from drop-off and pick-up zones.

Objective:

2. The location of schools should not be on roadways that attract other types of significant traffic (e.g. commuter, industrial or commercial traffic).

Action Plan:

- a. Sidewalks shall be provided on all streets around new school campuses. Where sidewalks are lacking around existing schools, the City shall apply for Safe-Route-To-School funds in order to finance the installation of these improvements.
- b. Schools should be connected to bike path systems.

Objective:

3. To the best extent possible, new schools should be centrally-located in the neighborhoods they are expected to serve. In order to provide for a community that is concentric, Sanger should work with Sanger Unified to locate at least some of the new schools on the east side of the community either in the northeast or southeast quadrants.

Action Plan:

- a. The Land Use Map identifies potential future school sites on the east side of Sanger.

Goal:

III. Encourage schools to establish partnerships with other public entities.

Objective:

1. The City and school district should continue to forge a working relationship with State Center Community College District as it pertains to agricultural, technical and mechanical training courses.

Action Plan:

- a. The City Manager should encourage and assist the school district and college on this goal.

Goal:

IV. Support the teaching of college courses in the Sanger area.

Objective:

1. Work with State Center Community College to support continuing and expanded college courses in Sanger.

Action Plan:

- a. Invite State Center Community College to make an annual presentation to the City Council on their ongoing activities in Sanger.

As future development and infrastructure projects, including new and/or governmental and public service facilities are considered by the City, each project will be evaluated for conformance with the General Plan, Municipal Code, and other applicable regulations. Subsequent development and infrastructure projects would also be analyzed for potential environmental impacts, consistent with the requirements of CEQA.

As previously stated, increased levels of staffing and equipment will be needed to serve growth allowed under the General Plan. The environmental effect of providing the public service is associated with the physical impacts of providing new and expanded facilities. The specific impacts of providing new and expanded facilities cannot be determined at this time, however, the General Plan land use map does designate the location of future schools and parks. New and expanded public facilities are anticipated to be primarily provided on sites with land use designations that allow such uses and the environmental impacts of constructing and operating the governmental facilities would be subject to the General Plan policies listed above and the General Plan requirements related to specific environmental topics as discussed in Chapters 3 of this Draft EIR. As such, any impacts would be *less than significant*.

Mitigation Measures:

None are required.

Cumulative Impacts

Less Than Cumulatively Considerable. The scope for considering cumulative impacts to public services is generally site-specific rather than cumulative in nature because each project site has different public service considerations that would be subject to review. Cumulative growth that would occur over the life of the General Plan and Master Plan will result in increased demand for public services, including fire protection, law enforcement, schools, parks, libraries, and other public and governmental services. The service area for each of these services is considered the cumulative analysis area. As the demand for public services increases, there will likely be a need to increase staffing and equipment in order to maintain acceptable service ratios, response times, and other performance standards. New or expanded service structures (e.g., offices, maintenance and administrative buildings, schools, parks, fire departments, libraries, etc.) will be needed to

provide for adequate staffing, equipment, and appropriate facilities to serve growth within the cumulative analysis area.

As described in this section, the project includes a range of Goals, Objectives and Action Plans that would ensure that public services are provided in a timely fashion, are adequately funded, and that new development funds its fair share of services.

The General Plan and North Academy Corridor Master Plan includes policies to ensure that recreational, educational, and fire protection services keep pace with new development and that other governmental services are adequately planned and provided. The General Plan includes policies to meet adopted and acceptable public services standards and to ensure future development pays its fair share for impacts to public services. With implementation of General Plan Goals, Objectives and Action Plans, including those established by the proposed project, the proposed project's incremental contribution to cumulative public services impacts would be *less than cumulatively considerable*.

3.16 Recreation

This section of the DEIR identifies potential impacts associated with the City's recreational services under full GPU buildout. No IS/NOP comment letters were received pertaining to this topic.

Environmental Setting

Sanger Existing Park and Recreation Resources

The Sanger Parks and Recreation Department operates a variety of recreation programs throughout the year. These include:

- Aquatics, including swimming lessons and Friday Night swim events
- Youth Events, including softball, basketball, gymnastics, football and tot programs
- Teen programs, including CPR training, boxing, volunteerism and Youth Council
- Adult programs, including basketball, volleyball, aerobics, zumba, CPR training
- Special events, including "movies in the park", Independence Day events, Halloween
- Downtown and the Annual Blossom Trail Run

Senior Citizen's programs are offered at the Sanger Senior Center and include daily meals, exercise classes, arts and crafts, bingo, ceramics, special events, guest speakers, field trips, games, and other activities.

Sanger presently has 14 developed park sites encompassing 51.5 acres¹, as depicted on Figure 3.16-1 and Table 3.16-1.

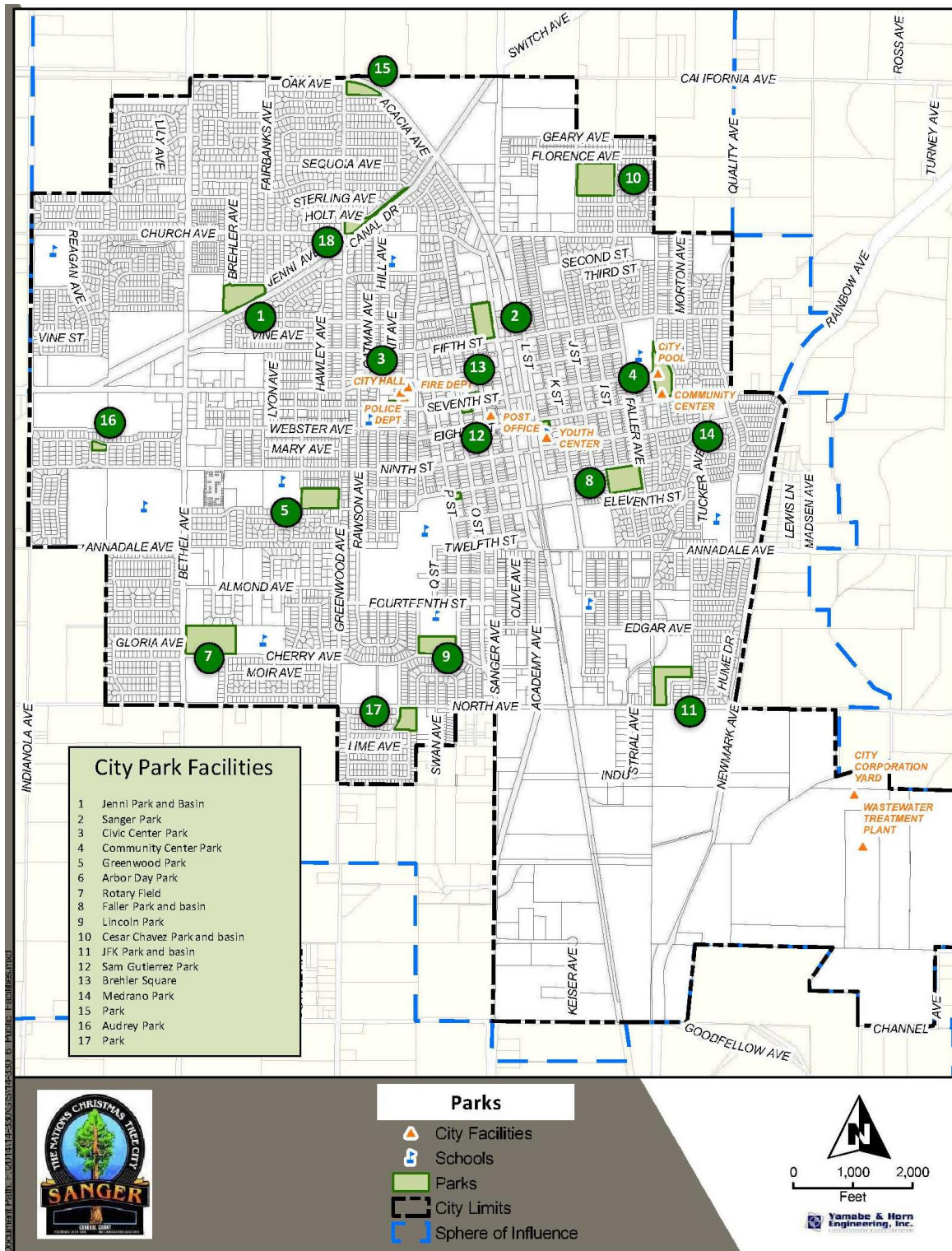
In addition to these parks, the City owns 13.8 acres for future neighborhood park and recreation facilities throughout the City. The City also owns a 65-acre nature area adjacent to the Kings River (outside the City Limits but within the Sphere of Influence) near the wastewater treatment plant. Sanger residents also have available athletic fields on school campuses which are operated by Sanger Unified School District.

Sanger Park and Recreation Master Plan

The City adopted the 2025 Sanger Parks and Recreation Master Plan in 2006. This document establishes policies and design recommendations for the development of future park and open space

¹ Sanger 2035 GPU Conservation, Open Space, Parks and Recreation Element, Page 4-2 to 4-6.

Figure 3.16-1: Existing Sanger Parks²



² Sanger 2035 GPU Conservation, Open Space, Parks and Recreation Element, Page 4-2 to 4-6.

Table 3.16-1: Sanger Existing Parks³

# on Map	Park/Location	Type of Park	Facilities	Acres
1	Jenni Park and Basin (southwest corner of Jenni and Brehler Avenues)	Neighborhood Park	Mixed Use – picnic, playground, walking path, landscaping	4.2 acres
2	Sanger Park (Academy and 4 th Avenue)	City/Neighborhood Park	Mixed use, band stand, pavilion, picnic, tot lot, restrooms	3.8 acres
3	Civic Center Park (7 th and Dweitt Avenue	Mini Park	Playground, tot lot	0.4 acres
4	Community Center Park (730 Recreation Place)	City/Neighborhood Park	Community Center, senior center, pool with slide, playground	3.2 acres
5	Greenwood Park and basin (southwest	Neighborhood	Mixed use, picnic, playground, mobile skate park, restrooms	4.1 acres
6	Arbor Day Park (southeast corner of 10 th and P Streets)	Mini Park	Passive use – open space	0.7 acres
7	Rotary Field & Multi Sports Complex (southeast corner of Cherry and Bethel Avenues)	Neighborhood	Mixed use sports fields, concession restrooms	8.8 acres*
8	Faller Park and basin (southwest corner of 10 th and Faller Avenue)	Neighborhood	Mixed use, sports field, tot lot, concession and restrooms	5.0 acres
9	Lincoln Park (northwest corner of Cherry Avenue and P Street	Neighborhood Park	Passive use, tot lot and restroom	4.0 acres
10	Cesar Chavez Park and basin (Faller and Harrison Streets)	Neighborhood Park	Mixed use, soccer field, basketball court, tot lot, picnic restroom and concession stand	8.8 acres
11	JFK Park and basin (Faller and North Avenues)	Neighborhood Park	Mixed use, soccer field, basketball court, tot lot, spray park, picnic restrooms	7.0 acres
12	Sam Gutierrez Park (7 th Street	Mini Park	Passive use – benches and fountain	0.5 acres
13	Brehler Square	Mini Park	Passive use, open space	0.6 acres
14	Medrano Park	Mini Park	Passive use, open space	0.4 acres
Total Park Acreage				51.5 acres

facilities in the community. The Plan establishes five service areas in the community based on population. The Plan also noted that the City is lacking 137 acres of park space – to meet the standard of 3 acres of parks per 1,000 residents.⁴

The City also provides a number of other public recreation facilities including:

- Aquatic Complex
- Community Center
- Sanger Youth Center
- Senior Center

³ Sanger 2035 GPU Conservation, Open Space, Parks and Recreation Element, Page 4-2 to 4-6.

⁴ Sanger 2035 GPU, Part II: Community Profile, Pages 1-23 to 1-225. (Collins & Schoettler, 2018).

Regulatory Setting

Quimby Act

The Quimby Act (California Government Code Section 66477) states that “the legislative body of a city or county may, by ordinance, require the dedication of land or impose a requirement of the payment of fees in lieu thereof, or a combination of both, for park or recreational purposes as a condition to the approval of a tentative or parcel map.” Requirements of the Quimby Act apply only to the acquisition of new parkland and do not apply to the physical development of new park facilities or associated operations and maintenance costs. The Quimby Act seeks to preserve open space needed to develop parkland and recreational facilities; however, the actual development of parks and other recreation facilities is subject to discretionary approval and is evaluated on a case-by-case basis with new residential development.

Local

City of Sanger Regulations

The City currently utilizes the guidance provided in its General Plan and Zoning Ordinance that protects recreational resources as outlined below:

- | | |
|----------------------------------|--|
| Community Design Framework: | To maintain a small-town atmosphere, the General Plan promotes well-planned, high quality, and pedestrian friendly development with adequate open space and recreational facilities. |
| Land Use and Urban Form Element: | Provide for orderly development of the City that implements the community’s vision for a safe and healthy community through cultural, educational, job, housing, and recreational opportunities. |
| Economic Development Element: | Support development of additional entertainment venues, special events, and recreational opportunities in the downtown and throughout the City. |
| | Encourage development of visitor-serving commercial, including retail and recreation uses, in the downtown, along Academy Avenue north of Jensen Avenue, at Academy Avenue and Highway 180, and at other |

appropriate locations that allows the City to better connect with this important resource.

Circulation and Transport Element: Prepare a Community Pedesteian and Bike Trails Plan that identifies walking and bicycle routes that are appropriate for recreational and commuter use.

OSRPF Element: Provide adequate park and recreational facilities and recreational programs which serve the diverse needs of the community.

Develop, improve, and maintain community and neighborhood park space, trails, and recreational facilities based on goals, development standards, and design criteria as defined in the OSRPF Element, City of Sanger Parks and Recreation Master Plan, and in accordance with the Circulation and Transportation Element.

To the extent possible, provide neighborhood park facilities in areas of existing development adequate in size and designed to serve within ½ miles of the target neighborhood population.

Coordinate, plan, organize, and deliver recreational programs and services that meet the diverse needs of the citizens of Sanger.

Parks shall be designed and developed so as to be safe from crime, easy to maintain, aesthetically pleasing, and readily accessible to users.

Provide a system of recreational trails for pedestrians and bicycles that are pleasant, safe, and convenient, and linked to the community's park system.

The City shall utilize, where feasible, a multiple-use concept in the development and maintenance of new parks and recreational facilities.

Coordinate with other agencies in the planning and management of parks, recreational facilities and programs, and open space.

Fresno County General Plan

Policy OS-H.2 of the Fresno County General Plan states: “The County shall strive to maintain a standard of five (5) to eight (8) acres of County-owed parkland per 1,000 residents in the unincorporated area.

Thresholds of Significance

The thresholds of significance for this section are established by the CEQA Guidelines Appendix G.

- Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?
- Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Impacts and Mitigation Measures

Impact 3.16-1: *Would the project increase the use of exiting neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated OR does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?*

Less Than Significant. Implementation of the proposed GPU would result in an increase in demand for new parkland and recreational facilities within the City and an increase in use of existing facilities. Growth accommodated under the General Plan buildout would include a range of uses that would increase the City’s population, and also attract additional workers and tourists to the City.

The current ratio of parkland to resident in the City is currently 2.1 acres per 1,000 residents; however, the proposed GPU is recommending the City increase its park standard to three acres

per 1,000. Table 3.16-2 demonstrates projections for two park acreage rates: 2-1/2 acres per 1,000 residents and three acres per 1,000 residents.

Table 3.16-2: Park Land Demand Calculations⁵

Year	Population Projection	Incremental Population Increase	Park Land Demand @ 3 acres per 1,000 residents (incremental population increase x 3.0)
2015	25,125 (existing population)	--	--
2020	27,337	2,209	6.6 acres
2025	29,742	2,405	7.2 acres
2030	32,357	2,615	7.8 acres
2035	35,202	2,845	8.4 acres
Totals		10,074 "future" residents	30 acres needed

Using the three acre per 1,000 projection, the City will need 30 acres of additional land by 2035 to accommodate a projected increase of nearly 10,100 residents; however, the City could subtract the 14 acres that is currently owned for future parks, thereby arriving at a total need of approximately 16 acres by the year 2035.

The use of neighborhood parks would also increase, but the level of increase would be less than pronounced, since new subdivisions and development projects would be required to provide adequate parks and open space and/or in-lieu fees. This requirement ensures that adequate parks and recreation facilities keep pace with new development and are provided to serve the development.

The proposed GPU includes several goals, objectives and action plans to ensure that the City's parkland goal is met, that existing parks are maintained or upgraded as needed, and that new facilities are developed as needed:

Sanger Land Use Element: River Lands

⁵ Sanger 2035 GPU Conservation, Open Space, Parks and Recreation Element, Page 4-5.

Goals, Objectives, Action Plans

Goal:

I. Take advantage of the Kings River environs and other water courses that traverse Sanger by establishing bike paths and walking trails along these features.

Objective:

1. Take advantage of the Kings River of the Kings River environs by designing a trail/bike path that will link the urbanized portions of Sanger with the Kings River.

Action Plan:

- a. The City shall work with the County of Fresno to establish a trail system that connects Sanger to the Kings River.

Objective:

2. Develop a “River Park” community park facility on the city-owned site located south of the wastewater treatment plant.

Action Plan:

- b. The City shall identify funding and prioritize construction of specified improvements at the park site.

Sanger Land Use Element: Economic Development

Goals, Objectives, Action Plans

I. Ensure that development impact fees pay for public improvements required by the General Plan and infrastructure master plans.

1. Review Sanger’s development impact fees to ensure that new uses pay their fair share of the cost of providing infrastructure and services, while remaining competitive with other communities.
 - a. The City shall periodically review development impact fees and update them as appropriate to ensure development pays its fair share while remaining competitive with other communities.

b. The City Planner shall identify any new impact fees that would be appropriate for financing other public improvements delineated by the General Plan, and forward a recommendation to the City Council regarding adoption.

Fees that could be included in a revised fee schedule could include, but is not limited to, traffic signals, roadway improvements, railroad crossing improvements, bike/trail paths, community facilities, landscaped medians and fire and police equipment.

Sanger Land Use Element: Parks and Open Space

Goals, Objectives, Action Plans

Goal:

I. Develop a high quality public park and recreation system that is convenient, accessible and affordable to all segments of the City. Based on a ratio of 3 acres per 1,000 residents, the City should add approximately 30 acres of developed park land by the year 2035.

Objective:

1. The General Plan designates within the planning area lands for open space, parks, recreation facilities and other amenities that are linked together with bike paths and pedestrian trails.

Action Plan:

- a. The General Plan land use map designates the location and size of Sanger's existing and future open space, park and recreation facilities.
- b. The Circulation Elements delineates the alignment and design of future pedestrian and bike pathways within the planning area.

Objective:

2. Require developers to dedicate new parks within new subdivisions at a ratio of 3 acres per 1,000 residents. The actual amount of acreage could be less if the developer agrees to install landscape and play equipment improvements equal to the value of the difference in acreage. In lieu of land dedication, the developer shall pay the City's park impact fee.

Action Plan:

- a. The Subdivision Ordinance shall be amended to incorporate the 3:1,000 park land dedication standard. Until the ordinance is amended, this policy shall be considered to be in force.
- b. The City shall review its development impact fee schedule to ensure the park impact fee is adequate to finance the acquisition and improvement of the 3 acres per 1,000 persons standard.

Objective:

3. Parks should be centrally located within the neighborhood or subdivision they serve. Further, the subdivision should be designed so that homes face onto the park – thereby providing added security by ensuring there are “eyes on the park” at all times.

Action Plan:

- a. The City shall amend its Design Guidelines and Standards to illustrate the preferred design of future parks relative to a proposed subdivision.

Objective:

4. Establish new parks in the northeast and southwest quadrants of the community in order to maximize the accessibility of residents in these quadrants to park and recreation facilities. The construction of these facilities can also serve to promote additional residential growth in these sections of Sanger.

Action Plan:

- a. The City will continue to secure funding sources for the planning, design and construction of these parks. Cities can often finance the construction of parks and recreation facilities, but the long-term maintenance of these facilities can be challenging. Cities have passed sales tax measures, utility taxes and parcel taxes to assist in the maintenance of these facilities. Absent these taxing options two other strategies could be employed by the City: 1) place local or neighborhood parks within a landscaping and lighting district; or 2) process all new residential subdivisions through a Development Agreement. This Agreement could require allocation of residential assessments towards maintenance of the local parks.

Goal:

II. Ensure that parks and recreation programs are adequately funded and maintained.

Objective:

1. The City should review and maintain its development impact fee schedule to ensure that its park fee is adequate to purchase and construct park land to achieve the park and open space facilities delineated in the Land Use Element.

Action Plan:

- a. The City Engineer shall periodically review the development impact fee schedule and initiate action by the City as necessary to maintain appropriate park fees, consistent with the State Mitigation Fee Act and the State Subdivision Map Act.

Objective:

2. The City should seek state and federal grants for the purchase and development of open space and park facilities.

Action Plan:

- a. The City shall dedicate resources to identify and secure funding for park and recreational resources.

Objective:

3. The City should establish and adopt a park program so that interested residents, service clubs and businesses can help to maintain parks.

Action Plan:

- a. The Parks and Recreation Department will oversee this program.

Sanger Land Use Element: Recreation

Goals, Objectives, Action Plans

Goal:

- I. Develop a recreation program that involves all segments of the Sanger population.

Objective:

1. The City should endeavor to provide programs for youth, adults and senior citizens.

Action Plan:

- a. The City should work with other public and private entities in coordinating activities for youth, adults and seniors. Other entities could include the school district, the County of Fresno, and local social agencies such as the Boys and Girls Club, AYSO Soccer, and YMCA. The ultimate result should be a program of regularly scheduled “league-type” activities, such as soccer, baseball and basketball games.

Goal:

II. Develop a recreation program that pays for itself through the collection of user fees.

Objective:

- 1. The City should fund a recreation program that is supported through the collection of program fees.

Action Plan:

- a. The City should analyze fees on an annual basis to ensure they cover the costs of the particular program.
- b. The City should seek outside funding in the form of state and federal grants and local contributions.

This Draft EIR addresses the potential impacts of development that may occur under buildout of the proposed General Plan Update, including residential, commercial, office, public facilities (including parks), and a range of other uses that are accommodated by the General Plan. The policies identified in the proposed General Plan and compliance with the Quimby Act would reduce the potential for implementation of the proposed project to result in increased impacts to public recreational facilities including parks, and the provision of recreational services. Future development would be required to be consistent with the proposed General Plan, the General Plan Land Use Map, and State requirements.

The implementation of the project is intended to ensure that development in the Sanger planning area protects park and recreational facilities through a continued effort to supply adequate, high quality facilities throughout the planning area. General Plan buildout would have a *less than significant impact* to parks and recreational facilities. See the topical sections of Chapter 3 for discussion of specific environmental impacts, including but not limited to aesthetics, air quality, noise, and traffic, that would occur with development under the General Plan, including development of new and expanded public services facilities as accommodated by the Land Use

Map, associated with the environmental effects of new or expanded parks and recreational facilities.

Mitigation Measures: None are required.

Cumulative Impacts

Less Than Cumulatively Considerable Impact. The scope for considering cumulative impacts to recreational facilities is generally area-specific rather than cumulative in nature because each project site has different recreational considerations that would be subject to review. The service area for the City's recreational services is considered the cumulative analysis area. Cumulative growth that would occur over the life of the General Plan and Master Plan will result in increased demand for public services, including parks and recreational services. As the demand for recreation increases, there will likely be a need to increase staffing and equipment in order to maintain acceptable performance standards. New or expanded recreational facilities will be needed to serve growth within the cumulative analysis area. As described above, the project includes a range of Goals, Objectives and Action Plans that would ensure that new development funds its fair share of services.

The General Plan and North Academy Corridor Master Plan includes policies to ensure that recreational services keep pace with new development and that other governmental services are adequately planned and provided. The General Plan includes policies to meet adopted and acceptable public services standards and to ensure future development pays its fair share for impacts to recreational services. With implementation of General Plan Goals, Objectives and Action Plans, including those established by the proposed project, the proposed project's incremental contribution to cumulative recreation impacts would be *less than cumulatively considerable*.

3.17 Transportation/Traffic

This section of the DEIR identifies potential impacts of the General Plan Update and Master Plan pertaining to transportation and traffic. The technical information in this section is based on the Circulation Element and Appendices prepared by Omni-Means/GHD. That document included Traffic Counts, SYNCHRO Reports, Traffic Signal Warrant Worksheets and is included in the General Plan Circulation Element document. In addition, a Transportation Impact Analysis Report was prepared specifically for the North Academy Corridor Master Plan and is included as Appendix D. No IS/NOP comment letters were received pertaining to this topic.

Environmental Setting

Sanger is located in the San Joaquin Valley between the two largest metropolitan areas in California – San Francisco to the north and Los Angeles to the south. Fresno, California’s fifth largest city, is located approximately 13 miles to the northwest. Other nearby cities include Reedley (approximately 7 miles southeast of the City) and Parlier (approximately 4.5 miles south of the City). Major transportation routes in the San Joaquin Valley run generally north/south and include State Route 99, Interstate 5, the Union Pacific Railroad line, and the Burlington Northern and Santa Fe Railroad line. Several highways and some rail lines cross the San Joaquin Valley in an east/west direction including State Routes 4, 120, 152, 198 and 58 among others.

The study area for Project impacts regarding transportation and traffic is the Planning Area and the areas surrounding the Project boundaries (in Fresno County) where potential development under the Project could affect areas inside and outside the Planning Area.

Local Circulation System

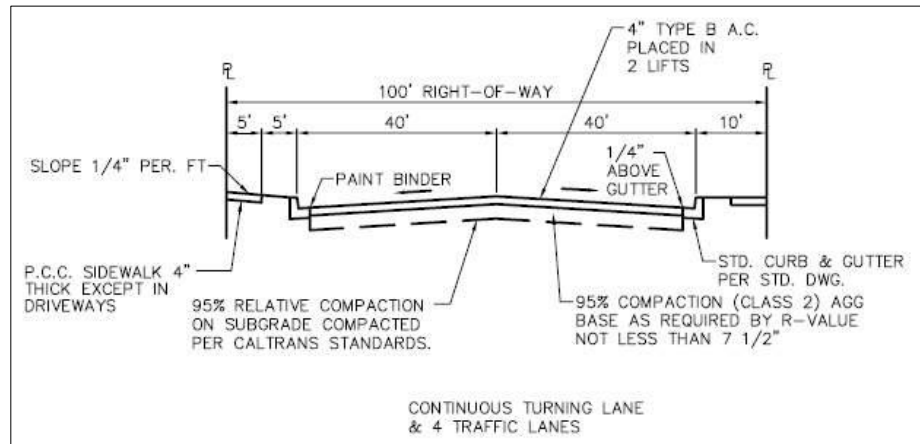
The City of Sanger contains a series of streets and roads used by automobiles, trucks, buses and other motorized and non-motorized vehicles to move within and beyond the city limits. Sanger’s roadway system is set up around a hierarchy of street types, which are commonly referred to as functional classifications. These functional classifications for most streets are summarized as follows:

Arterials

Arterials collect and distribute traffic from freeways and expressways to collector streets and vice versa. On arterials, the optimum distance between intersections is approximately one quarter mile. Other intersections closer than one quarter mile should be restricted to right turn access. Based upon the City of Sanger Standard Details (Figure 3.17-1), the arterial right-of-way widths

range from 80 feet to 120 feet (with bike lanes). Arterials generally feature two thru lanes of traffic in each direction with a left turn channelization and/or a continuous turn lane. The minimum median width is 16 feet.

Figure 3.17-1: Typical Arterial Cross Section



The following arterials are identified in the City of Sanger's General Plan circulation system:

Academy Avenue is a north/south arterial located in central Sanger and bisects the community. Academy Avenue is a regional route in Fresno County that extends from the City of Kingsburg in the south to State Route 180 in the north. Through the City of Sanger, Academy Avenue is a four-lane divided and undivided arterial throughout the city limits between Central Avenue and California Avenue. Academy Avenue serves many land uses in Sanger, including residential, commercial, retail, industrial, medical and agricultural.

Annadale Avenue provides east/west travel in central Sanger between N Street and the eastern city limits. Annadale Avenue is primarily a four-lane undivided arterial in central Sanger that serves a variety of land uses, including residential, commercial, industrial and strip retail. East of Newmark Avenue, Annadale Avenue transitions into a two-lane undivided roadway as it travels outside the city limits to Reed Avenue in Fresno County where it eventually terminates.

Bethel Avenue is a north/south aligned arterial generally consisting of a four-lane divided roadway between North and California Avenues in western Sanger. Also a regional route in Fresno County, in its entirety Bethel Avenue extends from State Route 99 (near Kamm Avenue) in the south to Ashlan Avenue in the north. In Sanger, Bethel Avenue serves a variety of residential, institutional (educational, religious), commercial, retail and industrial land uses.

