DRAFT

ENVIRONMENTAL IMPACT REPORT

FOR THE

CROSSROADS WEST SPECIFIC PLAN

(SCH: 2017032062)

JUNE 2018

Prepared for:

City of Riverbank, Development Services Department
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De Novo Planning Group

A Land Use Planning, Design, and Environmental Firm

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INTRODUCTION

The City of Riverbank has determined that the Crossroads West Specific Plan (CWSP) Project is a "Project" within the definition of CEQA. CEQA requires the preparation of an environmental impact report (EIR) prior to approving any project, which 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]).

The EIR contains a description of the Project, description of the environmental setting, identification of Project impacts, 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 EIR identifies issues determined to have no impact or a less than significant impact, and provides detailed analysis of potentially significant and significant impacts. Comments received in response to the NOP were considered in preparing the analysis in this EIR.

PROJECT DESCRIPTION

The CWSP area (also-known-as “Project site” or “Plan Area”) is located within the unincorporated area of Stanislaus County. The approximately 380-acre Plan Area is adjacent to the City of Riverbank (City) limits to the north and east. The Plan Area is contained within the City’s existing Sphere of Influence (SOI), and the Plan Area was previously analyzed at a programmatic level in the City’s 2005-2025 General Plan Update Environmental Impact Report.

The nine parcels that comprise the Plan Area are primarily used for agricultural operations including a cow dairy operation with 550 milking cows, row crops, and fallow land. Seven home sites exist within the Plan Area and many of them have accessory structures on site including storage buildings, shop buildings, and barn structures. Additionally, an approximately 11-acre regional City park, the Riverbank Sports Complex, is currently developed in the northeastern portion of the Plan Area, near the intersection of Morrill Road and Oakdale Road. Crawford Road and Morrill Road traverse the Plan Area from east to west.

Modesto Irrigation District (MID) provides water supply for the existing agricultural uses and maintains two easements on the Plan Area: a MID main canal with a crossing is located along the northern boundary of the Plan Area, and MID Lateral 6 traverses the southern portion of the Plan Area from northeast to southwest. A series of private irrigation ditches distribute the MID water from the on-site ditches throughout the Plan Area.

The Plan Area is bounded on the east by Oakdale Road, on the south by Claribel Road, on the north by the MID Main Canal and the City of Riverbank city limits, and on the west by those property lines approximately 0.5-mile west of Oakdale Road. The proposed Project includes development of up to 1,872 Low Density Residential (LDR) units, up to 192 Medium Density Residential (MDR) units, and up to 388 High Density Residential (HDR) units. The Project also includes up to 550,000

square feet (sf) of Mixed Use 1 (MU-1) uses, and up to 27,000 sf of Mixed Use 2 (MU-2) uses. It is noted that development in MU-1 could consist of a maximum of 550,000 sf of retail uses and no residential uses, or up to 350 units of residential uses and 360,000 sf of retail uses. The CWSP is designed to provide flexibility, so there are various other hypothetical combinations of retail and residential development, but not more than the maximum density presented would be allowed without an amendment approved by the City. Additionally, the proposed Project would increase the size of the existing 11-acre Regional Park, the Riverbank Sports Complex, to 22 acres. The plan accommodates the possibility for a future 10 to 12-acre elementary school as well as a 20 acre middle school within the Plan Area. The proposed Project would provide approximately 42 acres of park, open space, and Regional Sports Park uses.

The Project also includes a request for approval of General Plan Amendments, Specific Plan, pre-zoning, annexation of the entire Project site. The developers of the MU-1 "Mixed Use" area have concurrently filed an application for a Development Agreement, Tentative Map and Preliminary Development Plan to be considered as part of the approval action. Changes to the Land Use Element would include changing the approximately 380-acre Plan Area from LDR, MDR, HDR, MU, Civic (C), Community Commercial (CC), and Park (P) to Specific Plan (SP). The proposed Project would also require pre-zoning of the Project site. The City's pre-zoning for the Plan Area will include the Specific Plan (SP) zoning designation.

The quantifiable objectives of the proposed Project include annexation of approximately 380 acres of land into the Riverbank City limits, and the subsequent development of land, which will include: Low Density Residential, Medium Density Residential, High Density Residential, Regional Sports Park, Mixed Use, Elementary School, Park/Basin, Neighborhood Park, and transportation and utility improvements.

AREAS OF CONTROVERSY AND ISSUES TO BE RESOLVED

This Draft EIR addresses environmental impacts associated with the proposed Project that are known to the City of Riverbank, were raised during the Notice of Preparation (NOP) process, or raised during preparation of the Draft EIR. This Draft EIR discusses potentially significant impacts associated with aesthetics, agricultural resources, air quality, biological resources, cultural and tribal resources, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use, population, and housing, noise, public services and recreation, transportation and circulation, utilities, and urban decay.

The City of Riverbank received 15 written comment letters on the NOP for the proposed Project. A copy of the letters is provided in Appendix A of this Draft EIR. The commenting agency/citizen is provided below. The City also held a public scoping meeting on April 12, 2017. The verbal comments that were provided at that scoping meeting are also included in Appendix A.

- Albert Dadesho;
- Best Best & Krieger;
- California Department of Transportation;
- Central Valley Regional Water Quality Control Board;

- City of Modesto;
- Modesto City Schools;
- Modesto Irrigation District;
- Native American Heritage Commission;
- R. Todd Whiteside;
- Rick Kimble;
- San Joaquin Valley Air Pollution Control District;
- Stanislaus Consolidated Fire Protection District;
- Stanislaus County Environmental Review Committee;
- Stanislaus Local Agency Formation Commission; and
- Sylvan Union School District.

ALTERNATIVES TO THE PROPOSED PROJECT

The CEQA Guidelines require an EIR to describe a reasonable range of alternatives to the Project or to the location of the Project which would reduce or avoid significant impacts, and which could feasibly accomplish the basic objectives of the proposed Project. Four alternatives to the proposed Project were developed based on input from City staff, and the technical analysis performed to identify the environmental effects of the proposed Project. The alternatives analyzed in this EIR include the following four alternatives in addition to the proposed Project.

- **No Project (No Build) Alternative**: Under this alternative, development of the Plan Area would not occur, and the Plan Area would remain in its current existing condition.
- **Off-Site Location Alternative:** Under this alternative, the proposed Project would be developed with the same amenities as described in the Project Description, but at an off-site location.
- **Increased Density Alternative:** Under this alternative, the proposed Project would be developed with the same amenities as described in the Project Description, but the density of the residential uses would be increased, and the total development footprint would be decreased.
- **Lower Density Alternative:** Under this alternative, the proposed Project would be developed in such a way to promote larger lot sizes and to reduce the overall footprint of the developed areas.

Alternatives are described in detail in Chapter 5. Table ES-1 presents a comparison of the alternative Project impacts with those of the proposed Project. As shown in the table, the No Project (No Build) Alternative is the environmentally superior alternative. However, as required by CEQA, when the No Project (No Build) Alternative is the environmentally superior alternative, the environmentally superior alternative among the others must be identified. The Off-Site Location Alternative would not reduce impacts related to any environmental issue. The Increased Density Alternative would reduce impacts in eight areas, and the Lower Density Alternative would reduce impacts in one area. Therefore, the Increased Density Alternative would be the next environmentally superior alternative.

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

ENVIRONMENTAL ISSUE	*NO PROJECT (NO BUILD) ALTERNATIVE*	*OFF-SITE LOCATION ALTERNATIVE*	*INCREASED DENSITY ALTERNATIVE*	*LOWER DENSITY ALTERNATIVE*
Aesthetics and Visual Resources	Less	Equal	Less	Equal
Agricultural Resources	Less	Equal	Less	Equal
Air Quality	Less	Equal	Less	Equal
Biological Resources	Less	Equal	Less	Equal
Cultural and Tribal Resources	Less	Equal	Less	Equal
Geology and Soils	Less	Equal	Less	Equal
Greenhouse Gases and Climate Change	Less	Equal	Less	Equal
Hazards and Hazardous Materials	Less	Equal	Equal	Equal
Hydrology and Water Quality	Less	Equal	Less	Less
Land Use, Population, and Housing	Less	Equal	Equal	Equal
Noise	Less	Equal	Equal	Equal
Public Services and Recreation	Less	Equal	Equal	Equal
Transportation and Circulation	Less	Equal	Equal	Equal
Utilities	Less	Equal	Equal	Equal
Urban Decay	Less	Equal	Equal	Equal

GREATER = GREATER IMPACT THAN THAT OF THE PROPOSED PROJECT
LESS = LESS IMPACT THAN THAT OF THE PROPOSED PROJECT
EQUAL = NO SUBSTANTIAL CHANGE IN IMPACT FROM THAT OF THE PROPOSED PROJECT

SUMMARY OF IMPACTS AND MITIGATION MEASURES

In accordance with the CEQA Guidelines, this EIR focuses on the significant effects on the environment. The CEQA Guidelines defines a significant effect as a substantial adverse change in the physical conditions which exist in the area affected by the proposed Project. A less than significant effect is one in which there is no long or short-term significant adverse change in environmental conditions. Some impacts are reduced to a less than significant level with the implementation of mitigation measures and/or compliance with regulations.

The environmental impacts of the proposed Project, the impact level of significance prior to mitigation, the proposed mitigation measures and/or adopted policies and standard measures that are already in place to mitigate an impact, and the impact level of significance after mitigation are summarized in Table ES-2.

This EIR analyzes the Specific Plan area at a programmatic level and the applicability of each mitigation measure will be determined based on the characteristics and relative fair share of impacts of each proposed development within the Plan Area. As a result, project specific mitigation monitoring and reporting programs may be prepared to identify which mitigation measures apply to each development application. In addition, additional mitigation measures may be imposed if an application shows potential impacts that were not analyzed or that exceed the analysis in this EIR. The City will review each subsequent application in accordance with the requirements under CEQA.

TABLE ES-2: PROJECT IMPACTS AND PROPOSED MITIGATION MEASURES

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
AESTHETICS			
Impact 3.1-1: Project implementation may result in substantial adverse effects on scenic vistas and resources or substantial degradation of visual character.	PS		SU
Impact 3.1-2: Project implementation may substantially damage scenic resources within a State Scenic Highway.	LS		--
Impact 3.1-3: Project implementation may result in light and glare impacts.	PS	***Mitigation Measure 3.1-1:*** *A lighting plan shall be prepared for each phase of development. The lighting plan shall demonstrate that the lighting systems and other exterior lighting throughout the phase of development has been designed to minimize light spillage onto adjacent properties to the greatest extent feasible. Use of LED lighting or other proven energy efficient lighting shall be required for facilities to be dedicated to the City of Riverbank for maintenance.*	LS
AGRICULTURAL RESOURCES			
Impact 3.2-1: The proposed Project has the potential to result in the conversion of Farmlands, including Prime Farmland, Unique Farmland, and Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural uses.	PS	***Mitigation Measure 3.2-1****: Prior to the issuance of grading permits, building permits, or final map approval on the subject residential property, the Project applicant shall secure permanent protection of offsite farmland based on a 1:1 ratio to the amount of gross Farmland converted as a result of Project development, consistent with the requirements of the City's Sustainable Agricultural Strategy. The acreage requiring agricultural mitigation shall be equal to the portion of the project site dedicated to residential uses which would be subject to the discretionary development entitlement and lands designated as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland. Permanent preservation shall consist of the purchase of agricultural conservation*	SU

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ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
		easements granted in perpetuity from willing seller(s), enforceable deed restrictions, purchase of banked mitigation credits, or other conservation mechanisms acceptable to the City. Land set aside for permanent preservation shall: (1) be of equal or better soil quality, have a dependable and sustainable supply of irrigation water, and be located within Stanislaus County; and (2) not be previously encumbered by a conservation easement of any nature. *The permanent protection of farmland shall be accomplished by either: (1) the landowner/developer working directly with an established farmland trust or similar organization, such as the Central Valley Farmland Trust, and providing certification satisfactory to the City that such lands have been permanently preserved at the specified ratio; or (2) it is the City's intent to work with a qualified land trust or similar organization, such as the Central Valley Farmland Trust, to establish a fee for agricultural land conservation easements.* ***Mitigation Measure 3.2-2:*** *Prior to the conversion of agricultural lands in the Plan Area, the Project applicant shall participate in the Stanislaus LAFCo's Agricultural Preservation Policy (as amended on March 25, 2015), consistent with the City's Sustainable Agricultural Strategy. The Project applicant shall prepare a "Plan for Agricultural Preservation", which shall include information such as the Project's direct and indirect impacts to agricultural resources, the availability of other lands in the City of Riverbank's existing boundaries, and relevant General Plan policies. The Plan shall also specify the method or strategy proposed to minimize the loss of agricultural lands. The information provided in the Plan shall be consistent with the environmental documentation prepared by the City.*	
Impact 3.2-2: The proposed Project has the potential to conflict with existing zoning for agricultural use, or Williamson Act Contracts.	LS		--
Impact 3.2-3: The proposed Project has the potential to result in conflicts with adjacent	PS	***Mitigation Measure 3.2-3:*** *Prior to approval of any Final Maps, "Right to Farm" language shall be presented to the City for approval and recordation against the affected property.*	LS

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ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
agricultural lands or indirectly cause conversion of agricultural lands.		*The proposed language shall contain the following statement: "All persons purchasing lots within the boundaries of this approved map should be prepared to accept the inconveniences associated with agricultural operations, such as noise, odors, flies, dust or fumes. Stanislaus County has determined that such inconveniences shall not be considered to be a nuisance if agricultural operations are consistent with accepted customs and standards."*	
AIR QUALITY			
Impact 3.3-1: Project operation has the potential to conflict with or obstruct implementation of an applicable air quality plan, cause a violation of an air quality standard, or contribute substantially to an existing or projected air quality violation.	PS	***Mitigation Measure 3.3-1****: The Project proponent shall submit an Air Impact Assessment (AIA) application to the San Joaquin Valley Air Pollution Control District in accordance with District Rule 9510 Indirect Source Review (ISR) to obtain AIA approval from the District for the phase or Project component that is to be constructed. Prior to the issuance of a building permit of each individual phase or Project component, the Project proponent shall incorporate mitigation measures into the proposed Project and demonstrate compliance with District Rule 9510 including payment of all fees.* ***Mitigation Measure 3.3-2****: Prior to the approval of improvement plans, the Project proponent shall incorporate measures that reduce vehicle emissions. The measures will be implemented through project design, conditions of approval, noticing and disclosure statements, or through the City's plan check and inspection process. This mitigation measure is intended to ensure that the best available and practical approaches are used to reduce operational emissions. Appropriate measures shall be selected by the City in consultation with SJVAPCD, and shall include, at a minimum, the following features into the applicable Project plans (e.g. site, engineering, landscaping, etc.):* • *Provide bus turnouts and transit improvements where requested by the San Joaquin RTD.* • *Design streets and trails to maximize pedestrian and bicycle connectivity, safety, and access to transit lines, including pedestrian and bicycle signalization, signage and safety designs at signalized intersections.*	SU

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		• *Provide traffic calming measures on all streets and intersections. Traffic calming features may include marked crosswalks, count-down signal timers, curb extensions, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, narrow roadways, traffic circles, on-street parking, planter strips with streets trees, chicanes/chokers, or other improvements designed to reduce motor vehicle speeds and encourage pedestrian and bicycle trips.* • *Provide street lighting along internal roadways and bike lanes/paths, sidewalks.* • *Provide vanpool parking only spaces and preferential parking for carpools to accommodate carpools and vanpools in employment areas.* • *Provide bicycle parking areas near the entrance of commercial establishments.* • *Provide pedestrian signalization, signage and safety designs at signalized intersections.* • *Require shade trees to shade sidewalks in street-side landscaping areas.* ***Mitigation Measure 3.3-3**: Prior the approval of improvement plans, the Project proponent shall prepare and implement, and/or require the implementation of, high-efficiency lighting throughout all portions of the Plan Area (for example: metal halide post top lights, or LEDs, as opposed to typical mercury cobrahead lights).* ***Mitigation Measure 3.3-4**: Prior to the approval of improvement plans, the Project proponent shall prepare and implement, and the City shall require the implementation of, the following additional mitigation measures:* • *Use low-VOC paint (indoor and outdoor, for both residential and non-residential uses).* • *Use only natural gas hearths (or no hearths).* • *Apply a Water Conservation Strategy to achieve reductions in outdoor water usage through installation of water-efficient irrigation systems, and landscaping with native and drought-tolerant plants that also reduce the need for gas-powered landscape maintenance equipment.* • *Require all flat roofs on non-residential structures to have a white or silver cap*	

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		sheet to reduce energy demand. • *Install low flow bathroom faucets.* • *Install low-flow kitchen faucets.* • *Install low-flow toilets.* • *Install low-flow showers.* • *Use water-efficient irrigation systems.*	

Impact 3.3-2: Project construction has the potential to cause a violation of an air quality standard or contribute substantially to an existing or projected air quality violation.	PS	***Mitigation Measure 3.3-5:*** *To reduce construction-related emissions, the following measures shall be implemented:*
		
		• *Prior to year 2025, construction contracts for development in the Plan Area shall specify use of off-road construction equipment that achieves fleet average emissions equal to or less than the Tier III emissions standard of 4.8 NOx grams per horsepower-hour (g/hp-hr). The fleet average can be achieved through any combination of uncontrolled engines complying with Tier III and above engine standards. Beginning in 2025, construction contracts for development in the Plan Area shall specify use of off-road construction equipment that achieves fleet average emissions equal to or less than the Tier IV emissions standards of NOx g/hp-hr. The fleet average can be achieved through any combination of controlled engines complying with Tier IV and above engine standards.*
		• *Prior to issuance of a grading or building permit, the project applicant shall submit a Fugitive Dust Control Plan to SJVAPCD for review and approval. The Fugitive Dust Control Plan shall reduce emissions, during construction of PM10 and PM2.5 and shall include the following:*
		  o *Names, addresses and phone numbers of persons responsible for the preparation, submission and implementation of the plan.*
		  o *Description and location of operations.*
		  o *Listing of all fugitive dust emissions sources included in the operation.*
		  o *The following dust control measures shall be implemented:*
		  ▪ *All on-site unpaved roads shall be effectively stabilized using water or chemical stabilizers that can be determined to be as*
			SU

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		efficient as or more efficient for fugitive dust control than California Air Resources Board approved soil stabilizers, and that shall not increase any other environmental impacts including loss of vegetation. ▪ *All material excavated or graded will be sufficiently watered to prevent excessive dust. Watering will occur as needed with complete coverage of disturbed areas. The excavated soil piles will be watered as needed to limit dust emissions to less than 20 percent opacity or covered with temporary coverings.* ▪ *Construction activities that occur on unpaved surfaces will be discontinued during windy conditions when winds exceed 25 miles per hour and those activities cause visible dust plumes. Construction activities may continue if dust suppression measures are used to minimize visible dust plumes.* ▪ *Track-out debris onto public paved roads shall not extend 50 feet or more from an active operation and track-out shall be removed or isolated such as behind a locked gate at the conclusion of each workday.* ▪ *All hauling materials should be moist while being loaded into dump trucks.* ▪ *All haul trucks hauling soil, sand and other loose material on public roads shall be covered (e.g., with tarps or other enclosures that would reduce fugitive dust emissions).* ▪ *Soil loads shall be kept below 6 inches of the freeboard of the truck.* ▪ *Drop heights should be minimized when loaders dump soil into trucks.* ▪ *Gate seals should be tight on dump trucks.* ▪ *Traffic speeds on unpaved roads shall be limited to a*	

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		maximum of 15 miles per hour. ▪ *All grading activities shall be suspended when visible dust emissions exceed 20 percent.* ▪ *Other fugitive dust control measures as necessary to comply with SJVAPCD Rules and Regulations.* ▪ *Disturbed areas should be minimized.*	
Impact 3.3-3: The proposed Project has the potential to have carbon monoxide hotspot impacts.	LS		--
Impact 3.3-4: The proposed Project has the potential for public exposure to toxic air contaminants.	LS		--
Impact 3.3-5: The proposed Project has the potential for exposure to odors.	LS		--
BIOLOGICAL RESOURCES			
Impact 3.4-1: The potential to have a direct or indirect effect on special-status invertebrate species.	LS		--
Impact 3.4-2: The potential to have direct or indirect effects on special-status reptile and amphibian species.	PS	***Mitigation Measure 3.4-1:*** *The project proponent shall implement the following measures to avoid or minimize impacts on western pond turtle:* • *Ground-disturbing activities in areas of potential pond turtle nesting habitat shall be avoided during the nesting season (April–August), to the extent feasible.* • *A preconstruction survey for western pond turtles within aquatic habitats and adjacent suitable uplands to be disturbed by project activities shall be conducted*	LS

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		by a qualified biologist. In aquatic habitats which may be dewatered during project construction, surveys shall be conducted immediately after dewatering and before any subsequent disturbance. Elsewhere, surveys shall be conducted within 24 hours before project disturbance. • *If pond turtles are found during preconstruction surveys, a qualified biologist, with approval from CDFW, shall move the turtles to the nearest suitable habitat outside the area subject to project disturbance. The construction area shall be reinspected whenever a lapse in construction activity of 2 weeks or more has occurred.* • *Construction personnel performing activities within aquatic habitats and adjacent suitable uplands to be disturbed by project activities shall receive worker environmental awareness training from a qualified biologist to instruct workers to recognize western pond turtle, their habitats, and measures being implemented for its protection.* • *Construction personnel shall observe a 15-miles-per-hour speed limit on unpaved roads.* ***Mitigation Measure 3.4-2:*** *The project proponent shall implement the following measures to avoid or minimize impacts on giant garter snake:* *The project proponent shall consult with USFWS regarding the potential for the project to affect giant garter snake habitat. If USFWS determines that giant garter snake may be potentially affected by project construction, the project proponent shall obtain an incidental take permit from USFWS and implement the minimization guidelines for giant garter snake, as follows:* • *Unless authorized by USFWS, construction and other ground-disturbing activities within 200 feet of suitable aquatic habitat for the giant garter snake shall not commence before May 1, with initial ground disturbance expected to correspond with the snake's active season. Initial ground disturbance shall be completed by October 1.*	

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		• *To the extent possible, construction activities shall be avoided within 200 feet from the banks of giant garter snake aquatic habitat. Movement of heavy equipment in these areas shall be confined to existing roadways, where feasible, to minimize habitat disturbance.* • *Construction personnel shall receive USFWS-approved worker environmental awareness training to instruct workers to recognize giant garter snake and their habitats.* • *Within 24 hours before construction activities, the project area shall be surveyed for giant garter snake. The survey shall be repeated if a lapse in construction activity of 2 weeks or greater has occurred. If a giant garter snake is encountered during construction, activities shall cease until appropriate corrective measures have been completed or it is determined by the qualified biologist and City staff, in coordination with USFWS and CDFW, that the giant garter snake shall not be harmed. Any sightings shall be reported to USFWS and CDFW immediately.* • *Any aquatic habitat for the snake that is dewatered shall remain dry for at least 15 consecutive days after April 15 and before excavating or filling of the dewatered habitat. If complete dewatering is not possible, potential snake prey (e.g., fish and tadpoles) will be removed so that snakes and other wildlife are not attracted to the construction area.* • *Giant garter snake habitat to be avoided within or adjacent to construction areas will be fenced and designated as environmentally sensitive areas. These areas shall be avoided by all construction personnel.*	
Impact 3.4-3: The potential to have direct or indirect effects on special-status bird species.	PS	***Mitigation Measure 3.4-3:*** *The project proponent shall implement the following measure to avoid or minimize impacts on western burrowing owl:* • *No less than 14 days before initiating ground disturbance activities, a qualified biologist shall complete an initial take avoidance survey using the recommended methods described in the Detection Surveys section of the March 7, 2012, CDFW Staff Report on Burrowing Owl Mitigation (CDFW 2012). Implementation of*	LS

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		avoidance and minimization measures (as presented in the March 7, 2012, CDFW Staff Report on Burrowing Owl Mitigation) would be triggered if the initial take avoidance survey results in positive owl presence in the Plan Area where project activities shall occur. If needed, the development of avoidance and minimization approaches shall be developed in coordination with CDFW. ***Mitigation Measure 3.4-4:*** *The project proponent shall implement the following measures to avoid or minimize impacts on Swainson's hawk:* • *No more than 30 days before the commencement of construction, a qualified biologist shall perform preconstruction surveys for nesting Swainson's hawk and other raptors during the nesting season (February 1 through August 31).* • *Appropriate buffers shall be established and maintained around active nest sites during construction activities to avoid nest failure as a result of project activities. The appropriate size and shape of the buffers shall be determined by a qualified biologist, in coordination with CDFW, and may vary depending on the nest location, nest stage, and construction activity. The buffers may be adjusted if a qualified biologist determines it would not be likely to adversely affect the nest. Monitoring shall be conducted to confirm that project activity is not resulting in detectable adverse effects on nesting birds or their young. No project activity shall commence within the buffer areas until a qualified biologist has determined that the young have fledged or the nest site is otherwise no longer in use.* • *Before the commencement of construction, the project proponent shall provide compensatory mitigation for the permanent loss of Swainson's hawk foraging habitat. Mitigation shall be at the CDFW specified ratios, which are based on distance to nests. The Plan Area's distance to the closest nest falls within the range of "within 5 miles of an active nest tree but greater than 1 mile from the nest tree." As such, the Project shall be responsible for 0.75 acres of each acre of urban development authorized (0-75:1 ratio). The project proponent shall either provide lands protected through fee title acquisition or conservation easement (acceptable to the CDFW) on agricultural lands or other suitable habitats which*	

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ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
		provide foraging habitat for Swainson's hawk. ***Mitigation Measure 3.4-5:*** *The project proponent shall implement the following measure to avoid or minimize impacts on other protected bird species that may occur on the site:* • *Preconstruction surveys for active nests of special-status birds shall be conducted by a qualified biologist in all areas of suitable habitat within 500 feet of project disturbance. Surveys shall be conducted within 14 days before commencement of any construction activities that occur during the nesting season (February 15 to August 31) in a given area.* • *If any active nests, or behaviors indicating that active nests are present, are observed, appropriate buffers around the nest sites shall be determined by a qualified biologist to avoid nest failure resulting from project activities. The size of the buffer shall depend on the species, nest location, nest stage, and specific construction activities to be performed while the nest is active. The buffers may be adjusted if a qualified biologist determines it would not be likely to adversely affect the nest. If buffers are adjusted, monitoring will be conducted to confirm that project activity is not resulting in detectable adverse effects on nesting birds or their young. No project activity shall commence within the buffer areas until a qualified biologist has determined that the young have fledged or the nest site is otherwise no longer in use.*	
Impact 3.4-4: The potential to result in direct or indirect effects on special-status mammal species.	PS	***Mitigation Measure 3.4-6:*** *The project proponent shall implement the following measures to avoid or minimize impacts on special-status bats:* • *If removal of suitable roosting areas (i.e. buildings, trees, shrubs, bridges, etc.) must occur during the bat pupping season (April 1 through July 31), surveys for active maternity roosts shall be conducted by a qualified biologist. The surveys shall be conducted from dusk until dark.* • *If a special-status bat maternity roost is located, appropriate buffers around the roost sites shall be determined by a qualified biologist and implemented to avoid*	LS

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ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
		destruction or abandonment of the roost resulting from habitat removal or other project activities. The size of the buffer shall depend on the species, roost location, and specific construction activities to be performed in the vicinity. No project activity shall commence within the buffer areas until the end of the pupping season (August 1) or until a qualified biologist conforms the maternity roost is no longer active.	
Impact 3.4-5: The potential for direct or indirect effects on candidate, sensitive, or special-status plant species.	LS		--
Impact 3.4-6: The potential to effect protected wetlands and jurisdictional waters.	PS	***Mitigation Measure 3.4-7:*** *Prior to any construction activities that would disturb a ditch/canal/basin within the Plan Area, the Project applicant shall obtain authorization for fill from the regulatory agencies (USACE-404 permit, RWQCB-401 certification, 1600 Streambed Alteration Agreement). All requirements of a permit shall be adhered to throughout the construction phase.*	LS
Impact 3.4-7: The potential to result in adverse effects on riparian habitat or a sensitive natural community.	LS		--
Impact 3.4-8: The potential to result in interference with the movement of native fish or wildlife species or with established wildlife corridors, or impede the use of native wildlife nursery sites.	LS		--
Impact 3.4-9: The potential to conflict with an adopted Habitat Conservation Plan.	NI		--

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ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
Impact 3.4-10: The potential to conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	LS		--
CULTURAL AND TRIBAL RESOURCES			
Impact 3.5-1: Project implementation has the potential to cause a substantial adverse change to a significant historical resource, as defined in CEQA Guidelines §15064.5, or a significant tribal cultural resource, as defined in Public Resources Code §21074.	PS	***Mitigation Measure 3.5-1:*** *Prior to ground disturbing activities for each phase of the Project that would potentially affect one or more of the listed resources below, the resources shall be evaluated for their potential architectural and/or historic importance by a Qualified Architectural Historian, at the cost of the Project applicant. The potentially historic resources within the Project site include the following:* • *Buildings or building complexes located northwest of the Oakdale Road / Morrill Road intersection, east of the existing Riverbank Sports Complex (on APN 074-006-013);* • *Buildings or building complexes located southwest of the Oakdale Road / Morrill Road intersection, approximately 0.18 miles south of the Riverbank Sports Complex (on APN 074-011-009);* • *Buildings or building complexes located northwest of the Oakdale Road / Crawford Road intersection, located along Oakdale Road (on APN 074-011-009);* • *Buildings or building complexes located southwest of the Oakdale Road / Crawford Road intersection, located 0.14 to 0.27 miles west of Oakdale Road (on APN 074-014-006); and* • *The MID Lateral No. 6 that crosses the southern portion of the Project site.* *Work shall not continue at the above-listed site(s) until the Qualified Architectural Historian conducts sufficient research and data collection to determine if the above-listed site(s) is eligible for listing on the NRHP or CRHR; or not a significant Public Trust Resource. Should the site(s) be determined to not be significant or eligible, no further action is required. Should the site(s) be determined to be significant or eligible, the Project applicant*	LS

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ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
		shall work with the Registered Professional Historian to develop a cultural resource plan for the site(s). *If a building or building complex is determined to be important under the criteria of the California Register of Historical Resources, and the buildings cannot be preserved, then it is recommended that the buildings be documented through the preparation of the DPR 523 forms with large scale "HABS-like" photographs taken. Sets of these photographs shall be placed with the County museum or a suitable archival facility and the Central California Information Center, thereby preserving information on early architecture for future researchers.* ***Mitigation Measure 3.5-2:*** *All construction workers shall receive a cultural resources sensitivity training session before they begin site work in order to identify any potentially significant cultural or similar resources that may result during construction. The sensitivity training session shall be instructed by a professional archaeologist. The sensitivity training shall inform the workers of their responsibility to identify and protect any cultural resources, including prehistoric or historic artifacts, or other indications of archaeological resources, within the Plan Area. The sensitivity training shall cover laws pertaining to cultural resources, examples of cultural resources that may be discovered in the Plan Area, and what to do if a cultural resource, or anything that may be a cultural resource, is discovered.* *If any cultural resources, including prehistoric or historic artifacts, or other indications of archaeological resources, are found during grading and construction activities during any phase of the Project, all work shall be halted immediately within a 200-foot radius of the discovery until an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology, as appropriate, has evaluated the find(s).* *Work shall not continue at the discovery site until the archaeologist conducts sufficient research and data collection to make a determination that the resource is either 1) a*	

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ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
		significant find; 2) not cultural in origin; or 3) not potentially significant or eligible for listing on the NRHP or CRHR; or 4) not a significant Public Trust Resource. *If a significant finding is made, a plan must be developed for this inadvertent finding. Measures to potentially address a subsurface finding could include one or more of the following depending upon the nature of the find: recordation of the finding; further efforts to define the extent and nature of the resource; preservation in place, and re-design to ensure long-term preservation of the resource; and/or data recovery excavations.* *If Native American resources are identified, a Native American monitor, following the Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites established by the Native American Heritage Commission, may also be required and, if required, shall be retained at the Project applicant's expense.*	
Impact 3.5-2: Project implementation has the potential to cause a substantial adverse change to a significant archaeological resource, as defined in CEQA Guidelines §15064.5	LS	*Implement* ***Mitigation Measure 3.5-2.***	-
Impact 3.5-3: Project implementation has the potential to directly or indirectly destroy a unique paleontological resource.	PS	***Mitigation Measure 3.5-3:*** *If paleontological resources are discovered during the course of construction during any phase of the Project, work shall be halted immediately within 50 meters (165 feet) of the discovery, the City of Riverbank shall be notified, and a qualified paleontologist shall be retained to determine the significance of the discovery. If the paleontological resource is considered significant, it should be excavated by a qualified paleontologist and given to a local agency, State University, or other applicable institution, where the resource could be curated and displayed for public education purposes.*	LS
Impact 3.5-4: Project implementation has the potential to disturb human remains, including those interred outside of formal cemeteries.	PS	***Mitigation Measure 3.5-4:*** *If human remains are discovered during the course of construction during any phase of the Project, work shall be halted at the site and at any nearby area reasonably suspected to overlie adjacent human remains until the Stanislaus County Coroner has been informed and has determined that no investigation of the cause*	LS

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ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*

		of death is required. If the remains are of Native American origin, either of the following steps will be taken:
		
		• *The Coroner shall contact the Native American Heritage Commission in order to ascertain the proper descendants from the deceased individual. The coroner shall make a recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods, which may include obtaining a qualified archaeologist or team of archaeologists to properly excavate the human remains.*
		• *The landowner shall retain a Native American monitor, and an archaeologist, if recommended by the Native American monitor, and rebury the Native American human remains and any associated grave goods, with appropriate dignity, in a location that is not subject to further subsurface disturbance when any of the following conditions occurs:*
		  o *The Native American Heritage Commission is unable to identify a descendent.*
		  o *The descendant identified fails to make a recommendation.*
		  o *The City of Riverbank or its authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.*	

GEOLOGY AND SOILS			
Impact 3.6-1: The proposed Project may expose people or structures to potential substantial adverse effects involving strong seismic ground shaking or seismic related ground failure.	LS		--

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ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
Impact 3.6-2: Implementation and construction of the proposed Project may result in substantial soil erosion or the loss of topsoil.	PS	***Mitigation Measure 3.6-1:*** *Prior to clearing, grading, and disturbances to the ground such as stockpiling, or excavation for each phase of the Project, the Project proponent shall submit a Notice of Intent (NOI) and Storm Water Pollution Prevention Plan (SWPPP) to the RWQCB to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit Order 2009-0009-DWQ amended by 2010-0014-DWQ & 2012-0006-DWQ). The SWPPP shall be designed with Best Management Practices (BMPs) that the RWQCB has deemed as effective at reducing erosion, controlling sediment, and managing runoff. These include: covering disturbed areas with mulch, temporary seeding, soil stabilizers, binders, fiber rolls or blankets, temporary vegetation, and permanent seeding. Sediment control BMPs, installing silt fences or placing straw wattles below slopes, installing berms and other temporary run-on and runoff diversions. These BMPs are only examples of what should be considered and should not preclude new or innovative approaches currently available or being developed. Final selection of BMPs will be subject to approval by City of Riverbank and the RWQCB. The SWPPP will be kept on site during construction activity and will be made available upon request to representatives of the RWQCB.*	LS
Impact 3.6-3: The proposed Project has the potential to be located on a geologic unit or soil that is unstable, or that would become unstable as a result of Project implementation, and potentially result in landslide, lateral spreading, subsidence, liquefaction or collapse.	PS	***Mitigation Measure 3.6-2****: Prior to earthmoving activities for each phase of the Project, a certified geotechnical engineer, or equivalent, shall be retained to perform a final geotechnical evaluation of the soils at a design-level as required by the requirements of the California Building Code Title 24, Part 2, Chapter 18, Section 1803.1.1.2 related to expansive soils and other soil conditions. The evaluation shall be prepared in accordance with the standards and requirements outlined in California Building Code, Title 24, Part 2, Chapter 16, Chapter 17, and Chapter 18, which addresses structural design, tests and inspections, and soils and foundation standards. The final geotechnical evaluation shall include design recommendations to ensure that soil conditions do not pose a threat to the health and safety of people or structures, including threats from liquefaction or lateral spreading. The grading and improvement plans, as well as the storm drainage and building plans for each phase of the Project shall be designed in accordance with the recommendations provided in the final geotechnical evaluation.*	LS

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ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
Impact 3.6-4: Potential for expansive soils to create substantial risks to life or property.	PS	*Implement* ***Mitigation Measure 3.6-2.***	LS
GREENHOUSE GASES AND CLIMATE CHANGE			
Impact 3.7-1: Potential to generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment or potential to conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.	PS	***Mitigation Measure 3.7-1:*** *The City shall require GHG reduction measures in connection with tentative subdivision maps submitted for approval, including but not limited to the following:* • *Actions included in Mitigation Measures 3.3-1 through 3.3-5 (see Section 3.3: Air Quality) that also reduce GHG emissions;* • *Actions that further improve energy efficiency, such as requiring that all buildings exceed Title 24 energy-efficiency requirements by a certain percentage, requiring on-site renewable energy production to meet a specified percent of the subdivision's electricity needs, etc.* • *Actions that further reduce vehicle miles traveled, such as providing transit hubs that would be accessible by local and regional transit routes and community multimodal paths and trails; providing general pedestrian connectivity throughout the project, etc.* • *Payment for GHG offsets, as determined to be feasible by the City.*	SU
Impact 3.7-2: Cumulative impact on climate change from increased Project-related greenhouse gas emissions.	PS		SU

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Impact 3.7-3: Project implementation may result in the inefficient, wasteful, or unnecessary use of energy resources.	LS		--
HAZARDS AND HAZARDOUS MATERIALS			

Impact 3.8-1: Potential to create a significant hazard through the routine transport, use, or disposal of hazardous materials or through the reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	PS	*Implement **Mitigation Measure 3.6-1**.*
		
		***Mitigation Measure 3.8-1**: Prior to the approval of any map, Preliminary Development Plan, or site plan, the City shall review the 2017 Phase I ESA (Geocon Consultants, Inc., July 2017) cited in the Draft EIR for the CWSP to determine if it is still applicable. After July 1, 2020, the City shall require an updated Phase I ESA for the specific property. The Phase I ESA shall evaluate the specific property proposed to be developed, to ensure that no material changes have occurred since preparation of the 2017 Phase I ESA (Geocon Consultants, Inc., July 2017).*
		
		***Mitigation Measure 3.8-2**: The applicant shall hire a qualified consultant to perform additional soil and site testing for the areas identified in this EIR to have potential hazardous conditions present prior to any mapping approvals. The following areas have been deemed to have potential hazardous conditions present:*
		
		• *The residential units and adjoining structures.*
		• *The remnant construction and/or farming materials (i.e. remnant pipes, etc.).*
		• *The soils in the area where farming equipment and above ground tanks have been stored, including, but not limited to, the following:*
		  o *The parcels associated with the Alexander Dairy (APNs 074-011-009 and 074-014-006).*
		  o *The parcels associated with the properties located at 5817 Oakdale Road, 5525 Oakdale Road, and 2054 Crawford Road.*
		  o *The Harrigfeld property located at 1901 Morrill Road.*
			LS

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ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
		o *All parcels located south of Morrill Road.* *The intent of the additional testing is to investigate whether any of the buildings, facilities, or soils in any of the above parcels contain hazardous materials. If asbestos-containing materials and/or lead are found in the buildings, a California Occupational Safety and Health Administration (Cal/OSHA) certified asbestos containing building materials (ACBM) and lead based paint contractor shall be retained to remove the asbestos-containing materials and lead in accordance with EPA and Cal/OSHA standards. In addition, all activities (construction or demolition) in the vicinity of these materials shall comply with Cal/OSHA asbestos and lead worker construction standards. The ACBM and lead shall be disposed of properly at an appropriate offsite disposal facility.* ***Mitigation Measure 3.8-3**: If the site investigation required by Mitigation Measure 3.8-2 indicates a probability that hazardous materials may be found on any parcel, the applicant for that parcel shall submit a Phase II ESA, which shall further evaluate on-site conditions. The Phase II ESA shall address the likely presence of hazardous substances and/or petroleum products identified in the previous Phase I ESA (Geocon Consultants, Inc., 2017) prepared for the Plan Area.* *In addition, due to the past agricultural operations in the Plan Area, a soil sampling program shall be implemented to assess potential agrichemical (including pesticides, herbicides, diesel, petrochemicals, etc.) impacts to surface soil within the Plan Area, as follows:* *A soil sampling and analysis workplan shall be submitted for approval the Stanislaus County Department of Environmental Resources. The sampling and analysis plan shall meet the requirements of the Department of Toxic Substances Control Interim Guidance for Sampling Agricultural Properties (2008), and the County Department of Environmental Resources Recommended Soil and Groundwater Sampling for Underground Tank Investigations (2013). The soils in the area where farming equipment and tanks have been stored, including, but not limited to, the following, should be included in the soil sampling*	

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		and analysis workplan: • *The parcels associated with the Alexander Dairy (APNs 074-011-009 and 074-014-006).* • *The parcels associated with the properties located at 5817 Oakdale Road, 5525 Oakdale Road, and 2054 Crawford Road.* • *The Harrigfeld property located at 1901 Morrill Road.* • *All parcels located south of Morrill Road.* *If the sampling results indicate the presence of agrichemicals that exceed commercial screening levels, a removal action workplan shall be prepared in coordination with Stanislaus County Department of Environmental Resources. The removal action workplan shall include a detailed engineering plan for conducting the removal action, a description of the onsite contamination, the goals to be achieved by the removal action, and any alternative removal options that were considered and rejected and the basis for that rejection. A no further action letter shall be issued by Stanislaus County Department of Environmental Resources upon completion of the removal action. The removal action shall be deemed complete when the confirmation samples exhibit concentrations below the commercial screening levels, which will be established by the agencies.* *If any stained soil or odor-impacted areas are encountered during the Phase II ESA, then soil sampling of these areas shall be included in the above soil sampling workplan, and depending upon the sampling results, included in the removal action workplan as well.* ***Mitigation Measure 3.8-4**: Prior to bringing hazardous materials onsite, the applicant shall submit a Hazardous Materials Business Plan (HMBP) to the Stanislaus County Division of Environmental Resources (CUPA) for review and approval. If during the construction process the applicant or any subcontractors generates hazardous waste, the applicant must register with the CUPA as a generator of hazardous waste, obtain an EPA ID# and accumulate, ship and dispose of the hazardous waste per Health and Safety Code Ch. 6.5.*	

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		(California Hazardous Waste Control Law). ***Mitigation Measure 3.8-5****: Prior to initiation of any ground disturbance activities within 50 feet of a well, the applicant shall hire a licensed well contractor to obtain a well abandonment permit from Stanislaus County Department of Environmental Resources, and properly abandon the on-site wells, pursuant to review and approval of the City Engineer and the Stanislaus County Department of Environmental Resources.* *Implement* ***Mitigation Measures 3.8-1, 3.8-2, 3.8-3, 3.8-4, and 3.8-5.***	
Impact 3.8-2: Potential to emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.	LS		--
Impact 3.8-3: Potential to result in impacts from being included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.	LS		--
Impact 3.8-4: Potential for the Project to result in safety hazards for people residing or working on the project site as a result of public airport or public use airport.	LS		--
Impact 3.8-5: Potential for the Project to result in safety hazards for people residing or working on the project site as a result of a private airstrip.	LS		--

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ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
Impact 3.8-6: Potential to impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	LS		--
Impact 3.8-7: Potential to expose people or structures to a risk of loss, injury or death from wildland fires.	LS		--
HYDROLOGY AND WATER QUALITY			
Impact 3.9-1: The proposed Project has the potential to violate water quality standards or waste discharge requirements during construction.	LS	*Implement* ***Mitigation Measure 3.6-1.***	--
Impact 3.9-2: The proposed Project has the potential to violate water quality standards or waste discharge requirements during operation.	PS	***Mitigation Measure 3.9-1****: The Project applicant shall implement the following nonstructural BMPs that focus on preventing pollutants from entering stormwater:* • *Pollution Prevention/Good Housekeeping* o *Prior to clearing, grading, and disturbances to the ground such as stockpiling, or excavation in each phase of the Project, the Project proponent shall develop a spill response and prevention plan as a component of (1) SWPPPs prepared for construction activities, (2) SWPPPs for facilities subject to the NPDES Stormwater Permit, and (3) spill prevention control and countermeasure plans for qualifying facilities. The spill response and prevention plan shall be implemented during all construction activities.* o *Streets and parking lots in all non-residential portions of the Project site shall be swept at least once every two weeks.* • *Operation and Maintenance (O&M) of Treatment Controls*	LS

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ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
		o *Prior to clearing, grading, and disturbances to the ground such as stockpiling, or excavation in each phase of the Project, the Project proponent shall develop an Operation and Maintenance (O&M) Plan for the storm drainage facilities to ensure long-term performance. The O&M plan shall incorporate the manufacturers' recommended maintenance procedures and include (1) provisions for debris removal, (2) guidance for addressing public health or safety issues, and (3) methods and criteria for assessing the efficacy of the storm drainage system. An annual report shall be submitted to the City certifying that maintenance of the facilities was conducted according to the O&M plan.* ***Mitigation Measure 3.9-2****: The Project applicant shall implement the following structural BMPs that focus on preventing pollutants from entering stormwater, or alternative BMPs approved by the City of Riverbank. Implementation of BMPs apply to all new development including the right-of-way as appropriate.* • *Extended Detention Facilities: Extended detention refers to the facilities proposed for the Project site that would detain and temporarily store stormwater runoff to reduce the peak rates of discharge to the storm drainage system. Detention of stormwater allows particles and other pollutants to settle and thereby potentially reduce concentrations and mass loading of contaminants in the discharge.* • *Grassed Swales: A swale is a vegetated, open channel management practice designed to treat and attenuate stormwater runoff for a specified water quality volume. Stormwater runoff flowing through these channels is treated by being filtered through vegetation in the channel, through a subsoil matrix, and/or through infiltration into the underlying soils. Swales can be used throughout the proposed Project area where feasible in the landscape design to treat parking lot runoff.* • *Proprietary Devices: There are a variety of commercially available stormwater*	

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ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
		treatment devices designed to remove contaminants from drainage once flows enter the conveyance systems. StormFilter™ units, or equivalent filtration-type systems, are recommended within the commercial and industrial areas as the main structural BMP for these areas. Bioswales are also recommended for streets and parking areas. Drop inlet filters should also be used to control drainage runoff water quality.	
Impact 3.9-3: The proposed Project has the potential to substantially deplete groundwater supplies or interfere substantially with groundwater recharge.	LS		--
Impact 3.9-4: The proposed Project has the potential to alter the existing drainage pattern in a manner which would result in substantial erosion, siltation, flooding, or polluted runoff.	LS		--
Impact 3.9-5 The proposed Project has the potential to otherwise substantially degrade water quality.	LS	*Implement **Mitigation Measure 3.6-1** (from Section 3.6 Geology and Soils) and **Mitigation Measures 3.9-1 and 3.9-2** (from Section 3.9 Hydrology and Water Quality).*	--
Impact 3.9-6 Place housing or structures that would impede/redirect flows within a 100-year, or 200-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.	LS		--
Impact 3.9-7 The proposed Project has the potential to expose people or structures to a significant risk of loss, injury or death involving	LS		--

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Environmental Impact	*Level of Significance Without Mitigation*	*Mitigation Measure*	*Resulting Level of Significance*
flooding, including flooding as a result of the failure of a levee or dam, seiche, tsunami, or mudflow.			
Land Use, Population, and Housing			
Impact 3.10-1: The proposed Project would not physically divide an established community.	NI		--
Impact 3.10-2: The proposed Project would not conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project adopted to avoid or mitigate an environmental effect.	LS		--
Impact 3.10-3: The proposed Project would not significantly conflict with an applicable habitat conservation plan or natural community conservation plan.	NI		--
Impact 3.10-4: The proposed Project has the potential to induce substantial population growth in an area.	LS		--
Impact 3.10-5: The proposed Project has the potential to displace substantial numbers of people or existing housing.	LS		--

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ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
NOISE			
Impact 3.11-1: Construction of the proposed Project may generate significant noise.	PS	***Mitigation Measure 3.11-1:*** *Construction activities shall not occur between 6:30 p.m. and 6:00 a.m. on weekdays or 5:00 p.m. and 8:00 a.m. on weekends and legal holidays, as required by the City of Riverbank Municipal Code. This requirement shall be noted in the improvements plans prior to approval by the City's Public Works Department.* ***Mitigation Measure 3.11-2:*** *In an effort to comply with the City General Plan standards contained in Table 3.11-6 (Table N-3 of the General Plan), all equipment shall be fitted with factory equipped mufflers, and in good working order. In addition, all staging areas shall be located as far as feasibly possible from residential areas. This requirement shall be noted in the improvements plans prior to approval by the City's Public Works Department.*	LS
Impact 3.11-2: Construction of the proposed Project may result in vibration impacts.	LS		--
Impact 3.11-3: The proposed Project may generate unacceptable traffic noise levels at existing receptors.	PS		SU
Impact 3.11-4: The proposed Project may result in traffic noise at new sensitive receptors.	PS	***Mitigation Measure 3.11-3:*** *The Project applicant(s) shall determine the appropriate methods for reducing traffic noise levels at the Project site to within the City of Riverbank noise level criteria. It is expected that traffic noise levels could exceed the City standards at residential areas adjacent to Oakdale Road, Morrill Road and Claribel Road. Mitigation can take the form of sound walls, berms, a combination of walls and berms, setbacks and shielding from building facades. The appropriate mitigation would be determined when site plans and tentative maps are available, subject to review and approval by the City of Riverbank.*	LS

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PS – potentially significant *B – beneficial impact* *SU – significant and unavoidable*

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
Impact 3.11-5: The proposed Project may result in noise from on-site activities at sensitive receptors.	PS	***Mitigation Measure 3.11-4:*** *The center of the play fields shall be located at a minimum distance of 275-feet from the nearest residences. This requirement shall be noted in the improvements plans prior to approval by the City's Public Works Department.* ***Mitigation Measure 3.11-5:*** *Use of the play fields shall be restricted to the daytime hours of 7:00 a.m. to 10:00 p.m. This requirement shall be noted in the improvements plans prior to approval by the City's Public Works Department.* ***Mitigation Measure 3.11-6:*** *When school site plans have been developed, a detailed analysis of school site noise impacts shall be identified and appropriate mitigation measures shall be included in the project designs. The City shall review and approve the analysis of school site noise impacts, as well as any mitigation measures resulting from the analysis*	LS
PUBLIC SERVICES AND RECREATION			
Impact 3.12-1: The proposed Project has the potential to require the construction of police department facilities which may cause substantial adverse physical environmental impacts.	PS	***Mitigation Measure 3.12-1:*** *Prior to the City recording a "Final Map" for each Project within the Plan Area, the owner of the project/map shall either annex the mapped property into a Community Facilities District ("CFD"), or create a new CFD for the mapped property, which will include funding for operational services with the Riverbank Police Department (Stanislaus County Sheriff).*	LS
Impact 3.12-2: The proposed Project has the potential to require the construction of fire department facilities which may cause substantial adverse physical environmental impacts.	PS		SU

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ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
Impact 3.12-3: The proposed Project has the potential to require the construction of school facilities which may cause substantial adverse physical environmental impacts.	PS		SU
Impact 3.12-4: The proposed Project has the potential to have effects on other public facilities.	LS		--
Impact 3.12-5: The proposed Project has the potential to require the construction of park and recreational facilities which may cause substantial adverse physical environmental impacts.	PS	***Mitigation Measure 3.12-2:*** *Prior to the recording of any Final Maps, or in connection with any other final approvals for the MU-1 "Mixed Use Retail" area dedicated to residential development, the project developer shall dedicate and finance the improvement of sufficient park land in accordance with a park improvement plan, subject to approval by the City, or pay sufficient in lieu fees in accordance with the Quimby Act and the City's General Plan policy, to develop at least five acres of parkland per 1,000 residents. If sufficient park area is not provided for in the subdividable lands in accordance with the Quimby Act and City Ordinances, the Project applicant shall demonstrate where the parkland dedication may occur and provide surety of its dedication and improvement according to a defined time line for dedication and improvement. This dedication requirement shall include development of full park improvement plans to be approved by the Director of Parks and Recreation. The timing of the park improvements shall be negotiated with the developer unless stipulated in a Development Agreement or Subdivision Improvement Agreement.*	LS
Impact 3.12-6: The proposed Project has the potential to 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.	LS		--

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ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
TRANSPORTATION AND CIRCULATION			
Impact 3.13-1: Under Existing conditions, the proposed Project would result in a significant impact at the Patterson Road / Coffee Road intersection.	PS	***Mitigation Measure 3.13-1:*** *Prior to issuance of Building Permits for the Project, each project applicant in the Plan Area shall pay the applicable City of Riverbank Impact Fee towards the improvement of the Patterson Road / Coffee Road intersection in order to satisfy their fair share obligation.*	SU
Impact 3.13-2: Under Existing conditions, the proposed Project would result in a significant impact at the Claribel Road / Oakdale Road intersection.	PS	***Mitigation Measure 3.13-2:*** *Prior to approval of a Final Map or improvement plans, each applicant within the CWSP Project shall be responsible for the project's fair share impacts towards the cost of widening Oakdale Road to provide a second southbound travel lane that continues beyond Claribel Road a distance sufficient to accommodate efficient intersection traffic operations and a transition back to a single lane, as well as a northbound right turn lane. The distance needed to accommodate the auxiliary through lane and transition back to a single lane is roughly ¼ mile. This roadway improvement shall be noted on the project improvement plans.* *The sum of each project applicant's fair share cost shall be equal to the total cost to construct the entire improvement, and the sum of the fair share costs shall be used by the developer(s) to construct the entire improvement. The specific segments of roadway which would be widened shall be completed as determined by the City Engineer based on the level of development being proposed at the time.*	SU
Impact 3.13-3: Under Existing conditions, the proposed Project would result in a significant impact at the Claribel Road / N-S Collector intersection.	PS	***Mitigation Measure 3.13-3:*** *Prior to approval of a Final Map or improvement plans, each applicant within the CWSP Project shall be responsible for the project's fair share impacts towards the cost of constructing a traffic signal and ancillary lanes at the Claribel Road / N-S Collector intersection, to the satisfaction of the City of Riverbank City Engineer. When, warranted, this roadway improvement shall be noted on the improvement plans for such project.* *The sum of each project applicant's fair share cost shall be equal to the total cost to construct the entire improvement, and the sum of the fair share costs shall be used by the*	LS

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ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
		developer(s) to construct the entire improvement.	
Impact 3.13-4: Under Existing conditions, the proposed Project would not result in a significant impact at the Coffee Road / Morrill Road intersection.	LS		--
Impact 3.13-5: Under Existing conditions, the proposed Project would result in a significant impact at the segment of Patterson Road from McHenry Avenue to Coffee Road.	PS	***Mitigation Measure 3.13-4:*** *Prior to issuance of any Building Permits for each Project in the Plan Area, each project applicant shall pay the applicable City of Riverbank Impact Fee towards widening of SR 108 to four-lanes in order to satisfy their fair share obligation.*	SU
Impact 3.13-6: Under Existing conditions, the proposed Project would result in a significant impact at the segment of Claribel Road from McHenry Avenue to Coffee Road.	PS	***Mitigation Measure 3.13-5:*** *Prior to issuance of any Building Permits for each Project in the Plan Area, each project applicant shall pay the applicable County RTIF fee towards construction of the North County Connector in order to satisfy their fair share obligation.*	SU
Impact 3.13-7: Under Existing conditions, the proposed Project would result in a significant impact at the segment of Claribel Road from Oakdale Road to Claus Road.	PS	***Mitigation Measure 3.13-6.*** *Prior to issuance of Building Permits for the Project, each project applicant in the Plan Area shall pay the applicable City of Riverbank Impact Fee and County RTIF fee towards the improvement of Claribel Road from Oakdale Road to Claus Road in order to satisfy their fair share obligation.*	SU
Impact 3.13-8: Under Existing conditions, the proposed Project would result in a significant impact at the segment of Coffee Road between Claribel Road and Claratina Avenue, located in the City of Modesto.	PS		SU
Impact 3.13-9: Under Existing conditions, the proposed Project would result in a significant impact at the Oakdale Road between Morrill	PS	***Mitigation Measure 3.13-7:*** *Prior to issuance of any Building Permits each Project within the Plan Area, each project applicant shall be responsible for contributing the fair share contribution towards the costs of widening Oakdale Road to four lanes by providing a*	LS

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Environmental Impact	*Level of Significance Without Mitigation*	*Mitigation Measure*	*Resulting Level of Significance*
Road and Crawford Road segment.		*second southbound through travel lane between Morrill Road and Crawford Road. The applicant shall be responsible for widening Oakdale Road when determined by the City Engineer.*	
Impact 3.13-10: Under Existing conditions, the proposed Project would result in a significant impact at the segment of Oakdale Road between Claribel Road and Claratina Avenue, located in the City of Modesto.	PS		SU
Impact 3.13-11: The proposed Project would adversely affect pedestrian and bicycle facilities.	PS	***Mitigation Measure 3.13-8:*** *Each project applicant in the Plan Area shall work with City of Riverbank staff to identify applicable pedestrian crossing features and shall install the features, when warranted, to the satisfaction of the City of Riverbank City Engineer.* ***Mitigation Measure 3.13-9:*** *Each project applicant in the Plan Area shall monitor pedestrian, bicycle, and motor vehicle safety conditions as development proceeds. Any identified safety conditions as a result of this monitoring shall be installed to alleviate these concerns, as applicable, to the satisfaction of the City of Riverbank City Engineer.*	LS
Impact 3.13-12: The proposed Project would adversely affect transit services or facilities.	PS	***Mitigation Measure 3.13-10:*** *The project applicants in the CWSP Area shall install the transit elements included in the CWSP. The project applicant shall work with Stanislaus Regional Transit staff to identify applicable on-site transit facilities and features in order to ensure that transit facilities are incorporated into the project. The transit facilities and features may include, but would not be limited to, bus turnouts, bus stops, and signage. The project applicants shall install the features, when warranted, to the satisfaction of the City Engineer.*	LS
Impact 3.13-13: Under EPAP conditions, the proposed Project would result in a significant impact to queue lengths.	PS	***Mitigation Measure 3.13-11****: Prior to approval of a Final Map or improvement plans, each project applicant within the CWSP Area shall be responsible for lengthening the available storage in left turn lanes at the Oakdale Road / Crawford Road, Oakdale Road / Freddi Lane, and Oakdale Road / Claribel Road intersections. The applicants shall be responsible*	LS

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ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
		for lengthening specific turn lanes when determined by the City Engineer. These roadway improvements shall be noted on the Project improvement plans.	
Impact 3.13-14: Under EPAP conditions, the proposed Project would result in a significant impact at the proposed mixed use retail area access.	PS	***Mitigation 3.13-12:*** *Prior to approval of a Final Map or improvement plans for the "MU-1 Mixed Use Retail" area, the project applicant shall be responsible for providing a design for vehicular access to the satisfaction of the City of Riverbank City Engineer when development of the "MU-1 Mixed Use Retail" area proceeds. This roadway design shall be noted on the project improvement plans.*	LS
Impact 3.13-15: Under EPAP conditions, the proposed Project would result in a significant impact at the McHenry Avenue / Kiernan Avenue / Claribel Avenue intersection.	PS	***Mitigation Measure 3.13-13:*** *Prior to issuance of Building Permits for each project in the Plan Area, each project applicant shall pay the applicable County RTIF fee towards construction of the North County Connector in order to satisfy their fair share obligation.*	SU
Impact 3.13-16: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the Patterson Road / Coffee Road intersection.	PS	*Implement* ***Mitigation Measure 3.13-1.***	SU
Impact 3.13-17: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the Coffee Road / Morrill Road intersection.	PS	***Mitigation Measure 3.13-14:*** *Prior to approval of a Final Map or improvement plans, each applicant within the CWSP Project shall be responsible for the project's fair share impacts towards the cost of installing a traffic signal at the Coffee Road / Morrill Road intersection. When warranted, construction of the traffic signal shall be required, to the satisfaction of the City of Riverbank City Engineer. When warranted, this roadway improvement shall be noted on the improvement plans for such project.*	LS
Impact 3.13-18: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the Coffee Road / Relocated Crawford Road intersection.	PS	***Mitigation Measure 3.13-15:*** *Prior to approval of a Final Map or improvement plans, each project applicant shall be responsible for its fair share of the cost of installing traffic signal at the Coffee Road / Relocated Crawford Road intersection. The signal shall be installed when conditions warrant, as determined by the City of Riverbank City Engineer.*	SU

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ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
Impact 3.13-19: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the Claribel Road / N-S Collector intersection.	PS	*Implement* ***Mitigation Measure 3.13-3.***	LS
Impact 3.13-20: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the Claribel Road / Oakdale Road intersection.	PS	***Mitigation Measure 3.13-16:*** *Prior to approval of a Final Map or improvement plans, each applicant within the CWSP Project shall be responsible for the project's fair share impacts towards the cost of adding a second northbound left turn lane at the Claribel Road / Oakdale Road intersection, as determined by the City of Riverbank City Engineer. When warranted, the addition of a second northbound left turn lane shall be required, to the satisfaction of the City of Riverbank City Engineer. When warranted, this roadway improvement shall be noted on the improvement plans for such project.*	SU
Impact 3.13-21: Under Cumulative (Year 2042) conditions, the proposed Project would not result in a significant impact at the Oakdale Road / Claratina Road intersection.	LS		--
Impact 3.13-22: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the Roselle Avenue / Sylvan Avenue intersection.	PS		SU
Impact 3.13-23: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the Coffee Avenue / Claratina Avenue intersection.	PS		SU
Impact 3.13-24: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact on the segment of Coffee	PS	***Mitigation Measure 3.13-17:*** *Prior to approval of a Final Map or improvement plans, each project applicant in the Plan Area shall be responsible forthe fair share of the cost of improving Coffee Road from Morrill Road to the relocated Crawford Road intersection to*	SU

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ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
Road between Morrill Road and the relocated Crawford Road.		*provide the functional equivalent of a two-lane arterial street standard, as determined by the City of Riverbank City Engineer.*	
Impact 3.13-25: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact on the segment of Coffee Road between the relocated Crawford Road and the realigned Claribel Road intersection.	PS	***Mitigation Measure 3.13-18:*** *Prior to approval of a Final Map or improvement plans, each project applicant in the Plan Area shall be responsible for contributing its fair share to the cost of improving Coffee Road from the relocated Crawford Road intersection to the realigned Claribel Road intersection to the equivalent of a four-lane arterial street standard, as determined by the City of Riverbank City Engineer.*	SU
Impact 3.13-26: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact on the segment of Coffee Road between the realigned Claribel Road intersection and NCC.	PS	***Mitigation Measure 3.13-19:*** *Prior to approval of a Final Map or improvement plans, each project applicant in the Plan Area shall be responsible for contributing its fair share fee to the cost of improving Coffee Road from the realigned Claribel Road intersection to NCC to a four-lane arterial street standard.*	SU
Impact 3.13-27: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact on the segment of Oakdale Road between the Claribel Road intersection and NCC in the City of Modesto.	PS		SU
Impact 3.13-28: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact on the segment of Roselle Avenue between the Claribel Road intersection and NCC.	PS		SU
Impact 3.13-29: The proposed Project would not result in conflicts with existing rail lines.	LS		--

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ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
Impact 3.13-30: The proposed Project would not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.	LS		--
Impact 3.13-30: The proposed Project would not result in inadequate emergency vehicle access.	LS		--
UTILITIES			
Impact 3.14-1: The proposed Project has the potential to exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.	LS		--
Impact 3.14-2: The proposed Project has the potential to require or result in the construction of new wastewater treatment or collection facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.	LS		--
Impact 3.14-3: The proposed Project has the potential to result in a determination by the wastewater treatment and/or collection provider which serves or may serve the Project that is does not have adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments.	LS		--

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ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
Impact 3.14-4: The proposed Project has the potential to require construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.	LS		--
Impact 3.14-5: The proposed Project has the potential to have insufficient water supplies available to serve the Project from existing entitlements and resources.	LS		--
Impact 3.14-6: The proposed Project has the potential to require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.	PS	***Mitigation Measure 3.14-1:*** *Prior to the issuance of a building or grading permit, the Project applicant shall submit a drainage plan to the City of Riverbank for review and approval. The plan shall include an engineered storm drainage plan that demonstrates attainment of pre-Project runoff requirements prior to release and describes the volume reduction measures and treatment controls used to reach attainment consistent with the Riverbank Low Impact Development Design and Specifications Manual, the Riverbank Storm Drain System Master Plan, and the Crossroads West Specific Plan.*	LS
Impact 3.14-7: The proposed Project has the potential to be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs and comply with federal, State, and local statutes and regulations related to solid waste.	LS		--

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Environmental Impact	*Level of Significance Without Mitigation*	*Mitigation Measure*	*Resulting Level of Significance*
Urban Decay			
Impact 3.15-1: Impacts related to the physical deterioration and urban decay of existing retail commercial development in the City of Riverbank and surrounding area.	LS		--
Cumulative Impacts			
Impact 4.1: Cumulative Damage to Scenic Resources within a State Scenic Highway	LS and LCC		--
Impact 4.2: Cumulative Degradation of the Existing Visual Character of the Region	PS		CC and SU
Impact 4.3: Cumulative Impact on Light and Glare	LS and LCC		--
Impact 4.4: Cumulative Impact on Agricultural Resources	PS		CC and SU
Impact 4.5: Cumulative Impact on the Region's Air Quality	PS		CC and SU
Impact 4.6: Cumulative Loss of Biological Resources Including Habitats and Special Status Species	LS and LCC		--
Impact 4.7: Cumulative Impacts on Known and Undiscovered Cultural Resources	LS and LCC		--

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ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
Impact 4.8: Cumulative Impact on Geologic and Soils Resources	LS and LCC		--
Impact 4.9: Cumulative Impact on Climate Change from Increased Project-Related Greenhouse Gas Emissions	PS		CC and SU
Impact 4.10: Cumulative Impact Related to Hazards and Hazardous Materials	LS and LCC		--
Impact 4.11: Cumulative Increases in Peak Stormwater Runoff from the Project site	LS and LCC		--
Impact 4.12: Cumulative Impacts Related to Degradation of Water Quality	LS and LCC		--
Impact 4.13: Cumulative Impacts Related to Degradation of Groundwater Supply or Recharge	LS and LCC		--
Impact 4.14: Cumulative Impacts Related to Flooding	LS and LCC		--
Impact 4.15: Cumulative Impact on Communities and Local Land Uses	LS and LCC		--
Impact 4.16: Cumulative Impacts on Population and Housing	LS and LCC		--

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Environmental Impact	*Level of Significance Without Mitigation*	*Mitigation Measure*	*Resulting Level of Significance*
Impact 4.17: Cumulative Exposure of Existing and Future Noise-Sensitive Land Uses to Increased Noise Resulting from Cumulative Development	PS		CC and SU
Impact 4.18: Cumulative Impact on Public Services	LS and LCC		--
Impact 4.19: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the Patterson Road / Coffee Road intersection.	PS		CC and SU
Impact 4.20: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the Coffee Road / Morrill Road intersection.	PS		CC and SU
Impact 4.21: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the Coffee Road / Relocated Crawford Road intersection.	PS		CC and SU
Impact 4.22: Under Cumulative (Year 2042) conditions, the proposed Project may result in a significant impact at the Claribel Road / N-S Collector intersection.	LS and LCC		--

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ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
Impact 4.23: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the Claribel Road / Oakdale Road intersection.	PS		CC and SU
Impact 4.24: Under Cumulative (Year 2042) conditions, the proposed Project would not result in a significant impact at the Oakdale Road / Claratina Road intersection.	LS and LCC		--
Impact 4.25: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the Roselle Avenue / Sylvan Avenue intersection.	PS		CC and SU
Impact 4.26: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the Coffee Avenue / Claratina Avenue intersection.	PS		CC and SU
Impact 4.27: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the segment of Coffee Road between Morrill Road and the relocated Crawford Road.	PS		CC and SU

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Environmental Impact	*Level of Significance Without Mitigation*	*Mitigation Measure*	*Resulting Level of Significance*
Impact 4.28: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the segment of Coffee Road between the relocated Crawford Road and the realigned Claribel Road intersection.	PS		CC and SU
Impact 4.29: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the segment of Coffee Road between the realigned Claribel Road intersection and NCC.	PS		CC and SU
Impact 4.30: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the segment of Oakdale Road between the Claribel Road intersection and NCC.	PS		CC and SU
Impact 4.31: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the segment of Roselle Avenue between the Claribel Road intersection and NCC.	PS		CC and SU
Impact 4.32: Under Cumulative (Year 2042) conditions, the proposed Project would not adversely affect bicycle facilities, pedestrian facilities, and transit facilities.	LS and LCC		--

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LS – less than significant
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ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
Impact 4.33: Under Cumulative (Year 2042) conditions, the proposed Project may result in issues related to site access and emergency vehicle access.	LS and LCC		--
Impact 4.34: Cumulative Impact on Wastewater Utilities	LS and LCC		--
Impact 4.35: Cumulative Impact on Water Utilities	LS and LCC		--
Impact 4.36: Cumulative Impact on Stormwater Facilities	LS and LCC		--
Impact 4.37: Cumulative Impact on Solid Waste Facilities	LS and LCC		--
Impact 4.38: Cumulative Impact Related to Urban Decay	LS and LCC		--

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1.1 PURPOSE AND INTENDED USES OF THE EIR

The City of Riverbank, as the lead agency, determined that the proposed Crossroads West Specific Plan Project (CWSP) is a "project" within the definition of CEQA, and is referred to herein as the "Project". CEQA requires the preparation of an environmental impact report (EIR) prior to approving any project, which 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]).

An EIR must disclose the expected environmental impacts, 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, and to balance a variety of public objectives, including economic, environmental, and social factors.

The City of Riverbank, as the lead agency, has prepared this Draft EIR to provide the public and responsible and trustee agencies with an objective analysis of the potential environmental impacts resulting from implementation of the proposed Project. 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 proposed Project. This EIR will be used by the City of Riverbank to determine whether to approve, modify, or deny the proposed Project and associated approvals in light of the Project's environmental effects. The EIR will be used as the primary environmental document to evaluate full development, all associated infrastructure improvements, and permitting actions associated with the proposed Project. All of the actions and components of the proposed Project are described in detail in Chapter 2.0, Project Description.

1.2 TYPE OF EIR

The State CEQA Guidelines identify several types of EIRs, each applicable to different project circumstances. This EIR has been prepared as a Program EIR pursuant to CEQA Guidelines Section 15168. The program-level analysis considers the broad environmental effects of the CWSP. CEQA Guidelines Section 15168 states that a program EIR is an EIR which may be prepared on a series of actions that can be characterized as one large project and are related either:

1) Geographically,
2) As logical parts in 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 CWSP. The EIR examines all phases of the project including planning, construction and operation. The program-level approach is appropriate for the CWSP because it allows comprehensive consideration of the reasonably anticipated scope of development plan; however, not all aspects of the future development are known at this stage in the planning process. Development projects in the Plan Area that require further discretionary approvals will be examined in light of this EIR to determine whether additional environmental documentation must be prepared.

The use of a program-level EIR can provide many advantages. The program EIR can:

- Provide an occasion for a more exhaustive consideration of effects and alternatives than would be practical in an EIR on an individual action;
- Ensure consideration of cumulative impacts that might be slighted in a case-by-case analysis;
- Avoid duplicative reconsideration of basic policy considerations;
- Allow the lead agency to consider broad policy alternatives and program wide mitigation measures at an early time when the agency has greater flexibility to deal with basic problems or cumulative impacts; and
- Allow reduction in paperwork.

The most common type of EIR, a "project EIR", examines the environmental impacts of a specific development project. A project EIR should focus primarily on the changes in the environment that would result from the development project. Additionally, a project EIR should examine all phases of the project including planning, construction, and operation. Because not all aspects of the future development for the Plan Area are known at this stage in the planning process, a project EIR is not the appropriate type of EIR for the proposed CWSP.

Another type of EIR, a "master EIR", is intended to provide a detailed environmental review of plans and programs upon which the approval of subsequent related development proposals can be based. For example, a master EIR may be prepared for projects consisting of smaller individual projects to be implemented in phases, such as staged projects. Additionally, a master EIR must describe and present sufficient information about anticipated subsequent projects within its scope. Information required about subsequent projects includes size, location, intensity, and scheduling. Master EIRs may be relied upon for a period of five years. Because buildout of the future development for the Plan Area would occur over a period longer than five years, a master EIR is not the appropriate type of EIR for the proposed CWSP.

1.3 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 proposed Project or an aspect of the proposed Project (CEQA Guidelines Section 15381). Under 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). The following agencies are considered "Responsible Agencies" or "Trustee

Agencies" for the proposed Project, and may be required to issue permits or approve certain aspects of the proposed Project:

- California Department of Fish and Wildlife (CDFW);
- California Department of Transportation (Caltrans);
- Central Valley Regional Water Quality Control Board (CVRWQCB) - Storm Water Pollution Prevention Plan (SWPPP) approval prior to construction activities pursuant to the Clean Water Act;
- Stanislaus County Local Agency Formation Commission (LAFCO) - Annexation;
- San Joaquin Valley Air Pollution Control District (SJVAPCD) - Approval of construction-related air quality permits;
- San Joaquin Valley Air Pollution Control District (SJVAPCD) - Authority to Construct, Permit to Operate for stationary sources of air pollution;
- Stanislaus County Health Department - Approval of restaurants and grease interceptors; and
- State Water Resources Control Board (SWRCB).

1.4 ENVIRONMENTAL REVIEW PROCESS

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

NOTICE OF PREPARATION AND INITIAL STUDY

The City of Riverbank circulated an Initial Study (IS) and Notice of Preparation (NOP) of an EIR for the proposed Project on March 22, 2017 to State Clearinghouse, State Responsible Agencies, State Trustee Agencies, Other Public Agencies, and Organizations and Interested Persons. A public scoping meeting was held on April 12, 2017 to present the project description to the public and interested agencies, and to receive comments from the public and interested agencies regarding the scope of the environmental analysis to be included in the Draft EIR. Concerns raised in response to the NOP were considered during preparation of the Draft EIR. The IS and NOP comments are presented in Appendix A.

DRAFT EIR

This document constitutes the Draft EIR. The Draft EIR contains a description of the proposed Project, description of the environmental setting, identification of project impacts, and mitigation measures for impacts found to be significant, as well as an analysis of project alternatives, identification of significant irreversible environmental changes, growth-inducing impacts, and cumulative impacts. This Draft EIR identifies issues determined to have no impact or a less than significant impact, and provides detailed analysis of potentially significant and significant impacts. Comments received in response to the NOP were considered in preparing the analysis in this EIR. Upon completion of the Draft EIR, the City of Riverbank 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. Additionally, the City of Riverbank will file the Notice of Availability with the County

Clerk and have it published in a newspaper of regional circulation to begin the local public review period.

PUBLIC NOTICE/PUBLIC REVIEW

The City of Riverbank 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, the review period for this Draft EIR is forty-five (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:

Attn: John B. Anderson, Contract Planner
City of Riverbank, Development Services Department
6707 3rd Street
Riverbank, CA 95367
(209) 863-7128

RESPONSE 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 received at a public hearing during such review period.

CERTIFICATION OF THE EIR/PROJECT CONSIDERATION

The City of Riverbank will review and consider the Final EIR. If the City of Riverbank finds that the Final EIR is "adequate and complete", the City of Riverbank will certify the Final EIR in accordance with CEQA. The rule of adequacy generally holds that and EIR can be certified if:

1) The EIR shows a good faith effort at full disclosure of environmental information; and

2) The EIR provides sufficient analysis to allow decisions to be made regarding the proposed project in contemplation of environmental considerations.

Following review and consideration of the Final EIR, the City of Riverbank may take action to approve, modify, or reject the proposed Project. A Mitigation Monitoring Program, as described below, 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 proposed Project to reduce or avoid significant effects on the environment. This Mitigation Monitoring Program will be designed to ensure that these measures are carried out during project implementation, in a manner that is consistent with the EIR.

1.5 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 proposed Project, environmental and planning documentation prepared for recent projects located within the City of Riverbank, applicable local and regional planning documents, and responses to the Notice of Preparation (NOP).

This Draft EIR is organized in the following manner:

EXECUTIVE SUMMARY

This 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 proposed Project's environmental impacts and possible mitigation measures. This chapter identifies alternatives that reduce or avoid at least one significant environmental effect of the proposed Project.

CHAPTER 1.0 – INTRODUCTION

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

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, related improvements, 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 proposed Project.

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

The following environmental topics are addressed in this section:

- Aesthetics and Visual Resources
- Agricultural Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Greenhouse Gases, Climate Change, and Energy
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use, Population, and Housing
- Noise
- Public Services and Recreation
- Transportation and Circulation
- Utilities
- Urban Decay

CHAPTER 4.0 – OTHER CEQA-REQUIRED TOPICS

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

CHAPTER 5.0 – ALTERNATIVES TO THE PROJECT

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

CHAPTER 6.0 – REPORT PREPARERS

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

APPENDICES

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

1.6 COMMENTS RECEIVED ON THE NOTICE OF PREPARATION

The City of Riverbank received 15 written comment letters on the NOP for the proposed Project. A copy of the letters is provided in Appendix A of this Draft EIR. The commenting agency/citizen is provided below. The City also held a public scoping meeting on April 12, 2017. The verbal comments that were provided at that scoping meeting are also included in Appendix A.

- Albert Dadesho;
- Best Best & Krieger;
- California Department of Transportation;
- Central Valley Regional Water Quality Control Board;
- City of Modesto;
- Modesto City Schools;
- Modesto Irrigation District;
- Native American Heritage Commission;
- R. Todd Whiteside;
- Rick Kimble;
- San Joaquin Valley Air Pollution Control District;
- Stanislaus Consolidated Fire Protection District;
- Stanislaus County Environmental Review Committee;
- Stanislaus Local Agency Formation Commission; and
- Sylvan Union School District.

1.7 AREAS OF CONTROVERSY

Aspects of the proposed project that could be of public concern include the following:

- Potential impacts to agricultural resources;
- Resulting traffic congestion along State and local roadways;
- Concerns regarding the proposed re-alignment of Crawford Road;
- Potential land use conflicts associated with adjacent agricultural lands;
- Impacts to local school districts;
- Location of the proposed school facility;
- Infrastructure and capacity concerns, including water supply and wastewater treatment;
- Financial impacts of the project;
- Concerns regarding potential impacts to on-site Modesto Irrigation District facilities.

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2.1 PROJECT LOCATION

The Crossroads West Specific Plan (CWSP) area (also-known-as "Project site" or "Plan Area") is located within the unincorporated area of Stanislaus County. The approximately 380-acre Plan Area is adjacent to the City of Riverbank (City) limits to the north and east. The Plan Area is contained within the City's existing Sphere of Influence (SOI), and the Plan Area was previously analyzed at a programmatic level in the City's 2005-2025 General Plan Update Environmental Impact Report.

The Plan Area is bounded on the east by Oakdale Road, on the south by Claribel Road, on the north by the Modesto Irrigation District (MID) Main Canal and the City of Riverbank city limits, and on the west by those property lines approximately 0.5-mile west of Oakdale Road. The Plan Area is located within Sections 27 and 34 of Township 2 South, Range 9 East Mount Diablo Meridian (MDBM). The site is shown on the Riverbank, California, 7.5-minute series quadrangle map. Figures 2.0-1 and 2.0-2 show the Project's regional location and vicinity.

2.2 PROJECT SETTING

EXISTING SITE CONDITIONS

The Plan Area is made up of nine assessor parcel numbers (APN's), which are listed in Table 2.0-1, and are displayed on Figure 2.0-3. It is noted that the acreages below do not include the roadway right of way or the main canal and lateral which pass through the Plan Area from the east to the west.

TABLE 2.0-1: PARCELS WITHIN THE PLAN AREA

APN	*ACREAGE*
074-006-016	60.51
074-006-022	8.92
074-006-021	0.38
074-006-014	11.00
074-006-013	4.76
074-011-004	0.98
074-011-009	153.96
074-014-006	86.29
074-014-007	54.04
Total	**380.84**

SITE TOPOGRAPHY

The Plan Area is relatively flat with natural gentle slope from northeast to southwest. The Plan Area topography ranges in elevation from approximately 111 to 125 feet above mean sea level. Figure 2.0-4 shows the U.S. Geological Survey (USGS) Topographic Map of the Plan Area.

EXISTING SITE USES

The nine parcels that comprise the Plan Area are primarily used for agricultural operations including a cow dairy operation with 550 milking cows, row crops, and fallow land. Seven home sites exist within the Plan Area and many of them have accessory structures on site including storage buildings, shop

buildings, and barn structures. Additionally, an approximately 11-acre regional City park, the Riverbank Sports Complex, is currently developed in the northeastern portion of the Plan Area, near the intersection of Morrill Road and Oakdale Road. Crawford Road and Morrill Road traverse the Plan Area from east to west.

MID provides water supply for the existing agricultural uses and maintains two easements on the Plan Area: an MID main canal with a crossing is located along the northern boundary of the Plan Area; additionally, MID Lateral 6 traverses the southern portion of the Plan Area from northeast to southwest. A series of private irrigation ditches distribute the MID water from the on-site canals throughout the Plan Area. Figure 2.0-5 shows aerial imagery of the current existing site uses within the Plan Area.

EXISTING SURROUNDING USES

Uses immediately adjacent to the southeast, south, southwest, and west of the Plan Area include agricultural uses and residential uses, including ranchettes and large estates lots. Other existing uses east of the Plan Area include single family residential subdivisions and a Regional Commercial Center. Existing residential subdivisions also exist to the north of the Plan Area across the MID Main Canal.

GENERAL PLAN LAND USE DESIGNATIONS

The Plan Area is currently located within Stanislaus County. The Plan Area is outside the Riverbank city limits, but within the City's SOI.

EXISTING CITY OF RIVERBANK GENERAL PLAN LAND USE DESIGNATIONS

The City of Riverbank General Plan designates the Plan Area as Lower Density Residential (LDR 0.0 to 8.0 dwelling units per acre [du/ac]), Medium Density Residential (MDR 8.0 to 16.0 du/ac), Higher Density Residential (HDR 16.0 or more du/ac), Mixed Use (MU), Civic (C), Community Commercial (CC), and Park (P). Table 2.0-2 shows the City land use designations and acreages for the Plan Area.

TABLE 2.0-2: CITY LAND USE DESIGNATIONS WITHIN PLAN AREA

LAND USE	*ACREAGE*
Lower Density Residential (LDR)	111.92
Medium Density Residential (MDR)	119.91
Higher Density Residential (HDR)	10.50
Mixed Use (MU)	6.18
Civic (C)	33.61
Community Commercial (CC)	54.04
Park (P)	44.70
Total	**380.84**

Figure 2.0-6a depicts the City of Riverbank General Plan land use designations for the Plan Area and the surrounding areas. The General Plan contains the following standards to guide development for these land uses:

Lower Density Residential (LDR): The LDR land use designation includes single-family homes, one to each lot, developed at a net density of up to eight dwelling units per acre. Lots would be at least 5,000

square feet in size. This category would primarily include detached units, but attached single-family units may be permitted, provided each unit has ground-floor living area and private outdoor open space.

Medium Density Residential (MDR): The MDR land use designation includes small-lot, single-family detached homes, attached single-family homes, and other residences developed at a net density of between eight and 16 dwelling units per acre. Lots would be at least 2,500 square feet in size.

Higher Density Residential (HDR): The HDR land use designation allows for all types of attached single-family and multi-family housing, including condominiums, apartment buildings, townhouses, and other similar residential structures developed at a net density of 16 or more dwelling units per acre.

Mixed Use (MU): The MU land use designation would accommodate neighborhood-scale retail uses, offices, personal and commercial services, and similar land uses. This is the primary category for Riverbank to accommodate neighborhood-serving retail, services, offices, and similar needs during the buildout of this General Plan. As such, this land use classification is anticipated to be mainly non-residential. However, the MU designation also explicitly allows for higher-density residential development in a vertical or horizontal mixed-use setting. This could include residential development above (on upper stories of a building) or adjacent to commercial operations on the same property.

Civic (C): The C land use designation includes civic and cultural land uses of various types. Examples include schools, places of worship, public facilities and infrastructure, community halls, and similar cultural and civic land uses. Where such land uses occur within an existing or planned neighborhood, they shall be designed to be compatible with the surrounding neighborhood. They shall be designed to be pedestrian friendly, include publicly accessible areas (where appropriate), and shall unify rather than divide neighborhoods. Certain land uses included in this category, such as day care centers, public facilities and services, place of religious worship, and other appropriate land uses will be allowed in other land use designations, as well, according to standards established in Riverbank's zoning ordinance.

Community Commercial (CC): The CC land use designation is anticipated to be developed for retail, employment, and commercial services. These areas are located along major roadways on the periphery of existing and planned neighborhoods. The maximum floor-area-ratio (FAR) is 0.3.

Park (P): The P land use designation includes active and passive parkland of all types. New and existing neighborhoods in Riverbank shall have close and convenient access to community parks, neighborhood parks, and smaller "pocket parks." This category can include public plazas, town squares, tot lots, parkways, linear parks, and other park space configurations.

EXISTING STANISLAUS COUNTY GENERAL PLAN LAND USE DESIGNATIONS

The Stanislaus County General Plan designates the Plan Area as Agriculture (AG). Figure 2.0-6b depicts the Stanislaus County General Plan land use designations for the Plan Area and the surrounding areas. The General Plan contains the following standards to guide development for this land use:

Agriculture (AG): The AG land use designation recognizes the value and importance of agriculture by acting to preclude incompatible urban development within agricultural areas. The designation is intended for areas of land which are presently or potentially desirable for agricultural usage. These are

typically areas which possess characteristics with respect to location, topography, parcel size, soil classification, water availability and adjacent usage which, in proper combination, provide a favorable agricultural environment. This designation establishes agriculture as the primary use in land so designated, but allows dwelling units, limited agriculturally related commercial services, agriculturally related light industrial uses, and other uses which by their unique nature are not compatible with urban uses, provided they do not conflict with the primary use.

EXISTING STANISLAUS COUNTY ZONING DESIGNATIONS

The Stanislaus County Zoning Ordinance currently designates the Plan Area for General Agriculture 40 Acre (A-2-40) uses. The County General zoning designations for the Plan Area and surrounding area are shown on Figure 2.0-6c. The County Zoning Code contains the following standards to guide development for this designation:

General Agriculture 40 Acre (A-2-40): The A-2-40 zone supports and enhances agriculture as the predominant land use in the unincorporated areas of the County. These district regulations are also intended to protect open-space lands pursuant to Government Code Section 65910.

SURROUNDING GENERAL PLAN DESIGNATIONS

Lands to the north, northwest, and west of the Plan Area (within the County) consist of AG uses, and lands to the south, southwest, and southeast (within the County) are designated Urban Transition (UT).

Lands to the north of the Plan Area (within the City of Riverbank) are designated for LDR, CC, and MU uses. Lands to the east of the Plan Area (within the City of Riverbank) are designated for LDR, CC, MU, and P uses. Areas surrounding the Plan Area to the west (within the City's SOI) have City designations of LDR, MDR, HDR, P, C, and Buffer/Greenway/Open Space (B/G/OS). The City of Riverbank and Stanislaus County General Plan land use designations for the Plan Area and surrounding areas are shown on Figures 2.0-6a and 2.0-6b, respectively.

2.3 PROJECT GOALS AND OBJECTIVES

Consistent with CEQA Guidelines Section 15124(b), a clear statement of objectives and the underlying purpose of the proposed Project shall be discussed. The principal objective of the proposed Project is the approval and subsequent implementation of the CWSP Project (the proposed Project). The quantifiable objectives of the proposed Project include annexation of approximately 380 acres of land into the Riverbank City limits, and the subsequent development of land, which will include: Low Density Residential, Medium Density Residential, High Density Residential, Regional Sports Park, Mixed Use, Elementary School, Park/Basin, Neighborhood Park, and transportation and utility improvements.

The CWSP Project identifies the following objectives:

- Create opportunities for housing types responsive to current market conditions, with the flexibility to adapt to changing market conditions.
- Create synergy between this new Specific Plan Area, containing a mixture of urban uses, with Riverbank's existing commercial node at Crossroads Shopping Center east of Oakdale Road across from the Project site.