California Avenue is an east/west aligned future arterial in the northern portion of Sanger. California Avenue is currently a two-lane, undivided roadway from McCall Avenue to Indianola Avenue in northwest Sanger and between Academy Avenue in central Sanger and Rainbow Avenue in eastern Sanger. California Avenue is planned to provide east/west travel in northern Sanger and will be constructed to arterial standards in the city limits (north of the railroad tracks) and fill in the existing gap between Indianola and Academy Avenues. This roadway currently serves residential and agricultural land uses (refer to the discussion under the impact evaluation section of this chapter for more information pertaining to planned improvements in the area).

Central Avenue provides east/west circulation in southern Sanger between McCall Avenue and Newmark Avenue. As a regional Fresno County route, Central Avenue extends west to State Route 145 south of Kerman and has an interchange at State Route 99 south of Fresno. In Sanger, Central Avenue is a two-lane, undivided roadway that will be built to arterial standards in the future to serve future development. Central Avenue is currently served by residential and agricultural land uses.

Goodfellow Avenue offers east/west travel in southeastern Sanger and is an eastward extension of Central Avenue. This existing two-lane undivided arterial extends from Newmark Avenue east to Reed Avenue north of Reedley. Primarily an agricultural corridor, Goodfellow Avenue provides access to scattered single-family residences.

Jensen Avenue is a major east/west regional route in Fresno County extending from Butte Avenue southwest of Kerman to Faller Avenue in eastern Sanger. Within the Sanger city limits, this arterial street is a four-lane divided roadway from McCall Avenue to Bethel Avenue and a four-lane undivided roadway from Bethel Avenue to Academy Avenue. East of Academy Avenue, Jensen Avenue picks up again and is a two-lane undivided roadway between L Street and Faller Avenue. Land uses served on this corridor include residential, commercial, retail, medical, industrial and agricultural.

8th Street provides east/west circulation as an arterial street between L Street and Newmark Avenue in central Sanger east of Academy Avenue. Although this street is not as wide as a standard arterial, it provides access to the central business district and provides on-street parking and sections of sidewalks and bike lanes. 8th Street primarily serves residents of Sanger and provides access to strip commercial uses and a small city park at L Street.

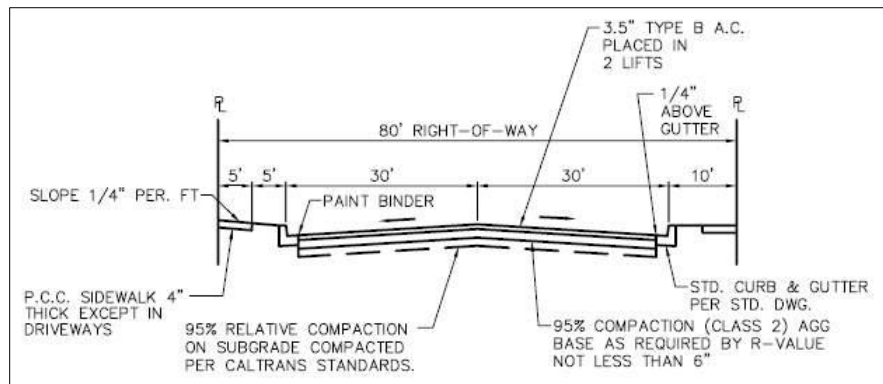
State Route 180 is a regional highway facility that is located north of Sanger. This route begins in Fresno and heads east to Sequoia/Kings Canyon National Parks. Near Sanger, State Route 180 is a four-lane divided expressway that carries an annual average daily traffic (AADT) count of

approximately 13,400. The future concept for State Route 180/Academy Avenue includes a modern interchange (refer to the discussion under the impact evaluation section of this chapter for more information pertaining to planned improvements in the area).

Collectors

Collectors connect local and arterial streets and provide direct access to parcels. Collector right-of-way widths range from 60 feet to 92 feet (with bike lanes). This width would typically accommodate two 30-foot travel lanes and 10 feet on each side to provide for sidewalks, bike lanes and parking. Figure 3.17-2 is the typical section for collector streets from City Standards.

Figure 3.17-2: Typical Collector Cross Section



The following are some of the critical collectors designated in the current City of Sanger's General Plan circulation system:

Almond Avenue is an undivided two-lane collector that runs in an east/west orientation. Almond Avenue is located in west Sanger and connects travelers between Bethel Avenue and Greenwood Avenue.

Butler Avenue is currently an east/west collector street between Academy Avenue and Quality Avenue in northeastern Sanger. It is planned to connect from Indianola Avenue and Academy Avenue in the future as development occurs between State Route 180 and Sanger. Butler Avenue is a two-lane undivided rural road that serves agricultural and limited residential land uses.

Church Avenue is an important east/west undivided two-lane collector that serves Sanger between Bethel Avenue and Greenwood Avenue and from Hill Avenue to Quality Avenue. With a pavement width of 56 feet, this route serves a school, residences, businesses and a church. Sections along the Church Avenue corridor are ideal for future Class II Bike Lanes as a result of the mixed land uses and wide road.

Faller Avenue is a north/south collector located in central and east Sanger. This two-lane undivided street extends from North Avenue to Geary Avenue. Faller Avenue fronts many residences and also serves several city parks and a school. Faller Avenue is another good facility to consider extension of the Class II Bike Lanes south of 8th Street.

Greenwood Avenue provides north/south connections in western Sanger between the southern city limits and Oak Avenue. This two-lane undivided collector offers access to many land uses, including agricultural uses to the south and a variety of mixed uses (residential, quasi-public, commercial, etc.) throughout the city.

Harrison Avenue is a two-lane undivided roadway that extend in its entirety from south of 9th Street to Church Avenue; however, it is designated as a collector street north of 5th Street (¼ mile) to Church Avenue. Harrison Avenue primarily serves residential neighborhoods and provides access to a local church.

Newmark Avenue is a two-lane undivided street in southeast Sanger. The limits of Newmark Avenue extend from the southern city limits to 8th Street travelling east of and adjacent to an irrigation canal. Due to the limited canal crossings, much of the traffic originating on Newmark Avenue is derived from agricultural land and residences north of Annadale Avenue (where a canal crossing exists).

North Avenue runs in an east/west direction in south Sanger. A two-lane undivided collector, North Avenue extends from Indianola Avenue east of Newmark Avenue. Portions of North Avenue contain sidewalks and/or multi-use paths. Mixes of land use make North Avenue a candidate for Class II Bike Lanes.

O Street generally runs in a north/south orientation west of and adjacent to Academy Avenue in downtown Sanger. O Street spans from North Avenue to Canal Drive, just north of Church Avenue. This two-lane undivided collector primarily serves single and multi-family residences of Sanger and also serves small businesses and several churches. Portions of O Street contain sidewalks and Class II Bike Lanes.

Rainbow Avenue travels diagonally between 8th Street and Riverbend Avenue in northeastern Sanger. This two-lane undivided collector is an extension of Newmark Avenue and travels beyond the city limits past California Avenue. Rainbow Avenue is west of the canal.

Riverbend Avenue is a future collector on the eastern outskirts of Sanger. As a two-lane undivided collector from Goodfellow Avenue north to Rainbow Avenue, Riverbend Avenue serves rural residents of Fresno County and the community of Centerville. (refer to the discussion

under the impact evaluation section of this chapter for more information pertaining to planned improvements in the area).

Quality Avenue is designated as a collector street between Church Avenue and California Avenue in north Sanger. This rural north/south oriented street is approximately $\frac{3}{4}$ of a mile east of Academy Avenue and primarily serves single family residences and agricultural land.

5th Street is a downtown collector between Bethel Avenue and Harrison. Sanger Park, residences and businesses access 5th Street to travel east/west in central Sanger. Crossing Academy Avenue, this two-lane collector has Class II Bike Lanes and sidewalks along portions of the street.

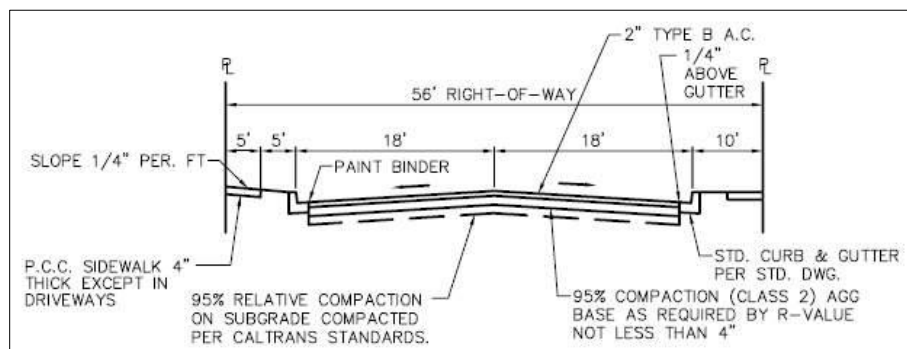
7th Street is also an east/west two-lane undivided road in central Sanger. 7th Street is designated as a collector between Greenwood Avenue and Academy Avenue where residents and small businesses are located. **9th Street** also provides east/west travel in central Sanger. 9th Street is a designated collector between Bethel and Faller Avenues. Several land uses, including residences, businesses, schools, churches and industrial development are found along the 9th Street corridor.

14th Street is a short ($\frac{1}{2}$ mile long) two-lane divided collector that is located between Greenwood and Sanger Avenues. 14th Street is the physical southern boundary of Sanger High School and is characterized by having wide sidewalks and a Class II Bike Lane on both sides of the street.

Local Streets

Local streets provide direct access to parcels. Local streets represent the largest part of the city's circulation system. Access to local streets is unrestricted and right-of-way width is 56 feet (as shown in Figure 3.17-3), depending on surrounding land uses (City of Sanger Standard Details). All roadways not identified in the General Plan as freeways/expressways, arterials, or collectors are designated local streets.

Figure 3.17-3: Typical Local Street Cross Section



Although the City of Sanger Standard Details provide guidance on cross-section widths and the City has preserved right-of-way along street corridors for future transportation-related improvements, street designs may vary with regard to raised medians, travel lanes for vehicles, bicycle lanes, parking and sidewalks within these cross sections. Local right-of-way widths range from 36 feet to 68 feet (with bike lanes). Future roadways will be developed on a street by street basis, according to direction from the City.

Sanger City Transit

The City of Sanger provides a local transit route to provide an alternative mode of transportation within the City. There is a demand responsive service provided for the elderly and disabled passengers in the community from 7:00 a.m. to 5:30 p.m., Monday through Friday, and Saturday from 8:00 a.m. to 5:00 p.m. The scheduled, fixed-route service is provided in the community Monday through Friday from 7:00 a.m. to 4:00 p.m.

Fresno County Rural Transit Agency

Sanger is one of several cities/communities served by Fresno County Rural Transit Agency (FCRTA). FCRTA services are generally available Monday through Friday from 7:00 a.m. to 5:30 p.m. Currently, FCRTA has 18 transit subsystems that are available to the elderly (60+), disabled, low income, and general public patrons within each of the thirteen rural incorporated cities of Fresno County, including Coalinga, Firebaugh, Fowler, Huron, Kerman, Kingsburg, Mendota, Orange Cove, Parlier, Reedley, Sanger, San Joaquin, and Selma.

Passenger fares are subsidized to be reasonable and to encourage frequent trips. Fares for service within a community range from \$.35 (for elderly, disabled, and accompanied children) to \$.50 (for the general public) per one-way trip. Fares for intercity service are generally half the fares granted to common carriers by the California Public Utilities Commission, they range from \$.75 to \$6.50 per one-way trip, depending upon distance traveled.

Within the City of Sanger, fixed route services provided by FCRTA are included along the Orange Cove Transit line. Transit service is provided between the City of Fresno and Orange Cove with stops in Sanger and Parlier. Transit stops for the Orange Cove line in Sanger are at the following locations:

- Academy & North (Southgate Shopping Center/99 Cents Store/EDD Office)
- 8th & Recreation (Sanger Community Center)
- 7th & West (Sanger City Hall)

- Jensen & Bethel (Sanger Hospital)

Bicycling

Sanger residents live in a flat terrain, making it ideal for bicycle travel. Biking is used for trips to school, work, recreational areas, local stores and for exercise. The City of Sanger Standard Details includes additional right of way for bike lanes as follows: 12 feet for local and collector streets and 20 feet for arterial streets. Therefore, a minimum of 6 feet on each side of the street can be utilized for bicycle lanes.

Bicycle Routes

Figure 3.17-4 identifies existing Class I and Class II Bikeways in the City of Sanger. In addition, the map also shows designated bike lanes located on existing streets (proposed bike lanes) and designated bike lanes on future streets (future alignment to include bike lanes). As shown in Figure 3.17-4, existing Class I Bikeways are located on the southeast side of Holt Avenue and the northeast side of Acacia Avenue in northwest Sanger. Existing Class II Bike Lanes are located along portions of Academy Avenue, 14th Avenue, O Street, 5th Avenue and 8th Avenue.

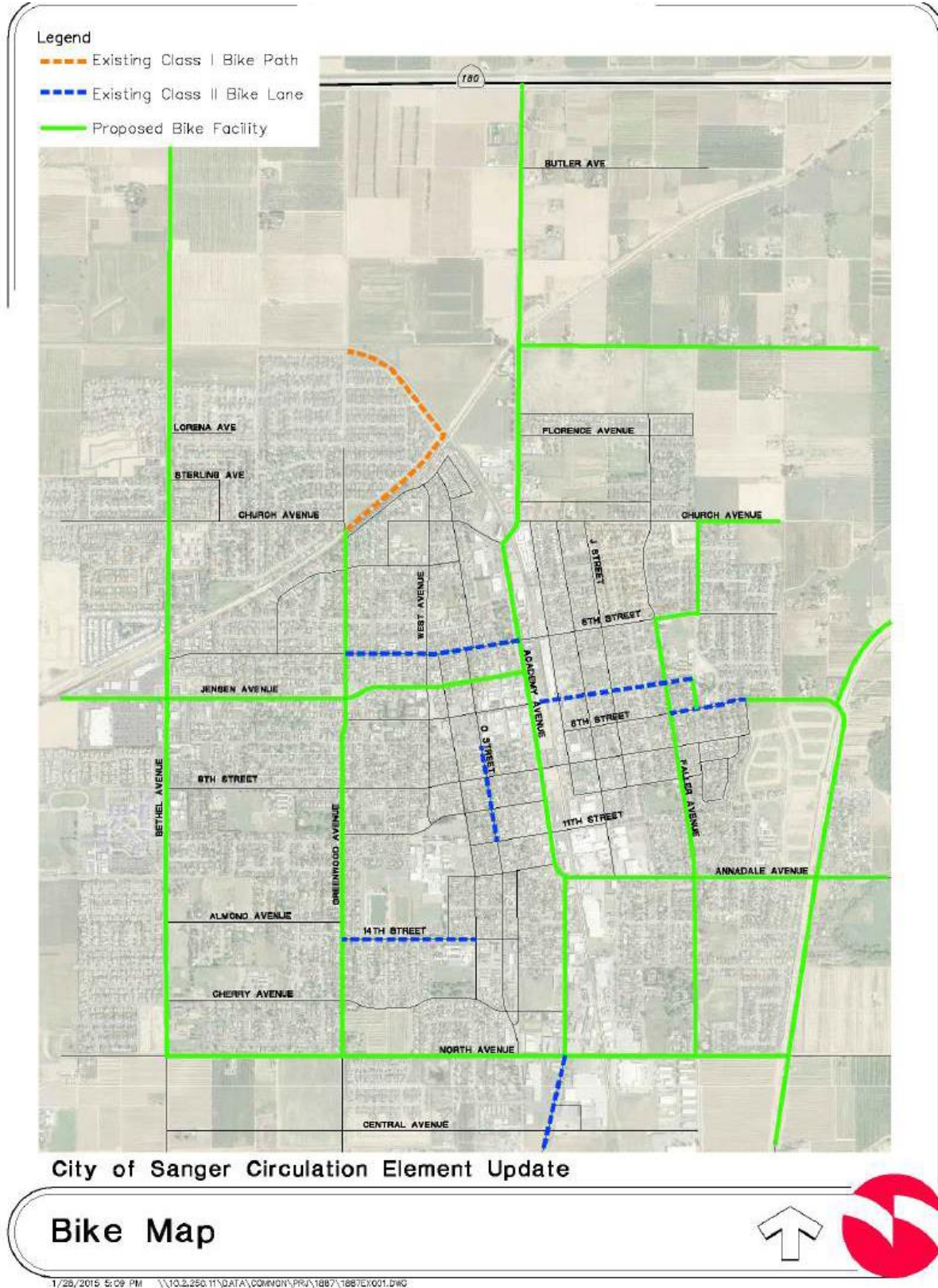
Pedestrian

A pedestrian is a person traveling on foot, whether walking or running. In some communities, those traveling using small wheels such as roller skates, skateboards, and scooters, as well as wheelchair users, are also included as pedestrians. In modern times, the term [pedestrian] usually refers to someone walking on a road or sidewalk.

Regular walking is important both for human health and for the natural environment. Frequent exercise, such as walking, tends to reduce the chance of obesity and related medical problems. In contrast, using a car for short trips tends to contribute both to obesity and via vehicle emissions to air pollution and climate change: internal combustion engines are more inefficient and highly polluting during their first minutes of operation (engine cold start). General availability of public transportation encourages walking, as it will not, in most cases, take one directly to one's destination.

Roads often have a designated footpath for pedestrian traffic, called a sidewalk. There are also pedestrian paths not associated with a road; these include urban short cuts and rural paths used mainly by people going for walks or going to the store, neighbor's house, etc. Pedestrians share some trails with horses and bicycles. Other byways used by walkers are also accessible to vehicles. There are also many roads with no sidewalks. Some modern towns are designed with the network of sidewalks and cycle paths almost entirely separate from the road network.

Figure 3.17-4: Bike Map



The term trail is also used by the authorities in some countries to mean any footpath that is not attached to a road or street. If such footpaths are in urban environments and are meant for both pedestrians and bicyclists, they can be called shared-use paths or multi-use paths in general and official usage.

In Sanger, pedestrian travel would be in the category identified as “semi-contiguous sidewalks with heavy usage near schools.” As observed in the field review and shown in photographs of typical street sections in Sanger, several sections of the streets and roads have significant sidewalks. Some roads have no curbs and sidewalks, but the majority has curb, gutter or sidewalk. Constraints to pedestrian travel occur primarily at major crossings, e.g., at a railroad track or at a canal.



Acacia Trail in Northwest Sanger

Rail

The Sanger Railroad Depot was built in 1887 next to the Southern Pacific Railroad line that connected Fresno to Porterville. Sanger became a center for shipping grain, citrus and lumber from the nearby mountains. When the depot was retired, it was the oldest building in the city and was donated to the Sanger Historical Society, which turned it into the Sanger Depot Museum in 1977.

Currently, there is one active railroad line in the City of Sanger. The San Joaquin Valley Railroad (SJVR) extends from the City of Fresno southeast to Exeter (Tulare County) bisecting Sanger. The railroad corridor is for goods movement only, i.e., non-passenger. Primarily used to move freight, SJVR hauls goods to market, agricultural equipment and other heavy apparatus.

From the south, SJVR travels east of and adjacent to Academy Avenue until Church Avenue where it crosses the canal and heads to the west, south of California Avenue alignment.

According to the California Public Utility Commission (CPUC) Rail Crossing List, there are nine (9) at-grade rail crossings within the vicinity of Sanger with a variety of warning devices:

- Academy Avenue (gates);
- 5th Street (passive);
- 7th Street (flashers);
- 9th Street (gates);
- 11th Street/M Street (passive);
- Annadale Avenue (gates);
- North Avenue (gates);
- Muscat Avenue (gates); and,
- Central Avenue (gates).

The route of the tracks and crossings are shown in map 1-6. All of these rail crossings are identified as “not private crossings” according to the CPUC. The distance between these crossings is 2.4 miles between SJVR mile-post 219.3 and 221.7.

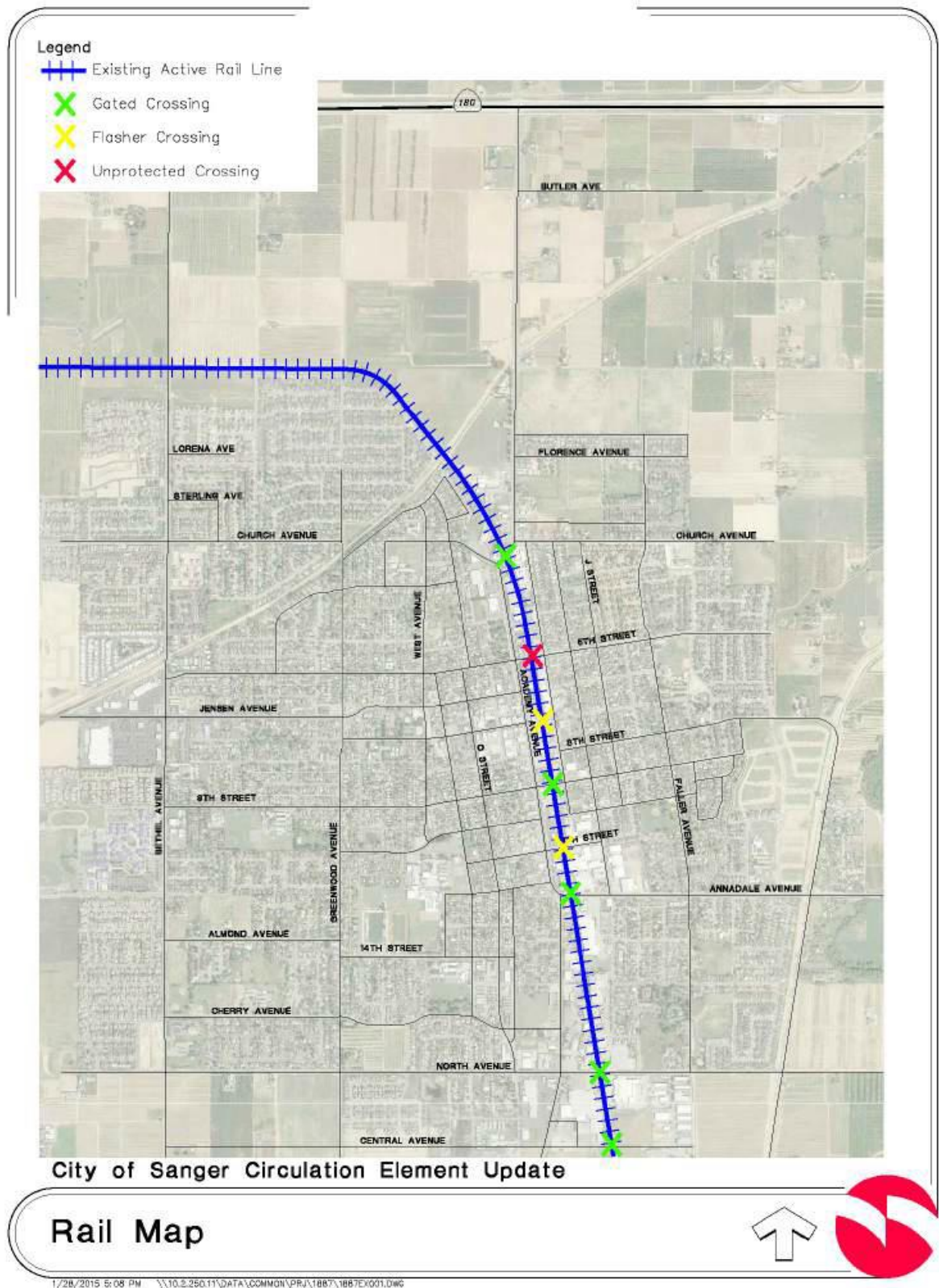
Passenger Rail Service

Amtrak provides regional and national railway service in Fresno County. The nearest Amtrak Station is located in the City of Fresno, at 2650 Tulare Street.

The San Joaquin (sometimes referred to as San Joaquins) is a passenger train operated by Amtrak, with funding from the California Department of Transportation as part of the Amtrak California network in California’s Central Valley. Twelve trains a day run between its southern terminus at Bakersfield and Stockton, where the route splits to Oakland (four trains each way per day) or Sacramento (two trains each way per day). At Bakersfield, Thruway Motorcoach service offers connections to the Pacific Surfliner at Los Angeles Union Station, several points in Southern California, the High Desert and the Central Coast. At Emeryville, Thruway Motorcoach service offers connections to San Francisco.

The San Joaquin is Amtrak's fifth-busiest service and the railroad's third-busiest in California. During fiscal year 2013 (FY 2013), the service carried a record 1.2 million passengers, a 6.6% increase from FY 2012.

Figure 3.17-5: Rail Map



Amtrak's San Joaquin has six southbound trains (between 6:00 AM and 9:55 PM) and six northbound trains (between 6:05 AM and 11:50 PM). Travelers from Sanger would have to travel by private vehicle approximately 15 miles. Public transportation users, i.e., FCRTA, would have to coordinate with bus schedules on the Orange Cove Transit Line to/from downtown Fresno Transit Station (approximately four blocks west of the Fresno Santa Fe Passenger Depot). Dial-A-Ride service for Sanger residents is also available during regular business hours.

Aviation

The City of Sanger does not have a municipal airport. The nearest commercial airport is Fresno Yosemite International Airport. Fresno Yosemite International Airport is a joint civil-military public airport in eastern Fresno, approximately 10 miles northwest of the City of Sanger via State Route 180/Peach Avenue.

The airport covers 2,150 acres and has two runways and one helipad. The airport is the air transport center for the San Joaquin Valley, with flights to airline hubs throughout the Western United States. International flights to/from Mexico are also available. Fresno Yosemite International Airport is also home to the Fresno Air National Guard Base and the 144th Fighter Wing (114 FW) of the California Air National Guard.

Daily departures for FYI commercial travel are available to the following destinations:

- Dallas
- Denver
- Guadalajara, Mexico
- Las Vegas
- Los Angeles
- Phoenix
- Portland
- Salt Lake City
- San Diego
- San Francisco
- Seattle

Regulatory Setting

Federal and State Regulations

Several federal regulations govern transportation issues. They include:

- Title 49, CFR, Sections 171-177 (49 CFR 171-177), governs the transportation of hazardous materials, the types of materials defined as hazardous, and the marking of the transportation vehicles.
- 49 CFR 350-399, and Appendices A-G, Federal Motor Carrier Safety Regulations, address safety considerations for the transport of goods, materials, and substances over public highways.
- 49 CFR 397.9, the Hazardous Materials Transportation Act of 1974, directs the U.S. Department of Transportation to establish criteria and regulations for the safe transportation of hazardous materials.

California Department of Transportation (Caltrans)

The California Department of Transportation (Caltrans) is responsible for operating and maintaining the State highway system. In the project vicinity, State Routes 41, 99, and 180, along with all the freeway ramp terminal intersections, fall under Caltrans jurisdiction. Caltrans provides administrative support for transportation programming decisions made by the California Transportation Commission (CTC) for state funding programs. The State Transportation Improvement Program (STIP) is a multi-year capital improvement program that sets priorities and funds transportation projects envisioned in long-range transportation plans.

State of California Transportation Department Transportation Concept Reports

Each District of the State of California Transportation Department (Caltrans) prepares a Transportation Concept Report (TCR) for every state highway or portion thereof in its jurisdiction. The TCR usually represents the first step in Caltrans' long-range corridor planning process. The purpose of the TCR is to determine how a highway will be developed and managed so that it delivers the targeted LOS and quality of operations that are feasible to attain over a 20-year period, otherwise known as the "route concept" or beyond 20 years, for what is known as the "ultimate concept".

California Public Utilities Commission

The California Public Utilities Commission (CPUC) sets guidelines for interactions between railroad facilities and ground transportation facilities. This includes location and type of crossing guards, design of railroad crossings, and other design criteria in and around railroad facilities. The guidelines come in the form of General Orders.

The California Complete Streets Act (AB 1358)

In 2010, the Governor’s Office of Planning and Research (OPR) published Update to the General Plan Guidelines: Complete Streets and the Circulation Element to amend the General Plan Guidelines to assist cities and counties meeting the requirements of AB 1358 to plan for the development of multimodal facilities. The goal of the AB 1358, and for the City of Sanger, is to provide information on how a city can plan for a well-balanced, connected, safe and convenient multimodal transportation network. As indicated in the Bill, the network should consist of complete streets that are designed for and constructed to serve all users of streets, roads and highways, regardless of their age or ability, or whether they are driving, walking, bicycling or taking transit.

On September 30, 2008, the Governor of California signed Assembly Bill 1358, the California Complete Streets Act. This Bill was designed to fulfill the commitment to reduce greenhouse gas emissions, make the most efficient use of urban land and transportation infrastructure, and improve public health. This would be accomplished by encouraging physical activity and reducing vehicle miles traveled (VMT) by shifting from short trips in the automobile to biking, walking and use of public transit. Today, many cities and counties within California have been implementing programs to increase alternative modes of transportation within their respective jurisdictions. It is anticipated that the City of Sanger will continue to work with the local community to further implement local improvements to reduce VMT and offer a variety of transportation modes for its residents. The legislation impacts local general plans by adding the following language to Government Code Section 65302(b)(2)(A) and (B):

- (A) Commencing January 1, 2011, upon any substantial revision of the circulation element, the legislative body shall modify the circulation element to plan for a balanced, multimodal transportation network that meets the needs of all users of the streets, roads, and highways for safe and convenient travel in a manner that is suitable to the rural, suburban, or urban context of the general plan.
- (B) For the purposes of this paragraph, “users of streets, roads, and highways” means bicyclists, children, persons with disabilities, motorists, movers of commercial goods, pedestrians, users of public transportation, and seniors.

Assembly Bill 32 and Senate Bill 375

The California State Legislature passed Assembly Bill 32 (AB 32), The Global Warming Solutions Act of 2006. AB 32 requires the State of California to reduce its GHG emissions to 1990 levels no later than 2020. Senate Bill 375 (SB 375) builds on the existing regional transportation planning

process undertaken by the state's 18 Metropolitan Planning Organizations (MPOs) to connect the reduction of GHG emissions from cars and light trucks to regional land use and infrastructure planning. According to the California Air Resources Board (CARB), passenger vehicles are the number one emitter of GHG emissions in California. SB 375 asserts that "Without improved land use and transportation policy, California will not be able to achieve the goals of AB 32."

The main objectives of SB 375 are:

- (1) To use the regional transportation planning process to direct funding to transportation projects that reduce GHG emissions by coordinating land use and transportation planning;
- (2) To use the California Environmental Quality Act (CEQA) streamlining as an incentive to encourage residential development projects that help achieve AB 32 GHG emission reduction goals; and,
- (3) To coordinate the state's requirements for regional housing development and planning with the regional transportation planning process.

Senate Bill 743

California's Governor signed Senate Bill (SB) 743 (Steinberg, 2013) that creates a process to change the way that transportation impacts are analyzed under CEQA. Specifically, SB 743 requires the Governor's Office of Planning and Research (OPR) to amend the CEQA Guidelines to provide an alternative to LOS for evaluating transportation impacts. Particularly within areas served by transit, those alternative criteria must "promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses. (New Public Resources Code Section 21099(b)(1)). Measurements of transportation impacts may include "vehicle miles traveled, vehicle miles traveled per capita, automobile trip generation rates, or automobile trips generated." OPR also has discretion to develop alternative criteria for areas that are not served by transit, if appropriate.

Once the CEQA Guidelines are amended to include those alternative criteria, auto delay will no longer be considered a significant impact under CEQA. Transportation impacts related to air quality, noise and safety must still be analyzed under CEQA where appropriate. SB 743 also amended congestion management law to allow cities and counties to opt out of LOS standards within certain infill areas. (See Amended Government Code Sections 65088.1 and 65088.4). Aside from changes to transportation analysis, SB 743 also included several important changes to CEQA that apply to transit-oriented developments, including aesthetics and parking.

Regional Policies and Regulations

Regional Transportation Plans (RTPs)

Each regional transportation planning agency, including federally recognized MPOs [Fresno COG] and state recognized Regional Transportation Planning Agencies (RTPA), is required to prepare and adopt an RTP. The RTP's goal is to achieve a coordinated and balanced regional transportation system. The plan should consider all transportation systems, as well as their users and associated facilities and services including, but not limited to: mass transit, highways, railroads, bicycle, walking, goods movement, maritime, and aviation. The plan is meant to be action-oriented and pragmatic and to consider both short-term and long-term system issues. An RTP establishes the region's priorities for funding transportation infrastructure projects and other transportation programs.

The 2010 Regional Transportation Plan Guidelines (RTP Guidelines), approved by the California Transportation Commission (CTC) and prepared by Caltrans, summarizes RTP requirements in both federal and state law. State law directs the RTP to “present clear, concise policy guidance to local and state officials” and to “consider and incorporate, as appropriate, the transportation plans of cities, counties, districts, private organizations, and state and federal agencies” An RTP must be consistent with the RTP Guidelines.

Additionally, the 2016 RTP Guidelines Update [to be implemented in 2016/17] reiterates the RTP's commitment to and focuses on the following topics:

- Public Health, Equity and Active Transportation
- Sustainable Community Strategy/Alternative Planning Strategy
- Environmental Considerations
- Modeling
- Freight
- Performance Measures & State and Federal Regulations
- Other Policy Areas as Needed

Although it is not legislatively required, the RTP Guidelines suggest that MPOs and RTPAs include local multimodal transportation policies in their plans. The RTP Guidelines recommend that regional transportation agencies integrate multimodal transportation network policies into their RTPs, identify the financial resources necessary to accommodate such policies, and consider accelerating programming for projects that retrofit existing roads to provide safe and convenient travel by all users. The guidelines also encourage MPOs and RTPAs to work with jurisdictions and agencies within their region to ensure that general plan circulation elements and local street

and road standards include the necessary planning, design, construction, operations, and maintenance procedures, to support all transportation system users.

Fresno County Regional Active Transportation Plan

The Fresno Council of Governments (FCOG or Fresno COG) developed an Active Transportation Plan (ATP or Plan) with the intent of providing a comprehensive document outlining the future of walking and bicycling in Fresno County.

The purpose of the ATP was to equip Fresno COG's member agencies, such as the City of Sanger, with the tools to better compete for funding sources that support ATPs and related projects. The ATP was developed to accomplish the following goals:

- Create a network of safe and attractive trails, sidewalks, and bikeways that connect Fresno County residents to key destinations, especially local schools, parks and transit.
- Create a network of regional bikeways that allows bicyclists to safely ride between cities and other regional destinations.
- Increase walking and bicycling trips in the region by creating user-friendly facilities.
- Increase safety by creating bicycle facilities and improving crosswalks and sidewalks for pedestrians.

San Joaquin Valley Blueprint

As part of the regional transportation planning process, Fresno COG and its member agencies, including the City of Sanger, are involved in the San Joaquin Valley Blueprint Planning Process. As a result of legislation associated with AB 32 and SB 375, the Blueprint Planning Process is heavily dependent upon creating land use patterns and development that reduce vehicle miles travelled (VMT) thereby decreasing automobile emissions and improving air quality. With the goal of reducing GHG emissions, the Valley Blueprint is a vision for the future of the San Joaquin Valley, in which less land is consumed for development, more resources are preserved for future generations, distinctive communities are enhanced and more travel choices are available.

City of Sanger Plans and Regulations

General Plan Update – Circulation Element

Goals in the City's Circulation Element are refined into objectives and action plans. These represent concrete actions the city will take to ensure that goals are realized. Circulation Element Goals, objectives and action plans are organized under the following topics:

1. Overall System Level

2. Streets and Highways
3. Public Transportation System
4. Non-Motorized Transportation
5. Goods Movement
6. Complete Streets

The applicable objectives and action plans from the Circulation Element are included in the impact analysis section of this chapter.

Existing Conditions

Existing Traffic Operating Conditions

Sanger's roadways were evaluated from data based upon 2014 average annual daily traffic (AADT) counts (2014 is when the General Plan Update process first commenced). Intersection facilities were evaluated for the AM and PM peak-hour based upon 2014 peak-hour turning movement counts. These traffic counts were conducted in September 2014 during a non-holiday week (Tuesday thru Thursday) when schools were in session. Conditions and deficiencies were identified by calculating the level-of-service (LOS). Detailed traffic analysis parameters, such as intersection and roadway LOS methodologies and technical assumptions are provided in the Appendices to the Circulation Element.

Traffic operations have been quantified through the determination of "Level of Service" (LOS). LOS is a qualitative measure of traffic operating conditions, whereby a letter grade "A" through "F" is assigned to an intersection or roadway segment representing progressively worsening traffic conditions. LOS was calculated for different intersection control types using the methods documented in the Highway Capacity Manual 2010 (HCM 2010). LOS definitions for different types of intersection controls are outlined in Table 3.17-1.

Table 3.17-1: Level of Service Criteria for Intersections

Level of Service	Type of Flow	Delay	Maneuverability	Stopped Delay/Vehicle (sec)		
				Signalized	Unsignalized	All-Way Stop
A	Stable Flow	Very slight delay. Progression is very favorable, with most vehicles arriving during the green phase not stopping at all.	Turning movements are easily made, and nearly all drivers find freedom of operation.	≤ 10.0	≤ 10.0	≤ 10.0
B	Stable Flow	Good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.	Vehicle platoons are formed. Many drivers begin to feel somewhat restricted within groups of vehicles.	>10 and ≤20.0	>10 and ≤15.0	>10 and ≤15.0
C	Stable Flow	Higher delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, although many still pass through the intersection without stopping.	Back-ups may develop behind turning vehicles. Most drivers feel somewhat restricted	>20 and ≤35.0	>15 and ≤25.0	>15 and ≤25.0
D	Approaching Unstable Flow	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume-to-capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	Maneuverability is severely limited during short periods due to temporary back-ups.	>35 and ≤55.0	>25 and ≤35.0	>25 and ≤35.0
E	Unstable Flow	Generally considered to be the limit of acceptable delay. Indicative of poor progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures are frequent occurrences.	There are typically long queues of vehicles waiting upstream of the intersection.	>55 and ≤80.0	>35 and ≤50.0	>35 and ≤50.0
F	Forced Flow	Generally considered to be unacceptable to most drivers. Often occurs with over saturation. May also occur at high volume-to-capacity ratios. There are many individual cycle failures. Poor progression and long cycle lengths may also be major contributing factors.	Jammed conditions. Back-ups from other locations restrict or prevent movement. Volumes may vary widely, depending principally on the downstream back-up conditions.	> 80.0	> 50.0	> 50.0

References: *Highway Capacity Manual 2010*

The City of Sanger General Plan Circulation Element has designated LOS “C” as the minimum acceptable LOS standard on city facilities. In the Circulation Element and this EIR, a peak-hour of LOS “C” is taken as the threshold for acceptable traffic operations at all study intersections. All intersection turning movement volumes and LOS worksheets are provided in a separate Technical Appendix to the Circulation Element.

Although Caltrans has not designated a LOS standard, Caltrans’ Guide for the Preparation of Traffic Impact Studies (December 2002) indicates that when the LOS of a State highway facility falls below the LOS “C/D” cusp in rural areas and the LOS “D/E” cusp in the Urban Areas, any additional traffic may have a significant impact. When existing State highway facilities are operating at higher levels of service than noted above, 20-year forecasts or general plan build-out analysis for the facility should be considered to establish equitable project contributions to local development impact fee programs that address cumulative traffic impacts.

To determine whether “significance” should be associated with unsignalized intersection LOS, a supplemental traffic signal warrant analysis was also performed. The signal warrant criteria employed for this study are presented in the California Manual on Uniform Traffic Control

Devices (CAMUTCD). Specifically, this study utilized the Peak-Hour Warrant 3. Though utilization of this warrant may indicate that signalization would be required, the final decision to provide this improvement should be based on further studies utilizing the additional warrants presented in MUTCD.

This analysis generally provides a “planning level” evaluation of traffic operating conditions, which is considered sufficient for California Environmental Quality Act/National Environmental Policy Act (CEQA/NEPA) purposes. This planning level evaluation incorporates actual heavy-vehicle adjustment factors, peak hour factors, and signal lost time factors and reports the resulting intersection delays and LOS as estimated using HCM-2010 methodologies. In this study, a general Peak Hour Factor (PHF) of 0.92 has been applied to the analysis of all future signalized intersections under all analysis scenarios. The HCM-recommended suburban traffic signal default cycle length of 100 seconds has been used for analysis of future signalized intersections, with four seconds of “lost time” per critical signal phase. The Synchro 8 integrated computer software program has been utilized to implement the HCM-2010 analysis methodologies.

LOS threshold volumes for roadway segments are shown in Table 3.17-2. In order to determine LOS, the average daily traffic (ADT) volume of the roadway is compared to the roadway type. The ADT thresholds shown in Table 3.17-2 are based upon the HCM and are Fresno COG’s currently adopted LOS methodology for roadway segments and utilized by the member agencies of Fresno COG and the City of Sanger.

Table 3.17-2: Level of Service for Roadway Segments

Roadway Segment Type	Total Two-Way Average Daily Traffic (ADT)				
	LOS A	LOS B	LOS C	LOS D	LOS E
6-Lane Divided Freeway	42,000	64,800	92,400	111,600	120,000
4-Lane Divided Freeway	28,000	43,200	61,600	74,400	80,000
4-Lane Divided Expressway	23,670	28,130	30,800	37,200	40,000
6-Lane Divided Arterial (with left-turn lane)	32,000	38,000	43,000	49,000	54,000
4-Lane Divided Arterial (with left-turn lane)	22,000	25,000	29,000	32,500	36,000
4-Lane Undivided Arterial (no left-turn lane)	18,000	21,000	24,000	27,000	30,000
2-Lane Arterial (with left-turn lane)	11,000	12,500	14,500	16,000	18,000
2-Lane Arterial (no left-turn lane)	9,000	10,500	12,000	13,500	15,000
2-Lane Collector/Local Street	6,000	7,500	9,000	10,500	12,000

Notes:

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

Reference: 2010 Highway Capacity Manual

Existing Intersection – Level of Service

Existing weekday AM and PM peak-hour traffic volume counts were conducted at the study intersections and on the roadway segments by Metro Traffic Data, Inc., in September 2014, while school was in session. The AM peak hour is defined as one-hour of peak traffic flow counted between 7:00 AM and 9:00 AM and the PM peak hour is defined as one-hour of peak traffic flow counted between 4:00 PM and 6:00 PM. Table 3.17-3 presents the intersection LOS results.

Table 3.17-3: Existing Intersection LOS Results

No.	Intersection	Control Type	AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS
1	Church Avenue/Bethel Avenue	AWSC	41.9	E	38.5	E
2	Almond Avenue/Bethel Avenue	TWSC	168.5	F	31.5	D
3	North Avenue/Bethel Avenue	AWSC	58.2	F	12.4	B
4	9 th Street/Greenwood Avenue	AWSC	23.2	C	13.5	B
5	North Avenue/Greenwood Avenue	TWSC	26.8	D	16.9	C
6	Jensen Avenue/West Avenue	TWSC	21.9	C	13.8	B
7	Church Avenue (south)/Academy Avenue	OWSC	16.4	C	17.9	C
8	11 th Street/Academy Avenue	TWSC	16.9	C	14.8	B
9	8 th Street/Faller Avenue	AWSC	8.4	A	8.0	A
10	Annadale Avenue/Faller Avenue	AWSC	10.5	B	10.1	B

Legend:

TWSC = Two-Way-Stop Control. AWSC = All-Way-Stop Control. OWSC = One-Way-Stop Control.

Average Delay = Average Intersection Delay for Signalized and AWSC Intersections..

Average Delay = Worst-Case Intersection Movement Delay for TWSC Intersections.

LOS = Average Intersection Level-of-Service for Signalized Intersections.

LOS = Worst-Case Movement's Level-of-Service for TWSC Intersections.

Warrant = CA MUTCD Peak-Hour Warrant-3 Met.

As presented in Table 3.17-3, six (6) of the studied intersections within the City were determined to operate at acceptable LOS “C” or better conditions and four (4) of the study intersections currently operate at unacceptable LOS “D” conditions or worse under “Existing” conditions. In addition, the intersections at Church Avenue/Bethel Avenue and North Avenue/Bethel Avenue currently meet the CA MUTCD Peak-Hour Warrant-3 under “Existing” AM and/or PM peak hour conditions. However, this intersection at Church Avenue/Bethel Avenue is scheduled for a traffic signal installation (2018).

Existing Roadway Segments – Level of Service

Existing average annual daily traffic (ADT) counts were conducted at the study city roadway segments by Metro Traffic Data, Inc., in September 2014, while school was in session. The 24-hour traffic counts identify directional traffic counts identified in 15-minute intervals. Traffic volumes for the state highway (State Route 180) were obtained from the Caltrans Traffic Operations Division and are reported in 2015. Table 3.17-4 identifies existing roadway LOS results.

Table 3.17-4: Existing Roadway LOS Results

Roadway Segment	Limits	No. of Lanes	Facility Type	AADT	LOS
North Avenue	Bethel Avenue - Greenwood Avenue	2	Collector	6,620	A
North Avenue	Sanger Avenue - Academy Avenue	2	Collector	8,990	A
North Avenue	J Street - Faller Avenue	2	Collector	3,920	A
Annadale Avenue	J Street - I Street	2	Arterial	5,390	A
8 th Street	J Street - I Street	2	Arterial	1,940	A
Jensen Avenue	Bethel Avenue - Lyon Avenue	4	Arterial	13,970	A
Jensen Avenue	N Street - Academy Avenue	4	Arterial	10,810	A
Bethel Avenue	Lorena Avenue - Sterling Avenue	4	Arterial	6,930	A
Bethel Avenue	Jensen Avenue - 9 th Street	3 (2 SB)	Arterial	13,660	C
Greenwood Avenue	Jensen Avenue - 7 th Street	2	Collector	6,510	B
Greenwood Avenue	Cherry Avenue - 14 th Street	2	Collector	3,600	A
West Avenue	3 rd Street - 4 th Street	2	Local	750	A
P Street	13 th Street - 14 th Street	2	Local	1,180	A
Academy Avenue	State Route 180 - Butler Avenue	4	Arterial	10,870	A
Academy Avenue	Florence Avenue - Church Avenue	4	Arterial	11,570	A
Academy Avenue	7 th Street - 8 th Street	4	Arterial	14,000	A
Academy Avenue	Cherry Avenue - North Avenue	4	Arterial	9,370	A
Academy Avenue	Commerce Avenue - Central Avenue	4	Arterial	8,690	A
J Street	5 th Street - Jensen Avenue	2	Local	450	A
Faller Avenue	10 th Street - 11 th Street	2	Collector	3,560	A
State Route 180	McCall Avenue – Bethel Avenue	4	State Route (Divided Expressway)	18,100*	A
State Route 180	Bethel Avenue – Academy Avenue	4	State Route (Divided Expressway)	18,100*	A
State Route 180	Academy Avenue – Newmark Avenue	4	State Route (Divided Expressway)	12,800*	A

Notes:

* 2015, State of California, Department of Transportation, Traffic Operations Division.

** Based upon HCM 2010.

As presented in Table 3.17-4, all of the roadway segments currently operate at acceptable LOS “C” or better conditions under “Existing” conditions.

Thresholds of Significance

In accordance with the CEQA Guidelines, a project impact would be considered significant if the project would:

- Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?
- Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
- Result in inadequate emergency access?

Impacts and Mitigation Measures

Impact 3.17-1: *Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?*

Impact 3.17-2: *Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?*

Discussion

Significant and unavoidable impact. Development allowed under the General Plan Update and Master Plan would result in increased use of the local and regional circulation system associated with increased residential, commercial, industrial, recreational, and other uses accommodated under the proposed General Plan Update, Master Plan and Land Use Map.

Sanger Level of Service Thresholds

As identified in the Circulation Element and described herein, the City has established a target LOS “C” along all major streets and highways except that LOS “D” may be allowed at intersections of any major street, highway or along street and highway segments where additional improvements are not practical or feasible (to be determined by city engineer). In addition, all significant trip generators shall be served by roads of adequate capacity and design

standards to provide reasonable and safe access by appropriate transportation modes with minimum delay.

Caltrans Level of Service Thresholds

Caltrans requirements are described in their Guide for the Preparation of Traffic Impact Studies (Caltrans 2001), which covers the information needed for Caltrans to review the impacts on state highway facilities, including freeway segments. The Guide for the Preparation of Traffic Impact Studies states that “Caltrans endeavors to maintain a target LOS at the transition between LOS ‘C’ and LOS ‘D’ on state highway facilities; however, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS.” The Guide also states that where “an existing State highway facility is operating at less than the appropriate target LOS, the existing measure of effectiveness (MOE) should be maintained.”

Fresno County Level of Service Thresholds

The Transportation and Circulation Element of the Fresno County 2000 General Plan provides the framework for Fresno County decisions concerning the countywide transportation system. It also establishes standards that guide the development of the transportation system and management of access to the highway system by new development throughout the unincorporated areas of the county. The Transportation and Circulation Element includes policies that state the county will strive to meet LOS D on urban roadways within the spheres of influence of the cities of Fresno and Clovis and LOS C on all other roadways in the county.

Methodology

The Circulation Element includes an analysis of the potential impacts of the proposed General Plan Update on the roadway network and describes measures and improvements needed to avoid or reduce traffic impacts. This information is used for the programmatic transportation analysis under the General Plan. However, a site-specific traffic impact analysis was prepared for the Master Plan area (Appendix E). That information is provided separately in the impact analysis section below so as to clarify transportation impacts between those associated with the General Plan Update and those specifically assigned to the Master Plan project.

For intersections, the General Plan Update and Master Plan conditions were forecasted to identify future intersection improvements. Working with Fresno COG staff, projected traffic forecasts were obtained for these two scenarios.

First, the 2035 “No-Build” or “Cumulative Base” conditions assume that the current General Plan (City of Sanger 2025 General Plan – November 2003) development patterns and land use policies are still in place and are forecasted to 2035 conditions. Land uses adopted in the City of Sanger General Plan, and associated amendments to the General Plan since adoption in 2003, are still the guiding principles used for the assumptions in the Fresno COG Regional Travel Demand Forecast Model, thus comprise the 2035 “No-Build” or “Cumulative Base” conditions. Table 3.17-5 identifies the 2035 “No-Project” or “Cumulative Base” roadway LOS results.

The second scenario is based upon planned land uses identified by the current General Plan team (led by Collins & Schoettler Planning Consultants) to reflect today’s vision of Sanger. This is identified as, “2035 General Plan Update Alternative.” The future land uses are based upon input for the community at workshops and open houses and input from local businesses and City staff, commissions and councils. Table 3.17-6 shows Year 2035 base roadway LOS results assuming the full buildout scenario as identified in the proposed General Plan Update. Table 3.17-7 identifies forecasted AM and PM peak hour intersection operations assumed under the 2035 General Plan Alternative.

2035 General Plan Update

As described above, development allowed under the 2035 General Plan Update would result in increased use of the local and regional circulation system associated with increased residential, commercial, industrial, recreational, and other uses accommodated under the proposed General Plan Update and Land Use Map.

As shown in Table 3.17-6, under full buildout of the 2035 General Plan, all of the roadway segments are forecasted to operate at acceptable conditions except for three roadway segments as follows:

- Academy Avenue from 7th Street to 8th Street (LOS D)
- SR 180 from Bethel Avenue to Academy Avenue (LOS E)
- SR 180 Academy Avenue to Newmark Avenue (LOS E)

As shown in Table 3.17-7, under full buildout of the 2035 General Plan, there are seven intersections that are forecasted to operate at deficient LOS levels (AM and PM peak hour) as follows:

- Almond Avenue / Bethel Avenue (LOS F - PM Peak Hour)
- North Avenue / Bethel Avenue (LOS F – AM Peak Hour and LOS D PM Peak Hour)
- 9th Street / Greenwood Avenue (LOS E – AM Peak Hour)

- North Avenue / Greenwood Avenue (LOS E – AM Peak Hour and LOS D – PM Peak Hour)
- Jensen Avenue / West Avenue (LOS E – AM Peak Hour)
- Church Avenue (south) / Academy Avenue (LOS F in both AM and PM Peak Hour)
- 11th Street / Academy Avenue (LOS F in both AM and PM Peak Hour)

In addition, it is projected that two (2) of the study intersections will meet CA MUTCD Peak-Hour Warrant-3 during the AM and/or PM peak hour under this scenario.

Table 3.17-5: 2035 “No-Project” Base Roadway LOS Results

<i>Roadway Segment</i>	<i>Limits</i>	<i>No. of Lanes</i>	<i>Facility Type</i>	<i>AADT</i>	<i>LOS</i>
North Avenue	Bethel Avenue - Greenwood Avenue	2	Minor Arterial	5,130	A
North Avenue	Sanger Avenue - Academy Avenue	2	Minor Arterial	4,450	A
North Avenue	J Street - Faller Avenue	2	Minor Arterial	7,990	C
Annadale Avenue	J Street - I Street	2	Minor Arterial	8,340	A
8 th Street	J Street - I Street	2	Minor Arterial	4,800	A
Jensen Avenue	Bethel Avenue - Lyon Avenue	4	Principal Arterial	22,510	B
Jensen Avenue	N Street - Academy Avenue	4	Principal Arterial	11,570	A
Bethel Avenue	Lorena Avenue - Sterling Avenue	4	Principal Arterial	9,080	A
Bethel Avenue	Jensen Avenue - 9 th Street	4	Principal Arterial	8,830	A
Greenwood Avenue	Jensen Avenue - 7 th Street	2	Collector	3,620	A
Greenwood Avenue	Cherry Avenue - 14 th Street	2	Collector	860	A
West Avenue	3 rd Street - 4 th Street	2	Local	840	A
P Street	13 th Street - 14 th Street	2	Local	1,290	A
Academy Avenue	State Route 180 - Butler Avenue	4	Principal Arterial	20,490	A
Academy Avenue	Florence Avenue - Church Avenue	4	Principal Arterial	28,240	C
Academy Avenue	7 th Street - 8 th Street	4	Principal Arterial	24,640	B
Academy Avenue	Cherry Avenue - North Avenue	4	Principal Arterial	19,740	A
Academy Avenue	Commerce Avenue - Central Avenue	4	Principal Arterial	19,700	A
J Street	5 th Street - Jensen Avenue	2	Local	640	A
Faller Avenue	10 th Street - 11 th Street	2	Collector	2,430	A
State Route 180	McCall Avenue – Bethel Avenue	4	State Route (Divided Expressway)	39,770	E
State Route 180	Bethel Avenue – Academy Avenue	4	State Route (Divided Expressway)	39,770	E
State Route 180	Academy Avenue – Newmark Avenue	4	State Route (Divided Expressway)	28,160	C

Table 3.17-6: 2035 General Plan Update and Master Plan Road Segment LOS Results

Roadway Segment	Limits	No. of Lanes	Facility Type	AADT	LOS
North Avenue	Bethel Avenue - Greenwood Avenue	2	Minor Arterial	8,920	A
North Avenue	Sanger Avenue - Academy Avenue	2	Minor Arterial	12,110	A
North Avenue	J Street - Faller Avenue	2	Minor Arterial	6,430	A
Annadale Avenue	J Street - I Street	2	Minor Arterial	7,260	A
8 th Street	J Street - I Street	2	Minor Arterial	3,180	A
Jensen Avenue	Bethel Avenue - Lyon Avenue	4	Principal Arterial	22,900	C
Jensen Avenue	N Street - Academy Avenue	4	Principal Arterial	16,070	A
Bethel Avenue	Lorena Avenue - Sterling Avenue	4	Principal Arterial	11,360	A
Bethel Avenue	Jensen Avenue - 9 th Street	4	Principal Arterial	18,400	A
Greenwood Avenue	Jensen Avenue - 7 th Street	2	Collector	8,770	C
Greenwood Avenue	Cherry Avenue - 14 th Street	2	Collector	4,850	A
West Avenue	3 rd Street - 4 th Street	2	Local	1,120	A
P Street	13 th Street - 14 th Street	2	Local	1,440	A
Academy Avenue	State Route 180 - Butler Avenue	4	Principal Arterial	22,700	C
Academy Avenue	Florence Avenue - Church Avenue	4	Principal Arterial	24,160	C
Academy Avenue	7th Street - 8th Street	4	Principal Arterial	29,240	D
Academy Avenue	Cherry Avenue - North Avenue	4	Principal Arterial	19,570	B
Academy Avenue	Commerce Avenue - Central Avenue	4	Principal Arterial	18,150	B
J Street	5 th Street - Jensen Avenue	2	Local	670	A
Faller Avenue	10 th Street - 11 th Street	2	Collector	4,800	A
State Route 180	McCall Avenue – Bethel Avenue	4	State Route (Divided Expressway)	39,660	E
State Route 180	Bethel Avenue – Academy Avenue	4	State Route (Divided Expressway)	39,660	E
State Route 180	Academy Avenue – Newmark Avenue	4	State Route (Divided Expressway)	28,050	B

Table 3.17-7: 2035 General Plan and Master Plan Intersection LOS Results

No.	Intersection	Control Type	AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS
1	Church Avenue/Bethel Avenue	Signal	10.0	A	8.6	A
2	Almond Avenue/Bethel Avenue	TWSC	11.3	B	270.9	F
3	North Avenue/Bethel Avenue	AWSC	115.4	F	27.4	D
4	9 th Street/Greenwood Avenue	AWSC	43.3	E	22.3	C
5	North Avenue/Greenwood Avenue	TWSC	42.8	E	27.7	D
6	Jensen Avenue/West Avenue	TWSC	42.1	E	21.9	C
7	Church Avenue (south)/Academy Avenue	OWSC	226.0	F	218.9	F
8	11 th Street/Academy Avenue	TWSC	90.8	F	107.9	F
9	8 th Street/Faller Avenue	AWSC	8.7	A	8.3	A
10	Annadale Avenue/Faller Avenue	AWSC	13.0	B	12.1	B

Legend:

TWSC = Two-Way-Stop Control. AWSC = All-Way-Stop Control. OWSC = One-Way-Stop Control.