- Develop the next logical planning area adjacent (to the west and northwest) of the City's major existing commercial node at Crossroads Shopping Center.
- Provide housing opportunities for employees expected in Riverbank through the development of the Riverbank Industrial Complex.
- Provide opportunities for Riverbank residents to buy new homes in a newly created neighborhood.
- Eliminate the planning peninsula created by the city limits in northwest Riverbank by "squaring off" the city limits to the westernmost city limits at Patterson Road and the MID Main Canal.
- Develop areas adjacent to the city limits to minimize leap-frog development that has the fewest landowners and a land area with large parcels which improves the likelihood that the objectives of a specific plan can be achieved over time.
- Promote a balance of uses in the Plan including retail opportunities, schools, public facilities, parks and open space, and varying density residential.
- Promote a mix of urban uses that are linked to regional amenities and transportation systems.
- Provide a variety of pedestrian corridors throughout the Plan Area to promote connectivity, foster a sense of community and connect the residents of Riverbank to amenities and public facilities.
- Protect adjacent farmland operations by providing transitional buffers.
- Encourage energy efficiency and thoughtful use of resources through sustainable design practices and Low-Impact Design (LID) strategies.
- Promote friendly and inviting streetscapes through the use of landscape materials, street fixtures, furniture and design elements that reflect a high-quality development.
- Encourage the use of mixed architectural styles and materials.
- Reinforce existing retail uses to the east and designate sufficient retail, office and commercial land for job generating uses to improve the City's jobs-to-housing balance.
- Create a safe and accessible link between neighborhoods, community facilities and shopping centers within the Plan Area and to the surrounding neighborhoods.

2.4 PROJECT CHARACTERISTICS AND DESCRIPTION

PROJECT CHARACTERISTICS

The proposed Project includes development of up to 1,872 Low Density Residential (LDR) units, up to 192 Medium Density Residential (MDR) units, and up to 388 High Density Residential (HDR) units. The Project also includes up to 550,000 square feet (sf) of Mixed Use 1 (MU-1) uses, and up to 27,000 sf of Mixed Use 2 (MU-2) uses. It is noted that development in MU-1 could consist of a maximum of 550,000 sf of retail uses and no residential uses, or up to 350 units of residential uses and 360,000 sf of retail uses. The CWSP is designed to provide flexibility, so there are various other hypothetical combinations of retail and residential development, but not more than the maximum density presented would be allowed without an amendment approved by the City. Additionally, the proposed Project would increase the size of the existing 11-acre Regional Park, the Riverbank Sports Complex, to 22 acres. The plan accommodates the possibility for a future 10 to 12-acre elementary school as well as a 20 acre middle school within the Plan Area. The proposed Project would provide approximately 42 acres of park, open space, and Regional Sports Park uses.

The Project also includes a request for approval of General Plan Amendments, Specific Plan, pre-zoning, and annexation of the entire Project site. The developers of the MU-1 "Mixed Use" area have concurrently filed an application for a Development Agreement, Tentative Map and Preliminary Development Plan to be considered as part of the approval action. The proposed land use designations are shown in Figures 2.0-7a and 2.0-7b, respectively. The CWSP land use plan proposes three categories of residential land uses: LDR, Low Density Residential; MDR, Medium Density Residential; and HDR, High Density Residential. These residential designations provide varying densities that will ensure a mix of housing types and styles across the Plan Area. All future development within the residential land use categories will be subject to Design Review Approval to ensure consistency with the Design Guidelines and Development Standards set forth in the Crossroads West Specific Plan. The Conceptual Land Use Plan in Figure 2.0-8 identifies locations for such land uses. It is expected that within the LDR areas, a ten- to twelve-acre elementary school site will be provided as well as a fire station site to be located near the corner of Crawford and Oakdale Road.

The land use plan as proposed suggests residential development of between 1,539 to 2,852 residential units. For LDR, the CWSP assumes between 1,170 and 1,872 units on 234 acres, assuming a buildout at between 5 and 8 du/ac, after removing parks, schools, and collector and arterial road rights-of-way. For MDR, the CWSP assumes between 96 and 192 units on 12 acres, based upon a buildout of between 8 and 16 du/ac. Some MDR density development would be allowed in the LDR areas, although they would need to fall within the total LDR number unit range. The total number of allowed residential units for the entire project cannot exceed the average density assumptions described below. For HDR, the CWSP assumes between 248 and 388 units on 15.5 acres, based upon a buildout at between 16 to 25 du/ac. It is noted that the CWSP is designed to provide maximum flexibility for design and response to market demands, so there are various other hypothetical combinations of residential development.

Additionally, the proposed mixed-use areas (MU-1 and MU-2) provide opportunities for retail development, office/commercial development, as well as some residential uses. The largest concentration of retail development will be located at the southern end of the Plan Area at the intersection of Oakdale Road and Claribel Road and is identified as MU-1 property. The MU-1 property consists of approximately 54 acres of land intended for mixed use development, which as provided in the CWSP may include commercial, retail, office, hospitality, entertainment, recreation, residential, restaurants, neighborhood and regional commercial or other uses permitted within the MU-1 designation. (See CWSP, Table 2.0-3.) Under the CWSP, the MU-1 property is designed to provide flexibility to allow: (i) the MU-1 property to be developed in phases; (ii) residents, occupants, and future tenants of the MU-1 property to be integrated within a regional or neighborhood commercial center or other MU-1 uses permitted under the CWSP so that the development remains viable as market conditions may change throughout the proposed 19-year buildout period; and (iii) development of the best possible project at the MU-1 property for long-term implementation of the CWSP. At maximum development intensity, the buildout of the 54-acre MU-1 property could reach an average commercial FAR of 0.35, resulting in approximately 550,000 sf of commercial MU-1 development. Alternatively, at maximum development intensity, subareas within the MU-1 property could be developed with up to approximately 350 residential dwelling units and up to 360,000 sf of commercial MU-1 development. If residential development is vertically integrated into a commercial area, such residential development would not be calculated into the retail/commercial FAR.

This Draft EIR evaluates the MU-1 property at maximum development intensity of 550,000 sf of retail/commercial to provide a reasonably conservative assessment of the environmental effects of development of the MU-1 property. In addition, this EIR's traffic impact analysis evaluates an alternative scenario where up to 350 residential dwelling units could be constructed through horizontal or vertical integration in small development subareas at low-, medium-, or high-density intensities and up to 360,000 sf of retail/commercial development occurring at the MU-1 property.

As noted above, the MU-1 property could provide up to 550,000 sf of retail, but could similarly provide about 360,000 sf of retail and up to 350 LDR, MDR or HDR units. The MU-2 property is estimated to develop with up to 27,000 sf of retail, and approximately 25 to 50 MDR or HDR units. Overall, the CWSP proposes between 1,539 and 2,852 residential units, and between 387,000 sf and 577,000 sf of mixed uses.

Project buildout would be implemented in phases, based on future market conditions over an estimated 19-year period, through a series of future tract and parcel maps. The phasing plan identified in Chapter 9 of the CWSP will ensure timely completion of public facilities and improvements that coincide with each development. The phasing plan will also ensure that each phase of development has the infrastructure necessary to meet the demands of new construction. At this time, it is anticipated that the regional MU-1 property will develop first followed by various areas of residential and MU-2, which are located north of MID Lateral No. 6. This phasing represents only the City's best estimate as to how the CWSP could be developed and should not be construed as a final phasing plan. Project development would be influenced by several factors, including general economic conditions, demographics, occupancy rates, construction schedule, construction costs, the emergence of other competitive projects, and possible changes in the regional infrastructure and public facilities, including the possibility of the North County Corridor (NCC) Project, which is being administered by Stanislaus County.

The phases identified in the CWSP have been designed, to the extent feasible, for independent utility and development. The intent is to allow each phase to develop and connect to sewer, water, and storm drainage facilities without relying on or requiring adjacent phases to develop. At the time of development of each phase or subsequent project in the CWSP, the City will develop conditions of approval to identify the infrastructure required, for example to ensure adequate traffic circulation within each project, and the City will determine which, and to what extent each mitigation measure applies to each phase.

Table 2.0-3 provides a summary of the land uses proposed for the CWSP. Since the proposed residential portion of the CWSP would not likely buildout to the maximum allowed densities, this EIR assumes average densities are achieved; for example, 6.5 du/ac for the LDR areas (1,521 units), 12 du/ac for the MDR areas (144 units), 20 du/ac for the HDR areas (310 units), up to 350 units for the MU-1 area and up to 38 units for the MU-2 area. If additional residential units are proposed above the assumed average density discussed, such modification would require that an amendment be approved by the City. Such amendment would require a modification to this environmental document.

TABLE 2.0-3: LAND USE SUMMARY

MAP SYMBOL	*ACREAGE*	*DENSITY RANGE*	*UNIT OR SF RANGE*
LDR – Low Density Residential	234	5 – 8 du/ac	1,170 – 1,872 du
MDR – Medium Density Residential	12	8 – 16 du/ac	96 – 192 du/ac
HDR – High Density Residential	15.5	16 – 25+ du/ac	248 – 388 du
MU-1 – Mixed Use 1	54	0 – 12 du/ac 0.35 FAR	0 – 350 du 360,000 – 550,000 sf
MU-2 – Mixed Use 2	5	10 – 20 du/ac 0.25 FAR	25 – 50 du 27,000 sf
P – Parks/Open Space/Regional Sports Park	42	N/A	N/A
S – Elementary School	12	N/A	N/A
Right of Way and MID Facilities	10.94	N/A	N/A
TOTAL	**380.84**	**--**	**1,539 – 2,852 du 387,000 – 577,000 sf**

NOTES: SF = SQUARE FEET; DU/AC = DWELLING UNITS PER ACRE; FAR = FLOOR-AREA-RATIO; N/A = NOT APPLICABLE.

The proposed Project includes Design Guidelines and Development Standards and would provide various housing and lot sizes. The proposed Design Guidelines shall apply to all residential and non-residential projects that are subject to Site Plan Approval. In any instance where there is a conflict between the Development Standards, Design Guidelines and City Zoning Ordinance, the Development Standards and Design Guidelines from the CWSP supersede and govern development within the Plan Area.

CIRCULATION AND ALTERNATIVE TRANSPORTATION

The proposed Project will participate with and expand the existing circulation system in the City of Riverbank. The Plan Area is a natural progression of the existing housing areas and street network on the southwestern side of the City and ties directly to the existing roadway network. The Plan Area is bound by Oakdale Road running north and south to the east, Claribel Road running east and west to the south. The closest main roadway to the west of the Plan Area is Coffee Road, which runs north and south. The Plan Area is bifurcated east to west by Morrill Road in the northern area of the site and Crawford Road running east to west midway of the site. Regional access to the Plan Area is via State Route 99, which is approximately seven miles west via Claribel Road. Oakdale Road and Claribel Road are classified as arterial streets in the City of Riverbank's General Plan. Arterial streets are designed to handle a higher volume of traffic and are typically placed on external boundaries of a project such as this to keep traffic moving and to prevent motorists from using the local streets. Morrill Road and Crawford Road are classified as collector streets in the City of Riverbank's General Plan. Collector streets are designed to funnel traffic onto arterials and other major roadways. Improvements are planned on Morrill Road and Crawford Road so that they are able to handle the proposed traffic generated by the proposed Project. Additionally, the Project proposes to install bicycle paths and lanes within the development. These lanes will be connected where possible to existing City of Riverbank bicycle lanes to provide optimal connectivity to non-motorized modes of transportation.

Proposed Circulation System

The Plan Area is well suited for development because of the existing circulation system and roadways that exist in the vicinity. The CWSP proposes the construction of one additional collector street, running

north and south of the Plan Area. This internal collector street will provide additional funneling of traffic through the Plan Area without a reliance on local streets. Several new local streets will also be constructed for the neighborhoods within the Plan Area. The exact location of these streets is unknown at this time as they will be determined during the tentative map approval process.

In addition to new roadways, the CWSP proposes to install bicycle paths and lanes within the development. These lanes will be connected where possible to existing City of Riverbank Bicycle Lanes to provide optimal connectivity to non-motorized modes of transportation. Working together, this network of roadways, bicycle lanes and walkways will provide convenient and safe access to all neighborhoods within the Plan Area. Construction of the roadway network will adhere to the adopted City Standards and Street Cross Sections.

ARTERIAL STREETS

Arterial streets feature four travel lanes, sidewalks on both sides of the street, bike lanes and landscape strips. Arterial streets are intended to function like boulevards or thoroughfares and therefore do not allow on-street parking.

COLLECTOR STREETS

Collector streets are smaller than arterials and typically only have two travel lanes, sidewalks on both sides of the street, bike lanes where applicable and landscape strips. On-street parking is allowed on collector streets as it is not uncommon for businesses to front onto collectors.

LOCAL RESIDENTIAL STREETS

These smaller streets are designed to handle small volume, neighborhood traffic with low speeds. The local residential streets proposed for the Project will feature two travel lanes, sidewalk and landscape strips on both sides. On-street parking is permitted on local residential streets to provide additional parking for the residents of the neighborhoods within the Plan Area.

CUL-DE-SACS AND ROUNDABOUTS

Cul-de-sacs are a popular street treatment in residential neighborhoods and are appealing to families with children because they provide a closed end street that does not allow through traffic. Cul-de-sacs proposed within the Plan Area will be designed and built according to City of Riverbank Street Standards and will provide adequate turning radius for emergency vehicles.

Roundabouts are often used as a method of traffic calming in neighborhoods and on collector streets and as focal points at the entrance of communities. The proposed Circulation Plan shows the possible location of roundabouts within the Plan Area. Roundabouts provide for the slowing of traffic on otherwise straight through street where speeds can escalate. Roundabouts also provide a place for public art displays, landscape treatments and traffic signage.

Proposed Alternative Transportation System

Alternative transportation includes bicycle lanes, pedestrian walkways, bus routes and other means of public transportation. Class I and Class II Bike Lanes will be integrated into the Circulation Plan for the

Project. Pedestrian walkways and sidewalks will be provided throughout Plan Area to encourage walking and jogging.

Bus routes and other public transit options will be planned for within the confines of the Plan Area. Riverbank Dial-a-Ride operates routes throughout the City and will likely add additional routes as new development occurs. Stanislaus Regional Transit operates loop Route 60 through Riverbank and into Oakdale. These public transit providers will be integral partners in developing suitable bus turnout locations and bus shelter facilities within the Plan Area. To support the use of public transit, it is anticipated that these facilities will be placed near the highest intensity uses in the Plan Area including HDR and MU-1 areas. See Figure 2.0-10 for the proposed alternative transportation circulation system.

GENERAL PLAN AMENDMENTS

The proposed Project would require a City of Riverbank General Plan Amendment to the Land Use and Circulation Elements to change land uses in the Plan Area. Changes to the Land Use Element would include changing the approximately 380-acre Plan Area from LDR, MDR, HDR, MU, C, CC, and P to Specific Plan (SP). Figure 2.0-6a illustrates the current Riverbank General Plan land uses within the Plan Area. Proposed General Plan land uses are shown on Figure 2.0-7a. The proposed amendment to the City's Circulation Element would include relocation of certain planned roads identified in the General Plan.

SPECIFIC PLAN APPROVAL

A specific plan requires adoption by resolution or ordinance, following public hearings before both the Planning Commission and the City Council. Additional entitlement applications that are necessary for the implementation of the Specific Plan may be made concurrently with the Specific Plan application.

ANNEXATION

The Plan Area is currently within Stanislaus County, and within the City of Riverbank's SOI. The proposed Project would result in the annexation of the APN's described in Table 2.0-1 into the City of Riverbank. This EIR analyzes the annexation of the parcels into the City of Riverbank, and it is intended to be used by Stanislaus County Local Agency Formation Commission (LAFCo) for their consideration of the annexation. Annexation of the Plan Area is consistent with the growth plans for the City of Riverbank.

PRE-ZONING

The Plan Area is currently within the jurisdiction of Stanislaus County. The County zoning for the entire Plan Area is A-2-40. The Stanislaus County LAFCo will require the Plan Area to be pre-zoned by the City of Riverbank in conjunction with the proposed annexation. The City's pre-zoning for the Plan Area will include the Specific Plan (SP) zoning designation. The pre-zoning would go into effect upon annexation into the City of Riverbank. The proposed pre-zoning for the Plan Area is shown on Figure 2.0-7b.

UTILITIES AND PLANNED INFRASTRUCTURE IMPROVEMENTS

The construction of onsite infrastructure improvements would be required to accommodate development of the proposed Project, as described below.

Water System

The existing and proposed water system, as well as the City's water standards and guidelines, are discussed in detail below.

EXISTING CONDITIONS

The City of Riverbank Domestic Water System provides two connection points for the proposed Project. There is an eight-inch line existing in Morrill Road just west of Oakdale Road that was constructed to serve the Riverbank Sports Complex in the northern end of the Plan Area. The eight-inch line connects to the City's existing water system at the intersection of Oakdale Road and Morrill Road and ultimately contributes to the residential water supply system east of Oakdale Road. The second connection is an existing 12-inch stub across Oakdale Road at Crawford Road. This line was placed during construction of the existing Crossroads development located easterly of Oakdale Road in anticipation of future growth to the west of Oakdale Road.

PROPOSED WATER SYSTEM

See Figure 2.0-11 for the proposed water system. Domestic water service will be provided to the Plan Area through the installation of water mains in the proposed arterial and collector roadways. Each land use will be connected to these main lines through an interconnected master water system. The installation of a 12-inch water main line from the existing stub at Crawford Road will service a portion of the Plan Area. Flows and demands for that portion of the Plan Area will be determined at the design stage of development. This 12-inch line will serve as the initial supply for the first phase of development which is likely to occur on the east side of the Plan Area.

With the development of the MU-1 property at the corner of Claribel Road and Oakdale Road, connections will be made through a loop water system connecting to existing water lines in Oakdale Road and to a new water line constructed along the Claribel frontage of the MU-1 property. These lines will be looped through the Plan Area to serve development. In the future, when the new north south collector road is constructed north of MID Lateral 6, and the MID Lateral 6 roadway crossing is constructed, the water lines north of MID Lateral 6 will be stubbed to the south side of MID Lateral 6 for future connection at the time of development of the MU-1 site.

In addition to the installation of water main lines, the proposed Project includes construction of a 1.69-million-gallon water tank to be located in the linear park near MID Lateral 6. A booster pump station will be constructed in conjunction with the water tank to distribute water to areas that will not be adequately served by the 12-inch main line. The ultimate water system build out will feature a tie-in to the existing 12-inch line which will provide uniform water distribution for the balance of the Plan Area. A new water well is proposed to be located in the Regional Park expansion area near the MID Main Lateral in the northern portion of the Plan Area. This well will be used to supplement the overall water system for Crossroads West.

The timing of the construction of the new peaking reservoir and well will be determined by a water balance and consumption report prepared at the time of site development for each phase of the CWSP. All water improvements shown are part of the City's Master Water Plan and are funded through the payment of City capital fees, also known as System Development Fees. If an adequate amount of fee revenue has not been collected when the well and/or peaking reservoir are required, the developer will be required to finance the cost of the master water improvements, subject to reimbursement through System Development Fee (SDF) credits or reimbursements, or other finance mechanisms provided in the CWSP.

The City of Riverbank Public Works Department will be responsible for the operation and maintenance of the proposed water supply, transmission main lines, water storage tank, and well site upon approval and certification of the Improvement Plans submitted by the master developer.

WATER STANDARDS AND GUIDELINES

The City of Riverbank requires all new residential, commercial mixed use, or industrial development to be served by a public water system. The proposed water system will be designed and constructed to operate at levels established by the City's Public Works Department. Standards and guidelines for the domestic water system shall include:

- Ensure the construction of a water system with adequate supply, transmission, and storage to meet the needs of the CWSP.
- Minimum water pressure shall be provided based on standards established by the City; this pressure shall be adequate throughout the day and during peak hour demands. Minimum fire flows must be provided based on standards established by the City's Fire Department and Public Works Department.
- Individual water meter stubs will be provided to all new Mixed Use tenants and residential dwelling units; a water connection fee shall be charged for each meter requested based on the most current impact fee schedule established by the City. The City of Riverbank is currently exploring the use of sub-meters as a means of eliminating redundancy and reducing administrative expenses. In this regard, sub-meters may become a useful tool in this project.

Sanitary Sewer System

The existing and proposed sanitary sewer system, as well as the City's sanitary sewer standards and guidelines, are discussed in detail below.

EXISTING CONDITIONS

The CWSP intends to tie-in to the City of Riverbank's existing sanitary sewer system at two different locations. An eight-inch line in Morrill Road, west of Oakdale Road, was installed to service the Regional Sports Park in the northern portion of the Plan Area. This line ties into the sewer manhole at the intersection of Oakdale Road and Morrill Road and is ultimately a part of the residential sewer collection system. An 18-inch line runs across Oakdale Road to Crawford Road, which was planned for the future development of the CWSP. This stub is an extension of the main trunk line that services the existing Crossroads development to the east and extends to Roselle Avenue.

PROPOSED SANITARY SEWER SYSTEM

See Figure 2.0-12 for the proposed sanitary sewer system. To adequately service the Plan Area, new sewer main lines and an extension of the 18-inch trunk line will be constructed in the new arterial and collector roads in the Plan Area. These improvements will service the majority of the Plan Area; however, a portion of development south of Crawford Road will be required to utilize a regional sewer pump station that will be placed in the southwest portion of the site north of MID Lateral No. 6, near the MU-1 land use. This regional sewer pump station will ultimately serve the southern portion of the residential development as well as the MU-1 properties.

An 18-inch line will be installed in Crawford Road, along with a 10-inch line in Morrill Road, and an eight-inch line where Crawford Road intersects the westerly boundary of the Plan Area. All new sewer lines will be installed at varying slopes to provide the best service for the Project. Should any area develop prior to the necessary sewer improvements or trunk line extension, this flow may be required to utilize a temporary lift station that connects to the 10-inch line in Morrill Road.

The development of the MU-1 property may require the construction of an interim sewer lift station to serve the entire site and be connected by way of a force main to the Crossroads Commercial development easterly of Oakdale Road. At the time the residential development occurs north of MID Lateral No. 6, and concurrent with the construction of the north-south collector roadway through the Plan Area and the construction of the bridge over MID Lateral 6, the sewer line will be extended to the south side of MID Lateral 6 to allow for a gravity connection from within the MU-1 property. If this occurs in advance of development of the MU-1 property, then this connection will be available to serve the MU-1 property. If the MU-1 property site has constructed a temporarily lift station and connection along Oakdale Road, at the time the new sewer connection becomes available, the temporary pump station and force main will be abandoned and connected to the new gravity sewer line in the north/south collector road.

A preliminary analysis was performed on the downstream system in Roselle, north of the Crawford Road Lift Station (CRLS). The existing flows from the CRLS are greater than the capacity in the stretch of 18-inch from CRLS to Talbot Lift Station (TLS) and from TLS to First Street. Therefore, a force main or a new and larger gravity main would need to be extended to a point downstream where the existing gravity sewer has adequate capacity.

The reduction of the CRLS flows from the TLS flows would be 1,172 gallons per minute (gpm) (3,272 - 2,100 = 1,172). This flow is less than the 80 percent full capacity of the 18-inch line it currently ties into. Therefore, the existing line could remain and be utilized by the TLS. As mentioned above, the CRLS would need to have a force main extended past the TLS to a point where the gravity line could accept the flow plus any additional flow due to future upgrades to the CRLS. A proposed solution to the lack of capacity would be to extend a 16-inch force main from CRLS to the existing 30-inch sewer main near First Street.

SANITARY SEWER STANDARDS AND GUIDELINES

The City of Riverbank Sewer Collection System Master Plan provides the design criteria required for all new gravity flow sewer systems constructed within the City. The following criteria will apply to the sanitary sewer system installed for the Project:

- Ensure the construction of a sanitary sewer system with adequate transmission and storage to meet the needs of the CWSP.
- Sewers are required to be sized to meet minimum flows of 40 to 70 percent full.
- Maximum depth for sewer trunk lines is 30 feet; minimum depth for trunk lines is six feet.
- All future sewer lines, which will be incorporated into the sewer collection network, will be required to be comprised of mainly eight-inch lines and, where applicable, six-inch lines.

Storm Drainage System

The following discussions provide details and guidelines which show the adherence to the City of Riverbank's LID Practices, municipal separate storm sewer system (MS4) Permit Regulations and California Stormwater Quality Association (CASQA) compliance.

EXISTING CONDITIONS

Currently, the Regional Sports Park located at the northern end of the Plan Area is the only existing development within the CWSP boundary that has drainage facilities to accommodate storm water runoff. The facilities at the Regional Sports Park were developed as part of the overall plan for the Park and tie into the existing City of Riverbank facilities located in Morrill Road and Oakdale Road. Any remaining storm runoff flows onto adjacent properties as there are no other formal drainage systems in the area. Some water is retained on-site and is used for the agricultural uses that exist on the site. The runoff generally flows to the south and west as that is how the Plan Area naturally slopes.

PROPOSED STORM DRAINAGE SYSTEM

The City of Riverbank adopted a Low Impact Development Design and Specifications Manual to assist developers in meeting State and local mandates for storm water drainage. Negative impacts to the Stanislaus River, the San Joaquin Delta and regional wildlife have prompted many municipalities to design and adopt LID practices and guidelines. The CWSP is identified as a greenfield/rural residential property in the Low Impact Development Design and Specifications Manual and does not have any other land data available due to it being outside the current City limit line.

See Figure 2.0-13 for the proposed storm drainage system. A standalone drainage system that will detain all storm water runoff on-site in detention basins is proposed. Because of the greenfield/rural residential designation within the Low Impact Development Design and Specifications Manual, maintaining existing hydrological conditions by conserving natural areas and existing drainage features is an important consideration, where possible. Impervious hardscape surfaces (i.e., conventional roofs and paving) will be designed to discharge to pervious areas to help filter and infiltrate the stormwater runoff. To further aid infiltration, native soil compaction in landscaped areas will be minimized.

Land planning for CWSP, the preliminary drainage studies, and the preliminary drainage design are integrated to emphasize water conservation, protect water quality, help reduce flooding, and improve the overall watershed health. The proposed LID practices are appropriate for the local and existing conditions found on the Plan Area.

The Project proposed to construct and use three major storm water detention basins. The first proposed basin will be located in the 11-acre expansion proposed for the Regional Sports Park and will drain the areas north of Morrill Road. The two remaining detention basins will be located north and south of the major collector road on the west side of the Plan Area.

Soil boring and percolation testing in the locations of the proposed retention ponds has been performed. Each pond had two percolation tests performed for a total of six tests along with one deep boring at each pond to classify the deeper underlying soil. The percolation tests were performed at a depth that would be consistent with the proposed bottom of the proposed retention ponds. These rates will be used as recommended in the report for design and sizing of the retention ponds. The deeper tests may be utilized for the design of an absorption trench to percolate any nuisance water that may occur.

LID practices can greatly improve storm water quality by encouraging processes (such as sedimentation, filtration, or evapotranspiration) which reduce the pollutants present in urban and suburban runoff. The CWSP will utilize LID guidelines and specifications throughout the proposed storm drainage system to ensure better water quality, recharging of ground water supplies where feasible, and reduce community infrastructure costs. While the City of Riverbank collects fees for storm water collection and disposal, the CWSP proposes to exempt the Plan Area from these fees. This exemption is appropriate as the CWSP will be required to construct all necessary storm water collection and disposal facilities to serve the Plan Area, as well as process the formation of a Community Facilities District (CFD) or similar type financing district to maintain the system. Should the City require any of these facilities to provide capacity above and beyond the needs of the CWSP, reimbursement may be considered.

Best Management Practices (BMP'S) go hand in hand with LID guidelines to help address significant water quality issues and hydrologic concerns that developments create. Several design goals are required by the City, including:

- conserve natural areas and drainages;
- minimize impervious surfaces, drain to pervious area;
- minimize soil compaction;
- mitigate peak runoff and associated erosion; and
- treat runoff in storm water BMPs.

Construction of the Project is anticipated to be phased and will be directed by demand and need. Because of this, temporary basins will be needed to handle storm water runoff until the permanent facilities are constructed. Water levels will not exceed four feet with two feet of freeboard for the temporary storm drain basins.

The landscape in the storm drain basins will serve two purposes: provide a visually appealing place for recreational activities, and serve as retention and assist in the detention of storm water runoff. Through

the use of bio-swales, infiltration, inlets, and conduits, storm water will be managed efficiently while adhering to the strict standards set forth by the City of Riverbank LID Practices.

The MU-1 property of the CWSP intends to utilize onsite storage and transmission to the existing offsite basin in the existing Crossroads development. Preliminary calculations that were computed for the site and existing grades helped to determine that the existing basin just east of Oakdale Road and south of MID Lateral 6 has approximately eight acre-feet of additional storage capacity available to serve the proposed Project. It is the intent of the MU-1 property developer to use the existing basin easterly of Oakdale Road in conjunction with on-site basins and underground storage of storm water, surface water storage in parking areas, and landscaped swale areas. The design and construction of these improvements will adhere to the City's LID Practices.

The MU-2 property will either need its own on-site collection system, or may tie into the collection facilities north or south of Morrill Road. The location of this connection will be determined as development occurs.

The MID Discharge Agreement currently on file for the existing Crossroads development will be modified to accommodate the proposed Project. The agreement currently permits the discharge out of existing basins into the MID Lateral 6 and will be modified to add the additional discharge from the proposed Project. On-site percolation will also be utilized if it is determined through soils analysis that storm water disposal is needed.

All new construction projects in the City of Riverbank are classified in the Low Impact Development Design and Specifications Manual based on their intended use (i.e., residential, Mixed Use 1 and 2, parking areas, etc.). The following design standards must be implemented for all project classifications:

- Mitigate peak run-off flow rates
- Conserve and create natural areas
- Minimize storm water pollutants of concern
- Protect slopes and channels
- Provide storm drain stenciling and signage
- Properly design outdoor material and trash storage areas
- Provide proof of ongoing BMP practices and maintenance
- Incorporate treatment control BMP's for water quality

LID practices are most effective when they are dispersed throughout a development project. The CWSP has been designed with this in mind and features linear park drainage basins running north and south throughout the Plan Area. Treatment and attenuation of flows throughout the Plan Area can be achieved by draining sidewalks to vegetated filter strips, constructing parking lots with permeable pavement, and outletting roof leaders to the surface of a bio-retention area.

The Plan Area features mostly Greenfield Sandy Loam and Madera Sandy Loam soil with a hardpan layer below, anywhere from 20- to 54-inches from the surface. Hardpan conditions affect most of Riverbank and call for special consideration when considering filtration options for projects. Infiltration is acceptable for the CWSP because the hardpan layer is at a depth less than 10 feet and the soils types are well draining.

To summarize, the CWSP will conform to and utilize the LID practices set forth by the City of Riverbank. A combination of methods will be used in the Plan Area including underground filtration, which will be integrated into parking areas and landscape areas; bio-retention areas, such as the park basins; vegetated swales, which can be located in street landscape areas and parking lots; filter strips, designed to treat sheet flow from adjacent surfaces; and permeable pavement, which is a porous, load-bearing pavement that allows storm water runoff to pass through its surface layer.

Dry Utilities

Dry utilities for the Plan Area include electricity, natural gas, and telecommunication services. These services are not typically provided by the City and, therefore, rely on outside service providers. This section provides details on the dry utility providers who will service the Plan Area.

ELECTRICITY

Electricity service is available from two service providers for the CWSP area. Pacific Gas & Electric (PG&E) and MID show the Plan Area within their service boundaries and have confirmed adequate supply for the area. While PG&E is available in the area of the Plan Area, MID has facilities within close proximity to the Plan Area and, therefore, will be the primary electricity provider for the Project. New power transmission lines will be installed underground, which conforms to the City Development Standards. Each MU-1 tenant and residential unit will be individually metered for their electricity use.

NATURAL GAS

The entire Plan Area falls within the service boundary for PG&E and, therefore, they will be the natural gas provider. Similar to electricity service, new transmission lines will be installed underground for the Project, which meets City requirements. Individual connections for retail tenants and residential units will be established for usage and billing purposes.

TELECOMMUNICATIONS

Telecommunications services include phone service, fiber optics, and cable television. AT&T Residential Division will be the primary phone and fiber optic provider for residents of the Project. Charter Communications will be the primary cable television provider. AT&T Business Division will be the primary provider for the retail, MU-1, and civic uses within the Plan Area. As with the other utilities, all new transmission lines will be constructed underground to meet the requirements of the City.

DRY UTILITY STANDARDS AND GUIDELINES

The following criteria will apply to the dry utilities installed for the Project:

- Tentative subdivision maps and or development plans shall be submitted to the City and appropriate utility companies to confirm the location, sizing, and availability of service to the Plan Area.
- Builders within the Plan Area shall coordinate with all dry utility providers to ensure proper design guidelines and criteria are met when preparing improvement plans.

- Telecommunication services shall be provided to every residential unit within the Plan Area to enhance the opportunity for telecommuting and home-based businesses, thereby reducing the impacts related to transportation and air quality.
- All new transmission lines for electricity, natural gas, and telecommunications shall be constructed underground per City of Riverbank requirements, unless otherwise noted and approved by the City and the utility provider. This includes all transformers and secondary boxes. Switch gear boxes shall be properly screened from public view. Special attention shall be made to prevent any utility box from being a target for graffiti.
- Existing overhead transmission lines shall be placed underground, where practical.
- Service standards for dry utilities providers are established and enforced by the California Public Utilities Commission.

2.5 USES OF THE EIR AND REQUIRED AGENCY APPROVALS

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

CITY OF RIVERBANK

The City of Riverbank will be the Lead Agency for the proposed Project, pursuant to the State Guidelines for Implementation of CEQA, Section 15050. Actions that would be required from the City include, but are not limited to, the following:

- Certification of the EIR;
- Adoption of the Mitigation Monitoring and Reporting Program;
- Approval of the Proposed City of Riverbank General Plan Amendments;
- Approval of the City of Riverbank Pre-zoning;
- Approval of Annexation to the City of Riverbank;
- Approval of Specific Plan;
- Approval of Development Agreement;
- Approval of future tentative and final maps;
- Approval of future Improvement Plans;
- Approval of Subdivision Improvement Agreement;
- Approval of future Grading Plans;
- Approval of future Site Plan and Design Review;
- Site purchase, development of plans and construction of a new West Side Fire Station by Stanislaus Consolidated Fire District; and,
- City review, approval, and construction of Project utility plans.

OTHER GOVERNMENTAL AGENCY APPROVALS

The following agencies may be required to issue permits or approve certain aspects of the proposed Project. Other governmental agencies that may require approvals in connection with the Project include, but are not limited to, the following:

- California Department of Fish and Wildlife (CDFW);
- California Department of Transportation (Caltrans);
- Central Valley Regional Water Quality Control Board (CVRWQCB) - Storm Water Pollution Prevention Plan (SWPPP) approval prior to construction activities pursuant to the Clean Water Act;
- Stanislaus LAFCO - Annexation;
- San Joaquin Valley Air Pollution Control District (SJVAPCD) - Approval of construction-related air quality permits;
- San Joaquin Valley Air Pollution Control District (SJVAPCD) - Authority to Construct, Permit to Operate for stationary sources of air pollution;
- Stanislaus County Health Department - Approval of restaurants and grease interceptors; and
- State Water Resources Control Board (SWRCB);
- U.S. Fish and Wildlife Service (USFWS);
- U.S. Army Corps of Engineers (USACE).

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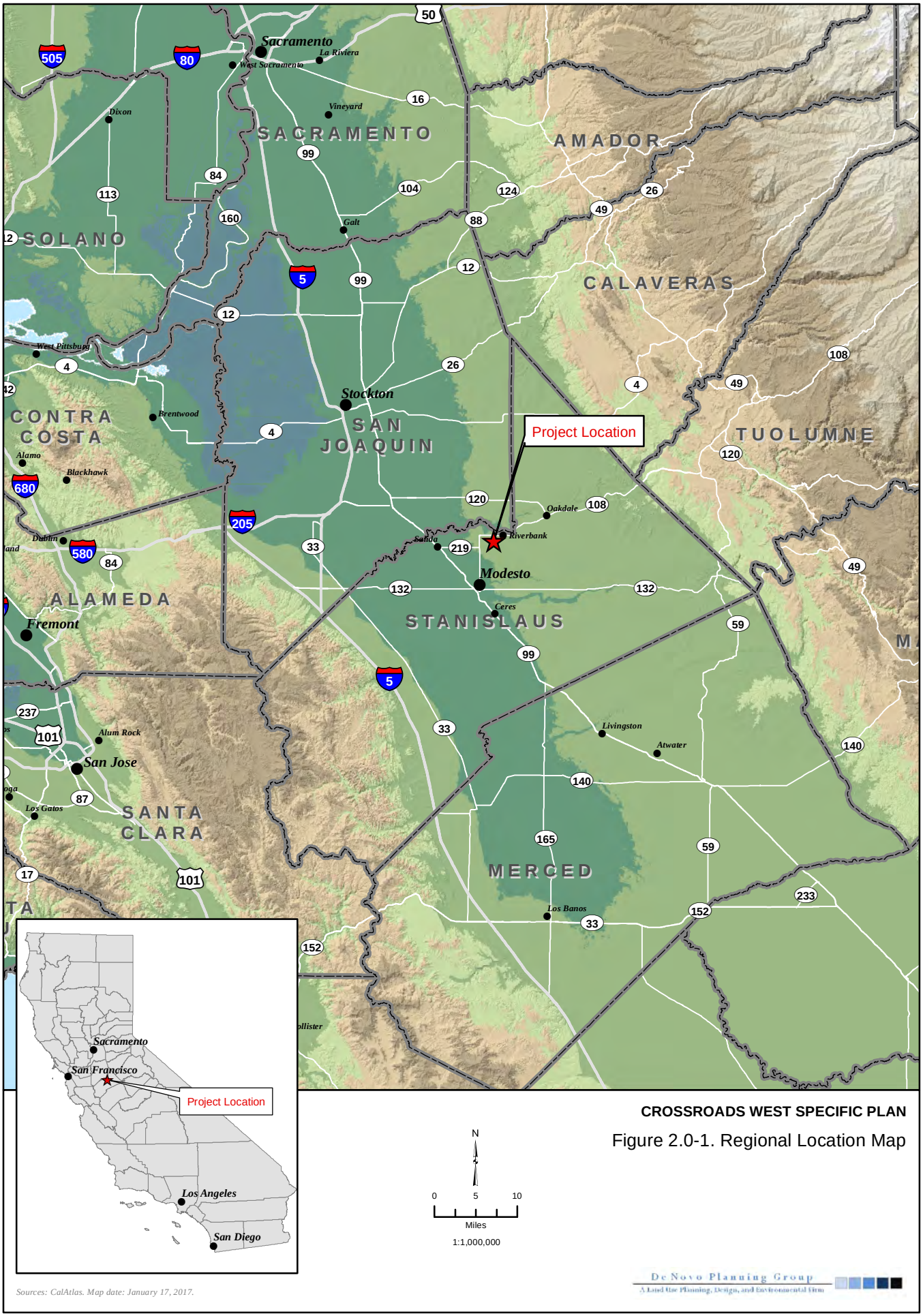

CROSSROADS WEST SPECIFIC PLAN

Figure 2.0-1. Regional Location Map

Sources: CalAtlas. Map date: January 17, 2017.

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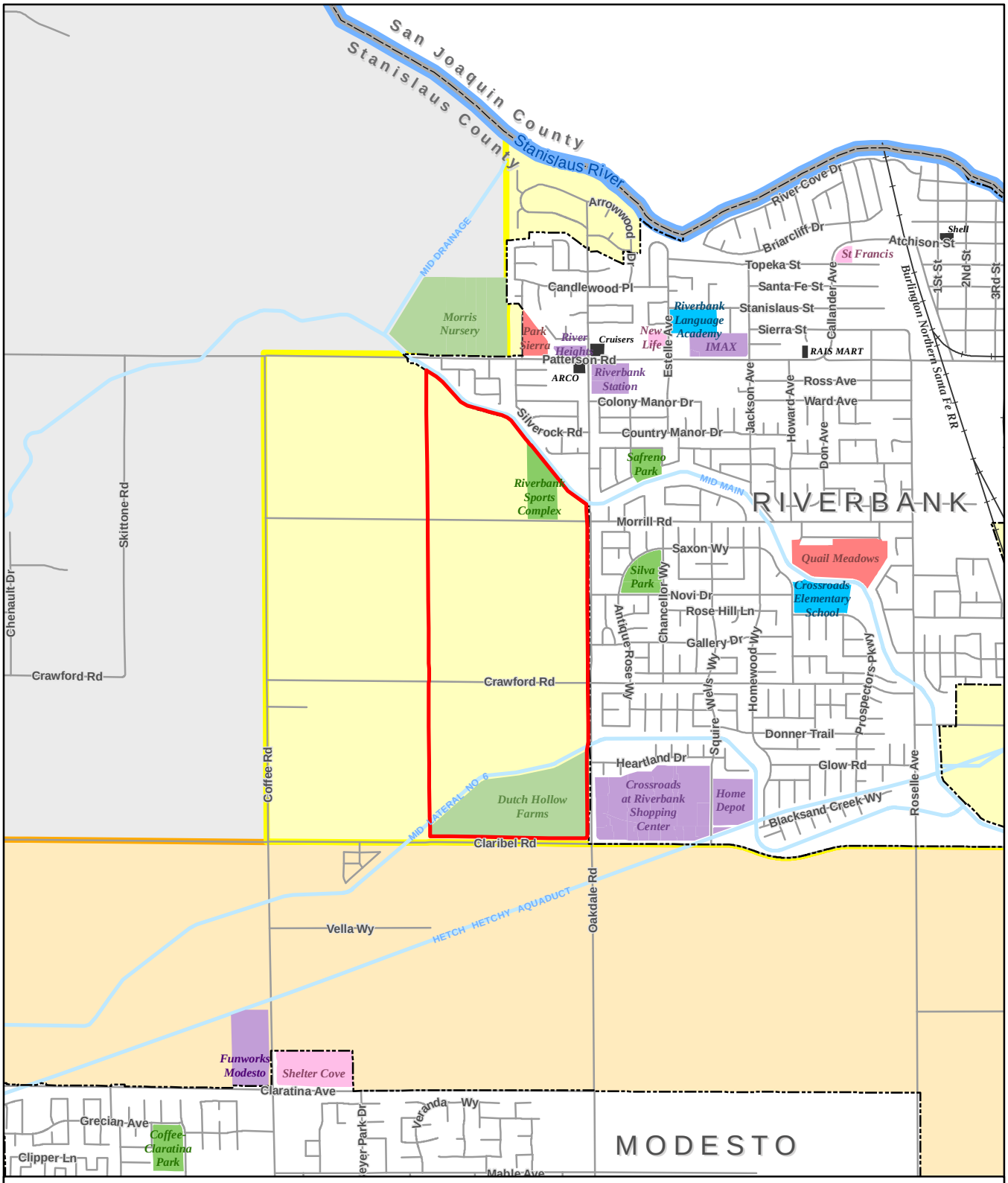

Legend

- Project Boundary
- City Boundary
- Riverbank SOI
- Modesto SOI
- County Boundary
- Canal
- Stanislaus River
- School
- Park
- Church
- Shopping/Entertainment
- Mobile Home Park
- Nursery/Farm
- Gas Station

N

0 500 1,000
Feet
1:28,000

CROSSROADS WEST SPECIFIC PLAN

Figure 2.0-2. Vicinity Map

Sources: Stanislaus County GIS; Google Maps. Map date: January 18, 2017.

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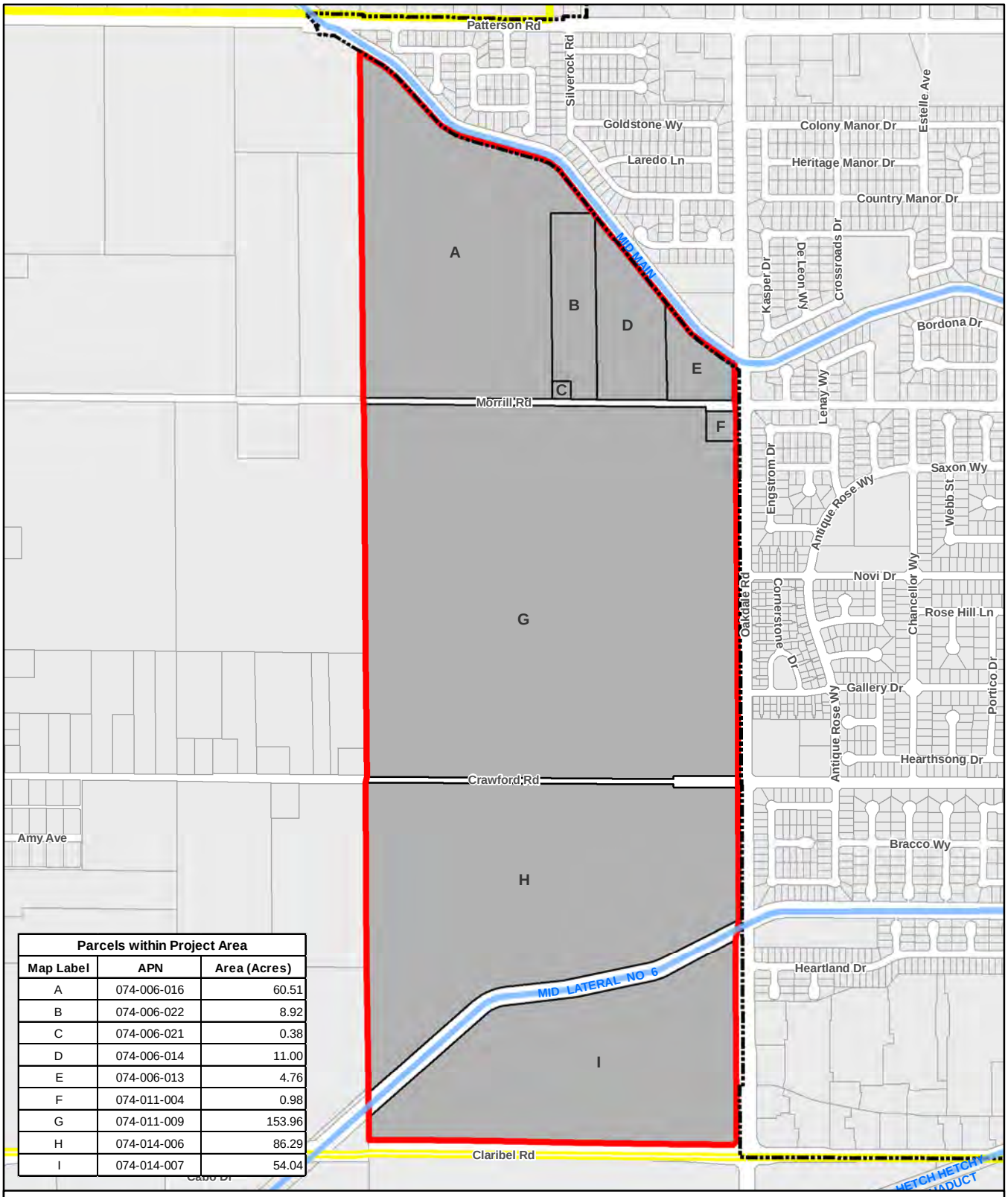

Parcels within Project Area		
Map Label	APN	Area (Acres)
A	074-006-016	60.51
B	074-006-022	8.92
C	074-006-021	0.38
D	074-006-014	11.00
E	074-006-013	4.76
F	074-011-004	0.98
G	074-011-009	153.96
H	074-014-006	86.29
I	074-014-007	54.04

Legend

- Project Boundary
- Assessor's Parcels
- Assessor's Parcels within Project Boundary
- Riverbank City Boundary
- Riverbank Sphere of Influence
- Canal

N

0 250 500

Feet

1:12,000

CROSSROADS WEST SPECIFIC PLAN

Figure 2.0-3. Assessor's Parcel Map

Sources: Stanislaus County GIS. Map date: January 17, 2017.

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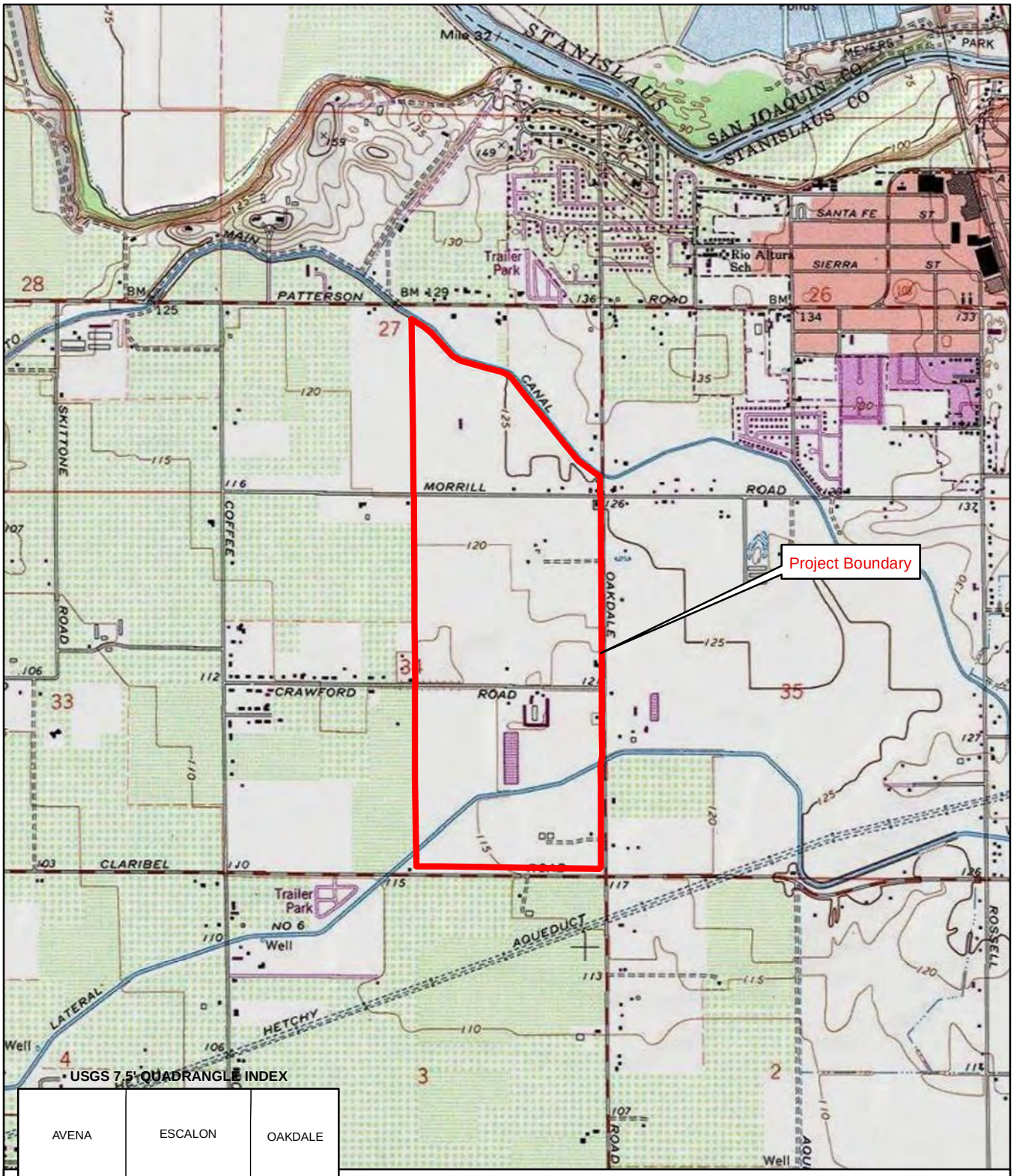

USGS 7.5' QUADRANGLE INDEX

AVENA	ESCALON	OAKDALE
SALIDA	RIVERBANK	WATERFORD
BRUSH LAKE	CERES	DENAIR

N

0 500 1,000

Feet

1:24,000

CROSSROADS WEST SPECIFIC PLAN

Figure 2.0-4. USGS Topographic Map

Riverbank Quadrangle

Sources: Stanislaus County GIS; ArcGIS Online USGS Topographic Map Service. Map date: January 17, 2017.

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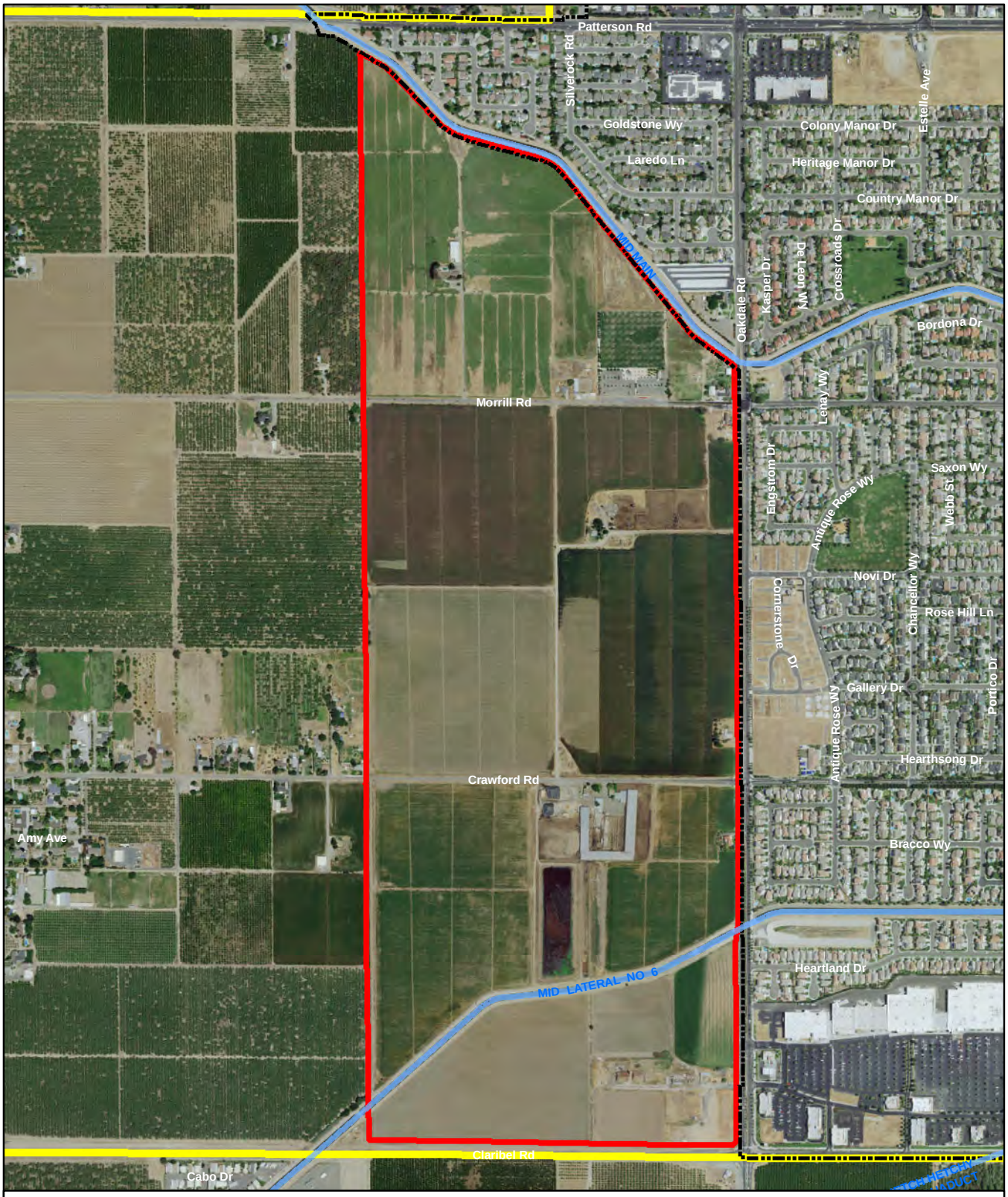

CROSSROADS WEST SPECIFIC PLAN

Figure 2.0-5. Aerial View of Project Site

Legend

- Project Boundary
- Riverbank City Boundary
- Riverbank Sphere of Influence
- Canal

N

0 250 500

Feet

1:12,000

Sources: Stanislaus County GIS; ESRI's ArcGIS Online World Imagery Map Service. Map date: January 17, 2017.

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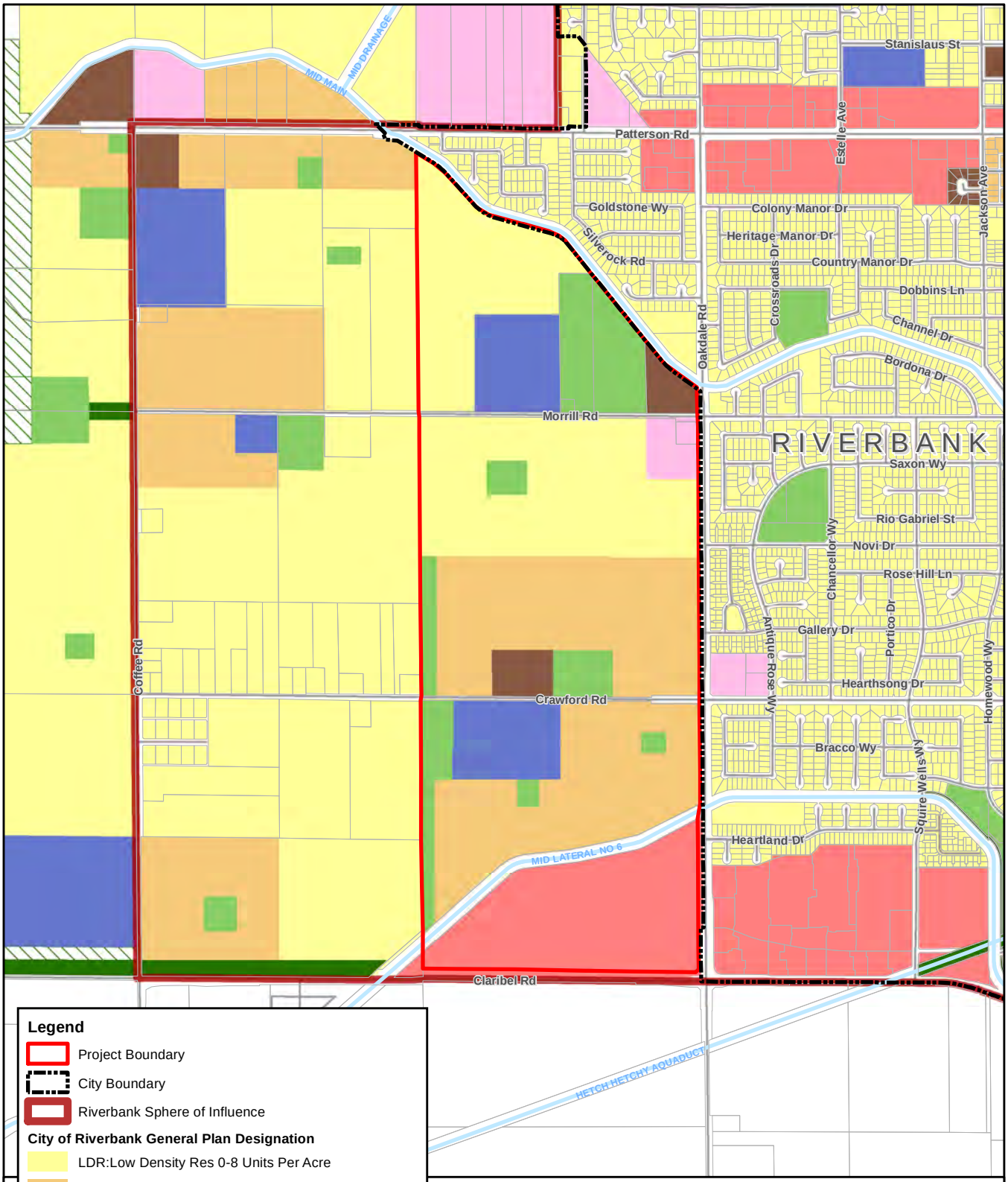

Legend

- Project Boundary
- City Boundary
- Riverbank Sphere of Influence

City of Riverbank General Plan Designation

- LDR:Low Density Res 0-8 Units Per Acre
- MDR:Medium Density Res 8-16 Units Per Acre
- HDR:Higher-Density Res 16+ Units Per Acre
- C:Civic
- C/C:Community Commercial
- MU:Mixed Use
- B/G/OS:Buffer/Greenway/Open Space
- MUR/R:Multi-Use Recreational/Resource Management
- P:Park

N

0 400 800

Feet

1:16,000

CROSSROADS WEST SPECIFIC PLAN

Figure 2.0-6a. Existing General Plan Land Use Designations

City of Riverbank

Sources: Stanislaus County; City of Riverank. Map date: August 24, 2017.

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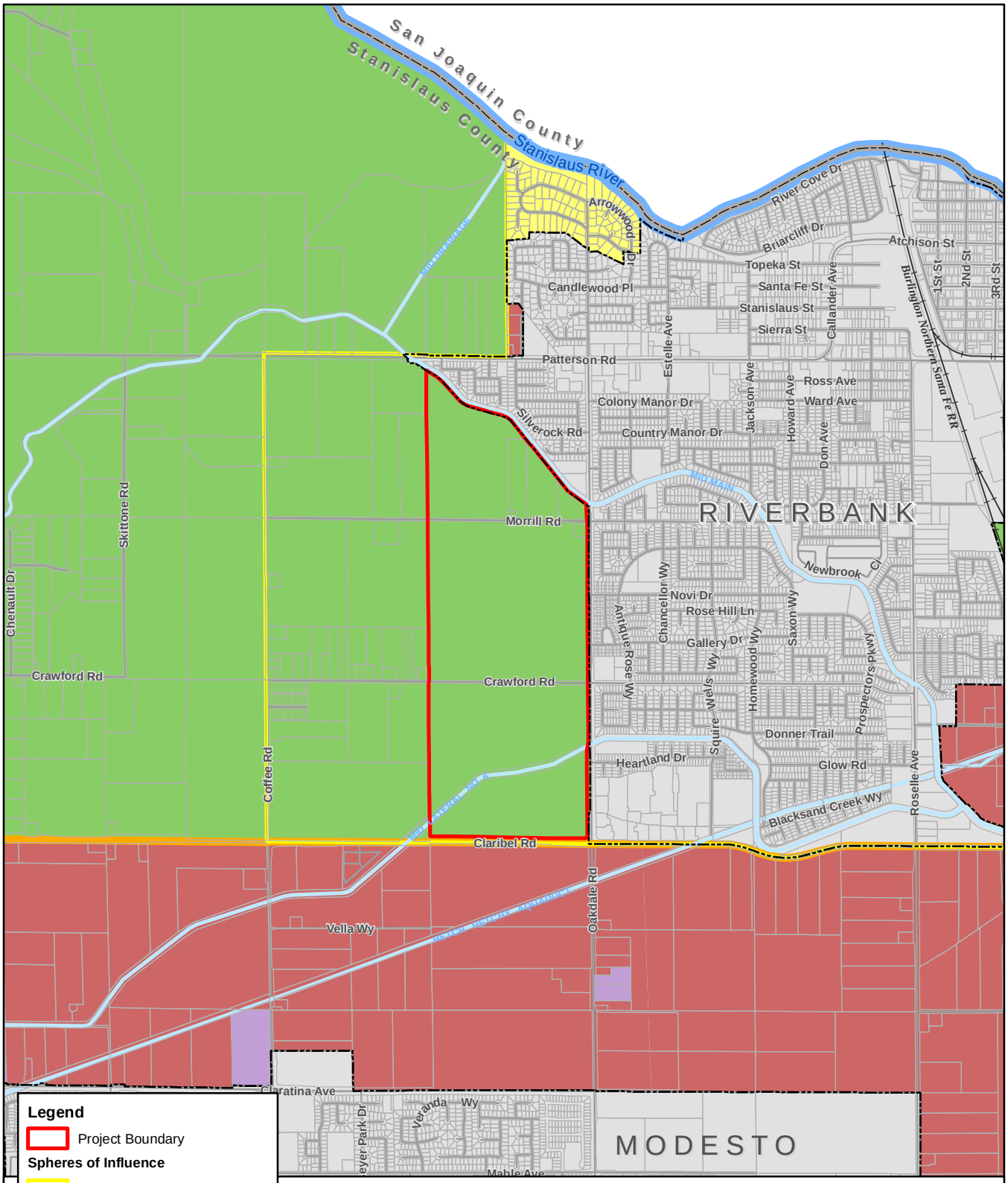

Legend

- Project Boundary

Spheres of Influence

- Riverbank SOI
- Modesto SOI

County General Plan Designation

- AG-Agriculture
- LDR-Residential - Low Density
- PD-Planned Development
- UT-Urban Transition
- City Area

N

0 500 1,000

Feet

1:28,000

CROSSROADS WEST SPECIFIC PLAN

Figure 2.0-6b. Existing General Plan Land Use Designations

Stanislaus County

Sources: Stanislaus County GIS. Map date: February 8, 2017.

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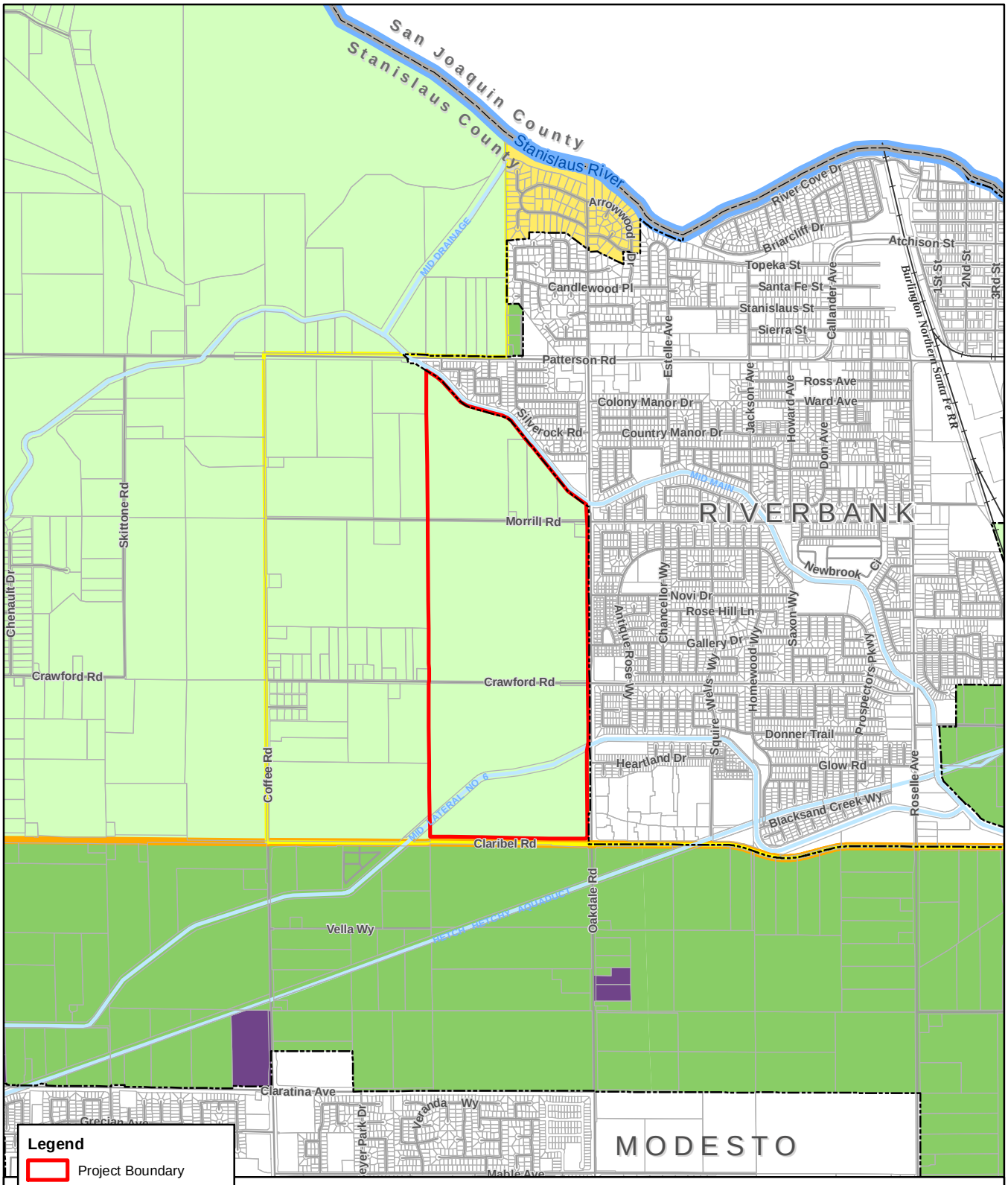

Legend

- Project Boundary

Spheres of Influence

- Riverbank SOI
- Modesto SOI

County Zoning Designations

- Rural Residential
- General AG 10 Acre UT
- General AG 40 Acre
- Planned Development

N

0 500 1,000

Feet

1:28,000

CROSSROADS WEST SPECIFIC PLAN

Figure 2.0-6c. Existing Zoning Designations

Stanislaus County

Sources: Stanislaus County GIS. Map date: March 24, 2017.

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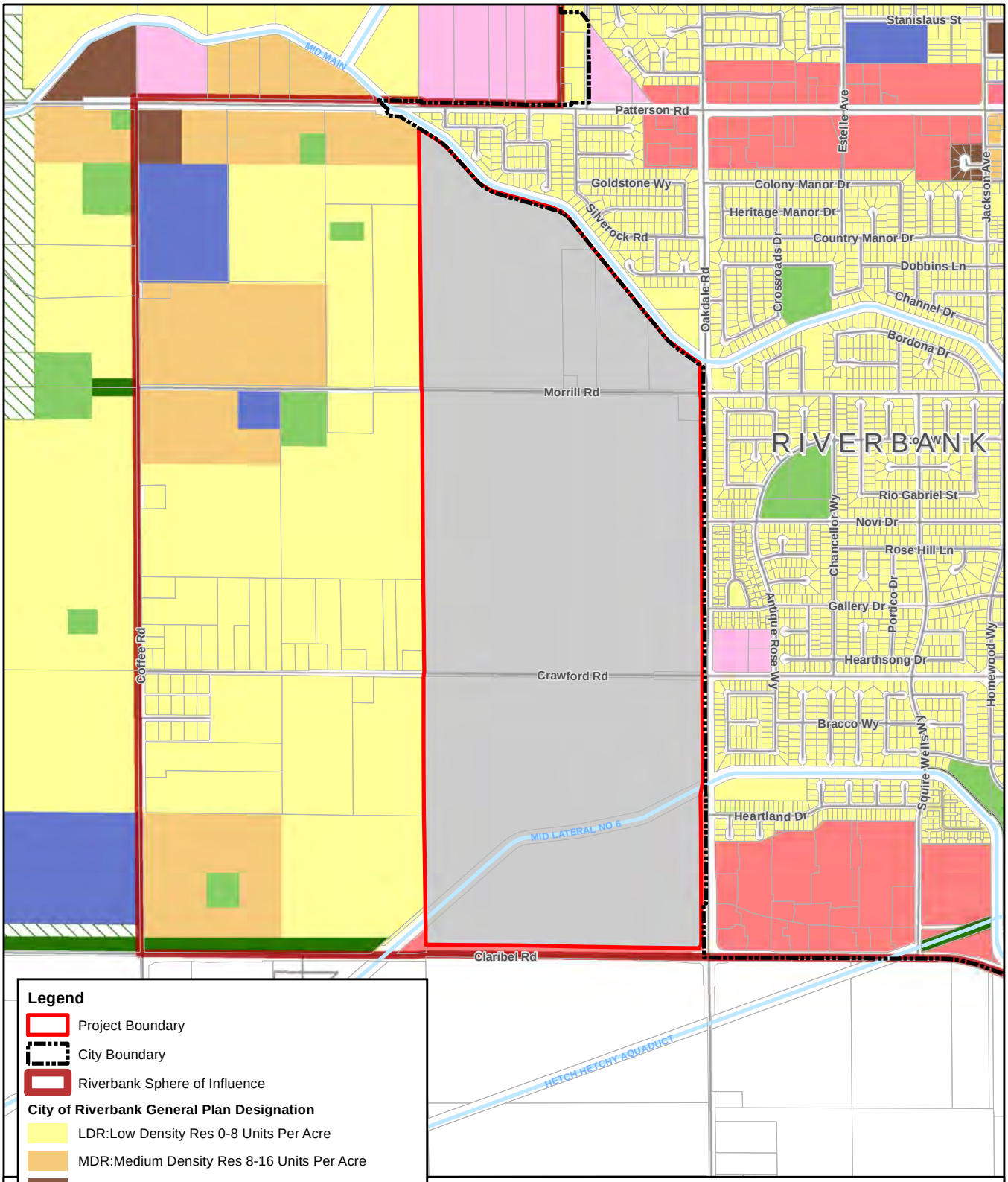

Legend

- Project Boundary
- City Boundary
- Riverbank Sphere of Influence

City of Riverbank General Plan Designation

- LDR:Low Density Res 0-8 Units Per Acre
- MDR:Medium Density Res 8-16 Units Per Acre
- HDR:Higher-Density Res 16+ Units Per Acre
- C:Civic
- C/C:Community Commercial
- MU:Mixed Use
- B/G/OS:Buffer/Greenway/Open Space
- MUR/R:Multi-Use Recreational/Resource Management
- P:Park
- SP: Specific Plan

N

0 400 800

Feet

1:16,000

CROSSROADS WEST SPECIFIC PLAN

Figure 2.0-7a. Proposed General Plan Land Use Designations

City of Riverbank

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Sources: Stanislaus County; City of Riverbank. Map date: August 24, 2017.

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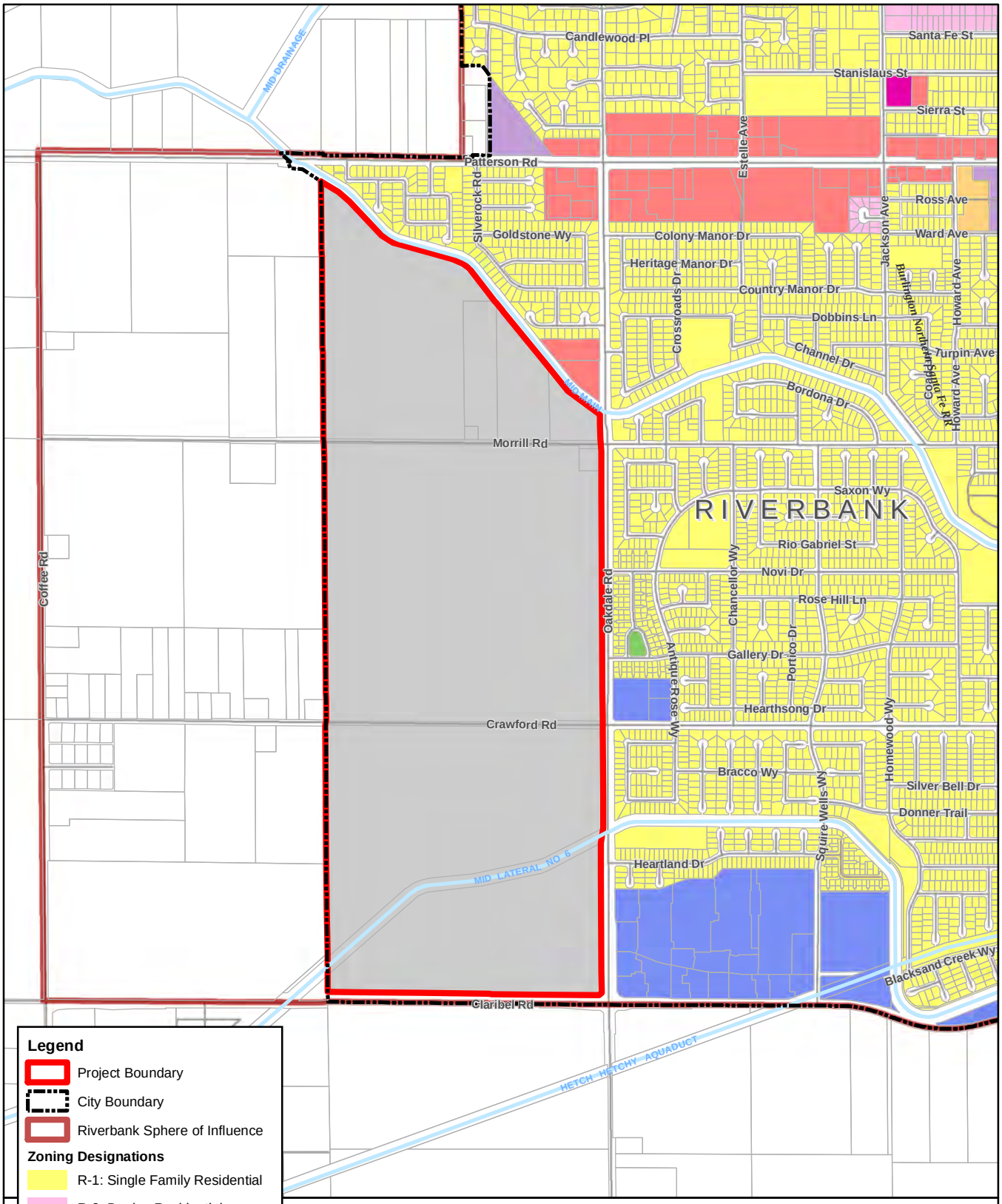

Legend

- Project Boundary
- City Boundary
- Riverbank Sphere of Influence

Zoning Designations

- R-1: Single Family Residential
- R-2: Duplex Residential
- R-3: Multi Family Residential
- C-1: Neighborhood Commercial
- C-2: General Commercial
- CM: Commercial-Industrial
- CX-1: Mixed Use
- Park
- SP: Specific Plan

N

0 500 1,000

Feet

1:16,000

CROSSROADS WEST SPECIFIC PLAN

Figure 2.0-7b. Pre-zoning

City of Riverbank

Sources: Stanislaus County; City of Riverbank. Map date: February 8, 2017.

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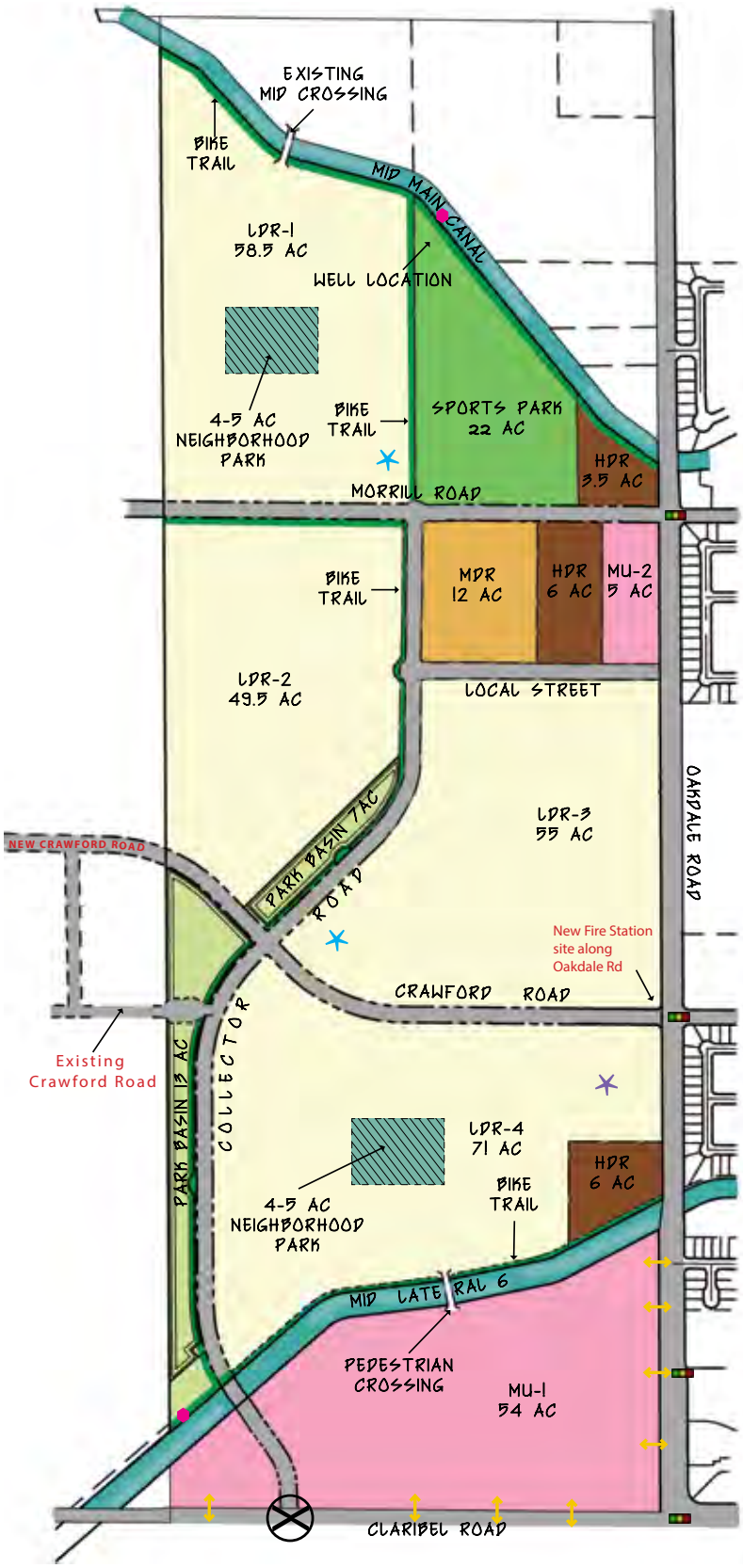

LEGEND/NOTES

- LOW-DENSITY RESIDENTIAL (LDR) - 5-8 DU/Acre [3, 4]
- MEDIUM DENSITY RESIDENTIAL (MDR) - 8-16 DU/Acre
- HIGH DENSITY RESIDENTIAL (HDR) - 20+ DU/Acre
- REGIONAL SPORTS PARK (P)
- MIXED USE 1 (MU-1) [5]
- MIXED USE 2 (MU-2)
- School (S)
- PARK/BASIN (P)
- Neighborhood Park
- ARTERIALS, COLLECTORS AND LOCAL STREETS

LEGEND/NOTES

- ACCESS POINTS FOR COMMERCIAL
- EXISTING TRAFFIC SIGNALS
- POSSIBLE TRAFFIC SIGNAL
- POSSIBLE SCHOOL SITE [3] (S)
- ACTIVE ADULT [2]
- BIKE TRAIL
- STORM DISCHARGE
- POSSIBLE NEIGHBORHOOD PARK

NOTES:

1. Total acreage does not include the existing Right-of-Ways for the MID Main Canal, Oakdale Road, MID Lateral No. 6, or Claribel Road.
2. Active Adult is allowed anywhere within the LDR designation.
3. The School locations are a placeholder within the LDR.
4. LDR unit count includes Neighborhood Park land which has an underlying land use designation of LDR.
5. In Mixed Use 1, development could consist of all retail (550,000 sf) and no residential; or up to 350 units of residential and about 360,000 sf of retail.
6. Park area and school areas are included in the LDR acreage.
7. The Land Use areas and shapes as shown on this Land Use Map are conceptual. Shapes of the Land Use areas may be reconfigured based on final design.

N

CROSSROADS WEST SPECIFIC PLAN

Figure 2.0-8. Conceptual Land Use Plan

Source: MVE, Inc. Date: June 15, 2018.

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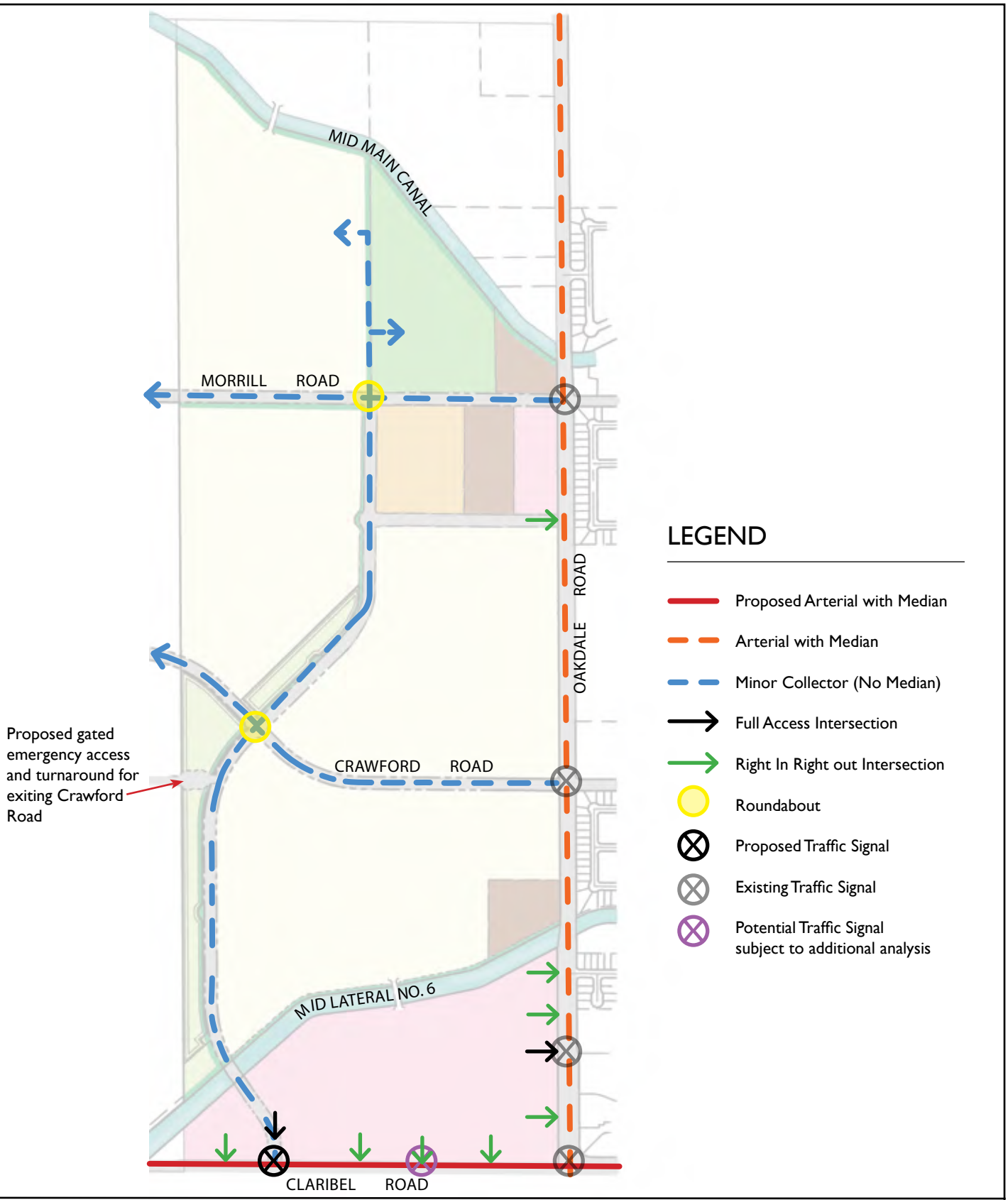

CROSSROADS WEST SPECIFIC PLAN

Figure 2.0-9. Vehicular Circulation Map

Source: MVE, Inc. Map date: June 15, 2018.

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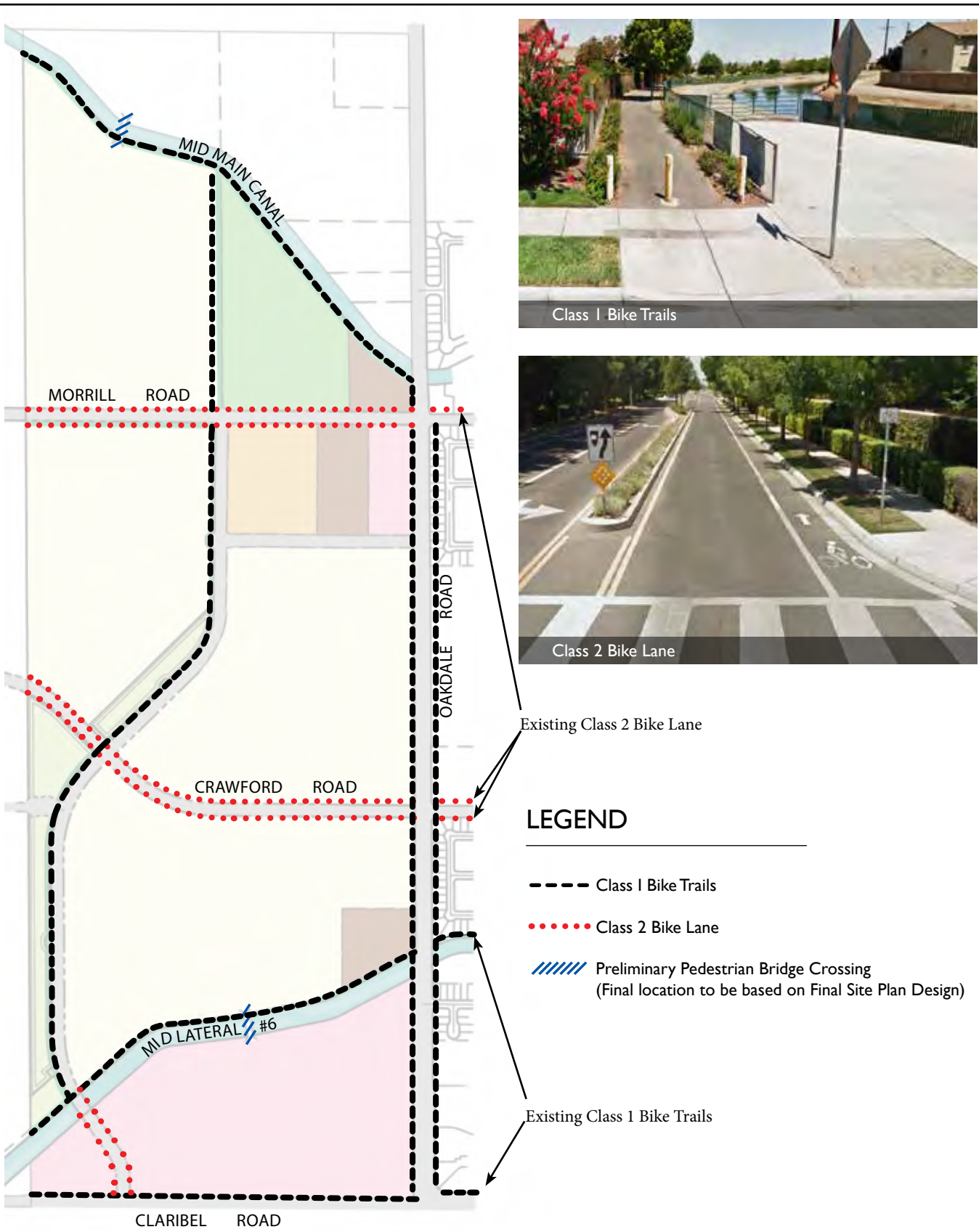

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CROSSROADS WEST SPECIFIC PLAN

Figure 2.0-10. Alternative Transportation Circulation Map

Source: MVE, Inc. Map date: June 15, 2018.

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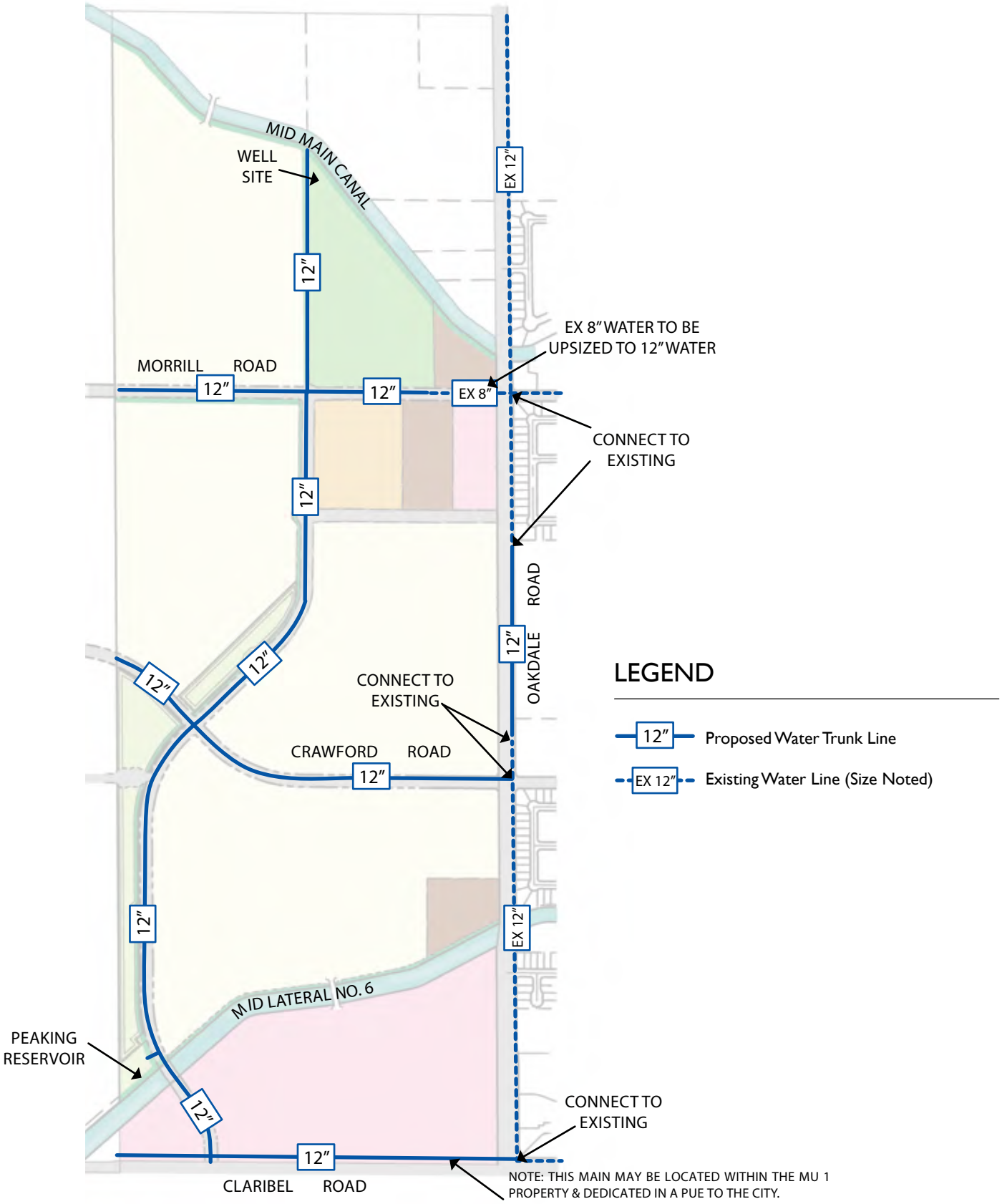

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CROSSROADS WEST SPECIFIC PLAN

Figure 2.0-11. Water System Map

Source: MVE, Inc. Map date: June 15, 2018.

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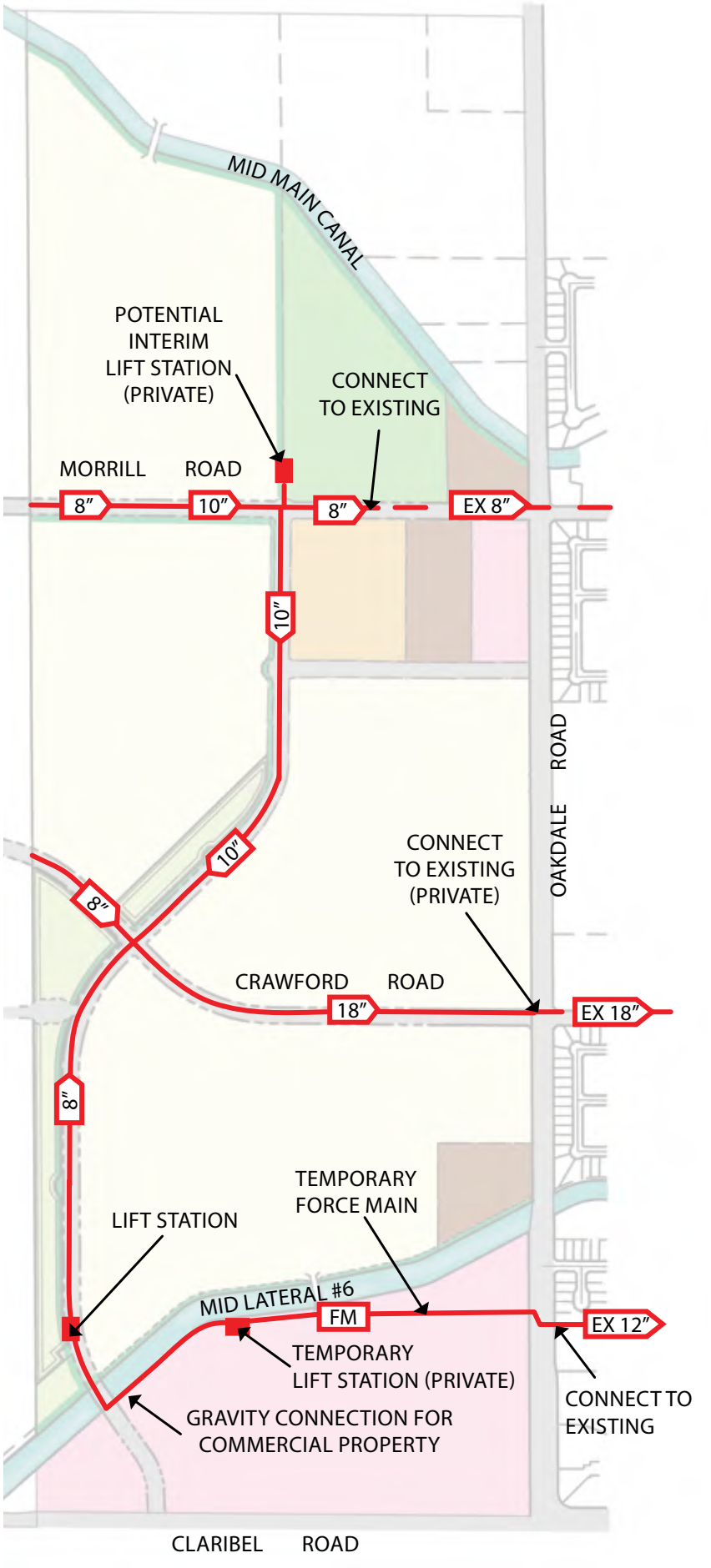

CROSSROADS WEST SPECIFIC PLAN

Figure 2.0-12. Sanitary Sewer System Map

LEGEND

- 8″ — Proposed Sanitary Sewer System
- FM — Future Gravity Connection
- EX 8″ — Existing Sanitary Sewer Line Size and Direction of Flow

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Source: MVE, Inc. Map date: February 13, 2017

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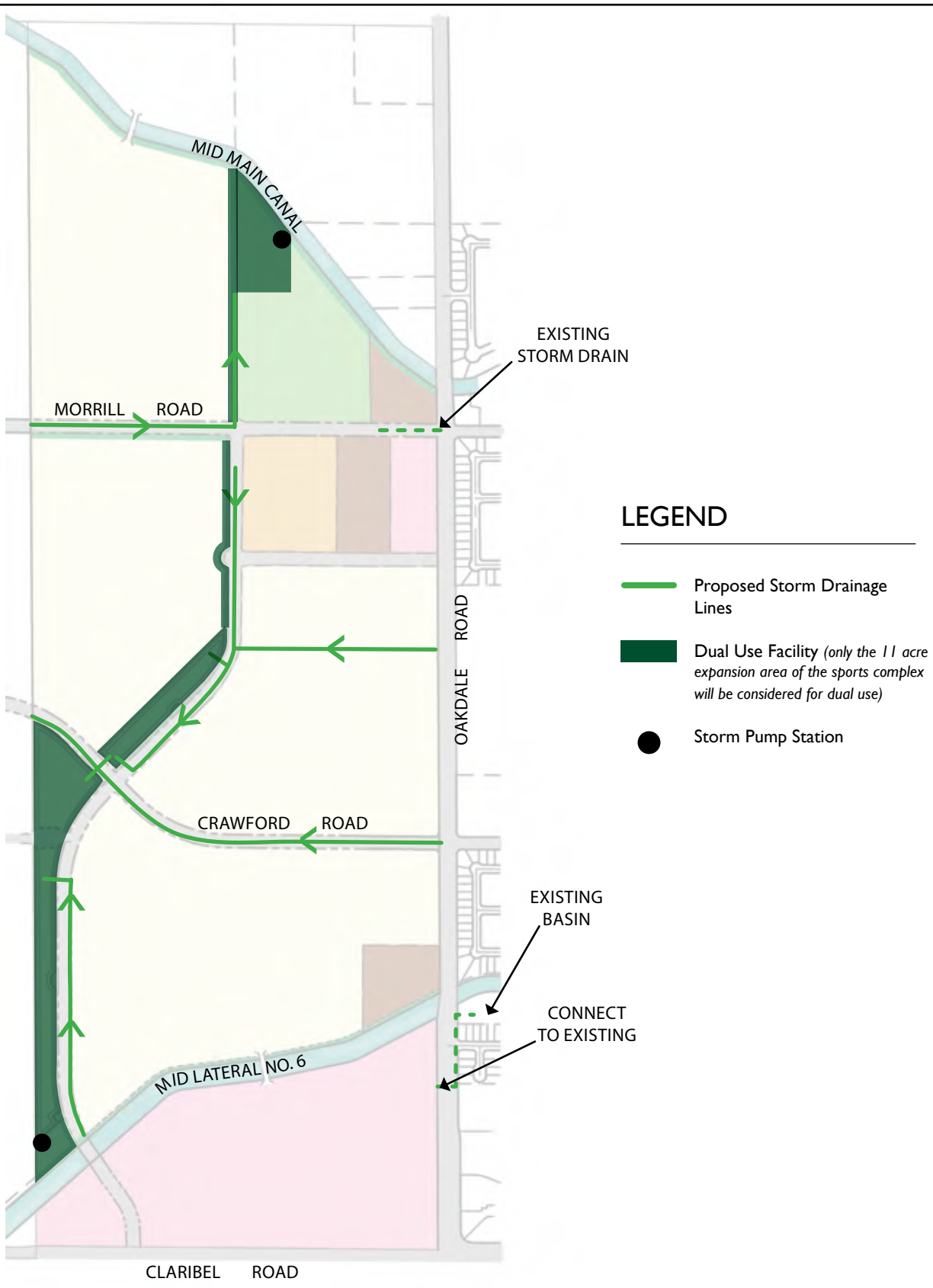

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CROSSROADS WEST SPECIFIC PLAN

Figure 2.0-13. Storm Drain System Map

Source: MVE, Inc. Map date: June 15, 2018.

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This section provides an overview of the visual character, scenic resources, views, scenic highways, and sources of light and glare that are encountered in the Plan Area and the vicinity. This section concludes with an evaluation of the impacts and recommendations for mitigating impacts. There were no comments received during the NOP scoping process related to this environmental topic.

3.1.1 ENVIRONMENTAL SETTING

REGIONAL SCENIC RESOURCES

Visual resources are generally classified into two categories: scenic views and scenic resources. Scenic views are elements of the broader viewshed such as mountain ranges, valleys, and ridgelines. They are usually mid-ground or background elements of a viewshed that can be seen from a range of viewpoints, often along a roadway or other corridor. Scenic resources are specific features of a viewing area (or viewshed) such as trees, rock outcroppings, and historic buildings. They are specific features that act as the focal point of a viewshed and are usually foreground elements.

Aesthetically significant features occur in a diverse array of environments within the region, ranging in character from urban centers to rural agricultural lands to natural water bodies. Features of the built environment that may also have visual significance include individual or groups of structures that are distinctive due to their aesthetic, historical, social, or cultural significance or characteristics. Examples of the visually significant built environment may include bridges or overpasses, architecturally appealing buildings or groups of buildings, landscaped freeways, and a location where a historic event occurred.

SCENIC HIGHWAYS AND CORRIDORS

Scenic highways and corridors make major contributions to the quality of life enjoyed by the residents of a region. The development of community pride, the enhancement of property values, and the protection of aesthetically-pleasing open spaces reflecting a preference for the local lifestyle are all ways in which scenic corridors are valuable to residents.

Scenic highways and corridors can also strengthen the tourist industry. For many visitors, highway corridors will provide their only experience of the region. Enhancement and protection of these corridors ensures that the tourist experience continues to be a positive one and, consequently, provides support for the tourist-related activities of the region's economy.

Scenic Highways

A scenic highway is generally defined by the California Department of Transportation (Caltrans) as a public highway that traverses an area of outstanding scenic quality, containing striking views, flora, geology, or other unique natural attributes. A highway may be designated scenic depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view.

The status of a proposed state scenic highway changes from eligible to officially designated when the local governing body applies to Caltrans for scenic highway approval, adopts a Corridor Protection Program, and receives notification that the highway has been officially designated a Scenic Highway.

Only one highway section in Stanislaus County is listed as a Designated Scenic Highway by the Caltrans Scenic Highway Mapping System; the segment of Interstate 5 (I-5) from the San Joaquin to Merced County lines. Views from this route are primarily agricultural with distant views of the Coast Range. The City of Riverbank and the Plan Area are not visible from this roadway segment.

Scenic Corridors

A scenic corridor is the view from the road that may include a distant panorama and/or the immediate roadside area. A scenic corridor encompasses the outstanding natural features and landscapes that are considered scenic. It is the visual quality of the man-made or natural environments within a scenic corridor that are responsible for its scenic value. Commonly, the physical limits of a scenic corridor are broken down into foreground views (zero to one quarter mile) and distant views (over one quarter mile). In addition to distinct foreground and distant views, the visual quality of a scenic corridor is defined by special features, which include:

- Focal points - prominent natural or man-made features which immediately catch the eye.
- Transition areas - locations where the visual environment changes dramatically.
- Gateways - locations which mark the entrance to a community or geographic area.

Stanislaus County Scenic Highways/Corridors

There are no County designated scenic corridors, trails, or rivers located in the Plan Area. A portion of Highway 108 in the County is designated as a Scenic Highway by the County. The Scenic Highway 108 Sonora Pass route begins at an elevation of about 3,000 feet, and rises to an elevation of 9,628 feet above sea level. The pass connects the communities of Sonora to the west and Bridgeport to the east. The Scenic Highway 108 Sonora Pass route is not located in the Plan Area, and is not visible from the Plan Area.

SCENIC WATER RESOURCES AND WILD AND SCENIC RIVERS

Water resources are important visual resources that draw tourists to the area for recreational opportunities. The most visually significant water body in the region is the San Joaquin River.

Wild and Scenic Rivers

Federal agencies have jurisdiction, under the Wild and Scenic Rivers Act, to designate rivers or river sections to “be preserved in free-flowing condition and…protected for the benefit and enjoyment of present and future generations.”

The Tuolumne River is designated as Wild and Scenic River under the Federal Wild and Scenic Rivers Act from the source to the Don Pedro Reservoir. The City of Riverbank and the Plan Area are not visible from this segment of the Tuolumne River.

PLAN AREA

The Plan Area is located in the southwestern portion of the City of Riverbank Sphere of Influence (SOI), within the unincorporated area of Stanislaus County. The Plan Area is located adjacent to the City limits to the north and east. Figures 2.0-1 and 2.0-2 in Section 2.0, Project Description, illustrate the regional location and Project vicinity.

The Plan Area encompasses approximately 390 acres of existing agricultural operations including dairy operations, row crops, and fallow land. Seven home sites exist within the Plan Area and many of them have accessory structures on site including storage buildings, shop buildings, and barn structures. Additionally, an approximately 11-acre regional City park, the Riverbank Sports Complex, is currently developed in the northeastern portion of the Plan Area, near the intersection of Morrill Road and Oakdale Road. Crawford Road and Morrill Road traverse the Plan Area from east to west. The Plan Area is relatively flat and ranges in elevation from approximately 111 to 125 feet above sea level, as shown in Figure 2.0-4.

Modesto Irrigation District (MID) provides water supply for the existing agricultural uses and maintains two easements in the Plan Area. An MID main canal with a crossing is located along the northern boundary of the Plan Area, adjacent south of off-site residential. Additionally, MID Lateral 6 traverses the southern portion of the Plan Area from northeast to southwest. A series of private irrigation ditches distribute the MID water from the on-site canals throughout the Plan Area.

Historical agricultural operations/farming in the Plan Area have limited natural scenic qualities. There is little native vegetation or naturalized habitat located on the site, and the flat topography of the site renders the site essentially void of prominent natural visual features.

Much of the Plan Area is active agricultural land. While this land is disturbed from its natural condition, developed agricultural land can provide visual relief to a passerby/viewer from common manmade structures and visual obstructions found in an urban environment. Agricultural lands provide a sense of openness that is common in natural environments. Throughout the year agricultural operations would result in the land evolving from an environment that appears lush with vegetation (green crops) to an environment that appears barren (recently tilled). According to the Stanislaus County General Plan EIR, agricultural land in the region offers expansive views that extent over the valley floor to the east and Diablo Range to the west. These landscape views are strongly characteristic of the Central Valley and have contributed to the regional identity.

The Plan Area is surrounded by a variety of designated undeveloped and existing developed land uses. The Plan Area is bounded on the east by Oakdale Road, on the south by Claribel Road, on the north by the MID Main Canal and the City of Riverbank city limits, and on the west by those property lines approximately 0.5-mile west of Oakdale Road. Uses immediately adjacent to the southeast, south, southwest, and west of the Plan Area include agricultural uses and residential uses, including ranchettes and large estates lots. Other existing uses east of the southerly portion of the Plan Area include a single family residential subdivision and a commercial center. Existing residential subdivisions also exist to the north, northeast, and east of the Plan Area. Other nearby

uses include a commercial shopping center located east of the Plan Area at the intersection of Claribel Road and Oakdale Road.

Lands to the north, northwest, and west of the Plan Area (within the County) consist of Agriculture (AG) uses, and lands to the south, southwest, and southeast (within the County) are designated Urban Transition (UT). Lands to the north of the Plan Area (within the City of Riverbank) are designated for Lower Density Residential (LDR), Community Commercial (CC), and Mixed Use (MU) uses. Lands to the east of the Plan Area (within the City of Riverbank) are designated for LDR, CC, MU, and Park (P) uses. Areas surrounding the Plan Area to the west (within the City's SOI) have City designations of LDR, Medium Density Residential (MDR), Higher Density Residential (HDR), P, Civic (C), and Buffer/Greenway/Open Space (B/G/OS).

There are no Officially Designated Scenic Highways located through or adjacent to the Plan Area. The only Officially Designated Scenic Highway in Stanislaus County is the segment of I-5 from the San Joaquin to Merced County lines, located approximately 21.2 miles southwest of the Plan Area. This scenic highway is not visible from the Plan Area.

There are minimal existing light sources in the Plan Area. Approximately seven residences with associated accessory structures (i.e., garages, barns, storage buildings) are located throughout the Plan Area and include minimal outdoor lighting. Additionally, an approximately 11-acre regional City park, the Riverbank Sports Complex, is currently developed in the northeastern portion of the Plan Area, near the intersection of Morrill Road and Oakdale Road. Outdoor lighting at this park includes field and parking lot lighting. Other existing lighting in the vicinity of the Plan Area includes: roadway lighting on Oakdale Road, and lighting from residential areas to the north, northeast, and east of the Plan Area.

3.1.2 REGULATORY SETTING

STATE

California Scenic Highway Program

The intent of the California Scenic Highway Program is "to protect and enhance California's natural scenic beauty and to protect the social and economic values provided by the State's scenic resources." Caltrans administers the program, which was established in 1963 and is governed by the California Streets and Highways Code §260 et seq. The goal of the program is to preserve and protect scenic highway corridors from changes that would diminish the aesthetic value of the adjacent land. Caltrans has compiled a list of state highways that are designated as scenic and county highways that are officially designated or eligible for designation as scenic. Scenic highway designation can provide several types of benefits to the region. Scenic areas are protected from encroachment of inappropriate land uses, free of billboards, and are generally required to maintain existing contours and preserve important vegetative features. Only low-density development is allowed on steep slopes and along ridgelines on scenic highways, and noise setbacks are required for residential development.

LOCAL

The City of Riverbank General Plan identifies visual and scenic resources within the City and recommends measures to protect these resources.

City of Riverbank General Plan

The City of Riverbank does not contain any areas officially designated as a scenic vista. However, the General Plan identifies the importance of visual characteristics in establishing community identity. For example, Goal CONS-7 aims to maintain and increase public access to Riverbank's scenic resources, which generally include the Stanislaus River, the Scenic Highway 108 corridor, and the agricultural resources conservation areas in the western and northeastern extremities of the General Plan Planning Area. Additional General Plan goals and policies address the protection of scenic resources within the City.

City of Riverbank Municipal Code

Chapter 157, Water Efficient Landscape and Irrigation, of the City Municipal Code contains standards and provisions related to irrigation and landscaping design requirements that would apply to the proposed Project. The primary intent of Chapter 157 is to enhance the aesthetic appearance of development in all areas of the City and to establish a water conservation plan to reduce water consumption. The provisions which apply to the Project include submittal of a landscape plan, parking lot landscaping design standards, and other development standards set forth in Section 157.05 of the Code.

3.1.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

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

- Have a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- Substantially degrade the existing visual character or quality of the site and its surroundings;
- 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: Project implementation may result in substantial adverse effects on scenic vistas and resources or substantial degradation of visual character. (Significant and Unavoidable)

Development of the proposed Project would convert the site from its existing use as primarily agricultural land to developed residential housing, a commercial mixed-use area, and park areas.

Project components would include:

- Construction of up to 1,872 low density residential units.
- Construction of up to 192 medium density residential units.
- Construction of up to 388 high density residential units.
- Construction of park/open space areas totaling approximately 31.0 acres.
- Expansion of the Riverbank Westside Regional Sports Park by a minimum of 11 acres.
- Dedication of a 10- to 12-acre elementary school site.
- Dedication of a 20-acre middle school site.
- Development of a 54.0-acre mixed use area with up to 550,000 square feet.
- Development of a 5.0-acre mixed use area with up to 27,000 square feet.
- Construction of roadways, pedestrian pathways, sewers, storm drainage and other public infrastructure to allow for access to and development of the site.

The Plan Area is not designated as a scenic vista by the City of Riverbank General Plan or the Stanislaus County General Plan, nor does it contain any unique or distinguishing features that would qualify the site for designation as a scenic vista. The City's General Plan EIR notes views of the Stanislaus River are considered to be very important by members of the Riverbank community. Development of the Project would not result in impacts to views of the Stanislaus River.

The Plan Area is highly visible from Oakdale Road, Claribel Road, Morrill Road and Crawford Road. Implementation of the proposed Project would change the existing visual character of the site from a primarily agricultural site to an urbanized site. Impacts related to a change in visual character are largely subjective and very difficult to quantify. People have different reactions to the visual quality of a project or a project feature, and what is considered "attractive" to one viewer may be considered "unattractive" to other viewers. The Plan Area currently consists primarily of agricultural lands. Agricultural lands provide visual relief from urban and suburban developments, and help to define the character of a region. The loss of agricultural lands can have an adverse cumulative impact on the overall visual character and quality of a region. Other existing on-site uses include the Sports Park, seven home sites and associated accessory structures, and Modesto Irrigation District's main canal and Lateral 6.

As described above, Project implementation would introduce residential and commercial uses, as well as supporting infrastructure into an area that is primarily occupied by agricultural uses. Implementation of the proposed Project would introduce developed urban land uses into an area that is primarily undeveloped and largely void of structures and impervious surfaces.

The proposed Project would include visual components that would assist in enhancing the appearance of the site following site development into a higher quality urban development. These improvements would include landscaping improvements such as new street trees and other vegetation landscaping. The proposed Project could result in the construction of an average of nine acres of Neighborhood Park, 20-acres of dual-use park basin, and expansion of the Regional Sports Park to 22 acres, which will result in areas of green space within the residential portion of the Plan Area.

While implementation of the proposed Project would change the existing visual character of the site, it would not result in substantial adverse effects on a designated scenic vista. There are no proposed structures over 75 feet high that would impede views of the surrounding agricultural areas from the Project vicinity.

The proposed Project would result in the conversion of the land from agricultural uses, which would contribute to changes in the regional landscape and visual character of the area. In order to reduce visual impacts, the Project includes proposed Design Guidelines. These standards include specifications for building height and massing; exterior lighting standards and specifications; and landscaping standards. Implementation of the design standards would ensure quality design throughout the Plan Area, and result in a Project that would be internally cohesive while maintaining aesthetics similar to surrounding uses.

Nevertheless, the loss of the visual appearance of the existing agricultural land on the site will change the visual character of the Plan Area in perpetuity. Compliance with the proposed Design Guidelines and landscaping requirements found in the Crossroads West Specific Plan would reduce visual impacts to the greatest extent feasible; however, the proposed Project would permanently convert the agricultural uses to urbanized uses and would create a change in the visual characteristics of the site. This is considered a **significant and unavoidable** impact. There is no additional feasible mitigation available that would reduce this impact to a less than significant level.

Impact 3.1-2: Project implementation may substantially damage scenic resources within a State Scenic Highway. (Less than Significant)

There are no designated State Scenic Highways in the vicinity of the Plan Area. Only one highway section in Stanislaus County is listed as a Designated Scenic Highway by the Caltrans Scenic Highway Mapping System; the segment of I-5 from the San Joaquin to Merced County lines. Views from this route are primarily agricultural with distant views of the Coast Range. The City of Riverbank and the Plan Area are not visible from this roadway segment.

There are no County designated scenic corridors, trails, or rivers located in the Plan Area. Additionally, there are no “eligible” highway segments in the Project vicinity that may be included in the State Scenic Highway system. As such, this is a **less than significant** impact, and no mitigation is required.

Impact 3.1-3: Project implementation may result in light and glare impacts. (Less than Significant with Mitigation)

Implementation of the proposed Project would introduce new sources of light and glare into the Plan Area. New sources of glare would occur primarily from the windshields of vehicles travelling to and from the Plan Area and from vehicles parked at the site. There is also the potential for reflective building materials and windows to result in increases in daytime glare.

A detailed lighting plan has not been prepared for the proposed Project, but for the purposes of this analysis, it has been conservatively assumed that nighttime street lighting, outdoor recreational, and safety lighting will be installed throughout areas of the Plan Area. It is assumed that security lighting will be installed within the various parking areas throughout the commercial areas.

Chapter 8, Design Guidelines, of the proposed Crossroads West Specific Plan provides standards for nuisance prevention and shielding requirements. For example, all parking lot lighting shall be LED and shall be directed and shielded in such a manner so as not to directly cast light on neighboring properties. The proposed Design Guidelines also include requirements for the installation of parking lot landscaping which further limit glare impacts.

The Riverbank General Plan EIR determined the impact of new sources of light and glare can be minimized by incorporating design features and operating requirements into new developments that limit light and glare. Policy CONS-7.6 requires lighting to be designed to avoid glare, prevent light spillage on adjacent properties, and avoid light pollution that would contribute light to the nighttime sky.

The proposed Project lighting would be required to incorporate design features to minimize the effects of light and glare. However, without a detailed lighting plan, the potential increase of nighttime lighting cannot be evaluated to a level of specificity. Implementation of Mitigation Measure 3.1-1 would reduce potential impacts associated with nighttime lighting and light spillage onto adjacent properties to a **less than significant** level.

MITIGATION MEASURE(S)

Mitigation Measure 3.1-1*: A lighting plan shall be prepared for each phase of development. The lighting plan shall demonstrate that the lighting systems and other exterior lighting throughout the phase of development has been designed to minimize light spillage onto adjacent properties to the greatest extent feasible. Use of LED lighting or other proven energy efficient lighting shall be required for facilities to be dedicated to the City of Riverbank for maintenance.*

This section provides an overview of the agricultural crops in Stanislaus County and the City of Riverbank, agricultural capability of the soils in the Plan Area, and existing site conditions. This section concludes with an evaluation of the impacts related to agricultural resources and recommendations for mitigating impacts as needed. Information in this section is derived primarily from the *California Important Farmlands Map* (California Department of Conservation, 2012), the *California Land Conservation (Williamson) Act Status Report* (California Department of Conservation, 2010), the *Stanislaus County Agricultural Report* (Stanislaus County Agricultural Commissioner, 2016), and the Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS, 2016). Comments from the Stanislaus County Environmental Review Committee and the Stanislaus Local Agency Formation Commission (LAFCo) were received during the NOP comment period regarding agricultural resources. Full comments received are included in Appendix A.

As discussed in the Initial Study, no forest resources are located in the Plan Area, and the sites is not zoned for forest land. Therefore, this CEQA topic is not relevant to the proposed Project and will not be addressed further in this EIR.

3.2.1 ENVIRONMENTAL SETTING

STANISLAUS COUNTY AGRICULTURE

Stanislaus County contains approximately 4,143 farms with an average farm size of approximately 185 acres. The County's Agricultural Commissioner's most recent published Agricultural Report (2016) contains the following information about agriculture in the County.

Agricultural Value

Stanislaus County has a total land area of 1,494.5 square miles. The total acreage of crop land in 2016 was 954,819.

The value of agricultural commodities produced in Stanislaus County for 2016 is $3,261,411,000. This represents a decrease of 16 percent from 2015. Table 3.2-1 lists the top nine commodities in Stanislaus County in 2016.

TABLE 3.2-1: SUMMARY COMPARISON OF CROP VALUES

PRODUCT TYPE	*2016 VALUE IN DOLLARS*
Field Crops	$185,744,000
Vegetable Crops	$156,182,000
Fruit and Nut Crops	$1,248,457,000
Nursery Products	$204,797,000
Livestock and Poultry	$622,473,000
Livestock and Poultry Products	$649,556,000
Organic Products	$99,696,000
Apiary Products	$76,768,000
Other Agriculture	$17,738,000

SOURCE: STANISLAUS COUNTY AGRICULTURAL REPORT, 2016.

AGRICULTURAL CAPABILITY

The California Department of Conservation Farmland Mapping and Monitoring Program identifies lands that have agriculture value and maintains a statewide map of these lands called the Important Farmlands Inventory (IFI). IFI classifies land based upon the productive capabilities of the land, rather than the mere presence of ideal soil conditions.

The suitability of soils for agricultural use is just one factor for determining the productive capabilities of land. Suitability is determined based on many characteristics, including fertility, slope, texture, drainage, depth, and salt content. A variety of classification systems have been devised by the state to categorize soil capabilities. The two most widely used systems are the Capability Classification System and the Storie Index. The Capability Classification System classifies soils from Class I to Class VIII based on their ability to support agriculture with Class I being the highest quality soil. The Storie Index considers other factors such as slope and texture to arrive at a rating. The IFI is in part based upon both of these two classification systems.

Soil Capability Classification System

The Soil Capability Classification System takes into consideration soil limitations, the risk of damage when soils are used, and the way in which soils respond to treatment. Capability classes range from Class I soils, which have few limitations for agriculture, to Class VIII soils that are unsuitable for agriculture. Generally, as the rating of the capability classification increases, yields and profits are more difficult to obtain. A general description of soil classifications, as defined by the Natural Resources Conservation Service (NRCS) is provided in Table 3.2-2 below.

TABLE 3.2-2: SOIL CAPABILITY CLASSIFICATION

CLASS	DEFINITION
I	Soils have slight limitations that restrict their use.
II	Soils have moderate limitations that restrict choice plants or that require moderate conservation practices.
III	Soils have severe limitations that restrict the choice of plants or that require special conservation practices, or both.
IV	Soils have very severe limitations that restrict the choice of plants or that require very careful management, or both.
V	Soils are not likely to erode but have other limitations; impractical to remove that limits their use largely to pasture or range, woodland, or wildlife habitat.
VI	Soils have severe limitations that make them generally unsuited to cultivation and limit their use largely to pasture or range, woodland, or wildlife habitat.
VII	Soils have very severe limitations that make them unsuited to cultivation and that restrict their use largely to pasture or range, woodland, or wildlife habitat.
VIII	Soils and landforms have limitations that preclude their use for commercial plans and restrict their use to recreation, wildlife habitat, water supply, or aesthetic purposes.

SOURCE: USDA SOIL CONSERVATION SERVICE.

Storie Index Rating System

The Storie Index Rating system ranks soil characteristics according to their suitability for agriculture from Grade 1 soils (80 to 100 rating) which have few or no limitations for agricultural production, to Grade 6 soils (less than 10) which are not suitable for agriculture. Under this

system, soils deemed less than prime can function as prime soils when limitations such as poor drainage, slopes, or soil nutrient deficiencies are partially or entirely removed. The six grades, ranges in index rating, and definition of the grades, as defined by the NRCS, are provided below in Table 3.2-3.

TABLE 3.2-3: STORIE INDEX RATING SYSTEM

GRADE	INDEX RATING	DEFINITION
1	80 – 100	Few limitations that restrict their use for crops
2	60 – 80	Suitable for most crops, but have minor limitations that narrow the choice of crops and have a few special management needs
3	40 – 60	Suited to a few crops or to special crops and require special management
4	20 – 40	If used for crops, severely limited and require special management
5	10 – 20	Not suited for cultivated crops, but can be used for pasture and range
6	Less than 10	Soil and land types generally not suited to farming

SOURCE: USDA SOIL CONSERVATION SERVICE, SOIL SURVEY OF YOLO COUNTY, CALIFORNIA, 1972.

In addition to soil suitability, other factors for determining the agricultural value of land include whether soils are irrigated, the depth of soil, water-holding capacity, and physical and chemical characteristics. Areas considered to have the greatest agricultural potential are designated as Prime Farmland or Farmland of Statewide Importance.

Important Farmlands

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

IMPORTANT FARMLANDS IN STANISLAUS COUNTY

Data from the Department of Conservation indicates that approximately 2,733 acres of Prime Farmland in Stanislaus County were developed for other uses between 2014 and 2016, resulting in an existing total of 249,967 acres of Prime Farmland (26 percent of agricultural land). The remaining agricultural land in the County is comprised of Farmland of Statewide Importance (3.4 percent), Unique Farmland (12.0 percent), Farmland of Local Importance (2.7 percent), and Grazing Land (41.7 percent). The types and acreages of farmland in 2014 and 2016 are shown below in Table 3.2-4.

TABLE 3.2-4: STANISLAUS COUNTY FARMLANDS SUMMARY AND CHANGE BY LAND USE CATEGORY

LAND USE CATEGORY	2014-2016 ACREAGE CHANGES							
	TOTAL ACREAGE INVENTORIED				ACRES LOST	ACRES GAINED	TOTAL ACREAGE CHANGED	NET ACREAGE CHANGED
	2014		2016		(-)	(+)		
	Acres	Percent	Acres	Percent				
Prime Farmland	252,700	26.0	249,967	25.8	4,575	1,842	6,417	-2,733
Farmland of Statewide Importance	32,183	3.3	33,172	3.4	396	1,385	1,781	989
Unique Farmland	105,630	10.9	116,210	12.0	1,431	12,011	13,442	10,580
Farmland of Local Importance	28,142	2.9	26,029	2.7	5,152	3,039	8,191	-2,113
IMPORTANT FARMLAND SUBTOTAL	418,655	43.2	425,378	43.8	11,554	18,277	29,831	6,723
Grazing Land	414,013	42.7	404,405	41.7	11,346	1,738	13,084	-9,608
AGRICULTURAL LAND SUBTOTAL	832,668	85.8	829,783	85.5	22,900	20,015	42,915	-2,885
Urban and Built-up Land	65,017	6.7	66,230	6.8	268	1,481	1,749	1,213
Other Land	65,023	6.7	66,680	6.9	2,382	4,039	6,421	1,657
Water Area	7,466	0.8	7,481	0.8	2	17	19	15
TOTAL AREA INVENTORIED	970,174	100.0	970,174	100.0	25,552	25,552	51,104	0

SOURCE: CA DEPARTMENT OF CONSERVATION, DIVISION OF LAND RESOURCE PROTECTION TABLE A-30, 2016.

EXISTING SITE CONDITIONS

The current uses in the Plan Area are predominantly agricultural operations, including dairy operations, row crops, and fallow land. Seven home sites exist within the Plan Area and many of them have accessory structures on site including storage buildings, shop buildings, and barn structures. Additionally, an approximately 11-acre regional City park, the Riverbank Sports Complex, is currently developed in the northeastern portion of the Plan Area, near the intersection of Morrill Road and Oakdale Road. The agricultural lands in the Plan Area are not under an existing Williamson Act contract or conservation easement.

Portions of the Plan Area have historically been under Williamson Act contract, but there or no active contracts currently within the Plan Area. According to the Stanislaus County Williamson Act FY 2010/2011 map, and historical information provided by the City of Riverbank, the 153.96-acre portion of the Plan Area located south of Morrill Road and north of Modesto Irrigation District (MID) Lateral 6 (Assessor's Parcel Number (APN) 074-011-009) was previously under Williamson Act contract, but that contract is no longer active or enforceably restricted. Non-renewal was filed for Assessor's Parcel Number (APN) 074-011-009 on September 28, 2004. Non-Renewal lands include enrolled lands for which non-renewal has been filed pursuant to Government Code Section 51245. Upon the filing of non-renewal, the existing contract remains in effect for the balance of the period remaining on the contract. During the non-renewal process, the annual tax assessment gradually increases. At the end of the 9-year non-renewal period, the contract expires and the land is no longer enforceably restricted.

Because the 9-year non-renewal period for this APN expired in 2013, the contract has also expired and the land is no longer enforceably restricted.

Surrounding Land Uses

Uses immediately adjacent to the southeast, south, southwest, and west of the Plan Area include agricultural uses and residential uses, including ranchettes and large estates lots. Other existing uses east of the southerly portion of the Plan Area include a single family residential subdivision and a commercial center. Existing residential subdivisions also exist to the north, northeast, and east of the Plan Area. Other nearby uses include a commercial shopping center located east of the Plan Area at the northeastern intersection of Claribel Road and Oakdale Road.

The Plan Area is bounded on the east by Oakdale Road, on the south by Claribel Road, on the north by the MID Main Canal and the City of Riverbank city limits, and on the west by those property lines approximately 0.5-mile west of Oakdale Road. Figure 2.0-5 provides an aerial view of the site, and Figure 2.0-6a displays the current Riverbank General Plan land use designations.

Plan Area Farmland Characteristics

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

PRIME FARMLAND

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

The majority of the Plan Area, approximately 226.38 acres, is designated Prime Farmland, as shown on Figure 3.2-1. Prime Farmlands are also located west, southwest, and south of the Plan Area.

FARMLAND OF STATEWIDE IMPORTANCE

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

There is no Farmland of Statewide Importance within the Plan Area.

UNIQUE FARMLAND

Unique farmland 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. Land must have been cropped at some time during the four years prior to the mapping date.

Approximately 85.55 acres of Unique Farmland is located in the northern portion of the Plan Area. Unique Farmland is also located to the east of the Plan Area.

GRAZING LAND

Grazing Land includes 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.

Approximately 8.35 acres of Grazing Land is located in the northeastern portion of the Plan Area, adjacent to the Riverbank Sports Complex. Grazing Land is also located to the southeast of the Plan Area.

FARMLAND OF LOCAL IMPORTANCE

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

Approximately 35.46 acres of Farmland of Local Importance is located in the northern portion of the Plan Area. Farmland of Local Importance is also located to the southeast of the Plan Area.

CONFINED ANIMAL AGRICULTURE

Confined Animal Agriculture includes poultry facilities, feedlots, dairy facilities, and fish farm. Approximately 49.06 acres of Confined Animal Agriculture is located in the southern-central portion of the Plan Area. Confined Animal Agriculture is also located to the southeast of the Plan Area.

URBAN AND BUILT-UP LAND

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

Approximately 11.51 acres of Urban and Built-up Land is located in the northern portion of the Plan Area. Urban and Built-up Land is also located to the north and east of the Plan Area.

SEMI-RURAL AGRICULTURAL AND RURAL COMMERCIAL LAND

Semi-Rural Agricultural and Rural Commercial Land includes farmsteads, agricultural storage and packing sheds, unpaved parking areas, composting facilities, equine facilities, firewood lots, and campgrounds. Lands classified as Semi-Rural Agricultural and Rural Commercial Land are located in one portion of the Plan Area (an area approximately 9.05 acres), in the southeastern corner of the Plan Area.

OTHER LAND

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

Soils and Farmland Characteristics

A Custom Soil Survey was completed for the Plan Area using the NRCS Web Soil Survey program. Table 3.2-5 identifies the soils found in the Plan Area. The NRCS Soils Map is provided in Figure 3.6-1 in Section 3.6, Geology and Soils.

TABLE 3.2-5: PLAN AREA SOILS

UNIT SYMBOL	NAME	ACRES IN AOI	PERCENT OF AOI	CAPABILITY CLASSIFICATION*
GvA	Greenfield sandy loam, deep over hardpan	192.24	48.7	II-IV
HdA	Hanford sandy loam	46.23	11.7	I-IV
HdpA	Hanford sandy loam, moderately deep over silt	6.24	1.6	II-IV
MdA	Madera sandy loam	130.93	33.1	IV-IV
OaA	Oakdale sandy loam	19.37	4.9	I-IV

** DEPICTS IRRIGATED VS. NON-IRRIGATED CAPABILITY RATING*

SOURCE: NRCS CUSTOM WEB SOIL SURVEY, 2016; STANISLAUS COUNTY SOIL SURVEY, 1992.

Greenfield sandy loam. This series consists of deep, well drained soils that formed in moderately coarse and coarse textured alluvium derived from granitic and mixed rock sources. Greenfield soils are on alluvial fans and terraces and have slopes of 0 to 30 percent. They have slow to medium runoff and moderately rapid permeability. Common uses for this series include: production of a wide variety of irrigated field, forage and fruit crops, and growing dryland grain and pasture. Vegetation on uncultivated areas consists of annual grass, forbs, some shrubs and scattered oak trees.

Hanford sandy loam. This series consists of very deep, well drained soils that formed in moderately coarse textured alluvium dominantly from granite. Hanford soils are on stream bottoms, floodplains and alluvial fans and have slopes of 0 to 15 percent. They have negligible to low runoff and moderately rapid permeability. Common uses for this series include: growing a wide range of fruits, vegetables, and general farm crops, urban development, and dairies. Vegetation in uncultivated areas is mainly annual grasses and associated herbaceous plants.

Madera sandy loam. This series consists of moderately deep to hardpan, well or moderately well drained soils that formed in old alluvium derived from granitic rock sources. Madera soils are on undulating low terraces with slopes of 0 to 9 percent. They have medium to very slow runoff and very slow permeability. Common uses for this series include: irrigated cropland such as alfalfa,

almonds, grapes, oranges, rice and tomatoes, irrigated pasture, dry farmed grain, and annual range. Vegetation is annual grasses and forbs.

Oakdale sandy loam. This series consists of very deep, well drained soils that formed in alluvium derived from granitic rock sources. They are on nearly level to gently sloping alluvial fans and terraces and in slightly depressed stream channels traversing alluvial fans with slopes of 0 to 5 percent. They have very slow to slow runoff and moderately rapid permeability. Almost all areas are cultivated and irrigated. Common crops are grapes, almonds, peaches, alfalfa, barley, beans, corn and walnuts.

3.2.2 REGULATORY SETTING

FEDERAL

Farmland Protection Policy Act

The Farmland Protection Policy Act (FPPA) is intended to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses. It ensures that, to the extent practicable, federal programs are compatible with state and local units of government as well as private programs and policies to protect farmland. Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a federal agency or with assistance from a federal agency. For the purpose of the FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland subject to FPPA requirements does not have to be currently used for crop production. In fact, the land can be forest land, pastureland, cropland, or other land but does not include water bodies or land developed for urban land uses (i.e., residential, commercial, or industrial uses).

The Natural Resource Conservation Service (NRCS) administers the Farmland Protection Program. NRCS uses a land evaluation and site assessment (LESA) system to establish a farmland conversion impact rating score on proposed sites of federally funded and assisted projects. This score is used as an indicator for the project sponsor to consider alternative sites if the potential adverse impacts on the farmland exceed the recommended allowable level. The assessment is completed on form AD-1006, Farmland Conversion Impact Rating. The sponsoring agency completes the site assessment portion of the AD-1006, which assesses non-soil related criteria such as the potential for impact on the local agricultural economy if the land is converted to non-farm use and compatibility with existing agricultural use.

The Plan Area and adjacent parcels will not be completed by a federal agency, or with assistance from a federal agency. Therefore, the Project will not be subject to the FPPA.

STATE

Williamson Act

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

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

The agricultural lands in the Plan Area are not under an existing Williamson Act contract or conservation easement. As described previously in this section, non-renewal was filed for Assessor's Parcel Number (APN) 074-011-009 on September 28, 2004. This approximately 153.96-acre area is located north of Crawford Road and south of Morrill Road. Because the 9-year non-renewal period for this APN expired in 2013, the contract has also expired and the land is no longer restricted via enforcement.

Farmland Security Zones

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

The Plan Area and the adjacent parcels are not within the FSZ program.

California Government Code Section 560643

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

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

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

LOCAL

City of Riverbank Sustainable Agricultural Strategy

In 2016, the City of Riverbank adopted a Sustainable Agricultural Strategy. The purpose of the Sustainable Agricultural Strategy is to meet the stated goals of Stanislaus LAFCo's Agricultural Preservation Policy. The document includes strategies to minimize loss of agricultural lands which would result through implementation of the Riverbank 2005-2025 General Plan. The plan for preservation is as follows:

- Properties granted discretionary approval of residential development entitlements that are located on lands designated as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland by the FMMP, shall be conditioned to cause the permanent preservation of similar quality farmland at a 1:1 ratio of the gross amount of farmland converted to the amount of farmland preserved. The acreage requiring mitigation shall be equal to that portion of the residential parcel subject to the discretionary development entitlement designated as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland.
- Permanent preservation shall consist of the purchase of agricultural conservation easements granted in perpetuity from willing seller(s), enforceable deed restrictions, purchase of banked mitigation credits, or other conservation mechanisms acceptable to the City.
- Land set aside for permanent preservation shall: (1) be of equal or better soil quality, have a dependable and sustainable supply of irrigation water, and be located within Stanislaus County; and (2) not be previously encumbered by a conservation easement of any nature.
- The land mitigation requirement shall be satisfied prior to City issuance of grading permit, building permits, or final map approval on the subject residential property. The permanent protection of farmland may be accomplished by either: (1) the landowner/developer may

work directly with an established farmland trust or similar organization, and provide certification satisfactory to the City that such lands have been permanently preserved at the specified ratio; or (2) it is the City's intent to work with a qualified land trust or similar organization to establish a fee for agricultural land conservation easements. When available, this program would allow for the landowner/developer to pay a fee directly to the City to provide for the required mitigation.

City of Riverbank General Plan

The City of Riverbank 2005-2025 General Plan designates the Plan Area as Lower Density Residential (LDR 0.0 to 8.0 dwelling units per acre [du/ac]), Medium Density Residential (MDR 8.0 to 16.0 du/ac), Higher Density Residential (HDR 16.0 or more du/ac), Mixed Use (MU), Civic (C), Community Commercial (CC), and Park (P). The General Plan Conservation and Open Space Element provides a goal and policy framework for the preservation and conservation of agricultural resources. General Plan agricultural goals and policies applicable to the Project are identified below:

GOALS: CONSERVATION AND OPEN SPACE

- CONS-3. Support the Practice of Agriculture and the Resources Associated with Farming in the Riverbank Planning Area and Beyond.

POLICIES: CONSERVATION AND OPEN SPACE

- CONS-3.1. The City will prepare a comprehensive Sustainable Agricultural Strategy intended to conserve agricultural production in the Stanislaus River Watershed, herein defined as the area within Stanislaus County and San Joaquin County between the Tuolumne and Calaveras Rivers, attributable to implementation of the 2025 General Plan. This strategy should provide flexibility so that it can be tied to land-use and regional agricultural preservation policies, and is intended to be funded on a fair-share basis by those projects that have a significant impact on the conversion of Important Farmlands, a non-renewable resource, to urban use. In determining a level of significance, it is the intent of the City to use quantifiable, measurable inputs and if a project has a significant impact on Farmland resources, then the project will mitigate for this impact.
- CONS-3.2. Ongoing agricultural practices on fertile lands in the western portion of the Riverbank Planning Area shall be protected from encroachment of urban use through the use of buffers. The buffers should also protect residential development from the effects of existing agricultural operations. The buffer shall be designed to protect the feasibility of ongoing agricultural activities on nearby lands and reduce the effects of noise, dust and the application of agricultural chemicals on residential development. The width of the buffer shall be 300 feet, except that the width of the buffer may be reduced where a project applicant demonstrates that a narrower buffer would protect the feasibility of ongoing agricultural activities on nearby lands and reduce the effects of noise, dust and the application of agricultural chemicals on residential development. Buffer areas may remain as open space or may be used for stormwater management; renewable energy

production; community recreation amenities; or any other allowed use consistent with this policy.

Stanislaus LAFCo Agricultural Preservation Policy

One of LAFCo's main charges is to protect and promote agriculture. The Commission amended the Agricultural Preservation Policy on March 25, 2015. The Policy requires applicants to prepare a "Plan for Agricultural Preservation" for annexation proposals that will impact agricultural lands. The Plan must include information such as the proposal's direct and indirect impacts to agricultural resources, the availably of other lands in the City's existing boundaries, and relevant General Plan policies. The Plan must also specify the method or strategy proposed to minimize the loss of agricultural lands. The information provided in the Plan should be consistent with the environmental documentation prepared by the City.

Stanislaus County Farmland Mitigation Program

The purpose of the Farmland Mitigation Program (FMP) is to aid in mitigating the loss of farmland resulting from residential development in the unincorporated areas of Stanislaus County by requiring the permanent protection of farmland based on a 1:1 ratio to the amount of farmland converted. The FMP is designed to utilize agricultural conservation easements granted in perpetuity as a means of minimizing the loss of farmland. The intent of these guidelines is to establish standards for the acquisition and long-term oversight of agricultural conservation easements purchased in accordance with the FMP.

These guidelines shall apply to any development project requiring a General Plan or Community Plan amendment from 'Agriculture' to a residential land use designation of the Stanislaus County General Plan. The acreage requiring mitigation shall be equal to the overall size of the legal parcel subject to the land use designation amendment and not the portion of parcel actually being developed.

Stanislaus County Right-to-Farm Ordinance

The County's Right-to-Farm Ordinance prevents against conflicts between urban and agricultural uses that may adversely affect ongoing agricultural operations. The idea of right-to-farm ordinances is to protect farmers from nuisance suits that may arise when new development (particularly residential development) encroaches into existing and ongoing agricultural areas. The County's ordinance requires disclosure to home buyers in farming areas that they are subject to noise, dust, odors, and other impacts of commercial agricultural operations. The ordinance also provides a voluntary agricultural grievance procedure as an alternative to court proceedings.

The County's right-to-farm ordinance is summarized in Section 9.32.050 of the County Code. According to the Code, for all discretionary approvals of parcel maps or subdivision maps involving agricultural land, or real property located adjacent to agricultural land, the County Department of Planning and Community Development shall include as a condition of approval that the final recorded map shall contain the following statement:

All persons purchasing lots within the boundaries of this approved map should be prepared to accept the inconveniences associated with agricultural operations, such as noise, odors, flies, dust or fumes. Stanislaus County has determined that such inconveniences shall not be considered to be a nuisance if agricultural operations are consistent with accepted customs and standards.

3.2.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

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

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Important Farmlands), 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;
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use.

IMPACTS AND MITIGATION MEASURES

Impact 3.2-1: The proposed Project has the potential to result in the conversion of Farmlands, including Prime Farmland, Unique Farmland, and Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural uses. (Significant and Unavoidable)

Development of the proposed Project would result in the permanent conversion of approximately 226.38 acres of Prime Farmland, 85.55 acres of Unique Farmland, and 35.46 acres of Farmland of Local Importance, as shown on Figure 3.2-1, to nonagricultural use. The loss of 347.39 acres of Important Farmland as classified under the FMMP is considered a potentially significant environmental impact.

The City's General Plan EIR anticipated development of the Plan Area as part of the overall evaluation of the build out of the City. The General Plan EIR addressed the conversion and loss of agricultural land that would result from the build out of the General Plan (General Plan Recirculated Draft EIR, pp. 4.3-10 through 4.3-17). The General Plan EIR determined that even with the implementation of all available mitigation, which identifies General Plan goals, policies, and implementation measures (i.e., Policies CONS-3.1, CONS-3.2, LAND-1.1, LAND-1.2, LAND-1.3, LAND-1.4, LAND-5.2, LAND-2.3, LAND-3.3, and Implementation Strategies CONS-1 and CONS-2), the impact would be significant and unavoidable.

The County FMP does not apply to the proposed Project because the Project would not require a General Plan amendment from 'Agriculture' to a residential land use designation of the Stanislaus County General Plan. The proposed Project would require a City of Riverbank General Plan Amendment to the Land Use and Circulation Elements to change land uses in the Plan Area. Changes to the Land Use Element would include changing the approximately 390-acre Plan Area from LDR, MDR, HDR, MU, C, CC, and P to Specific Plan (SP).

Conversion of the Plan Area from largely agricultural uses to urban uses was analyzed in the City's General Plan EIR. As noted in Section 4.3 of the City's General Plan EIR, the loss of agricultural land to urbanization is considered permanent. While the City has incorporated all available mitigation for the loss of agricultural land in the form of General Plan policies and implementation strategies, the extent of urban development under the General Plan inherently involves the conversion of high-quality agricultural land. Mitigation Measure 3.2-1 requires the project applicant to conserve Important Farmland of equal value to the land in the Plan Area that will be converted at a 1:1 ratio, in perpetuity, or pay in-lieu fees. Mitigation Measure 3.2-2 requires participation in the City's Sustainable Agricultural Strategy. While the implementation of these mitigation measures would assist in preserving farmland, the proposed Project would still result in the permanent conversion and loss of 347.39 acres of Important Farmland within Stanislaus County. This is considered a **significant and unavoidable** impact.

MITIGATION MEASURE(S)

Mitigation Measure 3.2-1: *Prior to the issuance of grading permits, building permits, or final map approval on the subject residential property, the Project applicant shall secure permanent protection of offsite farmland based on a 1:1 ratio to the amount of gross Farmland converted as a result of Project development, consistent with the requirements of the City's Sustainable Agricultural Strategy. The acreage requiring agricultural mitigation shall be equal to the portion of the project site dedicated to residential uses which would be subject to the discretionary development entitlement and lands designated as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland. Permanent preservation shall consist of the purchase of agricultural conservation easements granted in perpetuity from willing seller(s), enforceable deed restrictions, purchase of banked mitigation credits, or other conservation mechanisms acceptable to the City. Land set aside for permanent preservation shall: (1) be of equal or better soil quality, have a dependable and sustainable supply of irrigation water, and be located within Stanislaus County; and (2) not be previously encumbered by a conservation easement of any nature.*

The permanent protection of farmland shall be accomplished by either: (1) the landowner/developer working directly with an established farmland trust or similar organization, such as the Central Valley Farmland Trust, and providing certification satisfactory to the City that such lands have been permanently preserved at the specified ratio; or (2) it is the City's intent to work with a qualified land trust or similar organization, such as the Central Valley Farmland Trust, to establish a fee for agricultural land conservation easements.

Mitigation Measure 3.2-2: *Prior to the conversion of agricultural lands in the Plan Area, the Project applicant shall participate in the Stanislaus LAFCo's Agricultural Preservation Policy (as amended*

on March 25, 2015), consistent with the City's Sustainable Agricultural Strategy. The Project applicant shall prepare a "Plan for Agricultural Preservation", which shall include information such as the Project's direct and indirect impacts to agricultural resources, the availability of other lands in the City of Riverbank's existing boundaries, and relevant General Plan policies. The Plan shall also specify the method or strategy proposed to minimize the loss of agricultural lands. The information provided in the Plan shall be consistent with the environmental documentation prepared by the City.

Impact 3.2-2: The proposed Project has the potential to conflict with existing zoning for agricultural use, or Williamson Act Contracts. (Less than Significant)

As noted above, non-renewal was filed for Assessor's Parcel Number (APN) 074-011-009 on September 28, 2004. This approximately 153.96-acre area is located north of Crawford Road and south of Morrill Road. Because the 9-year non-renewal period for this APN expired in 2013, the contract has also expired and the land is no longer restricted via enforcement.

The Plan Area is not under an existing Williamson Act Contract. The Plan Area is currently within the jurisdiction of Stanislaus County. The County zoning for the entire Plan Area is General Agriculture 40 Acre (A-2-40). The A-2-40 zone supports and enhances agriculture as the predominant land use in the unincorporated areas of the County. These district regulations are also intended to protect open-space lands pursuant to Government Code Section 65910. The Stanislaus LAFCo will require the Plan Area to be pre-zoned by the City of Riverbank in conjunction with the proposed annexation. The City's pre-zoning will include the City's Specific Plan (SP) zoning designation. The pre-zoning would go into effect upon annexation into the City of Riverbank.

Although the Plan Area is currently zoned for agricultural use by the County, the proposed Project includes pre-zoning consistent with the proposed residential and commercial mixed uses. Additionally, conversion of the Plan Area from agricultural to urban uses has been anticipated by the City since the passage of the General Plan and associated EIR. Therefore, implementation of the proposed Project would have a **less than significant** impact relative to this topic and no mitigation is required.

Impact 3.2-3: The proposed Project has the potential to result in conflicts with adjacent agricultural lands or indirectly cause conversion of agricultural lands. (Less Than Significant with Mitigation)

Neighboring agricultural land, including Prime Farmland and Unique Farmland, are located to the west, southwest, and south of the Plan Area as shown on Figure 3.2-1. A variety of residential and commercial uses would be developed in the Plan Area with implementation of the proposed Project.

Riverbank's General Plan anticipates that agricultural lands to the west of the Plan Area would develop with urban uses, however, these lands are currently under active agricultural production, and it is unknown if or when these lands would convert to urban uses and farming operations

would cease. Riverbank's southern General Plan boundary stops at Claribel Road to the south. The City of Modesto's General Plan covers the lands south of Claribel Road which is comprised of agricultural lands which might be developed with urban uses in the future. Existing agricultural operations that are located adjacent the Project site may be adversely impacted by the increased human presence in the Plan Area. Additionally, future residents within the proposed Plan Area may be adversely affected by active agricultural operations associated with managing these lands.

The City's General Plan EIR anticipated development of the Plan Area as part of the overall evaluation of the build out of the City. The City's General Plan EIR identifies that the location or nature of the General Plan could result in the conversion of farmland to non-agricultural use. The General Plan EIR addressed the conversion of adjacent farmland properties that would result from the build out of the General Plan (General Plan Recirculated Draft EIR, pp. 4.3-18 through 4.3-20). The General Plan EIR determined that even with the implementation of all available mitigation, which identifies Implementation Strategy CONS-2, the impact would be significant and unavoidable.

General Plan Implementation Strategy CONS-2 directs the City to adopt a "right-to-farm" ordinance (or adopt the County's right-to-farm ordinance, as appropriate) that informs residents of ongoing agricultural practices at the edges of Riverbank and protects farmers and other agriculture interests from dumping, nuisance complaints, and other problems typically associated with new residents on the City fringe. According to this strategy, the City will coordinate with Stanislaus County regarding the design of the County's Right-to-Farm Ordinance to develop consistency, where appropriate. The City has not yet adopted a "right-to-farm" ordinance (or adopted the County's right-to-farm ordinance).

Portions of the proposed development would be buffered from existing agricultural operations by existing roadways including, Claribel Road in the southern side of the Plan Area. Additionally, as shown in Figure 2.0-8 in Section 2.0, a linear park basin area would be located along the southern half of the western Plan Area boundary. This 13-acre park basin area would provide a buffer from agricultural areas adjacent to the west of the site.

Riverbank General Plan Policy CONS-3.2 states: *Ongoing agricultural practices on fertile lands in the western portion of the Riverbank Planning Area shall be protected from encroachment of urban use through the use of buffers. The buffers should also protect residential development from the effects of existing agricultural operations. The buffer shall be designed to protect the feasibility of ongoing agricultural activities on nearby lands and reduce the effects of noise, dust and the application of agricultural chemicals on residential development. The width of the buffer shall be 300 feet, except that the width of the buffer may be reduced where a project applicant demonstrates that a narrower buffer would protect the feasibility of ongoing agricultural activities on nearby lands and reduce the effects of noise, dust and the application of agricultural chemicals on residential development. Buffer areas may remain as open space or may be used for stormwater management; renewable energy production; community recreation amenities; or any other allowed use consistent with this policy.*

According to the City's General Plan EIR, policies contained in the General Plan address transitional areas between urban uses and ongoing agricultural operations, including use of the Multi-Use Recreation/Resource Management (MUR/R) designation in western portions of the Planning Area between planned urban development and ongoing agricultural operations and the use of clustering to buffer between these potentially incompatible land uses.

As shown in Figures 2.0-6a and -7a in Section 2.0, Project Description, the MUR/R designation is located west of the Plan Area, and west of Coffee Road. As stated in the City's General Plan EIR, the MUR/R designation would provide opportunities for stormwater management, renewable energy production, and community recreation amenities. This area would accommodate stormwater detention facilities, groundwater recharge areas, wind generators, solar collectors, wind breaks, as well as trails, benches, and other passive recreational areas. Areas designated MUR/R could also act as a buffer between ongoing agriculture and new residential areas and provide an identifiable and permanent boundary to outward expansion of the City. Areas designated MUR/R between new growth areas and ongoing agricultural operations will be identified and appropriate widths established through Specific Plans. The width of MUR/R areas will vary depending on the intended uses taking place within a particular rea. The width of the MUR/R for agricultural buffering purposes will be designed to minimize noise, dust, and any adverse impacts related to application of agricultural chemicals as experienced by encroaching residential uses.

In relation to the proposed Project, the MUR/R buffer area located west of the Plan Area would provide a buffer between existing agricultural uses and future urban uses in the western portions of the Planning Area. The width of this MUR/R buffer is approximately 400 feet, as shown on the City's Land Use Map. The land east of the MUR/R buffer and west of the Plan Area is designated for future residential, civic, and park uses by the City's General Plan Land Use Map. Because the timing of development of the area west of the Plan Area and east of the MUR/R buffer is unknown at this time, a temporary indirect impact to the agricultural lands adjacent west of the Plan Area would result.

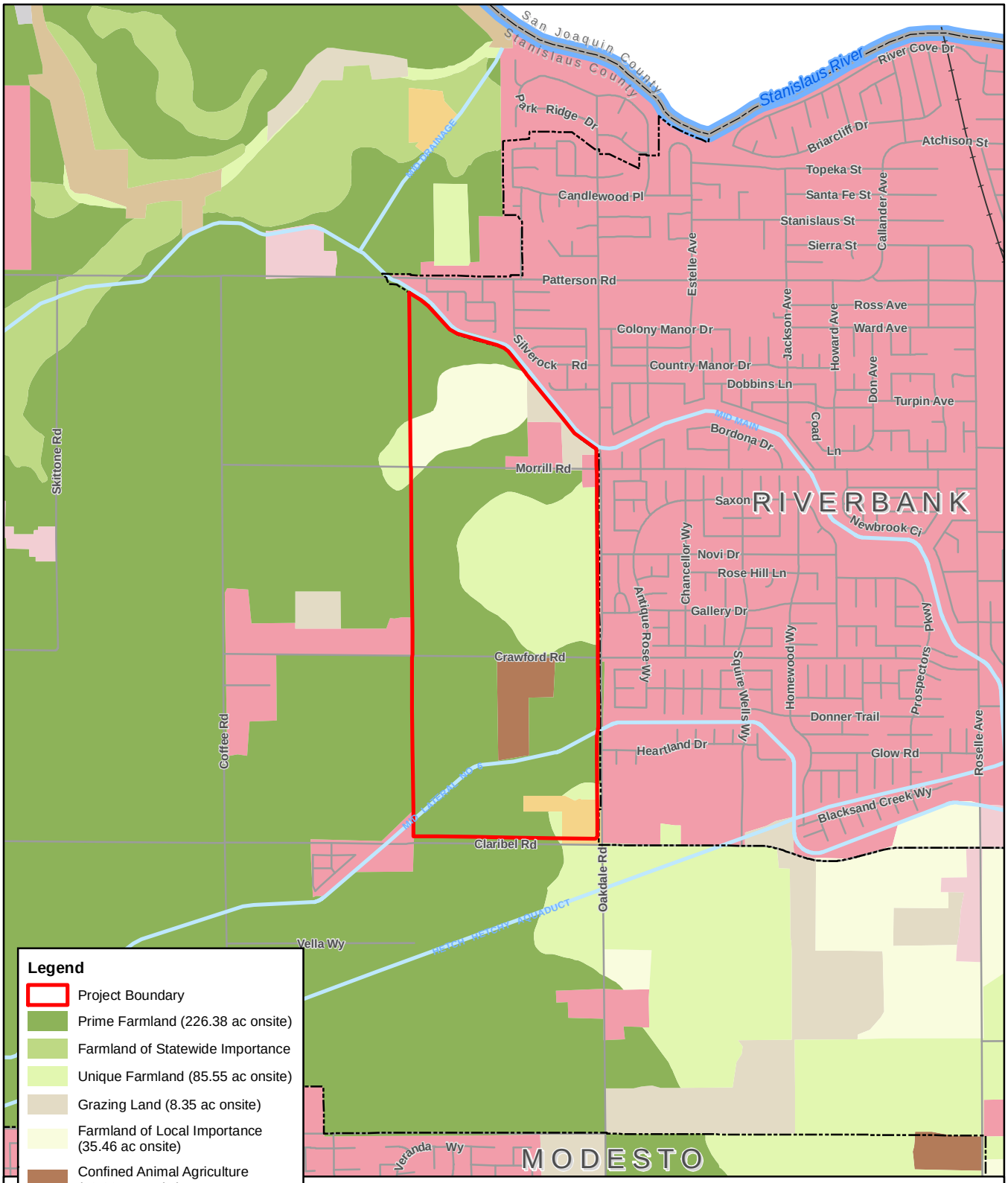
The proposed project is not anticipated to lead to the permanent indirect conversion of offsite agricultural lands to a non-agricultural use. The project would not extend infrastructure or roadway access to offsite agricultural lands. Implementation of Mitigation Measure 3.2-3 would ensure that the Project applicant complies with the County's right-to-farm ordinance due to the potential conflicts between the proposed residences in the southern and western portions of the Plan Area and the existing agricultural operations to the south and west of the Plan Area.

With implementation of the following mitigation measure, the impacts to adjacent agricultural lands to the south and west of the Plan Area would be **less than significant**.

MITIGATION MEASURE(S)

Mitigation Measure 3.2-3: *Prior to approval of any Final Maps, "Right to Farm" language shall be presented to the City for approval and recordation against the affected property. The proposed language shall contain the following statement: "All persons purchasing lots within the boundaries*

of this approved map should be prepared to accept the inconveniences associated with agricultural operations, such as noise, odors, flies, dust or fumes. Stanislaus County has determined that such inconveniences shall not be considered to be a nuisance if agricultural operations are consistent with accepted customs and standards."



CROSSROADS WEST SPECIFIC PLAN

Figure 3.2-1. Project Site Farmlands Classifications

Sources: Farmland Mapping and Monitoring Program, Stanislaus County 2014; Stanislaus County;. Map date: March 24, 2017.

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This section describes the regional air quality, current attainment status of the air basin, local sensitive receptors, emission sources, and impacts that are likely to result from Project implementation. The analysis contained in this section is intended to cover impacts associated with the conversion of the entire site to urban uses. Following this discussion is an assessment of consistency of the proposed Project with applicable policies and local plans. The Greenhouse Gases and Climate Change analysis is located in Section 3.7 of this document. This section is based in part on the following technical studies: *Air Quality and Land Use Handbook: A Community Health Perspective* (California Air Resources Board [CARB], 2005), *Guide for Assessing and Mitigation Air Quality Impacts* (San Joaquin Valley Air Pollution Control District [SJAVPCD], 2002), *Guidance for Assessing and Mitigating Air Quality Impacts - 2015* (SJAVPCD, 2015), and CalEEMod *(v.2016.3.2)* (CAPCOA, 2017). A comment from the SJVAPCD was received during the Notice of Preparation (NOP) comment period regarding air quality. SJVAPCD recommended this EIR include discussions of construction and operational criteria pollutant emissions, nuisance orders, and consider whether emissions of toxic air contaminants (TACs) would pose a significant health risk to nearby sensitive receptors. Full comments received are included in Appendix A.

3.3.1 ENVIRONMENTAL SETTING

SAN JOAQUIN VALLEY AIR BASIN

The San Joaquin Valley Air Basin (SJVAB) consists of eight counties, stretching from Kern County in the south to San Joaquin County in the north. The SJVAB is bounded by the Sierra Nevada in the east, the Coast Ranges in the west, and the Tehachapi mountains in the south.

The surrounding topographic features restrict air movement through and out of the basin and, as a result, impede the dispersion of pollutants from the basin. Inversion layers are formed in the SJVAB throughout the year. (An inversion layer is created when a mass of warm dry air sits over cooler air near the ground, preventing vertical dispersion of pollutants from the air mass below). During the summer, the San Joaquin Valley experiences daytime temperature inversions at elevations from 2,000 to 2,500 feet above the valley floor. During the winter months, inversions occur from 500 to 1,000 feet above the valley floor (SJVAPCD, 2002).

The pollution potential of the San Joaquin Valley is very high. Surrounding elevated terrain in conjunction with temperature inversions frequently restrict lateral and vertical dilution of pollutants. Abundant sunshine and warm temperatures in summer are ideal conditions for the formation of photochemical oxidant, and the Valley is a frequent scene of photochemical pollution.

Climate

The SJVAB has an inland Mediterranean climate with warm, dry summers and cooler winters. The average daily maximum temperature in the Basin is 65 degrees Fahrenheit (°F), with temperature highs of 95 °F in July. Average daily minimum temperature is 48 °F, with temperature lows of 45 °F in January. Normal rainfall level is approximately 9 inches per year, and occurs mainly in the winter months from November to April. Thunderstorms occur on approximately three to four days in the spring, on average.

San Joaquin County has warm, dry days and relatively cool nights, with clear skies and limited rainfall. Winters are mild with light rains and frequent heavy fog from December to January.

In summer, high temperatures often exceed 100 degrees, with averages in the low 90's in the northern valley and the high 90's in the southern valley. Summer low temperatures average in the high 50's in the northern valley and the upper 60's in the southern valley. The northern end of the Valley (Manteca and Stockton area) receives approximately 20 inches of rain per year. The central portion of the Valley (Fresno area) receives approximately 10 inches of rain per year. The southern end of the Valley (Bakersfield area) receives less than 6 inches of rain per year.

Air Movement

Marine air comes into the basin from the Sacramento River–San Joaquin River Delta, although most air movement is restricted by the surrounding mountains. Winds from the Bay Area flow northeasterly into the Sacramento Valley and southward into San Joaquin County. This results in weak winds from the north and northeast, with an average speed of seven miles per hour.

Wind speed and direction determine the dispersion of air pollutants. During the summer, wind from the north flows south and southeasterly through the Valley, through the Tehachapi Pass and into the Southeast Desert Air Basin. Thus, emissions from the San Francisco Bay Area and the Broader Sacramento air basins are transported into San Joaquin County and the Valley. Emissions in the San Joaquin Valley are then transported to the Southeast Desert and Great Basin Valley Air Basins. In late fall and winter, cold air from the mountains flows into the Valley. This results in winds from the south that flow north and northwesterly. Some emissions from San Joaquin County are transported to the Broader Sacramento air basin during these times. But the winds are relatively light, limiting the dispersion of CO and other pollutants. Thus, high concentrations of CO remain in the Valley.

Seasonal Pollution Variations

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

The winds and unstable atmospheric conditions associated with the passage of winter storms result in periods of low air pollution and excellent visibility. Precipitation and fog tend to reduce or limit some pollutant concentrations. For instance, clouds and fog block sunlight, which is required to fuel photochemical reactions that form ozone. Because carbon monoxide (CO) is partially water-soluble, precipitation and fog also tend to reduce concentrations in the atmosphere. In addition, respirable particulate matter (PM_{10}) can be washed from the atmosphere through wet deposition processes (e.g., rain). However, between winter storms, high pressure and light winds lead to the creation of low-level temperature inversions and stable atmospheric conditions resulting in the concentration of air pollutants (e.g., CO and PM_{10}).

Summer is considered the ozone season in the SJVAB. This season is characterized by poor air movement in the mornings and longer daylight hours which provides a plentiful amount of sunlight to fuel photochemical reactions between reactive organic gases (ROG) and nitrogen oxides (NO_X), which result in ozone formation. During the summer, wind speed and direction data indicate that summer wind usually originates at the north end of the San Joaquin Valley and flows in a south-southeasterly direction through the San Joaquin Valley, through Tehachapi pass, and into the Southeast Desert Air Basin.

Sunlight

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

Temperature Inversions

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

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

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

CRITERIA POLLUTANTS

The United States Environmental Protection Agency (EPA) uses six "criteria pollutants" as indicators of air quality, and has established for each of them a maximum concentration above

which adverse effects on human health may occur. These threshold concentrations are called National Ambient Air Quality Standards (NAAQS). Each criteria pollutant is described below.

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

The reactivity of O_3 causes health problems because it damages lung tissue, reduces lung function and sensitizes the lungs to other irritants. Scientific evidence indicates that ambient levels of O_3 not only affect people with impaired respiratory systems, such as asthmatics, but healthy adults and children as well. Exposure to O_3 for several hours at relatively low concentrations has been found to significantly reduce lung function and induce respiratory inflammation in normal, healthy people during exercise. This decrease in lung function generally is accompanied by symptoms including chest pain, coughing, sneezing and pulmonary congestion.

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

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

Sulfur dioxide (SO_2) affects breathing and may aggravate existing respiratory and cardiovascular disease in high doses. Sensitive populations include asthmatics, individuals with bronchitis or emphysema, children and the elderly. SO_2 is also a primary contributor to acid deposition, or acid rain, which causes acidification of lakes and streams and can damage trees, crops, historic buildings and statues. In addition, sulfur compounds in the air contribute to visibility impairment in large parts of the country. This is especially noticeable in national parks. Ambient SO_2 results largely from stationary sources such as coal and oil combustion, steel mills, refineries, pulp and paper mills and from nonferrous smelters.

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

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

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

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

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

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

ODORS

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

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

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

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

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

SENSITIVE RECEPTORS

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

AMBIENT AIR QUALITY

Both the U.S. Environmental Protection Agency (U.S. EPA) and the California Air Resources Board (CARB) have established ambient air quality standards for common pollutants. These ambient air quality standards represent safe levels of contaminants that avoid specific adverse health effects associated with each pollutant.

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

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

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

NOTES: PPM = PARTS PER MILLION, µG/M^3 = MICROGRAMS PER CUBIC METER
SOURCES: CALIFORNIA AIR RESOURCES BOARD, 2016.

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

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

The State of California regularly reviews scientific literature regarding the health effects and exposure to PM and other pollutants. On May 3, 2002, CARB staff recommended lowering the level of the annual standard for PM_{10} and establishing a new annual standard for $PM_{2.5}$. The new standards became effective on July 5, 2003, with another revision on November 29, 2005.

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

Existing air quality concerns within Stanislaus County and the entire SJVAB are related to increases of regional criteria air pollutants (e.g., ozone and particulate matter), exposure to toxic air contaminants, odors, and increases in greenhouse gas emissions contributing to climate change. The primary source of ozone (smog) pollution is motor vehicles which account for 70 percent of the ozone in the region. Particulate matter is caused by dust, primarily dust generated from

construction and grading activities, and smoke which is emitted from fireplaces, wood-burning stoves, and agricultural burning.

Attainment Status

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

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

The U.S. EPA designates areas for ozone (O_3), carbon monoxide (CO), and nitrogen dioxide (NO_2) as "does not meet the primary standards," "cannot be classified," or "better than national standards." For sulfur dioxide (SO_2), areas are designated as "does not meet the primary standards," "does not meet the secondary standards," "cannot be classified," or "better than national standards." However, the CARB terminology of attainment, nonattainment, and unclassified is more frequently used.

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

TABLE 3.3-2: STATE AND NATIONAL ATTAINMENT STATUS

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

SOURCE: CALIFORNIA AIR RESOURCES BOARD, 2017A.

Stanislaus County Air Quality Monitoring

The SJVAB consists of eight counties, from San Joaquin County in the north to Kern County in the south. SJVAPCD and CARB maintain numerous air quality monitoring sites throughout each County in the Air Basin to measure ozone, $PM_{2.5}$, and PM_{10}. It is important to note that the federal ozone 1-hour standard was revoked by the EPA and is no longer applicable for federal standards. Data obtained from the monitoring sites throughout Stanislaus County between 2014 and 2016 is summarized in Tables 3.3-3 through 3.3-4. Data for PM_{10} was not available for Stanislaus County, so data the from the Modesto-14th street monitoring site is shown in Table 3.3-5.

TABLE 3.3-3 STANISLAUS COUNTY AMBIENT AIR QUALITY MONITORING DATA SUMMARY - OZONE

YEAR	DAYS/MAX DAYS > STANDARD			1-HOUR OBSERVATIONS			8-HOUR AVERAGES				YEAR COVERAGE	
	8-HOUR STANDARDS				EENED[1]		0.070 STANDARD		0.075 STANDARD			
	0.070	0.075	0.08	MAX.	1-YR	3-YR	MAX.	D.V.	MAX.	D.V.	MIN	MAX
2016	29/27	13/11	4/4	0.105	0.0	0.0	0.091	0.083	0.091	0.083	96	100
2015	29/28	20/17	5/5	0.113	0.0	0.0	0.100	0.082	0.100	0.082	96	97
2014	36/27	15/12	1/1	0.103	0.0	0.0	0.091	0.084	0.091	0.084	88	99

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

SOURCE: CALIFORNIA AIR RESOURCES BOARD (AEROMETRIC DATA ANALYSIS AND MANAGEMENT SYSTEM, OR IADAM) AIR POLLUTION SUMMARIES, 2017B.

TABLE 3.3-4 STANISLAUS COUNTY AMBIENT AIR QUALITY MONITORING DATA SUMMARY - PM 2.5

YEAR	EST. DAYS > NAT'L '06 STD.	ANNUAL AVERAGE		NAT'L ANN. STD. D.V.[1]	STATE ANNUAL D.V.[2]	NAT'L '06 STD. 98TH PERCENTILE	NAT'L '06 24-HR STD. D.V.[1]	HIGH 24-HOUR AVERAGE		YEAR COVERAGE	
		NAT'L	STATE					NAT'L	STATE	MIN.	MAX.
2016	13.8	12.7	12.7	13.1	13	38.5	46	53.6	53.6	96	100
2015	16.8	14.2	*	13.9	15	47.3	51	60.9	60.9	64	90
2014	23.9	12.3	11.4	14.1	15	51.2	51	61.0	61.0	100	100

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

SOURCE: CALIFORNIA AIR RESOURCES BOARD (AEROMETRIC DATA ANALYSIS AND MANAGEMENT SYSTEM, OR IADAM) AIR POLLUTION SUMMARIES, 2017B.

TABLE 3.3-5: MODESTO-14TH STREET AMBIENT AIR QUALITY MONITORING DATA SUMMARY - PM 10

YEAR	EST. DAYS > STD.		ANNUAL AVERAGE		3-YEAR AVERAGE		HIGH 24-HR AVERAGE		YEAR COVERAGE
	NAT'L	STATE	NAT'L	STATE	NAT'L	STATE	NAT'L	STATE	
2016	*	*	27.6	*	28	30	83.5	81.5	0
2015	0.0	31.1	27.0	27.7	40	30	85.6	90.3	0
2014	0.0	37.6	29.1	29.6	*	30	122.5	127.7	0

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

SOURCE: CALIFORNIA AIR RESOURCES BOARD (AEROMETRIC DATA ANALYSIS AND MANAGEMENT SYSTEM, OR IADAM) AIR POLLUTION SUMMARIES, 2017B.

3.3.2 REGULATORY SETTING

FEDERAL

Clean Air Act

The Federal Clean Air Act (FCAA) was first signed into law in 1970. In 1977, and again in 1990, the law was substantially amended. The FCAA is the foundation for a national air pollution control effort, and it is composed of the following basic elements: NAAQS for criteria air pollutants, hazardous air pollutant standards, state attainment plans, motor vehicle emissions standards, stationary source emissions standards and permits, acid rain control measures, stratospheric ozone protection, and enforcement provisions.

The EPA is responsible for administering the FCAA. The FCAA requires the EPA to set NAAQS for several problem air pollutants based on human health and welfare criteria. Two types of NAAQS were established: primary standards, which protect public health, and secondary standards, which protect the public welfare from non-health-related adverse effects such as visibility reduction.

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

Transportation Control Measures

One particular aspect of the SIP development process is the consideration of potential control measures as a part of making progress towards clean air goals. While most SIP control measures are aimed at reducing emissions from stationary sources, some are typically also created to

address mobile or transportation sources. These are known as transportation control measures (TCMs). TCM strategies are designed to reduce vehicle miles traveled and trips, or vehicle idling and associated air pollution. These goals are achieved by developing attractive and convenient alternatives to single-occupant vehicle use. Examples of TCMs include ridesharing programs, transportation infrastructure improvements such as adding bicycle and carpool lanes, and expansion of public transit.

STATE

CARB Mobile-Source Regulation

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

California Clean Air Act

The CCAA was first signed into law in 1988. The CCAA provides a comprehensive framework for air quality planning and regulation, and spells out, in statute, the state's air quality goals, planning and regulatory strategies, and performance. CARB is the agency responsible for administering the CCAA. CARB established ambient air quality standards pursuant to the California Health and Safety Code (CH&SC) [§39606(b)], which are similar to the federal standards. The San Joaquin Valley Air Pollution Control District is one of 35 air quality management districts that have prepared air quality management plans to accomplish a five percent annual reduction in emissions documenting progress toward the state ambient air quality standards.

Air Quality Standards

The NAAQS are determined by the EPA. The standards include both primary and secondary ambient air quality standards. Primary standards are established with a safety margin. Secondary standards are more stringent than primary standards and are intended to protect public health and welfare. States have the ability to set standards that are more stringent than the federal standards. As such, California established more stringent ambient air quality standards.

Federal and state ambient air quality standards have been established for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, PM_{10}, and lead. In addition, California has created standards for pollutants that are not covered by federal standards. The state and federal primary standards for major pollutants are shown in Table 3.3-1.

Tanner Air Toxics Act

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

The AB 2588 requires that existing facilities that emit toxic substances above a specified level prepare a toxic-emission inventory, prepare a risk assessment if emissions are significant, notify the public of significant risk levels, and prepare and implement risk reduction measures. 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 equipment (e.g., tractors, generators). In February 2000, ARB adopted a new public-transit bus-fleet rule and emission standards for new urban buses. These rules and standards provide for (1) more stringent emission standards for some new urban bus engines, beginning with 2002 model year engines; (2) zero-emission bus demonstration and purchase requirements applicable to transit agencies; and (3) reporting requirements under which transit agencies must demonstrate compliance with the urban transit bus fleet rule. Upcoming milestones include the low-sulfur diesel-fuel requirement, and tighter emission standards for heavy-duty diesel trucks (2007) and off-road diesel equipment (2011) nationwide.

LOCAL

San Joaquin Valley Air Pollution Control District

The SJVAPCD is the local agency with primary responsibility for compliance with both the federal and state standards and for ensuring that air quality conditions are maintained. They do this through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The eight counties that comprise the SJVAPCD are divided into three regions. These include:

- Northern Region: Merced, San Joaquin, and Stanislaus Counties;
- Central Region: Madera, Fresno, and Kings Counties; and
- Southern Region: Tulare and Valley portion of Kern Counties.

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

The SJVAPCD has prepared the *2007 Ozone Plan* to achieve Federal and State standards for improved air quality in the SJVAB regarding ozone. The *2007 Ozone Plan* provides a comprehensive list of regulatory and incentive-based measures to reduce emissions of ozone and particulate matter precursors throughout the SJVAB. The 2007 Ozone Plan calls for major advancements in

pollution control technologies for mobile and stationary sources of air pollution. The *2007 Ozone Plan* calls for a 75-percent reduction in ozone-forming oxides of nitrogen emissions.

The SJVAPCD has also prepared the *2007 PM_{10} Maintenance Plan and Request for Redesignation* (2007 PM_{10} Plan). On April 24, 2006, the SJVAPCD submitted a Request for Determination of PM_{10} Attainment for the Basin to CARB. CARB concurred with the request and submitted the request to the EPA on May 8, 2006. On October 30, 2006, the EPA issued a Final Rule determining that the Basin had attained the NAAQS for PM_{10}. However, the EPA noted that the Final Rule did not constitute a redesignation to attainment until all of the FCAA requirements under Section 107(d)(3) were met. In December 2008, the EPA redesignated the San Joaquin Valley to attainment of the federal PM_{10} standard. As required by federal Clean Air Act Section 175A(b), the District is in the process of developing the 2017 PM_{10} Maintenance Plan to demonstrate the maintenance of the standard for the upcoming ten-year period of 2020 through 2029.

The SJVAPCD has prepared the *2008 $PM_{2.5}$ Plan* to achieve Federal and State standards for improved air quality in the San Joaquin Valley Air Basin. The *2008 $PM_{2.5}$ Plan* provides a comprehensive list of regulatory and incentive based measures to reduce $PM_{2.5}$. The SJVAPCD is currently undergoing a robust public process to develop an attainment strategy to address multiple $PM_{2.5}$ standards. This robust process includes conducting multiple workshops and reconvening the Public Advisory Workgroup (PAW) formed under direction from the District's Governing Board, with appointments by the Executive Director/Air Pollution Control Officer. The PAW committee consists of representatives from regulated entities (industry, farms, dairy families and municipalities), community advocates, and advisors from EPA and ARB. The PAW committee meetings will be open to the public.