Average Delay = Average Intersection Delay for Signalized Intersections.

Average Delay = Worst-Case Intersection Movement Delay for TWSC Intersections.

LOS = Average Intersection Level-of-Service for Signalized Intersections.

LOS = Worst-Case Movement's Level-of-Service for TWSC Intersections.

Warrant = CA MUTCD Peak-Hour Warrant-3 Met.

Proposed Improvements

The Circulation Element identifies planned transportation improvement projects that are recommended during buildout of the 2035 General Plan and Master Plan. These potential improvements would further reduce impacts to these roadway segments and intersections. Figure 3.17-6, identifies Future Streets Classifications in Sanger. In general, Principal Arterials will be a minimum of four (4) lanes and Minor Arterials will be two (2) to four (4) lanes. Specifically, the U.S. Department of Transportation Federal Highway Administration (FHWA), definitions are as follows for Urban Arterials:

Principal Arterial – Characteristics

- Serve major activity centers, highest traffic volume corridors and longest trip demands

- Carry high proportion of total urban travel on minimum of mileage
- Interconnect and provide continuity for major rural corridors to accommodate trips entering and leaving urban area and movements through the urban area
- Serve demand for intra-area travel between the central business district and outlying residential areas

In Sanger, Academy Avenue and Jensen Avenue are examples of Principal Arterials. These roadways carry large volumes of traffic and provide connections to outlying areas

Minor Arterial – Characteristics

- Interconnect and augment the higher-level Arterials
- Serve trips of moderate length at a somewhat lower level of travel mobility than Principal Arterials
- Distribute traffic to smaller geographic areas than those served by higher level arterials
- Provide more land access than Principal Arterials without penetrating identifiable neighborhoods
- Provide urban connections for Rural Collectors

North Street and 8th Street are examples of Minor Arterials in Sanger. These roadways have between two (2) and four (4) travel lanes (less right-of-way) but provide more land access (e.g., 8th Street) than a higher-level arterial. Traffic volumes are generally higher than collector streets and there is more room to provide Bike Lanes and a two-way turn-lane (e.g., North Avenue) than a lower-class roadway. The Minor Arterial would fall within the arterial street and collector street cross sections.

State Route 180 will continue to be planned as an expressway, as indicated in Caltrans' State Route 180 Transportation Concept Report. Potential improvements exist at Bethel Avenue and Academy Avenue. Potential concepts have identified at-grade and grade-separated access at these intersections. It is important that Caltrans and the City of Sanger preserve right-of-way at these intersections to accommodate for future growth along the State Route 180 Corridor. Figure 3.17-7 identifies potential intersections improvements in Sanger. These may include installation of traffic signals, roundabouts, bulb-outs, etc. This list was compiled as a result of the intersections identified in this document, traffic signal locations from the City of Sanger Improvement and

Impact Fees, conceptual roundabouts as provided in the City of Sanger Roundabout Concepts (Omni-Means/GHD), and discussions with Collins & Schoettler and Caltrans.

It should be noted that Figure 3.17-7 is a map of potential improvements that may be modified at any time by the City of Sanger. It is intended to be used as a tool to help guide potential transportation improvement in the City of Sanger. Additional studies, warrants and analysis will be required prior to implementation of any improvement identified in Figure 3.17-7.

Figure 3.17-6: Future Street Classifications

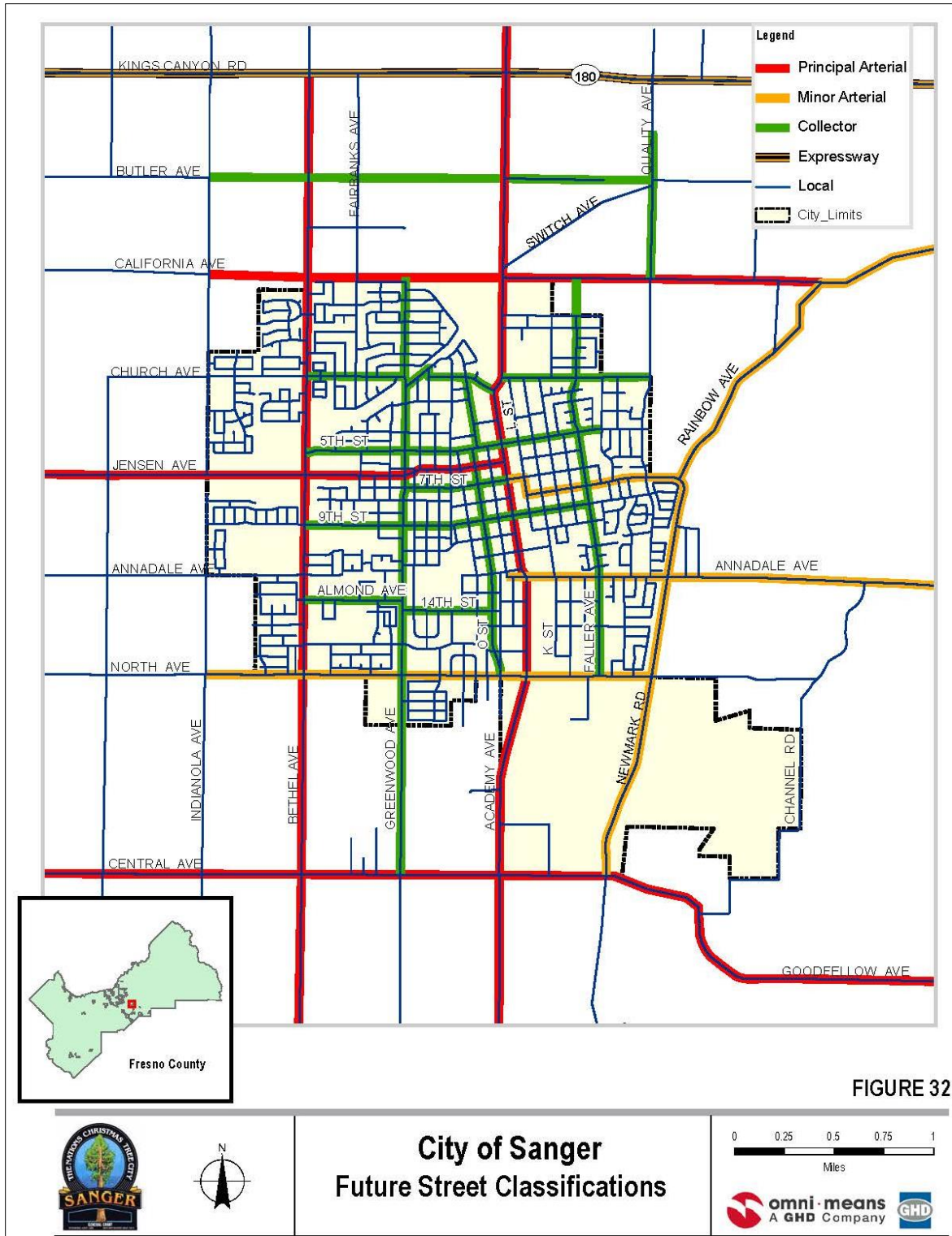


Figure 3.17-7: Potential Intersection Improvements

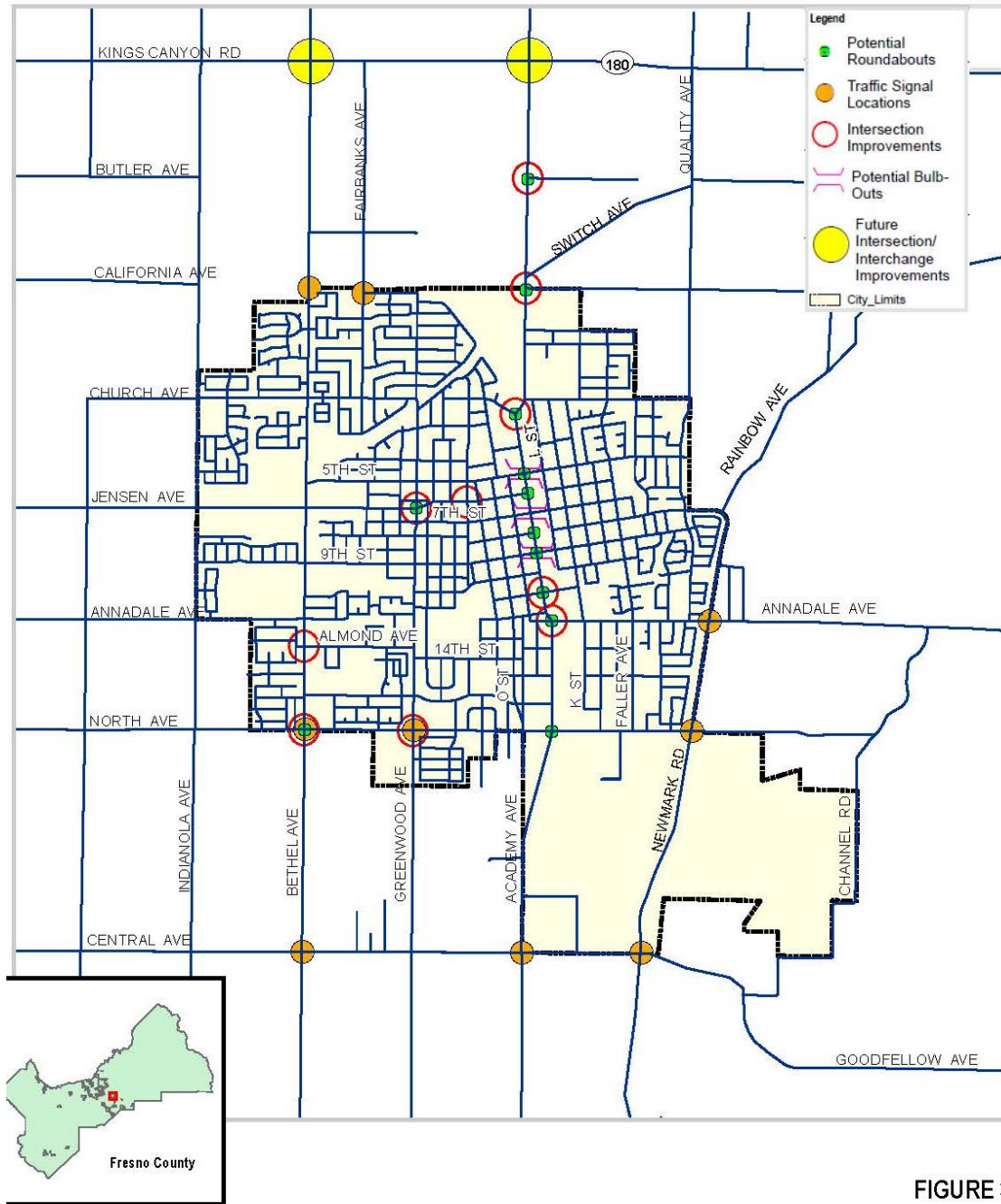
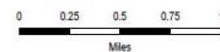


FIGURE 33



City of Sanger Potential Intersection Improvements



omni means
A GHD Company



In addition to these potential improvements, the Action Plans from the Circulation Element identified herein are intended to guide planning and development of the circulation system and to reduce impacts on the system to help achieve the LOS C standard. These goals and policies include actions that, for example, would reduce vehicle miles traveled, reduce vehicle trips through a range of programs and promotion of alternative transportation, and assure that new development is designed to incorporate traffic facility improvements that improve the function and capacity of the transportation system.

Applicable Circulation Element action plans and implementation measures will ensure that subsequent development projects address their project-level impacts, pay their proportional share of roadway improvements, and/or provide necessary off-site improvements. These action plans are as follows:

Sanger Circulation Element: Issue One – Overall System Level

Goals, Objectives, Action Plans

Goal:

Overall System Level

- I. Develop a comprehensive circulation system that is coordinated with planned land use patterns contained in the Land Use Element.

Objective:

1. The transportation system plan shall provide adequate capacity to serve travel demands anticipated by 2035.
2. The transportation system shall be formulated in a manner that responds to concentrations of population and employment activities in areas designated for urban development by the Land Use Element.
3. Transportation system improvements shall be sized and designed to safely and efficiently accommodate existing and projected traffic, with respect to both the volume, type of traffic and modes of travel.
4. When a land use development project is proposed, the City will determine if a traffic impact study is required. In general, the City shall request a traffic impact study if the project: (1) exceeds 100 AM and/or PM peak hour peak hour trips (based upon the trip generation rates identified in the ITE Trip Generation

Manual); or (2) if the project generates more than 50 peak hour trips at an existing City intersection (based upon the trip generation rates identified in the ITE Trip Generation Manual).

The developer is responsible for objectively assessing the impacts of the development on the roadway network. The analysis will follow standard procedures for the development of Traffic Impact Studies, including trip generation, distribution and assignment of trips, to the background roadway network and the analysis of level of service (LOS) on critical roadway segments and intersections under existing and future (20 years) conditions. Traffic impact studies evaluating State highway facilities, shall be referred to Caltrans, and utilize traffic study preparation guidelines and LOS standards as recommended by Caltrans. In addition, analysis on all City facilities (streets, roads, intersections, etc.) shall be consistent with the most recent version of the Caltrans' Guide for the Preparation of Traffic Impact Studies.

5. The City's transportation system shall be designed, constructed, operated, and implemented in a manner that maintains a high level of environmental quality.

Action Plan:

- a. Using the latest available and most current industry-standard technology, the City of Sanger shall mitigate, to the extent practicable, any negative environmental effects on air quality and ambient noise levels resulting from circulation improvements.
- b. The City of Sanger shall support the implementation of effective controls on vehicular emissions.
- c. Alignments for new roadways, or for improvements to existing roadways and other transportation system improvements, shall avoid, wherever practicable, disturbance of existing communities, biotic resource areas and minimize destruction of trees or any environmentally sensitive areas.
- d. Mitigation measures shall be used, to the extent practical, to reduce or avoid adverse environmental, safety, social and economic impacts of transportation improvement projects.
- e. Determination of practical roadway alignments and other transportation system improvements and mitigation measures shall reflect need for improvement, costs, maintenance of appropriate design standards and safety features, as well as environmental consequences.

Objective:

6. The City's transportation system shall be maintained, designed, constructed, operated and implemented in a manner which provides a roadway network which supports the economy and maintain personal mobility and promotes safety, convenience, and efficiency. Priority shall be given to:

Action Plan:

- a. Maintaining the existing farm-to-market rural road system within undeveloped portions of the City limits, which supports transportation of goods and people in the City of Sanger; and
- b. Measures that improve safety and the efficient use of existing transportation facilities, particularly on heavily traveled routes. Such measures typically include low-cost improvements such as signalization, channelization and turning lanes.

Objective:

7. Transportation system improvements and operations shall be located and designed to promote utilization of the existing system, intermodal coordination and give priority to energy conservation.
8. The City, in coordination with the Fresno COG, shall encourage Transportation Systems Management (TSM) strategies in urban areas to reduce vehicular trips during peak periods. Such strategies may include:

Action Plan:

- a. Traffic flow improvements, and continued maintenance and rehabilitation of existing corridors for efficient movement of people and goods;
- b. Incentives for carpooling and vanpooling through Fresno COG's Rideshare Program;
- c. Preferential parking for carpools and vanpools;
- d. Incentives for flex-time and modified work schedules;
- e. Development of park and ride facilities to accommodate carpools and vanpools; and

- f. A transit service that meets public transportation needs of local residents.

Goal:

Streets and Highways

- II. Provide and maintain a highway system with adequate capacity and acceptable levels of service to accommodate projected travel demands for the 20-year planning period.

Objective:

1. Rights-of-way shall be reserved for all highways designated on the roadway system as required by the City's Subdivision Ordinance.
2. The City has established a target LOS "C" along all major streets and highways except that LOS "D" may be allowed at intersections of any major street, highway or along street and highway segments where additional improvements are not feasible (to be determined by city engineer).
3. All significant trip generators shall be served by roads of adequate capacity and design standards to provide reasonable and safe access by appropriate transportation modes with minimum delay.
4. Future maintenance costs, and the relationship of overall maintenance needs to available funds, should be considered to determine whether a roadway should be routinely maintained or fully reconstructed.
5. Where extensive truck travel involving regional movement of bulk goods is anticipated, such as along Central Avenue, roadway standards to accommodate large trucks should be implemented.
6. For development under City jurisdiction outside the current City limits but within Sanger's Sphere of Influence (SOI), where roadway standards are different from the County, City and County staff will cooperate and agree on a reasonable choice of design standards for the particular circumstances involved and negotiate logical transitions from City to County Standards. It will be City staff's responsibility to contact the County when differences in standards are determined.

Action Plan:

- a. Transition areas at meeting points of roadways designed to differing City and County Standards or differing functional classifications should be individually designed to facilitate satisfactory operational and safety performance. Further, the City should update the Road Standards to reflect the intent of this policy.

Objective:

7. The City shall make every effort to obtain adequate local, state and federal funding to provide roadway infrastructure that accommodates planned development and maintains the minimum level of service.
8. The City shall seek roadway improvement funding from a variety of sources to ensure that no person(s) or agency is inequitably burdened and pays an inordinate share of the cost of such improvements. Funding sources shall be distributed equitably, to the extent practicable, between those benefitting from the expenditure of such funds.
9. Access and parking policies for each functional roadway classification within the City shall be as follows:

Action Plan:

- a. Expressways: Access to and from abutting property is prohibited. Access to expressway facilities shall only be at major signalized intersections along the expressway;
- b. Urban and Rural Arterials: Access from abutting parcels shall be discouraged. Consolidation of driveways shall be encouraged. Parking may be prohibited if additional capacity is needed; and
- c. Urban Collectors, Rural Collectors and Local Roads: Access shall be permitted from abutting parcels.

Objective:

10. For each roadway classification, pavement widths, lane configurations, and medians and/ or shoulder widths shall be based on acceptable design standards of the agency having jurisdiction over the facility.

11. For City roads, each roadway classification, pavement widths, lane configuration, and medians and/ or shoulder widths shall be based on acceptable design standards (found on the City of Sanger’s Website).

Action Plan:

- a. Divided Urban and Rural Arterials - Right-of-way of 100 - 106 feet;
- b. Undivided Urban and Rural Arterials - Right-of-way of 80 - 84 feet;
- c. Urban and Rural Collectors - Right-of-way of 68-72 feet;
- d. Local Roads -Ultimate Right-of-way of 56-60 feet. Narrower right-of way may be considered with innovative traffic calming street designs such as curvilinear streets, parkway landscape strips, and intersection enhanced paving. Narrower streets may also be considered for in-fill or odd shaped parcels, or to support neo-traditional development;
- e. All Classes - Additional right-of-way may be required for intersection design; and
- f. The Southeast Sanger Area Specific Plan design standards shall apply to facilities within the specific plan area.

Objective:

12. Requirements for frontage improvements on each functional roadway class shall be as follows:

Action Plan:

- a. Urban and Rural Arterials and Urban Collectors - urban improvement standards shall be required, including curb and gutter, planter strips, sidewalks, street lights, and landscaping;
- b. Rural Collectors - improvement standards shall be applied; and
- c. Local Roads - City facility standards shall be applied which include planter strips.

Objective:

13. Ordinances may be adopted by the City that require maintenance agreements for private roads. The agreements would be executed by the developer when required by specific provisions contained in the City of Sanger's General Plan, Specific, Community, or Redevelopment Plan, or an ordinance code.
14. The City of Sanger's Building Setback Line Ordinance shall assure adequate separation between future right-of-way acquisition areas and future structures or other improvements. The setback ordinance shall define setbacks from external limits rather than from the centerline of right-of way for roadway classifications identified in this Circulation Element. Where larger setbacks are desired, the Public Works Director may designate higher setback requirements.
15. The City shall adopt ordinances that establish plan lines for designated arterial and collector highways. Specific plans may also be utilized to establish plan lines, which are based upon specified distances from the center lines of existing roadways. In either method, new structures shall not be constructed within the area of the plan line and required setbacks shall be measured from the plan line boundary rather than from the parcel boundary.
16. Parking restrictions along facilities in unincorporated urban areas shall be determined from roadway classification policies described herein or, in situations where variations are desired by proposed developments.
17. Prior to approval of conditional use permits and/or site plan reviews for new agricultural processing and industrial facilities with similar truck traffic generating characteristics, the City shall require the applicant to demonstrate an adequate on-site truck parking/ staging/maneuvering facility plan to preclude the need for truck queuing and parking on adjacent roadways.
18. Development proposals requiring developer mitigation fees for future year circulation improvements shall agree to participate in a mitigation fee program implemented by a development agreement with the City.
19. Future alleyways (one- and two-way) should be considered as a viable circulation alternative in existing and future development plans.

Goal:

Public Transportation System

- III. Promote development of a safe, efficient, convenient and economical community, inter-community and Citywide public transportation system.

Objective:

1. Support transit service through the Fresno County Rural Transit Agency (FCRTA) that adequately serves low-income residents, students, the elderly and physically disabled.
2. The City, through FCRTA and development of the Fresno County Short Range Transit Plan (SRTP), should help identify short and long-range transit needs and maximize revenue sources utilizing all funding mechanisms including federal grants, State enabling legislation, and farebox revenue.
3. The City and FCRTA should distribute complete and accurate public transit information.
4. Support the coordination and consolidation of social service transportation through the Fresno County Consolidation Transportation Service Agency (CTSA) administered by the Fresno County Economic Opportunities Commission (EOC) to promote efficiency and optimum use of existing transit resources.
5. Encourage safety, reasonable fares and the provision of adequate service to meet reasonable transit needs.

Goal:

Non-Motorized Transportation

- IV. The City shall establish safe and convenient facilities to accommodate the use of non-motorized modes of transportation (reference Figure 25 – Bikeway Map).

Objective:

1. Provide Fresno COG pedestrian and bike information for the Regional Active Transportation Plan (ATP) that:

Action Plan:

- a. Identifies walking and bicycle routes that are appropriate for recreational and commuter use;

- b. Prepares and coordinates information systems for bicyclists and carpools;
- c. Reviews and addresses the needs of pedestrians and bicyclists within the city; and
- d. Encourages and supports maintenance of existing bicycle and pedestrian facilities.

Objective:

- 2. Designate regional bicycle routes that are designed for safe use by bicyclists and reduce conflicts with motor vehicles. Support development of designated bicycle paths adjacent to or separated from commute corridors.
- 3. Support implementation of bicycle support facilities such as bike racks, showers, locker rooms and other facilities during the project review process. Encourage employers to offer incentives (showers, locker rooms, and money) for bicyclists to reduce congestion and increase parking availability.
- 4. Support the bicycle as an alternate transportation mode and as a part of the traffic mix.
- 5. Encourage the use of abandoned railroad right-of-ways and canals for bicycle paths.
- 6. Encourage removal of barriers (walls, easements and fences) for safe and convenient movement of pedestrians. Special emphasis should be placed on the needs of disabled persons.
- 7. Consider the needs of pedestrians and address requirements of the American Disabilities Act (ADA) to provide for the safe and convenient movement of pedestrians and the needs of disabled persons during the project review process.
- 8. Apply for Active Transportation Program (ATP) grants that:

Action Plan:

- a. Increase the proportion of trips accomplished by biking and walking;
- b. Increase the safety and mobility of non-motorized users;

- c. Advance the active transportation efforts of regional agencies to achieve greenhouse gas reduction goals;
- d. Enhance public health, including reduction of childhood obesity through the use of programs including, but not limited to, projects eligible for Safe Routes to School Program funding;
- e. Ensure that disadvantaged communities fully share the benefits of the program; and,
- f. Provide a broad spectrum of projects to benefit many types of active transportation users.

Goal:

Goods Movement

- V. Provide for the efficient movement of goods through design, construction and maintenance of the regional circulation system.

Objective:

- 1. Street and highway projects shall be implemented so that goods movement can continue to be convenient and economical in areas where large concentrations of truck traffic exist.
- 2. Support continued operation of the regional freight rail system, which offers safe, convenient and economical transport of commodities.
- 3. Review and monitor proposals for expansion of pipelines for the transport of suitable products and materials.
- 4. Provide for the efficient movement of goods through design construction and maintenance of the cities truck route system.

Goal:

Complete Streets

- VI. Provide “Complete Streets” that are safe, comfortable, and convenient routes for walking, bicycling, and public transportation to increase use of these modes of transportation.

Objective:

1. Include infrastructure that promotes a safe means of travel for all users along the right of way, such as sidewalks, shared use paths, bicycle lanes, and paved shoulders.
2. Include infrastructure that facilitates safe crossing of the right of way, such as accessible curb ramps, crosswalks, refuge islands, and pedestrian signals; such infrastructure must meet the needs of people with different types of disabilities and people of different ages.
3. Ensure that sidewalks, crosswalks, public transportation stops and facilities, and other aspects of the transportation right of way are compliant with the Americans with Disabilities Act (ADA) and meet the needs of people with different types of disabilities, including mobility impairments, vision impairments, hearing impairments, and others. Ensure that the City of Sanger ADA Transition Plan includes a prioritization method for enhancements and revise if necessary.
4. Prioritize incorporation of street design features and techniques that promote safe and comfortable travel by pedestrians, bicyclists, and users of public transportation, such as traffic calming circles, additional traffic calming mechanisms, narrow vehicle lanes, raised medians, dedicated transit lanes, transit priority signalization, transit bulb outs, road diets, high street connectivity, and physical buffers and separations between vehicular traffic and other users.
5. Ensure use of additional features that improve the comfort and safety of users:

Action Plan:

- a. Provide pedestrian-oriented signs, pedestrian-scale lighting, benches and other street furniture, bicycle parking facilities, and comfortable and attractive public transportation stops and facilities.
- b. Encourage street trees, landscaping, and planting strips, including native plants where possible, in order to buffer traffic noise and protect and shade pedestrians and bicyclists.
- c. Reduce surface water runoff by reducing impervious surfaces on the streets.

Goal:

6. In all street projects, include infrastructure that improves transportation options for pedestrians, bicyclists, and users of public transportation of all ages and abilities.
7. Ensure that this infrastructure is included in planning, design, approval, construction, operations, and maintenance phases of street projects.
8. Incorporate this infrastructure into all construction, reconstruction, retrofit, maintenance, alteration, and repair of streets, bridges, and other portions of the transportation network.
9. Incorporate multimodal improvements into pavement resurfacing, restriping, and signalization operations where the safety and convenience of users can be improved within the scope of the work.
10. Develop systems to implement and monitor incorporation of such infrastructure into construction and reconstruction of private streets.
11. Allow exclusion of such infrastructure from street projects only upon written approval by the City of Sanger, and only where documentation and supporting data indicate one of the following bases for the exemption: (a) use by a specific category of users is prohibited by law; (b) the cost would be excessively disproportionate to the need or probable future use over the long term; (c) there is an absence of current and future need; or (d) significant adverse impacts outweigh the positive effects of the infrastructure.
12. Provide an annual report to the City Council listing the street projects undertaken in the past year and briefly summarizing the complete streets infrastructure used in those projects and, if applicable, the basis for excluding complete streets infrastructure from those projects.
13. Develop a pedestrian crossings policy, addressing matters such as where to place crosswalks and when to use enhanced crossing treatments.
14. Develop policies to improve the safety of crossings and travel in the vicinity of schools and parks.
15. Consider developing a transportation demand management/commuter benefits ordinance to encourage residents and employees to walk, bicycle, use public transportation, or carpool.

16. Develop a checklist for Sanger's development and redevelopment projects, to ensure the inclusion of infrastructure providing for safe travel for all users and enhance project outcomes and community impact.
17. As feasible, the City of Sanger shall incorporate Complete Streets infrastructure into existing public [and private] streets to improve the safety and convenience of users, construct and enhance the transportation network for each category of users, and create employment.

Applicable Circulation Element action plans will ensure that new development projects address their project-level impacts, pay their proportional share of roadway improvements, and/or provide necessary off-site improvements. In order to construct the potential improvements identified herein, the City will require one or more of the following actions: i) Add these projects to those programmed for funding through a development impact fee program; ii) Continue to require participation by new development in providing fair-share funding and/or constructing new facilities, and/or iii) Continue to seek and obtain other regional and state funding to ensure that sufficient funds are available to construct the improvements. Therefore, since the implementation of improvements necessary to ensure roadway operations meet performance standards may not occur as the General Plan identifies that the necessary improvements to the local roadway system are planned but not guaranteed due to funding and other considerations and improvements to Caltrans facilities are outside of the City's jurisdiction, the impact associated with the General Plan Update's potential to conflict with applicable plans, ordinances, or policies establishing measures of effectiveness for the performance of the circulation system is *significant and unavoidable*.

General Plan Update Mitigation Measures: In order to construct the potential improvements identified herein, the City will require one or more of the following actions: i) Add these projects to those programmed for funding through a development impact fee program; ii) Continue to require participation by new development in providing fair-share funding and/or constructing new facilities, and/or iii) Continue to seek and obtain other regional and state funding to ensure that sufficient funds are available to construct the improvements as identified in the Goals, Objectives and Action Plans identified in the Circulation Element. In addition, the following mitigation measure will help reduce, but not necessarily entirely eliminate potential significant impacts pertaining to conflicts with applicable plans, ordinances or policies:

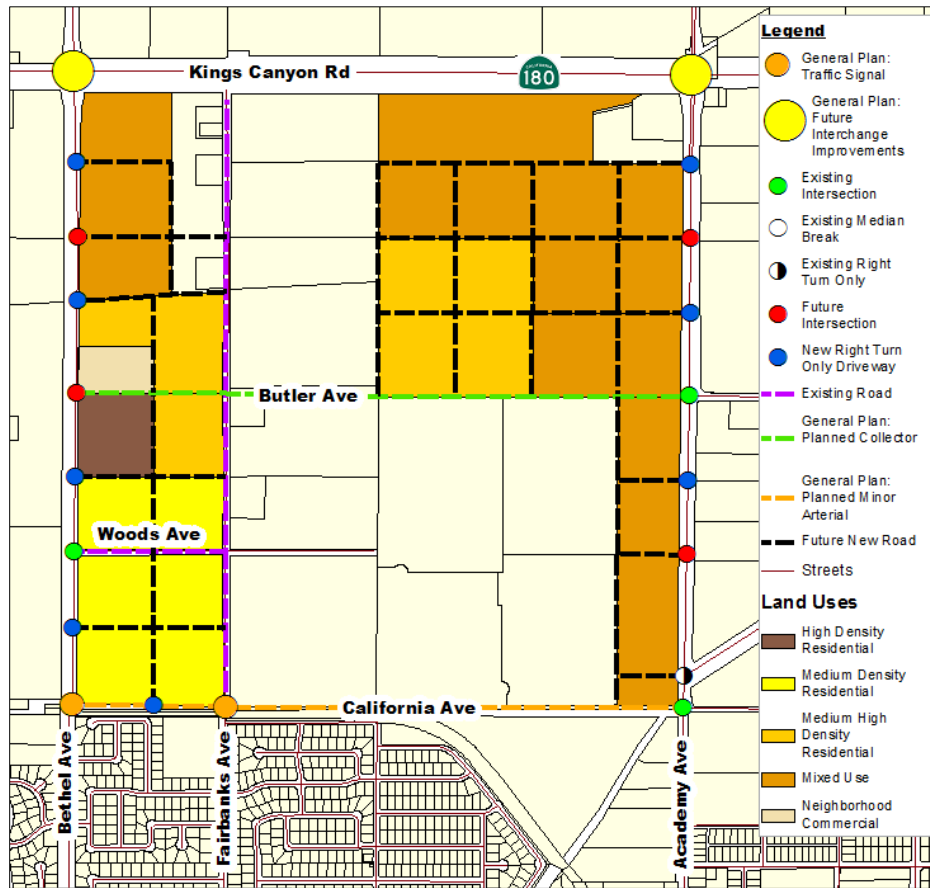
- TRA-1** When a land use development project is proposed, the City shall require the preparation of a traffic/transportation impact study (as directed by the City Engineer)

when one or more of the following conditions occur: 1) The proposed project requires an amendment to the Land Use Element of the General Plan; 2) The proposed project would result in substantial changes to the off-site transportation system; or 3) When certain traffic count criteria are met, such as if the project: a.) Exceeds 100 AM and/or PM peak hour trips (based on the trip generation rates identified in the latest version of the ITE Trip Generation Manual) or b.) Generates more than 50 peak hour trips at an existing City intersection.

The developer is responsible for objectively assessing the impacts of the development on the roadway network (subject to review/approval by the City Engineer). The analysis will follow standard procedures for the development of Traffic Impact Studies, including trip generation, distribution and assignment of trips, to the background roadway network and the analysis of level of service (LOS) on critical roadway segments and intersections under existing and future (20 years) conditions. Traffic impact studies evaluating State highway facilities, shall be referred to Caltrans, and utilize traffic study preparation guidelines and LOS standards as recommended by Caltrans. In addition, analysis on all City facilities (streets, roads, intersections, etc.) shall be consistent with the most recent version of the *Caltrans' Guide for the Preparation of Traffic Impact Studies*.

North Academy Master Plan Transportation Impacts

As previously discussed, a Transportation Impact Analysis Report was prepared specifically for the North Academy Corridor Master Plan and is included as Appendix D. The proposed Master Plan street network is shown in Figure 3.17-8.

Figure 3.17-8: North Academy Master Plan – Proposed Land Use / Street Network

The following analysis is specific to the North Academy Corridor Master Plan project:

Master Plan Trip Generation

The analysis assumes that the North Academy Corridor Master Plan Project will provide an additional 300 acres of mixed-use development (commercial and residential), medium and high residential development and neighborhood commercial land uses. However, for trip generation purposes, it is proposed that approximately one-third of the non-residential land and one-half of the residential uses will be developed between now and 2035. Following determination of proposed development in raw acres, several assumptions were made to convert values into square feet in order to calculate trip generation. These assumptions include using a floor area ratio (FAR) of 0.2, which includes a 5.8% reduction for roads. Refer to Table 3.17-8 – Master Plan Trip Generation.

Table 3.17-8: Master Plan Trip Generation

Land Use Category (ITE Code)	Unit	Rate/Unit	AM Peak Hour Trip			PM Peak Hour Trip		
			Rate/Unit			Rate/Unit		
			Total	In %	Out %	Total	In %	Out %
Multifamily Housing (Low-Rise) (220)	D.U.	7.32	0.46	0.23	0.77	0.56	0.63	0.37
Shopping Center (820)	GLA	37.75	0.94	0.62	0.38	3.81	0.48	0.52
Corridor Path	D.U. or KSF	Daily Trips	AM Peak Hour Trip			PM Peak Hour Trip		
			Total	In	Out	Total	In	Out
Academy Ave								
Mixed Use 1 (R)	D.U.	81	593	37	9	29	45	29
Mixed Use 2 (R)	D.U.	20	146	9	2	7	11	7
Mixed Use 3 (R)	D.U.	31	227	14	3	11	17	11
Mixed Use 1 (C)	Sq.Ft	140	5,275	131	81	50	532	256
Mixed Use 2 (C)	Sq.Ft	34	2,019	32	20	12	131	63
Mixed Use 3 (C)	Sq.Ft	53	2,019	50	31	19	204	98
Medium High Density Residential	D.U.	296	2,167	136	31	105	166	104
Subtotal	656	12,445	411	178	233	1,107	567	540
Bethel Ave								
Mixed Use 4 (R)	D.U.	31	227	14	3	11	17	11
Mixed Use 4 (C)	Sq.Ft	46	1,736	43	27	16	175	84
Neighborhood Commercial	Sq.Ft	20	760	19	12	7	77	37
Medium High Density Residential 1	D.U.	118	867	54	13	42	66	42
Medium High Density Residential 2	D.U.	67	488	31	7	24	37	23
Medium Density Residential	D.U.	319	2,332	147	34	113	178	112
High Density Residential	D.U.	110	805	51	12	39	62	39
Subtotal	711	7,215	359	107	252	613	348	265
Total	1,366	19,659	770	285	485	1,720	916	804

Master Plan Transportation Impacts

Existing plus Project conditions analyze the proposed project impacts on the planned circulation network of the City of Sanger. Table 3.17-9 provides a summary of existing plus project impacts to intersections.

Table 3.17-9: Existing Plus Master Plan Intersection LOS

#	Intersection	Control Type ^{1,2}	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay ⁴	LOS	Warrant Met? ³	Delay	LOS	Warrant Met? ³
1	Academy Ave/Kings Canyon Rd (SR 180)	Signal	C	10.7	B	--	13.0	B	--
2	Academy Ave/Butler Ave	TWSC	C	17.6	C	No	156.1	F	Yes
3	Academy Ave/California Ave	TWSC	C	15.5	C	No	27.9	D	No
4	Academy Ave/Geary Ave	TWSC	C	10.6	B	No	11.0	B	No
5	Academy Ave/Florence Ave	TWSC	C	12.3	B	No	16.6	C	No
6	Academy Ave/Church Ave	TWSC	C	14.0	B	No	34.2	D	Yes
7	Bethel Ave/Kings Canyon Rd (SR 180)	Signal	C	15.1	B	--	18.4	B	--
8	Bethel Ave/Church Ave	Signal	C	10.8	B	No	5.8	A	--

Notes:

1. TWSC = Two Way Stop Control
2. LOS = Delay based on worst minor street approach for TWSC intersections, average of all approaches for Signal
3. Warrant = Based on California MUTCD Warrant 3
4. OVR = Delay exceeds 300 seconds

As shown in bold type in Table 3.17-9, three (3) PM peak hour intersection deficiencies are projected to operate at unacceptable LOS D or worse conditions under *Existing plus Project* conditions. Further, two (2) intersection meets the CA MUTCD Warrant 3 (Academy Ave/Butler Ave). The remaining deficient projected intersections do not meet the CA MUTCD Warrant 3. All Mitigation measures are discussed in a subsequent section of this report.

Table 3.17-10 provides a summary of existing plus project impacts to roadway segment operations.

Table 3.17-10: Existing Plus Master Plan Road Segment Operations

Roadway Segment	Limits	No. of Lanes	Facility Type	AADT	LOS
State Route 180	Bethel Avenue – Academy Avenue	4	Divided Expressway	20,580	A
State Route 180	Academy Avenue – Newmark Avenue	4	Divided Expressway	16,030	A
Academy Avenue	Church Avenue – Butler Avenue	4	Principal Arterial	16,820	A
Academy Avenue	Butler Avenue – State Route 180	4	Principal Arterial	20,390	A
Bethel Avenue	Church Avenue – Florence Avenue	4	Arterial	8,320	A
Bethel Avenue	Florence Avenue – State Route 180	2	Collector	13,810	F

As presented in Table 3.17-10, all of the study roadway segments, with the exception of one (1) segment, is expected to operate at acceptable LOS under existing plus project conditions. The roadway segment of Bethel Avenue between Florence Avenue and State Route 180 is expected to operate at LOS F conditions. Mitigation measures to reduce impacts are discussed at the end of this section.

Cumulative plus Project conditions were developed by adding proposed project volumes to Cumulative No Project intersection traffic volumes. Intersection geometrics assumed are the same as Cumulative "No Project". Figure 13 of Appendix D identifies Cumulative plus Project lane geometrics and control and Figure 14 shows the resulting Cumulative plus Project AM and

PM peak hour intersection traffic volumes. Table 3.17-11 presents the results of the Cumulative plus Project condition analysis.

Table 3.17-11: Cumulative Plus Master Plan Intersection LOS

#	Intersection	Control Type ^{1,2}	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay ⁴	LOS	Warrant Met? ³	Delay ⁴	LOS	Warrant Met? ³
1	Academy Ave/Kings Canyon Rd (SR 180)	Signal	C	14.4	B	--	24.1	C	--
2	Academy Ave/Butler Ave	TWSC	C	95.2	F	No	OVR	F	Yes
3	Academy Ave/California Ave	TWSC	C	OVR	F	Yes	OVR	F	Yes
4	Academy Ave/Geary Ave	TWSC	C	11.8	B	No	17.3	C	No
5	Academy Ave/Florence Ave	TWSC	C	14.6	B	No	28.7	D	No
6	Academy Ave/Church Ave	TWSC	C	73.8	F	Yes	OVR	F	Yes
7	Bethel Ave/Kings Canyon Rd (SR 180)	Signal	C	45.5	D	--	34.5	C	--
8	Bethel Ave/Church Ave	Signal	C	12.6	B	--	5.3	A	--

Notes:

1. TWSC = Two Way Stop Control

2. LOS = Delay based on worst minor street approach for TWSC intersections, average of all approaches for Signal

3. Warrant = Based on California MUTCD Warrant 3

4. OVR = Delay exceeds 300 seconds

As presented in bold in Table 3.17-11, four (4) AM and four (4) PM peak hour intersection deficiencies are projected to operate at unacceptable LOS D conditions under cumulative plus project conditions. Further, three (3) intersections along Academy Avenue (California, Butler and Church Avenues) are anticipated to meet the CA MUTCD Warrant 3 (peak hour) under AM and/or PM peak periods.

Cumulative plus Project freeway segments and ramp segments for AM and PM peak hours were quantified by superimposing proposed project traffic over the cumulative no project traffic volumes. Table 3.17-12 shows cumulative plus project conditions roadway segments LOS results.

Table 3.17-12 : Cumulative Plus Master Plan Road Segment Operations

Roadway Segment	Limits	No. of Lanes	Facility Type	AADT	LOS
State Route 180	Bethel Avenue – Academy Avenue	4	Divided Expressway	41,750	F
State Route 180	Academy Avenue – Newmark Avenue	4	Divided Expressway	28,890	C
Academy Avenue	Church Avenue – Butler Avenue	4	Principal Arterial	26,500	C

Academy Avenue	Butler Avenue – State Route 180	4	Principal Arterial	29,280	D
Bethel Avenue	Church Avenue – Florence Avenue	4	Principal Arterial	11,190	A
Bethel Avenue	Florence Avenue – State Route 180	4	Principal Arterial	19,560	A

As presented in bold in Table 3.17-12, two (2) of the study roadway segments are projected to operate at unacceptable LOS D or worse conditions in the cumulative plus project conditions scenario.

Master Plan Recommended Transportation Improvements

Numerous improvements are recommended in order to mitigate the Master Plan transportation impacts. These are shown in Mitigation Measure TRA-1 below.

Upon completion of Mitigation Measure TRA-1, the impact would be reduced to a less than significant level by attaining acceptable levels of service. The payment of traffic fees as outlined in TRA-1 is an accepted form of mitigation for traffic impacts under CEQA. Though the applicant will pay its fair share fee for the identified improvements, the City of Sanger cannot ensure that the improvements will be fully funded sufficient to facilitate construction prior to the project's contribution to the impact. If a proposed improvement is not fully funded and constructed before completion of the project, significant impacts to the intersection or roadway could occur until the City and/or other jurisdiction (such as Caltrans) completes the improvements. Therefore, in accordance with the legal principles that underpin CEQA, the residual significance of this impact is *significant and unavoidable*.

North Academy Master Plan Mitigation Measures:

TRA – 2: As determined by the City of Sanger, and as a condition of approval, the developer(s) of the North Academy Master Plan shall mitigate its fair share of transportation related impacts by paying the project's fair share of mitigation costs and/or constructing the improvements and receiving credits and reimbursements for the portion of construction for the following improvements:

Existing Plus Project Intersection Deficiencies and Mitigations

- Academy Avenue / Butler Avenue: **Install traffic signal.**
- Academy Avenue / California Avenue: **Install All-way-stop control.**
- Academy Avenue / Church Avenue: **Install traffic signal.**

Existing Plus Project Roadway Segment Deficiencies and Mitigations

- Bethel Avenue between Florence Avenue and SR 180: **Widen to 4 lanes.**

Cumulative Plus Project Intersection Deficiencies and Mitigations

- Academy Avenue / Florence Avenue: **Monitor future operations.**
- Bethel Avenue / SR 180: **Install additional N/B left turn lane.**

Existing Plus Project Roadway Segment Deficiencies and Mitigations

- Academy Avenue between Butler and SR 180: **Widen to 6 lanes.**

The fair share amounts will be determined by the City and memorialized in a development agreement or other binding document.

Impact 3.17-3: *Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?*

Less Than Significant Impact. Implementation of the General Plan and Master Plan would increase the amount of vehicle traffic, as well as bicycles, pedestrians, and buses, using the circulation system. However, new and upgraded roadways will be designed according to applicable federal, state, and local design standards. As a result, implementation of the General Plan Update and Master Plan would result in a less-than-significant impact related to hazards due to roadway design features or incompatible uses.

Mitigation Measures: None are required.

Impact 3.17-4: *Result in inadequate emergency access.*

Less Than Significant Impact. Buildout of the proposed General Plan would allow for a variety of new development, including residential, commercial, industrial, and public service projects, which would result in increased jobs and population in the City of Sanger. Roads and infrastructure improvements would occur to accommodate the new growth. Goals, objectives and action plans regarding emergency preparedness are outlined in the Safety Element of the proposed General Plan update, as provided below:

Sanger Safety Element: Emergency Preparedness

Goals, Objectives, Action Plans

Goal:

- I. Keep Sanger prepared to respond to emergencies that can be reasonably expected to occur in or around the planning area.

Objective:

1. Maintain an emergency preparedness team composed of City Department heads. Coordinate with heads of other local agencies to provide a coordinated response to emergencies, including Sanger Police and Fire Departments, Fresno County Sheriff's Department, Sanger Unified School District, Consolidated Irrigation District and other agencies as may be appropriate. Require that this team meet on a twice-yearly basis to review emergency preparedness tactics, share information, discuss needs and develop action plans to address those needs. Issues to be explored include:

- Establishing emergency shelters at key locations, such as the community center, school campuses, etc. Ensure these facilities are stocked (or will be stocked) with emergency supplies such as blankets, water and food.
- Ensuring key roadways stay clear in the event that evacuation is necessary.
- Lines of communication are open in the event that equipment or manpower must be shared between agencies.
- Other issues that may be identified.

Future projects are not anticipated to remove or impede emergency access. Through consistency and adherence to the proposed General Plan goals, objectives and action plans, implementation of the General Plan and Master Plan would have a *less than significant impact* with regard to this issue.

Mitigation Measures: None are required.

Impact 3.17-5: *Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.*

Less Than Significant. Implementation of the General Plan Update and Master Plan would increase demand for public transit, bicycle, and pedestrian facilities, which would require the improvement and expansion of such services.

As described herein, the Circulation Element provides numerous action plans regarding non-motorized transportation which are designed to increase the use of public transit, as well as bicycle and pedestrian facilities. The Circulation Element also provides a complete streets approach, which considers all modes of transportation, in the planning, design and implementation of facilities to support planned population and employment growth. Therefore, implementation of the General Plan Update would result in a *less than significant impact* related to adopted policies, plans, or programs regarding public transit, bicycle, and pedestrian facilities.

Mitigation Measures: None are required.

3.18 Tribal Cultural Resources

This section of the DEIR evaluates the potential impacts to Tribal Cultural Resources (TCRs) associated with implementation of the 2035 Sanger General Plan and Master Plan. No IS/NOP comments were received pertaining to Tribal Cultural Resources.

Environmental Setting

Natural Environment

The Kings River corridor was an important Native American habitation and resource-gathering area, both prehistorically and historically. Several tribes fished for salmon, gathered acorns and other food and fiber resources, held ceremonies, and collected basketry materials along this stretch of the river.

The San Joaquin River is the prominent hydrologic feature that drains the southern half of the Great Valley into San Francisco Bay. The sharp peaks of the Sierra Nevada effectively block moisture moving eastward from the coast, resulting in a higher level of precipitation on the western slopes. Smaller east-west-trending rivers, like the Kings River, immediately adjacent to the Project area, drain the Sierra Nevada range before converging on the San Joaquin River. The Kings River and its smaller tributaries would have provided habitat for an abundance of food resources such as aquatic plants, fish, beaver, and other animals hunted prehistorically and historically.¹

Ethnographic Resources

The Northern Valley Yokuts inhabited the marshy regions of the upper half of the San Joaquin Valley, and were situated near major waterways, building on low mounds to prevent spring flooding. Ethnographic evidence indicates that these villages were occupied for the majority of the year and abandoned for short periods as the residents left to engage in seasonal resource gathering.²

In prehistoric times the Petachie, Gashowu, Wakichi and Kechayi of the Yokuts occupied the valley floor on the floodplains and creeks and rivers. Salmon spearing, acorn gathering and other hunting and gathering activities were conducted throughout the area by various tribes.

¹ Applied Earthworks, Inc. Cultural Resources Inventory for the Cricket Hollow Boat Launching Facility Project on the Kings River in Reedley, Fresno County, California.

² Ibid.

The Spanish missions established in the coastal areas in the 1700's served as an early influence for the Valley Indians. In 1833 an epidemic, possibly Malaria, infected the local Indian population and Indian life was further influenced by miners arriving in 1848. In 1851, soldiers arrived as part of the Mariposa Indian war and built a military post on the south bank of the San Joaquin River two miles above Friant. Native Americans in the area were involved as laborers in various railroad projects from 1891 through the early 1930's.³

Regulatory Setting

Assembly Bill (AB) 52

AB 52, which was approved in September 2014 and became effective on July 1, 2015, requires that CEQA lead agencies consult with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of a proposed project, if requested by the tribe. A provision of the bill, chaptered in CEQA Section 21086.21, also specifies that a project with an effect that may cause a substantial adverse change in the significance of a TCR is a project that may have a significant effect on the environment.

Defined in Section 21074(a) of the Public Resources Code, TCRs are:

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 California Register of Historical Resources; or
 - b. Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.
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 subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

TCRs are further defined under Section 21074 as follows:

³ Sanger GPU Part II: Community Profile, Page 3-18 (Collins & Schoettler, 2018).

- a. A cultural landscape that meets the criteria of subdivision (a) is a TCR to the extent that the landscape is geographically defined in terms of the size and scope of the landscape; and
- b. A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a “non-unique archaeological resource” as defined in subdivision (h) of Section 21083.2 may also be a TCR if it conforms with the criteria of subdivision (a).

Mitigation measures for TCRs must be developed in consultation with the affected California Native American tribe pursuant to newly chaptered Section 21080.3.2, or according to Section 21084.3. Section 21084.3 identifies mitigation measures that include avoidance and preservation of TCRs and treating TRCs with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource.

Methodology

According to AB 52, it is the responsibility of the tribes to formally request of a lead agency that they be notified of projects in the lead agency’s jurisdiction so that they may request consultation related to TCRs. Nevertheless, the City of Sanger proactively sent out letters to tribes identified by the Native American Heritage Commission. These include the following:

- Picayune Rancheria of Chukchansi
- Santa Rosa Rancheria Tachi Yokut Tribe
- Table Mountain Rancheria
- Kings River Choinumni Farm Tribe
- Traditional Choinumni Tribe
- Tule River Indian Tribe
- Dumna Wo-Wah Tribal Government

Thresholds of Significance

The thresholds of significance for this section are established by the CEQA Checklist Item.

- Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place,

cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

- i. Listed or eligible for listing in the California Register of Historical Resources, or in the local register of historical resources as defined in Public Resources Code Section 5020.1j(k) or
- ii. 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, the lead agency shall consider the significance of the resource to a California Native American tribe.

Impacts and Mitigation Measures

Impact 3.18-1: *Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:*

- i) *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*
- ii) *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 Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.*

Less Than Significant. As previously discussed, the City of Sanger sent out letters to the applicable tribes notifying them of the proposed Project. According to AB 52, the tribes had 90 days from the receipt of the letter to request consultation with the City of Sanger. None of the Tribes requested consultation.

As previously discussed in Chapter 3.5 – Cultural Resources, the SOI is not known to contain any TCRs. As further noted in that chapter, with respect to archaeological resources and human remains that may be present in areas where there would be some ground disturbance, mitigation measures set forth in the section, including monitoring, would be implemented to ensure that should resources be encountered, they would be protected from damage. Therefore, while no

TCRs are expected to be affected by the proposed project, the mitigation measures set forth in Chapter 3.5 - Cultural Resources, would further ensure that any resources encountered would not be adversely affected.

Based on the above, the proposed project is not expected to result in a substantial adverse change in the significance of TCRs, and this impact is considered *less than significant*.

Mitigation Measures: None are required.

Cumulative Impacts

Less Than Cumulatively Considerable. The scope for considering cumulative impacts to tribal cultural resources are the geographic areas covered by the General Plan Update and Master Plan as well as the areas designated by the Native American Heritage Commission as having potential to impact tribal cultural resources (TCRs) as a result of the Project. As discussed above, the SOI is not known to contain any TRCs; however, mitigation is included to reduce any potential impacts to Tribal Resources. As such, cumulative impacts are considered *less than cumulatively considerable*.

3.19 Utilities and Service Systems

This section of the DEIR identifies potential impacts of the proposed Project pertaining to water supply and infrastructure, wastewater (sewer) capacity and service, solid waste and other utility services. Primary information for the utilities and services systems was obtained from various sources. The City updated and adopted its Urban Water Management Plan (2015) in Fall 2018. Background information from that document is included in this EIR analysis and references to specific information from that document are used to support the analysis. The City also prepared a Sewer System Management Plan (2009). Other sources of technical information include the Kings Basin Water Authority 2015 Annual Report and the Kings Basin Water Authority Integrated Regional Water Management Plan (2012), as well as the Groundwater Sustainability Plan (GSP) developed under the Sustainable Groundwater Management Act (SGMA) and adopted by the City in December 2019.

Environmental Setting

Water Supply

Please refer to Section 3.10 – Hydrology and Water Quality for an extensive description of the environmental setting pertaining to water supply, which is incorporated into this discussion. The text is not duplicated here for purposes of brevity.

Water System

The City of Sanger is the governing agency and the main purveyor of water within the City limits. As of 2016, there are approximately 6,417 active service connections.¹ Figure 3.19-1 shows the Water Service Boundary Map and Figure 3.19-2 shows the location of the City's groundwater supply wells and storage tanks.

Wastewater (Sewer)

The City of Sanger provides wastewater collection and treatment for its residents and businesses. The existing sewer system is comprised of a network of approximately 80 miles of sewer pipelines, ranging from 6 to 30 inches in diameter, and includes four lift stations and associated force mains. Wastewater is conveyed by the collection system to the City's Wastewater Treatment

¹ Sanger Draft 2015 Urban Water Management Plan, page 11.

Plant (WWTP) located southeast of the urban area, east of Newmark Avenue and south of North Avenue, adjacent to the Kings River.

Domestic WWTP

Wastewater collection occurs through several main trunk lines which convey domestic sewer by gravity flow to the headworks of the treatment plant. The domestic WWTP consists of a headworks, grit chamber, two primary clarifiers, an activated sludge unit, secondary clarifiers, disinfection system, sludge thickener, anaerobic sludge digester, and a sludge holding tank. Currently, the disinfection system at the WWTP is not in use.

WDRs Order No. 2014-0004 allows the City's Domestic WWTP to discharge up to 3.0 million gallons per day (mgd). The City currently discharges undisinfected secondary effluent to six evaporation/percolation ponds approximately three miles south of the WWTP, to a site known as "Lincoln Ponds" on Lincoln Avenue. A 4-mile, 20-inch PVC pipeline pumps treated effluent from the WWTP to the Lincoln Ponds, which are located on a City owned 120-acre parcel. The Lincoln Ponds cover approximately nine acres, each with a total capacity of 328 acre-feet. Three of the ponds are used for effluent disposal, and three are used only for "emergency purposes."

The City does not currently recycle effluent discharged from the Domestic WWTP; however, the City is currently seeking interest from nearby agricultural and/or industrial water users to provide a beneficial use of the recycled water. The City is currently in the planning process of evaluating the feasibility of recycling treated effluent from the Domestic WWTP on nearby land. The City may retain jurisdiction over the recycled water or collaborate with CID to deliver recycled water using existing infrastructure.

Industrial WWTP

Wastewater is conveyed through a separate industrial sewer truck line from the main industrial area to the headworks of the Industrial WWTP. The Industrial WWTP consists of headworks, aerated grit chamber, primary clarifiers, a biofilter, an intermediate pump station for biofilter recirculation, and a pump station to transport the effluent to the treatment train. The treatment train consists of a fully mechanically aerated treatment pond, an aerated storage pond, three non-aerated storage ponds, and six pump stations for draining the ponds.