In addition to the *2007 Ozone Plan, the 2008 $PM_{2.5}$ Plan,* and the *2007 PM_{10} Plan*, the SJVAPCD prepared the *Guide for Assessing and Mitigating Air Quality Impacts* (GAMAQI). The GAMAQI is an advisory document that provides Lead Agencies, consultants, and project applicants with analysis guidance and uniform procedures for addressing air quality impacts in environmental documents. Local jurisdictions are not required to utilize the methodology outlined therein. This document describes the criteria that SJVAPCD uses when reviewing and commenting on the adequacy of environmental documents. It recommends thresholds for determining whether or not projects would have significant adverse environmental impacts, identifies methodologies for predicting project emissions and impacts, and identifies measures that can be used to avoid or reduce air quality impacts. An update of the GAMAQI was approved on March 19, 2015, and is used as a guidance document for this analysis.

SJVAPCD RULES AND REGULATIONS

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

Regulation VIII – Fugitive PM_{10} Prohibitions

Regulation VIII is comprised of District Rules 8011 through 8081 which are designed to reduce PM_{10} emissions (predominantly dust/dirt) generated by human activity, including construction and demolition activities, road construction, bulk materials storage, paved and unpaved roads, carryout and track out, landfill operations, etc.

Rule 4002 – National Emission Standards for Hazardous Air Pollutants

Rule 4002 applies in the event an existing building will be renovated, partially demolished or removed (National Emission Standards for Hazardous Air Pollutants); this rule applies to all sources of Hazardous Air Pollutants.

Rule 4102 – Nuisance

Rule 4102 dictates that if a source operation emits or may emit air contaminants or other materials such that the emissions create a public nuisance, the owner/operator may be subject to APCD enforcement action.

Rule 4103 – Open Burning

Rule 4103 prohibits the burning of agricultural material when the land is converting from agriculture to non-agricultural (i.e. urban) purposes.

Rule 4601 – Architectural Coatings

Rule 4601 limits emissions of volatile organic compounds from architectural coatings by specifying storage, cleanup and labeling requirements.

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

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

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

District Rule 8021 requires owners or operators of construction projects to submit a Dust Control Plan to the District if at any time the project involves non-residential developments of five or more acres of disturbed surface area or moving, depositing, or relocating of more than 2,500 cubic yards per day of bulk materials on at least three days of the project. The proposed Project will meet these criteria and will be required to submit a Dust Control Plan to the District in order to comply with this rule.

Rule 9510 – Indirect Source Review

The SJVAPCD adopted the Indirect Source Review Rule (or Rule 9510) in 2005 to reduce O_3 precursors (i.e., ROG and NOx) and PM_{10} emissions from new development projects. The rule is the

result of state requirements outlined in the regions' portion of the SIP. New projects that would generate substantial air pollutant emissions are subject to this rule. The rule requires projects to mitigate both construction and operational period emissions by applying the SJVAPCD-approved mitigation measures and paying fees to support programs that reduce emissions. Fees are based on estimated costs to reduce the emissions, and include expected costs to cover administration of the program.

To determine how an individual project would satisfy Rule 9510, each project is required to submit an air quality impact assessment (AIA) to the SJVAPCD as early as possible, but no later than prior to the project's final discretionary approval, to identify the project's baseline unmitigated emissions inventory for indirect sources: on-site exhaust emissions from construction activities and operational activities from mobile and area sources of emissions (excludes fugitive dust and permitted sources). Rule 9510 requires the following:

Construction Equipment Emissions

The exhaust emissions for construction equipment greater than 50 horsepower used or associated with the development project shall be reduced by the following amounts from the statewide average as estimated by CARB:

- 20 percent of the total NOx emissions, and
- 45 percent of the total PM10 exhaust emissions.

Mitigation measures that may include those that reduce construction emissions on-site by using less polluting construction equipment, which can be achieved by utilizing add-on controls, cleaner fuels, or newer lower emitting equipment.

Operational Emissions

- NOx Emissions: Applicants shall reduce 33.3 percent of the project's operational baseline NOx emissions over a period of ten years as quantified in the approved AIA.
- PM_{10} Emissions: Applicants shall reduce of 50 percent of the project's operational baseline PM_{10} emissions over a period of 10 years as quantified in the approved AIA.

These requirements listed above can be met through any combination of on-site emission reduction measures.

In the event that a project cannot achieve the above standards, through imposition of mitigation measures, then the project would be required to pay the applicable off-site fees.

Individual development projects would be subject to Indirect Source Review requirements if upon full buildout the project would include or exceed any one of the following:

- 50 dwelling units;
- 2,000 square feet of commercial space;
- 25,000 square feet of light industrial space;

- 100,000 square feet of heavy industrial space;
- 20,000 square feet of medical office space;
- 39,000 square feet of general office space;
- 9,000 square feet of educational space;
- 10,000 square feet of government space;
- 20,000 square feet of recreational space; or
- 9,000 square feet of space not identified above.

The Indirect Source Review rule also applies to any transportation or transit project where construction exhaust emissions equal or exceed two (2) tons NOx or two (2) tons of PM_{10}.

For projects subject to District Rule 9510, the District recommends that demonstration of compliance with District Rule 9510, including payment of all applicable fees before issuance of the first building permit, be made a condition of project approval.

Rule 9510 indirectly limits the vehicular emissions contribution of new development to regional air pollution. Through an application and review process, the developer may incorporate emission-reduction features in the project or may pay the fee prescribed in the rule. Fees collected by the APCD are indexed to the cost of providing offsetting mitigation and are used for that purpose. The provisions of the rule are described in more detail in the analysis of environmental impacts and mitigation measures.

City of Riverbank General Plan

GOALS: AIR QUALITY ELEMENT

- AIR-1. Create and Enhance Development Patterns that Encourage People to Walk, Bicycle, or Use Public Transit for a Significant Number of Their Daily Trips.
- AIR-2. Construction Practices and Materials Used in Riverbank Minimize Direct and Indirect Air Pollutant Emissions.
- AIR-3. Avoid Land Use Incompatibility that Causes Local Exposure to Harmful and Hazardous Air Pollutants.

POLICIES: AIR QUALITY ELEMENT

- AIR-1.1. In new development areas of the City, approved projects, City investment, and approved Specific Plans shall create small-scale, pedestrian-friendly neighborhood centers (with schools, parks, shops, community centers, compact housing, etc.), within walking distance (approximately ¼ mile maximum) that allow residents to meet many needs without the use of an automobile. (See also Goal DESIGN-10 and accompanying policies and policies LAND-2.2, LAND-2.3, LAND-3.1, and CIRC-2.1).
- AIR-1.2. Approved plans, subdivisions, and projects shall provide highly-connected circulation networks that accommodate safe, direct, and convenient alternatives to vehicular travel, and shorten trip lengths for vehicular travel. (See also Community Character and Design Element Policy DESIGN 1.5).

- AIR-1.3. Approved plans, subdivisions, and projects shall provide neighborhood parks in proximity to activity centers such as schools, libraries, community centers, and higher-density housing (more than 16 units per acre, net).
- AIR-1.4. Schools shall be located, designed, and the surrounding area planned to ensure that students can safely and conveniently walk or bicycle to school from their homes.
- AIR-1.5. The City will not allow arterial-focused, automobile-oriented commercial development within new and existing neighborhoods. Automobile-oriented land uses include volume discount stores, regional shopping centers, automobile dealerships, and similar uses. Such land uses shall be designed and located such that neighborhood pedestrian and bicycle access is not adversely affected.
- AIR-1.6. Transit improvements are required at sites deemed appropriate and necessary by the City and relevant transit provider/s and consistent with long-range transit plans.
- AIR-1.7. New major activity centers, office, and commercial development shall accommodate alternatives to automobile access, including provision of secure bicycle storage and parking facilities.
- AIR-1.8. The City will coordinate with transit providers and County and regional transportation agencies to plan for a multi-modal transportation system that supports and encourages alternatives to automobile travel.
- AIR-1.9. The City of Riverbank will preserve and enhance existing neighborhoods and commercial districts having pedestrian-, bicycle-, and transit-oriented designs.

3.3.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

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

- Conflict with or obstruct implementation of the applicable air quality plan;
- Cause a violation of any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations;
- Create objectionable odors affecting a substantial number of people.

As noted in Appendix G of the CEQA Guidelines, the significance criteria established by SJVAPCD may be relied on to determine whether a project exceeds the above thresholds. The discussion below evaluates the proposed Project's air quality impacts pursuant to SJVAPCD's recommended guidelines and thresholds of significance.

METHODOLOGY

Construction and operational emissions were modeled using the California Emissions Estimator Model, Version 2016.3.2 (CalEEMod) using project-specific inputs, including proposed land use types and sizes and trip generation from the traffic study. CalEEMod is a computer model developed by the California Air Pollution Officers Association (CAPCOA) in collaboration with California Air Districts. Default data (e.g., mission factors, trip lengths, meteorology, source inventory, etc.) have been provided by the various California Air Districts to account for local requirements and conditions. For the purposes of providing a conservative analysis and given the existing emissions are anticipated to be relatively low because of the existing uses, for the purposes of this analysis, existing operational emissions were not subtracted to provided net emissions. The CalEEMod inputs and outputs are detailed in Appendix B. Where appropriate, emissions results were compared the applicable SJVAPCD thresholds of significance.

IMPACTS AND MITIGATION MEASURES

Impact 3.3-1: Project operation has the potential to conflict with or obstruct implementation of an applicable air quality plan, cause a violation of an air quality standard, or contribute substantially to an existing or projected air quality violation. (Significant and Unavoidable)

The SJVAPCD is tasked with implementing programs and regulations required by the FCAA and the CCAA. In that capacity, the SJVAPCD has prepared plans to attain Federal and State ambient air quality standards. To achieve attainment with the standards, the SJVAPCD has established thresholds of significance for criteria pollutant emissions in their *SJVAPCD Guidance for Assessing and Mitigating Air Quality Impacts* (2015). Projects with emissions below SJVAPCD's thresholds of significance for criteria pollutants would be determined to "Not conflict or obstruct implementation of the District's air quality plan".

The proposed Project would be a direct and indirect source of air pollution, in that it would generate and attract vehicle trips in the region (mobile source emissions) and it would increase area source emissions and energy consumption. The mobile source emissions would be entirely from vehicles, while the area source emissions would be primarily from the use of natural gas fuel combustion, landscape fuel combustion, consumer products, and architectural coatings. Indirect electricity usage would also be a major part of the proposed Project's emissions.

Buildout of the Plan Area is not anticipated to result in the construction or modification of stationary air pollutant sources. If such sources, such as a gas station, are included in the Plan Area at a later time, they may require permits from SJVAPCD. Such sources could include combustion emissions from boilers used for heating and cooling or standby emergency generators (rated 50 horsepower or greater). These sources would normally result in minor emissions, compared to those from traffic generation. Sources of air pollutant emissions complying with all applicable SJVAPCD regulations generally will not be considered to have a significant air quality impact. Stationary sources that are exempt from SJVAPCD permit requirements due to low emission thresholds would not be considered to have a significant air quality impact.

As previously mentioned, development projects in the Plan Area are subject to SJVAPCD's Indirect Source Review or Rule 9510 to reduce NOx and PM_{10} emissions. Under Rule 9510, development projects in the Plan Area would be required to reduce operational NOx emissions by 33 percent and operational PM_{10} emissions by 50 percent over 10 years. The actual required reductions would be determined by SJVAPCD when an application is submitted prior to "the last discretionary approval" for a project. However, the methods used by SJVAPCD to determine the required mitigations are consistent with the methods used in this analysis (e.g., use of latest CalEEMod model using project size and trip generation rates). The mitigations required by Indirect Source Review for development projects in the Plan area may be determined through several permit applications, as portions of the Project could proceed with development at different times. The operational PM_{10} and $PM_{2.5}$ emissions shown in Table 3.3-6 show the proposed Project's impact to air quality with respect to PM_{10} would be significant. These emissions would be reduced further than the levels reported in Table 3.3-6 with the application of the measures outlined in the Indirect Source Review, Rule 9510. Emissions of ozone precursors (i.e., ROG and NOx) would also be reduced with the required Rule 9510 mitigation. However, the total Plan Area emissions are predicted to remain above the SJVAPCD thresholds for ozone precursor emissions.

TABLE 3.3-6: OPERATIONAL BUILDOUT GENERATED EMISSIONS (UNMITIGATED)

Thresholds	*ROG*	*NOx*	*PM_{10}*	*$PM_{2.5}$*
	tons/year	*tons/year*	*tons/year*	*tons/year*
	≤ 10 tons/year	*≤ 10 tons/year*	*≤ 15 tons/year*	*≤ 15 tons/year*
Area	21.6	1.1	0.2	0.2
Energy	0.4	3.2	0.3	0.3
Mobile	7.3	94.3	41.6	11.3
Total	**29.3**	**98.6**	**42.0**	**11.7**
Threshold Exceeded?	**Yes**	**Yes**	**Yes**	**No**

NOTES: NUMBERS MAY NOT ADD UP DUE TO ROUNDING. THE AIR DISTRICT IS IN ATTAINMENT FOR CO, AND SO_2. CO SCREENING IS PERFORMED UNDER IMPACT 3.3-3.
SOURCE: CALEEMOD (V.2016.3.2).

Emissions projected in Table 3.3-6 for all future buildout years would exceed the GAMAQI significance thresholds for ozone precursor air pollutants and PM_{10}. Emissions exceeding the thresholds are considered significant, since they may interfere with progress in the region towards attaining and maintaining ambient air quality standards for ozone.

Implementation of Mitigation Measure 3.3-1 would require development projects in the Plan Area to mitigate operational NOx emissions by 33 percent and operational PM_{10} emissions by 50 percent over ten years. However, even with all reasonable and feasible measures that could be implemented into the Plan Area on-site, the mitigation is not expected to achieve reductions required under Rule 9510. Therefore, per Mitigation Measure 3.3-1, in addition to on–site mitigation measures, development projects in the Plan Area will likely be required to provide off-site mitigation that would be in the form of fees payable to the SJVAPCD. The District would use these fees to further reduce emissions from a number of ongoing programs. Application of the Rule 9510 and Mitigation Measure 3.3-1 would be considered application of the most reasonable mitigation available.

In addition, the following CalEEMod™ (v.2016.3.2) mitigation assumptions were incorporated into the model (it should be noted that some of the following mitigation assumptions are already included in project design, such as the project density of 6.5 dwelling units per acre, and the location of the nearest transit stop of 0.5 miles; however, these are incorporated as mitigation within the modelling software due to limitations of the CalEEMod software):

Traffic Mitigation

- Density (6.5 dwelling units per acre)
- Increase Transit Accessibility in the Project area (within 0.5 miles of a transit stop)
- Improve Pedestrian Network so that the Project area connects to offsite pedestrian networks
- Provide traffic calming measures on all street segments and intersections (note: traffic calming features may include marked crosswalks, count-down signal timers, curb extensions, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, narrow roadways, traffic circles, on-street parking, planter strips with streets trees, chicanes/chokers, or other improvements designed to reduce motor vehicle speeds and encourage pedestrian and bicycle trips)

Energy Mitigation

- Install High Efficiency Lighting (note: according to CAPCOA's *Quantifying Greenhouse Gas Mitigation Measures*, a minimum of a 16 percent reduction in electricity usage is expected compared with low-efficiency lighting. For example: metal halide post top lights, or LEDs, as opposed to typical mercury cobrahead lights).

Area Mitigation

- Use Only Natural Gas Hearths (or No Hearths)

Water Mitigation

- Apply a Water Conservation Strategy to achieve a 20 percent reduction in outdoor water usage
- Install low flow bathroom faucets
- Install low-flow kitchen faucets
- Install low-flow toilets
- Install low-flow showers
- Use water-efficient irrigation systems

The proposed Project would be required to implement Mitigation Measures 3.3-2 through 3.3-4, which incorporate the mitigation assumptions included in the model (above). As previously described, the proposed Project is also subject to the SJVAPCD Rule 9510 (Indirect Source Rule, or ISR), which could result in substantial mitigation of emissions beyond what is reflected in the modeling outputs. The reductions are accomplished by the incorporation of mitigation measures into projects and/or by the payment of an Indirect Source Rule fee for any required reductions that

have not been accomplished through Project mitigation commitments. The actual calculations will be accomplished by the SJVAPCD and Project applicants as the Project (or portions of the Project) are brought forward for approval under Rule 9510. However, even with the application of the ISR (see Mitigation Measure 3.3-1) and the mitigation assumptions previously described (with implementation of Mitigation Measures 3.3-2 through 3.3-4), emissions levels may remain above the defined thresholds of significance for the proposed Project as a whole. As such, operation of the proposed Project would have a **significant and unavoidable** impact relative to operational air emissions.

MITIGATION MEASURE(S)

Mitigation Measure 3.3-1*: The Project proponent shall submit an Air Impact Assessment (AIA) application to the San Joaquin Valley Air Pollution Control District in accordance with District Rule 9510 Indirect Source Review (ISR) to obtain AIA approval from the District for the phase or Project component that is to be constructed. Prior to the issuance of a building permit of each individual phase or Project component, the Project proponent shall incorporate mitigation measures into the proposed Project and demonstrate compliance with District Rule 9510 including payment of all fees.*

Mitigation Measure 3.3-2*: Prior to the approval of improvement plans, the Project proponent shall incorporate measures that reduce vehicle emissions. The measures will be implemented through project design, conditions of approval, noticing and disclosure statements, or through the City's plan check and inspection process. This mitigation measure is intended to ensure that the best available and practical approaches are used to reduce operational emissions. Appropriate measures shall be selected by the City in consultation with SJVAPCD, and shall include, at a minimum, the following features into the applicable Project plans (e.g. site, engineering, landscaping, etc.):*

- *Provide bus turnouts and transit improvements where requested by the San Joaquin RTD.*
- *Design streets and trails to maximize pedestrian and bicycle connectivity, safety, and access to transit lines, including pedestrian and bicycle signalization, signage and safety designs at signalized intersections.*
- *Provide traffic calming measures on all streets and intersections. Traffic calming features may include marked crosswalks, count-down signal timers, curb extensions, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, narrow roadways, traffic circles, on-street parking, planter strips with streets trees, chicanes/chokers, or other improvements designed to reduce motor vehicle speeds and encourage pedestrian and bicycle trips.*
- *Provide street lighting along internal roadways and bike lanes/paths, sidewalks.*
- *Provide vanpool parking only spaces and preferential parking for carpools to accommodate carpools and vanpools in employment areas.*
- *Provide bicycle parking areas near the entrance of commercial establishments.*
- *Provide pedestrian signalization, signage and safety designs at signalized intersections.*
- *Require shade trees to shade sidewalks in street-side landscaping areas.*

Mitigation Measure 3.3-3*: Prior the approval of improvement plans, the Project proponent shall prepare and implement, and/or require the implementation of, high-efficiency lighting throughout all portions of the Plan Area (for example: metal halide post top lights, or LEDs, as opposed to typical mercury cobrahead lights).*

Mitigation Measure 3.3-4*: Prior to the approval of improvement plans, the Project proponent shall prepare and implement, and the City shall require the implementation of, the following additional mitigation measures:*

- *Use low-VOC paint (indoor and outdoor, for both residential and non-residential uses).*
- *Use only natural gas hearths (or no hearths).*
- *Apply a Water Conservation Strategy to achieve reductions in outdoor water usage through installation of water-efficient irrigation systems, and landscaping with native and drought-tolerant plants that also reduce the need for gas-powered landscape maintenance equipment.*
- *Require all flat roofs on non-residential structures to have a white or silver cap sheet to reduce energy demand.*
- *Install low flow bathroom faucets.*
- *Install low-flow kitchen faucets.*
- *Install low-flow toilets.*
- *Install low-flow showers.*
- *Use water-efficient irrigation systems.*

Impact 3.3-2: Project construction has the potential to cause a violation of an air quality standard or contribute substantially to an existing or projected air quality violation. (Significant and Unavoidable)

Construction-related activities would generate emissions of criteria air pollutants (PM_{10} and $PM_{2.5}$) and ozone precursors (ROG and NOx) from site preparation (e.g., excavation and clearing) grading, off-road equipment, material transport, worker commute, vehicle use on unpaved roads, paving, application of architectural coatings, and other activities. For this analysis, as a conservative estimate, it is assumed that development in the Plan Area would occur over a period of about 16 years, which is consistent with CalEEMod default assumptions for buildout of the Plan Area. It was assumed that full buildout would occur by 2035.

Project-generated, construction-related emissions of criteria pollutants and precursors were modeled in accordance with SJVAPCD-recommended methodologies. Table 3.3-7 shows the model assumptions for each phase of project construction. Table 3.3-8 shows the results of construction emission estimates from CalEEMod modeling. As indicated in Table 3.3-8, emissions for NOx would be above the SJVAPCD threshold. Furthermore, since the phasing of construction in the Plan area is not yet defined, and if large projects occur together, other significance thresholds could be exceeded. Criteria air pollutant emissions that exceed the SJVAPCD significance thresholds would cumulatively contribute to the ozone and particulate matter nonattainment designations of the SJVAB under the NAAQS and CAAQS.

MODEL ASSUMPTIONS (CONSTRUCTION)

TABLE 3.3-7: CONSTRUCTION PHASE

PHASE NUMBER	PHASE NAME	START DATE	END DATE	# DAYS/WEEK	# DAYS
1	Site Preparation	3/1/2019	6/1/2019	5	67
2	Grading	6/2/2019	8/31/2019	5	65
3	Building Construction	9/1/2019	8/30/2035	5	4,173
4	Paving	9/1/2019	8/30/2020	5	260
5	Architectural Coating	9/1/2019	10/30/2035	5	4,216

SOURCE: CALEEMOD (V. 2016.3.2).

Table 3.3-8 shows the construction emissions for all construction years (2018 through 2034).

TABLE 3.3-8: CONSTRUCTION EMISSIONS (UNMITIGATED) (TONS/YEAR)

YEAR	ROG	NOX	PM_{10}	$PM_{2.5}$
2019	1.5	9.3	2.3	1.0
2020	3.3	15.7	3.4	1.1
2021	3.0	13.1	3.2	1.0
2022	2.8	12.2	3.2	1.0
2023	2.6	10.0	3.2	0.9
2024	2.6	9.8	3.2	0.9
2025	2.5	9.5	3.2	0.9
2026	2.4	9.4	3.2	0.9
2027	2.4	9.3	3.2	0.9
2028	2.3	9.2	3.2	0.9
2029	2.2	9.1	3.2	0.9
2030	2.2	8.4	3.1	0.9
2031	2.1	8.3	3.1	0.9
2032	2.1	8.3	3.1	0.9
2033	2.0	8.2	3.1	0.9
2034	2.0	8.2	3.1	0.9
2035	1.5	5.3	2.1	0.6
Single-year Maximum	**3.3**	**15.7**	**3.4**	**1.1**
Threshold	**10**	**10**	**15**	**15**
Threshold Exceeded?	**No**	**Yes**	**No**	**No**

NOTE: NUMBERS MAY NOT ADD UP DUE TO ROUNDING.

SOURCE: CALEEMOD (V.2016.3.2).

New development within the Plan Area would be required to comply with SJVAPCD Regulation VIII – Fugitive PM_{10} Prohibition. As part of the development process under the Specific Plan, the applicants would be required to develop and obtain approval of a Fugitive Dust Control Plan (from the City or SJVAPCD, as appropriate) to mitigate, as feasible, fugitive dust emissions to satisfy the requirements set forth under then-applicable SJVAPCD Rules and Regulations, including, without limitation, Regulation VIII. The effect of this rule would, at a minimum, reduce PM_{10} fugitive dust emissions by approximately 55 percent.

New development within the Plan Area would be required to comply with SJVAPCD Rule 9510. As part of the development process for individual, site-specific projects under the Specific Plan would prepare a detailed AIA. To the extent applicable under Rule 9510 for each such individual development, SJVAPCD would require calculation of the construction and operational emissions from the development at issue. The purpose of the AIA is to confirm a development's construction exhaust emissions, and therefore be able to identify appropriate mitigation, either through implementation of specific mitigation measures or payment of applicable off-site fees. Under Rule 9510, each project that is subject to this Rule would be required to reduce construction exhaust emissions by 20 percent for NOx and 45 percent for PM_{10} or pay offset mitigation fees for emissions that do not achieve the mitigation requirements. Offset fees would be calculated in accordance with the procedures identified in the Rule 9510 and approved by the SJVAPCD. Measures to meet these requirements usually take the form of newer or retrofitted construction fleets, a reduction of construction traffic, use of electrical-powered stationary equipment, and possibly off-site mitigation or fees payable to SJVAPCD to obtain off-site reductions. In addition to complying with SJVAPCD requirements (as provided under Mitigation Measure 3.3-1, below), specific minimum standards for reduction of construction emissions have been formalized under Mitigation Measure 3.3-5.

Individual site-specific projects under the Specific Plan may be subject to SJVAPCD Regulation VIII and Rule 9510. Implementation of Regulation VIII, Rule 9510 (as provided under Mitigation Measure 3.3-1), and construction emissions standards would result in the proposed Project using less-polluting construction equipment, including newer equipment or retrofitting older equipment would reduce construction emissions on-site, as well as implementation of measures to reduce construction emissions. Nevertheless, while the analysis above assumes development will be spread out over the buildout period, if large and/or numerous construction projects occur concurrently, proposed Project emissions could exceed the SJVAPCD significance thresholds of criteria pollutants and could cumulatively contribute to the ozone and particulate matter nonattainment designations of the SJVAB. Therefore, proposed Project construction impacts of the Project are considered **significant and unavoidable** and the following mitigation measure would be required.

MITIGATION MEASURE(S)

Mitigation Measure 3.3-5: *To reduce construction-related emissions, the following measures shall be implemented:*

- *Prior to year 2025, construction contracts for development in the Plan Area shall specify use of off-road construction equipment that achieves fleet average emissions equal to or less than the Tier III emissions standard of 4.8 NOx grams per horsepower-hour (g/hp-hr). The fleet average can be achieved through any combination of uncontrolled engines complying with Tier III and above engine standards. Beginning in 2025, construction contracts for development in the Plan Area shall specify use of off-road construction equipment that achieves fleet average emissions equal to or less than the Tier IV emissions*

standards of NOx g/hp-hr. The fleet average can be achieved through any combination of controlled engines complying with Tier IV and above engine standards.

- *Prior to issuance of a grading or building permit, the project applicant shall submit a Fugitive Dust Control Plan to SJVAPCD for review and approval. The Fugitive Dust Control Plan shall reduce emissions, during construction of PM_{10} and $PM_{2.5}$ and shall include the following:*
    - *Names, addresses and phone numbers of persons responsible for the preparation, submission and implementation of the plan.*
    - *Description and location of operations.*
    - *Listing of all fugitive dust emissions sources included in the operation.*
    - *The following dust control measures shall be implemented:*
        - *All on-site unpaved roads shall be effectively stabilized using water or chemical stabilizers that can be determined to be as efficient as or more efficient for fugitive dust control than California Air Resources Board approved soil stabilizers, and that shall not increase any other environmental impacts including loss of vegetation.*
        - *All material excavated or graded will be sufficiently watered to prevent excessive dust. Watering will occur as needed with complete coverage of disturbed areas. The excavated soil piles will be watered as needed to limit dust emissions to less than 20 percent opacity or covered with temporary coverings.*
        - *Construction activities that occur on unpaved surfaces will be discontinued during windy conditions when winds exceed 25 miles per hour and those activities cause visible dust plumes. Construction activities may continue if dust suppression measures are used to minimize visible dust plumes.*
        - *Track-out debris onto public paved roads shall not extend 50 feet or more from an active operation and track-out shall be removed or isolated such as behind a locked gate at the conclusion of each workday.*
        - *All hauling materials should be moist while being loaded into dump trucks.*
        - *All haul trucks hauling soil, sand and other loose material on public roads shall be covered (e.g., with tarps or other enclosures that would reduce fugitive dust emissions).*
        - *Soil loads shall be kept below 6 inches of the freeboard of the truck.*
        - *Drop heights should be minimized when loaders dump soil into trucks.*
        - *Gate seals should be tight on dump trucks.*
        - *Traffic speeds on unpaved roads shall be limited to a maximum of 15 miles per hour.*
        - *All grading activities shall be suspended when visible dust emissions exceed 20 percent.*
        - *Other fugitive dust control measures as necessary to comply with SJVAPCD Rules and Regulations.*
        - *Disturbed areas should be minimized.*

Impact 3.3-3: The proposed Project has the potential to have carbon monoxide hotspot impacts. (Less than Significant)

Project traffic would increase concentrations of carbon monoxide along streets providing access to the Plan Area. Carbon monoxide is a local pollutant (i.e., high concentrations are normally only found very near sources). The major source of carbon monoxide, a colorless, odorless, poisonous gas, is automobile traffic. Elevated concentrations (i.e. hotspots), therefore, are usually only found near areas of high traffic volume and congestion.

Emissions and ambient concentrations of CO have decreased greatly in recent years. These improvements are due largely to the introduction of cleaner burning motor vehicles and motor vehicle fuels. No exceedances of the State or National CO standard have been recorded at any of San Joaquin Valley's monitoring stations in the past 16 years. The SJVAB has attained the State and National CO standard.

However, despite this progress, localized CO concentrations still warrant concern in the San Joaquin Valley, and should be addressed. The region must safeguard against localized high concentrations of CO that may not be recorded at monitoring sites.

Plan area traffic would increase concentrations of carbon monoxide along roadways providing access to the Plan Area. Carbon monoxide is a localized air pollutant, where highest concentrations are found very near sources. The major source of carbon monoxide is automobile traffic. Elevated concentrations, therefore, are usually only found near areas of high traffic volume and congestion.

The GAMAQI recommends air quality modeling of CO concentrations following the Project-Level Carbon Monoxide Protocol developed by UC Davis[1] in the following situations:

- A traffic study for the project indicates that the Level of Service (LOS) on one or more streets or at one or more intersections in the project vicinity will be reduced to LOS E or F; or
- A traffic study indicates that the project will substantially worsen an already existing LOS F on one or more streets or at more or more intersections in the project vicinity.

As shown in Section 3.13, Transportation and Circulation, the only streets and/or intersections that have the potential to meet either of the above criteria are the:

- Claribel Road to McHenry Avenue to Coffee Road segment (deterioration to LOS E);
- Claribel Road from Oakdale Road to Claus Road segment (deterioration from to LOS F);
- Coffee Road between Claribel Road and Claratina Avenue segment (deterioration to LOS F); and
- Oakdale Road between Claribel Road and Claratina Avenue segment (deterioration to LOS F).

[1] UC Davis. 1998. Project-Level Carbon Monoxide Protocol. Institute of Transportation Studies.

Improvements to these streets are included in the City of Modesto's Public Facilities Fee (PFF) traffic impact fee program, the City of Riverbank Impact Fee program, and/or the County's Regional Transportation Impact Fee (RTIF) program. Although improvements to these road segments have already been planned for and are expected to be fully funded, the timing of these improvements remains unclear.

The SJVAPCD provides a second screening tier (tier 2) in the instance that a project does not screen out satisfactorily under tier 1. The screening approach requires that if the first tier of screening criteria is not met then the second tier of screening criteria shall be examined. As noted above, the timing of the above improvements are not clear, therefore, the second tier of screening criteria is provided below:

Second Tier: If all of the following criteria are met, the proposed Project will result in a less-than-significant impact to air quality for local CO.

- The Project will not result in an affected intersection experiencing more than 31,600 vehicles per hour;
- The Project will not contribute traffic to a tunnel, parking garage, bridge underpass, urban street canyon, or below-grade roadway; or other locations where horizontal or vertical mixing of air will be substantially limited; and
- The mix of vehicle types at the intersection is not anticipated to be substantially different from the County average (as identified by the EMFAC or CalEEMod models).

The proposed Project screens out under the second tier because it meets all three criteria. The proposed Project would not result in an affected intersection affecting more than 31,600 vehicles per hour, contribute traffic to a location where horizontal or vertical mixing of air will be substantially limited, or provide a mix of vehicle types at intersections that are substantially different than the County average. Therefore, the Specific Plan does not meet these conditions that would require detailed CO analysis. Therefore, the proposed Project is below the applicable screening levels and this is a **less than significant** impact.

Impact 3.3-4: The proposed Project has the potential for public exposure to toxic air contaminants. (Less than Significant)

A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or in 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 very low concentrations. In general, for those TACs that may cause cancer, there is no concentration that does not present some risk. This contrasts with the criteria pollutants for which acceptable levels of exposure can be determined and for which the state and federal governments have set ambient air quality standards.

Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments (CAAA) of 1990, whereby Congress mandated that the U.S. Environmental Protection Agency (EPA) regulate 188 air toxics, also known as hazardous air pollutants. The EPA has assessed

this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007) and identified a group of 93 compounds emitted from mobile sources. In addition, EPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment. These are acrolein, benzene, 1,3-butidiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter.

The 2007 EPA rule requires controls that will dramatically decrease Mobile Source Air Toxics (MSAT) emissions through cleaner fuels and cleaner engines. According to an FHWA analysis using EPA's MOBILE6.2 model, even if vehicle activity (VMT) increases by 145 percent, a combined reduction of 72 percent in the total annual emission rate for the priority MSAT is projected from 1999 to 2050. California maintains stricter standards for clean fuels and emissions compared to the national standards, therefore it is expected that MSAT trends in California will decrease consistent with or more than the U.S. EPA's national projections.

The California Air Resources Board (CARB) published the *Air Quality and Land Use Handbook: A Community Health Perspective* (2007) to provide information to local planners and decision-makers about land use compatibility issues associated with emissions from industrial, commercial and mobile sources of air pollution. The CARB Handbook indicates that mobile sources continue to be the largest overall contributors to the State's air pollution problems, representing the greatest air pollution health risk to most Californians. The most serious pollutants on a statewide basis include diesel exhaust particulate matter (diesel PM), benzene, and 1,3-butadiene, all of which are emitted by motor vehicles. These mobile source air toxics are largely associated with freeways and high traffic roads. Non-mobile source air toxics are largely associated with industrial and commercial uses. Table 3.3-9 provides the California Air Resources Board minimum separation recommendations on siting sensitive land uses.

SJVAPCD recently adopted the state Office of Environmental Health Hazard Assessment's (OEHHA's) revised Risk Assessment Guidelines relative to toxic air contaminants. As a result, for permitting purposes, SJVAPCD will not approve projects that result in a 20 in a million or greater cancer risk (cumulative for a facility since 1995, and with exceptions as noted in Policy APR 1905). For CEQA purposes, projects that result in a 20 in a million or greater cancer risk should be considered to have a significant air quality impact.

There are sensitive receptors such as residences and parks that are proposed as part of the proposed Project. These new residences and parks are well beyond the minimum separation distance from toxic air emitters. Additionally, the proposed Project does not include any of the source categories identified in the CARB minimum separation standards. However, there is the possibility that a fueling station could be conditionally permitted within a Mixed Use portion of the Plan Area (i.e. within the MU-1 and/or MU-2 land uses). Should future development of the Mixed Use areas include a fueling station, this would be the only source category identified in the CARB minimum separation standards that would be potentially developed as part of the Project. According to the Retail Fuel Report and Data for California released by the California Energy

Commission, the average gasoline sales per station in 2012 was 1.58 million gallons per year. Therefore, should a fueling facility be constructed within the Mixed Use portion of the Plan Area, the facility is anticipated to have a throughput under 3.6 million gallons per year because the fueling facility would be considered a neighborhood gas station and is not located along a major freeway. Implementation of the proposed Project would have a **less than significant** impact relative to this topic.

TABLE 3.3-9: CARB MINIMUM SEPARATION RECOMMENDATIONS ON SITING SENSITIVE LAND USES

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

SOURCE: AIR QUALITY AND LAND USE HANDBOOK: A COMMUNITY HEALTH PERSPECTIVE (CARB 2005).

Impact 3.3-5: The proposed Project has the potential for exposure to odors. (Less than Significant)

While offensive odors rarely cause any physical harm, they can be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and the SJVAPCD. In 2016, SJVAPCD adopted Guidance to Conduct Detailed Analysis for Assessing Odor Impacts to Sensitive Receptors. Under this guidance, SJVAPCD recommends a detailed analysis be prepared for any proposed project that is a potential odor source and which would result in sensitive receptors being located closer to the proposed project than the identified distance. None of the facilities referenced in SJVAPCD's Guidance are included in the proposed Project. As a result, the general nuisance rule (Heath and Safety Code §41700) is the basis for the significance threshold in this EIR. Examples of facilities that are known producers of odors include: Wastewater Treatment Facilities, Chemical Manufacturing, Sanitary Landfill, Fiberglass Manufacturing, Transfer Station, Painting/Coating Operations (e.g. auto body shops), Composting Facility, Food Processing Facility, Petroleum Refinery, Feed Lot/Dairy, Asphalt Batch Plant, and

Rendering Plant. The proposed Project would not introduce any such land uses and is not located in the vicinity of any such existing or planned land uses.

The Plan Area is located in an area partially surrounded by agricultural uses (i.e. to the south and west) that are ultimately expected to continue their agricultural uses. The most common nuisance in agricultural areas is blowing dust and odors. Plowing of fields on dry days can create substantial dust that is transported by wind. Although the residential uses are generally separated from the surrounding agricultural land, this could result in conflicts between agricultural and new residential users. Nevertheless, Stanislaus County has a right-to-farm policy, which states that all persons purchasing lots located adjacent to agricultural land should be prepared to accept the inconveniences associated with agricultural operations, such as noise, odors, flies, dust or fumes. Stanislaus County has determined that such inconveniences shall not be considered to be a nuisance if agricultural operations are consistent with accepted customs and standards.

Commercial uses, particularly retail, are not typically associated with the creation of objectionable odors. However, restaurants, especially fast food restaurants, have the potential to generate substantial sources of odors as a result of cooking processes and food waste disposal. Char broilers, deep-fryers, and ovens tend to produce food odors that could be considered offensive to some people. The food waste produced by the any quick service restaurants developed as part of the Mixed Use portion of the Plan Area could putrefy if not properly managed, which could produce objectionable odors. Any restaurants developed within the Plan Area would involve food preparation that could result in cooking exhaust and smoke, and would produce food waste. As odors are highly subjective, one receptor may consider cooking exhaust and related smoke an acceptable odor, while another receptor may find such odors objectionable. Nonetheless, any restaurants developed within the Plan Area use would be required to comply with all State and local regulations associated with cooking equipment and controls. This would ensure that pollutants associated with smoke and exhaust from cooking surfaces would be captured and filtered, allowing only filtered air to be released into the atmosphere.

Decomposition of biological materials, such as food waste and other trash, could create objectionable odors if not properly contained and handled. The proposed Project would provide waste receptacles throughout the Mixed Use portion of the Plan Area and would utilize outdoor trash dumpsters with lids, which would be picked up regularly during normal solid waste collection operating hours within the area. The dumpster lids are intended to contain odors emanating from the dumpsters. The dumpsters would be stored in screened areas for further protection from potential objectionable odors. The garbage collected on-site and stored in the outdoor dumpsters would not be on-site long enough to cause substantial odors. Thus, the outdoor, enclosed, and covered trash dumpsters that would be picked up regularly would provide proper containment and handling of the trash generated on-site.

The proposed Project does not propose uses that would create odors. Detailed information on specific site uses for the Mixed Use land uses is not fully known at this time; however, future proposed uses within these areas will require review and approval by the City of Riverbank. At this time, it is anticipated that the proposed Project will not emit, or place individuals within close

proximity to, objectionable odors. As such, impacts would be **less than significant** regarding this environmental topic.

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This section describes the geomorphic provinces/bioregions, vegetation, wildlife, soils, hydrogeomorphic features, wetlands, special status species, regulatory setting, and impacts that are expected on biological resources. The analysis contained in this section is intended to be at a Project-level, and covers impacts associated with the conversion of the entire site to an urban use. This section is based in part on the following technical studies: *City of Riverbank General Plan 2005-2025* (City of Riverbank, 2009), the *City of Riverbank Draft Environmental Impact Report for the 2005-2025 General Plan Update* (City of Riverbank, 2008), as well as site specific surveys and analysis. There were no comments received during the NOP scoping process related to this environmental topic.

Methods

PRE-FIELD INVESTIGATION

Prior to the field investigation, numerous maps, databases, and reports were reviewed including:

- U.S. Geological Survey (USGS) 7.5-minute Quadrangle
- USGS National Hydrography Data Set
- Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps
- National Resource Conservation Service (NRCS) Soil Survey
- California Wildlife Habitat Relationships (CWHR) maps
- California Natural Diversity Database (CNDDB)
- California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants
- U.S. Fish and Wildlife Service's (USFWS) IPac
- U.S. Fish and Wildlife Service's (USFWS) Official List

FIELD INVESTIGATIONS

Field investigations were performed in the study area on April 12, June 14, 2017 by Principal Biologist Steve McMurtry. The surveys served several purposes. First, they served as reconnaissance of the site to establish the existing conditions of the site and to verify information gathered in the pre-field investigation. This included identification of the habitat types, hydrologic features, topography, soil characteristics, vegetation. The field investigations followed the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2009). Field investigations were performed during the floristic period for species in the region. Field investigations were performed on foot using transects. Habitat was recorded, and the Plan Area was inspected for the presence, or potential for presence of wildlife. The area was inspected for its upland and aquatic habitat functions. The field investigations coincided with the optimal period for observing nesting birds, breeding amphibians, and active reptiles. The site was also examined for evidence of scat and tracks of mammals.

FIELD TOOLS/EQUIPMENT

Tools used during the field investigations included a Trimble GeoExplorer XH Handheld (sub-foot unit), 30-meter tape measure, diameter tape, spade, Munsell color chart, Vortex 20-60x80 spotting scope, and Bushnell 10x42 binoculars.

3.4.1 ENVIRONMENTAL SETTING

GEOMORPHIC PROVINCES/BIOREGION

The City of Riverbank is located in the southern portion of the Great Valley Geomorphic Province of California. The Great Valley Province is a broad structural trough bounded by the tilted block of the Sierra Nevada on the east and the complexly folded and faulted Coast Ranges on the west. The Stanislaus River is located just north of the City. This is a tributary of the San Joaquin River, which drains the Great Valley Province into the San Joaquin Delta to the north, ultimately discharging into the San Francisco Bay to the northwest.

The City of Riverbank is located within the San Joaquin Valley Bioregion, which is comprised of Kings County, most of Fresno, Kern, Merced, and Stanislaus counties, and portions of Madera, San Luis Obispo, and Tulare counties. The San Joaquin Valley Bioregion is the third most populous out of ten bioregions in the state, with an estimated 2 million people. The largest cities are Fresno, Bakersfield, Modesto, and Stockton. Interstate 5 and State Route 99 are the major north-south roads that run the entire length of the bioregion.

The bioregion is bordered on the west by the coastal mountain ranges. Its eastern boundary joins the southern two-thirds of the Sierra bioregion, which features Yosemite, Kings Canyon, and Sequoia National Parks. At its northern end, the San Joaquin Valley bioregion borders the southern end of the Sacramento Valley bioregion. To the west, south, and east, the bioregion extends to the edges of the valley floor.

Habitat in the bioregion includes vernal pools, valley sink scrub and saltbush, freshwater marsh, grasslands, arid plains, orchards, and oak savannah. Historically, millions of acres of wetlands flourished in the bioregion, but stream diversions for irrigation dried all but about five percent. Remnants of the wetland habitats are protected in this bioregion in publicly owned parks, reserves, and wildlife areas. The bioregion is considered the state's top agricultural producing region with the abundance of fertile soil.

LOCAL SETTING

Location

The Plan Area is located near the City of Riverbank, Stanislaus County, California. The Plan Area comprises approximately 390 acres of land that is proposed to be annexed into the City of Riverbank. Uses immediately adjacent to the southeast, south, southwest, and west of the Plan Area include agricultural uses and residential uses, including ranchettes and large estates lots. Other existing uses east of the southerly portion of the Plan Area include a single family residential subdivision and a commercial center. Existing residential subdivisions also exist to the north, northeast, and east of the Plan Area. Other nearby uses include a commercial shopping center located east of the Plan Area at the intersection of Claribel Road and Oakdale Road. The Plan Area encompasses nine parcels, as shown in Figure 2.0-3.

Topography

The Plan Area is relatively flat with a natural gentle slope from northeast to southwest. Topographic features within the Plan Area include level fields, farm roads, and irrigation ditches/catch basins. Elevation ranges from approximately 111 to 125 feet above mean sea level.

Climate

The City of Riverbank is located in the southern portion of the San Joaquin Valley, which has a Mediterranean climate that is subject to cool, wet winters (often blanketed with fog) and hot, dry summers. The average annual precipitation is approximately 13.81 inches. Precipitation occurs as rain most of which falls between the months of November through April, peaking in January at 2.85 inches. The average temperatures range from December lows of 37.5 F to July highs of 94.3 F.

Vegetation

Vegetation in the Plan Area consists of agricultural, ruderal, and landscaping. Because of the active agricultural use, there is very limited natural vegetation in the Plan Area with the exception of the perimeter of the agricultural fields. Common plant species observed in these areas include: wild oat (*Avena barbata*), rip-gut brome (*Bromus diandrus*), softchess (*Bromus hordeaceus*) alfalfa (*Medicago sativa*), Russian thistle (Salsola tragus), Italian thistle (*Carduus pycnocephalus*), rough pigweed (*Amaranthus retroflexus*), sunflower (*Helianthus annuus*), tarragon (*Artemisia dracunculus*), prickly lettuce (*Lactuca serriola*), milk thistle (*Silybum marianum*), sow thistle (*Sonchus asper*), telegraph weed (*Heterotheca grandiflora*), barley (*Hordeum* sp.), mustard (*Brassica niger*), and heliotrope (*Heliotropium curassavicum*).

Wildlife

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

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

Plant Communities

Agricultural and natural plant communities provide habitat for a variety of biological resources in the region. Sensitive habitats include those that are of special concern to resource agencies or those that are protected under a Habitat Conservation Plan, Natural Community Conservation

Plan, the California Environmental Quality Act (CEQA), the Fish and Game Code, or the Clean Water Act (CWA). Additionally, sensitive habitats are usually protected under specific policies from local agencies. Figure 3.4-1 illustrates the plant communities (land cover types) in the vicinity of the Plan Area. Table 3.4-1 summarizes the plant communities (land cover types) by acreage.

TABLE 3.4-1: LAND COVER TYPES

LAND COVER TYPE	*ACREAGE*
Deciduous Orchard	22.36
Dryland Grain Crops	177.10
Evergreen Orchard	0.67
Irrigated Grain Crops	14.31
Irrigated Hayfield	103.03
Irrigated Row and Field Crops	6.45
Lacustrine	7.56
Pasture	56.66
Urban	6.65
Vineyard	0.22

SOURCE: CALFIRE FRAP DATA, STANISLAUS COUNTY, 2017.

The majority of the Plan Area is labeled as Dryland Grain Crops (44.8 percent of site), Irrigated Hayfield (26.0 percent of site), or Pasture (14.3 percent of site) on the land cover types maps. The Plan Area has been actively used for agricultural use (i.e., crop production, pasture uses, dairy, and grazing). Some of the labeled uses, such as orchard, are not currently present in the Plan Area and are likely based on historical uses.

Agricultural areas, including the Plan Area, are generally flat and well drained, and as a result are well suited for many crops. Alfalfa fields, hay, row crops, orchards, annual grasslands, cattle pasture, and dairies dominate the agricultural areas in the region. Agricultural fields commonly have irrigation canals, ditches, and stock ponds that serve as a water source or drainage for the fields and habitat for a limited variety of plants and animals.

Hydrogeomorphic Features

The Plan Area is level agricultural property that is actively maintained in crops during the growing season. There are no rivers, streams, or other natural aquatic habitats within the boundary of the Plan Area, although there is an extensive network of man-made irrigation facilities (canals/ditches/basins). The Modesto Irrigation District (MID) main canal is located along the northern boundary and the MID Lateral 6 traverses the southern portion of the Plan Area from northeast to southwest. Along much of the western boundary of the Plan Area is a private irrigation canal/ditch that feeds irrigation water to smaller tributary ditches throughout much of the Plan Area. A ditch/basin located on the eastside of Claribel Road within the Plan Area collects stormwater runoff from Claribel, in addition to irrigation runoff from the fields. There are several basins associated with the dairy operation located west of Crawford Road and east of the MID Lateral 6 within the boundary of the Plan Area.

SPECIAL-STATUS SPECIES

The following discussion is based on a background search of special-status species that are documented in the California Natural Diversity Database (CNDDB), the California Native Plant

Society's (CNPS) Inventory of Rare and Endangered Plants, and the U.S. Fish and Wildlife Service's (USFWS) records of listed endangered and threatened species from the IPAC database. The background search was regional in scope and focused on the documented occurrences within the Project's nine-quadrangle region (i.e., Riverbank, Salida, Brush Lake, Ceres, Denair, Waterford, Oakdale, Escalon, and Avena U.S. Geological Survey quadrangles). Table 3.4-2 provides a list of special-status plants and Table 3.4-3 provides a list of special-status animals. Figure 3.4-2 presents the documented occurrences within the Plan Area's nine-quadrangle region.

TABLE 3.4-2: SPECIAL-STATUS PLANT SPECIES WHICH MAY OCCUR IN PROJECT AREA

SPECIES	*STATUS (FED./CA/ CNPS)*	*HABITAT AND BLOOMING PERIOD*	*PRESENCE DETERMINATION*
Legenere *Legenere limosa*	--/--/1B.1	Vernal pool. April-June.	Not Present
Greene's tuctoria *Tuctoria greenei*	E/R/1B.1	Vernal pool. May-July.	Not Present
San Joaquin Valley Orcutt grass *Orcuttia inaequalis*	T/E/1B.1	Vernal pool. April-September.	Not Present
Colusa grass *Neostapfia colusana*	T/E/1B.1	Vernal pool (adobe, large). May-August.	Not Present
Subtle orache *Atriplex subtilis*	--/--/1B.2	Valley and foothill grassland. June, August-October.	Not Present
Heartscale *Atriplex cordulata var. cordulata*	--/--/1B.2	Saline or alkaline soils, chenopod scrub, meadows and seeps, valley and foothill grassland (sandy). April-October.	Not Present
Beaked clarkia *Clarkia rostrate*	--/--/1B.3	Cismontane woodland, valley and foothill grassland. April-May.	Not Present
Prairie wedge grass *Sphenopolis obtusata*	--/--/2B.2	Mesic soils, cismontane woodland, meadows and seeps. April-June.	Not Present

NOTES: CNPS = CALIFORNIA NATIVE PLANT SOCIETY

FEDERAL

E = ENDANGERED UNDER THE FEDERAL ENDANGERED SPECIES ACT.

T = THREATENED UNDER THE FEDERAL ENDANGERED SPECIES ACT.

STATE

E = ENDANGERED UNDER THE CALIFORNIA ENDANGERED SPECIES ACT.

T = THREATENED UNDER THE FEDERAL CALIFORNIA ENDANGERED SPECIES ACT.

R = RARE UNDER THE CALIFORNIA ENDANGERED SPECIES ACT

CALIFORNIA NATIVE PLANT SOCIETY

1B = RARE, THREATENED, OR ENDANGERED IN CALIFORNIA AND ELSEWHERE.

2 = RARE, THREATENED, OR ENDANGERED IN CALIFORNIA, BUT MORE COMMON ELSEWHERE.

3 = A REVIEW LIST – PLANTS ABOUT WHICH MORE INFORMATION IS NEEDED.

4 = PLANTS OF LIMITED DISTRIBUTION – A WATCH LIST

.1 = SERIOUSLY ENDANGERED IN CALIFORNIA (OVER 80% OF OCCURRENCES THREATENED-HIGH DEGREE AND IMMEDIACY OF THREAT).

.2 = FAIRLY ENDANGERED IN CALIFORNIA (20-80% OCCURRENCES THREATENED).

.3 = NOT VERY ENDANGERED IN CALIFORNIA (<20% OF OCCURRENCES THREATENED).

TABLE 3.4-3: SPECIAL-STATUS WILDLIFE AND FISH SPECIES WHICH MAY OCCUR IN PROJECT AREA

SPECIES	*STATUS (FED/CA)*	*GEOGRAPHIC DISTRIBUTION*	*HABITAT REQUIREMENTS*	*PRESENCE DETERMINATION*
INVERTEBRATES				
Vernal pool fairy shrimp *Branchinecta lynchi*	FT/--	Central Valley, central and south Coast Ranges from Tehama County to Santa Barbara County. Isolated populations also in Riverside County	Common in vernal pools; they are also found in sandstone rock outcrop pools.	Not Present
Vernal pool tadpole shrimp *Lepidurus packardi*	FE/--	Shasta County south to Merced County	Vernal pools and ephemeral stock ponds.	Not Present
Obscure bumble bee *Bombus caliginosus*	--/--	Occur in Mediterranean California and the Pacific Coast.	Found within open grassy prairies and coastal meadows.	Potentially Present
Crotch bumble bee *Bombus crotchii*	--/--	Occur in the United States and Baja California in Mexico. Occur primarily in California, Western Desert, and adjacent foothills. Distributed throughout most of southwestern North America.	Found within open grasslands and and scrub habitats.	Potentially Present
Western bumble bee *Bombus occidentalis*	--/--	Occur in the western United States and western Canada.	Nest underground in rodent burrows. Require plants that bloom that contain nectar.	Potentially Present
Molestan blister beetle *Lytta molesta*	--/--	Distribution of this species is poorly known.	Annual grasslands, foothill woodlands or saltbush scrub.	Not Present
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	FT/--	Stream side habitats below 3,000 feet throughout the Central Valley	Riparian and oak savanna habitats with elderberry shrubs; elderberries are the host plant.	Not Present
AMPHIBIANS				
California tiger salamander *Ambystoma californiense (A. tigrinum c.)*	FT/CT	Central Valley, including Sierra Nevada foothills, up to approximately 1,000 feet, and coastal region from Butte County south to northeastern San Luis Obispo County.	Small ponds, lakes, or vernal pools in grass-lands and oak woodlands for larvae; rodent burrows, rock crevices, or fallen logs for cover for adults and for summer dormancy.	Not Present
BIRDS				
Burrowing owl *Athene cunicularia*	--/SSC	Lowlands throughout California, including the Central Valley, northeastern plateau, southeastern deserts, and coastal areas. Rare along south coast	Level, open, dry, heavily grazed or low stature grassland or desert vegetation with available burrows	Habitat present (fields), none observed.
Great blue heron *Ardea herodias*	--/--	Found throughout much of North America and into Central and South America. Common throughout California.	Rookeries occur in tall trees near a variety of wetland habitat types. Isolated areas that discourage predation and human disturbance are preferred.	Habitat present (ditches and fields), none observed.

SPECIES	STATUS (FED/CA)	GEOGRAPHIC DISTRIBUTION	HABITAT REQUIREMENTS	PRESENCE DETERMINATION
Swainson's hawk *Buteo swainsoni*	--/CT	Lower Sacramento and San Joaquin Valleys, the Klamath Basin, and Butte Valley. Highest nesting densities occur near Davis and Woodland, Yolo County	Nests in oaks or cottonwoods in or near riparian habitats. Forages in grasslands, irrigated pastures, and grain fields	Habitat present (fields), none observed.
Cackling (Aleutian Canada) goose *Branta hutchinsii leucopareia*	--/--	The entire population winters in Butte Sink, then moves to Los Banos, Modesto, the Delta, and East Bay reservoirs; stages near Crescent City during spring before migrating to breeding grounds.	Roosts in large marshes, flooded fields, stock ponds, and reservoirs; forages in pastures, meadows, and harvested grainfields; corn is especially preferred	Habitat present (ditches and fields), none observed.
Tricolored blackbird *Agelaius tricolor*	--/SSC	Permanent resident in the Central Valley from Butte County to Kern County. Breeds at scattered coastal locations from Marin County south to San Diego County; and at scattered locations in Lake, Sonoma, and Solano Counties. Rare nester in Siskiyou, Modoc, and Lassen Counties	Nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles, thistles, and grainfields. Habitat must be large enough to support 50 pairs. Probably requires water at or near the nesting colony	Not Present
Snowy egret *Egretta thula*	--/--	Found mostly throughout North, Central, and South America. Breeds in costal and inland wetlands. Their range has been limited over time due to habitat destruction and hunting. A migratory species that relocates from the United States and Canada to Mexico, Central America, South America, and the West Indies.	Prefer shallow water inlets for feeding such as salt-marsh pools, tidal channels, and bays. Mostly along costal areas and islands. During winter time they migrate and roost in the mangroves of the Caribbean.	Habitat present (ditches and fields), none observed.
Yellow-breasted chat *Icteria virens*	--/SSC	Are found in Southern Canada to Mexico, southern Ontario, Alberta, and the United States during breeding season. Range from southern Baja California, to Texas, to western Panama during the winter months. In the eastern United States including northeastern South Dakota, eastern Kansas, Texas, and Nebraska.	Prefer dense deciduous and coniferous forests. Found in shrubby habitats and also along streams, swamps, forests, and upland thickets. Prefer sumac trees, dogwood, and red cedar. Find shelter and food in wetlands and orchards.	Not Present

SPECIES	STATUS (FED/CA)	GEOGRAPHIC DISTRIBUTION	HABITAT REQUIREMENTS	PRESENCE DETERMINATION
FISH				
Steelhead – Central Valley DPS *Oncorhynchus mykiss irideus*	FT/--	This distinct population segment, or DPS, includes all naturally spawned populations of steelhead (and their progeny) in the Sacramento and San Joaquin Rivers and their tributaries, excluding steelhead from San Francisco Bay and San Pablo Bays and their tributaries.	Free of heavy sedimentation with adequate flow and cool, clear water. Gravel that is between 0.5 to 6.0 inches in diameter, dominated by 2 to 3-inch gravel. Escape cover such as logs, undercut banks, and deep pools for spawning adults.	Not Present
Hardhead *Mylopharodon conocephalus*	--/SSC	Tributary streams in the San Joaquin drainage; large tributary streams in the Sacramento River and the main stem	Resides in low to mid-elevation streams and prefer clear, deep pools and runs with slow velocities. They also occur in reservoirs.	Not Present
MAMMALS				
Townsend's big-eared bat *Corynorhinus townsendii*	FE/--	Coastal regions from Del Norte County south to Santa Barbara County	Roosts in caves, tunnels, mines, and dark attics of abandoned buildings. Very sensitive to disturbances and may abandon a roost after one onsite visit	Potentially present.
Western mastiff bat *Eumops perotis californicus*	--/SSC	Widespread in the southern United States and the northern part of Mexico. Occur at elevations to 2,600 meters.	Day roosts occur in crevices of cliffs and rocky canyons as well as trees. Roost areas need to be elevated and have a 2 meter drop off for take off area. Can live in chaparral, costal and desert shrubs, and forests and wetland habitats.	Potentially present.
Western red bat *Lasiurus blossevillii*	--/SSC	Occur in southern British Columbia, the majority of the western United States, throughout Central America and Mexico, and even further south including Brazil, Bolivia, and Chile.	Prefers edges that have trees for roosting as well as open areas. Requires water. Feeds on a multitude of insects. Roosts primarily in trees and sometimes in shrubs but less often. Roost 2-40 ft above the ground.	Potentially present.
Hoary bat *Lasiurus cinereus*	--/--	Occur in all 50 states. Rare in the eastern United States and northern Rockies. Found mainly in the Pacific Northwest and California, Arizona, and New Mexico.	Prefer older large leaf trees such as cottonwoods, willows, and fruit/nut trees for daytime roosts. Often found in association with riparian corridors. Need open spaces to forage.	Potentially present.
Yuma myotis *Myotis yumanensis*	--/--	Occur in western North America and also from British Columbia to Central Mexico.	Range from juniper and riparian woodlands to the desert near open water sources. Found near rivers, streams, ponds, etc. Temperate and terrestrial habitats.	Potentially present.

SPECIES	STATUS (FED/CA)	GEOGRAPHIC DISTRIBUTION	HABITAT REQUIREMENTS	PRESENCE DETERMINATION
REPTILES				
Western pond turtle *Emys marmorata*	--/--	Occurs from the Oregon border of Del Norte and Siskiyou Counties south along the coast to San Francisco Bay, inland through the Sacramento Valley, and on the western slope of Sierra Nevada	Occupies ponds, marshes, rivers, streams, and irrigation canals with muddy or rocky bottoms and with watercress, cattails, water lilies, or other aquatic vegetation in woodlands, grasslands, and open forests	Habitat present (ditches), none observed.

STATUS EXPLANATIONS:

FEDERAL

E = ENDANGERED UNDER THE FEDERAL ENDANGERED SPECIES ACT.
T = THREATENED UNDER THE FEDERAL ENDANGERED SPECIES ACT.
PE = PROPOSED FOR ENDANGERED UNDER THE FEDERAL ENDANGERED SPECIES ACT.
PT = PROPOSED FOR THREATENED UNDER THE FEDERAL ENDANGERED SPECIES ACT.
C = CANDIDATE SPECIES FOR LISTING UNDER THE FEDERAL ENDANGERED SPECIES ACT.
D = DELISTED FROM FEDERAL LISTING STATUS.

STATE

E = ENDANGERED UNDER THE CALIFORNIA ENDANGERED SPECIES ACT.
T = THREATENED UNDER THE CALIFORNIA ENDANGERED SPECIES ACT.
C = CANDIDATE SPECIES FOR LISTING UNDER THE STATE ENDANGERED SPECIES ACT.
FP = FULLY PROTECTED UNDER THE CALIFORNIA FISH AND GAME CODE.
SSC = SPECIES OF SPECIAL CONCERN IN CALIFORNIA.

3.4.2 REGULATORY SETTING

There are a number of regulatory agencies whose responsibility includes the oversight of the natural resources of the state and nation including the California Department of Fish and Wildlife (CDFW), USFWS, U.S. Army Corps of Engineers (USACE), and the Central Valley Regional Water Quality Control Board (CVRWQCB). These agencies often respond to declines in the quantity of a particular habitat or plant or animal species by developing protective measures for those species or habitat type. The following is an overview of the federal, state and local regulations that are applicable to the proposed Project.

FEDERAL

Federal Endangered Species Act

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

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

Migratory Bird Treaty Act

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

Federal Bald and Golden Eagle Protection Act

The Federal Bald and Golden Eagle Protection Act provide regulations to protect bald and golden eagles as well as their nests and eggs from willful damage or injury.

Clean Water Act – Section 404

Section 404 of the CWA regulates all discharges of dredged or fill material into waters of the U.S. Discharges of fill material includes the placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; and fill for intake and outfall pipes and subaqueous utility lines [33 C.F.R. §328.2(f)].

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

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

Clean Water Act – Section 401

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

Rivers and Harbors Act of 1899

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

STATE

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

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

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

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

In 1977 the State Legislature passed the Native Plant Protection Act (NPPA) in recognition of rare and endangered plants of the state. The intent of the law was to preserve, protect, and enhance endangered plants. The NPPA gave the California Fish and Game Commission the power to designate native plants as endangered or rare, and to require permits for collecting, transporting, or selling such plants. The NPPA includes provisions that prohibit the taking of plants designated as "rare" from the wild, and a salvage mandate for landowners, which requires notification of the CDFW 10 days in advance of approving a building site.

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

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

Fish and Game Code §1601-1603 – Streambed Alteration

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

Public Resources Code §21000 - California Environmental Quality Act

CEQA identifies that a species that is not listed on the federal or state endangered species list may be considered rare or endangered if the species meets certain criteria. (CEQA Guidelines § 15380) Species that are not listed under FESA or CESA, but are otherwise eligible for listing (i.e. candidate, or proposed) may be protected by the local government until the opportunity to list the species arises for the responsible agency.

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

California Wetlands Conservation Policy

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

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

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

Natural Community Conservation Planning Act

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

Porter-Cologne Water Quality Control Act

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

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

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

State and federal laws mandate the protection of designated “beneficial uses” of water bodies. State law defines beneficial uses as “domestic; municipal; agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves” (Water Code Section 13050[f]). Additional protected beneficial uses of the San Joaquin River include groundwater recharge and fresh water replenishment. Major issues and the general conditions of existing beneficial uses in the San Joaquin River are as follows:

- Water Supply: The San Joaquin River is not currently a source of municipal water supply for the City of Manteca and is not identified as a source for the proposed Project, although some farms in the region use the river as a source of water for irrigation. The City currently uses groundwater only and surface water from the South San Joaquin Irrigation District

(SSJID) South County Surface Water Supply Project (SCSWSP), which does not rely on the San Joaquin River.

- Agricultural Supply: Extensive use is made of San Joaquin River and Delta waters for agricultural purposes. Annual water diversions from the Delta by the State Water Project (SWP) and the Central Valley Project (CVP) for agriculture are estimated to reach 4.3 million acre-feet (MAF) per year by 2030. In addition, about 2,000 privately owned agricultural water supply diversions are scattered throughout the Delta, generally consisting of riverside pumping stations.
- Recreation: Water-dependent recreation uses of the San Joaquin River and the Delta include swimming, wading, waterskiing, sport fishing, and a variety of other activities that involve contact with the water. Noncontact (water-enhanced) recreation uses include picnicking, camping, pleasure boating, hunting, bird watching, education, and aesthetic enjoyment.
- Groundwater Recharge: Water from the San Joaquin River and the Delta recharges the San Joaquin Valley groundwater basin. Recharge serves to maintain salt balance in the soil column, prevent saltwater intrusion into freshwater aquifers, and provide for water supplies. Groundwater is replenished through deep percolation of streamflow, precipitation, and applied irrigation water. Groundwater quality is generally adequate throughout the San Joaquin Valley and the Delta, although at shallow depths within the Delta the water is often saline and contains high levels of total dissolved solids (TDS) and dissolved minerals. Enforceable TDS standards do not exist for drinking water. The need for treatment generally depends on consumer acceptance.
- Fish and Wildlife: The San Joaquin River and the waterways of the Delta provide important habitat for a diverse variety of aquatic life and terrestrial wildlife. This includes temporary habitat and migration routes for anadromous and other migratory species, as well as permanent habitat for resident species. Fish dependent on the Delta as a migration corridor, nursery, or permanent residence include Chinook salmon, steelhead, delta smelt, Sacramento splittail, striped bass, American shad, sturgeon, catfish, largemouth bass, and numerous other estuary and freshwater species. The amount and quality of water flowing through the Delta greatly influences the overall productivity of the area on an annual basis. A large assemblage of wildlife uses the Delta either seasonally or year round, including waterfowl; migratory and resident songbirds; mice, rabbits, and other small mammals; water dependent mammals, such as beaver and muskrat; and predators such as skunk, raccoon, northern harrier, and coyote.

LOCAL

City of Riverbank General Plan

GOAL: COMMUNITY CHARACTER AND DESIGN

- DESIGN-15. Adequate, Safe, Well-Located Public Open Spaces, Parks Facilities, and Access to Features of the Natural Environment.

POLICIES: COMMUNITY CHARACTER AND DESIGN

- DESIGN-15.1. The City will identify land to create an open space system that links, parks, greenbelts, wildlife habitats, the Stanislaus River corridor, channels, and other critical areas. Impacts on the environmental functions of critical areas shall be considered in the development of open space system links.
- DESIGN-15.2. The City will require integration in the design of an open space system natural features that also provide flood protection, wildlife habitat, and other environmental enhancements.
- DESIGN-15.4. The City will require and pursue the preservation and enhancement of public access to riverfront recreation / natural areas while protecting sensitive habitats.

GOALS: CONSERVATION AND OPEN SPACE

- CONS-4. Preserve Habitat Associated with the Stanislaus River While Increasing Public Access.
- CONS-5. Preserve the Natural Diversity in the Riverbank Planning Area.

POLICIES: CONSERVATION AND OPEN SPACE

- CONS-4.1. Approved projects, plans, and subdivisions shall avoid conversion of habitat within the existing Stanislaus River riparian corridor, including Great Valley Mixed Riparian Forest, Great Valley Willow Scrub, and Riparian Scrub areas, and shall preserve an open space buffer along the Stanislaus River and associated riparian areas. The open space buffer shall be designed to avoid impacts to habitat and special status species in the riparian corridor, as specified in Policy CONS 5.1, Policy CONS 5.2, Policy CONS 5.3, and Policy CONS 5.6, based on project specific biological resource assessment. The precise size of buffer from the river and associated riparian corridor is to be determined by site specific analysis. The riparian corridor preservation and open space buffer shall be provided through a permanent covenant, such as a conservation easement and shall also include an ongoing maintenance agreement with a land trust or other qualified nonprofit organization. The preservation of the riparian corridor and ongoing maintenance agreement is required prior to City approval of any subdivision of property or development project located in areas outside City limits as of January 1, 2007 (see Figure CONS-1). Low-impact recreation could be allowed in this buffer area to the extent that impacts to these sensitive habitats are avoided or fully mitigated by demonstrating no net loss of habitat functions or value. Urban development shall not be allowed in this buffer area.
- CONS-4.2. Approved projects, plans, and subdivisions shall provide for collection, conveyance, treatment, detention, and other stormwater management measures in a way that does not decrease water quality or alter hydrology in the Stanislaus River or associated groundwater recharge areas.
- CONS-4.3. The City will require compliance with the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan for projects to expand Jacob Myers Park, or other projects within San Joaquin County, as applicable.

- CONS-5.1. Approved projects, plans, and subdivisions shall avoid urban development of the existing Stanislaus River riparian corridor and other habitat that is rare, declining, unique, or supportive of special-status species.
- CONS-5.2. Development applications involving areas with important habitat shall submit site plans that specifically show how development will avoid impacts to habitat that is rare, declining, unique, or supportive of special-status species.
- CONS-5.3. The City will require the use of clustering to avoid important habitat areas.
- CONS-5.4. When the loss of important habitat is unavoidable, mitigation measures will be designed to reduce impacts to the maximum extent feasible. This mitigation may include, but is not limited to off-site mitigation banking with restoration and enhancement components. For projects that would affect the function and value of river, stream, lake, pond, or wetland features, each of these features shall be delineated. For wetlands, the delineation shall be conducted in accordance with the U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual and verified by USACE. The project applicant shall determine the exact acreage of important habitat (including those protected by federal, state, regional, and/or local regulations) that would be impacted by project implementation. A mitigation plan to replace or rehabilitate affected habitats in a manner that ensures no net loss of habitat functions and values shall be prepared and implemented in accordance with applicable regulations. The plan shall be reviewed and approved by the appropriate regulatory agencies and all relevant permits and authorizations shall be obtained. Mitigation monitoring shall be conducted to ensure performance criteria are met.
- CONS-5.5. Approved projects, plans, and subdivisions shall comply with applicable federal and state laws and regulations (e.g., federal and state endangered species acts and California Fish and Game Code) that require the protection of special-status species.
- CONS-5.6. For all development projects involving discretionary review that have the potential to affect special status species, the project applicant shall be required to perform a reconnaissance level assessment of the Plan Area for special-status species and their habitat. For projects with the potential to have a substantial adverse effect on special-status species, their habitats, or movement corridors, or result in the fragmentation of their habitats, a Biological Inventory Report shall be prepared by a qualified biologist, to determine if, and to what extent special-status species and their habitat may be affected by a proposed project. Projects shall be designed to avoid disturbance or fragmentation of important habitats and wildlife movement corridors. For projects where avoidance is not possible, the project applicant shall be required to fully mitigate the effects the development on special-status species, and the loss and/or fragmentation of their habitat.
- CONS-5.7. A mitigation plan shall be prepared and reviewed and approved by the appropriate regulatory agencies for projects where avoidance of adverse effects to special-status species is not feasible, and authorization for take of listed species shall be obtained, if necessary. The mitigation plan shall include measures to minimize potential for effects during project construction (e.g., pre-construction surveys and timing of construction) and measures to compensate for loss of special-status species habitat. Loss of Swainson's hawk foraging habitat shall be compensated for by preservation and management of foraging

habitat of at least a similar quality at an appropriate location. Mitigation plans shall identify an appropriate mitigation site, compensation acreage, performance criteria, and monitoring and management requirements to ensure the site provides suitable habitat for the applicable species. Long-term protection of mitigation lands shall be ensured through fee title acquisition, conservation easement, or other suitable mechanisms. Long-term management of mitigation lands shall be ensured by establishing a management endowment or other suitable funding source. Alternatively, it may be appropriate to contribute funds to existing mitigation programs. Use of such a program shall be approved by the appropriate regulatory agencies.

City of Riverbank Municipal Code

Chapter 156, Oak and Landmark Tree Preservation, of the Riverbank Municipal Code calls for the conservation and protecting of existing landmark trees and oak trees within the City. Landmark trees are defined under Section 156.02 of the Code as: Trees that are: (1) six inches or greater in diameter at breast height (DBH); (2) in good health; and (3) of preferred species in order: (a) oak, (b) deciduous and (c) evergreen; (4) other such trees with significant impact (including but not limited to: age, size, location, outstanding habitat value, superior beauty, historical and/or cultural significance) on the surrounding area. Landmark Tree may also mean an "oak tree." Fruit trees and other trees used for agricultural purposes and production on existing lots created prior to June 8, 2006, are specifically excluded as being landmark trees. Additionally, oak trees are defined as A valley oak tree (*Quercus lobata*) with a trunk diameter of two inches or greater at a point 4.5 feet above the root crown (also referred to as "two inches diameter breast height [DBH]"). Oak tree may also mean a "landmark tree."

Section 156.14 of the Code outlines methods and standards for tree protection during construction activities. Section 156.10 notes that removal, destruction, mutilation, poisoning, or other attempts to kill a landmark/oak tree in the City is prohibited without a tree conservation permit. Prior to issuance of the tree removal permit, the property owner will be required to pay a permit fee and submit the appropriate cash bond to insure tree replacement. As a condition of the tree conservation permit, a project applicant shall submit a cash bond equal to the cost of the conservation efforts outlined in the adopted plan, as determined by the City. The bond shall be held for the purpose of assuring that the conservation efforts are implemented. If it is determined that practices violating any portion of the municipal code have resulted in tree damage, then the city may require that a cash bond, equal to the replacement value of the damaged tree(s), be submitted. The bond shall be held for the purpose of assuring that all remedial actions required by the city to minimize tree damage are taken, and/or for the purpose of assuring tree replacement should any damaged trees die or show noticeable signs of decline, as determined by a certified arborist, within a designated period of evaluation.

3.4.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

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

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

IMPACTS AND MITIGATION

Impact 3.4-1: The potential to have a direct or indirect effect on special-status invertebrate species. (Less than Significant)

According to the CNDDB, there are seven special-status invertebrates that are documented within the nine-quadrangle Project region, including: Vernal pool fairy shrimp (*Branchinecta lynchi*), Vernal pool tadpole shrimp (*Lepidurus packardi*), obscure bumble bee (*Bombus caliginosus*), crotch bumble bee (*Bombus crotchii*), western bumble bee (*Bombus occidentalis*), Molestan blister beetle (*Lytta molesta*), and valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*).

Field surveys and habitat evaluations for the entire Plan Area were performed on April 12, June 14, 2017.

Valley elderberry longhorn beetle (VELB) is a federal threatened insect, proposed for delisting. Elderberry (*Sambucus* sp.), which is a primary host species for valley elderberry longhorn beetle (VELB), is not present within the Plan Area. VELB is not anticipated to be directly affected by any individual phase or component of the proposed Project because there are no blue elderberry shrubs in the Plan Area.

Vernal pool fairy shrimp (VPFS) is a federal threatened invertebrate found in the Central Valley, central and south Coast Ranges from Tehama County to Santa Barbara County. They are commonly found in vernal pools and in sandstone rock outcrop pools. VPFS is not anticipated to be directly affected by any individual phase or component of the proposed Project because there in not appropriate vernal pool habitat in the Plan Area.

Vernal pool tadpole shrimp (VPTS) is a federal endangered invertebrate found in vernal pools and stock ponds from Shasta county south to Merced county. VPTS is not anticipated to be directly affected by any individual phase or component of the proposed Project because there in not appropriate vernal pool habitat in the Plan Area.

Essential habitat for Molestan blister beetle is not present in the Plan Area. Obscure bumble bee (*Bombus caliginosus*), crotch bumble bee (*Bombus crotchii*), western bumble bee (*Bombus occidentalis*) may occur in the region, and in the Plan Area at times. These species are tracked by CDFW, but are not specifically protected under state or federal law. The proposed project is not expected to have a significant impact on these species.

No special-status invertebrates were observed within the Plan Area or offsite improvement corridors during field surveys and none are expected to be affected by the proposed Project. Therefore, the proposed Project would have a **less than significant** impact on special-status invertebrate species.

Impact 3.4-2: The potential to have direct or indirect effects on special-status reptile and amphibian species. (Less than Significant with Mitigation)

According to the CNDDB, there is one special-status amphibian that is documented within the nine-quadrangle Project region, the: California tiger salamander (*Ambystoma californiense*). In addition, there is one special-status reptile that is documented within the nine-quadrangle Project region, the: Western pond turtle (*Emys marmorata*). In addition, the California red-legged frog (*Rana aurora draytoni*) and giant garter snake (*Thamnophis couchi gigas*) are documented in the USFWS IPAC database as potentially occurring within the region.

The California tiger salamander (CTS) (*Ambystoma californiense*) requires a combination of aquatic breeding habitat and upland estivation habitat within approximately one mile of each other. There are eight documented occurrences of CTS within a nine-quad search radius, six of which are located toward Oakdale and in the foothill region. The Plan Area is not within the migration distance for these occurrences. The other two occurrences are located near Escalon and Ripon. The Plan Area is not within the migration distance for these occurrences. The irrigation ditches do not have any documented occurrences of this species; however, they were evaluated during the field surveys for the potential to serve as an aquatic breeding site. The irrigation ditches do not receive irrigation water during the winter rainy season. As such, the irrigation ditches are largely dry during the breeding season for this species which inhibits breeding opportunities. Additionally, there is very limited upland in the vicinity that is not regularly disturbed (i.e. tilled, disced, deep ripped) in association with the agricultural activities. There could be small isolated areas in the

vicinity that have appropriate aquatic and upland habitat; however, none is available in the Plan Area. Absent any habitat, this species is not present.

The irrigation ditches represent potentially-suitable habitat for western pond turtle (*Clemmys marmorata*), which is known to occur in aquatic habitats, such as streams, ponds, freshwater marshes, and lakes. They require still or slow-moving water with instream emergent woody debris, rocks, or other similar features for basking sites. Western pond turtle nests are typically located on unshaded upland slopes in dry substrates with clay or silt soils. The irrigation ditches provide aquatic habitat for western pond turtles. The banks/levees along the irrigation ditches could provide suitable nesting sites, but regular disturbance from vegetation removal activities, such as burning, mowing, and herbicide spraying, makes it very unlikely that pond turtles would nest in the banks. The agricultural portion of the Plan Area is unlikely to be utilized by western pond turtle. This species is known throughout the region; however, this special status species is not anticipated to be affected by the proposed Project.

The irrigation ditches represent potentially-suitable habitat for giant garter snake (*Thamnophis gigas*), which is a federal and state listed threatened species. Essential giant garter snake habitat components consist of 1) adequate water during early spring through mid-fall to provide prey base and cover, 2) emergent wetland vegetation for escape cover and foraging habitat, 3) uplands for basking and retreat sites, and 4) higher elevation upland for cover and flood refugia. The USFWS considers areas within 200 feet of aquatic habitat to represent potential upland habitat. Additionally, the USFWS identifies various levels of impact to giant garter snake habitat, from temporary to permanent, and applies mitigation requirements accordingly. It is noted that there are no documented occurrences of this species within a nine-quad search and this species is not anticipated to be present.

The irrigation ditches do not represent suitable habitat for California red-legged frog (CRLF) (*Rana aurora draytoni*) or foothill yellow-legged frog (FYLF) (*Rana boylii*). Essential habitat components for these species consist of permanent and semi-permanent aquatic habitats, such as creeks and cold-water ponds, with emergent and submergent vegetation. They also need adjacent upland habitat. It is noted that there are no documented occurrences of these species within a nine-quad search and these species are not anticipated to be present.

CONCLUSION

The irrigation ditches provide potential aquatic habitat for several species, including those discussed above. Filling the irrigation ditches and the land immediately adjacent to the irrigation ditches would present a potential impact to this habitat. While no special-status reptiles or amphibians were observed within the Plan Area during field surveys and none are expected to be affected by the proposed Project, the presence of habitat warrants preconstruction surveys to ensure that these facilities are not occupied at the time of construction. Implementation of the following mitigation measure would reduce potential impacts to special status species to a **less than significant** level.

MITIGATION MEASURE(S)

Mitigation Measure 3.4-1: *The project proponent shall implement the following measures to avoid or minimize impacts on western pond turtle:*

- *Ground-disturbing activities in areas of potential pond turtle nesting habitat shall be avoided during the nesting season (April–August), to the extent feasible.*
- *A preconstruction survey for western pond turtles within aquatic habitats and adjacent suitable uplands to be disturbed by project activities shall be conducted by a qualified biologist. In aquatic habitats which may be dewatered during project construction, surveys shall be conducted immediately after dewatering and before any subsequent disturbance. Elsewhere, surveys shall be conducted within 24 hours before project disturbance.*
- *If pond turtles are found during preconstruction surveys, a qualified biologist, with approval from CDFW, shall move the turtles to the nearest suitable habitat outside the area subject to project disturbance. The construction area shall be reinspected whenever a lapse in construction activity of 2 weeks or more has occurred.*
- *Construction personnel performing activities within aquatic habitats and adjacent suitable uplands to be disturbed by project activities shall receive worker environmental awareness training from a qualified biologist to instruct workers to recognize western pond turtle, their habitats, and measures being implemented for its protection.*
- *Construction personnel shall observe a 15-miles-per-hour speed limit on unpaved roads.*

Mitigation Measure 3.4-2: *The project proponent shall implement the following measures to avoid or minimize impacts on giant garter snake:*

- *In areas within 200 feet of any irrigation ditch (potential GGS aquatic habitat) construction will occur during the GGS active season of May 1 through October 1.*
- *Construction personnel shall receive worker environmental awareness training to instruct workers to recognize giant garter snake and their habitats.*
- *Within 24 hours before construction activities, areas within 200 feet of any irrigation ditch (potential GGS aquatic habitat) shall be surveyed for giant garter snake. The survey shall be repeated if a lapse in construction activity of 2 weeks or greater has occurred. If a giant garter snake is encountered during construction, activities within 200 feet of the irrigation ditches shall cease until appropriate corrective measures have been completed or it is determined by the qualified biologist and City staff, in coordination with USFWS and CDFW, that the giant garter snake shall not be harmed. Any sightings shall be reported to USFWS and CDFW immediately.*
- *A biological onsite monitor will be present during initial ground-disturbing activities within 200 feet of any irrigation ditch or potential GGS habitat within the CWSP Plan Area*

- *Construction vehicles would require low-speed limits within such sites to lessen the probability that the species could be run over by vehicles and equipment.*
- *Any aquatic habitat for the snake that is dewatered shall remain dry for at least 15 consecutive days after April 15 and before excavating or filling of the dewatered habitat. If complete dewatering is not possible, potential snake prey (e.g., fish and tadpoles) will be removed so that snakes and other wildlife are not attracted to the construction area.*
- *Giant garter snake aquatic habitat to be avoided (i.e. irrigation ditches) within or adjacent to construction areas will be fenced and designated as environmentally sensitive areas. These areas shall be avoided by all construction personnel.*

Impact 3.4-3: The potential to have direct or indirect effects on special-status bird species. (Less than Significant with Mitigation)

Special-status birds that are documented in the CNDDB within the nine-quadrangle Project region include: burrowing owl (*Athene cunicularia*), great blue heron (*Ardea herodias*), Swainson's hawk (*Buteo swainsoni*), cackling (Aleutian Canada) goose (*Branta hutchinsii leucopareia*), Tricolored blackbird (*Agelaius tricolor*), snowy egret (*Egretta thula*), and yellow-breasted chat (*Icteria virens*). The Plan Area may provide suitable foraging habitat for a variety of potentially occurring special-status birds, including those listed above. Potential nesting habitat is present in a variety of trees located within the Plan Area and in the vicinity. There is also the potential for other special-status birds that do not nest in this region and represent migrants or winter visitants to forage in the Plan Area.

BURROWING OWL

Burrowing owl (*Athene cunicularia*) is a ground nesting raptor species that is afforded protection by CDFW as a species of special concern due to declining populations in the Great Central Valley of California. They typically inhabit open grasslands and nest in abandoned ground squirrel burrows, cavities associated with raised mounds, levees, or soft berm features. The nearest CNDDB occurrences are located approximately 0.7 miles east of the Plan Area. There are other documented occurrences within the region, and this species is generally common in undeveloped areas.

The Plan Area was actively cultivated and lacked active ground squirrel burrows. No burrowing owls or their signs were observed during the site visit. Nevertheless, any ground disturbance has potential to result in direct impacts on this species if this species occupies the area at some time before construction commences.

SWAINSON'S HAWK

Swainson's hawk (*Buteo swainsoni*) is a raptor species currently listed as threatened in California by the CDFW. Breeding pairs typically nest in tall cottonwoods, valley oaks, or willows associated with riparian corridors, grassland, irrigated pasture, and cropland with a high density of rodents.

The Central Valley populations breed and nest in the late spring through early summer before migrating to Central and South America for the winter.

The riparian habitat along the Stanislaus River approximately 1.75 miles to the north has a documented Swainson's hawk nest. There is a second documented nest located approximately 2 miles to the northwest of the Plan Area. The Plan Area does not have suitable nesting trees and is not considered nesting habitat for this species. However, the majority of the site provides suitable foraging habitat for Swainson's hawk. The project would not have a direct impact on Swainson's hawk, however, there would be an indirect impact through the loss of foraging habitat.

TRICOLORED BLACKBIRD

Tricolored blackbirds (*Agelaius tricolor*) are listed by CDFW as a species of special concern due to declining populations in the region. They are colonial nesters that favor dense stands of cattails and/or bulrush, but they also commonly utilize blackberry thickets associated with drainages, ditches, and canals. The closest recorded occurrence is approximately 2.4 miles to the northwest.

This species was not encountered during the field survey. This species is not present in the Plan Area.

OTHER BIRDS IN THE REGION

Year-round birds: Special-status birds that can be present in the region throughout the year include: Great blue heron (*Ardea Herodias*), bald eagle (*Haliaeetus leucocephalus*), black rail (*Laterallus jamaicensis*), burrowing owl (*Athene cunicularia*), loggerhead shrike *(Lanius ludovicianus*), Nuttalls woodpecker (*Picoides nuttallii*), oak titmouse (*Baeolophus inornatus*), song sparrow (Modesto population) (*Melospiza melodia*), tricolored blackbird *(Agelaius tricolor*), Williamson's sapsucker (*Sphyrapicus thyroideus*), yellow-billed magpie (*Pica nuttalli*), among others. Some of these species are migratory, but also reside year-round in California.

Summering Birds: Special-status birds that are only present in the region in the spring and summer months include: Aleutian goose (*Branta canadensis leucopareia*), least bittern (*Ixobrychus exilis*), Swainson's hawk (*Buteo swainsoni*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), and yellow-billed magpie (*Pica nuttalli*).

Overwintering Birds: Special-status birds that are only present in the region in the fall and winter months include: Snowy egret (*Egretta thula*), Yellow-breasted chat (*Icteria virens*), ox sparrow (*Passerella iliaca*), lesser yellowlegs (*Tringa flavipes*), Lewis's woodpecker (*Melanerpes lewis*), long-billed curlew (*Numenius americanus*), marbeled godwit (*Limosa fedoa*), merlin *(Falco columbarius*), mountain plover (*Charadrius montanus*), peregrine falcon (*Falco peregrinus*), short-eared owl (*Asio flammeus*), and western grebe (A*echmophorus occidentalis*).

Nesting Raptors (Birds of Prey): All raptors (owls, hawks, eagles, falcons), including species and their nests, are protected from take pursuant to the Fish and Game Code of California Section 3503.5, and the federal Migratory Bird Treaty Act, among other federal and State regulations. Special-status raptors that are known to occur in the region include: bald eagle (*Haliaeetus*

leucocephalus), burrowing owl (*Athene cunicularia*), Cooper's hawk *(Accipiter cooperii*), ferruginous hawk *(Buteo rega*), golden eagle *(Aquila chrysaetos*), great horned owl *(Bubo virginianus),* prairie falcon *(Falco mexicanus*), red-tailed hawk *(Buteo jamaicensis),* short-eared owl (*Asio flammeus*), Swainson's hawk *(Buteo swainsoni*), and white-tailed kite *(Elanus leucurus*), among others.

Analysis: Powerlines and trees located in the region represent potentially suitable nesting habitat for a variety of special-status birds. Additionally, the agricultural land represents potentially suitable nesting habitat for the ground-nesting birds. In general, most nesting occurs from late February and early March through late July and early August, depending on various environmental conditions. The CNDDB currently contains nesting records for Swainson's hawk and burrowing owl in the vicinity of the Plan Area, but not onsite. In addition to the species described above, common raptors such as among others, may nest in or adjacent to the Plan Area.

CONCLUSION

The Plan Area is currently undeveloped and has been previously used for agricultural uses. Field surveys did not reveal the presence of any special-status species. However, the powerlines and trees found in the Plan Area can provide nesting opportunities for a variety of birds. During field surveys there was no evidence of nesting; however, new nests can be constructed in future breeding cycles. Suitable foraging habitat is located on and around the Plan Area. This includes foraging habitat for burrowing owl and Swainson's hawk. The proposed project would require permanent disturbance to the foraging habitat. Implementation of the following mitigation measure would reduce potential impacts to special status birds to a **less than significant** level.

MITIGATION MEASURE(S)

Mitigation Measure 3.4-3: *The project proponent shall implement the following measure to avoid or minimize impacts on western burrowing owl:*

- *No less than 14 days before initiating ground disturbance activities, a qualified biologist shall complete an initial take avoidance survey using the recommended methods described in the Detection Surveys section of the March 7, 2012, CDFW Staff Report on Burrowing Owl Mitigation (CDFW 2012). Implementation of avoidance and minimization measures (as presented in the March 7, 2012, CDFW Staff Report on Burrowing Owl Mitigation) would be triggered if the initial take avoidance survey results in positive owl presence in the Plan Area where project activities shall occur. If needed, the development of avoidance and minimization approaches shall be developed in coordination with CDFW.*

Mitigation Measure 3.4-4: *The project proponent shall implement the following measures to avoid or minimize impacts on Swainson's hawk:*

- *No more than 30 days before the commencement of construction, a qualified biologist shall perform preconstruction surveys for nesting Swainson's hawk and other raptors during the nesting season (February 1 through August 31).*

- *Appropriate buffers shall be established and maintained around active nest sites during construction activities to avoid nest failure as a result of project activities. The appropriate size and shape of the buffers shall be determined by a qualified biologist, in coordination with CDFW, and may vary depending on the nest location, nest stage, and construction activity. The buffers may be adjusted if a qualified biologist determines it would not be likely to adversely affect the nest. Monitoring shall be conducted to confirm that project activity is not resulting in detectable adverse effects on nesting birds or their young. No project activity shall commence within the buffer areas until a qualified biologist has determined that the young have fledged or the nest site is otherwise no longer in use.*

- *Before the commencement of construction, the project proponent shall provide compensatory mitigation for the permanent loss of Swainson's hawk foraging habitat. Mitigation shall be at the CDFW specified ratios, which are based on distance to nests. The Plan Area's distance to the closest nest falls within the range of "within 5 miles of an active nest tree but greater than 1 mile from the nest tree." As such, the Project shall be responsible for 0.75 acres of each acre of urban development authorized (0-75:1 ratio). The project proponent shall either provide lands protected through fee title acquisition or conservation easement (acceptable to the CDFW) on agricultural lands or other suitable habitats which provide foraging habitat for Swainson's hawk.*

Mitigation Measure 3.4-5: *The project proponent shall implement the following measure to avoid or minimize impacts on other protected bird species that may occur on the site:*

- *Preconstruction surveys for active nests of special-status birds shall be conducted by a qualified biologist in all areas of suitable habitat within 500 feet of project disturbance. Surveys shall be conducted within 14 days before commencement of any construction activities that occur during the nesting season (February 15 to August 31) in a given area.*

- *If any active nests, or behaviors indicating that active nests are present, are observed, appropriate buffers around the nest sites shall be determined by a qualified biologist to avoid nest failure resulting from project activities. The size of the buffer shall depend on the species, nest location, nest stage, and specific construction activities to be performed while the nest is active. The buffers may be adjusted if a qualified biologist determines it would not be likely to adversely affect the nest. If buffers are adjusted, monitoring will be conducted to confirm that project activity is not resulting in detectable adverse effects on nesting birds or their young. No project activity shall commence within the buffer areas until a qualified biologist has determined that the young have fledged or the nest site is otherwise no longer in use.*

Impact 3.4-4: The potential to result in direct or indirect effects on special-status mammal species. (Less than Significant with Mitigation)

The Plan Area provides potential habitat for several special-status bats, including: Townsend's big-eared bat (*Corynorhinus townsendii*), western mastiff bat (*Eumops perotis californicus*), western red bat (*Lasiurus blossevillii*), hoary bat (*Lasiurus cinereus*), and Yuma myotis (*Myotis Yumanensis*).

These species are not federal or state listed; however, they are tracked by the CNDDB and are considered species of special concern. Development of the Plan Area would eliminate foraging habitat for special-status bats by urbanizing the agricultural areas. The loss of foraging habitat would not directly affect these bat species, however, the available foraging habitat for these species would be reduced. There are a variety of agricultural areas which remain within the vicinity of the Plan Area where bats could roost. Roosts commonly include: tree/shrub foliage, hollow trees, barns, attics, inoperable vehicles, bridges, rocks, and debris piles. There was no evidence of bat roosts during the field investigations, however, bats can be difficult to detect and can inhabit areas that they were not previously known to inhabit. With implementation of the following mitigation measure, the proposed Project would have a **less than significant** impact on special-status bat species.

MITIGATION MEASURE(S)

Mitigation Measure 3.4-6: *The project proponent shall implement the following measures to avoid or minimize impacts on special-status bats:*

- *If removal of suitable roosting areas (i.e. buildings, trees, shrubs, bridges, etc.) must occur during the bat pupping season (April 1 through July 31), surveys for active maternity roosts shall be conducted by a qualified biologist. The surveys shall be conducted from dusk until dark.*

- *If a special-status bat maternity roost is located, appropriate buffers around the roost sites shall be determined by a qualified biologist and implemented to avoid destruction or abandonment of the roost resulting from habitat removal or other project activities. The size of the buffer shall depend on the species, roost location, and specific construction activities to be performed in the vicinity. No project activity shall commence within the buffer areas until the end of the pupping season (August 1) or until a qualified biologist conforms the maternity roost is no longer active.*

Impact 3.4-5: The potential for direct or indirect effects on candidate, sensitive, or special-status plant species. (Less than Significant)

The records search identified eight documented special-status plant species within the nine-quadrangle Project region. These eight special-status plants include: Legenere (*Legenere limosa*), Greene's tuctoria (*Tuctoria greenei*), San Joaquin Valley Orcutt grass (*Orcuttia inaequalis*), Colusa grass (*Neostapfia colusana*), subtle orache (*Atriplex subtilis*), heartscale (*Atriplex cordulata var. cordulata*), beaked clarkia (*Clarkia rostrate*), and Prairie wedge grass (*Sphenopolis obtusata*).

Of the eight documented species, three are federally listed (two threatened and one endangered), three are state listed (two endangered and one rare), seven CNPS 1B listed species (including the federal and state listed species), and one CNPS 2 listed species.

Field surveys and habitat evaluations were performed on April 12, June 14, 2017. The collection of field surveys included surveys that coincided with the blooming period for special many status plants known to occur within the region. The conditions of the Plan Area are highly disturbed due

to the active agricultural operations. No special-status plants were observed within the Plan Area during field surveys. The surveys were conducted within the blooming period for all species. Implementation of the individual phases, and the proposed Project as a whole, will have a **less than significant** impact on special-status plants.

Impact 3.4-6: The potential to effect protected wetlands and jurisdictional waters. (Less than Significant with Mitigation)

The Plan Area is level agricultural property that is actively maintained in crops during the growing season. There are no rivers, streams, or other natural aquatic habitats within the boundary of the Plan Area, although there is an extensive network of man-made irrigation facilities (canals/ditches/basins). The Modesto Irrigation District (MID) main canal is located along the northern boundary and the MID Lateral 6 traverses the southern portion of the Plan Area from northeast to southwest. Along much of the western boundary of the Plan Area is a private irrigation canal/ditch that feeds irrigation water to smaller tributary ditches throughout much of the Plan Area. A ditch/basin located on the eastside of Claribel Road within the Plan Area collects stormwater runoff from Claribel, in addition to irrigation runoff from the fields. There are several basins associated with the dairy operation located west of Crawford Road and east of the MID Lateral 6 within the boundary of the Plan Area.

The proposed stormwater collection system functions through storm drainage collection, treatment, detention, and discharge. The exact sizing of the underground piping and basin will be engineered during the preparation of the improvement plans. The project proposes an on-site drainage system to collect the runoff in a combination of underground pipes and surface vegetated swales and then discharge the runoff into the three proposed major storm water detention basins. The dual use detention ponds have been designed with surface areas and volumes in compliance with City standards. The MID Discharge Agreement currently on file for the existing Crossroads development will be modified to accommodate the proposed Project. The agreement currently permits the discharge out of existing basins into the MID Lateral 6 and will be modified to add the additional discharge from the proposed Project.

The proposed project is not anticipated to result in fill activities to the MID main canal or MID Lateral 6.

The ditch/basin located on the northside of Claribel Road within the Plan Area primarily collects stormwater runoff from Claribel Road. This facility was constructed as a temporary drainage facility until such time that full roadway improvements are constructed (i.e. curb, gutter sidewalk, and underground drainage). This ditch/basin is anticipated to be non-jurisdictional, but final decisions on jurisdiction are made by the regulatory agencies at the time permits are processed.

The irrigation canal/ditch located along much of the western boundary of the Plan Area is a private irrigation canal/ditch that feeds irrigation water to smaller tributary ditches throughout much of the Plan Area. This facility is manmade and specifically services the agricultural uses of the site. The Specific Plan does not specify if the main canal would be undergrounded or remain in place as an open facility. The location of this facility is within an area designed for open space and park uses

and either scenario (underground or leave in place) remains an option. It is anticipated that the facility would fall under the agricultural ditch exemption, and is not jurisdictional, but final decisions on jurisdiction are made by the regulatory agencies at the time permits are processed.

The smaller tributary ditches throughout much of the Plan Area receive irrigation water from the irrigation canal/ditch located along much of the western boundary of the Plan Area. These tributary ditches are manmade and specifically service the agricultural uses of the site. These facilities would be filled as the Specific Plan develops. It is anticipated that these facilities would fall under the agricultural ditch exemption, and is not jurisdictional, but final decisions on jurisdiction are made by the regulatory agencies at the time permits are processed.

There are several basins associated with the dairy operation located west of Crawford Road and east of the MID Lateral 6 within the boundary of the Plan Area. These facilities would be filled as the Specific Plan develops. It is anticipated that these facilities are not jurisdictional, but final decisions on jurisdiction are made by the regulatory agencies at the time permits are processed.

There are no rivers, streams, or other natural aquatic habitats within the boundary of the Plan Area. As described above, there is a network of man-made irrigation facilities (canals/ditches/basins) that are all anticipated to be deemed non-jurisdictional. The final jurisdictional determination is made by the regulatory agencies. The Project applicant for parcels that contain any of these irrigation facilities must consult with the USACE to ensure that the regulatory agency does not claim jurisdiction and require a permit for fill activities. If the regulatory agencies takes jurisdiction over these facilities the Project applicant for the parcels with the irrigation facilities would be required to obtain a permit and provide compensatory mitigation in accordance with the regulatory agency's requirements. There are no other wetlands that are proposed for disturbance. Implementation of the following Mitigation Measure would ensure that any potential for impact is reduced to a **less than significant** level.

MITIGATION MEASURES

Mitigation Measure 3.4-7*: If construction activities would disturb a ditch/canal/basin within the Plan Area, the property owner/applicant proposing the activity shall verify with that the facility qualifies under the agricultural ditch exemption. If the facilities do not qualify for the exemption and are determined to be jurisdictional by the regulatory agencies, any fill activity would require authorization for fill from the regulatory agencies (USACE-404 permit, RWQCB-401 certification, 1600 Streambed Alteration Agreement). All requirements of a permit shall be adhered to throughout the construction phase.*

Impact 3.4-7: The potential to result in adverse effects on riparian habitat or a sensitive natural community. (Less than Significant)

The CNDDB record search revealed documented occurrences of one sensitive habitat within the nine-quadrangle Project region: Northern Hardpan Vernal Pool. This sensitive natural community does not occur within the Plan Area. There is no riparian habitat within the Plan Area.

Implementation of the proposed Project would have a **less than significant** impact on riparian habitats or sensitive natural communities.

Impact 3.4-8: The potential to result in interference with the movement of native fish or wildlife species or with established wildlife corridors, or impede the use of native wildlife nursery sites. (Less than Significant)

The CNDDB record search did not reveal any documented wildlife corridors or wildlife nursery sites on or adjacent to the Plan Area. Special-status fish species documented within the region include: Hardhead (*Mylopharodon conocephalus*) and Steelhead - Central Valley DPS (*Oncorhynchus mykiss irideus*). The closest major natural movement corridor for native fish that are documented in the region is the Stanislaus River, located to the north of the Plan Area. The land uses within the Plan Area would not have any direct disturbance to the Stanislaus River or its tributaries, and therefore, would not have any direct disturbance to the movement corridor or habitat.

The ongoing operational phase of the proposed Project requires discharge of stormwater into the City storm drainage system and on-site MID facilities. The MID Discharge Agreement currently on file for the existing Crossroads development will be modified to accommodate the proposed Project. The agreement currently permits the discharge out of existing basins into the MID Lateral 6 and will be modified to add the additional discharge from the proposed Project. On-site percolation will also be utilized if it is determined through soils analysis that storm water disposal is needed.

The discharge of stormwater could result in indirect impacts to special-status fish downstream if stormwater was not appropriately treated through BMPs prior to its discharge to MID facilities. The City's Low Impact Development Design and Specifications Manual establishes design standards for all development projects in the City. Storm water drainage is managed through the implementation of best management practices to the extent they are technologically achievable to prevent and reduce pollutants. The City requires reasonable protection from accidental discharge of prohibited materials or other wastes into the municipal storm drain system or watercourses. The management of water quality through BMPs is intended to ensure that water quality does not degrade to levels that would interfere or impede fish or wildlife. Implementation of these required measures would ensure that this potential impact is reduced to a **less than significant** level.

Impact 3.4-9: The potential to conflict with an adopted Habitat Conservation Plan. (No Impact)

The Plan Area is not subject to an HCP or NCCP. Implementation of the proposed project would have **no impact** relative to this topic.

Impact 3.4-10: The potential to conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. (Less than Significant)

The Conservation and Open Space Element of the General Plan establishes numerous policies related to biological resources as listed below:

CONSERVATION AND OPEN SPACE ELEMENT POLICIES

CONS-4.1. Approved projects, plans, and subdivisions shall avoid conversion of habitat within the existing Stanislaus River riparian corridor, including Great Valley Mixed Riparian Forest, Great Valley Willow Scrub, and Riparian Scrub areas, and shall preserve an open space buffer along the Stanislaus River and associated riparian areas. The open space buffer shall be designed to avoid impacts to habitat and special status species in the riparian corridor, as specified in Policy CONS 5.1, Policy CONS 5.2, Policy CONS 5.3, and Policy CONS 5.6, based on project specific biological resource assessment. The precise size of buffer from the river and associated riparian corridor is to be determined by site specific analysis. The riparian corridor preservation and open space buffer shall be provided through a permanent covenant, such as a conservation easement and shall also include an ongoing maintenance agreement with a land trust or other qualified nonprofit organization. The preservation of the riparian corridor and ongoing maintenance agreement is required prior to City approval of any subdivision of property or development project located in areas outside City limits as of January 1, 2007 (see Figure CONS-1). Low-impact recreation could be allowed in this buffer area to the extent that impacts to these sensitive habitats are avoided or fully mitigated by demonstrating no net loss of habitat functions or value. Urban development shall not be allowed in this buffer area.

- ***Consistent****: Development of the Plan Area would not convert habitat within the existing Stanislaus River riparian corridor, including Great Valley Mixed Riparian Forest, Great Valley Willow Scrub, or Riparian Scrub areas. As noted previously, the Plan Area contains the following land cover types: Deciduous Orchard, Dryland Grain Crops, Evergreen Orchard, Irrigated Grain Crops, Irrigated Hayfield, Irrigated Row and Field Crops, Lacustrine, Pasture, Urban, and Vineyard. The Plan Area is not located along the Stanislaus River, and riparian habitat is not found on-site.*

CONS-4.2. Approved projects, plans, and subdivisions shall provide for collection, conveyance, treatment, detention, and other stormwater management measures in a way that does not decrease water quality or alter hydrology in the Stanislaus River or associated groundwater recharge areas.

- ***Consistent****: The proposed Project would include development of a storm drainage system in accordance with the adopted City and regional stormwater regulations. As discussed in Chapter 2.0, Project Description, a standalone drainage system that will detain all storm water runoff on-site in detention basins is proposed. Because of the greenfield/rural residential designation within the Low Impact Development Design and Specifications Manual, maintaining existing hydrological conditions by conserving natural areas and existing drainage features is an important consideration, where possible. Impervious hardscape surfaces (i.e., conventional roofs and paving) will be designed to discharge to pervious areas to help filter and infiltrate the stormwater runoff. To further aid infiltration, native soil compaction in landscaped areas will be minimized.*

Additionally, as discussed in Section 3.9, Hydrology and Water Quality, development of the Plan Area would not alter the hydrology of the Stanislaus River. Impacts related to groundwater recharge were determined to be less than significant (see Impact 3.9-3).

CONS-4.3. The City will require compliance with the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan for projects to expand Jacob Myers Park, or other projects within San Joaquin County, as applicable.

- ***Consistent****: The proposed Project does not include expansion of Jacob Myers Park, and the Plan Area is not located within San Joaquin County.*

CONS-5.1. Approved projects, plans, and subdivisions shall avoid urban development of the existing Stanislaus River riparian corridor and other habitat that is rare, declining, unique, or supportive of special-status species.

- ***Consistent****: Habitat areas in the vicinity of the Plan Area include largely agricultural plant communities which provide habitat for a variety of biological resources in the region. Agricultural areas occur throughout the region and are generally flat and well drained, and as a result are well suited for many crops. Alfalfa fields, hay, row crops, orchards, dominate the agricultural areas in the vicinity. The on-site agricultural areas, although not rare, support some special-status species as foraging habitat. This EIR includes an in-depth analysis of impacts for sensitive plants and wildlife, as well as habitat. Where impacts are identified, appropriate mitigation measures are presented to minimize, avoid, or compensate to the extent practicable.*

CONS-5.2. Development applications involving areas with important habitat shall submit site plans that specifically show how development will avoid impacts to habitat that is rare, declining, unique, or supportive of special-status species.

- ***Consistent****: As discussed above, the on-site agricultural areas, although not rare, can support some special-status species. This EIR includes an in-depth analysis of impacts for sensitive plants and wildlife, as well as habitat. Where impacts are identified, appropriate mitigation measures are presented to minimize, avoid, or compensate to the extent practicable.*

CONS-5.3. The City will require the use of clustering to avoid important habitat areas.

- ***Consistent****: The proposed Project includes approximately 120 acres of Medium Density Residential (MDR) uses, and approximately 45 acres of park uses. The MDR designation is intended to provide areas with smaller lot sizes for both attached and detached housing including but not limited to cluster homes, courtyard homes and townhomes.*

CONS-5.4. When the loss of important habitat is unavoidable, mitigation measures will be designed to reduce impacts to the maximum extent feasible. This mitigation may include, but is not limited to off-site mitigation banking with restoration and enhancement components. For projects that would affect the function and value of river, stream, lake, pond, or wetland features, each of these features shall be delineated. For wetlands, the delineation shall be conducted in

accordance with the U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual and verified by USACE. The project applicant shall determine the exact acreage of important habitat (including those protected by federal, state, regional, and/or local regulations) that would be impacted by project implementation. A mitigation plan to replace or rehabilitate affected habitats in a manner that ensures no net loss of habitat functions and values shall be prepared and implemented in accordance with applicable regulations. The plan shall be reviewed and approved by the appropriate regulatory agencies and all relevant permits and authorizations shall be obtained. Mitigation monitoring shall be conducted to ensure performance criteria are met.

- ***Consistent****: As noted previously, this EIR includes an in depth analysis of impacts for sensitive plants and wildlife, as well as habitat. Where impacts are identified, mitigation measures are presented to minimize, avoid, or compensate to the extent practicable. As discussed throughout this section, the proposed Project would be subject to any applicable local, regional, state, or federal regulations pertaining to potential impacts to habitat and wildlife.*

CONS-5.5. Approved projects, plans, and subdivisions shall comply with applicable federal and state laws and regulations (e.g., federal and state endangered species acts and California Fish and Game Code) that require the protection of special-status species.

- ***Consistent****: As discussed throughout this section, the proposed Project would be subject to any applicable local, regional, state, or federal regulations pertaining to potential impacts to habitat and wildlife.*

CONS-5.6. For all development projects involving discretionary review that have the potential to affect special status species, the project applicant shall be required to perform a reconnaissance level assessment of the Plan Area for special-status species and their habitat. For projects with the potential to have a substantial adverse effect on special-status species, their habitats, or movement corridors, or result in the fragmentation of their habitats, a Biological Inventory Report shall be prepared by a qualified biologist, to determine if, and to what extent special-status species and their habitat may be affected by a proposed project. Projects shall be designed to avoid disturbance or fragmentation of important habitats and wildlife movement corridors. For projects where avoidance is not possible, the project applicant shall be required to fully mitigate the effects the development on special-status species, and the loss and/or fragmentation of their habitat.

- ***Consistent****: Field investigations were performed in the Plan Area on April 12, June 14, 2017 by Principal Biologist Steve McMurtry. The surveys served several purposes. Primarily, they served as reconnaissance of the site to establish the existing conditions of the site and to verify information gathered in the pre-field investigation. This section serves as a Biological Inventory Report. As required by the mitigation measures included in this section of the EIR, the Project applicant would be required to fully mitigate the effects of development on special-status species, and the loss and/or fragmentation of their habitat.*

CONS-5.7. A mitigation plan shall be prepared and reviewed and approved by the appropriate regulatory agencies for projects where avoidance of adverse effects to special-status species is not feasible, and authorization for take of listed species shall be obtained, if necessary. The mitigation

plan shall include measures to minimize potential for effects during project construction (e.g., pre-construction surveys and timing of construction) and measures to compensate for loss of special-status species habitat. Loss of Swainson's hawk foraging habitat shall be compensated for by preservation and management of foraging habitat of at least a similar quality at an appropriate location. Mitigation plans shall identify an appropriate mitigation site, compensation acreage, performance criteria, and monitoring and management requirements to ensure the site provides suitable habitat for the applicable species. Long-term protection of mitigation lands shall be ensured through fee title acquisition, conservation easement, or other suitable mechanisms. Long-term management of mitigation lands shall be ensured by establishing a management endowment or other suitable funding source. Alternatively, it may be appropriate to contribute funds to existing mitigation programs. Use of such a program shall be approved by the appropriate regulatory agencies.

- ***Consistent****: Mitigation Measures have been incorporated into this EIR to ensure avoidance of special status species to the extent feasible. Mitigation requires the Project applicant to preform preconstruction surveys to ensure that there are no impacts to special status species that have potential habitat even though none have been observed (i.e. burrowing owl, giant garter snake, western pond turtle, etc.). Additionally, the Project applicant must implement various measures in order to avoid and/or minimize impacts on Swainson's hawk and their habitat. As part of the measure, compensatory mitigation for the permanent loss of Swainson's hawk foraging habitat would be provided. The Project applicant shall either provide lands protected through fee title acquisition or conservation easement (acceptable to the CDFW) on agricultural lands or other suitable habitats which provide foraging habitat for Swainson's hawk. Surveys for other special-status species and other measures to minimize potential for effects during project construction would also be required.*

Additionally, the Community and Character Design Element of the General Plan establishes numerous policies and implementation measures related to biological resources as listed below:

DESIGN-15.1. The City will identify land to create an open space system that links, parks, greenbelts, wildlife habitats, the Stanislaus River corridor, channels, and other critical areas. Impacts on the environmental functions of critical areas shall be considered in the development of open space system links.

- ***Consistent****: Park basin areas and other trails would be provided throughout the Plan Area in order to provide open space system links.*

DESIGN-15.2. The City will require integration in the design of an open space system natural features that also provide flood protection, wildlife habitat, and other environmental enhancements.

- ***Consistent****: As noted above, park basin areas and other trails would be provided throughout the Plan Area in order to provide open space system links. The on-site MID lateral and main canal would be maintained with development of the Plan Area, and these features would be linked by a series of park basin areas, trails, and park areas. Additionally, as discussed in*

Section 3.9 of this EIR, the following design standards from the City of Riverbank Low Impact Development Design and Specifications Manual must be implemented for all project classifications:

- *Mitigate peak run-off flow rates*
- *Conserve and create natural areas*
- *Minimize storm water pollutants of concern*
- *Protect slopes and channels*
- *Provide storm drain stenciling and signage*
- *Properly design outdoor material and trash storage areas*
- *Provide proof of ongoing BMP practices and maintenance*
- *Incorporate treatment control BMP's for water quality*

DESIGN-15.4. The City will require and pursue the preservation and enhancement of public access to riverfront recreation / natural areas while protecting sensitive habitats.

- ***Consistent**: The Project site does not include on-site riverfront recreation access areas. It is noted that the Plan Area is home to the 11-acre City's Regional Sports Park, which will be expanded and improved as part of the Project for public use.*

MUNICIPAL CODE

Chapter 156, Oak and Landmark Tree Preservation, of the Riverbank Municipal Code calls for the conservation and protecting of existing landmark trees and oak trees within the City. Landmark trees are defined under Section 156.02 of the Code as: Trees that are: (1) six inches or greater in diameter at breast height (DBH); (2) in good health; and (3) of preferred species in order: (a) oak, (b) deciduous and (c) evergreen; (4) other such trees with significant impact (including but not limited to: age, size, location, outstanding habitat value, superior beauty, historical and/or cultural significance) on the surrounding area. Landmark Tree may also mean an "oak tree." Fruit trees and other trees used for agricultural purposes and production on existing lots created prior to June 8, 2006, are specifically excluded as being landmark trees. Additionally, oak trees are defined as A valley oak tree (*Quercus lobata*) with a trunk diameter of two inches or greater at a point 4.5 feet above the root crown (also referred to as "two inches diameter breast height [DBH]"). Oak tree may also mean a "landmark tree."

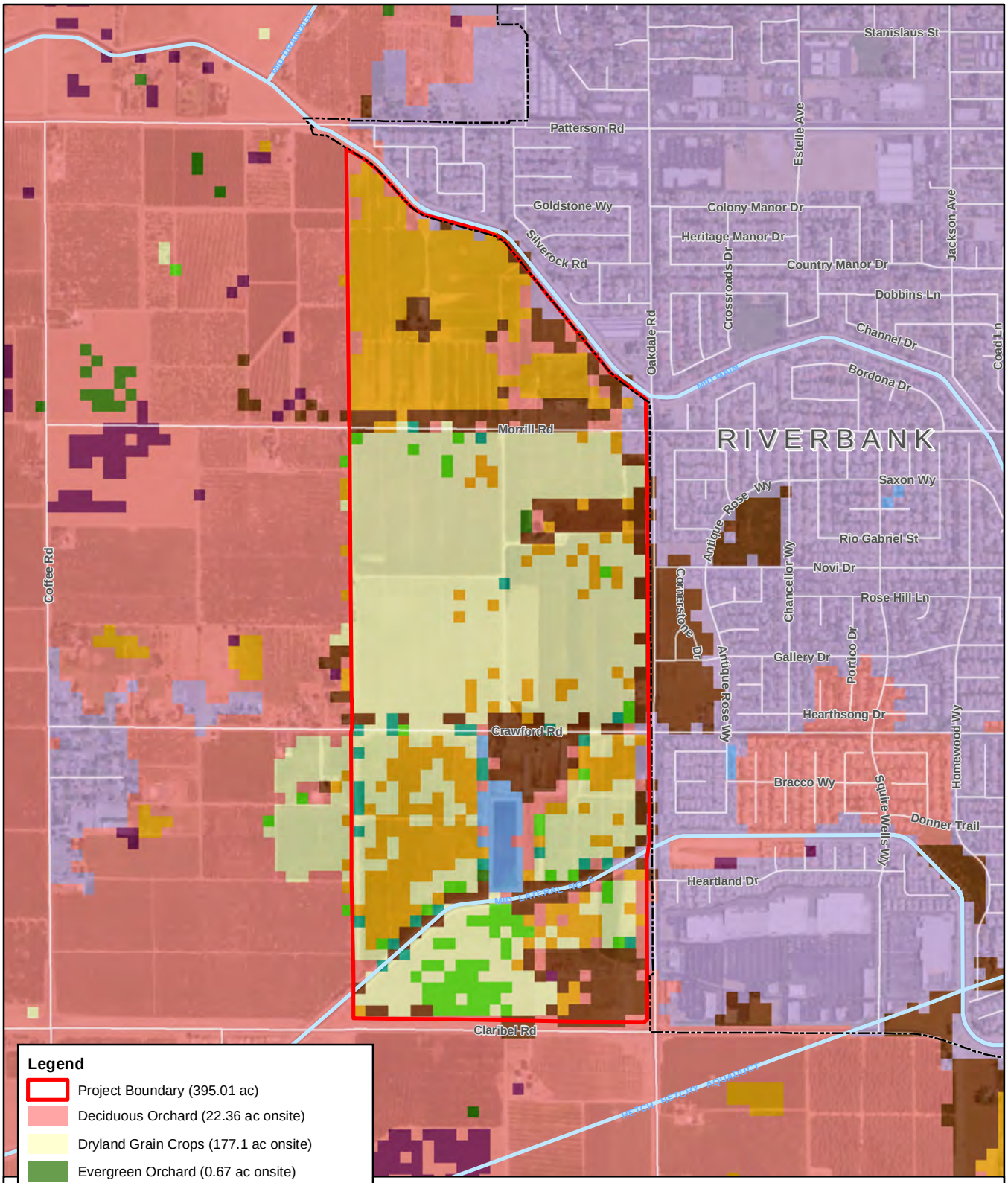
Section 156.14 of the Code outlines methods and standards for tree protection during construction activities. Section 156.10 notes that removal, destruction, mutilation, poisoning, or other attempts to kill a landmark/oak tree in the City is prohibited without a tree conservation permit. Prior to issuance of the tree removal permit, the property owner will be required to pay a permit fee and submit the appropriate cash bond to insure tree replacement. As a condition of the tree conservation permit, a project applicant shall submit a cash bond equal to the cost of the conservation efforts outlined in the adopted plan, as determined by the City. The bond shall be held for the purpose of assuring that the conservation efforts are implemented. If it is determined that practices violating any portion of the municipal code have resulted in tree damage, then the city may require that a cash bond, equal to the replacement value of the damaged tree(s), be submitted. The bond shall be held for the purpose of assuring that all remedial actions required by

the city to minimize tree damage are taken, and/or for the purpose of assuring tree replacement should any damaged trees die or show noticeable signs of decline, as determined by a certified arborist, within a designated period of evaluation.

- ***Consistent****: The Plan Area contains numerous ornamental landscaping and shade trees in association with the existing residences, farm structures, and roadways. The proposed Project is a Specific Plan and detailed tentative maps and site plans are not yet available. It may be possible for specific trees to be incorporated into the final design of the development once the more detailed engineering effort begins. Nevertheless, any trees that cannot remain in the final design must be replaced in accordance with Section 156.14 of the Code.*

CONCLUSION

In summary, the proposed Project is consistent with the local policies and ordinances protecting biological resources, such as a tree preservation policy or ordinance. The Project has been designed with ample open space, park, and trail areas in order to maintain open space linkages to the extent feasible. The Project would be required to comply with applicable policies to minimize impacts to special-status species and their associated habitat. Where impacts are identified, mitigation measures are presented to minimize, avoid, or compensate to the extent practicable. Therefore, this impact would be considered **less than significant**.



Legend

- Project Boundary (395.01 ac)
- Deciduous Orchard (22.36 ac onsite)
- Dryland Grain Crops (177.1 ac onsite)
- Evergreen Orchard (0.67 ac onsite)
- Irrigated Grain Crops (14.31 ac onsite)
- Irrigated Hayfield (103.03 ac onsite)
- Irrigated Row and Field Crops (6.45 ac onsite)
- Lacustrine (7.56 ac onsite)
- Pasture (56.66 ac onsite)
- Urban (6.65 ac onsite)
- Vineyard (0.22 ac onsite)

N

0 250 500

Feet

1:15,000

CROSSROADS WEST SPECIFIC PLAN

Figure 3.4-1. Land Cover Types

Sources: CalFire FRAP data, fveg15_1; Stanislaus County.
Map date: March 28, 2017.

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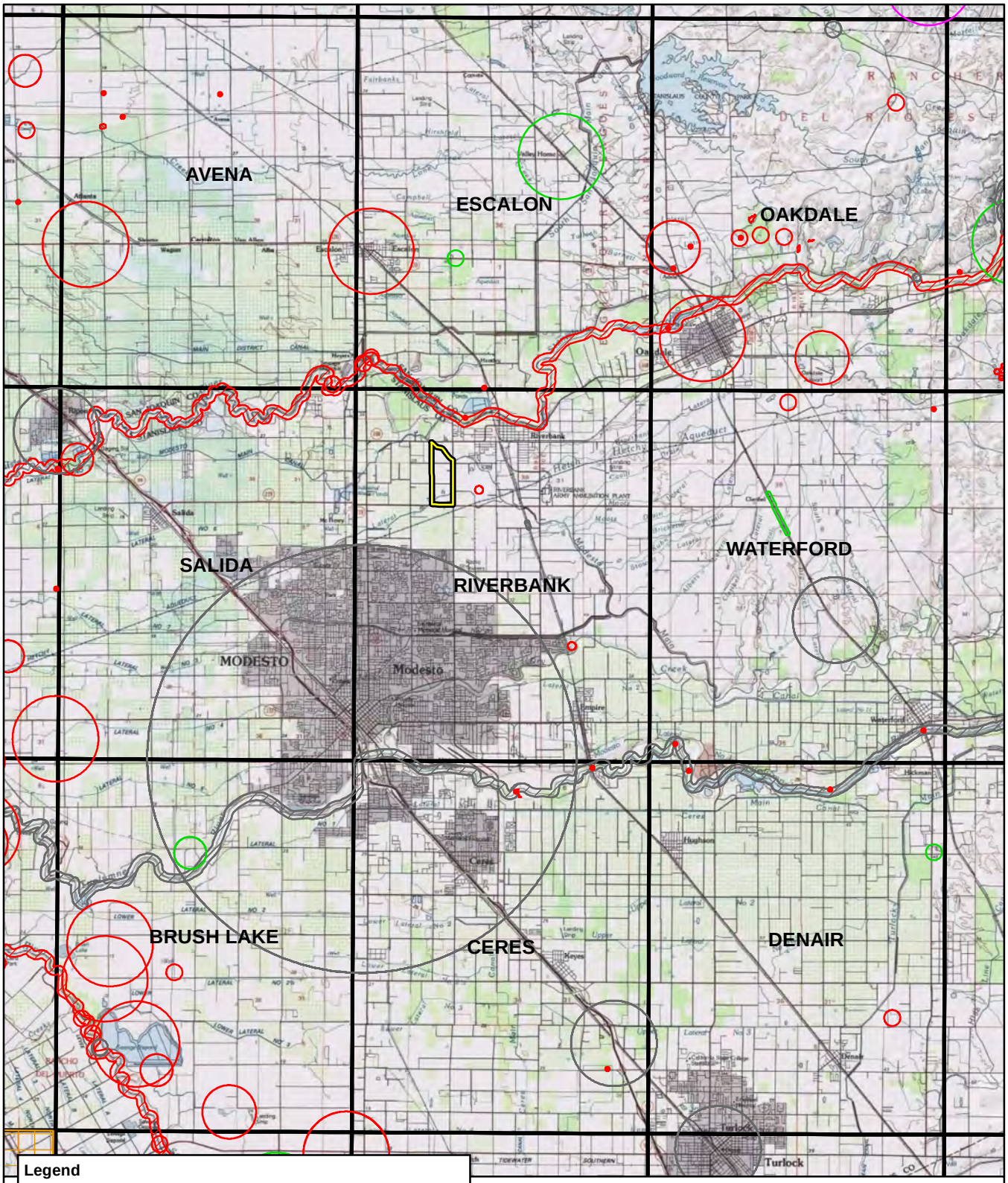

Legend

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

CROSSROADS WEST SPECIFIC PLAN

Figure 3.4-2: California Natural Diversity Database 9-Quad Search

N

0 1 2

Miles

1:210,000

CNDDB version 03/2017. Please Note: the occurrences shown on this map represent the known locations of the species listed here as of the date of this version. There may be additional occurrences or additional species within this area which have not been surveyed and/or mapped. Lack of information in the CNDDB about a species or an area can never be used as proof that no special status species occur in an area. Basemap: ArcGIS Online Topographic Map Service. Map date: March 28, 2017.

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This section provides a discussion of the prehistoric period background, ethnographic background, historic period background, known cultural resources in the region, the regulatory setting, an impact analysis, and mitigation measures. The Notice of Preparation (NOP) for the proposed Project was sent to the Native American Heritage Commission (NAHC) for review and comment on March 22, 2017 and again on May 17, 2017. The May 17, 2017 comment letter included a list of Native American contacts. The NAHC provided general comments on the proposed Project on March 29, 2017. There were no other comments received during the public review period for the NOP related to cultural resources. Full comments received are included in Appendix A.

Information in this section is derived primarily from the *Cultural Resource Assessment for the Crossroads West Specific Plan Area, Stanislaus County, California* (Peak & Associates, Inc., July 2017).

3.5.1 ENVIRONMENTAL SETTING

PROJECT SETTING

The Plan Area is bounded on the east by Oakdale Road, on the south by Claribel Road, on the north by the Modesto Irrigation District (MID) Main Canal and the City of Riverbank city limits, and on the west by those property lines approximately 0.5-mile west of Oakdale Road. The Plan Area is located within Sections 27 and 34, Township 2 South, Range 9 East (Mount Diablo Baseline and Meridian), mapped on the Riverbank, California, 7.5-minute series quadrangle map.

CULTURAL AND HISTORICAL SETTING

Prehistory

The Central Valley region was among the first in the state to attract intensive fieldwork, and research has continued to the present day. This has resulted in a substantial accumulation of data.

In the early decades of the 1900s, E.J. Dawson explored numerous sites near Stockton and Lodi, later collaborating with W.E. Schenck (Schenck and Dawson 1929). By 1933, the focus of work was directed to the Cosumnes locality where survey and excavation studies were conducted by the Sacramento Junior College (Lillard and Purves 1936). Excavation data, in particular from the stratified Windmiller site (CA-Sac-107), suggested two temporally distinct cultural traditions. Later work at other mounds by Sacramento Junior College and the University of California, Berkeley, enabled the investigators to identify a third cultural tradition, intermediate between the previously postulated Early and Late Horizons. The three-horizon sequence, based on discrete changes in ornamental artifacts and mortuary practices, as well as on observed differences in soils within sites (Lillard, Heizer and Fenenga 1939), was later refined by Beardsley (1954). An expanded definition of artifacts diagnostic of each time period was developed, and its application extended to parts of the central California coast. Traits held in common allow the application of this system within certain limits of time and space to other areas of prehistoric central California.

The Windmiller Culture (Early Horizon) is characterized by ventrally-extended burials (some dorsal extensions are known), with westerly orientation of heads; a high percentage of burials with grave goods; frequent presence of red ocher in graves; large projectile points, of which 60 percent are of materials other than obsidian; rectangular *Haliotis* beads; *Olivella* shell beads (types A1a and L); rare use of bone; some use of baked clay objects; and well-fashioned charmstones, usually perforated.

The Cosumnes Culture (Middle Horizon) displays considerable changes from the preceding cultural expression. The burial mode is predominately flexed, with variable cardinal orientation and some cremations present. During the Middle Horizon, there is a lower percentage of burials with grave goods, and ocher staining is common in graves. *Olivella* beads of types C1, F and G predominate, and there is abundant use of green *Haliotis* sp. rather than red *Haliotis* sp. Other characteristic artifacts include perforated and canid teeth; asymmetrical and "fishtail" charmstones, usually unperforated; cobble mortars and evidence of wooden mortars; extensive use of bone for tools and ornaments; large projectile points, with considerable use of rock other than obsidian; and use of baked clay.

The Hotchkiss Culture (Late Horizon) burial pattern retains the use of the flexed mode. There is wide spread evidence of cremation, and lesser use of red ocher, heavy sue of baked clay, *Olivella* beads of Types E and M, extensive use of *Haliotis* ornaments of many elaborate shapes and forms, shaped mortars and cylindrical pestles, bird-bone tubes with elaborate geometric designs, clam shell disc beads, small projectile points indicative of the introduction of the bow and arrow, flanged tubular pipes of steatite and schist, and use of magnesite (Moratto 1984:181-183). The characteristics noted are not all-inclusive, but cover the more important traits.

Schulz (1981), in an extensive examination of the central California evidence for the use of acorns, used the terms Early, Middle and Late Complexes, but the traits attributed to them remain generally the same. While it is not altogether clear, Schulz seemingly uses the term “Complex” to refer to the particular archeological entities (above called “Horizons”) as defined in this region. Ragir's (1972) cultures are the same as Schulz's complexes.

Bennyhoff and Hughes (1984) have presented alternative dating schemes for the Central California Archeological Sequence. The primary emphasis is a more elaborate division of the horizons to reflect what is seen as cultural/temporal changes within the three horizons and a compression of the temporal span.

There have been other chronologies proposed, including Fredrickson (1973), and because it is correlated with Bennyhoff's (1977) work, it does merit discussion. The particular archeological cultural entities Fredrickson has defined, based upon the work of Bennyhoff, are patterns, phases and aspects. Bennyhoff's (1977) work in the Plains Miwok area is the best definition of the Cosumnes District, which likely conforms to Fredrickson's pattern. Fredrickson also proposed periods of time associated heavily with economic modes, which provides a temporal term for comparing contemporary cultural entities. It corresponds with Willey and Phillips' (1958) earlier “tradition”, although it is tied more specifically to the archeological record in California.

Ethnography

The Plan Area lies within the northern portion of the ethnographic territory of the Yokuts people. The Yokuts were members of the Penutian language family which held all of the Central Valley, San Francisco Bay Area, and the Pacific Coast from Marin County to near Point Sur. The Yokuts differed from other ethnographic groups in California as they had true tribal divisions with group names (Kroeber 1925; Latta 1949). Each tribe spoke a particular dialect, common to its members, but similar enough to other Yokuts that they were mutually intelligible (Kroeber 1925).

The Yokuts held portions of the San Joaquin Valley from the Tehachapis in the south to Stockton in the north. On the north, they were bordered by the Plains Miwok, and on the west by the Saclan or Bay Miwok and Costonoan peoples. Although neighbors were often from distinct language families, differences between the people appear to have been more influenced by environmental factors as opposed to linguistic affinities. Thus, the Plains Miwok were more similar to the nearby Yokuts than to foothill members of their own language group. Similarities in cultural inventory co-varied with distance from other groups and proximity to culturally diverse people. The material culture of the southern San Joaquin Yokuts was therefore more closely related to that of their non-Yokuts neighbors than to that of Delta members of their own language group.

Trade was well developed with mutually beneficial interchange of needed or desired goods. Obsidian, rare in the San Joaquin Valley, was obtained by trade with Paiute and Shoshoni groups on the eastern side of the Sierra Nevada, where numerous sources of this material are located, and to some extent from the Napa Valley to the north. Shell beads, obtained by the Yokuts from coastal people, and acorns, rare in the Great Basin, were among many items exported to the east by Yokuts traders (Davis 1961).

Economic subsistence was based on the acorn, with substantial dependency on gathering and processing of wild seeds and other vegetable foods. The rivers, streams, and sloughs that formed a maze within the valley provided abundant food resources such as fish, shellfish, and turtles. Game, wild fowl, and small mammals were trapped and hunted to provide protein augmentation of the diet. In general, the eastern portion of the San Joaquin Valley provided a lush environment of varied food resources, with the estimated large population centers reflecting this abundance (Cook 1955; Baumhoff 1963).

Settlements were oriented along the water ways and village sites were normally placed adjacent to these features for their nearby water and food resources. House structures varied in size and shape (Latta 1949; Kroeber 1925), with most constructed from the readily available tules found in the extensive marshes of the low-lying valley areas. The housepit depressions for the structures ranged in diameter from three to 18 meters (Wallace 1978:470).

Historical Background

In 1867, Major James Burney constructed a ferry at the point where the steel bridge crosses the Stanislaus. The ferry was operated by a number of different individuals, and eventually became operated by the County. As early as 1889, citizens had asked for a bridge crossing the river to replace the ferry. After a series of serious accidents, the ferry was closed in 1919. In 1928, a steel bridge was finally completed across the river. The bridge had been built too low, and was threatened several times by floods. It also could not carry heavier trucks. The two counties eventually agreed to the construction of a new bridge, completed in 1967.

Around the original ferry, a small settlement grew up and became known as Burneyville. The town of Burwood, two miles north served as the post office for the community. The first building to be built was a warehouse, and in the early 1870s the town contained several residences, a grocery store, blacksmith, hotel, two or three saloons, a dry goods store and a shoe shop.

Riverbank, always a distinct community from Burneyville, began as a flag-stop depot on the San Francisco and San Joaquin Valley Railroad. The company began surveys and construction on the route south from Stockton in 1891 and 1892. By 1896, the route had been completed as far south as Fresno. The railroad was sold in 1898 to the Atchinson, Topeka and Santa Fe Railroad (now the Burlington Northern Santa Fe). Because Burneyville was below the bluff and the bridge and trestle, the company only maintained a depot about a half-mile to the south of the river. This flag-stop was selected by the railroad for the location of a roundhouse and repair shops, and led to the development and naming of Riverbank (Brotherton 1982: 57-62).

The proposed Plan Area remained in agricultural use for many years. In 1895, there were only two landowners: Squire Wells held the northern portion in Section 27, and L.W. Crawford owning the 320 acres comprising the east half of Section 34 to the south. By 1906, the east half of Section 34 had been divided, with Spenker having acquired the northeast quarter of the Section, L.C. Palmer owning the lands north of the Lateral Canal, and A. M. Fresh owning the southern portion, south of the lateral canal.

The first detailed U.S. Geological Survey (USGS) topographic map for the area (Riverbank, 1916) shows several resources in and adjacent to the Plan Area. To the north of the Plan Area is the MID Main Canal, with Lateral No. 6 splitting off the Main Canal about a mile to the east of the Plan Area and cutting the southern portion of the Plan Area. The McHenry School was located in the northeastern corner of Section 34, but was removed by 1953. There were also five other buildings in Section 34. The land within the Plan Area has since remained in agricultural use, with gradual subdivision of lots into smaller parcels.

In recent years, the population of Riverbank has had great development growth with the 1990 population of 8,547 growing to 15,826 in 2000, and 21,757 in 2008. Much of this growth has occurred in the Plan Area vicinity, located in the southwestern portion of the City.

METHODOLOGY

Records Search

Records of previously recorded cultural resources and cultural resource investigations for the Plan Area were examined by the Central California Information Center (CCIC) of the California Historical Resources Information System on March 27, 2017 (CCIC File #10234N). Two resources have been recorded in the Plan Area: MID Lateral No. 6 Canal (Primary number: P-50-0075), and a residence and barns at 5101 Oakdale Road (Primary number: (P-50-2159), evaluated as not eligible for the California Register. One previous field survey covered a larger tract of land in the Plan Area: a 2004 study by Peak & Associates covered the portion of the Plan Area now occupied by the Sports Park. Two other surveys covered small portions of the Plan Area.

Four other historic period resources have been recorded within a 0.125-mile radius of the Plan Area, and nine surveys have been completed in the same radius.

No prehistoric resources have ever been recorded in or in the immediate vicinity of the Plan Area.

Field Survey

Approximately 300 acres of the overall Plan Area was subject to a complete survey in April 2017 by Mike Lawson, with transects no wider than 10 meters in width. Much of the Plan Area is currently in cultivation, with the existing grain crop limiting ground surface observation. The northern portion of the Plan Area includes a cattle pasture.

The ground surface within the Plan Area was inspected for artifacts, midden, or any other indication of site presence. The ground surface, though heavily disturbed by previous agricultural work, was easily visible in some areas due to tillage, mowing, and spacing of plants, with no vegetation on the surface in some areas. There were no significant impediments to surface visibility. The soil was consistently medium brown in color and somewhat sandy, with a heavy gravel and pebble content.

The land containing the existing Riverbank Sports Complex was previously surveyed, prior to development of the park. The older building complex in the southeastern portion had been previously recorded and evaluated as not significant. The site of the McHenry School in the northeastern corner of Section 34, on the south side of Morrill Road, was surveyed with no evidence remaining of the resource.

There are four building complexes in the Plan Area that may contain buildings more than 50 years in age. These areas were not surveyed and no building complexes were recorded as part of the Cultural Resource Assessment. A new site form was not completed for the section of the MID Lateral that crosses the southern portion of the Plan Area.

Consultation

As noted above, the May 17, 2017 NAHC comment letter included a list of Native American contacts. The City of Riverbank contacted the following tribes which were listed on the NAHC comment letter on April 5, 2018: California Valley Miwok Tribe, North Valley Yokuts Tribe, Southern Sierra Miwuk Nation, Tule River Indian Tribe, and Tuolumne Brand of Me-Wuk Indians. The tribal consultation letters provided the tribes with information regarding the proposed project. To date, none of the tribes have responded to the tribal consultation letters.

3.5.2 REGULATORY SETTING

FEDERAL

National Historic Preservation Act

The National Historic Preservation Act was enacted in 1966 as a means to protect cultural resources that are eligible to be listed on the National Register of Historic Places (NRHP). The law sets forth criterion that is used to evaluate the eligibility of cultural resources. The NRHP is composed of districts, sites, buildings, structures, objects, architecture, archaeology, engineering, and culture that are significant to American History.

Virtually any physical evidence of past human activity can be considered a cultural resource. Although not all such resources are considered to be significant and eligible for listing, they often provide the only means of reconstructing the human history of a given site or region, particularly where there is no written history of that area or that period. Consequently, their significance is judged largely in terms of their historical or archaeological interpretive values. Along with research values, cultural resources can be significant, in part, for their aesthetic, educational, cultural and religious values.

National Register of Historic Places

The eligibility criteria for the NRHP are as follows (36 CFR 60.4):

> *The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess aspects of integrity of location, design, setting, materials, workmanship, feeling, association, and*
>
> *(A) that are associated with events that have made a significant contribution to the broad patterns of our history and cultural heritage; or*
> *(B) that are associated with the lives of persons significant in our past; or*
> *(C) that embody the distinctive characteristics of a type, period, region, or method of construction, or that represent the work of a master, or that possess high artistic values or that represent a significant and distinguishable entity whose components may lack individual distinction; or*
> *(D) that have yielded, or may be likely to yield, information important in prehistory or history.*

STATE

California Register of Historic Resources

The California Register of Historical Resources (CRHR) was established in 1992 and codified in the Public Resource Code §5020, 5024 and 21085. The law creates several categories of properties that may be eligible for the CRHR. Certain properties are included in the program automatically, including: properties listed in the NRHP; properties eligible for listing in the NRHP; and certain classes of State Historical Landmarks. Determining the CRHR eligibility of historic and prehistoric properties is guided by CCR §§15064.5(b) and Public Resources Code (PRC) §§21083.2 and 21084.1.

Cultural resources, under CRHR guidelines, are defined as buildings, sites, structures, or objects that may have historical, architectural, archaeological, cultural, or scientific importance. A cultural resource may be eligible for listing on the CRHR if it:

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

California Environmental Quality Act

CEQA Guidelines §15064.5 provides guidance for determining the significance of impacts to archaeological and historical resources. Demolition or material alteration of a historical resource, including archaeological sites, is generally considered a significant impact. Determining the CRHR eligibility of historic and prehistoric properties is guided by CCR §§15064.5(b) and Public Resources Code (PRC) §§21083.2 and 21084.1.

CEQA also provides for the protection of Native American human remains (CCR §15064.5[d]). Native American human remains are also protected under the Native American Graves Protection and Repatriation Act of 1990 (25 USC 3001 et seq.), which requires federal agencies and certain recipients of federal funds to document Native American human remains and cultural items within their collections, notify Native American groups of their holdings, and provide an opportunity for repatriation of these materials. This act also requires plans for dealing with potential future collections of Native American human remains and associated funerary objects, sacred objects, and objects of cultural patrimony that might be uncovered as a result of development projects overseen or funded by the federal government.

If a prehistoric or historic period cultural resource does not meet any of the four CRHR criteria, but does meet the definition of a "unique" site as outlined in PRC §21083.2, it may still be treated as a significant resource if it is: 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:

- it contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information,
- it has a special and particular quality such as being the oldest of its type or the best available example of its type, or
- it is directly associated with a scientifically recognized important prehistoric or historic event.

Assembly Bill 978

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

Senate Bill 18

SB 18, approved in 2004, applies to local governments and requires consultation with California Native American tribes on a contact list provided by the Native American Heritage Commission, prior to the adoption or amendment of a general plan or specific plan. If a tribe, once contacted, requests consultation, the local government must consult with the tribe on the plan. A tribe has 90 days from the date of receipt of notification to request consultation.

As noted above, the May 17, 2017 NAHC comment letter included a list of Native American contacts. The City of Riverbank contacted the following tribes which were listed on the NAHC comment letter on April 5, 2018: California Valley Miwok Tribe, North Valley Yokuts Tribe, Southern Sierra Miwuk Nation, Tule River Indian Tribe, and Tuolumne Brand of Me-Wuk Indians. The tribal consultation letters provided the tribes with information regarding the proposed General Plan amendment. To date, no tribes have requested consultation pursuant to SB 18.

Assembly Bill 52

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

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

applying the criteria set forth in PRC Section 5024.1 (c) the lead agency shall consider the significance of the resource to a California Native American tribe.

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

AB 52 requires a lead agency, prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report for a project, to begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project if: (1) the California Native American tribe requested to the lead agency, in writing, to be informed by the lead agency through formal notification of proposed projects in the geographic area that is traditionally and culturally affiliated with the tribe, and (2) the California Native American tribe responds, in writing, within 30 days of receipt of the formal notification, and requests the consultation.

No California Native American tribes have requested consultation with the City of Riverbank pursuant to AB 52.

LOCAL

City of Riverbank General Plan

GOALS: CONSERVATION AND OPEN SPACE ELEMENT

- CONS-1 Maintain Riverbank's Historic Resources.
- CONS-2 Minimize Negative Impacts to Archaeological Resources.

POLICIES: CONSERVATION AND OPEN SPACE ELEMENT

- CONS-1.1 Historically significant buildings shall not be demolished or changed in way that affects their historic value, except to protect public health and safety, or where saving the structure is infeasible.
- CONS-1.2 Buildings and other cultural resources that are not historically significant but have historical or architectural value should be preserved or relocated, wherever feasible. Where this is not feasible, the resource shall be documented and the information retained in a secure, but publicly accessible location. An acknowledgment of the resource should be incorporated in historic signage and the reuse or display of historic materials and artifacts.
- CONS-1.3 The City will promote and encourage adaptive reuse of historic buildings. Consistent with health, safety, and other basic considerations, the City will be flexible in applying building and zoning standards to encourage continued use and adaptive reuse of historic buildings.

- CONS-1.4 The City shall coordinate with local, State, and federal agencies to ensure that historic preservation regulations are implemented.
- CONS-2.1 Approved projects, plans, and subdivision requests shall incorporate all available measures, with a preference for avoidance, to reduce or eliminate impacts to known and unknown archaeological and paleontological resources.
- CONS-2.2 All Native American cultural and archaeological sites shall be protected permanently from urban development, wherever possible.
- CONS-2.3 The City shall restrict the circulation of cultural resource locational information to prevent potential site vandalism.
- CONS-2.4 The City shall not knowingly approve any public or private project that may adversely affect an archaeological site without first consulting with the Central California Information Center of the California Historical Resources Information System (CHRIS) and, if necessary, consulting with a qualified professional archaeologist regarding the significance of the site. Implementation of this policy shall be guided by Section 15064.5 of the State CEQA guidelines.
- CONS-2.5 As guided by State law, in the event of the inadvertent discovery of previously unknown archaeological sites during excavation or construction, all construction affecting the site shall cease and the contractor shall contact the appropriate City agency. If Native American human remains are discovered, the City shall work with local Native American representatives to ensure that the remains and associated artifacts are treated in a respectful and dignified manner.

3.5.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

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

- Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines §15064.5;
- Cause a substantial adverse change in the significance of archaeological resource pursuant to CEQA Guidelines §15064.5;
- Directly or indirectly destroy a unique paleontological resource;
- Disturb any human remains, including those interred outside of formal cemeteries; or
- Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code §21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:
    - Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k); or

- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resources to a California Native American tribe.

IMPACTS AND MITIGATION MEASURES

Impact 3.5-1: Project implementation has the potential to cause a substantial adverse change to a significant historical resource, as defined in CEQA Guidelines §15064.5, or a significant tribal cultural resource, as defined in Public Resources Code §21074. (Less than Significant with Mitigation)

The Plan Area is located in an area known to have historical buildings present, some of which might be important resources. The research revealed five building complexes that are more than 50 years in age. One of the complexes has been recorded and evaluated and was not deemed to be significant. The four remaining building complexes that are more than 50 years in age are located: northwest of the Oakdale Road / Morrill Road intersection, east of the existing Riverbank Sports Complex (on Assessor's Parcel Number [APN] 074-006-013); southwest of the Oakdale Road / Morrill Road intersection, approximately 0.18 miles south of the Riverbank Sports Complex (on APN 074-011-009); northwest of the Oakdale Road / Crawford Road intersection, located along Oakdale Road (on APN 074-011-009); and southwest of the Oakdale Road / Crawford Road intersection, located 0.14 to 0.27 miles west of Oakdale Road (on APN 074-014-006). These areas were not surveyed and no building complexes were recorded as part of the Cultural Resource Assessment. A new site form was not completed for the section of the MID Lateral that crosses the southern portion of the Plan Area.

As with most projects in the region that involve ground-disturbing activities, there is the potential for discovery of a previously unknown historical or tribal cultural resource. Implementation of the following mitigation measures would ensure that this potential impact is **less than significant**.

MITIGATION MEASURE(S)

Mitigation Measure 3.5-1: *Prior to ground disturbing activities for each phase of the Project that would potentially affect one or more of the listed resources below, the resources shall be evaluated for their potential architectural and/or historic importance by a Qualified Architectural Historian, at the cost of the Project applicant. The potentially historic resources within the Project site include the following:*

- *Buildings or building complexes located northwest of the Oakdale Road / Morrill Road intersection, east of the existing Riverbank Sports Complex (on APN 074-006-013);*
- *Buildings or building complexes located southwest of the Oakdale Road / Morrill Road intersection, approximately 0.18 miles south of the Riverbank Sports Complex (on APN 074-011-009);*

- *Buildings or building complexes located northwest of the Oakdale Road / Crawford Road intersection, located along Oakdale Road (on APN 074-011-009);*
- *Buildings or building complexes located southwest of the Oakdale Road / Crawford Road intersection, located 0.14 to 0.27 miles west of Oakdale Road (on APN 074-014-006); and*
- *The MID Lateral No. 6 that crosses the southern portion of the Project site.*

Work shall not continue at the above-listed site(s) until the Qualified Architectural Historian conducts sufficient research and data collection to determine if the above-listed site(s) is eligible for listing on the NRHP or CRHR; or not a significant Public Trust Resource. Should the site(s) be determined to not be significant or eligible, no further action is required. Should the site(s) be determined to be significant or eligible, the Project applicant shall work with the Registered Professional Historian to develop a cultural resource plan for the site(s).

If a building or building complex is determined to be important under the criteria of the California Register of Historical Resources, and the buildings cannot be preserved, then it is recommended that the buildings be documented through the preparation of the DPR 523 forms with large scale "HABS-like" photographs taken. Sets of these photographs shall be placed with the County museum or a suitable archival facility and the Central California Information Center, thereby preserving information on early architecture for future researchers.

Mitigation Measure 3.5-2: *All construction workers shall receive a cultural resources sensitivity training session before they begin site work in order to identify any potentially significant cultural or similar resources that may result during construction. The sensitivity training session shall be instructed by a professional archaeologist. The sensitivity training shall inform the workers of their responsibility to identify and protect any cultural resources, including prehistoric or historic artifacts, or other indications of archaeological resources, within the Plan Area. The sensitivity training shall cover laws pertaining to cultural resources, examples of cultural resources that may be discovered in the Plan Area, and what to do if a cultural resource, or anything that may be a cultural resource, is discovered.*

If any cultural resources, including prehistoric or historic artifacts, or other indications of archaeological resources, are found during grading and construction activities during any phase of the Project, all work shall be halted immediately within a 200-foot radius of the discovery until an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology, as appropriate, has evaluated the find(s).

Work shall not continue at the discovery site until the archaeologist conducts sufficient research and data collection to make a determination that the resource is either 1) a significant find; 2) not cultural in origin; or 3) not potentially significant or eligible for listing on the NRHP or CRHR; or 4) not a significant Public Trust Resource.

If a significant finding is made, a plan must be developed for this inadvertent finding. Measures to potentially address a subsurface finding could include one or more of the following depending upon the nature of the find: recordation of the finding; further efforts to define the extent and

nature of the resource; preservation in place, and re-design to ensure long-term preservation of the resource; and/or data recovery excavations.

If Native American resources are identified, a Native American monitor, following the Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites established by the Native American Heritage Commission, may also be required and, if required, shall be retained at the Project applicant's expense.

Impact 3.5-2: Project implementation has the potential to cause a substantial adverse change to a significant archaeological resource, as defined in CEQA Guidelines §15064.5. (Less than Significant)

The Plan Area is located in a region known to have archeological resources, particularly along the major waterways. The field surveys did not reveal a significant archeological resource or site in the Plan Area. However, as with most projects in the region that involve ground-disturbing activities, there is the potential for discovery of previously unknown archaeological resources. Implementation of Mitigation Measure 3.5-2 would ensure that this potential impact is **less than significant**.

MITIGATION MEASURE(S)

*Implement **Mitigation Measure 3.5-2.***

Impact 3.5-3: Project implementation has the potential to directly or indirectly destroy a unique paleontological resource. (Less than Significant with Mitigation)

The field surveys by did not reveal any surface evidence of paleontological resources in the Plan Area. The Plan Area is not expected to contain subsurface paleontological resources, although it is possible.

Damage to or destruction of a paleontological resource would be considered a potentially significant impact under local, state, or federal criteria. Implementation of the following mitigation measure would ensure steps would be taken to reduce impacts to paleontological resources in the event that they are discovered during construction. This mitigation measure would reduce this impact to a **less-than-significant** level.

MITIGATION MEASURE(S)

Mitigation Measure 3.5-3: *If paleontological resources are discovered during the course of construction during any phase of the Project, work shall be halted immediately within 50 meters (165 feet) of the discovery, the City of Riverbank shall be notified, and a qualified paleontologist shall be retained to determine the significance of the discovery. If the paleontological resource is considered significant, it should be excavated by a qualified paleontologist and given to a local agency, State University, or other applicable institution, where the resource could be curated and displayed for public education purposes.*

Impact 3.5-4: Project implementation has the potential to disturb human remains, including those interred outside of formal cemeteries. (Less than Significant with Mitigation)

Indications suggest that humans have occupied Stanislaus County for over 10,000 years and it is not always possible to predict where human remains may occur outside of formal burials. Therefore, excavation and construction activities, regardless of depth, may yield human remains that may not be interred in marked, formal burials.

Under CEQA, human remains are protected under the definition of archaeological materials as being "any evidence of human activity." Additionally, Public Resources Code Section 5097 has specific stop-work and notification procedures to follow in the event that human remains are inadvertently discovered during Project implementation.

While no human remains were found during field surveys of the Plan Area, implementation of the following mitigation measure would ensure that all construction activities which inadvertently discover human remains implement state-required consultation methods to determine the disposition and historical significance of any discovered human remains. The following mitigation measure would reduce this impact to a **less-than-significant** level.

MITIGATION MEASURE(S)

Mitigation Measure 3.5-4: *If human remains are discovered during the course of construction during any phase of the Project, work shall be halted at the site and at any nearby area reasonably suspected to overlie adjacent human remains until the Stanislaus County Coroner has been informed and has determined that no investigation of the cause of death is required. If the remains are of Native American origin, either of the following steps will be taken:*

- *The Coroner shall contact the Native American Heritage Commission in order to ascertain the proper descendants from the deceased individual. The coroner shall make a recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods, which may include obtaining a qualified archaeologist or team of archaeologists to properly excavate the human remains.*
- *The landowner shall retain a Native American monitor, and an archaeologist, if recommended by the Native American monitor, and rebury the Native American human remains and any associated grave goods, with appropriate dignity, in a location that is not subject to further subsurface disturbance when any of the following conditions occurs:*
    - *The Native American Heritage Commission is unable to identify a descendent.*
    - *The descendant identified fails to make a recommendation.*
    - *The City of Riverbank or its authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.*

The purpose of this section is to disclose and analyze the potential impacts associated with the geology of the Plan Area and regional vicinity, and to analyze issues such as the potential exposure of people and property to geologic hazards, landform alteration, and erosion. This section is based in part on the following: *City of Riverbank General Plan 2005-2025* (City of Riverbank, 2009), the *City of Riverbank Draft Environmental Impact Report for the 2005-2025 General Plan Update* (City of Riverbank, 2008)*, Custom Soils Report for Stanislaus County, California* (NRCS, 2016), Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS, 2016), and Interactive Fault Map provided by the U.S. Geological Survey (USGS, 2016). There were no comments received during the NOP scoping process related to this environmental topic.

As discussed in in the Initial Study prepared for the proposed Project, the proposed Project would connect to the municipal sewer system for wastewater disposal. Septic tanks or septic systems are not proposed as part of the Project. Additionally, there are no significant deposits of mineral resources located in the Plan Area, as delineated by the Mineral Resources and Mineral Hazards Mapping Program (MRMHMP). The Plan Area is not designated as a Mineral Resource Zone (MRZ). As such, these CEQA topics will not be further discussed.

3.6.1 ENVIRONMENTAL SETTING

GEOLOGIC SETTING

Regional Geology

The Plan Area lies in the San Joaquin Valley in central California. The San Joaquin Valley is located in the southern portion of the Great Valley Geomorphic Province. The Great Valley, also known as the Central Valley, is a topographically flat, northwest-trending, structural trough (or basin) about 50 miles wide and 450 miles long. It is bordered by the Tehachapi Mountains on the south, the Klamath Mountains on the north, the Sierra Nevada Mountains on the east, and the Coast Ranges on the west.

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

Local Setting

The Plan Area is relatively flat with natural gentle slope from northeast to southwest. The Plan Area topography ranges in elevation from approximately 111 to 125 feet above sea level. Figure 2.0-4 in Section 2.0 shows the topographic view of the Plan Area. The nine parcels that comprise the Plan Area are primarily used for agricultural operations including dairy operations, row crops, and fallow land. Seven home sites exist within the Plan Area and many of them have accessory structures on site including storage buildings, shop buildings, and barn structures. Additionally, an approximately 11-acre regional City park, the Riverbank Sports Complex, is currently developed in

the northeastern portion of the Plan Area, near the intersection of Morrill Road and Oakdale Road. Crawford Road and Morrill Road traverse the Plan Area from east to west.

Modesto Irrigation District (MID) provides water supply for the existing agricultural uses and maintains two easements in the Plan Area. An MID main canal with a crossing is located along the northern boundary of the Plan Area. Residential development is located just north of the Plan Area. Additionally, MID Lateral 6 traverses the southern portion of the Plan Area from northeast to southwest. A series of private irrigation ditches distribute the MID water from the on-site canals throughout the Plan Area.

A Custom Soil Survey was completed for the Plan Area using the NRCS Web Soil Survey program. The NRCS Soils Map is provided in Figure 3.6-1. Table 3.6-1 identifies the type and range of soils found in the Plan Area.

TABLE 3.6-1: PLAN AREA SOILS

UNIT SYMBOL	NAME	ACRES IN AOI	PERCENT OF AOI
GvA	Greenfield sandy loam, deep over hardpan	192.24	48.7
HdA	Hanford sandy loam	46.23	11.7
HdpA	Hanford sandy loam, moderately deep over silt	6.24	1.6
MdA	Madera sandy loam	130.93	33.1
OaA	Oakdale sandy loam	19.37	4.9

SOURCE: NRCS CUSTOM SOIL SURVEY 2017.

Greenfield sandy loam. This series consists of deep, well drained soils that formed in moderately coarse and coarse textured alluvium derived from granitic and mixed rock sources. Greenfield soils are on alluvial fans and terraces and have slopes of 0 to 30 percent. They have slow to medium runoff and moderately rapid permeability. Common uses for this series include: production of a wide variety of irrigated field, forage and fruit crops, and growing dryland grain and pasture. Vegetation on uncultivated areas consists of annual grass, forbs, some shrubs and scattered oak trees.

Hanford sandy loam. This series consists of very deep, well drained soils that formed in moderately coarse textured alluvium dominantly from granite. Hanford soils are on stream bottoms, floodplains and alluvial fans and have slopes of 0 to 15 percent. They have negligible to low runoff and moderately rapid permeability. Common uses for this series include: growing a wide range of fruits, vegetables, and general farm crops, urban development, and dairies. Vegetation in uncultivated areas is mainly annual grasses and associated herbaceous plants.

Madera sandy loam. This series consists of moderately deep to hardpan, well or moderately well drained soils that formed in old alluvium derived from granitic rock sources. Madera soils are on undulating low terraces with slopes of 0 to 9 percent. They have medium to very slow runoff and very slow permeability. Common uses for this series include: irrigated cropland such as alfalfa, almonds, grapes, oranges, rice and tomatoes, irrigated pasture, dry farmed grain, and annual range. Vegetation is annual grasses and forbs.

Oakdale sandy loam. This series consists of very deep, well drained soils that formed in alluvium derived from granitic rock sources. They are on nearly level to gently sloping alluvial fans and terraces and in slightly depressed stream channels traversing alluvial fans with slopes of 0 to 5 percent. They have very slow to slow runoff and moderately rapid permeability. Almost all areas are cultivated and irrigated. Common crops are grapes, almonds, peaches, alfalfa, barley, beans, corn and walnuts.

FAULTS AND SEISMICITY

Faults

A fault is a fracture in the crust of the earth along which rocks on one side have moved relative to those on the other side. A fault trace is the line on the earth's surface defining the fault. Displacement of the earth's crust along faults releases energy in the form of earthquakes and in some cases in fault creep. Most faults are the result of repeated displacements over a long period of time.

Surface rupture occurs when movement on a fault deep within the earth breaks through to the surface. Surface ruptures have been known to extend up to 50 miles with displacements of an inch to 20 feet. Fault rupture almost always follows preexisting faults, which are zones of weakness. Rupture may occur suddenly during an earthquake or slowly in the form of fault creep. Sudden displacements are more damaging to structures because they are accompanied by shaking.

The State of California designates faults as active, potentially active, and inactive depending on how recent the movement that can be substantiated for a fault. Table 3.6-2 presents the California fault activity rating system.

TABLE 3.6-2: FAULT ACTIVITY RATING

FAULT ACTIVITY RATING	*GEOLOGIC PERIOD OF LAST RUPTURE*	*TIME INTERVAL (YEARS)*
Active (A)	Holocene	Within last 11,000 years
Potentially Active (PA)	Quaternary	11,000-1.6 Million Years
Inactive (I)	Pre-Quaternary	Greater than 1.6 Million

SOURCE: CALIFORNIA GEOLOGICAL SURVEY

The U.S. Geological Survey identifies potential seismic sources within 17 miles of the Plan Area. Two of the closest known faults classified as active by the U.S. Geological Survey are an unnamed fault west of the City of Modesto near State Route 33, located approximately 17 miles to the southwest, and the San Joaquin fault, located approximately 21 miles to the southwest. The Green Springs Run fault is located approximately 24 miles to the northeast. Other faults that could potentially affect the proposed Project include the Bowie Flat fault, the Black Butte fault, and the Ortigalita fault. Figure 3.6-2 provides a map of known area faults.

Seismicity

The amount of energy available to a fault is determined by considering the slip-rate of the fault, its area (fault length multiplied by down-dip width), maximum magnitude, and the rigidity of the

displaced rocks. These factors are combined to calculate the moment (energy) release on a fault. The total seismic energy release for a fault source is sometimes partitioned between two different recurrence models, the characteristic and truncated Gutenberg-Richter (G-R) magnitude-frequency distributions. These models incorporate our knowledge of the range of magnitudes and relative frequency of different magnitudes for a particular fault. The partition of moment and the weights for multiple models are given in the following summary.

Earthquakes are generally expressed in terms of intensity and magnitude. Intensity is based on the observed effects of ground shaking on people, buildings, and natural features. By comparison, magnitude is based on the amplitude of the earthquake waves recorded on instruments, which have a common calibration. The Richter scale, a logarithmic scale ranging from 0.1 to 9.0, with 9.0 being the strongest, measures the magnitude of an earthquake relative to ground shaking. Table 3.6-3 provides a description and a comparison of intensity and magnitude.

TABLE 3.6-3: MODIFIED MERCALLI INTENSITY SCALE FOR EARTHQUAKES

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

SOURCE: UNITED STATES GEOLOGICAL SURVEY

According to the California Geological Survey's Probabilistic Seismic Hazard Assessment Program, Stanislaus County is considered to be within an area that is predicted to have a 10 percent probability that a seismic event would produce horizontal ground shaking of 10 to 20 percent

within a 50-year period. This level of ground shaking correlates to a Modified Mercalli intensity of V to VII, light to strong.

Alquist-Priolo Special Study Zone

The California legislature passed the Alquist-Priolo Special Studies Zone Act in 1972 to address seismic hazards associated with faults and to establish criteria for developments for areas with identified seismic hazard zones. The California Geologic Survey (CGS) evaluates faults with available geologic and seismologic data and determines if a fault should be zoned as active, potentially active, or inactive. If CGS determines a fault to be active, then it is typically incorporated into a Special Studies Zone in accordance with the Alquist-Priolo Earthquake Hazard Act. Alquist-Priolo Special Study Zones are usually one-quarter mile or less in width and require site-specific evaluation of fault location and require a structure setback if the fault is found traversing a Plan Area. The Plan Area is not within an Alquist-Priolo Special Study Zone. The nearest Alquist-Priolo fault zone, the Ortigalita fault zone, is located approximately 38 miles southwest of the Plan Area.

SEISMIC HAZARDS

Seismic Ground Shaking

The potential for seismic ground shaking in California is expected. As a result of the foreseeable seismicity in California, the State requires special design considerations for all structural improvements in accordance with the seismic design provisions in the California Building Code. These seismic design provisions require enhanced structural integrity based on several risk parameters. Seismic ground shaking in the Plan Area is expected during the life of the proposed Project. All structures will be built in accordance with the California Building Code's seismic design standards.

Fault Rupture

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

Liquefaction

Liquefaction typically requires a significant sudden decrease of shearing resistance in cohesionless soils and a sudden increase in water pressure, which is typically associated with an earthquake of high magnitude. The potential for liquefaction is highest when groundwater levels are high, and loose, fine, sandy soils occur at depths of less than 50 feet. Soil data from the NRCS Web Soil Survey (NRCS 2017) suggests that the potential for liquefaction is moderate given that the soils are high in sand and the water table is relatively high.

The City of Riverbank General Plan Draft EIR has indicated that "the relatively high water table found in Riverbank could result in impacts related to liquefaction." The General Plan Draft EIR indicates that with the implementation of goals, policies, and implementation measures from the General Plan Safety Element the potentially significant impact would be reduced to a less than significant impact.

Lateral Spreading

Lateral spreading typically results when ground shaking moves soil toward an area where the soil integrity is weak or unsupported, and it typically occurs on the surface of a slope, although it does not occur strictly on steep slopes. Oftentimes, lateral spreading is directly associated with areas of liquefaction. Because the potential for liquefaction is moderate, the potential for lateral spreading is present. The General Plan Draft EIR indicates that with the implementation of goals, policies, and implementation measures from the General Plan Safety Element the potentially significant impact would be reduced to a less than significant impact.

Landslides

Landslides include rockfalls, deep slope failure, and shallow slope failure. Factors such as the geological conditions, drainage, slope, vegetation, and others directly affect the potential for landslides. One of the most common causes of landslides is construction activity that is associated with road building (i.e., cut and fill). The Plan Area is essentially flat; therefore, the potential for a landslide in the Plan Area is non-existent.

NON-SEISMIC HAZARDS

Expansive Soils

Expansive soils can undergo significant volume change with changes in moisture content. They shrink and harden when dried and expand and soften when wet. If structures are underlain by expansive soils, it is important that foundation systems be capable of tolerating or resisting any potentially damaging soil movements. In addition, it is important to limit moisture changes in the surficial soils by using positive drainage away from buildings as well as limiting landscaping watering.

According to the NRCS Web Soil Survey, the soils in the Plan Area have a low shrink-swell potential. The NRCS Web Soil Survey indicated that near surface soils within the Project site have low plasticity, and the expansion potential of the soils would respond to fluctuations in moisture content. Figure 3.6-3 provides a map of the shrink-swell potential of the soils at the Plan Area and in the vicinity.

Erosion

Erosion naturally occurs on the surface of the earth as surface materials (i.e. rock, soil, debris, etc.) is loosened, dissolved, or worn away, and transported from one place to another by gravity. Two common types of soil erosion include wind erosion and water erosion. The steepness of a slope is an important factor that affects soil erosion. Erosion potential in soils is influenced primarily by

loose soil texture and steep slopes. Loose soils can be eroded by water or wind forces, whereas soils with high clay content are generally susceptible only to water erosion. The potential for erosion generally increases as a result of human activity, primarily through the development of facilities and impervious surfaces and the removal of vegetative cover.

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

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water. Within the Plan Area, the erosion factor Kf varies from 0.17 to 0.37, which is considered a low to moderate potential for erosion. Furthermore, because the Plan Area is essentially flat, the erosion potential is slight.

Collapsible Soils

Collapsible soils undergo a rearrangement of their grains and a loss of cementation, resulting in substantial and rapid settlement under relatively low loads. Collapsible soils occur predominantly at the base of mountain ranges, where Holocene-age alluvial fan and wash sediments have been deposited during rapid run-off events. Soils prone to collapse are commonly associated with manmade fill, wind-laid sands and silts, and alluvial fan and mudflow sediments deposited during flash floods. During an earthquake, even slight settlement of fill materials can lead to a differentially settled structure and significant repair costs. Differential settlement of structures typically occurs when heavily irrigated landscape areas are near a building foundation. Examples of common problems associated with collapsible soils include tilting floors, cracking or separation in structures, sagging floors, and nonfunctional windows and doors. Collapsible soils have not been identified in the Riverbank General Plan as an issue in the Riverbank area. However, in areas subject to potential liquefaction, the potential for liquefaction induced settlement is present.

Subsidence

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

3.6.2 REGULATORY SETTING

FEDERAL

Uniform Building Code (UBC)

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

STATE

The State of California has established a variety of regulations and requirements related to seismic safety and structural integrity, including the California Building Code, the Alquist-Priolo Earthquake Fault Zoning Act and the Seismic Hazards Mapping Act.

California Building Standards Code

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

California Building Code

The California Building Code, Title 24, Part 2, Chapter 16 addresses structural design, Chapter 17 addresses structural tests and special inspections, and Chapter 18 addresses soils and foundations. Section 1610 provides structural design standards for foundation walls and retaining walls to ensure resistance to lateral soil loads. Section 1613 provides structural design standards for earthquake loads. Section 1704.7 requires special inspections for existing site soil conditions, fill placement and load-bearing requirements during the construction as specified in Table 1704.7 of this section. Sections 1704.8 through 1704.16 provide inspection and testing requirements for various foundation types, and construction material types. Section 1803.1.1.1 requires each city and county enact an ordinance which requires a preliminary soil report and that the report be based upon adequate test borings or excavations, of every subdivision, where a tentative and final map is required pursuant to Section 66426 of the Government Code. Section 1803.5.3 defines expansive soils and specifies that in areas likely to have expansive soil, the building official shall require soil tests to determine where such soils do exist. Section 1803.5.4 specifies that a subsurface soil investigation must be performed to determine whether the existing ground-water

table is above or within 5 feet (1524 mm) below the elevation of the lowest floor level where such floor is located below the finished ground level adjacent to the foundation. Section 1803.5.8 provides specific standards where shallow foundations will bear on compacted fill material more than 12 inches (305 mm) in depth. Section 1803.5.11 and 1803.5.12 provide requirements for geotechnical investigations for structures assigned varying Seismic Design Categories in accordance with Section 1613. Section 1804 provides standards and requirements for excavation, grading, and fill. Section 1808, 1809, and 1810 provides standards and requirements for the construction of varying foundations.

Alquist-Priolo Earthquake Fault Zoning Act

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

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

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

Seismic Hazards Mapping Act

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

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

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

Caltrans Seismic Design Criteria

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

LOCAL

City of Riverbank General Plan

GOAL: SAFETY ELEMENT

- SAFE-1. Minimize the Loss of Life and Damage to Property Natural and Human-Caused Hazards.

POLICIES: SAFETY ELEMENT

- SAFE-1.1. The City will ensure that approved development projects and public investments are consistent with the information provided in the Stanislaus County Multi-Jurisdictional Hazard Mitigation Plan.
- SAFE-1.2. The City will continue to enforce State of California Building Standards Commission uniform codes, such as the California Building Code and California Fire Code with adopted Fire District amendments.
- SAFE-1.11. Proposed developments located within river bluff areas and other areas prone to geologic and soil limitations require a detailed geotechnical study prepared by an independent qualified geologist approved by the City. Approved plans, projects, and

subdivision requests shall incorporate measures to reduce risks identified in the geotechnical study, to the City's satisfaction.

- SAFE-1.12. The City will not allow the location of water wells in areas where subsidence could occur as a result or where existing potential for subsidence could be increase as a result of operation of a domestic water well.

GOAL: CONSERVATION AND OPEN SPACE ELEMENT

- CONS-6. Maintain or Increase Surface and Groundwater Quality and Supply.

POLICIES: CONSERVATION AND OPEN SPACE ELEMENT

- CONS-6.2. The City will coordinate with appropriate regional, state, and federal agencies to address local sources of groundwater and soil contamination, including underground storage tanks, septic tanks, agriculture, and industrial uses.

- CONS-6.7. The City will require mitigation measures, in coordination with the Regional Water Quality Control Board, as a part of approved projects, plans, and subdivisions to address the quality and quantity of urban runoff, including that attributable to soil erosion.

3.6.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

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

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
    - Strong seismic ground shaking; or
    - Seismic-related ground failure, including liquefaction;
- 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; or
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.

IMPACTS AND MITIGATION MEASURES

Impact 3.6-1: The proposed Project may expose people or structures to potential substantial adverse effects involving strong seismic ground shaking or seismic related ground failure. (Less than Significant)

The California Geologic Survey (CGS) evaluates faults and determines if a fault should be zoned as active, potentially active, or inactive. All active faults are incorporated into a Special Studies Zone,

also referred to as an Alquist-Priolo Special Study Zone. The Plan Area is not within an Alquist-Priolo Special Study Zone.

The U.S. Geological Survey identifies potential seismic sources within 17 miles of the Plan Area. Two of the closest known faults classified as active by the U.S. Geological Survey are an unnamed fault west of the City of Modesto near State Route 33, located approximately 17 miles to the southwest, and the San Joaquin fault, located approximately 21 miles to the southwest. The Green Springs Run fault is located approximately 24 miles to the northeast. Other faults that could potentially affect the proposed Project include the Bowie Flat fault, the Black Butte fault, and the Ortigalita fault. Figure 3.6-2 provides a map of known area faults.

According to the California Geological Survey's Probabilistic Seismic Hazard Assessment Program, Stanislaus County is considered to be within an area that is predicted to have a 10 percent probability that a seismic event would produce horizontal ground shaking of 10 to 20 percent within a 50-year period. This level of ground shaking correlates to a Modified Mercalli intensity of V to VII, light to strong. As a result of these factors the California Geological Survey has defined the entire county as a seismic hazard zone. The Uniform Building Code places all of California in the zone of greatest earthquake severity because recent studies indicate high potential for severe ground shaking.

There will always be a potential for groundshaking caused by seismic activity anywhere in California, including the Plan Area. Seismic activity could come from a known active fault such as the San Joaquin fault, or any number of other faults in the region. In order to minimize potential damage to the buildings and site improvements, all construction in California is required to be designed in accordance with the latest seismic design standards of the California Building Code. As discussed under Section 3.6.2, Regulatory Setting, the California Building Code, Title 24, Part 2, Chapter 16 addresses structural design and Chapter 18 addresses soils and foundations. Collectively, these state requirements, which have been adopted by the City of Riverbank, include design standards and requirements that are intended to minimize impacts to structures in seismically active areas of California. Section 1613 specifically provides structural design standards for earthquake loads. Section 1803.5.11 and 1803.5.12 provide requirements for geotechnical investigations for structures assigned varying Seismic Design Categories in accordance with Section 1613. Design in accordance with these standards and policies would reduce any potential impact to a less than significant level. Because all development in the Plan Area must be designed in conformance with these state and local standards and policies, any potential impact would be considered **less than significant**.

Impact 3.6-2: Implementation and construction of the proposed Project may result in substantial soil erosion or the loss of topsoil. (Less than Significant with Mitigation)

According to the United States Environmental Protection Agency, polluted stormwater runoff is a leading cause of impairment to the nearly 40 percent of surveyed U.S. water bodies which do not meet water quality standards. Over land or via storm sewer systems, polluted runoff is discharged, often untreated, directly into local water bodies. Soil erosion and the loss of topsoil is one of the

most common sources of polluted stormwater runoff during construction activities. When left uncontrolled, storm water runoff can erode soil and cause sedimentation in waterways, which collectively result in the destruction of fish, wildlife, and aquatic life habitats; a loss in aesthetic value; and threats to public health due to contaminated food, drinking water supplies, and recreational waterways.

Mandated by Congress under the Clean Water Act, the NPDES Stormwater Program is a comprehensive two-phased national program for addressing the non-agricultural sources of stormwater discharges which adversely affect the quality of our nation's waters. The program uses the National Pollutant Discharge Elimination System (NPDES) permitting mechanism to require the implementation of controls designed to prevent harmful pollutants, including soil erosion, from being washed by stormwater runoff into local water bodies. The construction activities for the proposed Project would be governed by the General Permit 2009-0009-DWQ (amended by 2010-0014-DWQ & 2012-0006-DWQ), which states:

> *"…Particular attention must be paid to large, mass graded sites where the potential for soil exposure to the erosive effects of rainfall and wind is great and where there is potential for significant sediment discharge from the site to surface waters. Until permanent vegetation is established, soil cover is the most cost-effective and expeditious method to protect soil particles from detachment and transport by rainfall. Temporary soil stabilization can be the single most important factor in reducing erosion at construction sites. The discharger is required to consider measures such as: covering disturbed areas with mulch, temporary seeding, soil stabilizers, binders, fiber rolls or blankets, temporary vegetation, and permanent seeding. These erosion control measures are only examples of what should be considered and should not preclude new or innovative approaches currently available or being developed. Erosion control BMPs should be the primary means of preventing storm water contamination, and sediment control techniques should be used to capture any soil that becomes eroded…"*

General Permit 2009-0009-DWQ (amended by 2010-0014-DWQ & 2012-0006-DWQ) further states that:

> *"Sediment control BMPs should be the secondary means of preventing storm water contamination. When erosion control techniques are ineffective, sediment control techniques should be used to capture any soil that becomes eroded. The discharger is required to consider perimeter control measures such as: installing silt fences or placing straw wattles below slopes. These sediment control measures are only examples of what should be considered and should not preclude new or innovative approaches currently available or being developed…Inappropriate management of run-on and runoff can result in excessive physical impacts to receiving waters from sediment and increased flows. The discharger is required to manage all run-on and runoff from a project site. Examples include: installing berms and other temporary run-on and runoff diversions…All measures must be periodically inspected, maintained and repaired to ensure that receiving water quality is protected. Frequent inspections coupled with thorough*

documentation and timely repair is necessary to ensure that all measures are functioning as intended…"

To ensure that construction activities are covered under General Permit 2009-0009-DWQ (amended by 2010-0014-DWQ & 2012-0006-DWQ), projects in California must prepare a Stormwater Pollution Prevention Plan (SWPPP) containing Best Management Practices (BMPs) to reduce erosion and sediments to meet water quality standards. Such BMPs may include: temporary erosion control measures such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover. The BMPs and overall SWPPP is reviewed by the Regional Water Quality Control Board as part of the permitting process. The SWPPP, once approved, is kept on site and implemented during construction activities and must be made available upon request to representatives of the RWQCB and/or the lead agency.

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

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water. Within the Plan Area, the erosion factor Kf varies from 0.17 to 0.37, which is considered a low to moderate potential for erosion. Furthermore, because the Plan Area is essentially flat, the erosion potential is considered slight. Regardless of the potential for erosion, there is always the potential for human caused erosion associated with construction activities or through the operational phase of a project. Grading, excavation, removal of vegetation cover, and loading activities associated with construction activities temporarily expose soils and increase the potential for soil erosion and sedimentation during rain events. Construction activities can also result in soil compaction and wind erosion effects that can adversely affect soils and reduce the revegetation potential at construction sites and staging areas.