Figure 3.19-1: Water Service Boundary Map

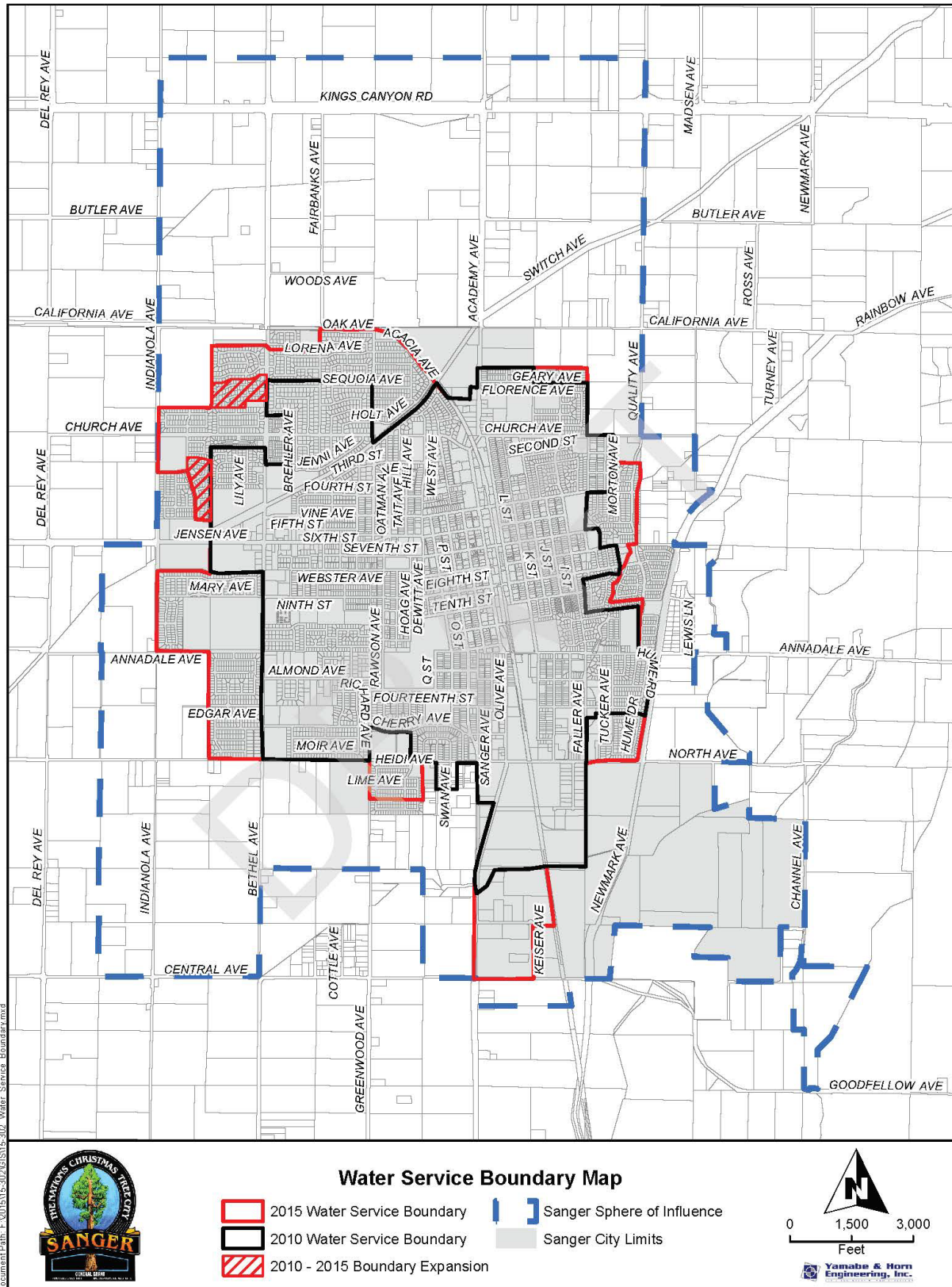
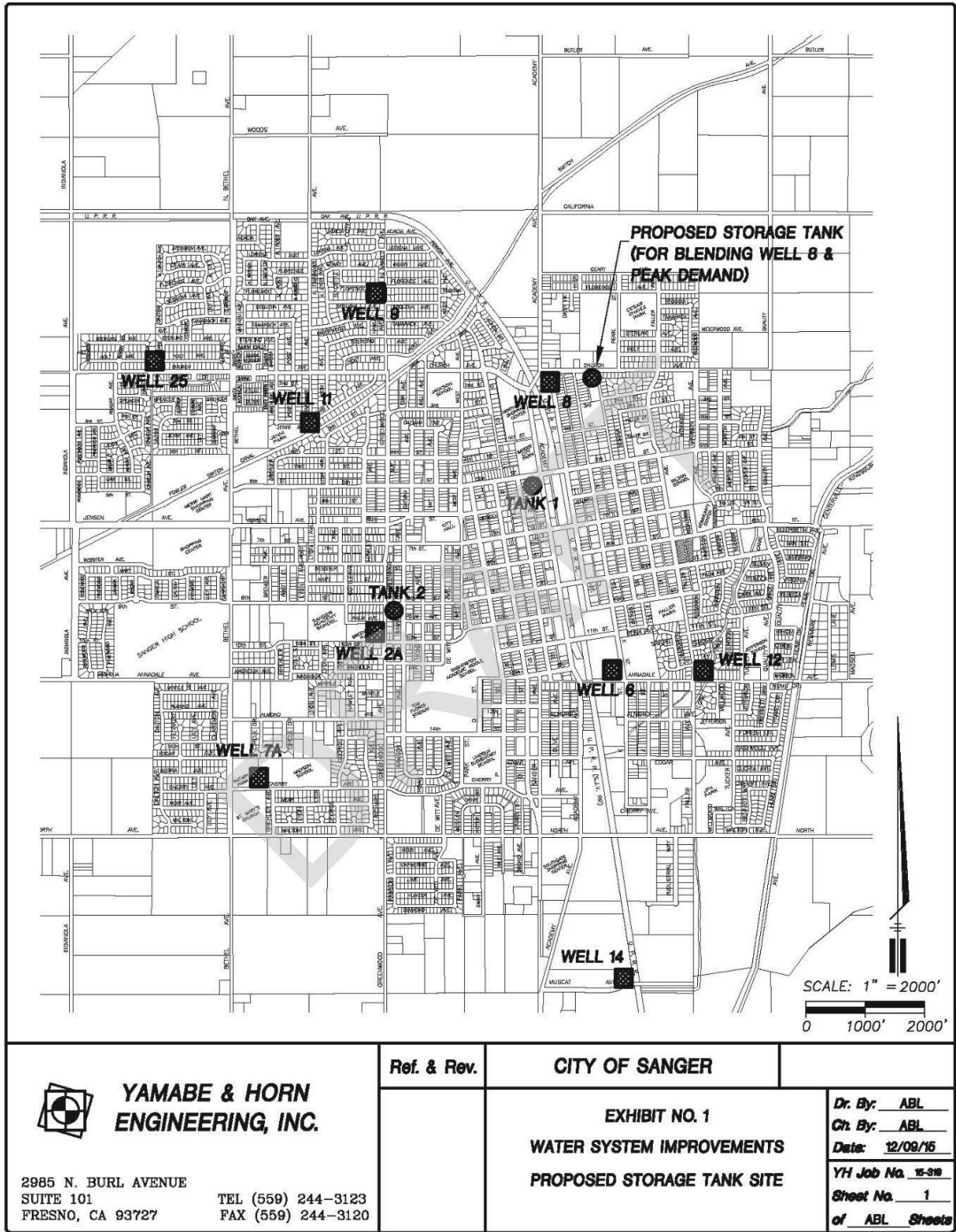


Figure 3.19-2: Location of Groundwater Wells and Storage Tanks



The City operates and maintains two separate Domestic and Industrial wastewater treatment plants under Waste Discharge Requirements (WDRs) Order No. R-2014-0004.

The WWTP's lie adjacent to one another, but wastewater from the individual plans are not comingled. Effluent from the industrial WWTP is stored in effluent storage ponds that are adjacent to the WWTP, and used to irrigate adjacent farmland for growing fiber, seed and fodder crops.²

Collection of sewage effluent is accomplished through a system of main trunk lines within major street rights-of-way. As development occurs, main trunks are extended through a combination of major facilities extensions typically funded through development fees and state and federal grants. Local extensions are constructed by developers based on individual project requirements. The City also collects sewer system impact fees from new development. Funds accrued by these fees are used to make capital improvements to the system.

Storm Water System

The City operates a storm drainage system that provides drainage facilities for most of the urban area. The system is comprised primarily of gutter flow to pipelines that range in size from 8 to 36 inches. Drainage is channeled through storm drain lines to a series of storage basins or irrigation canals and pipelines. There are approximately ten retention basins located throughout the City's service area, ranging in capacity from under one acre foot to over 100 acre feet.

The City does not currently have a storm drainage master plan and so storm drain facilities are designed either on a drainage sub-area or piece-meal basis. If permanent storm drainage facilities are not available to serve a proposed development the developer must install temporary on-site facilities or permanent drainage facilities. Developers are also required to pay the City's storm drain impact fee. Funds accumulated in this account are used to make capital storm drainage improvements throughout the City.³

Solid Waste

Sanger contracts with Mid Valley Disposal Service for solid waste collection. In addition, this private contractor operates a curbside recycling program. Mid Valley Disposal transports solid waste to a transfer facility in Fresno for sorting, after which solid waste is hauled the American Avenue landfill, located near Kerman. The American Avenue landfill is a 440-acre facility and

² Sanger Draft Urban Water Management Plan (2018), pages 43-44.

³ Sanger GPU Part II: Community Profile, page 1-31.

has a 30-year “life expectancy” based on current rates of disposal. The City’s website provides schedules for solid waste and recycled waste pickup. According to CalRecycle, the facility is permitted to receive 2,200 tons/day with a total maximum capacity of 32,700,000 cubic yards.⁴

There are other landfills in the area including the Clovis Landfill which is permitted to receive up to 2,000 tons/day and is expected to remain operational until Year 2047.

In the unincorporated portions of the community, solid waste disposal is handled by the individual property owner. Sanger has successfully achieved the State of California’s mandate to divert at least 50% of its solid waste stream to recycling and green waste programs, and is working with Mid Valley Disposal to devise strategies to meet the 75% diversion rate by the year 2020.⁵

Electricity and Natural Gas

Pacific Gas and Electric Company (PG&E) provides electric and natural gas utilities to the project area.

Regulatory Setting

Federal Agencies and Regulations

Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) was originally passed by Congress in 1974 to protect public health by regulating the nation’s public drinking water supply. The law was amended in 1986 and 1996 and requires many actions to protect drinking water and its sources: rivers, lakes, reservoirs, springs, and groundwater wells. The SDWA applies to every public water system in the United States but does not regulate private wells which serve fewer than 25 individuals.

The SDWA authorizes the United States Environmental Protection Agency (EPA) to set national health- based standards for drinking water to protect against both naturally-occurring and manmade contaminants that may be found in drinking water. Originally, the SDWA focused primarily on treatment as the means of providing safe drinking water at the tap. The 1996 amendments changed the existing law by recognizing source water protection, operator training, funding for water system improvements, and public information as important components of

⁴ <https://www2.calrecycle.ca.gov/swfacilities/Directory/10-AA-0009> (accessed Jan. 2020).

⁵ Sanger General Plan Community Profile (2018), page 1-18.

safe drinking water. This approach is intended to ensure the quality of drinking water by protecting it from source to tap.

Clean Water Act

The Clean Water Act (CWA) is the primary federal legislation governing surface water quality protection. The statute employs a variety of regulatory and non-regulatory tools to sharply reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. These tools are employed to achieve the broader goal of restoring and maintaining the chemical, physical, and biological integrity of the nation's waters so that they can support "the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water." Pollutants regulated under the CWA include "priority" pollutants, including various toxic pollutants; "conventional" pollutants, such as biochemical oxygen demand (BOD), total suspended solids (TSS), fecal coliform, oil and grease, and pH; and "non-conventional" pollutants, including any pollutant not identified as either conventional or priority. The CWA regulates both direct and indirect discharges.

National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) program, Section 402 of the CWA, controls direct discharges into navigable waters. Direct discharges or "point source" discharges are from sources such as pipes and sewers. NPDES permits, issued by either EPA or an authorized state/tribe, contain industry-specific, technology-based and/or water-quality-based limits, and establish pollutant monitoring and reporting requirements. (EPA has authorized 40 states to administer the NPDES program.) A facility that intends to discharge into the nation's waters must obtain a permit before initiating a discharge. A permit applicant must provide quantitative analytical data identifying the types of pollutants present in the facility's effluent and the permit will then set forth the conditions and effluent limitations under which a facility may make a discharge.

General Pretreatment Regulations

Another type of discharge that is regulated by the CWA is discharge that goes to a publicly owned treatment works (POTW). POTWs collect wastewater from homes, commercial buildings, and industrial facilities and transport it via a collection system to the treatment plant. Here, the POTW removes harmful organisms and other contaminants from the sewage so it can be discharged safely into the receiving stream. Generally, POTWs are designed to treat domestic sewage only. However, POTWs also receive wastewater from industrial (non-domestic) users. The General Pretreatment Regulations establish responsibilities of federal, state, and local government,

industry, and the public to implement pretreatment standards to protect municipal wastewater treatment plants from damage that may occur when hazardous, toxic, or other wastes are discharged into a sewer system and to protect the quality of sludge generated by these plants. Discharges to a POTW are regulated primarily by the POTW itself, rather than the state/tribe or EPA.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) was enacted in 1976 to address the huge volumes of municipal and industrial solid waste generated nationwide. After several amendments, the Act as it stands today governs the management of solid and hazardous waste and underground storage tanks (USTs). RCRA is an amendment to the Solid Waste Disposal Act of 1965. RCRA has been amended several times, most significantly by the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA is a combination of the first solid waste statutes and all subsequent amendments. RCRA authorizes the EPA to regulate waste management activities. RCRA authorizes states to develop and enforce their own waste management programs, in lieu of the federal program, if a state's waste management program is substantially equivalent to, consistent with, and no less stringent than the federal program.

State Agencies and Regulations

Porter-Cologne Water Quality Act

In 1969, the California Legislature enacted the Porter-Cologne Water Quality Control Act to preserve, enhance, and restore the quality of the state's water resources. The act established the State Water Resources Control Board and nine Regional Water Quality Control Boards as the principal state agencies with the responsibility for controlling water quality in California. Under the act, water quality policy is established, water quality standards are enforced for both surface water and groundwater, and the discharges of pollutants from point and nonpoint sources are regulated. The act authorizes the State Water Resources Control Board to establish water quality principles and guidelines for long-range resource planning including groundwater and surface water management programs and control and use of recycled water.

State Water Resources Control Board

Created by the State Legislature in 1967, the five-member State Water Resources Control Board (SWRCB) allocates water rights, adjudicates water right disputes, develops statewide water protection plans, establishes water quality standards, and guides the nine Regional Water Quality Control Boards located in the major watersheds of the state. The joint authority of water allocation

and water quality protection enables SWRCB to provide comprehensive protection for California's waters. SWRCB is responsible for implementing the CWA and issues NPDES permits to cities and counties through Regional Water Quality Control Boards (RWQCBs). The Planning Area is located within a portion of the state that is regulated by the Central Valley RWQCB.

Urban Water Management Planning Act

In 1983, the California Legislature enacted the Urban Water Management Planning Act (Water Code Sections 10610–10656). The act states that every urban water supplier that provides water to 3,000 or more customers, or that provides over 3,000 acre-feet of water annually, 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 act describes the contents of the Urban Water Management Plans as well as how urban water suppliers should adopt and implement the plans. It is the intention of the act to permit levels of water management planning commensurate with the numbers of customers served and the volume of water supplied.

Senate Bill (SB) 610

SB 610 makes changes to the Urban Water Management Planning Act to require additional information in Urban Water Management Plans if groundwater is identified as a source available to the supplier. Required information includes a copy of any groundwater management plan adopted by the supplier, a copy of the adjudication order or decree for adjudicated basins, and if non-adjudicated, whether the basin has been identified as being overdrafted or projected to be overdrafted in the most current California Department of Water Resources publication on that basin. If the basin is in overdraft, that plan must include current efforts to eliminate any long-term overdraft. A key provision in SB 610 requires that any project subject to the California Environmental Quality Act supplied with water from a public water system be provided a specified water supply assessment, except as specified in the law.

Assembly Bill (AB) 901

AB 901 requires Urban Water Management Plans to include information relating to the quality of existing sources of water available to an urban water supplier over given time periods and the manner in which water quality affects water management strategies and supply.

Senate Bill (SB) 221

SB 221 prohibits approval of subdivisions consisting of more than 500 dwelling units unless there is verification of sufficient water supplies for the project from the applicable water supplier(s).

This requirement also applies to increases of 10 percent or more of service connections for public water systems with less than 500 service connections. The law defines criteria for determining “sufficient water supply” such as using normal, single-dry, and multiple-dry year hydrology and identifying the amount of water that the supplier can reasonably rely on to meet existing and future planned uses. Rights to extract additional groundwater, if groundwater is to be used for the project, must be substantiated.

California Integrated Waste Management Act

To minimize the amount of solid waste that must be disposed of by transformation and land disposal, the State Legislature passed the California Integrated Waste Management Act of 1989 (AB 939), effective January 1990. According to AB 939, all cities and counties are required to divert 25 percent of all solid waste from landfill facilities by January 1, 1995, and 50 percent by January 1, 2000, and beyond. Solid waste plans are required to explain how each city’s AB 939 plan will be integrated with the respective county plan. They must promote (in order of priority) source reduction, recycling and composting, and environmentally safe transformation and land disposal.

Regional

Regional Water Quality Control Board, Central Valley Region

The Central Valley RWQCB provides planning, monitoring, and enforcement techniques for surface and ground water quality in the Central Valley region, including the City of Tehachapi. The primary duty of the RWQCB is to protect the quality of the waters within the region for all beneficial uses. This duty is implemented by formulating and adopting water quality plans for specific ground or surface water basins and by prescribing and enforcing requirements on all agricultural, domestic and industrial waste discharges.

Water Reuse Requirements (Permits)

The Central Valley RWQCB issues water reuse requirements (permits) for projects that reuse treated wastewater. These permits include water quality protections as well as public health protections by incorporating criteria established by DPH in Title 22. The Central Valley RWQCB may also incorporate requirements into the permit in addition to those specified in Title 22. These typically include periodic inspection of recycled water systems, periodic cross-connection testing, periodic training of personnel that operate recycled water systems, maintaining a database and/or permitting individual use sites, periodic monitoring of recycled water and groundwater quality, and periodic reporting.

Waste Discharge Requirements

The Central Valley RWQCB typically requires a Waste Discharge Requirement (WDR) permit for any facility or person discharging or proposing to discharge waste that could affect the quality of the waters of the state, other than into a community sewer system. Those discharging pollutants (or proposing to discharge pollutants) into surface waters must obtain an NPDES permit from the Central Valley RWQCB.

The NPDES serves as the WDR. For other types of discharges, such as those affecting groundwater or in a diffused manner (e.g., erosion from soil disturbance or waste discharges to land), a Report of Waste Discharge (WDR) must be filed with the Central Valley RWQCB in order to obtain WDRs. For specific situations, the Central Valley RWQCB may waive the requirement to obtain a WDR for discharges to land or may determine that a proposed discharge can be permitted more effectively through enrollment in a general NPDES permit or general WDR.

Sustainable Groundwater Management Act

Section 65352.5(a)

For General Plans: Section 65350.5 requires planning agencies to review prior to adopting new or amended general plan:

- a. An adoption of, or update to, a groundwater sustainability plan or groundwater management plan pursuant to Part 2.74 (commencing with Section 10720) or Part 2.75 (commencing with Section 10750) of Division 6 of the Water Code or groundwater management court order, judgment or decree.
- b. An adjudication of water rights.
- c. An order or interim plan by the State Water Resources Control Board pursuant to Chapter 11 (commencing with Section 10735) of Part 2.74 of Division 6 of the Water Code.

Kings Basin Integrated Regional Water Management Plan

The Kings Basin Integrated Regional Water Management Plan (IRWMP) defines problems and issues; regional goals and objectives; water management strategies; and projects to enhance the beneficial uses of water for the Kings Basin Region. Now in its second edition, the current IRWMP is the outcome of a more than two-year collaborative planning process that included a Disadvantaged Community (DAC) pilot study, extensive stakeholder involvement and

numerous meetings among various work groups and participants. The final plan document was adopted by the Kings Basin Water Authority Board of Directors on October 17, 2012.⁶

Local

Sanger 2035 General Plan Update – Land Use Element

Goals, Objectives and Action Plans

Issue Eleven: Infrastructure

Goal:

- I. Adequately develop and finance infrastructure systems.

Objective:

1. Undertake a study periodically to update Sanger's development impact fees for sewer, water and storm drainage fees.

Action Plan:

- a. The City should periodically commission a consultant to prepare a study of Sanger's development impact fees including sewer, water and storm drainage. The fees should be reviewed every two years to ensure that the fees keep pace with the cost of these services.

Objective:

2. The City will not approve new development without a determination that the City's water system has or will have sufficient capacity to serve the development without reducing water service to other properties, or negatively impacting local water pressures.
3. The annexation of a Disadvantaged Unincorporated Community (DUC) will trigger the City's installation of sewer, water and storm drainage improvements within the Community. Said improvements shall be financed by connection fees charged to the owners of property in the DUC.

⁶ Kings Basin Water Authority. Integrated Regional Water Management Plan. <http://www.kingsbasinauthority.org/governance/governing-documents/irwmp/>. Accessed May 2018.

Action Plan:

- a. The City Engineer shall evaluate the infrastructure costs of serving a Disadvantaged Unincorporated Community, and report these findings to the City Council.

Objective:

4. The City shall prepare an update to its water, sewer and storm drainage master plans in order to properly and efficiently serve future development provided for by the Land Use Element.

Action Plan:

- a. The City shall pursue funding sources to prepare the aforementioned master plans.
- b. The modification of the City's development impact fees shall be consistent with the State Mitigation Fee Act, which requires a clear nexus between fees and their purpose.

Objective:

5. The City should continue to seek state and federal grants for the upgrading and expansion of its infrastructure systems.

Action Plan:

- a. The City Manager shall continue to have staff or consultants pursue grants or loans for the financing of infrastructure including low interest loans from USDA.

Goal:

- II. Maintain, rebuild and upgrade infrastructure systems.

Objective:

1. The City shall update its 5-Year Capital Improvement Program to ensure that its infrastructure system can accommodate the urban growth prescribed by the Land Use Element.

Action Plan:

- a. The 5-year capital improvement program shall be updated, and input from the community invited.

Objective:

2. The City should work with the private sector to participate in the upgrading of off-site infrastructure improvements when adjacent land is being considered for development.

Action Plan:

- a. From time to time, the City may work with a developer to upgrade a part of the infrastructure or street system that is not part of the project being developed.

Objective:

3. The City should focus on upgrading infrastructure and road improvements in certain parts of the Downtown with a particular focus on 5th, 7th and 9th Streets on the east side of the Union Pacific Railroad as well as land on both sides of L Street.

Action Plan:

- a. The City Engineer should evaluate these areas to determine if there are projects that should be added to Sanger's 5-year capital improvement program.

Thresholds of Significance

The thresholds of significance for this section are established by the CEQA Guidelines Appendix G.

- o Require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?
- o Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

- Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?
- Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?
- Comply with federal, state and local management and reduction statutes and regulations related to solid waste?

Impacts and Mitigation Measures

Impact 3.19-1: *Require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?*

Impact 3.19-3: *Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?*

Less Than Significant. As Sanger continues to develop in the future, there will be an increased need for wastewater (sewer), water, stormwater systems, electric power, natural gas and communications facilities.

Wastewater (sewer)

Collection of sewage effluent is accomplished through a system of main trunk lines within major street rights-of-way. As development occurs, main trunks are extended through a combination of major facilities extensions typically funded through development fees and state and federal grants. Local extensions are constructed by developers based on individual project requirements. The City also collects sewer system impact fees from new development. Funds accrued by these fees are used to make capital improvements to the system.

According to the City's Sewer System Master Plan (2009), based on the existing population in 2005, and estimated population growth through 2035, the City would need up to five new trunk lines. Two of the trunk lines have been built since 2005. These new lines would need to accommodate new construction (capacity increasing). The City also worked with Carollo Engineers to develop plans for sewer treatment plant renovation and expansion. These expansion

plans would increase the capacity to 5.3 million gallons per day, which is estimated to serve Sanger until the year 2035.⁷

The City operates and maintains two separate Domestic and Industrial wastewater treatment plants (WWTP) under Waste Discharge Requirements (WDRs) Order No. R-2014-0004.

Domestic WWTP

The City of Sanger operates its own wastewater collection system and domestic wastewater treatment plant. Wastewater collection occurs through several main trunk lines which convey domestic sewer by gravity flow to the headworks of the treatment plant. The domestic WWTP consists of a headworks, grit chamber, two primary clarifiers, an activated sludge unit, secondary clarifiers, disinfection system, sludge thickener, anaerobic sludge digester, and a sludge holding tank. Currently, the disinfection system at the WWTP is not in use.

WDRs Order No. 2014-0004 allows the City's Domestic WWTP to discharge up to 3.0 million gallons per day (mgd). The City currently discharges undisinfected secondary effluent to six evaporation/percolation ponds approximately three miles south of the WWTP, to a site known as "Lincoln Ponds" on Lincoln Avenue. A 4-mile, 20-inch PVC pipeline pumps treated effluent from the WWTP to the Lincoln Ponds, which are located on a City owned 120-acre parcel. The Lincoln Ponds cover approximately nine acres, each with a total capacity of 328 acre-feet. Three of the ponds are used for effluent disposal, and three are used only for "emergency purposes."

The City does not currently recycle effluent discharged from the Domestic WWTP; however, the City is currently seeking interest from nearby agricultural and/or industrial water users to provide a beneficial use of the recycled water. The City is currently in the planning process of evaluating the feasibility of recycling treated effluent from the Domestic WWTP on nearby land. The City may retain jurisdiction over the recycled water or collaborate with CID to deliver recycled water using existing infrastructure.

Industrial WWTP

Wastewater is conveyed through a separate industrial sewer truck line from the main industrial area to the headworks of the Industrial WWTP. The Industrial WWTP consists of headworks, aerated grit chamber, primary clarifiers, a biofilter, an intermediate pump station for biofilter recirculation, and a pump station to transport the effluent to the treatment train. The treatment

⁷ Sanger Sewer System Management Plan (2009), page 40.

train consists of a fully mechanically aerated treatment pond, an aerated storage pond, three non-aerated storage ponds, and six pump stations for draining the ponds.

The WWTP's lie adjacent to one another, but wastewater from the individual plans are not comingled. Effluent from the industrial WWTP is stored in effluent storage ponds that are adjacent to the WWTP, and used to irrigate adjacent farmland for growing fiber, seed and fodder crops.⁸

The General Plan includes provisions to ensure that new development cannot be approved until it can be demonstrated that adequate capacity is available to serve it. As described above, the City will identify necessary system upgrades and capacity enhancements to meet growth, prior to the approval of new development. Since the land uses within the existing General Plan buildout scenarios would not be substantially different from the land uses within the proposed General Plan Update and Master Plan buildout scenarios, the Project is not expected to allow an increase above planned wastewater treatment capacity. Treatment of the effluent would continue to occur as required by the WDR and the Regional Water Quality Control Board requirements.

Therefore, because the projected wastewater generation volumes associated with buildout of the General Plan Update and Master Plan would not be expected to exceed future demand; that treatment will continue to be adequate; and that the proposed General Plan Update contains a comprehensive set of Goals, Objectives and Action Plans to ensure an adequate and reliable wastewater collection and treatment system with adequate capacity; impacts associated with wastewater treatment and capacity, and compliance with waste discharge requirements are less than significant.

In addition, the specific environmental impacts of constructing new sewer facilities such as collection trunk lines and/or expanded WWTP facilities that may be needed to support new development cannot be determined because the locations and designs of new facilities are not yet known. However, it can be expected that such construction would have similar impacts as would construction and operation of other types of future development within the proposed SOI. The proposed General Plan Update policies and mitigation measures referenced in other sections of this EIR that serve to avoid or reduce potential impacts from new development would also avoid or reduce impacts of constructing and operating new or expanded wastewater facilities. In addition, as new infrastructure projects are proposed, the City will be required to conduct a

⁸ Sanger Draft Urban Water Management Plan (2018), pages 43-44.

CEQA evaluation of each individual project as required by CEQA and the CEQA Guidelines on a case by case basis. Therefore, this impact would be less than significant.

Stormwater

Development proposed under the General Plan Update and Master Plan would result in the need for additional or expanded stormwater drainage, conveyance, and retention infrastructure.

The City operates a storm drainage system that provides drainage facilities for most of the urban area. The system is comprised primarily of gutter flow to pipelines that range in size from 8 to 36 inches. Drainage is channeled through storm drain lines to a series of storage basins or irrigation canals and pipelines. There are approximately ten retention basins located throughout the City's service area, ranging in capacity from under one acre foot to over 100 acre feet.