In accordance with the NPDES Stormwater Program, Mitigation Measure 3.6-1 requires an approved SWPPP designed to control erosion and the loss of topsoil to the extent practicable using BMPs that the RWQCB has deemed effective in controlling erosion, sedimentation, runoff during construction activities. The RWQCB has stated that these erosion control measures are only examples of what should be considered and should not preclude new or innovative approaches currently available or being developed. The specific controls are subject to the review and approval by the RWQCB and are existing regulatory requirements. Implementation of Mitigation Measures 3.6-1 would ensure that the proposed Project would have a **less than significant** impact relative to this topic.

MITIGATION MEASURE(S)

Mitigation Measure 3.6-1: *Prior to clearing, grading, and disturbances to the ground such as stockpiling, or excavation for each phase of the Project, the Project proponent shall submit a Notice of Intent (NOI) and Storm Water Pollution Prevention Plan (SWPPP) to the RWQCB to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit Order 2009-0009-DWQ amended by 2010-0014-DWQ & 2012-0006-DWQ). The SWPPP shall be designed with Best Management Practices (BMPs) that the RWQCB has deemed as effective at reducing erosion, controlling sediment, and managing runoff. These include: covering disturbed areas with mulch, temporary seeding, soil stabilizers, binders, fiber rolls or blankets, temporary vegetation, and permanent seeding. Sediment control BMPs, installing silt fences or placing straw wattles below slopes, installing berms and other temporary run-on and runoff diversions. These BMPs are only examples of what should be considered and should not preclude new or innovative approaches currently available or being developed. Final selection of BMPs will be subject to approval by City of Riverbank and the RWQCB. The SWPPP will be kept on site during construction activity and will be made available upon request to representatives of the RWQCB.*

Impact 3.6-3: The proposed Project has the potential to be located on a geologic unit or soil that is unstable, or that would become unstable as a result of Project implementation, and potentially result in landslide, lateral spreading, subsidence, liquefaction or collapse. (Less than Significant with Mitigation)

LIQUEFACTION

Soil liquefaction results from loss of strength during cyclic loading, such as imposed by earthquakes. Soils most susceptible to liquefaction are clean, loose, saturated, and uniformly graded, fine-grained sands. Soil data from the NRCS Web Soil Survey (NRCS 2015) suggests that the potential for liquefaction is moderate given that the soils are high in sand and the water table is relatively high.

The City of Riverbank General Plan Draft EIR has indicated that “the relatively high water table found in Riverbank could result in impacts related to liquefaction.” The General Plan Draft EIR indicates that with the implementation of goals, policies, and implementation measures from the General Plan Safety Element the potentially significant impact would be reduced to a less than significant impact.

LATERAL SPREADING

Lateral spreading typically results when ground shaking moves soil toward an area where the soil integrity is weak or unsupported, and it typically occurs on the surface of a slope, although it does not occur strictly on steep slopes. Oftentimes, lateral spreading is also directly associated with areas of liquefaction. Since the potential for liquefaction is moderate, the potential for lateral spreading is present. The General Plan Draft EIR indicates that with the implementation of goals,

policies, and implementation measures from the General Plan Safety Element the potentially significant impact would be reduced to a less than significant impact.

LANDSLIDES

Landslides include rockfalls, deep slope failure, and shallow slope failure. Factors such as the geological conditions, drainage, slope, vegetation, and others directly affect the potential for landslides. One of the most common causes of landslides is construction activity that is associated with road building (i.e. cut and fill). The Plan Area is essentially flat; therefore, the potential for a landslide in the Plan Area is non-existent.

COLLAPSIBLE SOILS

Collapsible soils undergo a rearrangement of their grains and a loss of cementation, resulting in substantial and rapid settlement under relatively low loads. Collapsible soils occur predominantly at the base of mountain ranges, where Holocene-age alluvial fan and wash sediments have been deposited during rapid run-off events. Differential settlement of structures typically occurs when heavily irrigated landscape areas are near a building foundation. Examples of common problems associated with collapsible soils include tilting floors, cracking or separation in structures, sagging floors, and nonfunctional windows and doors. Collapsible soils have not been identified in the Riverbank General Plan as an issue in the Riverbank area. However, in areas subject to potential liquefaction, the potential for liquefaction induced settlement is present. The General Plan Draft EIR indicates that with the implementation of goals, policies, and implementation measures from the General Plan Safety Element the potentially significant impacts relating to liquefaction would be reduced to a less than significant impact.

SUBSIDENCE

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

CONCLUSION

The Plan Area does not have a significant risk of becoming unstable as a result of landslide, subsidence, or soil collapse. There is a potential for liquefaction, liquefaction induced settlement, and lateral spreading. However, through the implementation of Mitigation Measure 3.6-2, the proposed Project would have a **less than significant** impact relative to this topic.

MITIGATION MEASURE(S)

Mitigation Measure 3.6-2*: Prior to earthmoving activities for each phase of the Project, a certified geotechnical engineer, or equivalent, shall be retained to perform a final geotechnical evaluation of*

the soils at a design-level as required by the requirements of the California Building Code Title 24, Part 2, Chapter 18, Section 1803.1.1.2 related to expansive soils and other soil conditions. The evaluation shall be prepared in accordance with the standards and requirements outlined in California Building Code, Title 24, Part 2, Chapter 16, Chapter 17, and Chapter 18, which addresses structural design, tests and inspections, and soils and foundation standards. The final geotechnical evaluation shall include design recommendations to ensure that soil conditions do not pose a threat to the health and safety of people or structures, including threats from liquefaction or lateral spreading. The grading and improvement plans, as well as the storm drainage and building plans for each phase of the Project shall be designed in accordance with the recommendations provided in the final geotechnical evaluation.

Impact 3.6-4: Potential for expansive soils to create substantial risks to life or property. (Less than Significant with Mitigation)

Expansive soils are those that undergo volume changes as moisture content fluctuates; swelling substantially when wet or shrinking when dry. Soil expansion can damage structures by cracking foundations, causing settlement and distorting structural elements. Expansion is a typical characteristic of certain varieties of clay-type soils. Expansive soils shrink and swell in volume during changes in moisture content, such as a result of seasonal rain events, and can cause damage to foundations, concrete slabs, roadway improvements, and pavement sections.

According to the NRCS Web Soil Survey, the soils in the Plan Area have a low shrink-swell potential. The NRCS Web Soil Survey indicated that near surface soils within the Plan Area have low plasticity, and the expansion potential of the soils would respond to fluctuations in moisture content. Figure 3.6-3 provides a map of the shrink-swell potential of the soils at the Plan Area and in the vicinity.

The California Building Code Title 24, Part 2, Chapter 18, Section 1803.1.1.2 requires specific geotechnical evaluation when a preliminary geotechnical evaluation determines that expansive or other special soil conditions are present, which, if not corrected, would lead to structural defects. Mitigation Measure 3.6-2, presented above, provides the requirement for a final geotechnical evaluation in accordance with the standards and requirements outlined in the California Building Code, Title 24, Part 2, Chapter 16, Chapter 17, and Chapter 18, which addresses structural design, tests and inspections, and soils and foundation standards. The final geotechnical evaluation would include design recommendations to ensure that soil conditions do not pose a threat to the health and safety of people or structures. The grading and improvement plans, as well as the storm drainage and building plans, are required to be designed in accordance with the recommendations provided in the final geotechnical evaluation. With the implementation of Mitigation Measure 3.6-2 (requiring a final Geotechnical Evaluation, and site recommendations) the proposed Project would have a **less than significant** impact relative to this topic.

MITIGATION MEASURE(S)

*Implement **Mitigation Measure 3.6-2**.*

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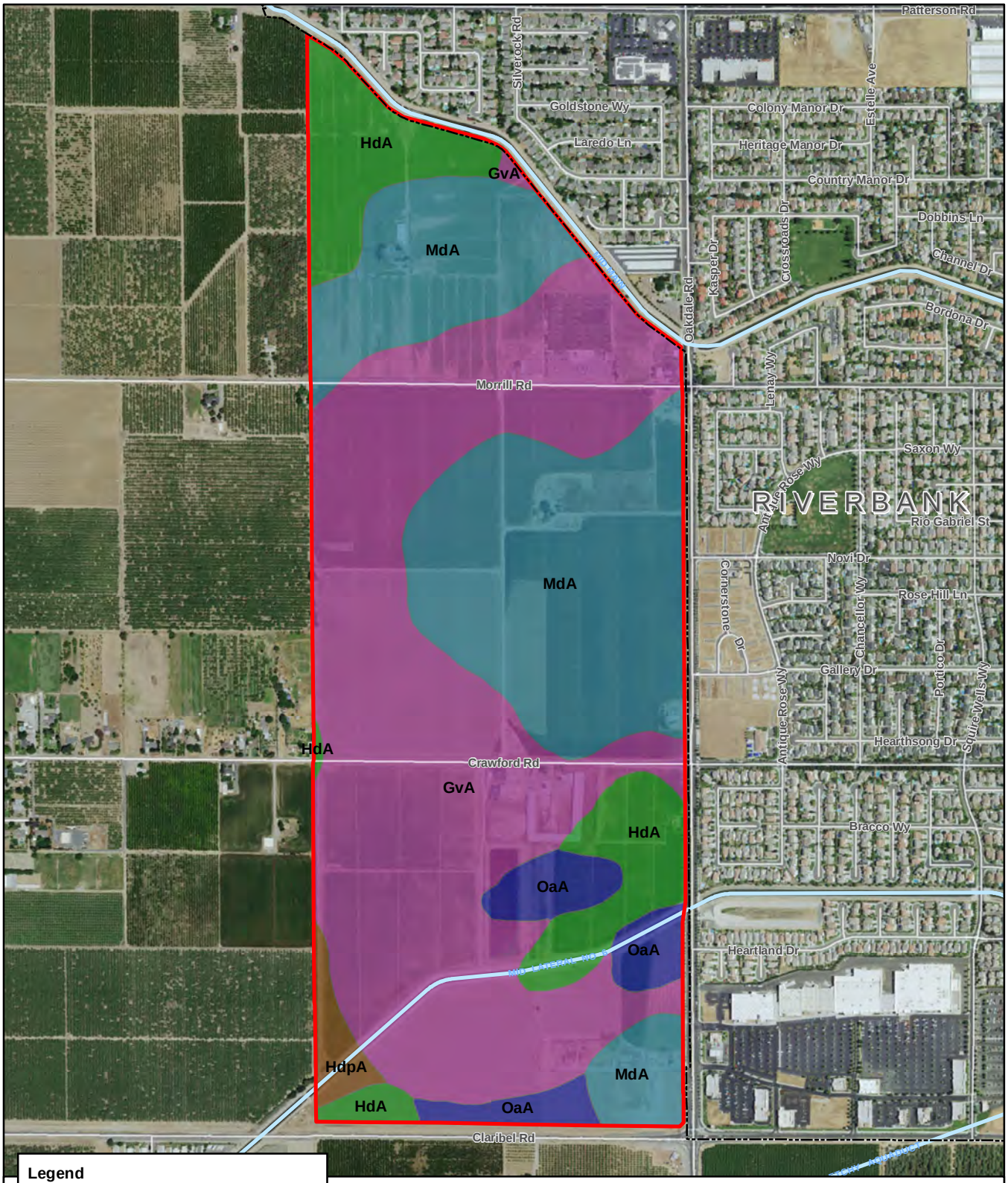

Legend

- Project Boundary (395.01 ac)
- GvA - Greenfield sandy loam, deep over hardpan (192.24 ac)
- HdA - Hanford sandy loam (46.23 ac)
- HdpA - Hanford sandy loam, moderately deep over silt (6.24 ac)
- MdA - Madera sandy loam (130.93 ac)
- OaA - Oakdale sandy loam (19.37 ac)

N

0 250 500

Feet

1:12,000

CROSSROADS WEST SPECIFIC PLAN

Figure 3.6-1. Project Site Soils

Sources: NRCS Web Soil Survey; Stanislaus County.
Map date: March 27, 2017.

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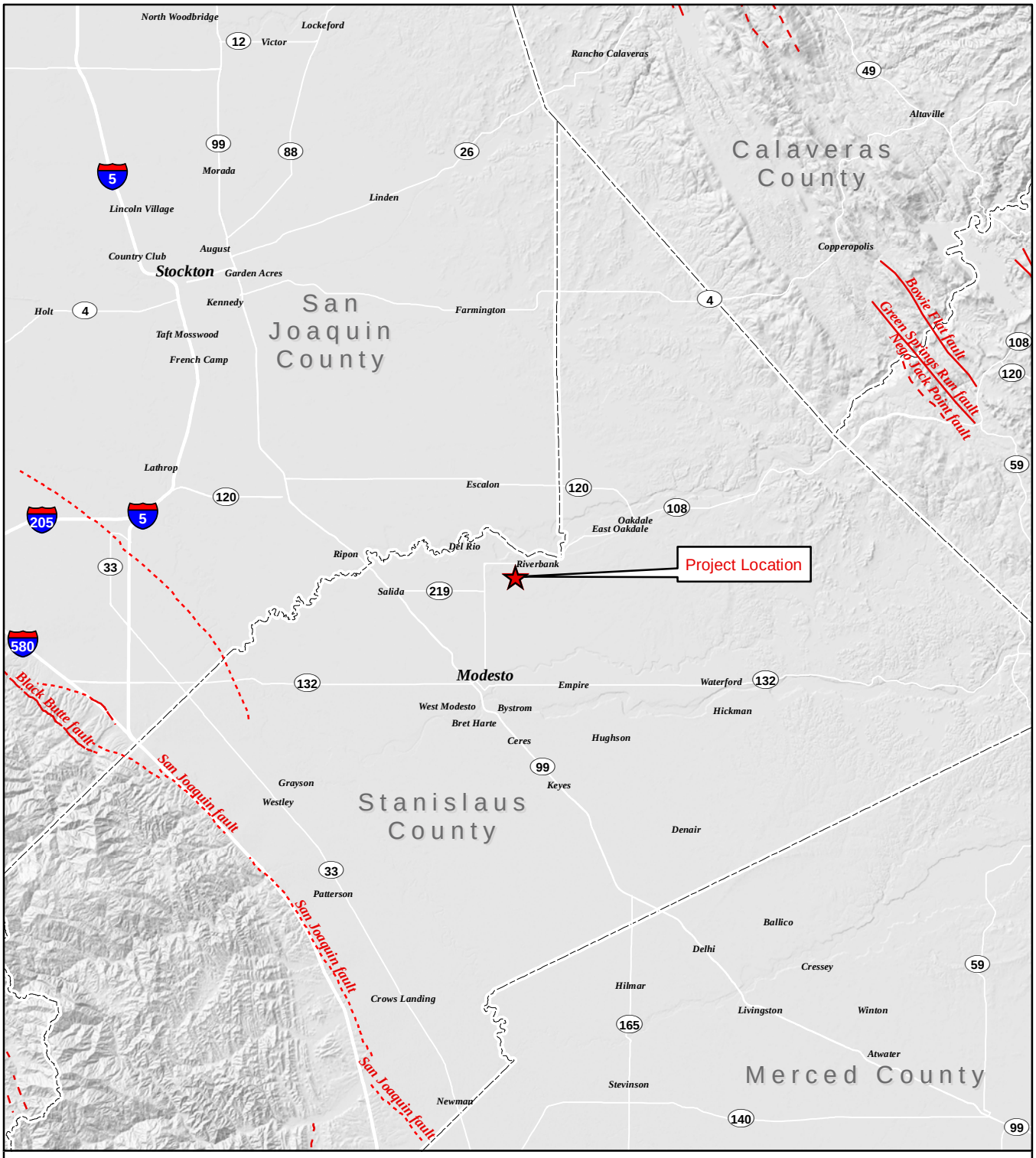

CROSSROADS WEST SPECIFIC PLAN

Figure 3.6-2. Known Faults in Project Area

Legend

Quaternary Faults

- Well-constrained
- Moderately-constrained
- Inferred

N

0 2½ 5

Miles

1:500,000

Data sources: US Geologic Survey; CalAtlas. Map date: March 27, 2017.

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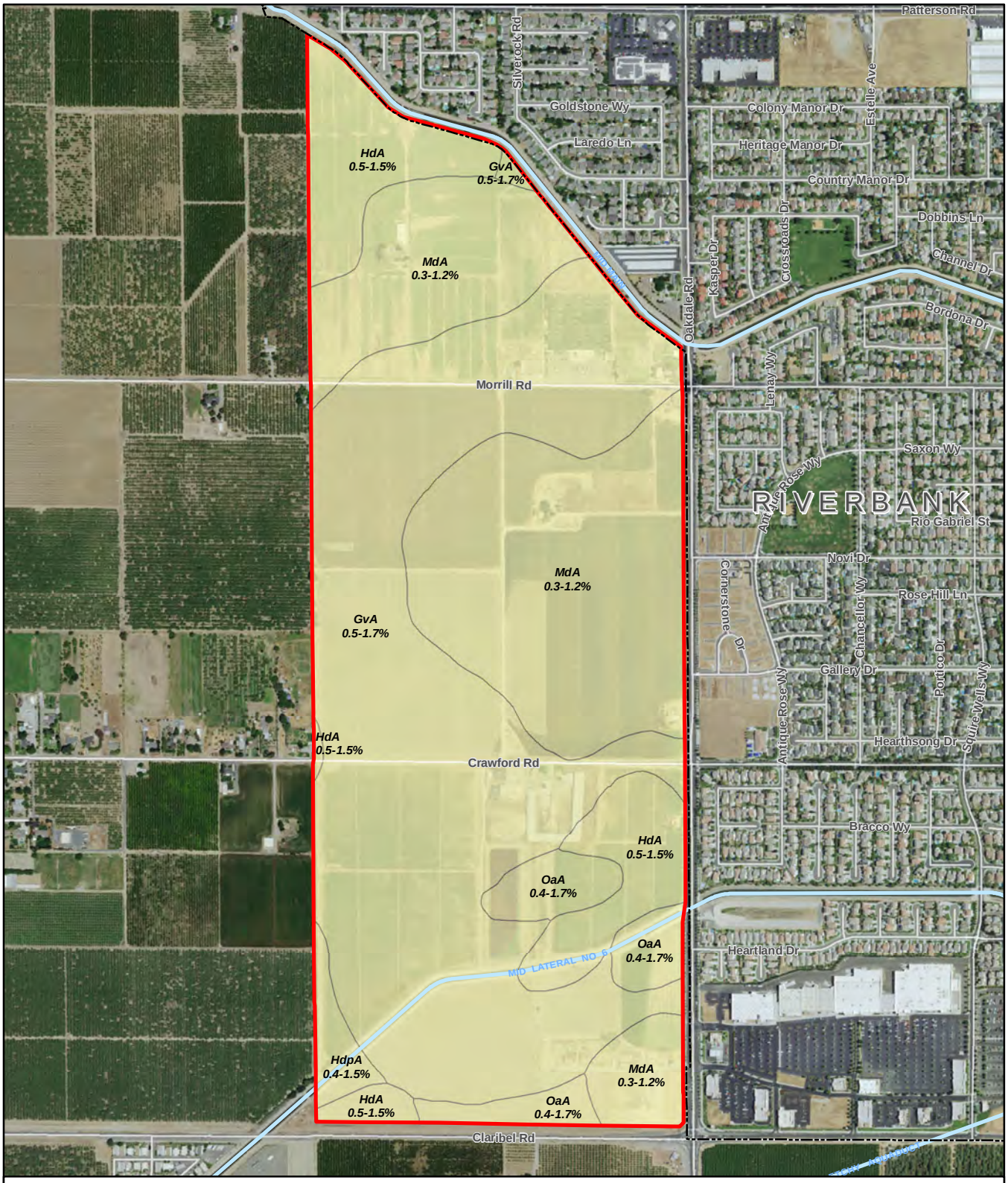

Legend

Project Boundary (395.01 ac)

Shrink-Swell Potential* of the Surface Horizon

Low

**Shrink-swell potential of soils is low if the soil has a linear extensibility of less than 3%, moderate if 3-6%, high if 6-9%, and very high if greater than 9%. Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state.*

N

0 250 500

Feet

1:12,000

Sources: NRCS Web Soil Survey; Stanislaus County.
Map date: March 27, 2017.

CROSSROADS WEST SPECIFIC PLAN

Figure 3.6-3. Expansive Soils Map

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This section discusses regional greenhouse gas (GHG) emissions, climate change, and energy conservation impacts that could result from implementation of the proposed Project. The analysis contained in this section is intended to be programmatic because GHG emissions and climate change are global issues. This analysis nevertheless covers GHG-related impacts associated with the conversion of the entire site to urban uses. This section provides a background discussion of greenhouse gases and climate change linkages and effects of global climate change. This section is organized with an existing setting, regulatory setting, approach/methodology, and impact analysis. The analysis and discussion of the GHG, climate change, and energy conservation impacts in this section focuses on the proposed Project's consistency with local, regional, and statewide climate change planning efforts and discusses the context of these planning efforts as they relate to the proposed Project. Disclosure and discussion of the Project's estimated energy usage and greenhouse gas emissions are provided. There was one NOP comment provided by the San Joaquin Valley Air Pollution Control District (SJVAPCD). There were no other comments received during the NOP scoping process related to this environmental topic.

3.7.1 ENVIRONMENTAL SETTING

GREENHOUSE GASES AND CLIMATE CHANGE LINKAGES

Various gases in the Earth's atmosphere, classified as atmospheric GHGs, play a critical role in determining the Earth's surface temperature. Solar radiation enters Earth's atmosphere from space, and a portion of the radiation is absorbed by the Earth's surface. The Earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation.

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

Greenhouse gases, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect. Among the prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), ozone (O_3), water vapor, nitrous oxide (N_2O), and chlorofluorocarbons (CFCs).

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. In California, the transportation sector is the largest emitter of GHGs, followed by the industrial sector (California Air Resources Board, 2017c).

As the name implies, global climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern, respectively. California produced 440.4 million gross metric tons of carbon dioxide equivalents ($MMTCO_2e$) in 2015 (California Energy Commission, 2017c). By 2020, estimated business-as-usual greenhouse gas emissions in California are projected to be 509 $MMTCO_2e$ per year (California Air Resources Board, 2015).

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

Consumption of fossil fuels in the transportation sector was the single largest source of California's GHG emissions in 2015, accounting for 39 percent of total GHG emissions in the state. This category was followed by the industrial sector (23 percent), the electricity generation sector (including both in-state and out of-state sources) (20 percent) and the agriculture sector (8 percent) (California Energy Commission, 2017c).

EFFECTS OF GLOBAL CLIMATE CHANGE

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

If the temperature of the ocean warms, it is anticipated that the winter snow season would be shortened. Snowpack in the Sierra Nevada provides both water supply (runoff) and storage (within the snowpack before melting), which is a major source of supply for the state. The snowpack portion of the supply could potentially decline by 70 to 90 percent by the end of the 21st century (Cal EPA, 2006).[1] This phenomenon could lead to significant challenges securing an adequate water supply for a growing state population. Further, the increased ocean temperature could result in increased moisture flux into the state; however, since this would likely increasingly come in the form of rain rather than snow in the high elevations, increased precipitation could lead to increased potential and severity of flood events, placing more pressure on California's levee/flood control system.

Sea level has risen approximately seven inches during the last century and it is predicted to rise more in the future. Some estimates anticipate a rise of an additional 22 to 35 inches by 2100,

[1] California Environmental Protection Agency, Climate Action Team. 2006. Climate Action Team Report to Governor Schwarzenegger and the Legislature. http://www.climatechange.ca.gov/climate_action_team/reports/.

depending on the future GHG emissions levels (Cal EPA, 2006). A recent estimate (2013) by the Coastal and Ocean Working Group of the California Climate Action Team (CO-CAT) anticipates that sea-levels south of the Cape Mendocino could rise between 16.56 inches (1.38 ft) to 65.76 inches (5.48 ft). If this occurs, resultant effects could include increased coastal flooding, saltwater intrusion and disruption of wetlands (Cal EPA, 2006). As the existing climate throughout California changes over time, mass migration of species, or failure of species to migrate in time to adapt to the perturbations in climate, could also result. Under the emissions scenarios of the Climate Scenarios report (Cal EPA, 2006), the impacts of global warming in California are anticipated to include, but are not limited to, the following.

Public Health

Higher temperatures are expected to increase the frequency, duration, and intensity of conditions conducive to air pollution formation. For example, days with weather conducive to ozone formation are projected to increase from 25 percent to 35 percent under the lower warming range and to 75 percent to 85 percent under the medium warming range. In addition, if global background ozone levels increase as predicted in some scenarios, it may become impossible to meet local air quality standards. Air quality could be further compromised by increases in wildfires, which emit fine particulate matter that can travel long distances depending on wind conditions. The Climate Scenarios report indicates that large wildfires could become up to 55 percent more frequent if GHG emissions are not significantly reduced.

In addition, under the higher warming scenario, there could be up to 100 more days per year with temperatures above 90°F in Los Angeles and 95°F in Sacramento by 2100. This is a large increase over historical patterns and approximately twice the increase projected if temperatures remain within or below the lower warming range. Rising temperatures will increase the risk of death from dehydration, heat stroke/exhaustion, heart attack, stroke, and respiratory distress caused by extreme heat.

Water Resources

A vast network of man-made reservoirs and aqueducts capture and transport water throughout the state from northern California rivers and the Colorado River. The current distribution system relies on Sierra Nevada snow pack to supply water during the dry spring and summer months. Rising temperatures, potentially compounded by decreases in precipitation, could severely reduce spring snow pack, increasing the risk of summer water shortages.

The state's water supplies are also at risk from rising sea levels. An influx of saltwater would degrade California's estuaries, wetlands, and groundwater aquifers. Saltwater intrusion caused by rising sea levels is a major threat to the quality and reliability of water within the southern edge of the Sacramento/San Joaquin River Delta, a major state fresh water supply. Global warming is also projected to seriously affect agricultural areas, with California farmers projected to lose as much as 25 percent of the water supply they need; decrease the potential for hydropower production within the state (although the effects on hydropower are uncertain); and seriously harm winter tourism. Under the lower warming range, the snow dependent winter recreational season at lower

elevations could be reduced by as much as one month. If temperatures reach the higher warming range and precipitation declines, there might be many years with insufficient snow for skiing, snowboarding, and other snow dependent recreational activities.

If GHG emissions continue unabated, more precipitation will fall as rain instead of snow, and the snow that does fall will melt earlier, reducing the Sierra Nevada spring snow pack by as much as 70 percent to 90 percent. Under the lower warming scenario, snow pack losses are expected to be only half as large as those expected if temperatures were to rise to the higher warming range. How much snow pack will be lost depends in part on future precipitation patterns, the Projections for which remain uncertain. However, even under the wetter climate Projections, the loss of snow pack would pose challenges to water managers, hamper hydropower generation, and nearly eliminate all skiing and other snow-related recreational activities.

Agriculture

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

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

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

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

Forests and Landscapes

Global warming is expected to alter the distribution and character of natural vegetation thereby resulting in a possible increased risk of large of wildfires. If temperatures rise into the medium warming range, the risk of large wildfires in California could increase by as much as 55 percent, which is almost twice the increase expected if temperatures stay in the lower warming range. However, since wildfire risk is determined by a combination of factors, including precipitation,

winds, temperature, and landscape and vegetation conditions, future risks will not be uniform throughout the state. For example, if precipitation increases as temperatures rise, wildfires in southern California are expected to increase by approximately 30 percent toward the end of the century. In contrast, precipitation decreases could increase wildfires in northern California by up to 90 percent.

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

Rising Sea Levels

Rising sea levels, more intense coastal storms, and warmer water temperatures will increasingly threaten the state's coastal regions. Under the higher warming scenario, sea level is anticipated to rise between 16.56 inches (1.38 feet) to 65.76 inches (5.48 feet) by 2100. Elevations of this magnitude would inundate coastal areas with saltwater, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats.

ENERGY CONSUMPTION

Energy is California is consumed from a wide variety of sources. Fossil fuels (including gasoline and diesel fuel, natural gas, and energy used to generate electricity) are most widely used form of energy in the State. However, renewable source of energy (such as solar and wind) are growing in proportion to California's overall energy mix. A large driver of renewable sources of energy in California is the State's current Renewable Portfolio Standard (RPS), which requires the State to derive at least 33 percent of electricity generated from renewable resources by 2020, and 50 percent by 2030.

Overall, in 2013, California ranked as the third-most energy efficient state in the nation (U.S. EIA, 2016). California's per capita rate of energy usage has remained relatively constant since the 1970's. Many State regulations since the 1970's, including new building energy efficiency standards, vehicle fleet efficiency measures, as well as growing public awareness, have helped to keep per capita energy usage in the State in check.

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

Electricity Consumption

California relies on a regional power system composed of a diverse mix of natural gas, renewable, hydroelectric, and nuclear generation resources. Approximately 71 percent of the electrical power needed to meet California's demand is produced in the state. Approximately 32 percent of its

electricity demand is imported from the Pacific Northwest and the Southwest (California Energy Commission, 2018). In 2016, California's in-state generated electricity was derived from natural gas (49.9 percent), large hydroelectric resources (12.3 percent), coal (0.2 percent), nuclear sources (9.6 percent), and renewable resources that include geothermal, biomass, small hydroelectric resources, wind, and solar (27.9 percent) (California Energy Commission, 2012).

According to the California Energy Commission (CEC), total statewide electricity consumption increased from 166,979 gigawatt-hours (GWh) in 1980 to 228,038 GWh in 1990, which is an estimated annual growth rate of 3.66 percent. The statewide electricity consumption in 1997 was 246,225 GWh, reflecting an annual growth rate of 1.14 percent between 1990 and 1997 (California Energy Commission Energy Almanac, 2012). Statewide consumption was 274,985 GWh in 2010, an annual growth rate of 0.9 percent between 1997 and 2010.

Oil

The primary energy source for the United States is oil, which is refined to produce fuels like gasoline, diesel, and jet fuel. Oil is a finite, nonrenewable energy source. World consumption of petroleum products has grown steadily in the last several decades. As of 2009, world consumption of oil had reached 96 million barrels per day. The United States, with approximately five percent of the world's population, accounts for approximately 19 percent of world oil consumption, or approximately 18.6 million barrels per day (The World Factbook 2009, Washington, DC: Central Intelligence Agency, 2009). The transportation sector relies heavily on oil. In California, petroleum based fuels currently provide approximately 96 percent of the state's transportation energy needs (California Energy Commission, 2012).

Natural Gas/Propane

The state produces approximately 12 percent of its natural gas, while obtaining 22 percent from Canada and 65 percent from the Rockies and the Southwest (California Energy Commission, 2012). In 2006, California produced 325.6 billion cubic feet of natural gas (California Energy Commission, 2012).

3.7.2 REGULATORY SETTING

FEDERAL

Clean Air Act

The Federal Clean Air Act (FCAA) was first signed into law in 1970. In 1977, and again in 1990, the law was substantially amended. The FCAA is the foundation for a national air pollution control effort, and it is composed of the following basic elements: NAAQS for criteria air pollutants, hazardous air pollutant standards, state attainment plans, motor National Ambient Air Quality Standards (NAAQS) vehicle emissions standards, stationary source emissions standards and permits, acid rain control measures, stratospheric ozone protection, and enforcement provisions.

The EPA is responsible for administering the FCAA. The FCAA requires the EPA to set NAAQS for several problem air pollutants based on human health and welfare criteria. Two types of NAAQS

were established: primary standards, which protect public health, and secondary standards, which protect the public welfare from non-health-related adverse effects such as visibility reduction.

Energy Policy and Conservation Act

The Energy Policy and Conservation Act of 1975 sought to ensure that all vehicles sold in the U.S. would meet certain fuel economy goals. Through this Act, Congress established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the Act, the National Highway Traffic and Safety Administration, which is part of the U.S. Department of Transportation (USDOT), is responsible for establishing additional vehicle standards and for revising existing standards.

Since 1990, the fuel economy standard for new passenger cars has been 27.5 mpg. Since 1996, the fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) has been 20.7 mpg. Heavy-duty vehicles (i.e., vehicles and trucks over 8,500 pounds gross vehicle weight) are not currently subject to fuel economy standards. Compliance with federal fuel economy standards is determined on the basis of each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the U.S. The Corporate Average Fuel Economy (CAFE) program, which is administered by the EPA, was created to determine vehicle manufacturers' compliance with the fuel economy standards. The EPA calculates a CAFE value for each manufacturer based on city and highway fuel economy test results and vehicle sales. Based on the information generated under the CAFE program, the USDOT is authorized to assess penalties for noncompliance.

Energy Policy Act of 1992 (EPAct)

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

Energy Policy Act of 2005

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

Intermodal Surface Transportation Efficiency Act (ISTEA)

ISTEA (49 U.S.C. § 101 et seq.) promoted the development of intermodal transportation systems to maximize mobility as well as address national and local interests in air quality and energy. ISTEA contained factors that metropolitan planning organizations (MPOs), such as the Stanislaus Council

of Governments (SCOG), were to address in developing transportation plans and programs, including some energy-related factors. To meet the ISTEA requirements, MPOs adopted explicit policies defining the social, economic, energy, and environmental values that were to guide transportation decisions in that metropolitan area. The planning process was then to address these policies. Another requirement was to consider the consistency of transportation planning with federal, state, and local energy goals. Through this requirement, energy consumption was expected to become a criterion, along with cost and other values that determine the best transportation solution.

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

SAFETEA-LU (23 U.S.C. § 507), renewed the Transportation Equity Act for the 21st Century (TEA-21) of 1998 (23 U.S.C.; 49 U.S.C.) through FY 2009. SAFETEA-LU authorized the federal surface transportation programs for highways, highway safety, and transit. SAFETEA-LU addressed the many challenges facing our transportation system today—such as improving safety, reducing traffic congestion, improving efficiency in freight movement, increasing intermodal connectivity, and protecting the environment—as well as laying the groundwork for addressing future challenges. SAFETEA-LU promoted more efficient and effective federal surface transportation programs by focusing on transportation issues of national significance, while giving state and local transportation decision makers more flexibility to solve transportation problems in their communities. SAFETEA-LU was extended in March of 2010 for nine months, and expired in December of the same year. In June 2012, SAFETEA-LU was replaced by the Moving Ahead for Progress in the 21st Century Act (MAP-21), which will take effect October 1, 2012.

Federal Climate Change Policy

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

Mandatory Greenhouse Gas Reporting Rule

On September 22, 2009, EPA issued a final rule for mandatory reporting of GHGs from large GHG emissions sources in the United States. In general, this national reporting requirement will provide EPA with accurate and timely GHG emissions data from facilities that emit 25,000 metric tons or more of CO_2 per year. This publicly available data will allow the reporters to track their own emissions, compare them to similar facilities, and aid in identifying cost effective opportunities to

reduce emissions in the future. Reporting is at the facility level, except that certain suppliers of fossil fuels and industrial greenhouse gases along with vehicle and engine manufacturers will report at the corporate level. An estimated 85 percent of the total U.S. GHG emissions, from approximately 10,000 facilities, are covered by this final rule.

STATE

Assembly Bill 1493

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

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

Assembly Bill 1007

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

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

Executive Order #S-06-06 establishes targets for the use and production of biofuels and biopower and directs state agencies to work together to advance biomass programs in California while providing environmental protection and mitigation. The executive order establishes the following target to increase the production and use of bioenergy, including ethanol and biodiesel fuels made from renewable resources: produce a minimum of 20 percent of its biofuels within California by

2010, 40 percent by 2020, and 75 percent by 2050. The executive order also calls for the state to meet a target for use of biomass electricity.

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

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this Executive Order is to reduce California's GHG emissions to: 1) 2000 levels by 2010, 2) 1990 levels by the 2020 and 3) 80 percent below the 1990 levels by the year 2050.

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

EO S-13-08

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

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

Assembly Bill 32 - Climate Change Scoping Plan

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

state's GHG inventory. The 2008 Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards:

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

First Update to the Climate Change Scoping Plan: In June 2013, CARB kicked off a public process intended develop the First Update to the Climate Change Scoping Plan (2014 Scoping Plan). The public process included: regional workshops, input/advise from stakeholders, advise from the Environmental Justice Advisory Committee, public review and comment of a draft Scoping Plan, and ultimately public hearings. On May 22, 2014, the First Update to the Climate Change Scoping Plan was approved by the Board. The 2014 Scoping Plan Update indicated that California is on track to meet the near-term 2030 GHG limit, and is well positioned to maintain and continue reductions beyond 2050 as required by AB 32.

On December 14, 2017, CARB approved the 2017 Final Scoping Plan Update, which outlines CARB's programs to achieve 40 percent reduction in GHG emissions from 1990 levels by 2030. To achieve these goals, the 2017 Scoping Plan Update includes a recommended plan-level efficiency threshold of six metric tons or less per capita by 2030 and no more than two metric tons by 2050. The strategies included in the 2017 update include, but are not limited to:

- Implementing and increasing the standards of the Mobile Source Strategy, which include increasing zero emission vehicle (ZEV) buses and trucks.
- Low Carbon Fuel Standard, with an increased stringency (18 percent by 2030).
- Implementation of SB 350, which expands the Renewable Portfolio Standard to 50 percent and doubles energy efficiency savings by 2030.
- California Sustainable Freight Action Plan, which improves freight system efficiency, utilizes near-zero emissions technology, and deployment of ZEV trucks.
- Implementing the proposed Short-Lived Climate Pollution Strategy, which focuses on reducing CH4 and hydrocarbon emissions by 40 percent and anthropogenic black carbon emissions by 50 percent by year 2030.
- Continued implementation of SB 375.
- Post-2020 Cap-and-Trade Program that includes declining caps.
- 20 percent reduction in GHG emissions from refineries by 2030.
- Development of a Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

California Strategy to Reduce Petroleum Dependence (AB 2076)

In response to the requirements of AB 2076 (Chapter 936, Statutes of 2000), the CEC and the CARB developed a strategy to reduce petroleum dependence in California. The strategy, *Reducing*

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

Climate Action Program at Caltrans

The California Department of Transportation, Business, Transportation, and Housing Agency, prepared a Climate Action Program in response to new regulatory directives. The goal of the Climate Action Program is to promote clean and energy efficient transportation, and provide guidance for mainstreaming energy and climate change issues into business operations. The overall approach to lower fuel consumption and CO_2 from transportation is twofold: (1) reduce congestion and improve efficiency of transportation systems through smart land use, operational improvements, and Intelligent Transportation Systems; and (2) institutionalize energy efficiency and GHG emission reduction measures and technology into planning, Project development, operations, and maintenance of transportation facilities, fleets, buildings, and equipment.

The reasoning underlying the Climate Action Program is the conclusion that "the most effective approach to addressing GHG reduction, in the short-to-medium term, is strong technology policy and market mechanisms to encourage innovations. Rapid development and availability of alternative fuels and vehicles, increased efficiency in new cars and trucks (light and heavy duty), and super clean fuels are the most direct approach to reducing GHG emissions from motor vehicles (emission performance standards and fuel or carbon performance standards)."

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

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

Senate Bill 97 (SB 97)

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

Senate Bill 375 (SB 375)

Sen. Bill No. 375 (Stats. 2008, ch. 728) (SB 375) was built on AB 32 (California's 2006 climate change law). SB 375's core provision is a requirement for regional transportation agencies to

develop a Sustainable Communities Strategy (SCS) in order to reduce GHG emissions from passenger vehicles. The SCS is one component of the Regional Transportation Plan (RTP).

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

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

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

California Building Energy Efficiency Standards

Title 24, Part 6 of the California Code of Regulations, known as the Building Energy Efficiency Standards, was established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. On January 1, 2010, the California Building Standards Commission adopted CALGreen and became the first state in the United States to adopt a statewide green building standards code. CALGreen requires new buildings to reduce water consumption by 20 percent, divert 50 percent of construction waste from landfills, and install low pollutant-emitting materials.

CEQA Guidelines Appendix F

In order to assure that energy implications are considered in Project decisions, CEQA requires that EIRs include a discussion of the potential energy impacts of proposed Projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy. The goal of conserving energy implies the wise and efficient use of energy.

LOCAL

San Joaquin Valley Air Pollution Control District Climate Change Action Plan

In August 2008, the SJVAPCD adopted its Climate Change Action Plan. The Climate Change Action Plan directed the SJVAPCD's Air Pollution Control Officer to develop guidance to assist APCD staff, Valley businesses, land use agencies and other permitting agencies in addressing GHG emissions as part of the CEQA process. Regarding CEQA guidance, some of the goals of the Climate Change Action Plan are to assist local land use agencies, developers and the public by identifying and quantifying GHG emission reduction measures for development Projects and by providing tools to

streamline evaluation of Project-specific GHG effects, and to assist Valley businesses in complying with State law related to GHG emissions.

A product of this direction to provide CEQA guidance is the Final Staff Report – Climate Change Action Plan: Addressing GHG Emissions Impacts, presented to the APCD Board in December 2009. A central component of the Final Staff Report is the establishment of Best Performance Standards, which are specifications or Project design elements that identify effective, feasible GHG emission reduction measures. Emission reductions achieved through Best Performance Standards implementation would be pre-quantified, thus negating the need for Project-specific quantification of GHG emissions.

For Projects not implementing Best Performance Standards, demonstration of a 29 percent reduction in GHG emissions from business-as-usual conditions is required to determine that a Project would have a less than cumulatively significant impact. Appendix J of the Final Staff Report provides a table of GHG emission reduction measures for development Projects, along with a point value that corresponds to a percentage decrease in GHG emissions when available.

2014 Regional Transportation Plan/Sustainable Communities Strategy

The 2014 Stanislaus County Regional Transportation Plan was written pursuant to the Sustainable Communities and Climate Protection Act of 2008 (i.e., SB 375). The SCS incorporates future transportation investments and land use strategies that prioritize a multi-modal investment plan covering a 27-year period extending out to 2040.

The RTP is a long-range transportation plan that guides the region's transportation improvements over a minimum of 20-years and is updated every four. Using growth forecasts and economic trends projected out over study timeframe, the RTP considers the role of transportation in the broader context of economic, environmental, and quality-of-life goals for the future, identifying regional transportation strategies to address our mobility needs. The 2014 RTP addresses all transportation modes including motor vehicles, transit (commuter and local), rail (commuter and inter-regional), goods movement (rail, truck, and water), bicycle and pedestrian facilities, aviation systems, transportation systems management (TSM) and transportation demand management (TDM) programs, and other Projects considered over the planning horizon of 2040. Regional transportation improvement Projects proposed to be funded, in whole or in part, in the state transportation improvement program must be included in the adopted RTP.

The eight counties of the San Joaquin Valley are coordinating on some aspects of these planning efforts to maximize resources, with each area's Metropolitan Planning Organization (MPO) developing a separate plan. MPOs are responsible for setting transportation policy and priorities for a region and documenting how transportation funds will be spent in a Regional Transportation Plan. Specifically, the San Joaquin County SCS does the following:

- Identifies the general location of uses, residential densities, and building intensities within the region
- Identifies areas within the region sufficient to house an eight-year Projection of the regional housing need for the region

- Gathers and considers the best practically available scientific information regarding resource areas and farmland in the region
- Sets forth a forecasted development pattern for the region
- Identifies areas within the region sufficient to house all the population of the region
- Identifies a transportation network to service the transportation needs of the region
- Quantifies the reduction in greenhouse gas emissions projected to be achieved by the SCS

The Greenhouse Gas Reduction Targets for the 2014 San Joaquin County RTP are as follows:

- 5 percent per capita reduction from 2005 levels by 2020
- 10 percent per capita reduction from 2005 levels by 2035

Stanislaus County Regional Communitywide Greenhouse Gas Inventory

The Stanislaus County Regional GHG Inventory was completed as part of the Stanislaus County Sustainability Toolbox (RST), a group of initiatives funded through the State of California Strategic Growth Council (SGC). The Stansislaus County Regional GHG Inventory provides the quantification of GHG community emissions for the county as a whole for the year 2005. Using the methodology for the regional inventory, separate GHG community inventories were prepared for each jurisdiction in the county and provided to individual cities and the unincorporated county for their use.

Total GHG emissions in 2005 from the Stanislaus County Region (combined emissions from the nine incorporated cities and the unincorporated county), were 6,042,232 $MTCO_2e$. Additional emissions arise from stationary sources and landfill sites (658,692 $MTCO_2e$). On-road Transportation was the largest sector, with 27 percent of overall regional emissions; Building Energy (Electricity) was the second largest sector, at 23 percent of overall emissions; Agriculture (Livestock Emissions) was the next large sector at 18 percent of emissions; Building Energy (Natural Gas) was the next largest sector at 16 percent of emissions; and the remainder of emissions were splits between the Agriculture (Other Emissions) sector (6 percent), the Off-road Transportation sector (2 percent), the Waste Sector (0.8 percent), the Water Sector (0.5 percent), and the Wastewater Treatment Sector (0.3 percent).

City of Riverbank – Efficient Transportation Program to Address Climate Change

The City of Riverbank's 2009 General Plan update focuses on increasing transportation choices available to residents through closer integration of land use and transportation planning. This includes increasing street "connectivity" (the frequency with which streets or roads intersect) and other strategies supporting non-automobile travel. The City of Riverbank works closely with developers to implement these goals.

Riverbank's 2009 General Plan update includes several specific strategies for supporting pedestrian, bicycle and other non-automobile modes of travel. Examples include requiring bike racks and pedestrian improvements in commercial development Projects; pushing buildings

toward the front of lots, with parking on the side or in back; and requiring street trees, to improve comfort and appearance of sidewalks and streets.

3.7.3 IMPACTS AND MITIGATION MEASURES

GREENHOUSE GAS EMISSIONS THRESHOLDS OF SIGNIFICANCE

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

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

The vast majority of individual projects do not generate sufficient GHG emissions to create a project-specific impact through a direct influence to climate change; therefore, the issue of climate change typically involves an analysis of whether a project's contribution towards an impact is cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future Projects (CEQA Guidelines, Section 15355).

The SJVAPCD's has evaluated different approaches for estimating impacts, and summarizing potential GHG emission reduction measures. The SJVAPCD staff has concluded that "*existing science is inadequate to support quantification of impacts that project specific GHG emissions have on global climatic change*." This is readily understood when one considers that global climatic change is the result of the sum total of GHG emissions, both man-made and natural that occurred in the past; that is occurring now; and will occur in the future. The effects of project specific GHG emissions are cumulative, and unless reduced or mitigated, their incremental contribution to global climatic change could be considered significant.

The *Final Draft Guidance for Assessing and Mitigating Air Quality Impacts* (SJVAPCD, 2015) provides an approach to assessing a project's impacts on greenhouse gas emissions by evaluating the project's emissions to the "reduction targets" established in ARB's AB 32 Scoping Plan. For instance, the SJVACD's guidance recommends that Projects should demonstrate 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, consistent with GHG emission reduction targets established in ARB's AB 32 Scoping Plan. 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*."

Subsequent to the SJVAPCD's approval of the *Final Draft Guidance for Assessing and Mitigating Air Quality Impacts* (SJVAPCD 2015), the California Supreme Court issued an opinion that affects the conclusions that should/should not be drawn from a GHG emissions analysis that is based on consistency with the AB 32 Scoping Plan. More specifically, in *Center for Biological Diversity v.*

California Department of Fish and Wildlife, the Court ruled that showing a "Project-level reduction" that meets or exceeds the Scoping Plan's overall statewide GHG reduction goal is not necessarily sufficient to show that a project's GHG impacts will be adequately mitigated: "*the Scoping Plan nowhere related that statewide level of reduction effort to the percentage of reduction that would or should be required from individual Projects*..." According to the Court, the lead agency cannot simply assume that the overall level of effort required to achieve the statewide goal for emissions reductions will suffice for a specific project.

Given this Court decision, reliance on a 29 percent GHG emissions reduction from projected BAU levels compared to the Project's estimated 2020 levels as recommended in the SJVAPCD's guidance documents will not be the basis for an impact conclusion in this EIR. Given that the SJVAPCD staff has concluded that "*existing science is inadequate to support quantification of impacts that Project specific GHG emissions have on global climatic change,*" this EIR will instead rely on a qualitative approach for this analysis.

The analysis will include an assessment of feasible Best Performance Standards (BPS) that can be incorporated into the Project design, and the resulting GHG emissions. The analysis will also review the Project for consistency with the RTP/SCS for the region, which is specifically designed to reduce GHG emissions in accordance with the ARB Scoping Plan. This qualitative approach will be used, in part because there are currently no numerical thresholds established by the SJVAPCD, and the SJVAPCD's *Climate Change Action Plan* (2008) and their guidance documents do not establish sufficient justification that a "project-level reduction" would meet or exceeds the Scoping Plan's overall statewide GHG reduction goal.

ENERGY CONSERVATION THRESHOLDS OF SIGNIFICANCE

Additionally, per Appendix F of the State CEQA Guidelines, the proposed Project would result in a significant impact on energy use if it would:

- Result in significant adverse impacts related to Project energy requirements, energy use inefficiencies, and/or energy intensiveness of materials by amount and fuel type for each stage of the Project including construction, operations, maintenance, and/or removal;
- Result in significant adverse impacts on local and regional energy supplies and on requirements for additional capacity;
- Result in significant adverse impacts on peak and base period demands for electricity and other forms of energy;
- Fail to comply with existing energy standards;
- Result in significant adverse impacts on energy resources;
- Result in significant adverse impacts related to transportation energy use requirements of the Project and use of transportation alternatives; or
- Conflict, or create an inconsistency, with any applicable plan, policy, or regulation adopted for the purpose of avoiding or mitigating environmental effects related to energy conservation.

In order to determine whether or not the proposed Project would result in a significant impact on energy use, this EIR includes an analysis of proposed Project energy use provided below.

IMPACTS AND MITIGATION MEASURES

Impact 3.7-1: Potential to generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment or potential to conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. (Significant and Unavoidable)

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

As described by the *Final Draft Guidance for Assessing and Mitigating Air Quality Impacts* (SJVAPCD, 2015), projects complying with an approved GHG emissions reduction plan which avoids or substantially reduces GHG emissions within the geographic area in which the project is located (e.g. the City of Riverbank) 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 the Lead Agency. The City of Riverbank does not have an approved GHG emissions reduction plan that would qualify.

Proposed Project GHG emissions were modelled and are provided below. The mitigation measures assumed for the modelling of GHG emissions for the proposed Project are also provided below (as also provided in *Section 3.3: Air Quality* of this EIR). The proposed Project's short-term construction-related and long-term operational GHG emissions for full buildout of the proposed Project were estimated using the California Emission Estimator Model (CalEEMod)™ (v.2016.3.2). CalEEMod is a statewide model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify GHG emissions from land use projects. The model quantifies direct GHG emissions from construction and operation (including vehicle use), as well as indirect GHG emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. Emissions are expressed in annual metric tons of CO_2 equivalent units of measure (i.e., $MTCO_2e$), based on the global warming potential of the individual pollutants.

POTENTIAL TO GENERATE SIGNIFICANT GHG EMISSIONS

Construction GHG Emissions

Estimated increases in unmitigated GHG emissions associated with construction of the proposed Project are summarized in Table 3.7-1. For the purposes of modelling, it is assumed that full buildout would not occur until approximately 2035. The results of the modeling are included as Appendix B of this Draft EIR.

TABLE 3.7-1: CONSTRUCTION GHG EMISSIONS (UNMITIGATED METRIC TONS/YEAR)

YEAR	BIO-CO_2	NBIO-CO_2	TOTAL CO_2	CH_4	N_2O	CO_2E
2019	0	2,090.3	2,090.3	0.2	0	2,096.5
2020	0	5,179.3	5,179.3	0.4	0	5,189.4
2021	0	4,883.0	4,883.0	0.3	0	4,891.3
2022	0	4,763.8	4,763.8	0.3	0	4,771.8
2023	0	4,628.2	4,628.2	0.3	0	4,634.6
2024	0	4,568.1	4,568.1	0.3	0	4,574.4
2025	0	4,456.4	4,456.4	0.2	0	4,462.6
2026	0	4,374.2	4,374.2	0.2	0	4,380.2
2027	0	4,298.5	4,298.5	0.2	0	4,304.5
2028	0	4,216.1	4,216.1	0.2	0	4,222.0
2029	0	4,173.6	4,173.6	0.2	0	4,179.4
2030	0	4,162.7	4,162.7	0.2	0	4,167.0
2031	0	4,118.1	4,118.1	0.2	0	4,122.4
2032	0	4,095.9	4,095.9	0.2	0	4,100.1
2033	0	4,032.2	4,032.2	0.2	0	4,036.4
2034	0	4,004.6	4,004.6	0.2	0	4,008.7
2035	0	2,694.7	2,694.7	0.1	0	2,697.4
Total	**0**	**70,739.70**	**70,739.70**	**3.90**	**0**	**70,838.7**
Single-Year Maximum	**0**	**5,179.3**	**5,179.3**	**0.4**	**0**	**5,189.4**

NOTE: NUMBERS MAY NOT ADD UP DUE TO ROUNDING.

SOURCE: CALEEMOD (V.2016.3.2).

As presented in the table, construction GHG emissions associated with development of the proposed Project are estimated to be a maximum of approximately 5,189 $MTCO_2e$ in a single year. Total construction GHG emissions over the course of full buildout would be 70,838.7 MT CO_2e. Construction GHG emissions are a one-time release and are, therefore, not typically expected to generate a significant contribution to global climate change in the long-term. Furthermore, assuming the lifecycle of the Proposed Project is 50 years (a conservative estimate), total average construction emissions amortized over this period would be approximately 1,416.8 $MTCO_2e$ per year. Therefore, cumulatively, these construction emissions would not generate a significant contribution to global climate change.

Long-Term Operational GHG Emissions

Existing Conditions

As described previously within this EIR (Chapter 2.0: Project Description), the nine parcels that comprise the Plan Area are currently used primarily for agricultural operations including dairy operations, row crops, and fallow land. Additionally, an approximately 11-acre regional City park, the Riverbank Sports Complex, is currently developed in the northeastern portion of the Plan Area, near the intersection of Morrill Road and Oakdale Road. Crawford Road and Morrill Road traverse the Plan Area from east to west. In addition to GHG emissions generated by the use of vehicles, agricultural equipment, and building energy use, existing dairy operations have a large potential to generate substantial amounts of biogenic CH_4 (methane) emissions (a potent source of GHGs). Such emissions are biological in origin; they are generated by the digestive activities of the dairy cows located within the Plan Area.

There are approximately 570 dairy cows (500 milking cows and 70 dry cows[2]) currently managed within the Plan Area. De Novo Planning Group calculated the approximate level of biogenic (i.e. methane) GHG emissions associated with the dairy cows under the existing scenario to be 1,922 $MTCO_2e$. A comparison of these emissions to the proposed project operational emissions is provided later on in this discussion (under Table 3.7-4).

Proposed Project

The following CalEEMod™ (v.2016.3.2) assumptions for mitigation of operational GHG emissions under the proposed Project were incorporated into the model, as allowed by the mitigation options provided within CalEEMod (based on the GHG measures provided within CAPCOA's Quantifying Greenhouse Gas Mitigation Measures). It should be noted that some of the following mitigation assumptions are already included in project design, such as the project density of 6.5 dwelling units per acre, and the location of the nearest transit stop of 0.5 miles; however, these are incorporated as mitigation within the modelling software due to limitations of the CalEEMod software. These measures were also provided in *Section 3.3: Air Quality* of this EIR:

<u>Traffic Mitigation</u>

- Density (6. 5 dwelling units per acre)
- Increase Transit Accessibility in the Project area (within 0.5 miles of a transit stop)
- Improve Pedestrian Network so that the Project area connects to offsite pedestrian networks
- Provide traffic calming measures on all street segments and intersections (note: traffic calming features may include marked crosswalks, count-down signal timers, curb extensions, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, narrow roadways, traffic circles, on-street parking, planter strips with streets trees, chicanes/chokers, or other improvements designed to reduce motor vehicle speeds and encourage pedestrian and bicycle trips)

[2] Email communication with Dave Romano, Project Applicant, on December 18, 2017.

Energy Mitigation

- Install High Efficiency Lighting (note: according to CAPCOA's *Quantifying Greenhouse Gas Mitigation Measures*, a minimum of a 16 percent reduction in electricity usage is expected compared with low-efficiency lighting. For example: metal halide post top lights, or LEDs, as opposed to typical mercury cobrahead lights).

Area Mitigation

- Use Only Natural Gas Hearths

Water Mitigation

- Apply a Water Conservation Strategy to achieve a 20 percent reduction in outdoor water usage
- Install low flow bathroom faucets
- Install low-flow kitchen faucets
- Install low-flow toilets
- Install low-flow showers
- Use water-efficient irrigation systems

Estimated GHG emissions associated with the buildout of the proposed Project with and without the above mitigation incorporated are summarized in Table 3.7-2 and 3.7-3.

TABLE 3.7-2: OPERATIONAL GHG EMISSIONS (UNMITIGATED METRIC TONS/YEAR)

CATEGORY	BIO-CO_2	NBIO-CO_2	TOTAL CO_2	CH_4	N_2O	CO_2E
Area	0.0	1,052.4	1,052.4	0.0470	0.0188	1,059.1
Energy	0.0	13,223.1	13,223.1	0.4030	0.1359	13,273.7
Mobile	0.0	48,423.9	48,423.9	2.8502	0.0000	48,495.1
Waste	641.0	0.0	641.0	37.8845	0.0000	1,588.2
Water	63.6	652.8	716.4	6.5585	0.1590	927.8
Total	**704.7**	**63,352.2**	**64,056.8**	**47.7432**	**0.3137**	**65,343.9**

NOTE: NUMBERS MAY NOT ADD UP DUE TO ROUNDING.
SOURCE: CALEEMOD (V.2016.3.2).

TABLE 3.7-3: OPERATIONAL GHG EMISSIONS (MITIGATED METRIC TONS/YEAR)

CATEGORY	BIO-CO_2	NBIO-CO_2	TOTAL CO_2	CH_4	N_2O	CO_2E
Area	0.0	1,052.4	1,052.4	0.0470	0.0188	1,059.1
Energy	0.0	12,848.3	12,848.3	0.3900	0.1332	12,897.7
Mobile	0.0	44,532.3	44,532.3	2.7925	0.0000	44,602.1
Waste	641.0	0.0	641.0	37.8845	0.0000	1,588.2
Water	63.6	604.3	667.9	6.5569	0.1587	879.2
Total	**704.7**	**59,037.2**	**59,741.9**	**47.6708**	**0.3106**	**61,026.2**

NOTE: NUMBERS MAY NOT ADD UP DUE TO ROUNDING.
SOURCE: CALEEMOD (V.2016.3.2).

As shown in the tables, the annual GHG emissions associated with buildout of the proposed Project would be approximately 65,344 $MTCO_2e$ without the above referenced mitigation incorporated and 61,026 $MTCO_2e$ with mitigation. The mitigation results in a decrease of approximately 4,318 $MTCO_2e$. It should be noted that these results do not incorporate the compliance with District Rule 9510, which is required under Mitigation Measure 3.3-1 (see *Section 3.3: Air Quality* of this EIR). Therefore, the mitigated scenario underestimates the reduction in GHG emissions that would be associated with compliance with all mitigation measures provided within this EIR. As shown above, under the mitigated scenario, proposed Project emissions would be reduced by approximately 6.6 percent.

Comparison of Existing Condition (Dairy Cows) and the Proposed Project

The following table compares the existing operational GHG emissions (generated from dairy cows) with the overall proposed Project operational GHG emissions under the mitigated scenario. It should be noted that the calculation for the existing condition does not account for the full range of agricultural/dairy operations of the Plan Area under the existing scenario (i.e. vehicle trips, diesel-powered farm equipment, etc.); this calculation only accounts for the biogenic GHG emissions from dairy cows generated under the existing scenario. The source of biogenic GHG emissions from dairy cows is methane (see Appendix B for further full calculation detail). The result of this calculation is provided in terms of carbon dioxide-equivalent (CO_2e), which is the standard unit for measuring carbon impact (CO_2e expresses the impact of each GHG in terms of the amount of CO_2 that would create the same amount of global warming). As shown, the proposed Project with mitigation would generate substantially more GHGs than emitted by the dairy cows under the Existing Condition.

TABLE 3.7-4: EXISTING CONDITION BIOGENIC GHGS VS. PROPOSED PROJECT MITIGATED OPERATIONAL GHGS

SCENARIO (OPERATIONAL)	*$MTCO_2E$*
Existing Condition (Dairy Cows only)	1,922
Mitigated Proposed Project	63,343
Proposed Project Mitigated minus Existing Condition (Dairy Cows only)	**61,421**

NOTE: NUMBERS MAY NOT ADD UP DUE TO ROUNDING.

SOURCES: CALEEMOD (V.2016.3.2); FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (2013); NATIONAL RESEARCH COUNCIL (2001); UNITED NATIONS (1995).

POTENTIAL TO CONFLICT WITH AN APPLICABLE PLAN

Regional Transportation Plan/Sustainable Communities Strategy

STANCOG released the Final Draft of the RTP/SCS in June 2014. The RTP/SCS reflects a region-specific, balanced multimodal plan that only achieves the intent and promise of SB 375 and can be implemented through existing and planned programs or policies. The RTP/SCS foundation comprises recent household and job growth forecasts, market demand and economic studies, and transportation studies. The RTP/SCS integrates the regional transportation planning process with land use planning to ensure that investment and land development decisions are not made without regard for each other. The intent of the RTP/SCS is to ensure the conservation of open

space of farmland, the improvement of air quality and the preservation of natural resources, a higher quality of life for residents, and a wide range of housing choices for the region.

Public and private transit services are key components in the Stanislaus region's overall transportation system, and is emphasized in the RTP/SCS. Approximately 1.1 percent of Stanislaus commuters use transit. As the population continues to grow and age, it is anticipated that the percentage of the population utilizing single-occupancy vehicles to travel will decrease, while those using transit and other modes will increase. In addition, in 2012, StanCOG developed the 2012 Non-Motorized Transportation Plan (NMTP). The NMTP is an important document that complements and helps implement the goals established in the RTP/SCS. The NMTP outlines a range of plans that can guide Stanislaus County toward the goal of providing bikeways and trails for all Stanislaus County residents. Appendix L of the RTP/SCS provides Performance Measures for the RTP/SCS Preferred Scenario (Moderate Change), which includes increases to daily transit ridership, a reduction in congested lane miles, and a reduction in weekdays miles of travel per capita.

The Plan Area includes access to existing nearby bus stops, and would incorporate bus turnouts and other transit improvements as requested by Stanislaus RTD (as described under Mitigation Measure 3.3-2 of this EIR). Additionally, the Plan Area includes several bike trails located throughout the Plan Area, which would also connect to existing neighborhoods. The proposed Project would also provide pedestrian connectivity to existing nearby neighborhoods, as required under Mitigation Measure 3.3-2 of this EIR.

As demonstrated above, the proposed Project upon full buildout would be generally consistent with the goals and strategies of the RTP/SCS.

Energy Consumption

As shown in Tables 3.7-2 and 3.7-3 above, "Energy" is one of the categories that were modeled for GHG emissions. The Project's total GHG emissions generated from the "Energy" category is approximately 13,274 $MTCO_2e$ without mitigation and 12,898 $MTCO_2e$ with mitigation. The following discussion includes a more detailed breakdown of energy consumption in terms of natural gas and electricity consumption. The modeling was performed with and without mitigation. The mitigation measures incorporated into the model are intended to reduce wasteful, inefficient and unnecessary consumption of energy during construction, operation, and maintenance/landscaping. The mitigation assumed in the modeling (relevant to energy consumption) includes:

- Install High Efficiency Lighting (note: according to CAPCOA's *Quantifying Greenhouse Gas Mitigation Measures*, a minimum of a 16 percent reduction in electricity usage is expected compared with low-efficiency lighting. For example: metal halide post top lights, or LEDs, as opposed to typical mercury cobrahead lights).

Natural Gas: Natural gas energy consumption by land uses within the proposed Project is presented in Table 3.7-5 below. This table also includes the GHG emissions that are generated by

natural gas use. Mitigation would not reduce natural gas consumption within the Proposed Project.

TABLE 3.7-5: NATURAL GAS USE AND GHG EMISSIONS BY LAND USE (UNMITIGATED OPERATIONAL YEAR)

LAND USE	NATURAL GAS USE	BIO-CO_2	NBIO-CO_2	TOTAL CO_2	CH_4	N_2O	CO_{2E}
	kBTU	MT/YEAR					
Apartments Low Rise	4,382,300	0	233.8564	233.8564	0.00448	0.00429	235.2461
City Park	0	0	0.0000	0	0	0	0
Elementary School	1,259,570	0	67.2154	67.2154	0.00129	0.00123	67.6148
Junior High School	2,951,970	0	157.5286	157.5286	0.00302	0.00289	158.4647
Regional Shopping Center	288,900	0	15.4168	15.4168	0.0003	0.00028	15.5084
Regional Shopping Center	5,885,000	0	314.0460	314.0460	0.00602	0.00576	315.9122
Single Family Housing	53,676,200	0	2,864.3653	2,864.3653	0.0549	0.0525	2,881.3868
Total	**68,400,000**	**0**	**3,652.4283**	**3,652.4283**	**0.0700**	**0.0670**	**3,674.1329**

SOURCE: CALEEMOD (V.2016.3.2).

Electricity: Unmitigated electricity energy consumption by land uses within the proposed Project is presented in Table 3.7-6 below. This table also includes the GHG emissions that are generated by the electricity use. Table 3.7-7 shows the electricity consumption by land uses within the proposed Project with mitigation incorporated.

TABLE 3.7-6: ELECTRICITY USE AND GHG EMISSIONS BY LAND USE (UNMITIGATED OPERATIONAL YEAR)

LAND USE	ELECTRICITY USE	TOTAL CO_2	CH_4	N_2O	CO_{2E}
	kWH/YEAR	MT/YEAR			
Apartments Low Rise	1,450,030	548.1859	0.0191	0.00395	549.8387
City Park	0	0	0	0	0
Elementary School	352,137	133.1259	0.0046300	0.00096	133.5273
Junior High School	825,283	311.9991	0.0109	0.00225	312.9399
Regional Shopping Center	220,050	83.1901	0.00289	0.0006	83.4410
Regional Shopping Center	4,482,500	1,694.6140	0.0590	0.0122	1,699.7235
Single Family Housing	17,985,800	6,799.5511	0.2366	0.0490	6,820.0527
Total	**25,300,000**	**9,570.6663**	**0.3330**	**0.0689**	**9,599.5232**

SOURCE: CALEEMOD (V.2016.3.2).

TABLE 3.7-7: ELECTRICITY USE AND GHG EMISSIONS BY LAND USE (MITIGATED OPERATIONAL YEAR)

LAND USE	ELECTRICITY USE	TOTAL CO_2	CH_4	N_2O	CO_{2E}
	kWH/YEAR	MT/YEAR			
Apartments Low Rise	1,409,840	532.9906	0.0186	0.00384	534.5976
City Park	0	0	0	0	0
Elementary School	328,140	124.0536	0.0043200	0.00089	124.4277
Junior High School	769,041	290.7370	0.0101	0.00209	291.6136
Regional Shopping Center	204,023	77.1310	0.00268	0.00056	77.3636
Regional Shopping Center	4,156,020	1,571.1879	0.0547	0.0113	1,575.923
Single Family Housing	17,457,300	6,599.7618	0.2296	0.0475	6,619.6610
Total	**24,300,000**	**9,195.8619**	**0.3200**	**0.0662**	**9,223.5888**

SOURCE: CALEEMOD (V.2016.3.2).

As shown, the mitigation incorporated would result in a reduction of approximately 1,000,000 kWh of electricity consumption on an annual basis. This represents a reduction of 4.0 percent in electricity consumption in a year.

CONCLUSION

As stated previously, short-term construction GHG emissions are a one-time release of GHGs and are not expected to significantly contribute to global climate change over the lifetime of the proposed Project. The proposed Project will comply with Title 24, Part 6 of the California Code of Regulations, known as the Building Energy Efficiency Standards. This includes the CALGreen requirements for new buildings to reduce water consumption by 20 percent, and install low pollutant-emitting materials. The City would review individual building plans as they are prepared to ensure that they comply with the latest Title 24 requirements, including CALGreen.

The proposed Project would be consistent with the goals, policies, and measures of the RTP/SCS. The Project incorporate bus turnouts and transit improvements where requested by the San Joaquin RTD, continuous public sidewalks and/or multi-use trails adjacent to all proposed public streets, and paving and bike trails.

The *Final Draft Guidance for Assessing and Mitigating Air Quality Impacts* (SJVAPCD, 2015) provides a tiered approach to assessing the significance of Project-specific GHG emissions increases. Projects complying with an approved GHG emissions 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. However, there is no approved GHG emissions reduction plan or GHG mitigation program within the City of Riverbank. Development of the proposed project would generate GHGs that may have a significant impact on the environment. The proposed Project would therefore be required to implement Mitigation Measure 3.7-1, as provided below. Although Mitigation Measure 3.7.1 requires the proposed Project to achieve additional emissions reductions, these measures plus the effectiveness of existing regulatory actions already adopted as part of the implementation of AB 32 are unknown at this time. Therefore, it would be speculative to determine that GHG impacts would be feasibly mitigated, and it is likely that the proposed Project would emit a substantial level of GHG emissions even with implementation of Mitigation Measure 3.7.1. Therefore, the proposed Project would have a **significant and unavoidable** impact for GHG emissions.

RESULTING LEVEL OF SIGNIFICANCE

Impacts related to GHG emissions and global climate change would be considered **significant and unavoidable**. The proposed Project is required to implement Mitigation Measures 3.3-1 through 3.3-5 (see *Section 3.3, Air Quality* of this EIR), as well as Mitigation Measure 3.7-1 (provided below).

MITIGATION MEASURE(S)

Mitigation Measure 3.7-1: *The City shall require GHG reduction measures in connection with tentative subdivision maps submitted for approval, including but not limited to the following:*

- *Actions included in Mitigation Measures 3.3-1 through 3.3-5 (see Section 3.3: Air Quality) that also reduce GHG emissions;*
- *Actions that further improve energy efficiency, such as requiring that all buildings exceed Title 24 energy-efficiency requirements by a certain percentage, requiring on-site renewable energy production to meet a specified percent of the subdivision's electricity needs, etc.*
- *Actions that further reduce vehicle miles traveled, such as providing transit hubs that would be accessible by local and regional transit routes and community multimodal paths and trails; providing general pedestrian connectivity throughout the project, etc.*
- *Payment for GHG offsets, as determined to be feasible by the City.*

Impact 3.7-2: Cumulative impact on climate change from increased Project-related greenhouse gas emissions. (Cumulatively Considerable and Significant and Unavoidable)

Greenhouse gas emissions from a single Project will not cause global climate change; however, greenhouse gas emission from multiple Projects throughout a region or state could result in a cumulative impact with respect to global climate change.

In California, there has been extensive legislation passed with the goal of reducing greenhouse gas emissions. The legislative goals are as follows: 1) 2000 levels by 2010, 2) 1990 levels by 2020 and 3) 80 percent below the 1990 levels by the year 2050. To achieve these goals, the CARB has developed regional greenhouse gas emission reduction targets for the automobile and light truck sectors (the largest single source of greenhouse gas emissions) for 2020 and 2035. The regional greenhouse gas emission reduction targets for each region in California were established by the California Air Resources Board.

As described in Impact 3.7-1 above, implementation of the proposed Project will still generate GHG emissions that wouldn't otherwise exist without the proposed Project. Given the length of construction activities for a Project of this size, the maximum short-term annual construction emissions of GHG associated with development of the Project in a single year are estimated to be 5,189 $MTCO_2e$. The operational emissions would be a long-term release totaling approximately 65,344 $MTCO_2e$ without mitigations and 61,026 $MTCO_2e$ with mitigation.

The proposed Project has incorporated mitigation measures that are intended to reduce emissions to the extent feasible. The State continues to implement measures that are intended to reduce emissions on a State-wide scale (i.e. vehicle fuel efficiency standards in fleets, low carbon fuels, etc.) that are consistent with AB 32. These types of State-wide measures will benefit the proposed

Project (and City as a whole) in the long-term as they come into effect; however, the City does not have the jurisdiction to create far reaching (i.e. State-wide) measures to reduce GHG emissions.

Additionally, as demonstrated above, the proposed Project would be generally consistent with the goals and strategies of the RTP/SCS. The Project incorporate bus turnouts and transit improvements where requested by the San Joaquin RTD, continuous public sidewalks and/or multi-use trails adjacent to all proposed public streets, and paving and bike trails.

On a project-by-project case, the City of Riverbank evaluates a project and the potential to impose project-specific mitigation, which has been done through this GHG analysis. However, because the proposed Project would result in a net increase in CO_2e emissions (above baseline conditions) even with mitigation measures incorporated into the proposed Project, the proposed Project would result in a **significant and unavoidable** and **cumulatively considerable** impact.

Impact 3.7-3: Project implementation may result in the inefficient, wasteful, or unnecessary use of energy resources. (Less than Significant)

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

The proposed Project is primarily a Specific Plan, which includes residential, non-residential, and park land uses. The amount of energy used at the Project site would directly correlate to the number and size of the residential units and non-residential, the energy consumption of associated unit appliances, outdoor lighting, and energy use associated with other Plan Area buildings and activities. Other major sources of proposed Project energy consumption include fuel used by vehicle trips generated during Project construction and operation, and fuel used by off-road construction vehicles during construction. The following discussion provides calculated levels of energy use expected for the proposed Project, based on commonly used modelling software (i.e. CalEEMod v.2016.3.2 and the California Air Resource Board's EMFAC2014). It should be noted that many of the assumptions provided by CalEEMod are conservative relative to the proposed Project. Therefore, this discussion provides a conservative estimate of proposed Project emissions.

ELECTRICITY AND NATURAL GAS

Electricity and natural gas used by the proposed Project would be used primarily to power on-site buildings. Total annual unmitigated and mitigated electricity (kWh) and natural gas (kBTU) usage associated with the operation of the proposed Project are shown in Tables 3.7-5, 3.7-6, and 3.7-7 (as provided by CalEEMod). The proposed Project incorporates feasible mitigation to reduce the proposed Project's operational electricity and natural gas consumption.

According to Calico's *Appendix A: Calculation Details for CalEEMod*, CalEEMod uses the California Commercial End Use Survey (CEUS) database to develop energy intensity value for non-residential buildings. The energy use from residential land uses is calculated based on the Residential Appliance Saturation Survey (RASS). Similar to CEUS, this is a comprehensive energy use assessment that includes the end use for various climate zones in California.

The natural gas usage of the Proposed Project is shown in Table 3.7-5 (see above). Mitigation would not reduce natural gas usage below the unmitigated scenario usage. Unmitigated electricity energy consumption by land uses within the proposed Project is presented in Table 3.7-6. Table 3.7-7 shows the electricity consumption by land uses within the proposed Project with mitigation incorporated.

As shown, Project operational electricity usage would be reduced with implementation of Project components considered mitigation by CalEEMod (note: given the limited mitigation options available in the current version of CalEEMod, the reduction attributable to mitigation represents a conservative analysis). As described by the mitigation measures in *Section 3.3: Air Quality* of this EIR, the proposed Project incorporates feasible mitigation that would reduce the proposed Project's energy consumption, as compared to the unmitigated scenario. These reductions in overall proposed Project energy usage also reflect a reduction in the Project's electricity intensity.

ON-ROAD VEHICLES (OPERATION)

The proposed Project would generate vehicle trips during its operational phase. According to the Traffic Study prepared for the proposed Project (KD Anderson, 2017), the Project would generate approximately 33,163 new daily vehicle trips. In order to calculate operational on-road vehicle energy usage and emissions, default trip lengths generated by CalEEMod were used, which are based on the Project location and urbanization level parameters De Novo (the EIR consultant) selected within CalEEMod (i.e. "Stanislaus County" and "Urban", respectively). These values are provided by the individual districts or use a default average for the state, depending on the location of the proposed Project (CAPCOA, 2017). Based on default factors provided by CalEEMod, the average distance per trip was conservatively calculated to be approximately 9.1 miles. Therefore, upon full buildout, the Proposed Project would generate at total of approximately 300,769 average daily vehicle miles travelled (Average Daily VMT). Using fleet mix data provide by CalEEMod (v2016.3.2), and current gasoline and diesel MPG (miles per gallon) factors for individual vehicle classes as provided by EMFAC2014, De Novo derived weighted MPG factors for operational on-road vehicles of approximately 33.0 MPG for gasoline and 7.8 MPG for diesel vehicles. With this information, De Novo calculated as a conservative estimate that the unmitigated proposed Project

would generate vehicle trips that would use a total of approximately 7,848 gallons of gasoline and 5,311 gallons of diesel fuel per day, on average, or 2,864,399 gallons of gasoline and 1,938,476 annual gallons of diesel fuel per year, at full buildout.

ON-ROAD VEHICLES (CONSTRUCTION)

The proposed Project would also generate on-road vehicle trips during Project construction (from construction workers and vendors). Estimates of vehicle fuel consumed were derived based on the assumed construction schedule, vehicle trip lengths and number of workers per construction phase as provided by CalEEMod, and current gasoline MPG factors provided by EMFAC2014. For the purposes of simplicity, it was assumed that all vehicles used gasoline as a fuel source (as opposed to diesel fuel or alternative sources). Table 3.7-8, below, describes gasoline and diesel fuel used by on-road mobile sources during each phase of the construction schedule. As shown, the vast majority of on-road mobile vehicle fuel used during the construction of the proposed Project would occur during the building construction phase. See Appendix B for a detailed calculation.

TABLE 3.7-8: ON-ROAD MOBILE FUEL GENERATED BY PROJECT CONSTRUCTION ACTIVITIES – BY PHASE

CONSTRUCTION PHASE	*# OF DAYS*	*TOTAL DAILY WORKER TRIPS[(A)]*	*TOTAL DAILY VENDOR TRIPS[(A)]*	*GALLONS OF GASOLINE FUEL[(B)]*	*GALLONS OF DIESEL FUEL[(B)]*
Site Preparation	67	18	-	401	-
Grading	65	20	-	432	-
Building Construction	4,173	1,986	675	2,756,467	2,843,977
Paving	260	15	-	1,297	-
Architectural Coating	4,216	397	-	556,694	-
Total	**N/A**	**N/A**	**N/A**	**3,315,291**	**2,843,977**

NOTE: [(A)] PROVIDED BY CALEEMOD. [(B)]SEE APPENDIX B FOR FURTHER DETAIL

SOURCE: CALEEMOD (V.2016.3.2); EMFAC2014.

OFF-ROAD VEHICLES (CONSTRUCTION)

Off-road construction vehicles would use diesel fuel during the construction phase of the proposed Project. A non-exhaustive list of off-road constructive vehicles expected to be used during the construction phase of the proposed Project includes: cranes, forklifts, generator sets, tractors, excavators, and dozers. Based on the total amount of CO_2 emissions expected to be generated by the proposed Project (as provided by the CalEEMod output), and a CO_2 to diesel fuel conversion factor (provided by the U.S. Energy Information Administration), the proposed Project would use a total of approximately 29,339 gallons of diesel fuel for off-road construction vehicles (during the site preparation and grading phases of the proposed Project). Detailed calculations are provided in Appendix B.

OTHER

Proposed Project landscape maintenance activities would generally require the use fossil fuel (i.e. gasoline) energy. For example, lawn mowers require the use of fuel for power. As an approximation, it is estimated that landscape care maintenance would require approximately

twenty individuals one full day per week, or 8,320 hours per year. Assuming an average of approximately 0.5 gallons of gasoline used per person-hour, the proposed Project would require the use of approximately 4,093 gallons of gasoline per year to power landscape maintenance equipment. The energy used to power landscape maintenance equipment would not differ substantially from the energy required for landscape maintenance for similar Project.

The proposed Project could also use other sources of energy not identified here. Examples of other energy sources include alternative and/or renewable energy (such as solar PV) and/or on-site stationary sources (such as on-site diesel generators) for electricity generation. The proposed Project would introduce solar PV onto residential rooftops, which would reduce the need for fossil fuel-based energy (for proposed Project buildings), including for electricity.

CONCLUSION

The proposed Project would use energy resources for the operation of Project buildings (electricity and natural gas), for on-road vehicle trips (e.g. gasoline and diesel fuel) generated by the proposed Project, and from off-road construction activities associated with the proposed Project (e.g. diesel fuel). Each of these activities would require the use of energy resources. The proposed Project would be responsible for conserving energy, to the extent feasible, and relies heavily on reducing per capita energy consumption to achieve this goal, including through Statewide and local measures.

The proposed Project would be in compliance with all applicable Federal, State, and local regulations regulating energy usage. For example, PG&E is responsible for the mix of energy resources used to provide electricity for its customers, and it is in the process of implementing the Statewide Renewable Portfolio Standard (RPS) to increase the proportion of renewable energy (e.g. solar and wind) within its energy portfolio. PG&E is expected to achieve at least a 33 percent mix of renewable energy resources by 2020, and 50 percent by 2030. Additionally, energy-saving regulations, including the latest State Title 24 building energy efficiency standards ("part 6"), would be applicable to the proposed Project. Other Statewide measures, including those intended to improve the energy efficiency of the statewide passenger and heavy-duty truck vehicle fleet (e.g. the Pavley Bill and the Low Carbon Fuel Standard), would improve vehicle fuel economies, thereby conserving gasoline and diesel fuel. These energy savings would continue to accrue over time. Furthermore, as described previously, the incorporation of the mitigation measures described previously in this section would further reduce Project energy consumption. The proposed Project would also be in compliance with the planning documents described previously within this section.

As a result, the proposed Project would not result in any significant adverse impacts related to Project energy requirements, energy use inefficiencies, and/or the energy intensiveness of materials by amount and fuel type for each stage of the proposed Project including construction, operations, maintenance, and/or removal. The electricity and natural gas provider to the Plan Area maintains sufficient capacity to serve the proposed Project. The proposed Project would comply with all existing energy standards, including those established by the City of Riverbank, and would not result in significant adverse impacts on energy resources. Furthermore, existing connections

exist between the Plan Area and nearby pedestrian and bicycle pathways, and public transit access exists nearby, reducing the need for local motor vehicle travel. Although improvements to the City's pedestrian, bicycle, and public transit systems would provide further opportunities for alternative transit, the proposed Project would be linked closely with existing networks that, in large part, are sufficient for most residents of the proposed Project and the City of Riverbank as a whole. The proposed Project would also be required to implement Mitigation Measures 3.3-1 through 3.3-5. For these reasons, the proposed Project would not be expected cause an inefficient, wasteful, or unnecessary use of energy resources nor cause a significant impact on any of the threshold as described by Appendix F of the *CEQA Guidelines*. This is a **less than significant** impact.

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The purpose of this section is to disclose and analyze the potential impacts associated with hazards and hazardous materials related to the Plan Area and general vicinity, and to analyze the potential for exposure of people to hazards and hazardous materials as the Project is built and operated in the future. This section is based in part on the *Phase 1 Environmental Site Assessment, Crossroads West Project Area, Stanislaus County, California* (Geocon Consultants, Inc., 2017), *City of Riverbank General Plan 2005-2025* (City of Riverbank, 2009), and the *City of Riverbank Draft Environmental Impact Report for the 2005-2025 General Plan Update* (City of Riverbank, 2008). Two comments were received during the NOP comment period regarding hazards and hazardous materials (listed below). Full comments received are included in Appendix A.

Comments relevant to hazards and hazardous materials include:

1. Central Valley Regional Water Quality Control Board; and
2. Sylvan Union School District.

3.8.1 ENVIRONMENTAL SETTING

PHYSICAL SETTING

Project Location

The Plan Area is located within the unincorporated area of Stanislaus County. The Plan Area is adjacent to the City of Riverbank city limits to the north and east. The Plan Area is bounded on the east by Oakdale Road, on the south by Claribel Road, on the north by the Modesto Irrigation District (MID) Main Canal and the City of Riverbank city limits, and on the west by those property lines approximately 0.5-mile west of Oakdale Road. Figures 2.0-1 and 2.0-2 found in Section 2.0 illustrate the regional location and Project vicinity.

Existing Site Uses

The nine parcels that comprise the Plan Area are primarily used for agricultural operations including dairy operations, row crops, and fallow land. Seven home sites exist within the Plan Area and many of them have accessory structures on site including storage buildings, shop buildings, and barn structures. Additionally, an approximately 11-acre regional City park, the Riverbank Sports Complex, is currently developed in the northeastern portion of the Plan Area, near the intersection of Morrill Road and Oakdale Road. Crawford Road and Morrill Road traverse the Plan Area from east to west.

Modesto Irrigation District (MID) provides water supply for the existing agricultural uses and maintains two easements in the Plan Area. An MID main canal with a crossing is located along the northern boundary of the Plan Area. Residential development is located just north of the Plan Area. Additionally, MID Lateral 6 traverses the southern portion of the Plan Area from northeast to southwest. A series of private irrigation ditches distribute the MID water from the on-site canals throughout the Plan Area.

Existing Surrounding Uses

Uses immediately adjacent to the southeast, south, southwest, and west of the Plan Area include agricultural uses and residential uses, including ranchettes and large estates lots. Other existing uses east of the southerly portion of the Plan Area include a single family residential subdivision and a commercial center. Existing residential subdivisions also exist to the north, northeast, and east of the Plan Area. Other nearby uses include a commercial shopping center located east of the Plan Area at the intersection of Claribel Road and Oakdale Road.

Site Topography

The Plan Area is relatively flat and ranges in elevation from approximately 111 to 125 feet above sea level as shown in Figure 2.0-4.

Site Soils

The NRCS Web Soil Survey indicates the presence of four soil series occurring within the Plan Area. Table 3.8-1 identifies the soils found in the Plan Area.

TABLE 3.8-1: NRCS SOIL SERIES INFORMATION

SERIES	*DESCRIPTION*	*SOURCE MATERIAL*	*DRAINAGE*	*PERCENT OF AOI*
Greenfield	Greenfield sandy loam, deep over hardpan	Moderately coarse and coarse textured alluvium derived from granitic and mixed rock sources	Well drained	48.7
Hanford	Hanford sandy loam	Moderately coarse textured alluvium dominantly from granite	Well drained	11.7
Hanford	Hanford sandy loam, moderately deep over silt	Moderately coarse textured alluvium dominantly from granite	Well drained	1.6
Madera	Madera sandy loam	Alluvium derived from granitic rock sources	Well or moderately well drained	33.1
Oakdale	Oakdale sandy loam	Alluvium derived from granitic rock sources	Well drained	4.9

SOURCE: NRCS CUSTOM SOIL SURVEY 2017.

HAZARDS ASSESSMENT

For the purposes of this EIR, "hazardous material" is defined as provided in California Health & Safety Code, Section 25501:

- Any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment.

"Hazardous materials" include, but are not limited to, hazardous substances, hazardous waste, and any material that a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

"Hazardous waste" is a subset of hazardous materials. For the purposes of this EIR, the definition of hazardous waste is essentially the same as that in the California Health & Safety Code, Section 25517, and in the California Code of Regulations (CCR), Title 22, Section 66261.2:

- Hazardous wastes are wastes that, because of their quantity, concentration, physical, chemical, or infectious characteristics, may either cause, or significantly contribute to, an increase in mortality or an increase in serious illness, or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

CCR Title 22 categorizes hazardous waste into hazard classes according to specific characteristics of ignitibility, corrosivity, reactivity, or toxicity. Hazardous waste with any of these characteristics is also known as a Resource Conservation and Recovery Act (RCRA) waste.

Hazardous materials can be categorized as hazardous non-radioactive chemical materials, radioactive materials, toxic materials, and biohazardous materials. The previous definitions are adequate for non-radioactive hazardous chemicals. Radioactive and biohazardous materials are further defined as follows:

- Radioactive materials contain atoms with unstable nuclei that spontaneously emit ionizing radiation to increase their stability.
- Radioactive wastes are radioactive materials that are discarded (including wastes in storage) or abandoned.
- Toxic wastes are harmful or fatal when ingested or absorbed (e.g., containing mercury, lead). When toxic wastes are land disposed, contaminated liquid may leach from the waste and pollute groundwater.
- Biohazardous materials include materials containing certain infectious agents (microorganisms, bacteria, molds, parasites, and viruses) that cause or significantly contribute to increased human mortality or organisms capable of being communicated by invading and multiplying in body tissues.
- Medical wastes include both biohazardous wastes (byproducts of biohazardous materials) and sharps (devices capable of cutting or piercing, such as hypodermic needles, razor blades, and broken glass) resulting from the diagnosis, treatment, or immunization of human beings, or research pertaining to these activities.

There are countless categories of hazardous materials and hazardous wastes that could be found on any given property based on past uses. Some common examples include agrichemicals (chlorinated herbicides, organophosphate pesticides, and organochlorine pesticides, such as such as Mecoprop (MCPP), Dinoseb, chlordane, dichloro-diphenyltrichloroethane (DDT), and dichloro-diphenyl-dichloroethylene (DDE)), petroleum based products (oil, gasoline, diesel fuel), a variety of chemicals including paints, cleaners, and solvents, and asbestos-containing or lead-containing materials (e.g., paint, sealants, pipe solder).

A Phase I Environmental Site Assessment (ESA) was completed for the Plan Area by Geocon Consultants, Inc. in July 2017 (see Appendix D). The purpose of the Phase I ESA was to identify evidence or indications of "recognized environmental conditions" as defined by the American Society for Testing and Materials (ASTM) *Designation E 1527-13 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*. The ASTM defines an REC as "the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment.

The ASTM also defines "Historical" and "Controlled" RECs (HRECs and CRECs, respectively). An HREC is defined as "a past release of any hazardous substance or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls)." A CREC is defined as "a recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation or required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls." An HREC is not an REC if a property meets current standards for unrestricted residential use. A CREC remains and REC by definition when the property does not meet the unrestricted residential use requirement unconditionally.

Adjoining Properties

The Plan Area is bounded on the east by Oakdale Road, on the south by Claribel Road, on the north by the Modesto Irrigation District (MID) Main Canal and the City of Riverbank city limits, and on the west by those property lines approximately 0.5-mile west of Oakdale Road. No evidence of conditions on the adjacent properties that are suspected of causing RECs at the Plan Area was observed.

Site Reconnaissance

As part of the Phase I ESA, site reconnaissance was conducted on July 7, 2017. The survey included walking and driving throughout all accessible areas of the Plan Area to observe site features and conditions. The offsite survey was performed by making observations of adjacent properties from the site and the surrounding public roads. The site reconnaissance began on the northern portion of the Plan Area and ended on the southernmost portion of the Plan Area. MID property was not accessed during the on-site survey.

The Plan Area was observed to be currently used for park, agricultural (historical and current), and rural residential uses. During the survey, a drum was observed on Assessor's Parcel Number (APN) 074-006-022, which constitutes an REC. No additional readily determinable RECs were observed

during the site survey. The presence of agricultural land and individual farms both on and adjacent to the Plan Area suggest the potential use or past use of farm tanks (i.e., underground storage tanks [USTs] and aboveground storage tanks [ASTs]) and the potential application of pesticides to crops.

RIVERBANK SPORTS COMPLEX – CITY OF RIVERBANK

The Riverbank Sports Complex consists of an asphalt parking lot, picnic area, concrete block building, and an approximately four-acre sports field. No RECs were observed on this parcel.

HARRIGFELD TRUST PROPERTY – APN 074-006-016

The Harrigfeld property occupies the northwestern portion of the site and consists of mainly grazing land for cattle with a single-family home and an equipment barn in the middle of the property. An area of ground disturbance is located immediately adjacent to the equipment barn. A blue 55-gallon drum was observed adjacent to the ground disturbance. Based on information provided by Mr. Romano, the ground disturbance may have been related to the removal of a UST. Three additional empty 55-gallon drums were also located near the equipment barn and did not appear to have been used recently.

FORMER MACHADO DAIRY (MACHADO PROPERTY) – APN 074-011-009

The former Machado Dairy located south of Morrill Road and north of Crawford Road no longer operates as a dairy but is currently used to keep additional dairy cattle. The former Machado Dairy contains a single-family home for a farm worker employed at the Alexander Dairy. Defunct farm equipment and tractor tires were observed on the parcel as well as multiple dilapidated outbuildings. An empty insecticide container was observed in the former milking barn and multiple five-gallon oil containers were observed throughout the property. De minimis soil staining in the location of the former barn was observed, which appears to have been recently razed.

ALEXANDER DAIRY (MACHADO PARSONS TRUST PROPERTY) – APN 074-014-006

The Alexander Dairy, located at 2054 Crawford Road, is an active dairy farm. The dairy comprises two single-family homes, a mobile home, milking barn, calving barn, and a u-shaped open-sided steel shelter housing the dairy cattle.

Three steal ASTs, one adjacent to the milking barn and the other two adjacent to the calving barn, were observed on this property. According to the operator of the dairy, two of the steel ASTs are currently in use and contained gasoline and diesel. Secondary containment for the ASTs was not observed. The other steel AST was reportedly empty. A plastic AST containing cleaning agent for a walk-through foot bath was observed adjacent to the milking barn and diesel AST. Stained soil was present near the diesel AST and clean agent AST. An older AST that formerly contained molasses was also observed but, according to the dairy operator, is no longer in use.

A drum of herbicide was observed in the calving barn along with other empty drums and small containers formerly containing herbicides. On the west side of the milking barn, multiple drums

containing both hydraulic fluid and motor oil were observed. Staining on the asphalt surrounding the drums was also observed. Multiple detergents used to clean the milking barn were also observed in the milking barn.

Two lagoons or settling ponds are located on the south side of the Alexander Dairy building complex. According to the dairy operator, rinse water used to wash out stock areas is pumped to a settling lagoon. Once the solids have settled, the water is then pumped out and used for crop application. On the west side of the settling ponds, an overhead transformer was observed to show signs of possible corrosion.

Illegally dumped tires, sheetrock, and other debris was present along the south side of Crawford Road on this parcel. On the north side of Crawford Road, equipment and farming implements are stored along a dirt access road to the fields north of the Alexander Dairy. Other possibly dumped materials including a mattress, debris, and an empty drum were observed among the equipment and farming implements. Debris was also observed in the southwestern corner of the parcel along the MID Lateral 6 canal. According to the dairy operator, a homeless person had been living there and the camp had recently caught fire, leaving charred debris.

A single-family home located at 5413 Oakdale Road is also associated with this parcel. Based on observations made from Oakdale Road and the perimeter of the house, no visible signs of RECs were observed at this portion of the parcel.

MCGRANE FAMILY TRUST PROPERTY (BROWMAN PROPERTY) – APN 074-014-007

The southernmost parcel is located just south of the Alexander Dairy and north of Claribel Road. The property comprises a small fruit stand, two large barns, and three outbuildings. A former house visible on satellite photos is no longer on the parcel. One of the outbuildings appeared to be utilized as a shelter for poultry and livestock while the other two appeared to be utilized as storage, housing farming supplies, herbicides, and a well system. The easternmost large barn appeared to be utilized for poultry and livestock while the second large barn is used for miscellaneous items such as a travel trailer, furniture, and other farm and household items

Two polyethylene totes and a 200- to 300-gallon vertical polyethylene AST was observed just north of the outbuildings. The totes appeared to be empty but the AST contained approximately 50 gallons of a fertilizer labeled “Thiocal”. Areas outside of the westernmost barn consisted of storage for ostensibly non-operational vehicles, farming implements, tires, debris, and a travel trailer.

An approximately 500-gallon trailer-mounted tank was observed along the north side of the MID Lateral No. 6 canal access road at Oakdale Road and appeared to be on MID property. Access to observe the tank more closely was not possible at the time of the onsite survey.

Interviews and Questionnaires

As part of the Phase I ESA, interviews were conducted for the operator of the Alexander Dairy, Mark Alexander, and property owner representative, David Romano. Mr. Alexander was interviewed regarding past and present use of the Plan Area and the potential for impacts related

to the use, storage, or disposal of hazardous substances and/or petroleum products on APNs 074-014-006 and 074-011-009. Mr. Alexander noted the location of stored chemicals and the current status of ASTs at the dairy. Mr. Alexander stated that his family owned the site since the 1970s. Adjacent fields have currently and historically provided fodder crops for the dairy cattle on both dairies. Mr. Alexander indicated that two registered ASTs containing gasoline and diesel were currently located on the 2054 Crawford Road dairy property. Additionally, Mr. Alexander noted that drums of oil for farm equipment and drums of detergent chemicals to clean stainless steel milk lines and milk equipment are also stored at the aforementioned address. The cleaning chemicals and maintenance of the equipment are maintained by a third party specializing in the dairy equipment.

Mr. Romano indicated that a UST was recently removed from the Harrigfeld Property at 1901 Morrill Road (APN 074-006-016). Files provided by the Stanislaus County Department of Environmental Resources (SCDER) did not indicate a permit for the removal of the UST or a permit may not have been obtained as State Water Resources Control Board (SWRCB) Local Guidance LG 109-1 exempts farm tanks less than 1,100 gallons from state UST regulations.

A questionnaire was also submitted to and received by Karna Harrigfield, one of the owners of the Harrigfield Property. Mrs. Harrigfield noted that she had knowledge of drums on the property. Additionally, Mrs. Harrigfield indicated knowledge of the existence of the UST on the property. Mrs. Harrigfield also indicated knowledge of previously stained soil on the property. During the onsite survey, the presence of a full drum, ostensibly associated with the recent UST removal at the site, was confirmed. However, stained soil was not observed during the site survey.

Questionnaires from H Homes, Dadesho, or McGrane property owners were not received.

Historical Use Information

Historical information was reviewed to develop a history of the previous uses in the Plan Area and surrounding area, in order to evaluate the Plan Area and adjoining properties for evidence of Recognized Environmental Conditions. Standard historical sources reviewed during the preparation of this report included the following, as available: Aerial Photographs, Environmental Records, and Databases.

AERIAL PHOTOGRAPHS

Aerial photographs of the Plan Area and general vicinity were reviewed. In 1993, the Plan Area contained seven ranchette style residential structures throughout the site, all of which still exist. Agricultural operations appear to have occurred throughout the majority of the Plan Area during this time. By 2002, development of the residential subdivision to the east of the Plan Area had begun. By 2009, the Riverbank Sports Complex was developed along Morrill Road. From 2009 to present, the Plan Area has remained in agricultural use with the existing residential uses remaining throughout the site.

ENVIRONMENTAL RECORDS

A search of local, state, and federal agency databases for the Plan Area and known contaminated sites in the vicinity was performed. None of the parcels in the Plan Area were found to contain any known contamination.

The U.S. Environmental Protection Agency (EPA) Toxic Release Inventory (TRI) does not list data on disposal or other releases of toxic chemicals in the Plan Area (USEPA, 2015). There are three TRI sites in the City of Riverbank. The nearest TRI site to the Plan Area is located at 3250 Patterson Road in Riverbank, approximately 1.25 miles east of the Plan Area.

The California Department of Toxic Substances Control (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. There are no sites listed in the Envirostor database within the Plan Area. The nearest site listed on the Envirostor database is located at 5800 Saxon Way, approximately 0.7 miles east of the Plan Area. This site, the Elementary School No. 11 site, was investigated for potential contaminants of concern. The investigation concluded that there are no contaminants of concern at the Elementary School No. 11 site and the site received a "No Further Action" cleanup status on November 1, 2004.

GeoTracker is the State Water Resources Control Board's (SWRCB's) Internet-accessible database system used by the SWRCB, regional boards, and local agencies to track and archive compliance data from authorized or unauthorized discharges of waste to land, or unauthorized releases of hazardous substances from USTs. See Table 3.8-2 for a complete list of sites identified by the GeoTracker database within 0.5 miles of the Plan Area.

TABLE 3.8-2: GEOTRACKER HAZARDOUS MATERIAL RELEASE SITES WITHIN 0.5 MILES OF PLAN AREA

SITE NAME	*TYPE*	*STATUS*	*ADDRESS*
Chevron #309187	Permitted UST	Active	2225 Claribel Rd.
Cipponeri Trucking	LUST Cleanup Site	Completed – Case Closed	20107 Patterson Rd.
ARCO #5565	LUST Cleanup Site	Completed – Case Closed	6345 Oakdale Rd.
Riverbank Cruisers #34	Permitted UST	Active	2201 Patterson Rd.
Quality Nut AKA John Hancock Hougue	LUST Cleanup Site	Completed – Case Closed	1711 Patterson Rd.

NOTES: UST = UNDERGROUND STORAGE TANK, LUST = LEAKING UNDERGROUND STORAGE TANK.
SOURCE: SWRCB, GEOTRACKER, 2017.

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 Plan Area does not have any active or planned solid waste facilities listed in the database. The nearest active facility, Eleanor Ranch, is located approximately 2.9 miles east of the Plan Area.

DATABASES

There is a broad list of federal, state, and local databases that provide information for sites with varying potential for risk from the possible existence of hazardous materials. There are numerous redundancies among these various database listings. Below is a brief summary of each.

National Priorities List: The National Priorities List (NPL) of Superfund Sites and Proposed NPL Sites is EPA's database of more than 1,200 sites designated or proposed for priority cleanup under the Superfund program. NPL sites may encompass relatively large areas. The Plan Area is not listed in this database.

RCRIS System: The Resource Conservation and Recovery Information System (RCRIS) is an EPA database that includes selective information on sites that generate, transport, store, treat, and/or dispose of hazardous waste as defined by RCRA. Identification on this list does not indicate that there has been an impact on the environment. The Plan Area is not listed in this database.

CERCLIS Data: Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) is an EPA database that contains information on potential hazardous waste sites that have been reported to the EPA by states, municipalities, private companies, and individuals, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites that are either proposed for or on the NPL, as well as sites that are in the screening and assessment phase for possible inclusion on the NPL. The Plan Area is not listed in this database.

CORRACTS: Corrective Action Report (CORRACTS) is an EPA database that identifies hazardous waste handlers with RCRA corrective action activity. The Plan Area is not listed in this database.

Cortese Database: The Cortese database identifies public drinking water wells with detectable levels of contamination, hazardous substance sites selected for remedial action, sites with known toxic material identified through the abandoned site assessment program, sites with USTs having a reportable release, and all solid waste disposal facilities from which there is known hazardous substance migration. The source of this database is the California Environmental Protection Agency (Cal-EPA) and are found in the GeoTracker database. The Plan Area is not listed in this database.

Phase I ESA Records Review: As part of the Phase I ESA completed for the Project, federal, state, and local environmental databases for the Plan Area and properties within one mile of the site were searched. Table 3.8-3 lists the databases that were searched, and the number of listings within each database within 1.25-miles of the Plan Area. Other databases that were searched and which listed no properties within their search distances are not listed in the table.

The Plan Area is located on the following databases: SWEEPS UST, HIST UST, CA FID UST, CHIMRS, FINDS, CUPA Listings, ENF, HAZNET, and EDR's exclusive records database (EDR Hist Auto and EDR Hist Cleaner). Table 3.8-4 summarizes the information for the Plan Area provided by each database.

TABLE 3.8-3: PHASE I ESA RECORDS REVIEW RESULTS WITHIN 1.25-MILES OF PLAN AREA

DATABASE NAME	*SEARCH RADIUS (MILES)*	*NUMBER OF LISTINGS*
Federal Databases		
Emergency Response Notification System (ERNS)	0.125	2
Resource Conservation and Recovery Act (RCRA) Large Quantity Generators (LQG)	0.375	3
Resource Conservation and Recovery Act (RCRA) Small Quantity Generators (SQG)	0.375	5
State, Local, and Tribal Databases		
DTSC Electronic Database (Envirostor)	1.125	2
Leaking Underground Storage Tank (LUST)	0.625	4
Underground Storage Tank (UST)	0.375	3
Additional Environmental Records		
Statewide Environmental Evaluation and Planning System (SWEEPS UST)	0.375	11
Hazardous Substance Storage Container Database (HIST UST)	0.375	14
Facility Inventory Database (CA FID UST)	0.375	10
Certified Unified Program Agencies (CUPA)	0.375	16
Facility and Manifest Data (HAZNET)	0.125	8
California Hazardous Material Incident Report System (CHMIRS)	0.125	4
RCRA Non-Generators/No Longer Regulated (NonGen/NLR)	0.375	1
Facility Index System/Facility Registry System (FINDS)	0.125	7
Enforcement & Compliance History Information (ECHO)	0.125	2
Enforcement Action Listing (ENF)	0.125	1
Historic Cortese	0.625	3
Pesticide Licensing (PEST LIC)	0.125	3
National Pollution Discharge Elimination System (NPDES) Permits Listings	0.125	1
Environmental Data Resources, Inc. (EDR) Hist Auto	0.250	8
Environmental Data Resources, Inc. (EDR) Hist Cleaner	0.250	3
Recovered Government Archive (RGA) Leaking Underground Storage Tank (LUST)	0.125	4

SOURCE: GEOCON CONSULTANTS, 2017.

TABLE 3.8-4: PHASE I ESA RECORDS REVIEW RESULTS FOR PLAN AREA

OWNER / BUSINESS	*ADDRESS*	*DATABASE*	*PERTINENT INFORMATION/POTENTIAL TO CASE AN REC AT SITE*
Angie Bosio	5101 Oakdale Rd.	HAZNET	In 2014, two tons of 'asbestos containing waste' was reportedly removed from the site and disposed of at a landfill. This constitutes an HREC.
Diesel Engine Sales	5101 Oakdale Rd.	Hist Auto	In 2008, this address was reported as an auto repair shop although no evidence of an auto repair shop was observed during the on-site survey. No further details are provided in the record. No violations were reported for this business. It is not likely that this business caused an REC at the site.
John Harrigfeld	1901 Morrill Rd.	HIST UST, SWEEPS UST, CA FID UST	A 350-gallon UST reported to have contained diesel was last reported at the property in 1988. Further information regarding the fate of the UST is not provided. Based on information provided by Dave Romano, the UST was removed recently. Given that there is no provided information regarding the fate of the UST or its reported removal, this represent an REC.
Verizon Wireless Riverbank West	2119 Morrill Rd.	CUPA Listings	No further information regarding this facility is provided. The potential for this facility to have caused an REC at the site is low.
John R. Machado	5413 Oakdale Rd.	HIST UST, SWEEPS UST, CA FID UST	A 600-gallon UST containing gasoline is reported to have been installed at this address in 1950. Stanislaus County Department of Environmental Resources records indicate that the UST was removed on January 6, 2017. Soil sample laboratory analytical data did not indicate an unauthorized release and, therefore, the UST is not likely to have caused an REC at the site.

OWNER / BUSINESS	ADDRESS	DATABASE	PERTINENT INFORMATION/POTENTIAL TO CASE AN REC AT SITE
Alexander Dairy	2054 Crawford Rd.	CHIMRS, ENF, FINDS	On March 10, 2005, a reported release of 'dairy animal waste water' was released from a private drain into an irrigation canal. In 2014, a notice of violation was issued to the dairy for data represented in a 2012 Annual Report differing from the dairy's Nutrient Management Plan values. The dairy is currently operating under Waste Discharge Requirements (WDRs) by oversight of the Regional Water Quality Control Board (RWQCB). The 2005 release is considered an HREC because the conditions was corrected and the dairy is currently in compliance with the WDRs.

SOURCE: GEOCON CONSULTANTS, 2017.

Stanislaus County Department of Environmental Resources (SCDER): As part of the Phase I ESA completed for the Project, a request to the SCDER for records pertaining to the Plan Area was made. Files for two properties at the Plan Area were provided regarding the presence of USTs at 5101 and 5413 Oakdale Road. A 100-gallon UST previously containing diesel fuel was identified in the CUPA inventory for the property located at 5101 Oakdale Road indicating the presence of the UST as recently as 2006. The current status of the UST is unknown, although historic records indicate that the UST has not been used since 1995 or earlier.

The file received from the SCDER for 5413 Oakdale Road included details pertaining to the January 2017 removal of a 600-gallon UST previously containing diesel fuel. Based on the laboratory analytical data in the file, there is no indication of an unauthorized release. No other files for properties in the Plan Area were provided by the SCDER.

California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR): As part of the Phase I ESA completed for the Project, a review of the DOGGR online mapping system was completed. The DOGGR online mapping system shows one plugged oil and gas well approximately one mile south-southeast of the Plan Area, and two additional plugged oil and gas wells approximately 1.3 and 1.6 miles east and southeast of the site, respectively. Based on their plugged status and the distances from the site, these former wells are unlikely to have caused an REC at the Plan Area.

Stanislaus County Department of Agriculture/Weights and Measures: As part of the Phase I ESA completed for the Project, a request to the Stanislaus County Department of Agriculture/Weights and Measures for pesticide use records was made. Records pertaining to pesticide use were only available for the Plan Area dating back to 2001. The majority of the pesticide use is associated with APNs 074-014-006 and 074-011-009. However, a history of pesticide use is also documented for APN 074-014-007.

San Joaquin Valley Air Pollution Control District (SJVAPCD): As part of the Phase I ESA completed for the Project, a records request to the SJVAPCD for any permits, violations, and historical records was made. The SJVAPCD provided records pertaining to the Alexander Dairy, located at 2054 Crawford Road. The records include Permits-to-Operate for dairy farming activities and maintaining a Permit-to-Operate a 550-gallon AST in 2011.

Petroleum Pipelines: As part of the Phase I ESA completed for the Project, online databases for indications of crude oil and/or petroleum product pipelines in the Plan Area were reviewed. A natural gas pipeline was found to transect the Plan Area along Crawford Road, then extending northward along Oakdale Road. No additional pipelines were identified in the Plan Area.

Hazardous Material Sites

As noted above, the State of California Hazardous Waste and Substances Site List (also known as the "Cortese List") is a planning document used by the state, local agencies, and developers to comply with the California Environmental Quality Act (CEQA) requirements for providing information about the location of hazardous materials sites. Government Code Section 65962.5 requires the Cal EPA to annually update the Cortese List. The DTSC is responsible for preparing a portion of the information that comprises the Cortese List. Other state and local government agencies are required to provide additional hazardous material release information that is part of the complete list.

GeoTracker is a geographic information system (GIS) that provides online access to environmental data and is the interface to the Geographic Environmental Information Management System (GEIMS), a data warehouse which tracks regulatory data about underground fuel tanks, fuel pipelines, and public drinking water supplies. Searches of the above resources and records identified five (two active and three inactive) hazardous material sites within 0.5 miles of the Plan Area known to handle and store hazardous materials that are associated with a hazardous material related release or occurrence. The terms "release" or "occurrence" include any means by which a substance could harm the environment: by spilling, leaking, discharging, dumping, injecting, or escaping. Table 3.8-2 displays the hazardous material sites within 0.5 miles of the Plan Area with a description of the hazards provided. Additionally, Table 3.8-5 displays the known hazardous material sites within 1.0 mile of the Plan Area with a description of the hazards provided. As noted previously, none of the parcels in the Plan Area were found to contain any known contamination. Two open cases, the Chevron #309187 permitted UST site and the Riverbank Cruisers #34 permitted UST site, are located approximately 0.04 miles east and 0.34 miles north of the Plan Area, respectively.

TABLE 3.8-5: GEOTRACKER HAZARDOUS MATERIAL RELEASE SITES WITHIN 1.0 MILE OF PLAN AREA

SITE NAME	*TYPE*	*STATUS*	*ADDRESS*
Chevron #309187	Permitted UST	Active	2225 Claribel Rd.
Cipponeri Trucking	LUST Cleanup Site	Completed – Case Closed	20107 Patterson Rd.
ARCO #5565	LUST Cleanup Site	Completed – Case Closed	6345 Oakdale Rd.
Riverbank Cruisers #34	Permitted UST	Active	2201 Patterson Rd.
Quality Nut AKA John Hancock Hougue	LUST Cleanup Site	Completed – Case Closed	1711 Patterson Rd.
Elementary School No. 11	School Investigation	No Action Required	5800 Saxon Way
Elmwood Estates	Evaluation	Refer – Other Agency	5536 Roselle Ave.
Cook Jay Transport	LUST Cleanup Site	Completed – Case Closed	2536 Patterson Rd.
Rais' Mart	Permitted UST	Active	2707 Patterson Rd.
Hub Service	LUST Cleanup Site	Completed – Case Closed	2772 Patterson Rd.
Valley Pacific Petro. – Riverbank Cardlock	Permitted UST	Active	2770 Patterson Rd.
John Hancock Property	Cleanup Program Site	Open – Inactive	Patterson/Callander

NOTES: UST = UNDERGROUND STORAGE TANK, LUST = LEAKING UNDERGROUND STORAGE TANK.
SOURCE: SWRCB, GEOTRACKER, 2017.

In addition to sites listed above, the Plan Area and the surrounding areas do not contain identified oil and gas monitoring wells.

Transportation of Hazardous Materials

The transportation of hazardous materials within the City of Riverbank Planning Area is subject to various federal, state, and local regulations. The following provisions are included in the California Vehicle Code (CVC) and pertain to the transportation of hazardous related materials.

- The Highway Patrol designates the routes in California which are to be used for the transportation of explosives. (Section 31616)
- The CVC applies when the explosives are transported as a delivery service for hire or in quantities in excess of 1,000 pounds. The transportation of explosives in quantities of 1,000 pounds or less, or other than on a public highway, is subject to the California Health and Safety Code. (Section 31601(a))
- It is illegal to transport explosives or inhalation hazards on any public highway not designated for that purpose, unless the use of the highway is required to permit delivery of, or the loading of, such materials. (Section 31602(b) and Section 32104(a))
- When transporting explosives through or into a city for which a route has not been designated by the Highway Patrol, drivers must follow routes as may be prescribed or established by local authorities. (Section 31614(a))
- Inhalation hazards and poison gases are subject to additional safeguards. These materials are highly toxic, spread rapidly, and require rapid and widespread evacuation if there is loss of containment or a fire. The Highway Patrol designates through routes to be used for the transportation of inhalation hazards. It may also designate separate through routes for the transportation of inhalation hazards composed of any chemical rocket propellant. (Section 32100 and Section 32102(b))

In addition to area roadways, hazardous materials are routinely transported on Union Pacific Railroad lines that are roughly one-quarter mile northwest of the Project boundary. Hazardous materials are transported on these lines. The risk of accidents, and more specifically accidents involving hazardous materials, is relatively low. The U.S. Department of Transportation Federal Railroad Administration found the UPRR company train accident rate to be 4.18 train accidents per one million train miles traveled, resulting in a less than 0.001% chance of an accident. Risk of a railroad accident containing hazardous materials is considered much lower, as only an average of eight accidents involving hazardous material spills occur annually in California.

The Union Pacific Railroad Company does implement a security plan in compliance with the Department of Transportation Final Rule 49 CFR Part 172 Hazardous Materials (HM 232): Security Requirements for Offerors and Transporters of Hazardous Materials. The plan includes requirements to enhance the security of transported hazardous materials and ensures proper cleanup procedures in the instance of an accidental release.

FIRE HAZARDS

Wild fires are a major hazard in the State of California. Wild fires burn natural vegetation on developed and undeveloped lands and include timber, brush, woodland, and grass fires. While low intensity wild fires have a role in the County's ecosystem, wild fires put human health and safety, structures (e.g., homes, schools, businesses, etc.), air quality, recreation areas, water quality, wildlife habitat and ecosystem health, and forest resources at risk.

Wildland fires in the City of Riverbank occur in areas with extensive vegetation, such as forests and grasslands. Most vegetated areas in the vicinity of Riverbank are irrigated agricultural lands, including pastures, field crops, orchards, and vineyards with a low potential for wildfire. The most significant area of vegetation potentially subject to wildfire is the riparian area along the Stanislaus River, approximately one mile north of the Plan Area. The bottom of the river, when dry, also poses a great fire hazard, especially to sections of Riverbank where houses are built along the top of the bluff alongside the river. The Plan Area is predominantly under agricultural or urban use. This area has a low fire hazard risk.

3.8.2 REGULATORY SETTING

FEDERAL

The primary federal agencies that are responsible for overseeing regulations and policies regarding hazardous materials are the Environmental Protection Agency (EPA), Department of Labor Occupational Safety and Health Administration (OSHA), and the Department of Transportation (DOT). Several laws governing the transport, storage, and use of hazardous materials are governed by these agencies as well as oversight for contaminated sites cleanup. Federal laws and regulations that are applicable to hazards and hazardous materials are presented below.

Toxic Substances Control Act

The 1976 Toxic Substances Control Act regulates the manufacturing, inventory, and disposition of industrial chemicals, including hazardous materials. The Model Accreditation Plan, adopted under Title II of the act, requires that all persons who inspect for asbestos-containing materials or design or conduct response actions with respect to friable asbestos obtain accreditation by completing a prescribed training course and passing an exam. Section 403 of the Toxic Substances Act establishes standards for lead-based paint hazards in paint, dust and soil.

Resource Conservation and Recovery Act

The 1976 Federal Resource Conservation and Recovery Act (RCRA) and the 1984 RCRA Amendments regulate the treatment, storage, and disposal of hazardous and non-hazardous wastes. The legislation mandated that hazardous wastes be tracked from the point of generation to their ultimate fate in the environment. This includes detailed tracking of hazardous materials during transport and permitting of hazardous material handling facilities.

The 1984 RCRA amendments provided the framework for a regulatory program designed to prevent releases from USTs. The program establishes tank and leak detection standards, including

spill and overflow protection devices for new tanks. The tanks must also meet performance standards to ensure that the stored material will not corrode the tanks. Owners and operators of USTs had until December 1998 to meet the new tank standards. As of 2001, an estimated 85 percent of USTs were in compliance with the required standards.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (the Act) introduced active federal involvement to emergency response, site remediation, and spill prevention, most notably the Superfund program. The Act was intended to be comprehensive in encompassing both the prevention of, and response to, uncontrolled hazardous substances releases. The Act deals with environmental response, providing mechanisms for reacting to emergencies and to chronic hazardous material releases. In addition to establishing procedures to prevent and remedy problems, it establishes a system for compensating appropriate individuals and assigning appropriate liability. It is designed to plan for and respond to failure in other regulatory programs and to remedy problems resulting from action taken before the era of comprehensive regulatory protection.

Natural Gas Pipeline Safety Act

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

Occupational Safety and Health Standards

The federal Occupational Safety and Health Administration (OSHA) is the agency responsible for assuring worker safety in the handling and use of chemicals identified in the Occupational Safety and Health Act of 1970 (Public Law 91-596, 9 USC 651 et seq.). OSHA has adopted numerous regulations pertaining to worker safety, contained in CFD Title 29. These regulations set standards for safe workplaces and work practices, including standards relating to the handling of hazardous materials and those required for excavation and trenching.

STATE

The primary state agencies that are responsible for overseeing regulations and policies regarding hazardous materials are the California Office of Emergency Services (OES), California Environmental Protection Agency (Cal-EPA), Department of Toxic Substances Control (DTSC), California Department of Transportation (Caltrans), California Highway Patrol (CHP), California Water Quality Control Board, and the California Air Resources Board. Several laws governing the generation, transport, and disposal of hazardous materials are administered by these agencies.

State laws and regulations that are applicable to hazards and hazardous materials are presented below.

Porter-Cologne Water Quality Act

The Porter-Cologne Water Quality Act regulates the oversight of water monitoring, and contamination cleanup and abatement, through the State Water Resources Control Board (SWRCB) and the RWQCBs.

Safe Drinking Water and Toxic Enforcement Act

The Safe Drinking Water and Toxic Enforcement Act regulates the discharge of contaminants to groundwater.

California Government Code Section 65962.5

California Government Code Section 65962.5 requires DTSC to compile and maintain lists of potentially contaminated sites located throughout the State of California. This "Cortese List" includes hazardous waste and disposal sites with waste constituents above hazardous waste levels outside of the waste management unit, Cease and Desist Orders and Cleanup and Abatement Orders concerning hazardous wastes, and hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code.

Hazardous Waste Control Law

California law provides the general framework for regulation of hazardous wastes by the Hazardous Waste Control Law (HWCL) passed in 1972. Similar to RCRA, this act regulates the identification, generation, transportation, storage, and disposal of materials the State of California has deemed hazardous. The HWCL provides for state regulation of existing hazardous waste facilities, which include "any structure, other appurtenances, and improvements on the land, used for treatment, transfer, storage, resource recovery, disposal, or recycling of hazardous wastes," and requires permits for, and inspections of, facilities involved in generation and/or treatment, storage and disposal of hazardous wastes. DTSC is the state's lead agency in implementing the HWCL.

California Health and Safety Code

Cal-EPA has established rules governing the use of hazardous materials and the management of hazardous wastes. Many of these regulations are embodied in the California Health and Safety Code. The code includes regulations that govern safe drinking water, substances control, land reuse and revitalization, remediation, restoration, and methamphetamine contaminated cleanups.

California Code of Regulations Title 22 and Title 26

The California Code of Regulations (CCR) Title 22 provides state regulations for hazardous materials, and CCR Title 26 provides regulation of hazardous materials management. In 1996, Cal/EPA established the "Unified Hazardous Waste and Hazardous Materials Management

Regulatory Program" (Unified Program) which consolidated the six administrative components of hazardous waste and materials into one program.

Worker and Workplace Hazardous Materials Safety

Cal/OSHA is responsible for developing and enforcing workplace safety standards and assuring worker safety in the handling and use of hazardous materials. Cal/OSHA standards are typically more stringent than federal OSHA regulations and are presented in Title 8 of the CCR.

LOCAL

City of Riverbank General Plan

GOAL: CIRCULATION ELEMENT

- CIRC-4. Move Freight and Passengers Efficiently.

POLICIES: CIRCULATION ELEMENT

- CIRC-4.1. The City will work with relevant public agencies and the railroad to appropriately regulate the movement of truck traffic and hazardous materials throughout the City.
- CIRC-4.4. The City will support the development and implementation of a quick-response emergency services program for railroad corridors and continue to support the County's Hazardous Materials Team.

GOALS: SAFETY ELEMENT

- SAFE-1. Minimize the Loss of Life and Damage to Property Natural and Human-Caused Hazards.
- SAFE-2. Provide Adequate Access for Emergency Response.

POLICIES: SAFETY ELEMENT

- SAFE-1.1. The City will ensure that approved development projects and public investments are consistent with the information provided in the Stanislaus County Multi-Jurisdictional Hazard Mitigation Plan.
- SAFE-1.2. The City will continue to enforce State of California Building Standards Commission uniform codes, such as the California Building Code and California Fire Code with adopted Fire District amendments.
- SAFE-1.3. The City will encourage the retrofitting of older buildings to current safety standards, and require compliance to recommendations of the fire and law enforcement service providers and the State Building Standards Commission uniform codes in coordination with major remodeling or additions.
- SAFE-1.4. The City will require set backs, ignition resistant building materials, or other measures to reduce exposure to potential wildfires in areas designated for natural open space preservation, in coordination with California Department of Forestry and Fire

Protection recommendations and Maintenance of Defensible Space Measures, as appropriate.

- SAFE-1.5. Approved plans, projects, and subdivision requests will ensure adequate fire flow per City and Fire District standards. The installation of automatic fire sprinklers may, at the discretion of the City and the Fire Chief, allow for a reduction in the required fire flow, while still complying with the California Fire Code requirements.
- SAFE-1.8. The City will require that hazardous materials are used, stored, transported, and disposed in a safe manner and in compliance with local, State, and federal safety standards.
- SAFE-1.9. Developments located on farmland or former farmland shall prepare reports that analyze residual agricultural chemicals that may be present on-site. Developments on such sites shall include measures to remove any risk due to hazardous materials for on-site proposed land uses, as well as existing and proposed land uses and users in the vicinity.
- SAFE-1.10. The City will review development requests and require that any airborne, waterborne, windborne, and other hazardous materials issues are fully disclosed, analyzed, and mitigated to ensure against any risk relative to any nearby planned or existing land uses and their users.
- SAFE-2.1. The City will require development and maintenance of a road system that provides adequate access for emergency equipment.
- SAFE-2.4. The City will coordinate with the County Office of Emergency Services to identify evacuation routes and operational plans to be used in case of dam failure, flood disaster, and wildfire for any new growth areas in addition to any updates required to serve the existing developed City.

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. Stanislaus County is the designated CUPA in the County for both unincorporated areas and incorporated cities. The Stanislaus County Division of Environmental Resources is responsible for the implementation of statewide programs within its jurisdiction, including: Underground storage of hazardous substances (USTs), Hazardous Materials Business Plan (HMP) requirements, California Accidental Release Prevention (Cal-ARP) program, etc. Implementation of these programs involves permitting, inspecting, providing education/guidance, investigations, and enforcement.

3.8.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

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

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.
- For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard for people residing or working in the Project area.
- For a Project within the vicinity of a private airstrip, would the Project result in a safety hazard for people residing or working in the Project area.
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
- Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildands are adjacent to urbanized areas or where residences are intermixed with wildlands.

IMPACTS AND MITIGATION MEASURES

Impact 3.8-1: Potential to create a significant hazard through the routine transport, use, or disposal of hazardous materials or through the reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. (Less than Significant with Mitigation)

Construction Phase Impacts: Construction activities would occur in phases through the development of the proposed Project. Construction equipment and materials would likely require the use of petroleum based products (oil, gasoline, diesel fuel), and a variety of chemicals including paints, cleaners, and solvents. The use of these materials at a construction site will pose a reasonable risk of release into the environment if not properly handled, stored, and transported. A release into the environment could pose significant impacts to the health and welfare of people and/or wildlife, and could result in contamination of water, habitat, and countless important resources. The RWQCB requires a project specific Storm Water Pollution Prevention Plan (SWPPP) to be prepared for each project that disturbs an area one acre or larger. The SWPPP is required to include project specific best management measures that are designed to control drainage and erosion. Mitigation Measure 3.6-1 contained in Section 3.6, Geology and Soils, ensures compliance with existing regulatory requirements to prepare a SWPPP designed to control erosion and the loss of topsoil to the extent practicable using best management practices (BMPs) that the RWQCB has deemed effective in controlling erosion, sedimentation, runoff during construction activities.

Like most agricultural and farming operations in the Central Valley, agricultural practices in the area have used agricultural chemicals including pesticides and herbicides as a standard practice.

Although no contaminated soils have been identified in the Plan Area or the vicinity above applicable levels, residual concentrations of pesticides may be present in soil as a result of historic agricultural application and storage. Continuous spraying of crops over many years can potentially result in a residual buildup of pesticides, in farm soils. Of highest concern relative to agrichemicals are chlorinated herbicides, organophosphate pesticides, and organochlorine pesticides, such as such as Mecoprop (MCPP), Dinoseb, chlordane, dichloro-diphenyltrichloroethane (DDT), and dichloro-diphenyl-dichloroethylene (DDE). There are no records of soil contamination in the Plan Area. However, soil staining was observed or reported at the following properties as part of the Phase I ESA:

- Former Machado Dairy (Machado Property) – APN 074-011-009;
- Alexander Dairy (Machado Property) – APN 074-014-006;
- Harrigfeld Property (1901 Morrill Road) – APN 074-006-016.

There are seven single-family residences with associated sheds and garage structures, as well as areas that are used for farm equipment storage. The homes and adjoining structures, as well as the farm equipment storage areas, will require removal prior to any construction. If the homes and structures are demolished, they will require evaluation for asbestos and lead containing materials. If such materials are present in the demolition of the structures, special demolition and disposal practices are required in accordance with state regulations to ensure their safe handling.

Additionally, existing areas containing above ground storage tanks and storage of farm equipment would require soil sampling to assess the soils in these areas. Further, groundwater wells may be located within the vicinity of the on-site residences. According to the Phase I ESA, one known well system is located at the McGrane Property (APN 074-014-007). Should other groundwater wells be present on-site, the proper well abandonment permit would be obtained. Implementation of the following mitigation measures will ensure that these potential impacts are reduced to a **less than significant** level.

MITIGATION MEASURE(S)

*Implement **Mitigation Measure 3.6-1**.*

Mitigation Measure 3.8-1: *Prior to the approval of any map, Preliminary Development Plan, or site plan, the City shall review the 2017 Phase I ESA (Geocon Consultants, Inc., July 2017) cited in the Draft EIR for the CWSP to determine if it is still applicable. After July 1, 2020, the City shall require an updated Phase I ESA for the specific property. The Phase I ESA shall evaluate the specific property proposed to be developed, to ensure that no material changes have occurred since preparation of the 2017 Phase I ESA (Geocon Consultants, Inc., July 2017).*

Mitigation Measure 3.8-2: *The applicant shall hire a qualified consultant to perform additional soil and site testing for the areas identified in this EIR to have potential hazardous conditions present prior to any mapping approvals. The following areas have been deemed to have potential hazardous conditions present:*

- *The residential units and adjoining structures.*

- *The remnant construction and/or farming materials (i.e. remnant pipes, etc.).*
- *The soils in the area where farming equipment and above ground tanks have been stored, including, but not limited to, the following:*
    - *The parcels associated with the Alexander Dairy (APNs 074-011-009 and 074-014-006).*
    - *The parcels associated with the properties located at 5817 Oakdale Road, 5525 Oakdale Road, and 2054 Crawford Road.*
    - *The Harrigfeld property located at 1901 Morrill Road.*
    - *All parcels located south of Morrill Road.*

The intent of the additional testing is to investigate whether any of the buildings, facilities, or soils in any of the above parcels contain hazardous materials. If asbestos-containing materials and/or lead are found in the buildings, a California Occupational Safety and Health Administration (Cal/OSHA) certified asbestos containing building materials (ACBM) and lead based paint contractor shall be retained to remove the asbestos-containing materials and lead in accordance with EPA and Cal/OSHA standards. In addition, all activities (construction or demolition) in the vicinity of these materials shall comply with Cal/OSHA asbestos and lead worker construction standards. The ACBM and lead shall be disposed of properly at an appropriate offsite disposal facility.

Mitigation Measure 3.8-3: *If the site investigation required by Mitigation Measure 3.8-2 indicates a probability that hazardous materials may be found on any parcel, the applicant for that parcel shall submit a Phase II ESA, which shall further evaluate on-site conditions. The Phase II ESA shall address the likely presence of hazardous substances and/or petroleum products identified in the previous Phase I ESA (Geocon Consultants, Inc., 2017) prepared for the Plan Area.*

In addition, due to the past agricultural operations in the Plan Area, a soil sampling program shall be implemented to assess potential agrichemical (including pesticides, herbicides, diesel, petrochemicals, etc.) impacts to surface soil within the Plan Area, as follows:

A soil sampling and analysis workplan shall be submitted for approval the Stanislaus County Department of Environmental Resources. The sampling and analysis plan shall meet the requirements of the Department of Toxic Substances Control Interim Guidance for Sampling Agricultural Properties (2008), and the County Department of Environmental Resources Recommended Soil and Groundwater Sampling for Underground Tank Investigations (2013). The soils in the area where farming equipment and tanks have been stored, including, but not limited to, the following, should be included in the soil sampling and analysis workplan:

- *The parcels associated with the Alexander Dairy (APNs 074-011-009 and 074-014-006).*
- *The parcels associated with the properties located at 5817 Oakdale Road, 5525 Oakdale Road, and 2054 Crawford Road.*
- *The Harrigfeld property located at 1901 Morrill Road.*
- *All parcels located south of Morrill Road.*

If the sampling results indicate the presence of agrichemicals that exceed commercial screening levels, a removal action workplan shall be prepared in coordination with Stanislaus County Department of Environmental Resources. The removal action workplan shall include a detailed engineering plan for conducting the removal action, a description of the onsite contamination, the goals to be achieved by the removal action, and any alternative removal options that were considered and rejected and the basis for that rejection. A no further action letter shall be issued by Stanislaus County Department of Environmental Resources upon completion of the removal action. The removal action shall be deemed complete when the confirmation samples exhibit concentrations below the commercial screening levels, which will be established by the agencies.

If any stained soil or odor-impacted areas are encountered during the Phase II ESA, then soil sampling of these areas shall be included in the above soil sampling workplan, and depending upon the sampling results, included in the removal action workplan as well.

Mitigation Measure 3.8-4*: Prior to bringing hazardous materials onsite, the applicant shall submit a Hazardous Materials Business Plan (HMBP) to the Stanislaus County Division of Environmental Resources (CUPA) for review and approval. If during the construction process the applicant or any subcontractors generates hazardous waste, the applicant must register with the CUPA as a generator of hazardous waste, obtain an EPA ID# and accumulate, ship and dispose of the hazardous waste per Health and Safety Code Ch. 6.5. (California Hazardous Waste Control Law).*

Mitigation Measure 3.8-5*: Prior to initiation of any ground disturbance activities within 50 feet of a well, the applicant shall hire a licensed well contractor to obtain a well abandonment permit from Stanislaus County Department of Environmental Resources, and properly abandon the on-site wells, pursuant to review and approval of the City Engineer and the Stanislaus County Department of Environmental Resources.*

Operational Phase Impacts: The operational phase of the Project will occur after construction is completed and business operators/employees and residents move in to occupy the structures and facilities on a day-to-day basis.

The proposed Project includes commercial mixed use facilities and residential structures. Each of these uses will likely use a variety of hazardous materials commonly found in urban areas including: paints, cleaners, and cleaning solvents. If handled appropriately, these materials do not pose a significant risk. These facilities will store and use these materials. There will be a risk of release of these materials into the environment if they are not stored and handled in accordance with best management practices approved by the Stanislaus County Division of Environmental Resources and the Stanislaus Consolidated Fire Protection District. Implementation of the following mitigation measures will ensure that the proposed Project would have a **less than significant** impact relative to this issue.

MITIGATION MEASURE(S)

Implement **Mitigation Measures 3.8-1, 3.8-2, 3.8-3, 3.8-4, and 3.8-5.**

Impact 3.8-2: Potential to emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. (Less than Significant)

The proposed mixed-use areas (MU-1 and MU-2) provide opportunities for retail development, office/commercial development, as well as some residential uses. The MU-1 property could provide up to 550,000 square feet (sf) of retail, but could similarly provide about 360,000 sf of retail and up to 350 MDR or HDR units. The MU-2 property is estimated to develop with up to 27,000 sf of retail, and approximately 25 to 50 MDR or HDR units. Overall, the CWSP proposes between 1,539 and 2,852 residential units, and between 387,000 sf and 577,000 sf of mixed uses.

In addition, the Specific Plan accommodates the possibilities for a future 10- to 12-acre elementary school as well as a 20-acre middle school within the Plan Area. Other schools near the Plan Area include: Rio Altura Elementary School (0.58 miles northeast), Stockard Coffee Elementary School (1.10 miles south), Fred C. Beyer High School (1.45 miles south), and Riverbank High School (2.12 miles east). There are a variety of other schools located beyond three miles from the Plan Area.

The proposed Project is not anticipated to have businesses that would emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste. However, given the unknown nature of future business establishments within the Mixed Use areas, the potential for hazardous materials is present. The Safety Element of the City of Riverbank General Plan provides the following policies to abate the possible exposure of schools to hazardous materials: Policy SAFE-1.1 states that the City shall ensure that approved development projects and public investments are consistent with the information provided in the Stanislaus County Multi-Jurisdictional Hazard Mitigation Plan; Policy SAFE-1.8 states that City will require that hazardous materials are used, stored, transported, and disposed in a safe manner and in compliance with local, State, and federal safety standards; Policy SAFE-1.9 states that developments located on farmland or former farmland shall prepare reports that analyze residual agricultural chemicals that may be present on-site, and developments on such sites shall include measures to remove any risk due to hazardous materials for on-site proposed land uses, as well as existing and proposed land uses and users in the vicinity; and Policy SAFE-1.10 states that the City will review development requests and require that any airborne, waterborne, windborne, and other hazardous materials issues are fully disclosed, analyzed, and mitigated to ensure against any risk relative to any nearby planned or existing land uses and their users.

Additionally, Implementation Measure SAFE-2 of the Safety Element states that the City will, in coordination with the County Office of Emergency Services, implement and periodically update disaster plans, including the City's Emergency Operations Plan, to meet federal, State, and local emergency requirements. Included in this work will be the identification and planning for evacuation routes for dam failure, flooding, and wildfire that may affect existing developed areas of the City, as well as new growth areas.

Through compliance with the General Plan Policies and Implementation Measures listed above, implementation of the proposed Project would have a **less than significant** impact with regards to this environmental issue.

Impact 3.8-3: Potential to result in impacts from being included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. (Less than Significant)

The hazards assessment included a site reconnaissance, interviews, historical land use research, and database research. The assessment revealed no evidence of historical or existing Recognized Environmental Conditions in connection with the Plan Area. The Plan Area is not on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Implementation of the proposed Project would have a **less than significant** impact with regards to this environmental issue.

Impact 3.8-4: Potential for the Project to result in safety hazards for people residing or working on the Project site as a result of public airport or public use airport. (Less than Significant)

There are no documented public airports or public use airports within close proximity to the Plan Area. Implementation of the proposed Project would have a **less than significant** impact with regards to this environmental issue.

Impact 3.8-5: Potential for the Project to result in safety hazards for people residing or working on the Project site as a result of a private airstrip. (Less than Significant)

There are no documented private airstrips within close proximity to the Plan Area. Implementation of the proposed Project would have a **less than significant** impact with regards to this environmental issue.

Impact 3.8-6: Potential to impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. (Less than Significant)

The Office of Emergency Services (OES) maintains an Emergency Operations Plan (EOP) that serves as the official Emergency Plan for Stanislaus County. The EOP is based on the National Incident Management System and its component parts, along with the California Standardized Emergency Management System (SEMS), including the five functional areas of incident or event management, operational coordination, planning, logistical support, and finance/administration support. The EOP serves as the basis for response as well as recovery efforts and activities within the County.

The EOP also identifies Emergency Support Functions (ESFs) that represent core emergency response categories performed by agencies and jurisdictions with primary and supporting responsibilities within Stanislaus County. These may include public and non-government organizations. These Emergency Support Functions are based on the State of California's Emergency Function Annexes (EFs) and the Federal Emergency Support Function Annexes (ESFs).

The County OES also prepared a Hazardous Materials Area Plan (Chapter 4 of Division 2, Title 19, Article 3, §2720-2728 of the California Code of Regulations) and (California Health and Safety

Code, Division 20, Chapter 6.95, Section 25503.5) that describes the hazardous materials response system developed to protect public health, prevent environmental damage and ensure proper use and disposal of hazardous materials. The plan establishes effective response capabilities to contain and control releases, establishes oversight of long-term cleanup and mitigation of residual releases, and integrates multi-jurisdiction and agency coordination. This plan is implemented by the Stanislaus County Division of Environmental Resources.

The Stanislaus County Office of Emergency Services also maintains a Hazardous Materials Business Plan (HMBP). The HMBP describes agency roles, strategies and processes for responding to emergencies involving hazardous materials.

In Stanislaus County, all major roads are available for evacuation, depending on the location and type of emergency that arises. The main evacuation route through Riverbank is State Route 108. This roadway is capable of handling heavy truck traffic, as well as traffic from passenger vehicles and would be a primary route for evacuations. The proposed Project does not include any actions that would impair or physically interfere with any of Stanislaus County's emergency plans or evacuation routes. Future uses in the Plan Area will have access to the County resources that establish protocols for safe use, handling and transport of hazardous materials. Construction activities are not expected to result in any unknown significant road closures, traffic detours, or congestion that could hinder the emergency vehicle access or evacuation in the event of an emergency. Implementation of the proposed Project would have a **less than significant** impact with regards to this environmental issue.

Impact 3.8-7: Potential to expose people or structures to a risk of loss, injury or death from wildland fires. (Less than Significant)

The risk of wildfire is related to a variety of parameters, including fuel loading (vegetation), fire weather (winds, temperatures, humidity levels and fuel moisture contents) and topography (degree of slope). Steep slopes contribute to fire hazard by intensifying the effects of wind and making fire suppression difficult. Fuels such as grass are highly flammable because they have a high surface area to mass ratio and require less heat to reach the ignition point. The County has areas with an abundance of flashy fuels (i.e. grassland) in the foothill areas of the eastern and western portion of the County. The Plan Area is located in an area that is predominately agricultural uses, which is not at a significant risk of wildlife. The proposed Project would have a **less than significant** impact with regards to this environmental issue.

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This section describes the regulatory setting, regional hydrology and water quality, impacts that are likely to result from project implementation, and measures to reduce potential impacts to water quality. This section is based in part on the following documents, reports and studies: *City of Riverbank General Plan 2005-2025* (City of Riverbank, 2009), *City of Riverbank Draft Environmental Impact Report for the 2005-2025 General Plan Update* (City of Riverbank, 2008), *City of Riverbank 2015 Urban Water Management Plan (UWMP)* (City of Riverbank, 2016), *City of Riverbank Water Master Plan* (City of Riverbank, 2007), *Water Supply Assessment for the Crossroads West Specific Plan* (West Yost Associates, 2017), *California Water Plan Update 2013* (DWR, 2013), *City of Riverbank Storm Drain System Master Plan* (City of Riverbank, 2008), *California's Groundwater Bulletin 118, San Joaquin Valley Groundwater Basin, Eastern San Joaquin Subbasin* (DWR, 2006), *California's Groundwater* (DWR, 2003), *Custom Soils Report for Stanislaus County, California* (NRCS, 2017), and *Web Soil Survey* (NRCS, 2017). A comment from the Central Valley Regional Water Quality Control Board was received during the NOP comment period regarding hydrology and water quality. Full comments received are included in Appendix A.

As discussed in in the Initial Study prepared for the proposed Project, the Plan Area is not located near a significant body of water that could be subject to a seiche or tsunami. Additionally, the Plan Area and the surrounding areas are essentially flat, which precludes the possibility of mudflows occurring in the Plan Area. As such, these CEQA topics will not be further discussed.

3.9.1 ENVIRONMENTAL SETTING

REGIONAL HYDROLOGY

Stanislaus County is located in the San Joaquin River watershed. The San Joaquin River is about 300 miles long. It begins in the Sierra Nevada mountain range on California's eastern border. The river runs down the western slope of the Sierra and flows roughly northwest through the Central Valley, to where it meets the Sacramento River at the Sacramento-San Joaquin Delta, a 1,000-square-mile maze of channels and islands that drains more than 40 percent of the state's lands (SJRGA 2013).

Because the Central Valley receives relatively little rainfall (12 to 17 inches a year, falling mostly October through March), snowmelt runoff from the mountains is the main source of fresh water in the San Joaquin River. Over its 300-mile length, the San Joaquin River is fed by many other streams and rivers, most notably the Stanislaus, Tuolumne and Merced rivers.

Most of the surface water in the upper San Joaquin River is stored and diverted at Millerton Lakes' Friant Dam, near Fresno. From Friant Dam, water is pumped north through the Madera Canal and south through the Friant-Kern canal to irrigation districts and other water retailers, which then deliver the water directly to the end users in the southern portion of the watershed.

In the central and northern portions of the watershed, many agricultural and municipal users receive water from irrigation districts, such as the Modesto, Merced, Oakdale, South San Joaquin and Turlock Irrigation Districts. That water is provided through diversions from rivers that are tributary to the San Joaquin, such as the Mokelumne, Stanislaus, Tuolumne and Merced rivers.

Climate

The summer climate is hot and sub-humid with warm, dry summers, and cool, moist winters. In the entire San Joaquin Valley Air Basin (SJVAB), daily summer high temperatures average 95 degrees. Over the last 30 years, temperatures in the SJVAB averaged 90 degrees or higher for 106 days a year, and 100 degrees or higher for 40 days a year.

The daily summer temperature variation can be as high as 30 degrees. In winter, the Pacific high-pressure cell weakens and shifts southward, resulting in wind flow offshore, the absence of upwelling, and the occurrence of storms. Average high temperatures in the winter are in the 50s, but lows in the 30s and 40s can occur on days with persistent fog and low cloudiness. The average daily low winter temperature is 45 degrees. The average rainfall is approximately 12.1 inches and occurs during winter storms.

Watersheds

The majority of the Plan Area is located in the Riverbank watershed. See Figure 3.9-1. A watershed is a region that is bound by a divide that drains to a common watercourse or body of water. Watersheds serve an important biological function, oftentimes supporting an abundance of aquatic and terrestrial wildlife including special-status species and anadromous and native local fisheries. Watersheds provide conditions necessary for riparian habitat.

The State of California uses a hierarchical naming and numbering convention to define watershed areas for management purposes. This means that boundaries are defined according to size and topography, with multiple sub-watersheds within larger watersheds. Table 3.9-1 shows the primary watershed classification levels used by the State of California. The second column indicates the approximate size that a watershed area may be within a particular classification level, although variation in size is common.

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

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

SOURCE: CALIFORNIA DEPARTMENT OF WATER RESOURCES, 2012.

Hydrologic Region

Stanislaus County is located in the San Joaquin River Hydrological Region. The Stanislaus River is a tributary of the San Joaquin River which originates in the high Sierra Nevada and passes through four counties: Stanislaus, San Joaquin, Calaveras, and Tuolumne. The San Joaquin River is the principal river of the region, and all other streams of the region are tributary to it. The Mokelumne

River and its tributary the Cosumnes River originate in the central Sierra Nevada, along with the more southerly Stanislaus and Tuolumne rivers. The Merced River flows from the south central Sierra Nevada and enters the San Joaquin near the City of Newman. The Chowchilla and Fresno rivers also originate in the Sierra south of the Merced River and trend westward toward the San Joaquin River. Creeks originating in the Coast Range and draining eastward into the San Joaquin River include Del Puerto Creek, Orestimba Creek, and Panoche Creek. Del Puerto Creek enters the San Joaquin near the City of Patterson, and Orestimba Creek enters north of the City of Newman. During flood years, Panoche Creek may enter the San Joaquin River or the Fresno Slough near the town of Mendota. The Kings River is a stream of the Tulare Lake Hydrologic Region, but in flood years it may contribute to the San Joaquin River, flowing northward through the James Bypass and Fresno Slough to enter near the City of Mendota. The Mud, Salt, Berrenda, and Ash sloughs also add to the San Joaquin River, and numerous lesser streams and creeks also enter the system, originating in both the Sierra Nevada and the Coast Range. The entire San Joaquin river system drains northwesterly through the Delta to Suisun Bay (DWR 2013, pg. SJR-5).

The City of Riverbank and much of the surrounding area is located in the Modesto Groundwater Subbasin. The subbasin lies almost entirely within Stanislaus County. The approximate physical boundaries of the Modesto Groundwater Subbasin are the Stanislaus, Tuolumne and San Joaquin rivers. The eastern boundary is based on the limit of water-bearing deposits.

Groundwater

The City, and its General Plan area, is located within the Stanislaus and San Joaquin Basins of the Great Central Valley. As detailed in the City's 2015 UWMP, the City's groundwater wells are located in the Modesto groundwater subbasin and the City is part of the Stanislaus and Tuolumne Rivers Groundwater Basin Association and was a part of the development of the Integrated Regional Groundwater Management Plan (IRGMP) for the Modesto Subbasin in 2005. Based on the IRGMP for the Modesto Subbasin, and various groundwater investigations performed on groundwater availability in the subbasin, including the Self-Certification of Supply Reliability for Three Additional Years of Drought (as required by the State Water Resources Control Board in 2016), the City's groundwater supplies are expected to be highly reliable as is described in further detail below.

Groundwater Production. According to California's Groundwater Bulletin 118, updated February 27, 2004, the estimated specific yield for the Modesto Subbasin is 8.8 percent. The estimated storage capacity to a depth of 300 feet is approximately 6,500,000 AF. The annual water demand for the basin was estimated at 590,000 AF in 2000. Groundwater accounted for 206,500 AF of the total supply. Total annual recharge to the basin was estimated at 310,000 AF, the largest component of which is from irrigation followed by precipitation.

Assuming no recharge, the current City of Riverbank groundwater usage of 3,878 acre-feet per year (AFY) (in 2015) is less than 1 percent of the total annual subbasin withdrawals, and less than 0.1 percent of the total estimated storage capacity of the basin. At full build-out of the City, it is anticipated that the City of Riverbank annual groundwater requirements will be 3.4 times the current volume. It is uncertain when the full build-out scenario would occur, but the anticipated

groundwater requirements would amount to less than 0.2 percent of the total amount of subbasin groundwater storage and less than 5 percent of the total annual basin recharge.

LOCAL SETTING

The Plan Area is relatively flat with natural gentle slope from northeast to southwest. The Plan Area topography ranges in elevation from approximately 111 to 125 feet above sea level. There are no natural water courses in the Plan Area. The nine parcels that comprise the Plan Area are primarily used for agricultural operations including dairy operations, row crops, and fallow land. Seven home sites exist within the Plan Area and many of them have accessory structures on site including storage buildings, shop buildings, and barn structures. Additionally, an approximately 11-acre regional City park, the Riverbank Sports Complex, is currently developed in the northeastern portion of the Plan Area, near the intersection of Morrill Road and Oakdale Road. Crawford Road and Morrill Road traverse the Plan Area from east to west.

Modesto Irrigation District (MID) provides water supply for the existing agricultural uses and maintains two easements in the Plan Area. An MID main canal with a crossing is located along the northern boundary of the Plan Area, adjacent south of off-site residential. Additionally, MID Lateral 6 traverses the southern portion of the Plan Area from northeast to southwest. A series of private irrigation ditches distribute the MID water from the on-site canals throughout the Plan Area. Figure 2.0-5 shows aerial imagery of the current existing site uses within the Plan Area.

City of Riverbank Groundwater System

The local groundwater basin and City groundwater use are described in the City's 2015 UWMP. A brief description of the groundwater basin and a discussion of historical and projected groundwater pumping are provided below.

WELL SYSTEM

City-Produced Groundwater. The City's sole source of water supply is groundwater. The City's potable groundwater is delivered through a pressurized distribution system. The City's water supply and distribution system includes nine active wells with pumps, two one million-gallon (MG) storage tanks with booster pump stations, and over 44 miles of pipeline 8 inches to 12 inches in diameter. There are also several miles of 4-inch and 6-inch diameter pipelines. The City's wells range in depth from 240 feet to 830 feet with an average depth of 440 feet. Yields from the wells range from 620 gallons per minute (gpm) at Well No. 2 to 1,500 gpm at Wells No. 10 and 12. The average yield is about 1,000 gpm, while the total available yield from all wells is 10,785 gpm (17,400 AFY if operated continuously). The average specific capacity of the City's wells between 1999 and 2015 was approximately 71 gpm per foot of drawdown.

Historical Groundwater Pumping. For the year 2015, the City produced about 3,422 AF of groundwater from the nine active wells (Well No. 1 has been removed from service). Additionally, the City produced about 3,750 AF of groundwater in the year 2016, and 4,040 AF in the year 2017. The annual production for each well has steadily increased over the past twenty years through 2017, which was the maximum groundwater pumped by the City at 6,851 AF. From 2007 through

2013, the City saw a noticeable decrease in annual pumping, even though there has been a steady population increase within the City's SOI. City staff believes the reduction in annual pumping is due to conservation efforts and the effect of the economic downturn.

The maximum daily use typically occurs in July or August. The largest monthly volume pumped was in July 2007, when 720 AF of ground water was produced. This is equal to about 23 AF per day or 5,260 gpm (7.6 million gallons per day [mgd]).

It is estimated that at full build-out, for the entire General Plan area (i.e., future demand within the City limits and General Plan areas), the projected water demand will be 14,610 AFY, or 3.4 times the 2010 production. Suggested facilities in the area include the addition of sixteen new groundwater wells (including Well No. 11), each at a capacity of 1,500 gpm, to meet 20 percent reserve capacity provisions and maximum daily demands, as well as emergency storage requirements at buildout conditions.

MODESTO SUBBASIN GROUNDWATER YIELD AND USAGE

As noted above, the estimated specific yield for the Modesto Subbasin is 8.8 percent. The estimated storage capacity to a depth of 300 feet is approximately 6,500,000 AF. The annual water demand for the basin was estimated at 590,000 AF in 2000. Groundwater accounted for 206,500 AF of the total supply. Total annual recharge to the basin was estimated at 310,000 AF, the largest component of which is from irrigation followed by precipitation.

Assuming no recharge, the current City of Riverbank groundwater usage of 6,851 AFY (in 2017) is less than 1 percent of the total annual subbasin withdrawals, and less than 0.1 percent of the total estimated storage capacity of the basin. At full build-out of the City, it is anticipated that the City of Riverbank annual groundwater requirements will be 3.4 times the current volume. It is uncertain when the full build-out scenario would occur, but the anticipated groundwater requirements would amount to less than 0.2 percent of the total amount of subbasin groundwater storage and less than 5 percent of the total annual basin recharge.

PAST AND PROJECTED FUTURE GROUNDWATER PUMPING

As noted above, the City's sole source of water supply is groundwater. A summary of the well capacities and other well data is shown in Table 3.9-2. It is noted that well #11 does not currently exist, but has been designed and is planned for the south side of Santa Fe Street, east of Central Avenue, in rural northeastern Riverbank. This site has been identified by the City as a potential future location that will be used, as needed, to accommodate the needs of current and future growth.

In general, groundwater in the County east of the San Joaquin River does not have the serious problems that exist in groundwater west of the River. The overall quality of the groundwater in the eastern County is good, although groundwater pumping around Modesto, improperly sealed wells, and past dairy farm practices has contributed to increasing concentrations of certain chemicals, including chloride, nitrate, arsenic, sodium, calcium, magnesium, carbonate, DBCP, bicarbonate, and sulfate. Total dissolved solids (TDS) values in DWR monitoring wells range from 60 to 8,300

milligrams per liter (mg/l), with a typical range of 200 to 500 mg/l. The Department of Health Services (DHS), which monitors Title 22 water quality standards, reports TDS values in 88 wells in the subbasin ranging from 60 to 860 mg/l, with an average value of 295 mg/l. The secondary MCL for TDS is 500 mg/l.

According to the City's 2015 UWMP, water quality at the City's wells has been historically excellent, with no Safe Drinking Water Act violations to date.

TABLE 3.9-2: CITY OF RIVERBANK WELL DATA

WELL NUMBER	*CONSTRUCTION DATE*	*COMPLETED DEPTH (FT.)*	*WELL CAPACITY (GPM)*	*SPECIFIC CAPACITY RANGE (GPM/FT. DRAWDOWN)*	*ESTIMATED PUMPING LEVEL (FT. BGS) AT MAX. PRODUCTION AND MAX. STATIC DTW*
2	1956	240	660	45 to 47	85
3	1965	420	625	24 to 35	90
4	1972	436	900	Up to 74	75
5	1978	385	900	56 to 81	90
6	1981	560	1,000	Up to 122	76
7	1990	N/A	1,200	Up to 75	82
8	2001	260	1,200	Unknown	116
9	2004	392	1,300	Up to 50	89
10	2007	830	1,500	N/A	N/A
12	2010	602	1,500	Up to 43	120
Total Well Capacity (gpm)			*10,785*	--	--
Firm Well Capacity (gpm)			*9,285*	--	--

NOTES: FT. BGS = FEET BELOW GROUND SURFACE; FIRM WELL CAPACITY IS THE TOTAL WELL CAPACITY WITH THE LARGEST WELL OUT OF SERVICE.
SOURCE: WATER SUPPLY ASSESSMENT (WEST YOST 2017).

GROUNDWATER QUALITY

As noted above, the City of Riverbank obtains its municipal water supply from groundwater wells located throughout the City. The latest complete drinking water quality report indicated no violation of any State Title 22 drinking water standards from well water samples set by State and federal agencies (City of Riverbank, 2003). This includes both secondary standards, which apply to the taste, odor or appearance of drinking water, as well as primary standards set to protect human health.

A recent assessment of the vulnerability of the City's drinking water sources to contamination was conducted in December 2001 (City of Riverbank 2003). The assessment concluded that the water sources are considered most vulnerable to the following activities, not associated with any detected contaminants in the City's water supply: gasoline stations, automotive repair/body shops, high-density housing, and waste dumps/landfills. Although recent water quality analyses

indicate that water from the wells is in compliance with State standards, the wells are still considered vulnerable to the aforementioned activities that are located near them.

Drainage

In general, the City of Riverbank drains from east to west. The City conveys runoff to multiple points along the Stanislaus River and to two MID canals (MID Main and Lateral No. 6). As indicated in the Storm Drain System Master Plan (Nolte, 2007c), the City storm drain system generally consists of the following facilities: collection piping ranging from 12 inches to 54 inches, four detention basins, six storm water pump stations, seven gravity storm water outfalls to the Stanislaus River, and one outfall to a MID Canal. MID and the City have entered into two storm drain discharge agreements authorizing a total of seven discharge points.

Typically, storm water is collected into detention basins and then pumped out within 24 to 48 hours following a storm. Additionally, the City enforces storm drain regulations established by the US EPA and the State of California. Storm drainage from industrial areas within the City is typically disposed of on site with the exception of the closed cannery, which may have drained into the sanitary sewer. Storm drainage from the newer commercial/industrial areas is either detained on site or released to the city system after the peak discharge has passed, or is disposed of on site.

MID distributes a combination of Tuolumne River water and groundwater via a network of storage facilities, canals, pipelines, pumps, drainage facilities and control structures. Additionally, the MID provides irrigation water to approximately 3,100 agricultural customers who irrigate close to 60,000 acres of permanent and annual crops. Water is transported to area farms via MID's 208 miles of canals and pipelines that operate on a gravity flow system. Surface water from the Tuolumne River flows downhill all the way from the beginning (MID's Upper Main Canal at La Grange) to the end of MID's canal system (several locations where there are drains into the San Joaquin, Stanislaus and Tuolumne rivers).

The MID water conveyance and distribution system was designed to deliver water by gravity flow from La Grange Dam on the east to the San Joaquin River on the west. This gravity conveyance system is energy efficient, but occasionally creates operational outflows to downstream tributaries. While these operational outflows are of relatively high quality and generate no environmental impacts, they are a lost resource to MID. The need for on-farm surface drainage within the District is minimal, as the majority of the land within the irrigation service area is well drained. Much of the land is irrigated with the use of level basins allowing agricultural water users to retain all irrigation water applied on-farm within the parcels' boundaries.

There have been substantial improvements to MID's main and secondary canals since they were built in the early part of the 20th century. In addition to the District facilities, irrigators constructed ditches and pipelines necessary to convey water from the District's canals to the irrigated fields.

Flooding

Flooding events can result in damage to structures, injury or loss of human and animal life, exposure of waterborne diseases, and damage to infrastructure. In addition, standing floodwater

can destroy agricultural crops, undermine infrastructure and structural foundations, and contaminate groundwater. The Plan Area is currently located in Zone X, which by definition indicates an area protected by levees from the 1% annual chance flood. The Plan Area is not located within the 200-year floodplain as delineated on the most recent 200-year flood plain maps for Riverbank. Figure 3.9-2 shows the 100- and 500-year flood boundaries.

Dam Failure

The Plan Area is located within the dam failure inundation area for New Melones Lake. Potential inundation from the New Melones Lake, Modesto Reservoir, and Don Pedro Reservoir are shown in Figure 3.9-3. Dam failure is generally a result of structural instability caused by improper design or construction, instability resulting from seismic shaking, or overtopping and erosion of the dam. Larger dams that are higher than 25 feet or with storage capacities over 50 AF of water are regulated by the California Dam Safety Act, which is implemented by the California Department of Water Resources, Division of Safety of Dams (DSD). The DSD is responsible for inspecting and monitoring these dams. The Act also requires that dam owners submit to the California Office of Emergency Services inundation maps for dams that would cause significant loss of life or personal injury as a result of dam failure. The County Office of Emergency Services is responsible for developing, maintaining, and implementing the Local Hazard Mitigation Plan that designates evacuation plans, the direction of floodwaters, and provides emergency information.

Stormwater Quality

Potential hazards to surface water quality include the following nonpoint pollution problems: high turbidity from sediment resulting from erosion of improperly graded construction projects, concentration of nitrates and dissolved solids from agriculture or surfacing septic tank failures, contaminated street and lawn run-off from urban areas, and warm water drainage discharges into cold water streams.

The most critical period for surface water quality is following a rainstorm which produces significant amounts of drainage runoff into streams at low flow, resulting in poor dilution of contaminates in the low flowing stream. Such conditions are most frequent during the fall at the beginning of the rainy season when stream flows are near their lowest annual levels. Besides the greases, oils, pesticides, litter, and organic matter associated with such runoff, heavy metals such as copper, zinc, and cadmium can cause considerable harm to aquatic organisms when introduced to streams in low flow conditions.

Urban stormwater runoff was managed as a non-point discharge (a source not readily identifiable) under the Federal Water Pollution Control Amendments of 1972 (PL 92-500, Section 208) until the mid-1980's. However, since then, the Federal Environmental Protection Agency has continued to develop implementing rules which categorize urban runoff as a point source (an identifiable source) subject to National Pollution Discharge Elimination System (NPDES) permits. Rules now affect medium and large urban areas, and further rulemaking is expected as programs are developed to meet requirements of Federal water pollution control laws.

Surface water pollution is also caused by erosion. Excessive and improperly managed grading, vegetation removal, quarrying, logging, and agricultural practices all lead to increased erosion of exposed earth and sedimentation of watercourses during rainy periods. In slower moving water bodies these same factors often cause a buildup of siltation, which ultimately reduces the capacity of the water system to percolate and recharge groundwater basins, as well as adversely affecting both aquatic resources and flood control efforts.

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

According to the California Water Quality Control Monitoring Council, which is part of California Environmental Protection Agency, Natural Resources, there are many areas within Stanislaus County which are considered Section 303(d) impaired waterbodies. In the regional vicinity of the Plan Area, Stanislaus River (Lower) and Dry Creek (tributary to Tuolumne River at Modesto, E Stanislaus County) are listed as Category 5 waterbodies. The criteria for a Category 5 waterbody include a water segment where standards are not met and a TMDL is required, but not yet completed, for at least one of the pollutants being listed for this segment. The Stanislaus River (Lower) assessed waterbody includes 59 acres listed as early as 1998 for Chlorpyrifos (Agriculture, Urban Runoff/Storm Sewers), Diazinon (Agriculture, Urban Runoff/Storm Sewers), Group A Pesticides (Agriculture), Mercury (Resource Extraction), Temperature, water (Source Unknown), and Unknown Toxicity (Source Unknown). The Dry Creek (tributary to Tuolumne River at Modesto, E Stanislaus County) assessed waterbody includes 34 acres listed as early as 2010 for Chlorpyrifos (Agriculture, Urban Runoff/Storm Sewers), Diazinon (Agriculture, Urban Runoff/Storm Sewers), Group A Pesticides (Agriculture), Mercury (Resource Extraction), Temperature, water (Source Unknown), and Unknown Toxicity (Source Unknown).

3.9.2 REGULATORY SETTING

There are a number of regulatory agencies whose responsibility includes the oversight of the water resources of the state and nation including the Federal Emergency Management Agency, the US Environmental Protection Agency, the State Water Resources Board, and the Regional Water Quality Control Board. The following is an overview of the federal, state and local regulations that are applicable to the proposed Project.

FEDERAL AND STATE

Clean Water Act (CWA)

The Clean Water Act (CWA), initially passed in 1972, regulates the discharge of pollutants into watersheds throughout the nation. Section 402(p) of the act establishes a framework for

regulating municipal and industrial stormwater discharges under the NPDES Program. Section 402(p) requires that stormwater associated with industrial activity that discharges either directly to surface waters or indirectly through municipal separate storm sewers must be regulated by an NPDES permit.

The State Water Resources Control Board (SWRCB) is responsible for implementing the Clean Water Act and does so through issuing NPDES permits to cities and counties through regional water quality control boards. Federal regulations allow two permitting options for stormwater discharges (individual permits and general permits). The SWRCB elected to adopt a statewide general permit (Water Quality Order No. 2013-001-DWQ-DWQ).

Federal Emergency Management Agency (FEMA)

Stanislaus County is a participant in the National Flood Insurance Program (NFIP), a Federal program administered by FEMA. Participants in the NFIP must satisfy certain mandated floodplain management criteria. The National Flood Insurance Act of 1968 has adopted as a desired level of protection, an expectation that developments should be protected from floodwater damage of the Intermediate Regional Flood (IRF). The IRF is defined as a flood that has an average frequency of occurrence on the order of once in 100 years, although such a flood may occur in any given year. Communities are occasionally audited by the Department of Water Resources to insure the proper implementation of FEMA floodplain management regulations.

200-Year Flood Protection in the Central Valley

Both State policy and recently enacted State legislation (Senate Bill 5) call for 200-year (0.5% annual chance) flood protection to be the minimum level of protection for urban and urbanizing areas in the Central Valley. Senate Bill 5 (SB5) requires that the 200-year protection be consistent with criteria used or developed by the Department of Water Resources. SB 5 requires all urban and urbanizing areas in the Sacramento and San Joaquin Valleys to achieve 200-year flood protection in order to approve development. The new law restricts approval of development after 2016 if “adequate progress” towards achieving this standard is not met. Urban and urbanizing areas protected by State-Federal project levees cannot use “adequate progress” as a condition to approve development after 2025. Adequate progress is defined as meeting all of the following:

1. The project scope, cost and schedule have been developed;
2. In any given year, at least 90% of the revenues scheduled for that year have been appropriated and expended consistent with the schedule;
3. Construction of critical features is progressing as indicated by the actual expenditure of budget funds;
4. The city or county has not been responsible for any significant delay in completion of the system; and
5. The above information has been provided to the DWR and the Central Valley Flood Protection Board and the local flood management agency shall annually report on the efforts to complete the project.

California Water Code

The Federal Clean Water Act 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 Clean Water Act. The Porter-Cologne Act grants the SWRCB and the RWQCBs authority and responsibility to adopt plans and policies, to regulate discharges to surface and groundwater, to regulate waste disposal sites and to require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substance, sewage, or oil or petroleum product.

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

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.*

Sustainable Groundwater Management Act

On September 16, 2014, Governor Jerry Brown signed into law a three-bill legislative package, composed of AB 1739 (Dickinson), SB 1168 (Pavley), and SB 1319 (Pavley), collectively known as the Sustainable Groundwater Management Act (SGMA). SGMA requires governments and water agencies of high and medium priority basins to halt overdraft and bring groundwater basins into balanced levels of pumping and recharge. Under SGMA, these basins should reach sustainability within 20 years of implementing their sustainability plans. For critically over-drafted basins, that will be 2040. For the remaining high and medium priority basins, 2042 is the deadline.

SGMA empowers local agencies to form Groundwater Sustainability Agencies (GSAs) to manage basins sustainably and requires those GSAs to adopt Groundwater Sustainability Plans (GSPs) for crucial groundwater basins in California. The Stanislaus and Tuolumne Rivers Groundwater Basin Association became the exclusive GSA for the Modesto Subbasin on May 27, 2017. As noted previously, the Stanislaus and Tuolumne Rivers Groundwater Basin Association became the exclusive GSA for the Modesto Subbasin on May 27, 2017. As detailed in the City's 2015 UWMP, the City's groundwater wells are located in the Modesto groundwater subbasin and the City is part of the Stanislaus and Tuolumne Rivers Groundwater Basin Association and was a part of the development of the IRGMP for the Modesto Subbasin in 2005.

National Pollutant Discharge Elimination System (NPDES)

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

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

These NPDES permits regulate discharges from publicly owned treatment works, industrial discharges, stormwater runoff, dewatering operations, and groundwater cleanup discharges. NPDES permits are issued for five years or less, and are therefore to be updated regularly. The rapid and dramatic population and urban growth in the Central Valley Region has caused a significant increase in NPDES permit applications for new waste discharges. To expedite the permit issuance process, the SWRCB has adopted several general NPDES permits, each of which regulates numerous discharges of similar types of wastes. The SWRCB has issued general permits for stormwater runoff from industrial and construction sites statewide. Stormwater discharges from

industrial and construction activities in the Central Valley Region can be covered under these general permits, which are administered jointly by the SWRCB and RWQCB.

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

The Water Quality Control Plan for the Sacramento-San Joaquin River Basins (Basin Plan) includes a summary of beneficial water uses, water quality objectives needed to protect the identified beneficial uses, and implementation measures. The Basin Plan establishes water quality standards for all the ground and surface waters of the region. The term "water quality standards," as used in the Federal Clean Water Act, includes both the beneficial uses of specific water bodies and the levels of quality that must be met and maintained to protect those uses. The Basin Plan includes an implementation plan describing the actions by the RWQCB and others that are necessary to achieve and maintain the water quality standards.

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

LOCAL

City of Riverbank General Plan

GOALS: COMMUNITY AND CHARACTER DESIGN

- DESIGN-15. Adequate, Safe, Well-Located Public Open Spaces, Parks Facilities, and Access to Features of the Natural Environment.
- DESIGN-19. Water Quality is Protected Throughout the Development Process and Occupation of the Site.

POLICIES: COMMUNITY AND CHARACTER DESIGN

- DESIGN-15.1. The City will identify land to create an open space system that links, parks, greenbelts, wildlife habitats, the Stanislaus River corridor, channels, and other critical areas. Impacts on the environmental functions of critical areas shall be considered in the development of open space system links.
- DESIGN-15.2. The City will require integration in the design of an open space system natural features that also provide flood protection, wildlife habitat, and other environmental enhancements.
- DESIGN-15.4. The City will require and pursue the preservation and enhancement of public access to riverfront recreation / natural areas while protecting sensitive habitats.

- DESIGN-19.1. The City will establish site design criteria for allowing natural hydrological systems to function with minimum or no modification.
- DESIGN-19.2. The City will promote the use of rain gardens, open ditches or swales, and pervious driveways and parking areas in site design to maximize infiltration of storm water and minimize runoff into environmentally critical areas.

GOALS: CONSERVATION AND OPEN SPACE

- CONS-4. Preserve Habitat Associated with the Stanislaus River While Increasing Public Access.
- CONS-5. Preserve the Natural Diversity in the Riverbank Planning Area.
- CONS-6. Maintain or Increase Surface and Groundwater Quality and Supply.

POLICIES: CONSERVATION AND OPEN SPACE

- CONS-4.2. Approved projects, plans, and subdivisions shall provide for collection, conveyance, treatment, detention, and other stormwater management measures in a way that does not decrease water quality or alter hydrology in the Stanislaus River or associated groundwater recharge areas.
- CONS-5.1. Approved projects, plans, and subdivisions shall avoid urban development of the existing Stanislaus River riparian corridor and other habitat that is rare, declining, unique, or supportive of special-status species.
- CONS-6.1. The City will require that waterways, floodplains, watersheds, and groundwater recharge areas are maintained in their natural condition, wherever feasible.
- CONS-6.2. The City will coordinate with appropriate regional, state, and federal agencies to address local sources of groundwater and soil contamination, including underground storage tanks, septic tanks, agriculture, and industrial uses.
- CONS-6.3. Approved projects, plans, and subdivisions in new growth areas shall incorporate natural drainage system design that emphasizes infiltration and decentralized treatment (rather than traditional piped approaches that quickly convey stormwater to large centralized treatment facilities).[1]
- CONS-6.4. The City will encourage the use of permeable surfaces for hardscape. Impervious surfaces such as driveways, streets, and parking lots will be minimized so that land is available for a natural drainage system to absorb stormwater, reduce polluted urban runoff, recharge groundwater, and reduce flooding.
- CONS-6.5. City street standards and parking requirements will balance the needs of transportation with the full range of community planning issues, including water quality, storm drainage, air quality, and other considerations.
- CONS-6.6. The City will encourage the use of recycled water for appropriate use, including but not limited to outdoor irrigation, toilet flushing, fire hydrants, and commercial and industrial processes.

[1] New growth areas are those included in the Riverbank Planning Area and outside of the City's Sphere of Influence as of January 1, 2007.

- CONS-6.7. The City will require mitigation measures, in coordination with the Regional Water Quality Control Board, as a part of approved projects, plans, and subdivisions to address the quality and quantity of urban runoff, including that attributable to soil erosion.

GOAL: SAFETY

- SAFE-1. Minimize the Loss of Life and Damage to Property Natural and Human-Caused Hazards.

POLICIES: SAFETY

- SAFE-1.6. The City will not allow the development of housing in the 100-year floodplain, as determined by the Federal Emergency Management Agency. The City may permit placement of non-residential improvements within the 100-year floodplain under a very limited set of circumstances. Any development project that includes structures or disturbances of natural features within the 100-year floodplain shall prove that the proposal does not:
    - Create danger to life and property due to increased flood heights or velocities caused by excavation, fill, roads, or intended use.
    - Create difficult emergency vehicle access in times of flood.
    - Create a safety hazard due to the unexpected heights, velocity, duration, rate of rise and sediment transport of the flood water expected at the site.
    - Create excessive costs in providing governmental services during and after flood conditions, including maintenance and repair of public facilities.
    - Interfere with the existing waterflow capacity of the floodway.
    - Substantially increase erosion and/or sedimentation.
    - Contribute to the deterioration of any watercourse or the quality of water in any body of water.

City of Riverbank Municipal Code

Chapter 151, Flood Plain Management, of the Municipal Code outlines the City's general food plain provisions, administration procedures, provisions for flood hazard reduction and conditions for variances.

Section 151.04 states that:

> *In order to accomplish its purposes, this subchapter includes regulations to:*
>
> *(A) Restrict or prohibit uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or flood heights or velocities;*
>
> *(B) Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;*

(C) Control the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel flood waters;

(D) Control filling, grading, dredging, and other development which may increase flood damage; and

(E) Prevent or regulate the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards in other areas.

3.9.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

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

- Violate any water quality standards or waste discharge requirements;
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of preexisting nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion, siltation, run-off or flooding on- or off-site;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site;
- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- Otherwise substantially degrade water quality;
- Place within a 100-year flood hazard area structures that would impede or redirect flood flows;
- Expose people or structures to significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; or
- Result in inundation by seiche, tsunami or mudflow.

IMPACTS AND MITIGATION

Impact 3.9-1: The proposed Project has the potential to violate water quality standards or waste discharge requirements during construction. (Less than Significant)

According to the United States Environmental Protection Agency, polluted stormwater runoff is a leading cause of impairment to the nearly 40 percent of surveyed U.S. water bodies which do not

meet water quality standards. Over land or via storm sewer systems, polluted runoff is discharged, often untreated, directly into local water bodies. Soil erosion is one of the most common sources of polluted stormwater runoff during construction activities. When left uncontrolled, storm water runoff can erode soil and cause sedimentation in waterways, which collectively result in the destruction of fish, wildlife, and aquatic life habitats; a loss in aesthetic value; and threats to public health due to contaminated food, drinking water supplies, and recreational waterways.

Mandated by Congress under the Clean Water Act, the NPDES Stormwater Program is a comprehensive two-phased national program for addressing the non-agricultural sources of stormwater discharges which adversely affect the quality of our nation's waters. The program uses the NPDES permitting mechanism to require the implementation of controls designed to prevent harmful pollutants, including soil erosion, from being washed by stormwater runoff into local water bodies. The construction activities for the proposed Project would be governed by the General Permit 2009-0009-DWQ (amended by 2010-0014-DWQ & 2012-0006-DWQ), which states:

> *"…Particular attention must be paid to large, mass graded sites where the potential for soil exposure to the erosive effects of rainfall and wind is great and where there is potential for significant sediment discharge from the site to surface waters. Until permanent vegetation is established, soil cover is the most cost-effective and expeditious method to protect soil particles from detachment and transport by rainfall. Temporary soil stabilization can be the single most important factor in reducing erosion at construction sites. The discharger is required to consider measures such as: covering disturbed areas with mulch, temporary seeding, soil stabilizers, binders, fiber rolls or blankets, temporary vegetation, and permanent seeding. These erosion control measures are only examples of what should be considered and should not preclude new or innovative approaches currently available or being developed. Erosion control BMPs should be the primary means of preventing storm water contamination, and sediment control techniques should be used to capture any soil that becomes eroded…"*

General Permit 2009-0009-DWQ (amended by 2010-0014-DWQ & 2012-0006-DWQ) further states that:

> *"Sediment control BMPs should be the secondary means of preventing storm water contamination. When erosion control techniques are ineffective, sediment control techniques should be used to capture any soil that becomes eroded. The discharger is required to consider perimeter control measures such as: installing silt fences or placing straw wattles below slopes. These sediment control measures are only examples of what should be considered and should not preclude new or innovative approaches currently available or being developed…Inappropriate management of run-on and runoff can result in excessive physical impacts to receiving waters from sediment and increased flows. The discharger is required to manage all run-on and runoff from a project site. Examples include: installing berms and other temporary run-on and runoff diversions…All measures must be periodically inspected, maintained and repaired to ensure that receiving water quality is protected. Frequent inspections coupled with thorough*

documentation and timely repair is necessary to ensure that all measures are functioning as intended…"

Grading, excavation, removal of vegetation cover, and loading activities associated with construction activities could temporarily increase runoff, erosion, and sedimentation. Construction activities also could result in soil compaction and wind erosion effects that could adversely affect soils and reduce the revegetation potential at construction sites and staging areas. To ensure that construction activities are covered under General Permit 2009-0009-DWQ (amended by 2010-0014-DWQ & 2012-0006-DWQ), projects in California must prepare a Stormwater Pollution Prevention Plan (SWPPP) containing Best Management Practices (BMPs) to reduce erosion and sediments to meet water quality standards. Such BMPs may include: temporary erosion control measures such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover. The BMPs and overall SWPPP is reviewed by the Regional Water Quality Control Board as part of the permitting process. The SWPPP, once approved, is kept on site and implemented during construction activities and must be made available upon request to representatives of the RWQCB and/or the lead agency.

In accordance with the NPDES Stormwater Program, Mitigation Measure 3.6-1 contained in Section 3.6 Geology and Soils, ensures compliance with existing regulatory requirements to prepare a SWPPP designed to control erosion and the loss of topsoil to the extent practicable using BMPs that the RWQCB has deemed effective in controlling erosion, sedimentation, runoff during construction activities. The RWQCB has stated that these erosion control measures are only examples of what should be considered and should not preclude new or innovative approaches currently available or being developed. The specific controls are subject to the review and approval by the RWQCB and are an existing regulatory requirement. Implementation of the proposed Project would have a ***less than significant*** impact relative to this topic.