The City does not currently have a storm drainage master plan and storm drain facilities are designed either on a drainage sub-area or piece-meal basis. If permanent storm drainage facilities are not available to serve a proposed development the developer must install temporary on-site facilities or permanent drainage facilities. Developers are also required to pay the City's storm drain impact fee. Funds accumulated in this account are used to make capital storm drainage improvements throughout the City.⁹

The specific environmental impacts of constructing new storm water drainage facilities such as storm water collection piping and detention/percolation facilities that may be needed to support new development cannot be determined because the locations and designs of new facilities are not yet known. However, it can be expected that such construction would have similar impacts as would construction and operation of other types of future development within the proposed SOI. These potential impacts are not anticipated to be significant and unavoidable given the types of storm water infrastructure that would be required. The proposed General Plan Update policies and mitigation measures referenced in other sections of this EIR that serve to avoid or reduce potential impacts from new development would also avoid or reduce impacts of constructing and operating new or expanded drainage facilities. In addition, as new infrastructure projects are proposed, the City will be required to conduct a CEQA evaluation of each individual project as required by CEQA and the CEQA Guidelines on a case by case basis. Therefore, this impact would be less than significant.

Electric Power, Natural Gas and Telecommunications Facilities

⁹ Sanger GPU Part II: Community Profile, page 1-31.

Development proposed under the General Plan Update and Master Plan would result in the need for additional or expanded electric power, natural gas, and telecommunications facilities depending on the size and pace of new development.

The specific environmental impacts of constructing new electric power, natural gas, or telecommunications facilities (such as poles, pipelines, towers, etc.) that may be needed to support new development cannot be determined because the locations and designs of new facilities are not yet known. However, it can be expected that such construction would have similar impacts as would construction and operation of other types of future development within the proposed SOI. These potential impacts are not anticipated to be significant and unavoidable given the typical nature of the infrastructure that would be required. The proposed General Plan Update policies and mitigation measures referenced in other sections of this EIR that serve to avoid or reduce potential impacts from new development would also avoid or reduce impacts of constructing and operating these new or expanded infrastructure. In addition, as new infrastructure projects are proposed, the City will be required to conduct a CEQA evaluation of each individual project as required by CEQA and the CEQA Guidelines on a case by case basis. Therefore, this impact would be *less than significant*.

Master Plan Infrastructure

As part of the Master Plan, the City of Sanger prepared an *Analysis of Utilities and Infrastructure for North Academy Corridor Master Plan* (Yamabe & Horn, 2019). That document is included as Appendix E. The report outlined the expected demand for water, wastewater and stormwater resulting from development of the Master Plan and provides an assessment of specific infrastructure needs to serve the Master Plan.

Wastewater

The Master Plan Area lies within the Eastside Sewer Interceptor Service Area. Portions of the sewer collection system proposed to serve the North Academy Corridor will also ultimately serve other parcels and development within the Eastside Sewer Interceptor Service Area in accordance with the SCSMP. Additional sewer mains within the Eastside Interceptor Service Area but outside the Plan Area that connect to the primary trunk lines were included in the sewer model to ensure that the trunk lines built with development of the Plan Area will be adequate for the remainder of the Interceptor Service Area at its buildout. See Exhibit SS-2 in Appendix E for a depiction of the various sewer service areas and trunk mains required for development of the Plan Area and the future adjacent development within the City Sphere of Influence.

The City has indicated that once the appropriate wastewater collection infrastructure is installed, its wastewater treatment plant has capacity to serve additional demand associated with the Master Plan.¹⁰

Water

The adopted 2004 Water System Master Plan (WSMP) includes the construction of future City Wells, including Well No. 28. The proposed site for Well No. 28 lies within the Master Plan Area and will be located near the Cal Fire station on Academy Avenue north of Butler Avenue. Development within the Plan Area should be required to construct Well No. 28 together with a looped system including a connection point back to the existing main in Academy, in order to provide and maintain two points of connection to water supply. Historically, most wells in the City of Sanger have been equipped with Granular Activated Carbon (GAC) filtration systems to remove 1,2-Dibromo-3-Chloropropane (D.B.C.P.) contamination from the ground water. It is assumed that a GAC filtration system will also be required as a component of the construction of Well No. 28 to remove D.B.C.P. in addition to the contaminant 1,2,3-Trichloropropane (1,2,3-TCP), as mandated by recent requirements of the California State Water Resources Board for public water systems. The proposed backbone distribution system to serve the Plan Area is depicted on Exhibit W-2 in Appendix E.¹¹ See impact discussion 3.10-2 regarding water supply.

Stormwater

The Service Areas overlying the Master Plan Area consist of five separate networks of storm drain manholes, inlets, and mains all ranging from 15" to 54" in diameter. See Exhibit SD-3 of Appendix E for the required pipeline sizing as well as the depiction of facilities required to serve both the Master Plan Area and future adjacent development. Onsite drainage systems are not shown within the SDMP and were not designed for master plan purposes. The master plan storm drain mains were designed based on the estimated flows and the existing ground topography. The master plan storm drain mains may be PVC pipe for diameters 18-inch and smaller, and concrete pipe (RGRCP) for diameters larger than 18- inch, with a Manning's n-value of 0.010 (PVC) and 0.0013 (concrete) being used for the design. The mains were designed to flow under a surcharged (low-head pressure) condition while maintaining a minimum of two feet of freeboard at the lowest manhole junction and/or drain inlet within each separate system. Lines C, D, and E (per SDMP) are within the North Service Area and serve the westerly majority of the Plan Area. Lines

¹⁰ Analysis of Utilities and Infrastructure for the North Academy Corridor Master Plan, (Appendix E, page 5).

¹¹ Ibid. Appendix E, page 7.

H and CQ are within the Northeast and CQ Service Areas, respectively, and serve the easterly portion of the Plan Area.

The Master Plan area includes two areas designated for development of retention basins; one in the North Service Area and one in the Northeast Service Area. Each basin is necessary to serve development within the Plan Area. The basin in the North Service Area is situated roughly north of the Woods Avenue alignment and west of Academy Avenue. This is referred to as the North Area Basin with a footprint area of 15 acres and proposed total volume at buildout of the North Service Area of roughly 236 acre-feet. It is assumed that the entire basin property will be purchased and dedicated to the City with buildout of the Plan Area, with excavation occurring over time as development occurs. The cost estimate for the Plan includes the property purchase and fencing of the property, along with excavation sufficient to serve the Plan Area within the North Service Area, estimated at 74 Acre-Feet (AF) or 120,000 cubic yards (CY). Future landscaping is assumed to be completed separately and is not included in the cost estimate.

The 10-acre Northeast Area Basin is located north of the Switch Avenue alignment, east of Academy Avenue and is planned for an ultimate storage volume of approximately 127 acre-feet. This basin may also be proposed for an interconnection to the Fowler Switch Canal for the purposes of groundwater recharge, if an agreement can be reached with Consolidated Irrigation District (CID), the agency maintaining jurisdiction over the canal. As with the North Area Basin, the cost estimate for the Northeast Area Basin includes the cost to purchase and fence the entire property, with excavation sufficient to serve the Plan Area, estimated at 21 AF or 34,000 CY. See Exhibits SD-2 and SD-3 of Appendix E for depiction of basin locations within the Service Areas and Plan Area.

A portion of the Plan Area south of the Fowler Switch Canal lies within the CQ Service Area and is to be served by the CQ basin, per the SDMP. Proposed Basin CQ is outside the boundary of the Plan Area and is not a part of the proposed improvements of the Plan. Development occurring in this area may incorporate temporary onsite retention rather than constructing the additional offsite storm drain facilities and basin excavation required for permanent service. Construction of proposed storm drain facilities lying within the Plan Area will be required. Another portion of the Plan Area south of the Fowler Switch Canal and west of the CQ Service Area is within the existing drainage boundary of the Cesar Chavez Drainage Basin. This area can be designed to surface drain to Academy Avenue and the existing drainage facilities therein.

An area north of Butler Avenue in the westerly portion of the Plan Area within the North Service Area is to be served by storm drain facilities proposed to be built outside the limits of the Plan Area. As with the portion of Plan Area within the CQ Service Area, this portion of the North

Service Area may also develop with temporary onsite retention until such time that permanent facilities are constructed. See Exhibit SD-3 in Appendix E for depiction of the areas recommended for temporary onsite retention or which can be served by existing drainage facilities.¹² The development shall either connect to permanent storm drainage facilities or otherwise develop with temporary onsite retention facilities until permanent facilities are constructed. The facility location and design will be subject to review by the City of Sanger. Impacts to sewer, water, and storm drainage systems will be *less than significant*.

As the Master Plan area is developed, the City will work with developers to ensure the improvements described in the Infrastructure Study are implemented as needed.

Mitigation Measures: None are required.

Impact 3.19-2: *Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?*

Less Than Significant With Mitigation. Please refer to Section 3.10 Hydrology and Water Quality, specifically Section 3.10-2 pertaining to depletion of groundwater supplies. Since Sanger obtains its potable water exclusively from groundwater, the discussion in 3.10-2 pertaining to the availability of groundwater supplies is applicable to this section. All discussion, analysis, and General Plan Update information from 3.10-2 is hereby incorporated in its entirety here for impact discussion 3.19-3. This impact is determined to be *less than significant* as it pertains to the General Plan Update (proposed Project), but *significant and unavoidable* as it pertains to cumulative impacts.

Mitigation Measures

In addition to the requirements imposed by the City's General Plan Update; the City's Municipal Code; State and federal regulation; and the requirements of the Sustainable Groundwater Management Plan / Groundwater Sustainability Plan; the City will require the following mitigation:

- | | |
|-------|--|
| HYD-1 | Prior to exceeding existing water supply capacity for development projects subject to CEQA, the City will review projects on an individual basis, which will include an analysis of the following: Inventory of existing water demands; quantification of proposed water use; assessment of opportunities for enhanced water conservation; assessment of any |
|-------|--|

¹² Analysis of Utilities and Infrastructure for the North Academy Corridor Master Plan, (Appendix E, pages 10-12).

shortfalls in future water demands; and identification of alternative water sources or other methods of achieving sufficient water use reduction and/or to achieve water balance. This analysis will be performed within the context of City's General Plan; the City's Municipal Code; State and federal regulations; and the requirements of the Sustainable Groundwater Management Plan / Groundwater Sustainability Plan.

Impact 3.19-4: *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?*

Impact 3.19-5: *Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?*

Less Than Significant. Development proposed under the General Plan Update and Master Plan would result in the need for additional solid waste disposal needs.

Sanger contracts with Mid Valley Disposal Service for solid waste collection. In addition, this private contractor operates a curbside recycling program. Mid Valley Disposal transports solid waste to a transfer facility in Fresno for sorting, after which solid waste is hauled the American Avenue landfill, located near Kerman. The American Avenue landfill is a 440-acre facility located at 18950 W. American Avenue in Fresno County to the southwest of the City of Kerman. This landfill has a 30-year "life expectancy" based on current rates of disposal. The City's website provides schedules for solid waste and recycled waste pickup. According to CalRecycle, the facility is permitted to receive 2,200 tons/day with a total maximum capacity of 32,700,000 cubic yards.¹³

There are other landfills in the area including the Clovis Landfill which is permitted to receive up to 2,000 tons/day and is expected to remain operational until Year 2047.

In the unincorporated portions of the community, solid waste disposal is handled by the individual property owner. Sanger has successfully achieved the State of California's mandate to divert at least 50% of its solid waste stream to recycling and green waste programs, and is working with Mid Valley Disposal to devise strategies to meet the 75% diversion rate by the year 2020.¹⁴

¹³ [CalRecycle. https://www2.calrecycle.ca.gov/swfacilities/Directory/10-AA-0009](https://www2.calrecycle.ca.gov/swfacilities/Directory/10-AA-0009). Accessed Jan. 2020.

¹⁴ Sanger General Plan Community Profile (2018), page 1-18.

The City provides its residents with Hazardous Waste Disposal services, as well as curbside recycling pickup.¹⁵ The City also provides commercial recycling information to local businesses to help promote recycling and a reduction of solid waste that is taken to landfills.¹⁶

The City Disposal and Street Sweeping Division has several objectives that will help ensure that impacts associated with solid waste disposal in the City remain less than significant. These include:¹⁷

- Promote disposal methods that reduce waste (AB939) to landfills by 50% by using recycling, green waste and education.
- Continue commercial recycling program for business and multi-family dwellings with five or more units.
- Continue green waste operation.
- Continue remediate and/or abandon existing City landfills in compliance to Federal, State, and County requirements.
- Look for innovative methods of waste collection that minimize alley use, alley travel, and customer complaints.
- Institute measurable objectives related to route efficiency and other department activities.

It is assumed that as the existing American Avenue Landfill nears capacity, the County would continue to plan for, fund, and construct additional disposal facilities or employ new technologies to meet future cumulative demand. Development of new landfill capacity would be a project that requires separate CEQA review by the County to identify adverse environmental effects and mitigation measures. Given that the landfill should have sufficient capacity to accommodate the City's incremental contribution of solid waste through 2030, as well as the City Disposal Divisions objectives that help to reduce the amount of solid waste generated by the City that ends up in the American Avenue Landfill, this impact would be less than significant. In addition, the City will continue to comply with all federal, state and local statutes related to solid waste, thus resulting in a *less than significant* impact pertaining to this issue.

Mitigation Measures: None are required.

Cumulative Impacts

Significant, Unavoidable and Cumulatively Considerable. The scope for considering cumulative impacts to utilities is generally site-specific rather than cumulative in nature

¹⁵ <https://www.ci.sanger.ca.us/Public%20works/ResidentialBrochureSanger%202015.pdf>. Accessed May 2018.

¹⁶ <https://www.ci.sanger.ca.us/Public%20works/Sanger%20Commercial%20Brochure%202015.pdf>. Accessed May 2018.

¹⁷ <https://www.ci.sanger.ca.us/Disposal.asp>, accessed May 2018.

because each project site has different utility considerations that would be subject to review. The scope for considering cumulative impacts to water supply are the geographic areas covered by the General Plan Update and Master Plan as well as the areas served by the Kings Groundwater Subbasin from which cities and other jurisdictions in the vicinity obtain their water supply. Under buildout conditions, development allowed by the General Plan would increase the demand for water supply, wastewater conveyance and treatment, and solid waste disposal. Growth associated with buildout of the General Plan, is summarized in Chapter 2.

Under cumulative conditions, individual projects proposed within the Planning Area would be required to comply with all applicable Goals, Objectives and Action Plans in the proposed General Plan and Master Plan. As described above, impacts to utilities, with the exception of water supplies, would be reduced to less than significant levels through implementation of policies and implementation measures contained in the proposed project. The General Plan and Master Plan includes policies that ensure adequate planning and provision of public facilities, including water supply and wastewater treatment and conveyance, and methods to reduce solid waste generation. The policies and related utilities contained in the proposed General Plan would reduce the proposed project's contribution to cumulative utilities impacts by requiring on-going planning to ensure adequate wastewater treatment, including any necessary infrastructure, and to continue to reduce solid waste. Cumulative impacts to water supply however, are considered *significant and unavoidable and cumulatively considerable* as discussed in Section 3.10, Hydrology and Water Quality.

3.20 Wildfire

This section of the DEIR addresses the potential for the 2035 General Plan and Master Plan to exacerbate wildfire risks. Additionally, the potential impacts related to exposure to wildfire, including smoke and subsequent flooding and runoff, are assessed in this section.

Environmental Setting

Wildfire Overview

A wildfire is an uncontrolled fire in an area of combustible vegetation that is generally extensive in size. Wildfires differ from other fires in that they take place outdoors in areas of grassland, woodlands, brush land, scrubland, peatland, and other wooded areas that act as a source of fuel, or combustible material. Buildings may become involved if a wildfire spreads to adjacent communities. The primary factors that increase an area's susceptibility to wildfire include topography, fuel (vegetation type), and weather.¹ These factors, as they exist and occur relative to the City of Sanger are described below.

Slope

According to the U.S Forest Service, fires burn faster uphill than downhill because the fuels above the fire are brought into closer contact with upward moving flames. The steeper the slope, the faster the fire burns. Additionally, steep slopes may hinder firefighting efforts. Following severe wildfires, sloping land is also more susceptible to landslide or flooding from increased runoff during substantial precipitation events. The City of Sanger is located on the Valley floor and topography in the area of Sanger is nearly flat.

Fuel

Fuel is any combustible material. Wildland fuels are live and/or dead plant material. These vary from one area of the country to another within the ecosystem; however, they are grouped into four major types based on the primary fuel that carries the fire. These are grasses, shrubs, timber litter and logging slash. Timber litter and logging slash are exclusively associated with forested areas, while grasses and shrubs are found in most ecosystems.

¹ U.S. Forest Service. Fire Management Study Unit. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fsm9_028958.pdf. Accessed September 2019.

Weather

Wind, temperature, and relative humidity are the most influential weather elements in fire behavior and susceptibility. Fire moves more quickly under hot, dry, and windy conditions. Wind may also blow burning embers ahead of a fire, causing its spread. Drought conditions also lead to extended periods of excessively dry vegetation, increasing the fuel load and ignition potential. According to the Western Regional Climate Center, average annual precipitation in the Sanger area is 10.89 inches. Generally, in an average or typical year, most precipitation is received from October through April.² May through September is the driest parts of the year and coincide with what has traditionally been considered the fire season in California. However, increasingly persistent drought and climatic changes in California have resulted in drier winters and fires during the autumn, winter, and spring months are become more common. Prevailing winds in the City of Sanger are generally easterly to southeasterly.³ Easterly to southeasterly prevailing wind means that winds generally move across the City from the east to the west.

Wildfire Hazards

In California, responsibility for wildfire prevention and suppression is shared by federal, state and local agencies. Federal agencies are responsible for federal lands in Federal Responsibility Areas. The State of California has determined that some non-federal lands in unincorporated areas with watershed value are of statewide interest and have classified those lands as State Responsibility Areas (SRA), which are managed by CAL FIRE. All incorporated areas and other unincorporated lands are classified as Local Responsibility Areas (LRA). While nearly all of California is subject to some degree of wildfire hazard, there are specific features that make certain areas more hazardous. CAL FIRE is required by law to map areas of significant fire hazards based on fuels, terrain, weather and other relevant factors (Public Resources Code [PRC] 4201-4204 and California Government Code 51175-89). As described above, the primary factors that increase an area's susceptibility to fire hazards include slope, vegetation type and condition, and atmospheric conditions. CAL FIRE maps fire hazards based on zones, referred to as Fire Hazard Severity Zones. CAL FIRE maps three zones on SRA: 1) Moderate Fire Hazard Severity Zones; 2) High Fire Hazard Severity Zones; and 3) Very High Fire Hazard Severity Zones. Only the Very High Fire Hazard Severity Zones are mapped on for LRA. Each of the zones influence how people construct buildings and protect property to reduce risk associated with wildland

² Western Regional Climate Center. Recent Climate in the West. Fresno Yosemite Intl Ap, California (043257). <https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca3257>. Accessed September 2019.

³ California Air Resources Board, Aerometric Data Division. California Surface Wild Climatology. 1984. <https://ww3.arb.ca.gov/research/apr/reports/l013.pdf>. Accessed September 2019.

fires. Under state regulations, areas within very high fire hazard risk zones must comply with specific building and vegetation management requirements intended to reduce property damage and loss of life within these areas. According to LRA mapping, no land within Fresno County is designated as a Very High Fire Hazard Severity Zone.⁴ Additionally, according to CAL FIRE, there are no SRA mapped within the City limits or nearby.⁵

Regulatory Setting

Federal Regulations

The Disaster Mitigation Act of 2000

The Disaster Mitigation Act of 2000 requires a State mitigation plan as a condition of disaster assistance. There are two different levels of State disaster plans: “Standard” and “Enhanced.” States that develop an approved Enhanced State Plan can increase the amount of funding available through the Hazard Mitigation Grant Program. The Act has also established new requirements for local mitigation plans.

National Fire Plan

The National Fire Plan was developed under Executive Order 11246 in August 2000, following a historic wildland fire season. Its intent is to establish plans for active response to severe wildland fires and their impacts to communities while ensuring sufficient firefighting capacity. The plan addresses firefighting, rehabilitation, hazardous fuels reduction, community assistance, and accountability.

State Regulations and Policies

The California Fire Plan

The Strategic Fire Plan for California is the State’s road map for reducing the risk of wildfire. The most recent version of the Plan was finalized in August 2018 and directs each CAL FIRE Unit to prepare a locally specific Fire Management Plan. In compliance with the California Fire Plan, individual CAL FIRE units are required to develop Fire Management Plans for their areas of responsibility. These documents assess the fire situation within each of the 21 CAL FIRE units and six contract counties. The plans include stakeholder contributions and priorities and identify

⁴ California Department of Forestry and Fire Protection. Fire Hazard Severity Zones Maps. Fresno County. https://osfm.fire.ca.gov/media/6449/fhszs_map10.jpg. Accessed September 2019.

⁵ Ibid.

strategic areas for pre-fire planning and fuel treatment as defined by the people who live and work with the local fire problem. The plans are required to be updated annually.⁶

California Office of Emergency Services

The California Office of Emergency Services (OES) prepares the State of California Multi-Hazard Mitigation Plan (SHMP). The SHMP identifies hazard risks and includes a vulnerability analysis and a hazard mitigation strategy. The SHMP is federally required under the Disaster Mitigation Act of 2000 in order for the State to receive Federal funding. The Disaster Mitigation Act of 2000 requires a State mitigation plan as a condition of disaster assistance.

California Fire Code (2016)

The 2016 Fire Code establishes the minimum requirements consistent with nationally recognized good practices to safeguard the public health, safety, and general welfare for the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures and premises, and to provide safety and assistance to firefighters and emergency responders during emergency operations. The provisions of this code apply to some construction, alteration, movement enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of buildings or structures or any appurtenances connected or attached to such building structures throughout California. The 2016 Fire Code has been updated to the 2019 Fire Code and will go into effect January 1, 2020. The code update is fully integrated and based on the 2018 International Fire Code.

Thresholds of Significance

In accordance with Appendix G to the State CEQA Guidelines, the project would have a significant impact on land use as follows:

- If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:
 - Substantially impair an adopted emergency response plan or emergency evacuation plan?

⁶ California Department of Forestry and Fire Protection. 2018 Strategic Fire Plan for California. https://osfm.fire.ca.gov/media/5590/2018-strategic-fire-plan-approved-08_22_18.pdf. Accessed September 2019.

- Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?
- Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?
- Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Impacts and Mitigation Measures

Impact 3.20-1: *Would the project substantially impair an adopted emergency response plan or emergency evacuation plan, expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire, require the installation or maintenance of associated infrastructure that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment, or expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes, if the project were located in or near state responsibility areas or lands classified as very high fire hazard severity zones?*

Less Than Significant. The Sanger SOI is approximately four miles southeast of the nearest State Responsibility Area and 15 miles southwest of the nearest Very High State Responsibility Area.⁷ The City lies on the Valley floor and is surrounded by active agriculture, in various stages of production. Impacts associated with implementation of the General Plan and reasonably foreseeable development expected to occur under full GPU buildout would be less than significant related to wildfires given the distance of the Sanger SOI from the State Responsibility Area and the State's Very High Fire Hazards Severity Zone and the intervening land uses between them.

⁷ California Department of Forestry and Fire Protection. Fire Hazard Severity Zones Maps. Fresno County. https://osfm.fire.ca.gov/media/6449/fhszs_map10.jpg. Accessed September 2019.

In addition, development under the General Plan and Master Plan would require consistency with the goals, objectives and action plans of the General Plan. Adherence to these goals, objectives and actions plans of the General Plan (listed below) would ensure that potential impacts from wildfires remain less than significant.

Sanger General Plan Safety Element - Issue Three: Fire Safety

Goals, Objectives, Action Plans

Goal:

- I. The City of Sanger shall endeavor to provide the highest level of fire suppression and safety for the community.

Objective:

1. The Fire Department shall take all actions to provide quality fire services to all residents in the City of Sanger.

Action Plan:

- a. The Planning Department shall coordinate with the Fire Department through Sanger’s design review process and the environmental review process to ensure that future development does not exceed the Fire Department’s capacity for adequate services.
- b. Ensure that future development projects do not negatively impact fire flows.

Objective:

2. The Fire Department shall work to provide fire prevention and public safety education to residents.

Action Plan:

- a. The Fire Department should initiate a fire prevention education program with the Sanger Unified School District.

Objective:

3. The City shall require that yards and lots be maintained free of weeds and debris.

Action Plan:

- a. The Fire Department shall send annual abatement letters to property owners who have properties where weed and debris build-up pose a public safety problem and pursue abatement proceedings against non-complying owners.

Objective:

4. The City shall work to improve the response capabilities of emergency crews.

Action Plan:

- a. New subdivisions should be designed to maximize connectivity into and within the development. The graphic below illustrates this concept. In general, grid street patterns will be used instead of designs using numerous dead-end streets and perimeter walls.



- b. Gated subdivisions are strongly discouraged.
- c. When new subdivisions are proposed, ensure that new street names are continuations of existing streets for streets that are aligned, and that addresses are locally assigned.
- d. The Public Works Department shall periodically check street signs to ensure they are clearly visible and legible.

- e. Representatives of the Police and Fire Departments should be available to report their activities to the Sanger City Council, on a regular basis.

Objective:

- 5. The City will continue to upgrade its water system to ensure that adequate water pressure and peak load water supply is maintained throughout the system.

Action Plan:

- a. The City should periodically review and update its development impact fee schedule to provide funds for replacement of old, undersized water lines. Further the City should propose and implement a capital improvement program to accomplish this goal. Finally, the City should evaluate and update (as needed) the Water System Master Plan to ensure it properly plans for growth consistent with the General Plan.

Implementation of these policies and action items will further ensure that impacts remain *less than significant*.

Mitigation Measures: None are required.

Cumulative Impacts

Less Than Cumulatively Considerable. As discussed above, the topography in the Planning Area is nearly flat with the nearest State Responsibility Area approximately four miles northwest. The City lies on the Valley floor and is surrounded by active agriculture, in various stages of production, which precludes likelihood of wildfires within the Planning Area. Cumulative impacts related to wildfires is *less than cumulatively considerable*.

Chapter 4

PROJECT ALTERNATIVES

PROJECT ALTERNATIVES

4.1 Introduction

CEQA Guidelines Section 15126.6 requires the consideration of a range of reasonable alternatives to the proposed project that could feasibly attain most of the objectives of the proposed project. The Guidelines further require that the discussion focus on alternatives capable of eliminating significant adverse impacts of the project or reducing them to a less than significant level, even if the alternative would not fully attain the project objectives or would be more costly. According to CEQA Guidelines, the range of alternatives required in an EIR is governed by the “rule of reason” that requires an EIR to evaluate only those alternatives necessary to permit a reasoned choice. An EIR need not consider alternatives that have effects that cannot be reasonably ascertained and/or are remote and speculative.

The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed.

CEQA Guidelines §15126.6(e) identifies the requirements for the “No Project” alternative. The specific alternative of “No Project” shall also be evaluated along with its impact. The purpose of describing and analyzing a no project alternative is to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project. The no project alternative analysis is not the baseline for determining whether the proposed project's environmental impacts may be significant, unless it is identical to the existing environmental setting analysis which does establish that baseline (see Section 15125).

Alternative locations can also be evaluated if there are feasible locations available. Each alternative is evaluated against the Project objectives and criteria established by the Lead Agency.

4.2 Project Objectives

A broad set of guiding objectives of the General Plan Update, agreed upon by the City Council and Planning Commission, are as follows:

- Project Sanger's future growth and make provisions for this growth through the General Plan;
- Create a unique and attractive city by investing in projects that will enhance Sanger's appearance and marketability;
- Provide a safe and pleasant environment and enhance property values throughout the community by avoiding and eliminating land use conflicts;
- Promote increased sales tax revenue in Sanger by providing sufficient land for a wide range of commercial uses;
- Protect and preserve natural resources, such as farmland, air and water quality and native vegetation, while facilitating growth of the community;
- Provide for a greater variety of housing choices and shopping opportunities; Provide an adequate supply of housing opportunities, affordable to all economic segments of the community;
- Ensure that there are adequate public facilities to serve Sanger in the future;
- Ensure that Sanger's infrastructure system can effectively serve the land use framework;
- Enhance the character of Sanger by creating an improved and revitalized downtown area;
- Promote economic development and enhanced employment opportunities in Sanger by designating sufficient land for industrial uses, retail stores, and office parks;
- Recognize the changing conditions and trends in the planning area and market place and make appropriate amendments to the General Plan; and
- Recognize past land use approval actions and adopted land use policies.

Master Plan Objectives

The following overarching goals are established to provide guidance in the implementation of the North Academy Corridor Master Plan:

- Recognize the planning area’s unique position in Sanger as a gateway to the community;
- Facilitate a feasible land use pattern that is as free as possible from conflicts and which establishes uses that are complementary to one another.

4.3 Alternatives Considered in this EIR

- **Alternative 1 - Existing General Plan (No Project) Alternative**
- **Alternative 2 - Reduced Project Area (Elimination of Master Plan area)**
- **Alternative 3 - Alternative Project Location**
- **Alternative 4 - Reduced Project Intensity**

Alternatives Rejected

According to the CEQA Guidelines, two primary provisions are necessary for an adequate alternative site analysis – feasibility and location. The EIR should consider alternate project locations if a significant project impact could be avoided or substantially lessened by moving the project to an alternate site. An alternative site for the proposed project would not be feasible because the project consists of the update of the City of Sanger’s General Plan. The project is, by definition, located in and around the City of Sanger. Since the project consists of a plan update for a specific area, an alternative location for this project is not feasible. A discussion of an infeasible alternative site would not meet the “rule of reason” under CEQA and Alternative 3 – Alternative Project Location was eliminated from further consideration in this EIR.

In addition, a project alternative consisting of reducing development intensity was considered (Alternative 4 – Reduced Project Intensity), but rejected for several reasons. First, much of the land within the City limits is already developed and could not be reduced or eliminated without significant impacts to the existing residents. Most of the larger and contiguous areas that are currently undeveloped but anticipated to be developed under the General Plan have already undergone a planning process that was specifically meant to guide development in that area. Any alternative changing or reducing uses in these areas would be in conflict with the previously adopted plans and is not desired by the City. The City does not desire to restrict or reduce development in infill areas within the City. For these reasons, Alternative 4 – Reduced Project Intensity was eliminated from further consideration in this EIR.

Alternative 1 - Existing General Plan (No Project) Alternative

CEQA Section 15126.6(e) requires the discussion of the No Project Alternative “to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project.” The No Project scenario in this case consists of not adopting the 2035 General Plan while continuing to utilize the City’s existing General Plan. Under this alternative, all land use changes and boundary changes will not occur and development will continue to be governed by the existing General Plan.

Description

The Existing General Plan (No Project) Alternative describes the environmental conditions that exist at the time that the environmental analysis commences (CEQA Guidelines, Section 15126.6 (e)(2)). The No Project alternative addresses environmental effects that would result from continued implementation of the City’s existing adopted General Plan.

The proposed General Plan Update would add up to 141 acres of undeveloped land for single and multi-family housing and 49 acres of undeveloped land for commercial development (note: the City already has 241 acres of undeveloped land that is zoned for industrial use, thus additional industrial land is not considered to be necessary at this time).

Under the No Project scenario, these additional acreages would not be added to the City and development would continue to occur under the existing General Plan document. The vast majority of the land within the expanded SOI is currently in agricultural use and is designated and zoned by Fresno County for continued agricultural use. Under the No Project Alternative, land within the expanded SOI would continue to be actively farmed; no urban development would occur.

Environmental Considerations

Development would be expected to continue to occur within the City, however, any future development would have to be consistent with the existing Land Use Map shown in the City’s General Plan. As such, environmental impacts would still occur, notwithstanding the reduction of acreage available for development. However, some impacts may be reduced based on this Alternative.

1. **Aesthetics** – The No Project Alternative would result in continued development within the City under the existing adopted General Plan. This new development would occur in areas already designated for development. The proposed new General Plan would result in development of areas that are currently undeveloped and thus would introduce new potentially significant aesthetic impacts to those areas. As such, the visual impacts of the No Project alternative are less than the proposed Project.
2. **Agricultural Resources** - Under the No Project scenario, these additional acreages would not be added to the City and development would continue to occur under the existing General Plan document. The vast majority of the land within the expanded SOI is currently in agricultural use and is designated and zoned by Fresno County for continued agricultural use. Under the No Project Alternative, land within the expanded SOI would continue to be actively farmed; no urban development would occur. As such, the agricultural impacts of the No Project Alternative are less than the proposed Project.
3. **Air Quality** – The No Project Alternative would result in less development than the proposed Project. This would result in less criteria air emissions being generated by new development. Thus, the air quality impacts of the No Project Alternative are less than the proposed Project.
4. **Biological Resources** - The No Project Alternative would result in less development than the proposed Project. This would result in less undisturbed land being developed and would avoid some of the potential biological impacts associated with new development. Thus, the biological impacts of the No Project Alternative are less than the proposed Project.
5. **Cultural Resources** - The No Project Alternative would result in less development than the proposed Project. This would result in less undisturbed land being developed and would avoid some of the potential cultural resource impacts associated with new development. Thus, the cultural resource impacts of the No Project Alternative are less than the proposed Project.
6. **Energy** - The No Project Alternative would result in less development than the proposed Project. This would result in less energy being used by or for new development. Thus, the energy impacts of the No Project Alternative are less than the proposed Project.
7. **Geology/Soils** - The No Project Alternative would result in less development than the proposed Project. This would result in less undisturbed land being developed and would avoid some of the potential geological impacts associated with new development. Thus, the geological impacts of the No Project Alternative are less than the proposed Project.
8. **Greenhouse Gas Emissions** - The No Project Alternative would result in less development than the proposed Project. This would result in less greenhouse gas

emissions being generated by new development. Thus, the greenhouse gas impacts of the No Project Alternative are less than the proposed Project.

9. **Hazards & Hazardous Materials** - The No Project Alternative would result in less development than the proposed Project. This would result in less undisturbed land being developed and would avoid some of the potential impacts from hazards and hazardous materials associated with new development. Thus, the hazardous impacts of the No Project Alternative are less than the proposed Project.
10. **Hydrology/Water Quality** - The No Project Alternative would result in less development than the proposed Project. This would result in less water being used and less impacts to water quality being generated by new development. Thus, the hydrologic impacts of the No Project Alternative are less than the proposed Project.
11. **Land Use/Planning** - The No Project Alternative would result in the continued reliance on the City's existing General Plan. This includes the existing goals, policies, and programs in the existing General Plan. Many of these policies have been updated in the proposed General Plan to help reduce land use conflicts and to ensure adequate planning as development occurs. As development continues to occur, it is likely that the No Project Alternative would result in greater impacts to land use conflicts and planning. Thus, land use and planning impacts would be greater under the No Project Alternative than the proposed Project.
12. **Mineral Resources** - The No Project Alternative would result in less development than the proposed Project. This would result in less undisturbed land being developed and would avoid some of the potential mineral resource impacts associated with new development. Thus, the mineral resource impacts of the No Project Alternative are less than the proposed Project.
13. **Noise** - The No Project Alternative would result in less development than the proposed Project. This would result in less noise being generated by new development. Thus, the noise impacts of the No Project Alternative are less than the proposed Project.
14. **Population/Housing** - The No Project Alternative would result in the continued reliance on the City's existing General Plan. This includes the existing goals, policies, and programs in the existing General Plan. Many of these policies have been updated in the proposed General Plan to help reduce impacts from population and inadequate housing. As development continues to occur, it is likely that the No Project Alternative would result in greater impacts to population and housing because development would occur based on the existing General Plan. Thus, population and housing would be greater under the No Project Alternative than the proposed Project.

15. **Public Services** - The No Project Alternative would result in less development than the proposed Project. This would result in less public services being used by or for new development. Thus, the public service impacts of the No Project Alternative are less than the proposed Project.
16. **Recreation** - The No Project Alternative would result in less development than the proposed Project. This would result in less recreational facilities being used by or for new development. Thus, the recreation impacts of the No Project Alternative are less than the proposed Project.
17. **Transportation** - The No Project Alternative would result in less development than the proposed Project. This would result in less traffic being generated by or for new development. Thus, the transportation impacts of the No Project Alternative are less than the proposed Project.
18. **Tribal Cultural Resources** - The No Project Alternative would result in less development than the proposed Project. This would result in less undisturbed land being developed and would avoid some of the potential tribal cultural resource impacts associated with new development. Thus, the tribal cultural resource impacts of the No Project Alternative are less than the proposed Project.
19. **Utilities/Service Systems** - The No Project Alternative would result in less development than the proposed Project. This would result in less public utilities being used and less impacts to public utilities generated by new development. Thus, the utilities/service system impacts of the No Project Alternative are less than the proposed Project.
20. **Wildfire** - The No Project Alternative would result in less development than the proposed Project. This would result in less undisturbed land being developed and would avoid some of the potential impacts from wildfires associated with new development. Thus, the wildfire impacts of the No Project Alternative are less than the proposed Project.

Alternative 2 - Reduced Project Area (Elimination of Master Plan Area)

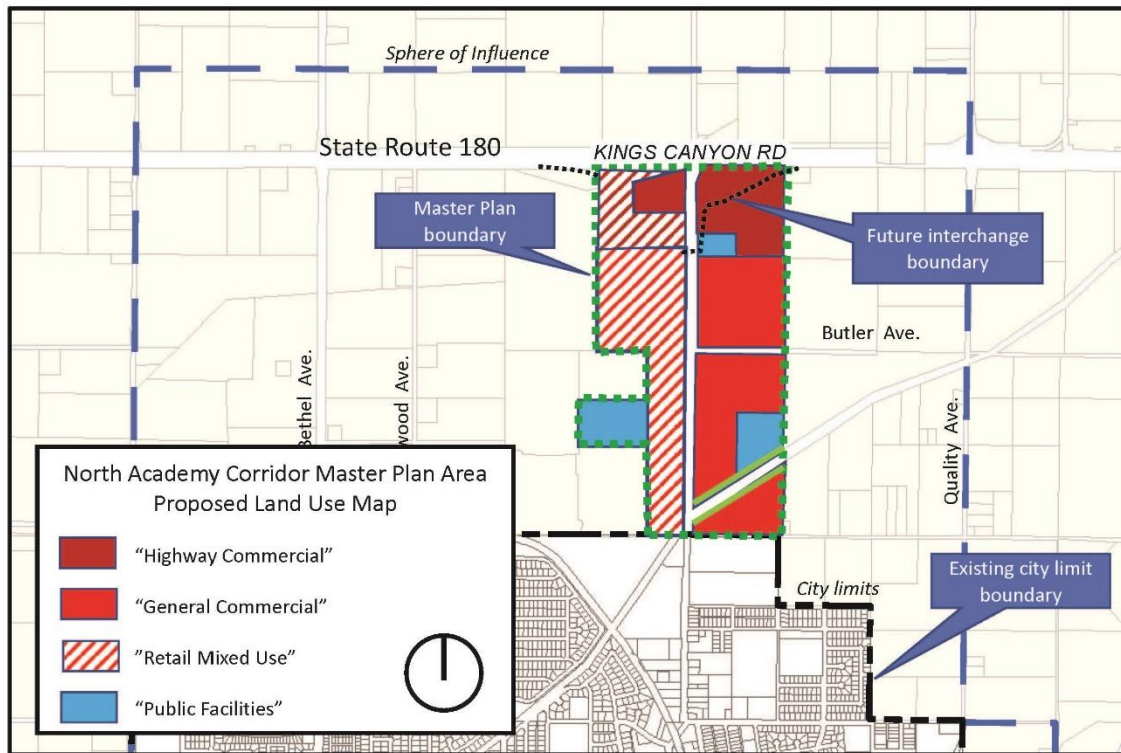
Description

The Reduced Project Area (Elimination of Master Plan Area) Alternative consists of removing the North Academy corridor Master Plan from the General Plan Update process. The General Plan Update would still occur, however the Master Plan area would be eliminated and no annexation of these lands would occur. The site would remain with its underlying land use designations and zoning and would remain in Fresno County.

The North Academy Corridor Master Plan is intended to guide urban development within a 285-acre planning area centered on Academy Avenue, north of the existing Sanger city boundary, extending to the intersection of Academy Avenue and State Route 180 (Kings Canyon Road). The annexation and development of this corridor was selected by the Sanger City Council as one of its top land use goals for action. It is important to note that the annexation of these lands is guided by a Memorandum of Understanding between the City of Sanger and Fresno County.

This Master Plan area comprises approximately 285 acres which proposes a variety of land uses along Academy Avenue and surrounding areas (See Master Plan Land Use Map below). The Master Plan area is proposed to be annexed into the City limits of Sanger. The Master Plan is proposing the following land uses:

- Mixed Use Retail ~153 acres
- Neighborhood Commercial ~8 acres
- Medium Density Residential ~48 acres
- Medium High Density Residential ~ 17 acres
- High Density Residential ~ 4 acres
- Other areas such as open space and right-of-way

Figure 4-1: Master Plan Proposed Land Use Map

The site currently provides of a variety of land use designations including agricultural (155 acres), commercial (14 acres), residential (22 acres), public (4 acres), vacant (65 acres) and right-of-way (25 acres).

Elimination of the Master Plan would remove this area from consideration for annexation and/or from the proposed General Plan Update.

Environmental Considerations

Development could be expected to continue to occur within the Master Plan area, however, any future development would have to be consistent with the underlying land use and zoning designations. As such, environmental impacts would still occur, notwithstanding the reduction of acreage available for development as proposed by the General Plan Update. However, because of the reduced Project, some impacts may be reduced based on this Alternative.

1. **Aesthetics** – The Reduced Project Alternative would eliminate the Master Plan area from the Project, however the General Plan Update would still occur. The proposed new General Plan would result in development of areas that are currently undeveloped and thus would introduce new potentially significant aesthetic impacts to those areas.

However, the Master Plan area would be eliminated from the General Plan Update and would result in a reduction in the amount of development that would occur. As such, the visual impacts of the Reduced Project Alternative are less than the proposed Project.

2. **Agricultural Resources** - The Reduced Project Alternative would eliminate the Master Plan area from the Project, however the General Plan Update would still occur. The proposed new General Plan would result in development of areas that are currently undeveloped and thus would introduce new potentially significant agricultural impacts to those areas. However, the Master Plan area would be eliminated from the General Plan Update and would result in a reduction in the amount of development that would occur. The vast majority of the land within the expanded SOI is currently in agricultural use and is designated and zoned by Fresno County for continued agricultural use. It is likely that elimination of the Master Plan would result in continued agricultural production in the Master Plan area. As such, the agricultural impacts of the Reduced Project Alternative are less than the proposed Project.
3. **Air Quality** – The Reduced Project Alternative would result in less development than the proposed Project. This would result in less criteria air emissions being generated by new development. Thus, the air quality impacts of the Reduced Project Alternative are less than the proposed Project.
4. **Biological Resources** - The Reduced Project Alternative would result in less development than the proposed Project. This would result in less undisturbed land being developed and would avoid some of the potential biological impacts associated with new development. Thus, the biological impacts of the Reduced Project Alternative are less than the proposed Project.
5. **Cultural Resources** - The Reduced Project Alternative would result in less development than the proposed Project. This would result in less undisturbed land being developed and would avoid some of the potential cultural resource impacts associated with new development. Thus, the cultural resource impacts of the Reduced Project Alternative are less than the proposed Project.
6. **Energy** - The Reduced Project Alternative would result in less development than the proposed Project. This would result in less energy being used by or for new development. Thus, the energy impacts of the Reduced Project Alternative are less than the proposed Project.
7. **Geology/Soils** - The Reduced Project Alternative would result in less development than the proposed Project. This would result in less undisturbed land being developed and would avoid some of the potential geological impacts associated with new development.

Thus, the geological impacts of the Reduced Project Alternative are less than the proposed Project.

8. **Greenhouse Gas Emissions** - The Reduced Project Alternative would result in less development than the proposed Project. This would result in less greenhouse gas emissions being generated by new development. Thus, the greenhouse gas impacts of the Reduced Project Alternative are less than the proposed Project.
9. **Hazards & Hazardous Materials** - The Reduced Project Alternative would result in less development than the proposed Project. This would result in less undisturbed land being developed and would avoid some of the potential impacts from hazards and hazardous materials associated with new development. Thus, the hazardous impacts of the Reduced Project Alternative are less than the proposed Project.
10. **Hydrology/Water Quality** - The Reduced Project Alternative would result in less development than the proposed Project. This would result in less water being used and less impacts to water quality being generated by new development. Thus, the hydrologic impacts of the Reduced Project Alternative are less than the proposed Project.
11. **Land Use/Planning** - The Reduced Project Alternative would result in the continued reliance on the City's existing General Plan. This includes the existing goals, policies, and programs in the existing General Plan. Many of these policies have been updated in the proposed General Plan to help reduce land use conflicts and to ensure adequate planning as development occurs. As development continues to occur, it is likely that the No Project Alternative would result in greater impacts to land use conflicts and planning. Thus, land use and planning impacts would be greater under the Reduced Project Alternative than the proposed Project.
12. **Mineral Resources** - The Reduced Project Alternative would result in less development than the proposed Project. This would result in less undisturbed land being developed and would avoid some of the potential mineral resource impacts associated with new development. Thus, the mineral resource impacts of the Reduced Project Alternative are less than the proposed Project.
13. **Noise** - The Reduced Project Alternative would result in less development than the proposed Project. This would result in less noise being generated by new development. Thus, the noise impacts of the Reduced Project Alternative are less than the proposed Project.
14. **Population/Housing** - The Reduced Project Alternative would result in the continued reliance on the City's existing General Plan. This includes the existing goals, policies, and programs in the existing General Plan. Many of these policies have been updated in the proposed General Plan to help reduce impacts from population and inadequate housing.

As development continues to occur, it is likely that the Reduced Project Alternative would result in greater impacts to population and housing because development would occur based on the existing General Plan. Thus, population and housing would be greater under the Reduced Project Alternative than the proposed Project.

15. **Public Services** - The Reduced Project Alternative would result in less development than the proposed Project. This would result in less public services being used by or for new development. Thus, the public service impacts of the Reduced Project Alternative are less than the proposed Project.
16. **Recreation** - The Reduced Project Alternative would result in less development than the proposed Project. This would result in less recreational facilities being used by or for new development. Thus, the recreation impacts of the Reduced Project Alternative are less than the proposed Project.
17. **Transportation** - The Reduced Project Alternative would result in less development than the proposed Project. This would result in less traffic being generated by or for new development. Thus, the transportation impacts of the Reduced Project Alternative are less than the proposed Project.
18. **Tribal Cultural Resources** - The Reduced Project Alternative would result in less development than the proposed Project. This would result in less undisturbed land being developed and would avoid some of the potential tribal cultural resource impacts associated with new development. Thus, the tribal cultural resource impacts of the Reduced Project Alternative are less than the proposed Project.
19. **Utilities/Service Systems** - The Reduced Project Alternative would result in less development than the proposed Project. This would result in less public utilities being used and less impacts to public utilities generated by new development. Thus, the utilities/service system impacts of the Reduced Project Alternative are less than the proposed Project.
20. **Wildfire** - The Reduced Project Alternative would result in less development than the proposed Project. This would result in less undisturbed land being developed and would avoid some of the potential impacts from wildfires associated with new development. Thus, the wildfire impacts of the Reduced Project Alternative are less than the proposed Project.

4.4 Summary of Potential Impacts of Alternatives

Table 4-1 is a generalized comparative assessment of potential impacts of the alternatives.

Table 4-1: Alternatives Potential Impact Analysis Compared to Proposed Project

Environmental Issues	No Project (Continuation of Existing General Plan	Reduced Project (Elimination of Master Plan Area)
Aesthetics	Less	Less
Agriculture / Forest Resources	Less	Less
Air Quality	Less	Less
Biological Resources	Less	Less
Cultural Resources	Less	Less
Energy	Less	Less
Geology and Soils	Less	Less
Greenhouse Gas Emissions	Less	Less
Hazards and Hazardous Materials	Less	Less
Hydrology and Water Quality	Less	Less
Land Use / Planning	Greater	Less
Noise	Less	Less
Population / Housing	Greater	Less
Public Services	Less	Less
Recreation	Less	Less
Transportation	Less	Less
Tribal Cultural Resources	Less	Less
Utilities and Service Systems	Less	Less
Wildfire	Less	Less
Cumulative Impacts	Less	Less
Impact Reduction	Yes	Yes

Environmentally Superior Alternative

Based on a review of the alternatives evaluated in this chapter, the No Alternative would result in the fewest impacts on the environment. However, the No Project Alternative would not meet the City's Project objectives, as identified in this chapter.

Apart from the No Project Alternative, the the Reduced Project Alternative would be the Environmentally Superior alternative because it would result in less adverse physical impacts to the environment with regard to most environmental topics. However, the Reduced Project does not meet all of the Project objectives, particularly with regard to the financial feasibility of this alternative.

Summary and Determination

Only the No Project and Reduced Project Alternatives could potentially result in fewer impacts than the proposed Project's impacts. These Alternatives however, would not meet the majority of the objectives of the proposed Project. After this full, substantial, and deliberate analysis, the proposed Project remains the preferred alternative.

Chapter 5

CEQA CONSIDERATIONS

CEQA CONSIDERATIONS

5.1 Growth-Inducing Impacts

Section 15126.2(d) of the CEQA Guidelines requires that at EIR evaluate the growth-inducing impacts of a proposed action. A growth-inducing impacts is defined by the CEQA Guidelines as:

The way in which a proposed project could foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth... it is not assumed that growth in an area is necessarily beneficial, detrimental, or of little significance to the environment.

Based on the State CEQA Guidelines, growth inducement is any growth that exceeds planned growth of an area and results in new development that would not have taken place without implementation of the Project. A project can have direct and/or indirect growth inducement potential. Direct growth inducement would result if a project, for example, involved construction of new housing. A project would have indirect growth inducement potential if it established substantial new permanent employment opportunities or if it would involve a construction effort with substantial short-term employment opportunities that would indirectly stimulate the need for additional housing and services to support the new employment demand. Similarly, a project would indirectly induce growth if it would remove an obstacle to additional growth and development, such as removing a constraint on a required public service. A project providing an increased water supply in an area where water service historically limited growth could be considered growth-inducing.

The State Guidelines further explain that the environmental effects of induced growth are considered indirect impacts of the proposed action. These indirect impacts or secondary effects of growth include increased demand on other community and public services and infrastructure, increased traffic and noise, and adverse environmental impacts such as degradation of air and water quality, degradation or loss of plant and animal habitat, and conversion of agricultural and open space land to developed uses.

Growth inducement may constitute an adverse impact if the growth is not consistent with or accommodated by the land use plans and growth management plans and policies for the area affected. Local land use plans provide for land use development patterns and growth policies that allow for the orderly expansion of urban development supported by adequate urban public services, such as water supply, roadway infrastructure, sewer service, and solid waste service.

The discussion of growth inducing impacts in this chapter is in addition to the analysis and evaluation contained in Chapters 3 of this EIR.

A general plan update is by nature a growth-inducing project to the extent that a general plan update is designed to accommodate new economic and/or population growth anticipated by the City. The proposed GPU and North Academy Corridor Master Plan is growth inducing in that it includes new land uses within the existing SOI which new growth not accommodated by the existing 2003 General Plan would be possible. New economic development and new housing development would occur in response to the City's anticipation that its population will grow between 1.24% and 3.6% per year to the year 2035.

The growth inducement that would be enabled by the proposed project would lead to significant direct and significant indirect effects on the environment, including having **significant and unavoidable growth-inducing impacts**. These are described in Section 3.0, Environmental Setting, Analysis and Mitigation Measures. Many of the significant impacts of the project would be avoided or lessened with the implementation of proposed GPU policies, including policies related to growth management, and by implementation of mitigation measures. Hence, by design, the proposed project reduces the most of the impacts of the growth it would induce. Those impacts that cannot be reduced to a less than significant level are described below in Section 5.3, Significant and Unavoidable Impacts.

5.2 Significant Irreversible Environmental Changes

CEQA requires that EIRs prepared for the adoption of a plan, policy, or ordinance of a public agency must include a discussion of significant irreversible environmental changes as a result of project implementation. State CEQA Guidelines Section 15126.2(c) describes irreversible environmental changes as:

“Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.”

Consumption of nonrenewable resources refers to the loss of physical features within the natural environment, including the conversion of open space, sensitive habitats, and nonrenewable energy use. The proposed General Plan and North Academy Corridor Master Plan includes a variety of goals, Objectives and Action Plans, which would preserve

open space areas and other natural resources in the region including local waterways and, as a result, will minimize the potential for impacts to the nonrenewable resources, including biological resources, open spaces, and waterways.

Non-renewable and slowly renewable resources such as electricity, natural gas, propane, gasoline, diesel, oil, sand, gravel, asphalt and concrete, steel, copper, lead and water would be consumed during the construction and operation of development allowed under the General Plan.

Future development and infrastructure projects consistent with the proposed project will physically change the environment in terms of aesthetics, air emission, noise, traffic, open space, and natural resources as discussed in Chapters 3.1 through 3.20. While these physical changes may not necessarily be individually significant, these physical changes are irreversible after development occurs. Therefore, the proposed General Plan would allow irreversible changes within the City that would involve permanent commitment of resources, including land and energy.

In summary, implementation of the proposed project would result in a commitment of land uses designated for the foreseeable future. Land use and development consistent with the General Plan would result in irretrievable commitments by introducing development onto sites that are presently undeveloped. The conversion of undeveloped lands including open space areas to urban uses would result in an irretrievable loss of open space land, and potential wildlife habitat. Additionally, development will physically change the environment in terms of aesthetics, air emission, noise, traffic, and open space. These physical changes are irreversible after development occurs. Therefore, the proposed General Plan would result in changes in land use within the Planning Area that would commit future generations to these uses.

The General Plan includes an extensive policy framework that is designed to address land use and environmental issues to the greatest extent feasible, while allowing growth and economic development for the City. However, even with the policies that will serve to reduce potential significant impacts, the proposed General Plan will result in significant irreversible changes. This impact is considered a **significant and unavoidable** impact under CEQA.

5.3 Significant and Unavoidable Impacts

A significant adverse unavoidable environmental impact is a significant adverse impact that cannot be reduced to a less than significant level through the implementation of

mitigation measures. CEQA Guidelines Section 15093 requires that a lead agency make findings of overriding considerations for unavoidable significant adverse environmental impacts before approving a project.

CEQA Guidelines Section 15126.2(b) requires an EIR to discuss unavoidable significant environmental effects, including those that can be mitigated but not reduced to a level of insignificance. The following significant and unavoidable impacts of the Sanger General Plan and North Academy Corridor Master Plan are discussed in Chapter 3, Chapter 4 and previously in this chapter. Refer to those discussions for further details and analysis of the significant and unavoidable impacts identified in Table 5-1.

Table 5-1: Significant and Unavoidable Impacts

Topic	Impact	Level of Significance
Agriculture	Convert important farmland to non-agricultural use	Individually and Cumulatively Significant and Unavoidable
	Conflict with existing zoning for agricultural use, or a Williamson Act contract	Individually and Cumulatively Significant and Unavoidable
	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	Individually and Cumulatively Significant and Unavoidable
Air Quality	Conflict with or obstruct implementation of an applicable air quality plan	Individually and Cumulatively Significant and Unavoidable
	Expose sensitive receptors to substantial pollution concentrations	Individually and Cumulatively Significant and Unavoidable
Greenhouse Gases	Generate greenhouse gas emissions 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 gasses	Individually and Cumulatively Significant and Unavoidable
Hydrology and Water Quality	Substantially decrease groundwater supplies or	Individually and Cumulatively Significant and Unavoidable

	interfere with groundwater recharge	
Noise	Generate a substantial temporary or permanent increase in ambient noise	Individually and Cumulatively Significant and Unavoidable
Utilities	Have sufficient water supplies available to serve the project	Cumulatively Significant and Unavoidable

5.4 Substantial Adverse Effects on Fish, Wildlife, and Plant Species

As described throughout the analysis in the DEIR, the proposed General Plan and North Academy Corridor Master Plan would not result in any significant impacts that would substantially reduce the habitat of fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the number or restrict the range of a rare or endangered plant or animal to the environment. As described in greater detail in Section 3.4 (Biological Resources) any potentially significant impacts related to plant and animal species would be reduced to a less than significant level through implementation of goals, policies and implementation measures provided in the City's General Plan as well as through adherence to state and federal regulations. Therefore, this is considered a **less than significant** impact.

5.5 Substantial Adverse Effects on Human Beings

As described throughout the analysis of this DEIR, the proposed General Plan reduces environmental effects including effects that directly and indirectly impact humans through implementation of Goals, Objectives and Action Plans provided in the City's General Plan. However, several environmental impacts would still be considered significant and unavoidable (listed above in Section 6.3). These impacts include increases in localized noise, considerable increases of criteria pollutants and greenhouse gases and reduced air quality which may cause substantial adverse effects on humans and the way humans interact with their environment. Therefore, this is considered a **significant and unavoidable** impact.

Chapter 6

PREPARERS

PREPARERS

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Appendices



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