MITIGATION MEASURE(S)

*Implement **Mitigation Measure 3.6-1**.*

Impact 3.9-2: The proposed Project has the potential to violate water quality standards or waste discharge requirements during operation. (Less than Significant with Mitigation)

The long-term operations of the proposed Project (all phases) could result in long-term impacts to surface water and groundwater quality from urban stormwater runoff. The proposed Project would result in new impervious areas associated with roadways, driveways, parking lots, buildings, and landscape areas. Normal activities in these developed areas include the use of various automotive petroleum products (i.e. oil, grease, and fuel), common household hazardous materials, heavy metals, pesticides, herbicides, fertilizers, and sediment. Within urban areas, these pollutants are generally called nonpoint source pollutants. The pollutant levels vary based on factors such as time between storm events, volume of storm event, type of uses, and density of people.

The City storm drain system consists of 12-inch to 54-inch diameter collection piping, four storm drainage park/detention basins, six storm water pump stations, seven gravity storm water outfalls to the Stanislaus River, and one outfall to a MID Canal. Typically, storm water is collected into detention basins and then pumped out within 24 to 48 hours following the storm.

Construction of the Project is anticipated to be phased and will be directed by demand and need. Because of this, temporary basins will be needed to handle storm water runoff until the permanent facilities are constructed. Water levels will not exceed four feet with two feet of freeboard for the temporary storm drain basins. The final design of all storm drain infrastructure improvements is subject to the review and approval of the City of Riverbank.

As shown in Figure 2.0-13 in Section 2.0, development of the proposed Project would include construction of a standalone drainage system that will detain all storm water runoff on-site in three detention basins. Because of the greenfield/rural residential designation within the Low Impact Development Design and Specifications Manual, maintaining existing hydrological conditions by conserving natural areas and existing drainage features is an important consideration, where possible. Impervious hardscape surfaces (i.e., conventional roofs and paving) will be designed to discharge to pervious areas to help filter and infiltrate the stormwater runoff. To further aid infiltration, native soil compaction in landscaped areas will be minimized. Land planning for CWSP, the preliminary drainage studies, and the preliminary drainage design are integrated to emphasize water conservation, protect water quality, help reduce flooding, and improve the overall watershed health. The proposed Low Impact Development (LID) practices are appropriate for the local and existing conditions found on the Plan Area. LID practices can greatly improve storm water quality by encouraging processes (such as sedimentation, filtration, or evapotranspiration) which reduce the pollutants present in urban and suburban runoff. The CWSP will utilize LID guidelines and specifications throughout the proposed storm drainage system to ensure better water quality, recharging of ground water supplies where feasible, and reduce community infrastructure costs.

The Project proposed to construct and use three major storm water detention basins. The first proposed basin will be located in the 11-acre expansion proposed for the Regional Sports Park and will drain the areas north of Morrill Road. The two remaining detention basins will be located north and south of the major collector road on the west side of the Plan Area.

The MU-1 property of the CWSP intends to utilize onsite storage and transmission to the existing offsite basin in the existing Crossroads development. Preliminary calculations that were computed for the site and existing grades helped to determine that the existing basin just east of Oakdale Road and south of MID Lateral 6 has approximately eight AF of additional storage capacity available to serve the proposed Project. It is the intent of the MU-1 property developer to use the basin east of Oakdale Road as well as on-site basins, underground storage, surface water storage in parking areas, and landscaped swale areas. The design and construction of these improvements will adhere to the City's LID Practices.

The MU-2 property will either need its own on-site collection system, or may tie into the collection facilities north or south of Morrill Road. The location of this connection will be determined as development occurs.

The MID Discharge Agreement currently on file for the existing Crossroads development will be modified to accommodate the proposed Project. The agreement currently permits the discharge out of existing basins into the MID Lateral 6 and will be modified to add the additional discharge from the proposed Project. On-site percolation will also be utilized if it is determined through soils analysis that storm water disposal is needed.

LID practices are most effective when they are dispersed throughout a development project. The CWSP has been designed with this in mind and features linear park drainage basins running north and south throughout the Plan Area. Treatment and attenuation of flows throughout the Plan Area can be achieved by draining sidewalks to vegetated filter strips, constructing parking lots with permeable pavement, and outletting roof leaders to the surface of a bio-retention area.

To summarize, the CWSP will conform to and utilize the LID practices set forth by the City of Riverbank in order to ensure impacts to surface water quality and groundwater quality are minimized. A combination of methods will be used in the Plan Area including underground filtration, which will be integrated into parking areas and landscape areas; bio-retention areas, such as the park basins; vegetated swales, which can be located in street landscape areas and parking lots; filter strips, designed to treat sheet flow from adjacent surfaces; and permeable pavement, which is a porous, load-bearing pavement that allows storm water runoff to pass through its surface layer. Implementation of LID practices will ensure that the resulting stormwater is filtered prior to infiltration into the underlying groundwater aquifer.

As noted previously, a recent assessment of the vulnerability of the City's drinking water sources to contamination was conducted in December 2001 (City of Riverbank 2003). The assessment concluded that the water sources are considered most vulnerable to the following activities, not associated with any detected contaminants in the City's water supply: gasoline stations, automotive repair/body shops, high-density housing, and waste dumps/landfills. Although recent water quality analyses indicate that water from the wells is in compliance with State standards, the wells are still considered vulnerable to the aforementioned activities that are located near them.

The proposed Project would include development of two mixed use areas ("MU-1" and "MU-2"). These mixed use areas would include 387,000 to 577,000 sf of mainly retail uses. Typical retail uses within the MU-1 and MU-2 areas may include the sale of food, groceries, dry goods, clothing, or other similar services and products. Additionally, proposed Project includes development of up to 388 high density housing units within the mixed use areas. In order to ensure that the proposed Project does not substantially degrade groundwater quality as a result of development of the proposed Project, including the proposed high density residential portion of the Project, extensive structural and non-structural BMPs would be implemented.

The MU-1 property intends to utilize onsite storage and transmission to the existing offsite basin in the existing Crossroads development. Preliminary calculations that were computed for the site and

existing grades helped to determine that the existing basin just east of Oakdale Road and south of MID Lateral 6 has approximately eight acre-feet of additional storage capacity available to serve the proposed Project. It is the intent of the MU-1 property developer to use an on-site basin in conjunction with underground storage of storm water, surface water storage in parking areas, and landscaped swale areas. The design and construction of these improvements will adhere to the City's LID Practices. The MU-2 property will either need its own on-site collection system, or may tie into the collection facilities north or south of Morrill Road. The location of this connection will be determined as development occurs.

The ongoing operational phase of the proposed Project requires the final discharge of stormwater into the on-site detention basins and to MID Lateral 6. The discharge of stormwater must be treated through BMPs prior to its discharge. The City of Riverbank implements best management practices to the extent they are technologically achievable to prevent and reduce pollutants. All new construction projects in the City of Riverbank are classified in the Low Impact Development Design and Specifications Manual based on their intended use (i.e., residential, Mixed Use 1 and 2, parking areas, etc.). The following design standards must be implemented for all project classifications:

- Mitigate peak run-off flow rates
- Conserve and create natural areas
- Minimize storm water pollutants of concern
- Protect slopes and channels
- Provide storm drain stenciling and signage
- Properly design outdoor material and trash storage areas
- Provide proof of ongoing BMP practices and maintenance
- Incorporate treatment control BMP's for water quality

Additionally, there are various non-structural and structural stormwater BMPs that can be implemented to reduce water pollution. Non-structural BMPs are typically aimed at prevention of pollution through public education and outreach. Non-structural BMPs include: school educational programs, newsletters, website information, commercial, billboards/advertisements, river cleanups, and storm drain stenciling. Structural BMPS are aimed at the physical collection, filtering, and detaining of stormwater. Structural BMPs include items such as drop inlet filters, vault filters, hydrodynamic separators, surface detention basins, and underground detention facilities.

The following mitigation measures would ensure that BMPs are implemented to reduce the amount of pollution in stormwater discharged from the Plan Area into the on-site MID facilities during the operational phase of the Project. The management of water quality through obtaining a General Industrial Stormwater Permit and implementing BMPs is intended to ensure that water quality does not degrade to levels that would violate water quality standards. These are existing regulatory requirements. Implementation of the proposed Project would have a ***less than significant*** impact relative to this topic.

MITIGATION MEASURE(S)

Mitigation Measure 3.9-1*: The Project applicant shall implement the following nonstructural BMPs that focus on preventing pollutants from entering stormwater:*

- *Pollution Prevention/Good Housekeeping*
    - *Prior to clearing, grading, and disturbances to the ground such as stockpiling, or excavation in each phase of the Project, the Project proponent shall develop a spill response and prevention plan as a component of (1) SWPPPs prepared for construction activities, (2) SWPPPs for facilities subject to the NPDES Stormwater Permit, and (3) spill prevention control and countermeasure plans for qualifying facilities. The spill response and prevention plan shall be implemented during all construction activities.*
    - *Streets and parking lots in all non-residential portions of the Project site shall be swept at least once every two weeks.*
- *Operation and Maintenance (O&M) of Treatment Controls*
    - *Prior to clearing, grading, and disturbances to the ground such as stockpiling, or excavation in each phase of the Project, the Project proponent shall develop an Operation and Maintenance (O&M) Plan for the storm drainage facilities to ensure long-term performance. The O&M plan shall incorporate the manufacturers' recommended maintenance procedures and include (1) provisions for debris removal, (2) guidance for addressing public health or safety issues, and (3) methods and criteria for assessing the efficacy of the storm drainage system. An annual report shall be submitted to the City certifying that maintenance of the facilities was conducted according to the O&M plan.*

Mitigation Measure 3.9-2*: The Project applicant shall implement the following structural BMPs that focus on preventing pollutants from entering stormwater, or alternative BMPs approved by the City of Riverbank. Implementation of BMPs apply to all new development including the right-of-way as appropriate.*

- *Extended Detention Facilities: Extended detention refers to the facilities proposed for the Project site that would detain and temporarily store stormwater runoff to reduce the peak rates of discharge to the storm drainage system. Detention of stormwater allows particles and other pollutants to settle and thereby potentially reduce concentrations and mass loading of contaminants in the discharge.*
- *Grassed Swales: A swale is a vegetated, open channel management practice designed to treat and attenuate stormwater runoff for a specified water quality volume. Stormwater runoff flowing through these channels is treated by being filtered through vegetation in the channel, through a subsoil matrix, and/or through infiltration into the underlying soils. Swales can be used throughout the proposed Project area where feasible in the landscape design to treat parking lot runoff.*
- *Proprietary Devices: There are a variety of commercially available stormwater treatment devices designed to remove contaminants from drainage once flows enter the conveyance*

systems. StormFilter™ units, or equivalent filtration-type systems, are recommended within the commercial and industrial areas as the main structural BMP for these areas. Bioswales are also recommended for streets and parking areas. Drop inlet filters should also be used to control drainage runoff water quality.

Impact 3.9-3: The proposed Project has the potential to substantially deplete groundwater supplies or interfere substantially with groundwater recharge. (Less than Significant)

The proposed Project would result in new impervious surfaces and could reduce rainwater infiltration and groundwater recharge. Infiltration rates vary depending on the overlying soil types. In general, sandy soils have higher infiltration rates and can contribute to significant amounts of ground water recharge; clay soils tend to have lower percolation potential; and impervious surfaces such as pavement significantly reduce infiltration capacity and increase surface water runoff.

Table 3.9-3 below identifies the soils in the Plan Area and the soils infiltration rate. The Plan Area has soils with hydrologic ratings of "A", "C", and "D".

TABLE 3.9-3: SOILS HYDROLOGIC RATING

DESCRIPTION	*SOURCE MATERIAL*	*RATING*
Greenfield sandy loam, deep over hardpan	moderately coarse and coarse textured alluvium derived from granitic and mixed rock sources	A
Hanford sandy loam	moderately coarse textured alluvium dominantly from granite	A
Hanford sandy loam, moderately deep over silt	moderately coarse textured alluvium dominantly from granite	C
Madera sandy loam	old alluvium derived from granitic rock sources	D
Oakdale sandy loam	alluvium derived from granitic rock sources	A

SOURCE: NCRS 2017.

The Plan Area features mostly Greenfield Sandy Loam and Madera Sandy Loam soil with a hardpan layer below, anywhere from 20- to 54-inches from the surface. Hardpan conditions affect most of Riverbank and call for special consideration when considering filtration options for projects. Infiltration is acceptable for the CWSP because the hardpan layer is at a depth less than 10 feet and the soils types are well draining.

Group "A" soils have low runoff potential when thoroughly wet, Group "C" soils have moderately high runoff potential when thoroughly wet, and Group "D" soils have high runoff potential when thoroughly wet. The Plan Area contains only 6.24 acres of Group "D" soils.

Development of the Plan Area with impervious surfaces could reduce rainwater infiltration and groundwater recharge further. The proposed 42 acres of park, open space, and Regional Sports Park uses will remain largely pervious. The collection of rainwater for those areas of impervious

surfaces will be routed into the proposed Project's storm drainage system and eventually flow into the Stanislaus River.

As detailed in the City's 2015 UWMP, the City's groundwater wells, including the proposed Project are, are located in the Modesto groundwater subbasin and the City is part of the Stanislaus and Tuolumne Rivers Groundwater Basin Association and was a part of the development of the IRGMP for the Modesto Subbasin in 2005. Based on the IRGMP for the Modesto Subbasin, and various groundwater investigations performed on groundwater availability in the subbasin, including the Self-Certification of Supply Reliability for Three Additional Years of Drought (as required by the State Water Resources Control Board in 2016), the City's groundwater supplies are expected to be highly reliable.

According to California's Groundwater Bulletin 118, updated February 27, 2004, the estimated specific yield for the Modesto Subbasin is 8.8 percent. The estimated storage capacity to a depth of 300 feet is approximately 6,500,000 AF. The annual water demand for the basin was estimated at 590,000 AF in 2000. Groundwater accounted for 206,500 AF of the total supply. Total annual recharge to the basin was estimated at 310,000 AF, the largest component of which is from irrigation followed by precipitation.

Assuming no recharge, the current City of Riverbank groundwater usage of 6,851 AFY (in 2017) is less than 1 percent of the total annual subbasin withdrawals, and less than 0.1 percent of the total estimated storage capacity of the basin. At full build-out, it is anticipated that the City of Riverbank annual groundwater requirements will be 3.4 times the current volume. It is uncertain when the full build-out scenario would occur, but the anticipated groundwater requirements would amount to less than 0.2 percent of the total amount of subbasin groundwater storage and less than 5 percent of the total annual basin recharge. For more information about the long-term groundwater supplies available to the City, refer to Chapter 3.14 this EIR.

While the Plan Area's soils have a range of low to high infiltration rates, much of the groundwater recharge in the basin occurs from irrigation followed by precipitation. Precipitation in the region is 13.81 inches, most of which falls between November through April. A portion of this annual rainfall infiltrates the soil and groundwater basin. Currently, the Regional Sports Park located at the northern end of the Plan Area is the only existing development within the CWSP boundary that has drainage facilities to accommodate storm water runoff. The facilities at the Regional Sports Park were developed as part of the overall plan for the Park and tie into the existing City of Riverbank facilities located in Morrill Road and Oakdale Road. Any remaining storm runoff flows onto adjacent properties as there are no other formal drainage systems in the area. Some water is retained on-site and is used for the agricultural uses that exist on the site. The runoff generally flows to the south and west as that is how the Plan Area naturally slopes.

Much of the Plan Area would be maintained as pervious surface. The proposed Project would provide approximately 42 acres of park, open space, and Regional Sports Park uses. Additionally, the front and back yard areas of the proposed single-family residential uses would remain pervious. The pervious surfaces that would be maintained would result in opportunities for groundwater recharge after the Plan Area is fully developed. Additionally, as discussed above, the

CWSP will utilize LID guidelines and specifications throughout the proposed storm drainage system to ensure better water quality, recharging of ground water supplies where feasible, and reduce community infrastructure costs. While the proposed Project would reduce the amount of pervious surfaces within the Plan Area, much of the site would be converted to impervious surface.

For the reasons mentioned above (and as discussed further in the Environmental Setting in Chapter 3.14), the proposed Project would not cause the substantial depletion of groundwater supplies or interfere substantially with groundwater recharge. As such, implementation of the proposed Project would have a **less than significant** impact relative to this topic.

Impact 3.9-4: The proposed Project has the potential to alter the existing drainage pattern in a manner which would result in substantial erosion, siltation, flooding, or polluted runoff. (Less than Significant)

Currently, runoff from within the Plan Area is collected in a system of MID canals and laterals, agricultural ditches, and roadside ditches. Public storm drain facilities are not currently installed in the agricultural fields.

Planned urbanization of the Plan Area would result in changes to land use, natural vegetation, and infiltration characteristics, and would introduce new sources of water pollutants, producing "urban runoff." Pollutants contained within urban runoff may include, but are not limited to sediment, oxygen-demanding substances (e.g., organic matter), nutrients (primarily nitrogen and phosphorus), heavy metals, bacteria, oil and grease, and toxic chemicals that can degrade receiving waters. Urban runoff pollutants may stem from erosion of disturbed areas, deposition of atmospheric particles derived from automobile or industrial sources, corrosion or decay of building materials, rainfall contact with toxic substances, decomposing plant materials, animal excrement, and spills of toxic materials on surfaces which receive rainfall and generate runoff. New residential uses within the Plan Area may also generate urban runoff from streets, driveways and parking areas. Yard areas may produce fertilizer wastes and/or bacterial contamination from animal excrement. New urban commercial development can generate urban runoff from parking areas, as well as any areas of hazardous materials storage exposed to rainfall.

The City of Riverbank adopted a Low Impact Development Design and Specifications Manual to assist developers in meeting State and local mandates for storm water drainage. All new construction projects in the City of Riverbank are classified in the Low Impact Development Design and Specifications Manual based on their intended use (i.e., residential, Mixed Use 1 and 2, parking areas, etc.). The following design standards must be implemented for all project classifications:

- Mitigate peak run-off flow rates
- Conserve and create natural areas
- Minimize storm water pollutants of concern
- Protect slopes and channels
- Provide storm drain stenciling and signage
- Properly design outdoor material and trash storage areas

- Provide proof of ongoing BMP practices and maintenance
- Incorporate treatment control BMP's for water quality

The proposed stormwater collection system functions through storm drainage collection, treatment, detention, and discharge. The exact sizing of the underground piping and basin will be engineered during the preparation of the improvement plans. The project proposes an on-site drainage system to collect the developed condition runoff in a combination of underground pipes and surface vegetated swales and then discharge the runoff into the three proposed major storm water detention basins. The dual use detention ponds have been designed with surface areas and volumes in compliance with City standards. The MID Discharge Agreement currently on file for the existing Crossroads development will be modified to accommodate the proposed Project. The agreement currently permits the discharge out of existing basins into the MID Lateral 6 and will be modified to add the additional discharge from the proposed Project.

With the design and construction of the improvements included in the proposed storm drainage system, the proposed Project would have a **less than significant** impact relative to this topic.

Impact 3.9-5 The proposed Project has the potential to otherwise substantially degrade water quality. (Less than Significant)

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

According to the California Water Quality Control Monitoring Council, which is part of California Environmental Protection Agency, Natural Resources, there are many areas within Stanislaus County which are considered Section 303(d) impaired waterbodies. In the regional vicinity of the Plan Area, Stanislaus River (Lower) and Dry Creek (tributary to Tuolumne River at Modesto, E Stanislaus County) are listed as Category 5 waterbodies. The criteria for a Category 5 waterbody include a water segment where standards are not met and a TMDL is required, but not yet completed, for at least one of the pollutants being listed for this segment. The Stanislaus River (Lower) assessed waterbody includes 59 acres listed as early as 1998 for Chlorpyrifos (Agriculture, Urban Runoff/Storm Sewers), Diazinon (Agriculture, Urban Runoff/Storm Sewers), Group A Pesticides (Agriculture), Mercury (Resource Extraction), Temperature, water (Source Unknown), and Unknown Toxicity (Source Unknown).

In accordance with the NPDES Stormwater Program, Mitigation Measure 3.6-1 contained in Section 3.6 Geology and Soils requires an approved SWPPP designed to control erosion and the loss of topsoil to the extent practicable using BMPs that the RWQCB has deemed effective in controlling erosion, sedimentation, runoff during construction activities. Such BMPs may include: temporary erosion control measures such as silt fences, staked straw bales/wattles, silt/sediment

basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover. The BMPs and overall SWPPP is reviewed by the Regional Water Quality Control Board as part of the permitting process. The SWPPP, once approved, is kept on site and implemented during construction activities and must be made available upon request to representatives of the RWQCB and/or the lead agency. The RWQCB has stated that these erosion control measures are only examples of what should be considered and should not preclude new or innovative approaches currently available or being developed. The specific controls are subject to the review and approval by the RWQCB.

The ongoing operational phase of the proposed Project (all phases) requires discharge of stormwater into the on-site detention basins, which would ultimately flow into the MID system. The discharge of stormwater must be treated through BMPs prior to its discharge. Mitigation Measures contained in this section and Section 3.6, Geology and Soils, would ensure that BMPs are implemented to reduce the amount of pollution in stormwater discharged from the Plan Area into the on-site detention basins, which would ultimately flow into the MID system during the operational phase of the project. There are various non-structural and structural stormwater BMPs that can be implemented to reduce water pollution. Non-structural BMPs are typically aimed at prevention of pollution through public education and outreach. Non-structural BMPs include: school educational programs, newsletters, website information, commercial, billboards/advertisements, river cleanups, and storm drain stenciling. Structural BMPS are aimed at the physical collection, filtering, and detaining of stormwater. Structural BMPs include items such as drop inlet filters, vault filters, hydrodynamic separators, surface detention basins, and underground detention facilities. The management of water quality through obtaining a General Industrial Stormwater Permit and implementing BMPs is intended to ensure that water quality does not degrade to levels that would violate water quality standards.

The use of BMPs are intended to treat runoff close to the source during the construction and long term operational phase of the Project to reduce stormwater quality impacts. The mitigation measures listed below are existing regulatory requirements. Implementation of proposed Project would have a **less-than-significant** impact relative to this topic.

MITIGATION MEASURE(S)

Implement **Mitigation Measure 3.6-1** (from Section 3.6 Geology and Soils) and **Mitigation Measures 3.9-1 and 3.9-2** (from Section 3.9 Hydrology and Water Quality).

Impact 3.9-6 Place housing or structures that would impede/redirect flows within a 100-year, or 200-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map. (Less than Significant)

As shown on Figure 3.9-2, the Plan Area is not within a 100-year flood zone as delineated by FEMA. The Plan Area is not located within the 200-year floodplain as delineated on the most recent 200-year flood plain maps for Riverbank. Development of the proposed Project would not place

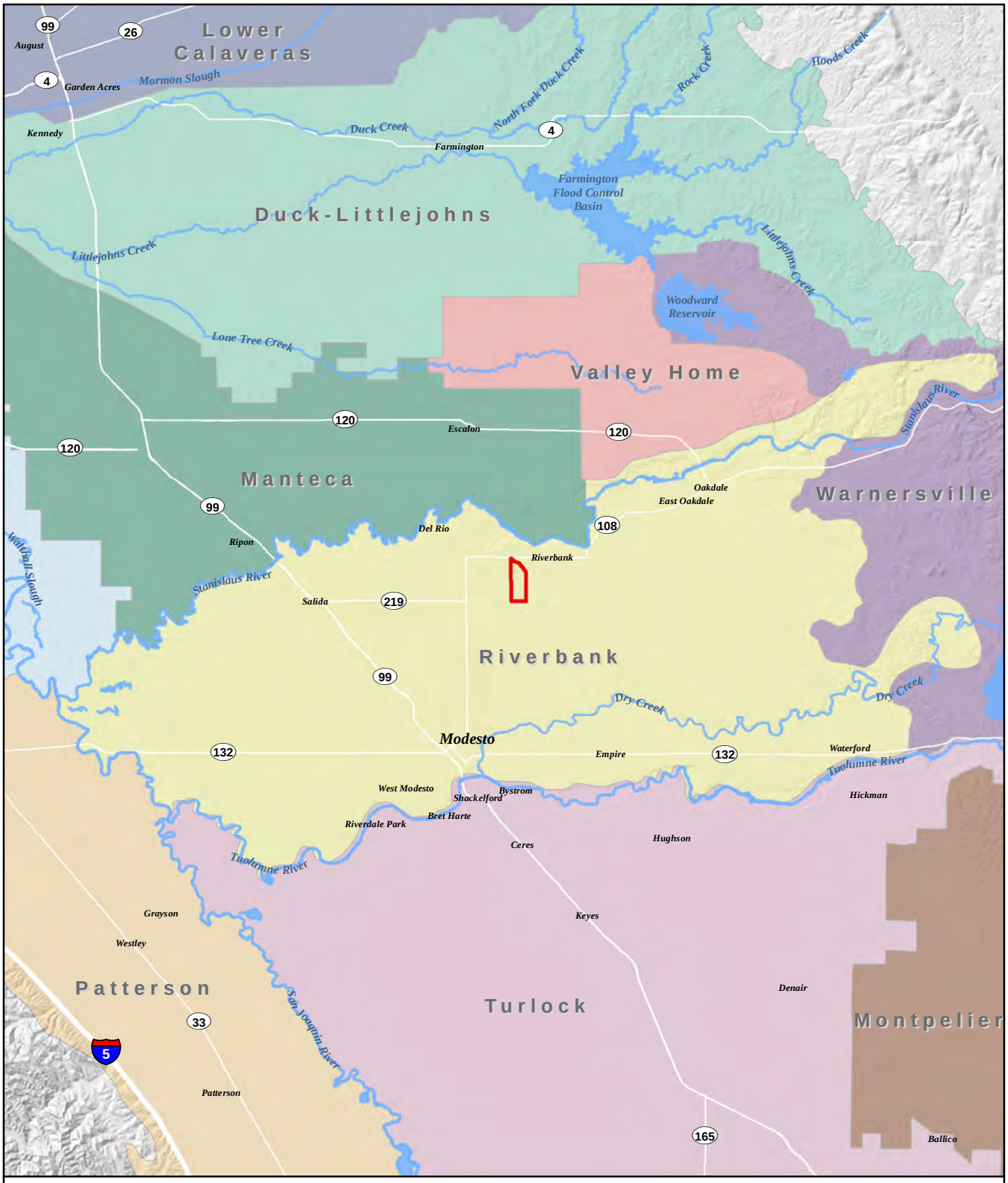
housing or structures in a 100-year or 200-year flood hazard area. As a result, the proposed Project would have a **less-than-significant** impact relative to this topic.

Impact 3.9-7 The proposed Project has the potential to expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam. (Less than Significant)

The Plan Area is subject to flood inundation as a result of dam failure. Figure 3.9-3 shows areas that are susceptible to dam inundation. Dam failure is generally a result of structural instability caused by improper design or construction, instability resulting from seismic shaking, or overtopping and erosion of the dam. As discussed previously, larger dams that are higher than 25 feet or with storage capacities over 50 AF of water are regulated by the California Dam Safety Act, which is implemented by the California Department of Water Resources, DSD. The DSD is responsible for inspecting and monitoring these dams. The Act also requires that dam owners submit to the California Office of Emergency Services inundation maps for dams that would cause significant loss of life or personal injury as a result of dam failure. The County Office of Emergency Services is responsible for developing and implementing a Dam Failure Plan that designates evacuation plans, the direction of floodwaters, and provides emergency information.

Regular inspection by DSD and maintenance by the dam owners ensure that the dams are kept in safe operating condition. As such, failure of these dams is considered to have an extremely low probability of occurring and is not considered to be a reasonably foreseeable event.

The Plan Area is not subject to flood inundation as a result of levee failure. The proposed Project is not anticipated to result in the exposure people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam. This impact is considered **less than significant**.



Legend

- Project Boundary

Hydrologic Area

- Duck-Littlejohns
- Lower Calaveras
- Manteca
- Montpelier
- Patterson
- Riverbank
- Turlock
- Valley Home
- Warnersville
- undefined

N

0 1 2

Miles

1:300,000

CROSSROADS WEST SPECIFIC PLAN

Figure 3.9-1: Watershed Map

Source: CalWater 2.2.1. Basemap: ArcGIS Online Topographic Map Service. Map date: March 28, 2017.

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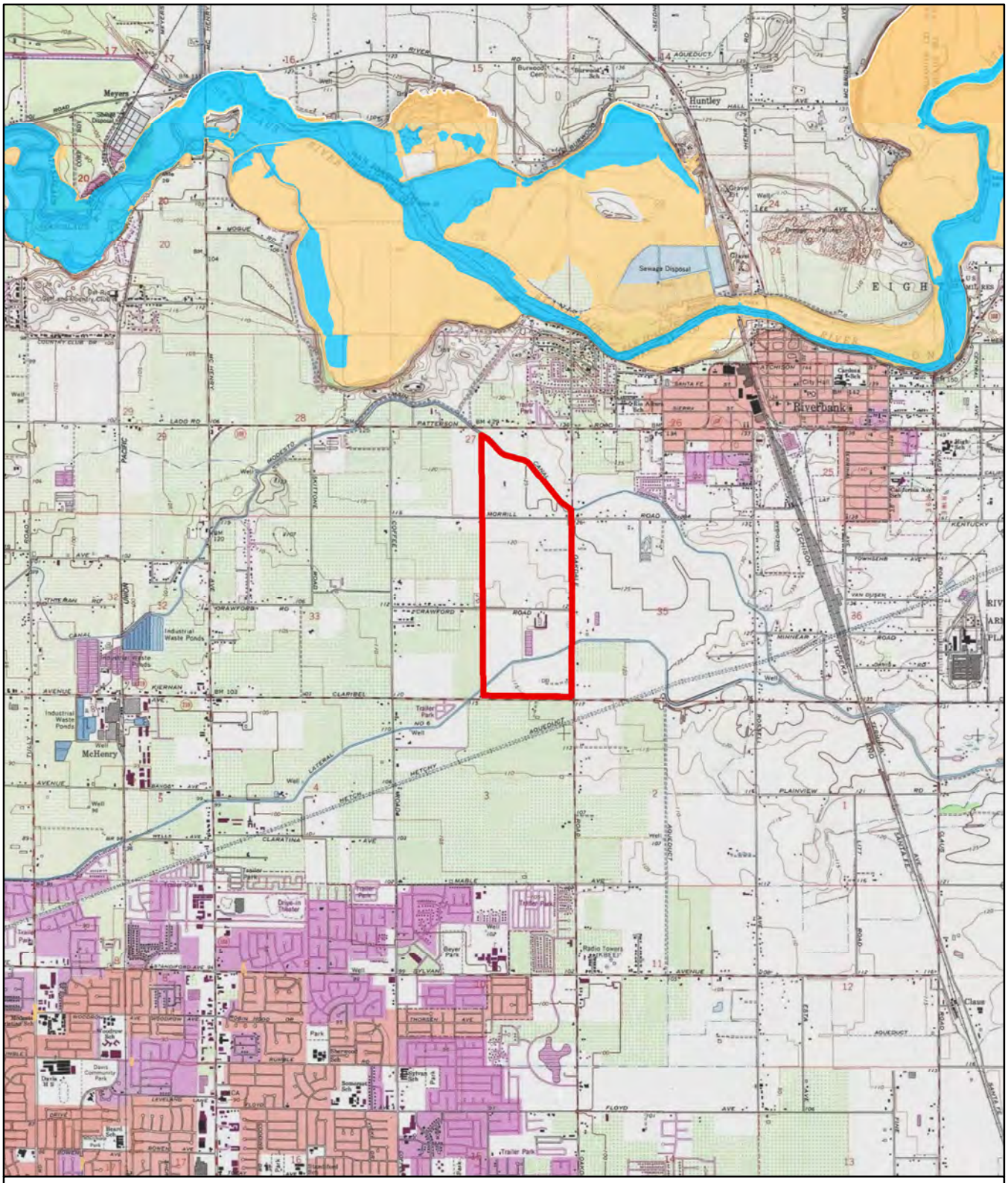

CROSSROADS WEST SPECIFIC PLAN

Figure 3.9-2: Project Site FEMA Flood Insurance Rate Map

Legend

- Project Boundary
- 1% Annual Chance Flood Hazard (100-yr Flood Zone)
- 0.2% Annual Chance Flood Hazard (500-yr Flood Zone)

N

0 1,000 2,000
Feet

1:50,000

Source: FEMA's National Flood Hazard Layer (Official). Basemap: ArcGIS Online Topographic Map Service. Map date: March 28, 2017.

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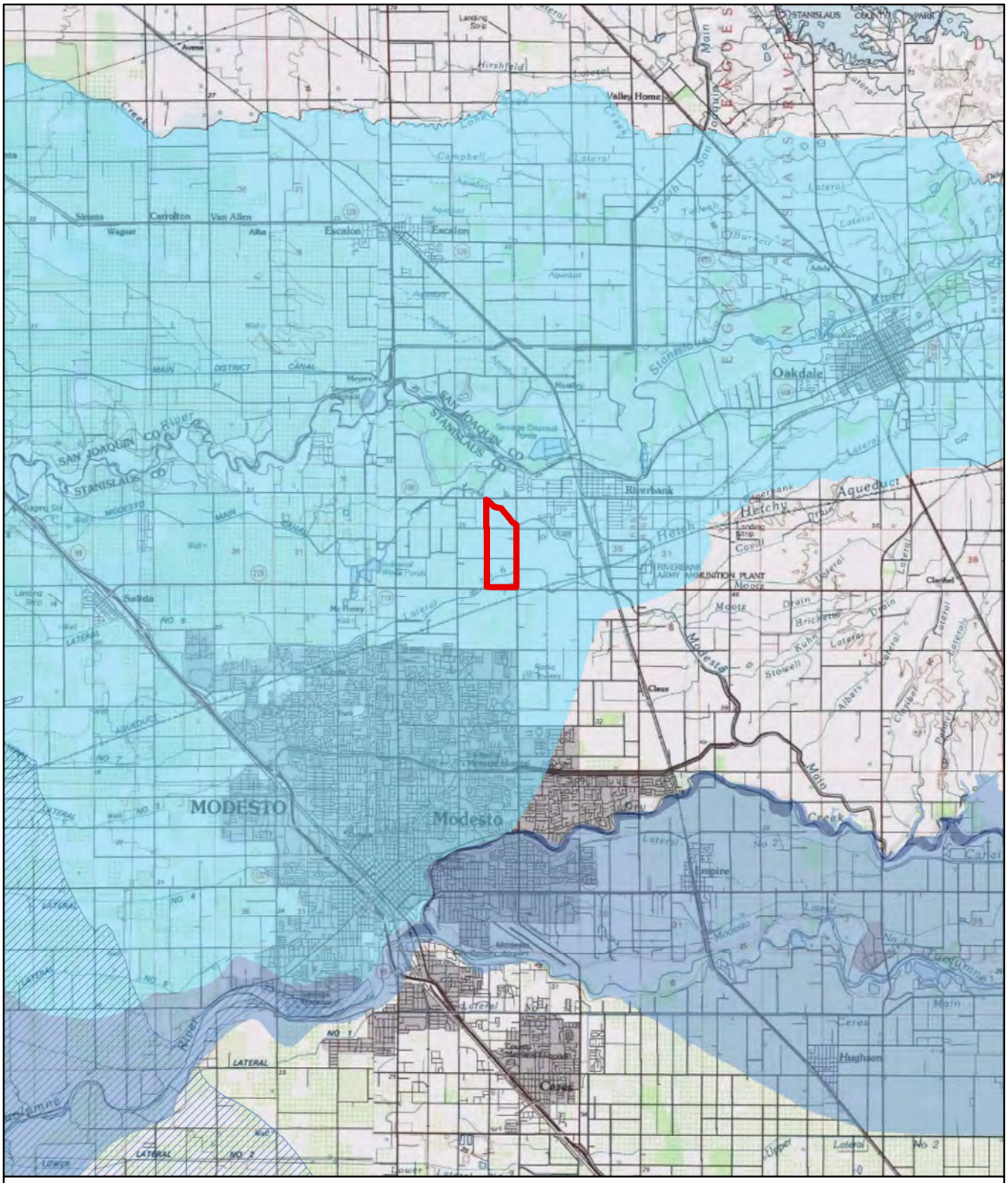

Legend

- Project Boundary

Dam Name

- San Luis
- Don Pedro
- New Melones
- Modesto Reservoir

N

0 ½ 1

Miles

1:150,000

CROSSROADS WEST SPECIFIC PLAN

Figure 3.9-3: Dam Inundation Areas

Source: California OES. Basemap: ArcGIS Online Topographic Map Service. Map date: March 28, 2017.

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This section describes the existing land uses in the Plan Area and in the surrounding area, describes the applicable land use regulations, and evaluates the environmental effects of implementation of the proposed Project related to land use, population, and housing. Information in this section is based on information provided in the Project materials, site surveys conducted by De Novo Planning Group in 2016, and the following reference documents: *City of Riverbank General Plan 2005-2025* (City of Riverbank, 2009), the *City of Riverbank Final Environmental Impact Report for the 2005-2025 General Plan Update* (City of Riverbank, 2008), the City of Riverbank Code of Ordinances, Chapter 153 - Zoning (City of Riverbank, 2016), and the *Stanislaus County General Plan 2015* (County of Stanislaus, 2016). There were no comments received during the NOP scoping process related to this environmental topic.

3.10.1 ENVIRONMENTAL SETTING

EXISTING PHYSICAL ENVIRONMENT

The City of Riverbank is located in northern Stanislaus County, approximately 7.5 miles northeast of Modesto and 16.2 miles southeast of Manteca. State Route (SR) 108 travels through Riverbank near the northern edge of the City, and the City is located along the southern bank of the Stanislaus River. Riverbank occupies approximately 2,500 acres of land (3.8 square miles).

Plan Area

The Plan Area is located within the unincorporated area of Stanislaus County. The approximately 390-acre Plan Area is adjacent to the City of Riverbank (City) limits to the north and east. The Plan Area is contained within the City's existing Sphere of Influence (SOI). The Plan Area is located south of SR 108, approximately 1.45 miles southwest of downtown Riverbank. Figures 2.0-1 and 2.0-2 found in Section 2.0 illustrate the regional location and Project vicinity.

The nine parcels that comprise the Plan Area are primarily used for agricultural operations including dairy operations, row crops, and fallow land. Seven home sites exist within the Plan Area and many of them have accessory structures on site including storage buildings, shop buildings, and barn structures. Additionally, an approximately 11-acre regional City park, the Riverbank Sports Complex, is currently developed in the northeastern portion of the Plan Area, near the intersection of Morrill Road and Oakdale Road. Crawford Road and Morrill Road traverse the Plan Area from east to west. Figure 2.0-5 shows aerial imagery of the current existing site uses within the Plan Area.

Modesto Irrigation District (MID) provides water supply for the existing agricultural uses and maintains two easements in the Plan Area. An MID main canal with a crossing is located along the northern boundary of the Plan Area, adjacent south of off-site residential. Additionally, MID Lateral 6 traverses the southern portion of the Plan Area from northeast to southwest. A series of private irrigation ditches distribute the MID water from the on-site canals throughout the Plan Area. Figure 2.0-5 shows aerial imagery of the current existing site uses within the Plan Area.

Surrounding Land Uses

Uses immediately adjacent to the southeast, south, southwest, and west of the Plan Area include agricultural uses and residential uses, including ranchettes and large estates lots. Other existing uses east of the southerly portion of the Plan Area include a single family residential subdivision and a commercial center. Existing residential subdivisions also exist to the north, northeast, and east of the Plan Area. Other nearby uses include a commercial shopping center located east of the Plan Area at the intersection of Claribel Road and Oakdale Road.

DEMOGRAPHICS

Population Trends

The City experienced a population increase from 2005 to 2010 of 2,692 persons (13.5%) as shown in Table 3.10-1. During the period from 2010 to 2015, population continued to increase in the City, resulting in a total population of 24,122 in 2015.

TABLE 3.10-1: POPULATION GROWTH

YEAR	POPULATION	CHANGE	PERCENT CHANGE
2005	19,986	--	--
2010	22,678	2,692	13.5%
2015	24,122	1,444	6.4%

SOURCES: RIVERBANK HOUSING ELEMENT 2014-2023 AND US CENSUS 2015.

Housing Stock

Table 3.10-2 summarizes the growth of the City's housing stock between 2000 and 2015. The number of housing units increased from 4,698 in 2000 to 7,069 in 2010. This represents 50.5 percent growth in the City's housing stock. The City's housing stock totaled 7,443 units in 2015.

TABLE 3.10-2: HOUSING UNIT GROWTH

YEAR	HOUSING UNITS	CHANGE	PERCENT CHANGE
2000	4,698	--	--
2010	6,785	2,087	44.4%
2015	7,443	658	9.7%

SOURCES: RIVERBANK HOUSING ELEMENT 2014-2023 AND US CENSUS 2000, 2015.

Persons Per Dwelling Unit

According to the most recent U.S. Census (2011-2015), the average number of persons residing in a dwelling unit in the City of Riverbank is 3.32.

3.10.2 REGULATORY SETTING

STATE

California Planning and Zoning Law Government Code Section 65300

California Government Code Section 65300 et seq. establishes the obligation of cities and counties to adopt and implement general plans. The general plan is a comprehensive, long-term, and general document that describes plans for the physical development of a jurisdiction and of any land outside its boundaries that, in the jurisdiction's judgment, bears relation to its planning. The general plan addresses a broad range of topics, including, at a minimum, land use, circulation, housing, conservation, open space, noise, and safety. In addressing these topics, the general plan identifies the goals, objectives, policies, principles, standards, and plan proposals that support the jurisdiction's vision for the area. The general plan is a long-range document that typically addresses the physical character of an area over a 20-year period. Although the general plan serves as a blueprint for future development and identifies the overall vision for the planning area, it remains general enough to allow for flexibility in the approach taken to achieve the plan's goals.

The State Planning and Zoning Law (California Government Code Section 65800 et seq.) establishes that zoning ordinances, which are laws that define allowable land uses within a specific district, are required to be consistent with the general plan and any applicable specific plans. When amendments to the general plan are made, corresponding changes in the zoning ordinance may be required within a reasonable time to ensure the land uses designated in the general plan would also be allowable by the zoning ordinance (Government Code, Section 65860, subd. [c]).

LOCAL

City of Riverbank General Plan

As noted above, General Plans are prepared under a mandate from the State of California, which requires each city and county to prepare and adopt a comprehensive, long-term general plan for its jurisdiction and any adjacent related lands. State law requires General Plans to address seven mandated components: circulation, conservation, housing, land use, noise, open space, and safety. In addition to those components required by State law, the Riverbank General Plan also contains optional elements, including Community Character and Design, Economic Development, Public Facilities and Services, and Air Quality.

The City's General Plan is comprehensive, long-range, and general. The fundamental purpose of this General Plan is to protect and enhance Riverbank's quality of life, and address important local concerns as the City grows and changes. The purpose of the General Plan is to achieve the vision of the community according to a set of guiding principles. Taken together, the General Plan Vision Statement and Guiding Principles describe the purpose and direction of the General Plan.

General Plan Land Use Map (2015): The City of Riverbank General Plan designates the Plan Area as Lower Density Residential (LDR 0.0 to 8.0 dwelling units per acre [du/ac]), Medium Density

Residential (MDR 8.0 to 16.0 du/ac), Higher Density Residential (HDR 16.0 or more du/ac), Mixed Use (MU), Civic (C), Community Commercial (CC), and Park (P). Table 2.0-2 shows the City land use designations and acreages for the Plan Area. Figure 2.0-6a in Section 2.0 depicts the Riverbank General Plan land use designations for the Plan Area and the surrounding areas. The General Plan contains the following descriptions for these land uses:

Lower Density Residential (LDR): The LDR land use designation includes single-family homes, one to each lot, developed at a net density of up to eight dwelling units per acre. Lots would be at least 5,000 square feet in size. This category would primarily include detached units, but attached single-family units may be permitted, provided each unit has ground-floor living area and private outdoor open space.

Medium Density Residential (MDR): The MDR land use designation includes small-lot, single-family detached homes, attached single-family homes, and other residences developed at a net density of between eight and 16 dwelling units per acre. Lots would be at least 2,500 square feet in size.

Higher Density Residential (HDR): The HDR land use designation allows for all types of attached single-family and multi-family housing, including condominiums, apartment buildings, townhouses, and other similar residential structures developed at a net density of 16 or more dwelling units per acre.

Mixed Use (MU): The MU land use designation would accommodate neighborhood-scale retail uses, offices, personal and commercial services, and similar land uses. This is the primary category for Riverbank to accommodate neighborhood-serving retail, services, offices, and similar needs during the buildout of this General Plan. As such, this land use classification is anticipated to be mainly non-residential. However, the MU designation also explicitly allows for higher-density residential development in a vertical or horizontal mixed-use setting. This could include residential development above (on upper stories of a building) or adjacent to commercial operations on the same property.

Civic (C): The C land use designation includes civic and cultural land uses of various types. Examples include schools, places of worship, public facilities and infrastructure, community halls, and similar cultural and civic land uses. Where such land uses occur within an existing or planned neighborhood, they shall be designed to be compatible with the surrounding neighborhood. They shall be designed to be pedestrian friendly, include publicly accessible areas (where appropriate), and shall unify rather than divide neighborhoods. Certain land uses included in this category, such as day care centers, public facilities and services, place of religious worship, and other appropriate land uses will be allowed in other land use designations, as well, according to standards established in Riverbank's zoning ordinance.

Community Commercial (CC): The CC land use designation is anticipated to be developed for retail, employment, and commercial services. These areas are located along major roadways on the periphery of existing and planned neighborhoods. The maximum floor-area-ratio (FAR) is 0.3.

Park (P): The P land use designation includes active and passive parkland of all types. New and existing neighborhoods in Riverbank shall have close and convenient access to community parks, neighborhood parks, and smaller "pocket parks." This category can include public plazas, town squares, tot lots, parkways, linear parks, and other park space configurations.

City of Riverbank General Plan Policies: General Plan policies associated with specific environmental topics (aesthetics, air quality, agriculture, biological resources, cultural resources, geology/soils/mineral resources, hazards, hydrology/water quality, noise, public services/recreation, transportation, utilities, etc.) are discussed in the relevant chapters of this EIR.

City of Riverbank Municipal Code, Chapter 153 - Zoning

The purpose of Chapter 153, Zoning, of the City's Municipal Code is to serve the public health, safety and general welfare and to provide the economic and social advantages resulting from an orderly planned use of land resources, in accordance with the City of Riverbank General Plan.

Zoning Map: The Zoning Map identifies zoning districts within the City at the parcel level. The Zoning Map does not designate the Plan Area because the site is not located within the City limits. The proposed project will include pre-zoning, which will go into effect once annexation occurs.

Stanislaus County General Plan

As noted above, state law requires General Plans to address seven mandated components: circulation, conservation, housing, land use, noise, open space, and safety. The County has also adopted one optional element, the Agricultural Element. The Stanislaus County General Plan is comprehensive, long-range, and general. The goals of the Stanislaus County General Plan support the Board of Supervisors Priorities of A Safe Community, A Healthy Community, A Strong Local Economy, Effective Partnerships, A Strong Agricultural Economy/Heritage, A Well Planned Infrastructure System, and Efficient Delivery of Public Services by providing a land-use framework responsive to the needs and conditions of the unincorporated area of Stanislaus County in compliance with State General Plan laws.

General Plan Land Use Map (2016): The Stanislaus County General Plan Land Use Map designates the Plan Area as Agriculture (AG). Below is a general description of this County designated land use within the Plan Area. The County General Plan land use designations for the Plan Area and surrounding area are shown on Figure 2.0-6b.

Agriculture (AG): The AG land use designation recognizes the value and importance of agriculture by acting to preclude incompatible urban development within agricultural areas. The designation is intended for areas of land which are presently or potentially desirable for agricultural usage. These are typically areas which possess characteristics with respect to location, topography, parcel size, soil classification, water availability and adjacent usage which, in proper combination, provide a favorable agricultural environment. This designation establishes agriculture as the primary use in land so designated, but allows dwelling units, limited agriculturally related commercial services,

agriculturally related light industrial uses, and other uses which by their unique nature are not compatible with urban uses, provided they do not conflict with the primary use.

Stanislaus County, Title 21 – Zoning

The purpose of Title 21, Zoning, is to contain information on zones, staff approval permits, and standards and regulations relating to such issues as infrastructure, natural resources, safety, and parking.

Zoning Map: The Zoning Map identifies zoning districts within the County at the parcel level. The Zoning Map designates the Plan Area as General Agriculture 40 Acre (A-2-40). Below is a general description of County zoning within the Plan Area. The County General zoning designations for the Plan Area and surrounding area are shown on Figure 2.0-6c.

General Agriculture 40 Acre (A-2-40): The A-2-40 zone supports and enhances agriculture as the predominant land use in the unincorporated areas of the County. These district regulations are also intended to protect open-space lands pursuant to Government Code Section 65910.

Stanislaus Local Agency Formation Commission (LAFCo)

The Stanislaus LAFCo is responsible for coordinating orderly reorganization to local jurisdictional boundaries, including annexations. Annexation of the Plan Area to the City of Riverbank is subject to LAFCo approval, and LAFCo will review the proposed annexation for consistency with LAFCo's Policies and Procedures. An annexation can only be approved if the applicable Municipal Services Review (MSR) and Plan for Services is current and demonstrates that adequate services can be provided to the annexed area. An MSR, produced as part of a LAFCo's regular review of municipal services, consists of a written statement of its determinations regarding infrastructure, growth and population projections, financing, cost avoidance, rate restructuring, shared facilities, government structure options, management efficiency, and local accountability and governance. An annexation proposal must include a Plan for Services consistent with the applicable MSR and must demonstrate that the City is capable of providing the required services. The City must pre-zone the lands to be annexed.

Stanislaus LAFCo has adopted Policies and Procedures for annexation and detachment to and from all agencies within their jurisdiction. Policy 3, Environmental Assessment, of the General Powers and Policy Guidelines documents states that the Commission will insure that all proposals are reviewed in compliance with the California Environmental Quality Act (CEQA) and Commission adopted CEQA procedures. Policy 4, Priorities for Annexation and Formation, of the General Powers and Policy Guidelines documents states that the Commission will consider the following priorities or guidelines for annexation and formation with the provision that overriding circumstances must be stated in exceptions (Government Code Section 56001):

A. Annexation to an existing city or district instead of formation of a new agency.
B. Annexation to a city rather than a district if both can provide comparable services.

C. Annexation to a multi-purpose district in preference to annexation to a single purpose district.
D. Formation of a new political entity as the last and least desirable alternative.

Policy 5, Pre-zoning for City Annexation, of the General Powers and Policy Guidelines documents states that the Commission will require prezoning designations for city annexation, pursuant to Government Code Section 56375. The adopted procedure for prezoning is as follows:

A. Such prezoning shall also require that the city become the lead agency for environmental review for the proposed change and shall prepare and submit to LAFCO the environmental assessment forms in sufficient time for LAFCO's Executive Officer to comment before a determination of environmental effects is made.

Additionally, Policy 6, Concurrent City-District Annexation, of the General Powers and Policy Guidelines documents states that, for any annexation within a community served by a variety of community-based local agencies, the Commission shall require concurrent annexation to all of the local agencies serving the community (concurrent city/district annexations).

Policy 17, Island Annexations, of the General Powers and Policy Guidelines documents states that the Commission will consider this policy as it relates to provisions intended to streamline island annexations as set forth in in Government Code Section 56375.3. Policy 20, Logical Boundaries, of the General Powers and Policy Guidelines documents states that the following shall be considered as favorable factors in determining logical boundaries for a proposal:

A. The Commission encourages the creation of logical boundaries and proposals which do not create islands and would eliminate existing islands, corridors, or other distortion of existing boundaries.
B. Proposals which are orderly and will either improve or maintain the agency's logical boundary are encouraged.

Policy 20, Development of Vacant or Underutilized Land Prior to Annexation of Additional Territory, of the General Powers and Policy Guidelines documents states that the following shall be considered with regards to development of vacant or underutilized land prior to annexation of additional territory:

A. Development of existing vacant non-open space and non-prime agricultural land within an agency's boundaries is encouraged prior to further annexation and development.
B. Annexation proposals to cities or districts providing urban services of undeveloped or agricultural parcels shall show: that urban development is imminent for all or a substantial portion of the proposal area; that urban development will be contiguous with existing or proposed development; and that a planned, orderly, and compact urban development pattern will result. Proposals resulting in leapfrog, noncontiguous urban development patterns shall not be approved.

3.10.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

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

- Physically divide an established community;
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect;
- Conflict with any applicable habitat conservation plan or natural community conservation plan;
- Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure);
- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere; or
- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

IMPACTS AND MITIGATION MEASURES

Impact 3.10-1: The proposed Project would not physically divide an established community. (No Impact)

The Plan Area is located along the western portion of the City of Riverbank's adopted SOI and is adjacent to the City limits to the north and east. Lands adjacent to the project site west and south consist of undeveloped agricultural land and ranchettes. The Plan Area would result in an extension of urban uses into an area of the City that was envisioned for development by the City's General Plan. The proposed Project would provide roadways and pedestrian pathways to connect the Plan Area to the existing circulation system and to allow access to and from the site. Development of the Plan Area would not result in physical barriers, such as a highway, wall, or other division, that would divide an existing community, but would serve as an orderly extension of existing and planned development. The Project would have **no impact** in regards to the physical division of an established community.

Impact 3.10-2: The proposed Project would not conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project adopted to avoid or mitigate an environmental effect. (Less than Significant)

Land use plans, policies, and regulations that govern the land uses in the Plan Area and have jurisdiction over the Project include the Stanislaus County General Plan, Stanislaus County Zoning Code, Riverbank General Plan, Riverbank Municipal Code, and the Stanislaus LAFCo Policies and Procedures Document.

STANISLAUS COUNTY GENERAL PLAN AND STANISLAUS COUNTY ZONING CODE

As noted previously, the Plan Area is currently within Stanislaus County, and within the City of Riverbank's SOI. The Stanislaus County General Plan and Stanislaus County Zoning Code are the current governing documents for the Plan Area. The Project would result in the annexation of the Plan Area into the City of Riverbank. The annexation area would include the entire Plan Area. Upon annexation of the Plan Area, the Stanislaus County General Plan and Stanislaus County Zoning Code would not apply to the Project.

RIVERBANK GENERAL PLAN

Since general plans often contain numerous policies emphasizing differing legislative goals, a development project may be "consistent" with a general plan, taken as a whole, even though the project appears to be inconsistent or arguably inconsistent with some individual policies. (*Sequoyah Hills Homeowners Association v. City of Oakland* (1993) 23 Cal.App.4th 704, 719.) The Project is consistent with the key land use issues and development concepts of the Riverbank General Plan which provide for logical growth of the City, emphasize community form, scale, and identify, encourage attractive, sustainable neighborhoods, support public transit and bicycle and pedestrian circulation, encourage housing opportunity, promote employment and economic development, encourage a mix of land uses that balance public services and fiscal sustainability, and promote access to open space.

The Project is located adjacent to the City limits, is located within the City's SOI, and will provide for housing opportunities, and employment-generating uses that will promote employment and economic development, and a mix of land uses, while providing an attractive, sustainable neighborhood. The Project is consistent with the General Plan land use policies that encourage an orderly pattern of development that is contiguous with the City boundary, require growth to contribute to a diversified economic base and balance between employment and housing opportunities, and allowing for recreation uses.

The land uses as proposed are not consistent with the General Plan. When land uses are not consistent with a General Plan there are two courses of action: 1) the uses are not allowed due to the inconsistency, or 2) the land uses are changed through an amendment to the General Plan to create consistency. The proposed Project would require a City of Riverbank General Plan

Amendment to the Land Use Element to change land uses in the Plan Area. Changes to the Land Use Element would include changing the Plan Area from LDR, MDR, HDR, MU, C, CC, and P to Specific Plan (SP). The proposed General Plan land use change is shown in Section 2.0, Figure 2.0-7a. Approval of the General Plan amendment would ensure that the proposed Project would be substantially consistent with the Riverbank General Plan land use requirements and would have a **less than significant** impact relative to the Riverbank General Plan. It is noted that consistency with Riverbank General Plan policies and programs related to environmental topics other than land use (aesthetics, biological resources, cultural resources, geology/soils, hazards, hydrology/water quality, noise, public services, transportation, and utilities) are discussed in the relevant sections of this EIR.

RIVERBANK ZONING CODE

The Riverbank Zoning Code implements the General Plan. The Plan Area is currently within the jurisdiction of Stanislaus County. The Stanislaus LAFCo will require the Plan Area to be pre-zoned by the City of Riverbank in conjunction with the proposed annexation. The City's pre-zoning will include the Specific Plan (SP) zoning designation. The pre-zoning would go into effect upon annexation into the City of Riverbank. The proposed pre-zoning for the Plan Area is shown on Figure 2.0-7b. These proposed zone changes would ensure that zoning would be consistent with the proposed General Plan designation within the Plan Area. Section 153.311 of the City's Zoning Code outlines the required contents of a specific plan proposed for the SP district. The purpose of the SP district is to provide a vehicle for implementing the City's General Plan on an area specific basis. A specific plan prepared in accordance with the standards set forth in Chapter 153 of the City's Zoning Code is intended to serve as a regulatory document, consistent with the General Plan. In the event of an inconsistency, or conflict between an adopted specific plan and comparable regulations of the Municipal Code, the specific plan will prevail. The City will review each component of the proposed Project as plans (improvement plans, building plans, site plans, etc.) are submitted for final approval to ensure that they are consistent with the City's Zoning ordinance. Approval of the zone change would ensure that the proposed Project would be consistent with the Zoning Code and will have a **less than significant** impact relative to this topic.

STANISLAUS LAFCO

The Plan Area is currently in an unincorporated portion of Stanislaus County adjacent to the City of Riverbank's city limits, within the adopted Riverbank SOI and within the City of Riverbank Urban Services Boundary. The proposed Project requires annexation of approximately 390 acres into the city limits.

LAFCo is serving as a responsible agency for this EIR pursuant to their *LAFCo Procedures for the California Environmental Quality Act (Adopted June 20, 2007).* When LAFCo is a Responsible Agency under CEQA, in order to approve the annexation, the Commission will certify that it has reviewed the Lead Agency's environmental documents and, if required, adopt findings for approval and statements of overriding considerations in accordance with Sections 15091 and

15903 of the CEQA Guidelines. The City of Riverbank has consulted LAFCo. The consultation process included sending LAFCo a copy of the Notice of Preparation during the 30-day public review period. LAFCo will also be sent a copy of the Draft EIR during the 45-day public review period and the Final EIR for their use in the annexation process. If the Executive Officer determines that the Draft and Final EIR are adequate for their use, he/she will prepare, or cause to be prepared, "draft" Findings and Statements, findings for approval, and statements of overriding considerations for LAFCo Commission consideration. If the LAFCo Commission approves the annexation, the Executive Officer will file a Notice of Determination within five working days after deciding to approve the annexation.

The Stanislaus LAFCo will review the proposed annexation for consistency with the *Stanislaus LAFCo Policies and Procedures*. These policies and procedures govern Stanislaus LAFCo determinations regarding annexations to all agencies. The following policies will be reviewed as part of the annexation process by the Stanislaus LAFCo.

A. Policy 3, Environmental Assessment, of the General Powers and Policy Guidelines documents states that the Commission will insure that all proposals are reviewed in compliance with the California Environmental Quality Act (CEQA) and Commission adopted CEQA procedures.

   This Draft EIR is in compliance with CEQA and the Commission adopted CEQA procedures.

B. Policy 4, Priorities for Annexation and Formation, of the General Powers and Policy Guidelines documents states that the Commission will consider the following priorities or guidelines for annexation and formation with the provision that overriding circumstances must be stated in exceptions (Government Code Section 56001):

   a. Annexation to an existing city or district instead of formation of a new agency.
   b. Annexation to a city rather than a district if both can provide comparable services.
   c. Annexation to a multi-purpose district in preference to annexation to a single purpose district.
   d. Formation of a new political entity as the last and least desirable alternative.

   The Plan Area is currently within Stanislaus County, and within the City of Riverbank's SOI. The proposed Project would result in the annexation of the APN's described in Table 2.0-1 (Section 2.0, Project Description) into the City of Riverbank. This EIR analyzes the annexation of the parcels into the City of Riverbank, and it is intended to be used by Stanislaus LAFCo for their consideration of the annexation. Annexation of the Plan Area is consistent with the growth plans for the City of Riverbank.

C. Policy 5, Pre-zoning for City Annexation, of the General Powers and Policy Guidelines documents states that the Commission will require prezoning designations for city annexation, pursuant to Government Code Section 56375. The adopted procedure for prezoning is as follows:

a. Such prezoning shall also require that the city become the lead agency for environmental review for the proposed change and shall prepare and submit to LAFCO the environmental assessment forms in sufficient time for LAFCO's Executive Officer to comment before a determination of environmental effects is made.

The Plan Area is currently within the jurisdiction of Stanislaus County. The County zoning for the entire Plan Area is A-2-40. The Stanislaus County LAFCo will require the Plan Area to be pre-zoned by the City of Riverbank in conjunction with the proposed annexation. The City's pre-zoning for the Plan Area will include the SP zoning designation. The pre-zoning would go into effect upon annexation into the City of Riverbank.

C. Policy 6, Concurrent City-District Annexation, of the General Powers and Policy Guidelines documents states that, for any annexation within a community served by a variety of community-based local agencies, the Commission shall require concurrent annexation to all of the local agencies serving the community (concurrent city/district annexations).

This EIR includes an assessment of the impacts of the proposed Project and proposed annexation on service agencies. The proposed commercial and residential development and the proposed annexation would not result in any significant, adverse impacts to any of the service agencies such that it would seriously impair operation.

D. Policy 17, Island Annexations, of the General Powers and Policy Guidelines documents states that the Commission will consider this policy as it relates to provisions intended to streamline island annexations as set forth in in Government Code Section 56375.3. Policy 20, Logical Boundaries, of the General Powers and Policy Guidelines documents states that the following shall be considered as favorable factors in determining logical boundaries for a proposal:

a. The Commission encourages the creation of logical boundaries and proposals which do not create islands and would eliminate existing islands, corridors, or other distortion of existing boundaries.
b. Proposals which are orderly and will either improve or maintain the agency's logical boundary are encouraged.

The proposed annexation includes lands contiguous with the current city limits and parcels within the SOI. Parcels proposed for annexation do not involve the elimination of islands.

E. Policy 20, Development of Vacant or Underutilized Land Prior to Annexation of Additional Territory, of the General Powers and Policy Guidelines documents states that the following shall be considered with regards to development of vacant or underutilized land prior to annexation of additional territory:

a. Development of existing vacant non-open space and non-prime agricultural land within an agency's boundaries is encouraged prior to further annexation and development.
b. Annexation proposals to cities or districts providing urban services of undeveloped or agricultural parcels shall show: that urban development is imminent for all or a substantial portion of the proposal area; that urban development will be contiguous with existing or proposed development; and that a planned, orderly, and compact urban development pattern will result. Proposals resulting in leapfrog, noncontiguous urban development patterns shall not be approved.

The proposed annexation area is within the SOI and lands within the Plan Area are designated for development under the General Plan. However, the Plan Area is currently in agricultural operation and agricultural resources are located adjacent to the proposed annexation area. There are no Williamson Act contracts on or adjacent to the Plan Area. However, the Department of Conservation Farmland Mapping and Monitoring Program (FMMP) delineates important farmland on and adjacent to the Plan Area. The proposed annexation area is not designated by the City of Riverbank for agricultural uses. However, the Stanislaus County General Plan designated the site for agricultural uses. The proposed Project would result in the development of existing open space lands for non-open space uses. The Stanislaus LAFCo requires applicants to prepare a "Plan for Agricultural Preservation" for annexation proposals that will impact agricultural lands. Mitigation Measure 3.2-2 in Section 3.2 of this Draft EIR requires compliance with LAFCo's Agricultural Preservation Policy.

Impacts related to the development of existing open space lands were analyzed in the Riverbank General Plan EIR. The General Plan EIR determined that impacts would be significant and unavoidable. According to the General Plan EIR, although City and County policies would support continued agricultural uses and would require urban development to fund agricultural conservation easements and other programs, no additional feasible mitigation is available.

The policies discussed above are intended to ensure orderly reorganization to local jurisdictional boundaries, including annexations. Ultimately, LAFCo will determine whether the proposed annexation would first require an update to the Riverbank Municipal Service Review in order to approve the annexation. This LAFCo policy was not specifically adopted to avoid or mitigate an environmental effect, rather it is intended to ensure orderly and logical reorganization to local jurisdiction boundaries, including annexations. The proposed Project is consistent with LAFCo policies adopted to address environmental impacts, with the exception of impacts to agricultural lands. Section 3.2, Agricultural Resources, addresses impacts related to conversion of agricultural land. As such, implementation of the proposed Project will have a **less than significant** impact relative to this topic.

Impact 3.10-3: The proposed Project would not significantly conflict with an applicable habitat conservation plan or natural community conservation plan. (No Impact)

No natural community conservation plans or habitat conservation plans have been adopted in Stanislaus County relevant to the Plan Area. The project would not conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan. Implementation of the Project would have **no impact** relative to this topic.

Impact 3.10-4: The proposed Project has the potential to induce substantial population growth in an area. (Less than Significant)

Section 15126.2(d) of the CEQA Guidelines requires that an EIR evaluate the growth-inducing impacts of a proposed action. A growth-inducing impact 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 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 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 (e.g., commercial, industrial, or governmental enterprises) 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 (*Napa Citizens for Honest Government v. Napa County Board of Supervisors* (2001) 91 Cal.App.4th 342). 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 or wastewater treatment/collection in an area where this service historically limited growth could be considered growth-inducing.

The State CEQA 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 may result in significant, adverse environmental impacts. Potential 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.

Components of Growth: The timing, magnitude, and location of land development and population growth in a region are based on various interrelated land use and economic variables. Key variables include regional economic trends, market demand for residential and non-residential uses, land availability and cost, the availability and quality of transportation facilities and public services, proximity to employment centers, the supply and cost of housing, and regulatory policies or conditions. Since the general plan of a community defines the location, type, and intensity of growth, it is the primary means of regulating development and growth in California.

GROWTH EFFECTS OF THE PROJECT

Direct Population Growth: The proposed Project includes residential units that would result in direct population growth. The U.S. Census (2015) estimates 3.32 people per household in Riverbank. The proposed Project includes a range of density and intensity, which would allow for between 1,539 to 2,852 units. The concept of providing a range of units is intended to provide design and planning flexibility to accommodate real market demands for housing. Based on the maximum number of residential units that could be built in the Plan Area (2,852 units), the population could increase by an estimated 9,469 persons. The range of population growth is estimated to be between 5,110 to 9,469 persons.

The Riverbank General Plan designates land uses to ensure a balance between new residential development and jobs-creating uses. The Riverbank 2014-2023 Housing Element assumed that development of the Crossroads West Specific Plan would occur within the City's SOI. To help facilitate the annexation and adoption of the Crossroads West Specific Plan, Program 1.1 and 1.1b are included in the City's 2014-2023 Housing Element Goals and Policies. Program 1.1 requires the City to identify sufficient land at various densities to allow for the construction of sufficient housing to meet its legally adopted State Department of Housing and Community Development (HCD) Regional Housing Need Allocation. Program 1.1b requires the City to maintain its vacant sites inventory by facilitating the development of the Crossroads West Specific Plan, and designate therein sufficient sites to accommodate the dwelling units identified in Table V-5 of the Housing Element and specifically, those sites designated for higher density development in order to meet the regional housing needs of lower income households. Table V-5 of the Riverbank 2014-2023 Housing Element shows that approximately 2,155 housing units (1,755 LDR, 200 MDR, and 200 HDR) would be developed as part of the Crossroads West Specific Plan Project.

It is noted that the Crossroads West Specific Plan is designed to provide maximum flexibility for design and response to market demands, so there are various other hypothetical combinations of residential development, but no more units than the maximum allowed would occur without an amendment approved by the City. The Crossroads West Specific Plan Project is estimated to create

between 1,539 (minimum) to 2,852 units (maximum). It is noted that because the proposed residential portion of the Crossroads West Specific Plan would not likely buildout to the maximum allowed densities, this EIR assumes average densities are achieved. The Housing Element estimate of 2,155 units for the Plan Area is within the estimated range of units for this site. The range of units proposed in the Crossroads West Specific Plan Project provides an approximate 30% variance for more or less units based on real market demand.

Indirect Population Growth: As described above, projects that include employment generating uses have the potential to result in indirect population growth through the creation of jobs or the extension of infrastructure into areas that were not previously served. Implementation of the proposed Project would provide job growth to the area. It is anticipated that local employment would be increased to provide administrative, management, visitor-serving areas, and retail services. The proposed Project is expected to require both full-time and part-time employees. It is anticipated that the employment growth would be met both by existing residents and through the attraction of new residents.

The proposed Project would establish a variety of business opportunities that can support the skilled and educated workforce of Riverbank and the local area. The proposed Project would not result in indirect population growth beyond the City's planned capacity. Therefore, the proposed Project is not anticipated to exceed the planned growth (directly or indirectly) in the area beyond what is anticipated in the City of Riverbank General Plan. While the proposed Project will result in growth, it is not anticipated to significantly induce growth. Implementation of the proposed Project will have a **less than significant** impact relative to this topic.

Impact 3.10-5: The proposed Project has the potential to displace substantial numbers of people or existing housing. (Less than Significant)

There are approximately seven residential structures located in the Plan Area. Development of the Project would remove all seven housing units, and add up to 2,852 new residential units. The loss of the seven units would be more than offset by the creation of the new housing. The Project will have a **less than significant** impact related to this topic.

This section provides a general description of the existing noise sources in the Project vicinity, a discussion of the regulatory setting, and identifies potential noise impacts associated with the proposed Project. Project impacts are evaluated relative to applicable noise level criteria and to the existing ambient noise environment. Mitigation measures have been identified for significant noise-related impacts.

3.11.1 ENVIRONMENTAL SETTING

KEY TERMS

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given area consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of noise.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, defined as ten times the logarithm of the ratio of the sound pressure squared over the reference pressure squared.
CNEL	Community noise equivalent level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
Frequency	The measure of the rapidity of alterations of a periodic acoustic signal, expressed in cycles per second or Hertz.
Impulsive	Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.
L_{dn}	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
L_{eq}	Equivalent or energy-averaged sound level.
L_{max}	The highest root-mean-square (RMS) sound level measured over a given period of time.
$L_{(n)}$	The sound level exceeded a described percentile over a measurement period. For instance, an hourly L_{50} is the sound level exceeded 50 percent of the time during the one hour period.
Loudness	A subjective term for the sensation of the magnitude of sound.

Noise Unwanted sound.

SEL Sound exposure levels. A rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy into a one-second event.

FUNDAMENTALS OF ACOUSTICS

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels, but are expressed as dB, unless otherwise noted.

The decibel scale is logarithmic, not linear. In other words, two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70-dBA sound is half as loud as an 80-dBA sound, and twice as loud as a 60-dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (L_{eq}), which corresponds to a steady-state A weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The L_{eq} is the foundation of the composite noise descriptor, L_{dn}, and shows very good correlation with community response to noise.

The day/night average level (L_{dn}) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment. CNEL is similar to L_{dn}, but includes a +5 dB penalty for evening noise. Table 3.11-1 lists several examples of the noise levels associated with common situations.

TABLE 3.11-1: TYPICAL NOISE LEVELS

COMMON OUTDOOR ACTIVITIES	*NOISE LEVEL (DBA)*	*COMMON INDOOR ACTIVITIES*
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft)	--100--	
Gas Lawn Mower at 1 m (3 ft)	--90--	
Diesel Truck at 15 m (50 ft), at 80 km/hr (50 mph)	--80--	Food Blender at 1 m (3 ft) Garbage Disposal at 1 m (3 ft)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft)	--70--	Vacuum Cleaner at 3 m (10 ft)
Commercial Area Heavy Traffic at 90 m (300 ft)	--60--	Normal Speech at 1 m (3 ft)
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing

SOURCE: CALTRANS, TECHNICAL NOISE SUPPLEMENT, TRAFFIC NOISE ANALYSIS PROTOCOL. SEPTEMBER 2013.

EFFECTS OF NOISE ON PEOPLE

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction;
- Interference with activities such as speech, sleep, and learning; and
- Physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a 1-dBA change cannot be perceived;
- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference;
- A change in level of at least 5-dBA is required before any noticeable change in human response would be expected; and
- A 10-dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6 dB per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.

EXISTING NOISE LEVELS

Existing and Surrounding Land Uses

The approximately 390-acre Crossroads West Specific Plan (CWSP) area (also-known-as "Project site" or "Plan Area") is located in the unincorporated area of Stanislaus County. The area is bounded by the Modesto Irrigation District (MID) Main Canal and the City of Riverbank city limits to the north, Claribel Road to the south, and Oakdale Road to the east. The western boundary of the Plan Area is identified by property lines approximately 0.5-miles west of Oakdale Road.

The Plan Area is comprised of nine parcels, which are primarily used for agricultural operations. These parcels also include seven residences and the Riverbank Sports Complex. Most of the residences include on-site storage, shops, and barn structures. The Riverbank Sports Complex is an 11-acre regional City park located near the intersection of Morrill Road and Oakdale Road. MID Lateral 6 traverses the Plan Area south of Crawford Road, from southwest to northeast.

Agricultural and residential uses area located to the west and south of the Plan Area. These uses include ranchettes and large estates. Residential subdivisions are located to the north and east of the Plan Area. A commercial shopping center is located southeast of the Plan Area, at the intersection of Claribel Road and Oakdale Road.

Existing Ambient Noise Levels

To quantify the existing ambient noise environment in the Project vicinity, short-term and continuous (24-hour) noise level measurements were conducted on the Project site between April 25th and 26th, 2017. The noise measurement locations are shown on Figure 3.11-1. The noise level measurement survey results are provided in Table 3.11-2. Appendix E shows the complete results of the noise monitoring survey.

TABLE 3.11-2: SUMMARY OF EXISTING BACKGROUND NOISE MEASUREMENT DATA

SITE	LOCATION	DATE/TIME	L_{DN} dB	AVERAGE MEASURED HOURLY NOISE LEVELS, dB					
				DAYTIME (7AM-10PM)			NIGHTTIME (10PM-7AM)		
				L_{EQ}	L_{50}	L_{MAX}	L_{EQ}	L_{50}	L_{MAX}
CONTINUOUS (24-HOUR) NOISE LEVEL MEASUREMENTS									
A	190 feet from Oakdale Rd. centerline	4/25/17-4/26/17 24-hour	64	62	60	76	56	46	72
B	125 feet from Oakdale Rd. centerline	4/25/17-4/26/17 24-hour	65	62	59	77	57	50	77
SHORT-TERM NOISE LEVEL MEASUREMENTS									
1	69 feet from Patterson Rd. centerline	4/25/17– 12:59 p.m.	N/A	68	67	75	Primary noise source is Patterson Road		
	66 feet from Patterson Rd. centerline	4/27/17– 9:22 a.m.	N/A	70	69	76			
2	45 feet from Morrill Rd. centerline	4/25/17– 1:30 p.m.	N/A	65	52	80	Primary noise source is Morrill Road.		
	54 feet from Morrill Rd. centerline	4/27/17– 9:47 a.m.	N/A	60	56	73			
3	15 feet from Crawford Rd. centerline	4/25/17– 1:57 p.m.	N/A	55	49	77	Primary noise source is a tractor from a near by farm and Crawford Road.		
	53 feet from Crawford Rd. centerline	4/27/17– 10:08 a.m.	N/A	54	50	69			
4	66 feet from Claribel Rd. centerline	4/25/17– 2:28 p.m.	N/A	66	63	83	Primary source of noise is traffic on Claribel Road.		
	130 feet from Claribel Rd. centerline	4/27/17– 10:31 a.m.	N/A	67	65	78			

SOURCE: J.C. BRENNAN & ASSOCIATES, INC., 2017.

The sound level meters were programmed to collect hourly noise level intervals at each site during the survey. The maximum value (L_{max}) represents the highest noise level measured during an interval. The average value (L_{eq}) represents the energy average of all of the noise measured during an interval. The median value (L_{50}) represents the sound level exceeded 50 percent of the time during an interval.

Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meters were used for the ambient noise level measurement survey. The meters were calibrated before and after use with an LDL Model CAL200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4).

EXISTING ROADWAY NOISE LEVELS

To predict existing noise levels due to traffic, the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. The model is based upon the Calveno reference noise emission factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and

the acoustical characteristics of the site. The FHWA model was developed to predict hourly L_{eq} values for free-flowing traffic conditions.

Traffic volumes for existing conditions were obtained from the traffic data prepared for the Project (KDAnderson & Associates, Inc., 2017). Truck percentages and vehicle speeds on the local area roadways were estimated from field observations.

Traffic noise levels are predicted at 75-feet from the centerline along each roadway segment. Sensitive receptors may be located at distances which vary from the assumed calculation distance and may experience shielding from intervening barriers or sound walls. Where barriers exist, a -5 dB correction has been included in the traffic noise prediction model calculations. The traffic noise analysis is believed to be representative of the majority of sensitive receptors located closest to the Project-area roadway segments analyzed in this report.

Table 3.11-3 shows the existing traffic noise levels in terms of L_{dn} at 75-feet from the centerline along each roadway segment. A complete listing of the FHWA Model input data is contained in Appendix E.

TABLE 3.11-3: EXISTING TRAFFIC NOISE LEVELS

ROADWAY	*SEGMENT*	*EXTERIOR TRAFFIC NOISE LEVEL, DB L_{DN}*
Patterson Road (SR 108)	McHenry Avenue to Coffee Road	67.9
Patterson Road (SR 108)	Coffee Road to Oakdale Road	62.3[1]
Patterson Road (SR 108)	Oakdale Road to Jackson Avenue	63.9
Morrill Road	Coffee Road to Oakdale Road	54.1
Crawford Road	Coffee Road to Oakdale Road	49.3
Crawford Road	Oakdale Road to Squire Wells Road	54.4[1]
Claribel Road	McHenry Avenue to Coffee Road	70.3
Claribel Road	Coffee Road to N-S Collector	65.2[1]
Claribel Road	N-S Collector to Oakdale Road	70.2
Claribel Road	Oakdale Road to Roselle Avenue	67.7
Claribel Road	Roselle Avenue to Claus Road	67.6
Coffee Road	Patterson Road to Morrill Road	61.6
Coffee Road	Morill Road to Crawford Road	62.9
Coffee Road	Crawford Road to Claribel Road	64.7
Coffee Road	Claribel Road to Claratina Avenue	64.3
Oakdale Road	Patterson Road to Morrill Road	59.4[1]
Oakdale Road	Morrill Road to Crawford Road	60.6[1]
Oakdale Road	Crawford Road to Claribel Road	62.5[1]
Oakdale Road	Claribel Road to Claratina Avenue	65.6
Roselle Avenue	Claribel Road to Claratina Avenue	59.4

NOTE: [1] ASSUMES A -5 DB SHIELDING DUE TO PRESENCE OF A SOUND WALL.

SOURCE: FHWA-RD-77-108 WITH INPUTS FROM KDANDERSON & ASSOCIATES, INC., AND J.C. BRENNAN & ASSOCIATES, INC. 2017.

3.11.2 REGULATORY SETTING

STATE

California Environmental Quality Act

The California Environmental Quality Act (CEQA) Guidelines, Appendix G, indicate that a significant noise impact may occur if a project exposes persons to noise or vibration levels in excess of local general plans or noise ordinance standards, or cause a substantial permanent or temporary increase in ambient noise levels. CEQA standards are discussed more below under the Thresholds of Significance section.

Governor's Office of Planning and Research (OPR)

The State of California General Plan Guidelines (State of California 1998), published by OPR, provides guidance for the acceptability of projects within specific CNEL contours. The guidelines also present adjustment factors that may be used in order to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution.

LOCAL

City of Riverbank General Plan

The City of Riverbank General Plan Noise Element contains goals, policies, and implementation measures for assessing noise impacts within the City. Listed below are the noise goals, policies, and implementation. The overarching goal for the environment is to ensure that noise does not substantially reduce the quality of urban life.

GOALS: NOISE

- NOISE-1. Create land use patterns and transportation networks that minimize noise problems.
- NOISE-2. Minimize noise impacts associated with development projects and other land use change.

POLICIES: NOISE

- NOISE-1.1. Large-scale commercial land uses requiring frequent large truck deliveries shall not be developed within new or existing neighborhoods.
- NOISE-1.2. New growth areas shall avoid the use of large-volume, high-speed roadways within neighborhoods and instead disperse vehicular traffic onto a network of fully connected smaller roadways.
- NOISE-1.3. Industrial and other noise-generating land uses shall be located away from noise-sensitive land uses or shall enclose any substantial noise sources completely within buildings or structures.

- NOISE-1.4. Development of noise-sensitive land uses in areas exposed to existing or projected levels of noise from transportation, stationary sources, or agricultural operations exceeding, or estimated to exceed, levels specified in Table N-1 of the General Plan [Table 3.11-4 of this section] shall require transportation planning, traffic calming, site planning, buffering, sound insulation, or other methods to reduce noise exposure in outdoor activity areas and interior spaces to the levels specified in Table N-1 of the General Plan [Table 3.11-4 of this section].

TABLE 3.11-4: MAXIMUM ALLOWABLE NOISE EXPOSURE FROM TRANSPORTATION NOISE SOURCES AT NOISE-SENSITIVE LAND USES [FROM CITY OF RIVERBANK GENERAL PLAN TABLE N-1]

LAND USE	*OUTDOOR ACTIVITY AREAS (DB L_{EQ})*	*INTERIOR SPACES*	
		DB L_{DN}	*DB L_{EQ}*
Residential	60	45	--
Transient Lodging	60	45	--
Hospitals, Nursing Homes	60	45	--
Theatres, Auditoriums, Music Halls	--	--	35
Churches, Meeting Halls	60	--	40
Office Buildings	--	--	45
Schools, Libraries, Museums	60	--	45
Playgrounds, Neighborhood Parks	70	--	--

NOTES: NOISE-SENSITIVE LAND USES INCLUDE SCHOOLS, HOSPITALS, REST HOMES, LONG-TERM CARE, MENTAL CARE FACILITIES, RESIDENCES, AND OTHER SIMILAR LAND USES. OUTDOOR ACTIVITY AREAS ARE CONSIDERED TO BE THE PORTION OF A NOISE-SENSITIVE PROPERTY WHERE OUTDOOR ACTIVITIES WOULD NORMALLY BE EXPECTED (I.E., PATIOS OF RESIDENCES AND OUTDOOR INSTRUCTIONAL AREAS OF SCHOOLS). OUTDOOR ACTIVITY AREAS FOR THE PURPOSES OF THIS ELEMENT DO NOT INCLUDE GATHERING SPACES ALONGSIDE TRANSPORTATION CORRIDORS OR ASSOCIATED PUBLIC RIGHTS-OF-WAY. WHERE DEVELOPMENT PROJECTS OR ROADWAY IMPROVEMENT PROJECTS COULD POTENTIALLY CREATE NOISE IMPACTS, AN ACOUSTICAL ANALYSIS SHALL BE REQUIRED AS PART OF THE ENVIRONMENTAL REVIEW PROCESS SO THAT NOISE MITIGATION MAY BE INCLUDED IN THE PROJECT DESIGN. SUCH ANALYSIS SHALL BE THE FINANCIAL RESPONSIBILITY OF THE APPLICANT AND BE PREPARED BY A QUALIFIED PERSON EXPERIENCED IN THE FIELDS OF ENVIRONMENTAL NOISE ASSESSMENT AND ARCHITECTURAL ACOUSTICS. MITIGATION STRATEGIES SHALL INCLUDE SITE PLANNING AND DESIGN OVER OTHER TYPES OF MITIGATION.

SOURCE: CITY OF RIVERBANK GENERAL PLAN, NOISE ELEMENT, TABLE N-1.

- NOISE-1.5. Sound walls are prohibited as a method for reducing noise exposure that could be addressed through other means.
- NOISE-2.1. Development projects and roadway improvement projects that increase traffic noise levels shall be mitigated to achieve acceptable levels specified in Table N-1 of the General Plan [Table 3.11-4 of this section] as measured at outdoor activity areas and interior spaces of existing and planned noise sensitive land uses. If existing noise levels exceed allowable levels in Table N-1 of the General Plan [Table 3.11-4 of this section] at noise sensitive land uses, then:
    - Where existing exterior noise levels are between 60 and 65 dB L_{dn} at outdoor activity areas of noise-sensitive uses, an increase of 3 dB L_{dn} or greater is considered significant and requires mitigation to achieve allowable levels.
    - Where existing exterior noise levels are greater than 65 dB L_{dn} at outdoor activity areas of noise-sensitive uses, an increase of 1.5 dB L_{dn} or greater is considered significant and requires mitigation to achieve allowable levels.

- Where it is not possible to reduce noise in outdoor activity areas to 60 dB L_{dn} or less using practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB L_{dn} may be allowed, provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with Table N-1 of the General Plan [Table 3.11-4 of this section].

- NOISE-2.2. Development projects that produce, or are affected by, non-transportation related noise shall be mitigated to achieve acceptable levels specified in Table N-2 of the General Plan [Table 3.11-5 of this section], as measured at outdoor activity areas of existing and planned noise-sensitive land uses. If existing noise levels exceed acceptable levels in Table N-2 of the General Plan [Table 3.11-5 of this section] as measured at outdoor activity areas of noise sensitive land uses:
  - Where existing exterior noise levels are between 60 and 65 dB L_{eq} at outdoor activity areas of noise-sensitive uses, an increase of 3 dB L_{eq} or greater is considered significant and requires mitigation to achieve acceptable levels.
  - Where existing exterior noise levels are greater than 65 dB L_{eq} at outdoor activity areas of noise-sensitive uses, an increase of 1.5 dB L_{eq} or greater is considered significant and requires mitigation to achieve acceptable levels.
  - Where it is not possible to reduce noise in outdoor activity areas to 60 dB L_{eq} or less using practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB L_{eq} may be allowed, provided that available exterior noise level reduction measures have been implemented.

TABLE 3.11-5: NOISE LEVEL PERFORMANCE STANDARDS FOR NEW PROJECTS AFFECTED BY, OR INCLUDING NON-TRANSPORTATION NOISE SOURCES [FROM THE CITY OF RIVERBANK GENERAL PLAN TABLE N-2]

NOISE LEVEL DESCRIPTOR	*DAYTIME (7 AM – 10 PM)*	*NIGHTTIME (10 PM – 7 AM)*
Hourly L_{eq}, dB	60	45
L_{max}, dB	75	65

NOTES: EACH OF THE NOISE LEVELS SPECIFIED SHALL BE LOWERED BY FIVE dB FOR SIMPLE TONE NOISES, NOISES CONSISTING PRIMARILY OF SPEECH, OR MUSIC, OR FOR RECURRING IMPULSIVE NOISES. THESE NOISE LEVEL STANDARDS DO NOT APPLY TO RESIDENTIAL UNITS ESTABLISHED IN CONJUNCTION WITH INDUSTRIAL OR COMMERCIAL USES (E.G., CARETAKER DWELLINGS).
SOURCE: CITY OF RIVERBANK GENERAL PLAN, NOISE ELEMENT, TABLE N-2.

- NOISE-2.3. The City shall require all feasible noise mitigation to reduce construction and other short-term noise and vibration impacts as a condition of approval for development projects by applying the performance standards outlined in Table N-3 of the General Plan [Table 3.11-6 of this section]. The total noise level resulting from new sources and ambient noise shall not exceed the standards in Table N-3 of the General Plan [Table 3.11-6 of this section], as measured at outdoor activity areas of any affected noise sensitive land use except:
  - If the ambient noise level exceeds the standard in Table N-3, the standard becomes the ambient level plus 5 dB(A).
  - Reduce the applicable standards in Table N-3 by 5 decibels if they exceed the ambient level by 10 or more decibels.

TABLE 3.11-6: NOISE LEVEL PERFORMANCE STANDARDS FOR NON-TRANSPORTATION NOISE SOURCES [FROM THE CITY OF RIVERBANK GENERAL PLAN TABLE N-3]

CUMULATIVE DURATION OF A NOISE EVENT[1] (MINUTES)	*MAXIMUM EXTERIOR NOISE LEVEL STANDARDS[2]*	
	DAY [3,5]	*NIGHT[4,5]*
30-60	50	45
15-30	55	50
5-15	60	55
1-5	65	60
0-1	70	65

NOTES:
1. CUMULATIVE DURATION REFERS TO TIME WITHIN ANY ONE-HOUR PERIOD.
2. NOISE LEVEL STANDARDS MEASURED IN DB.
3. DAYTIME = HOURS BETWEEN 7:00 A.M. AND 10:00 P.M.
4. NIGHTTIME = HOURS BETWEEN 10:00 P.M. AND 7:00 A.M.
5. EACH OF THE NOISE LEVEL STANDARDS SPECIFIED MAY BE REDUCED BY 5 DBA FOR TONAL NOISE (I.E., A SIGNAL WHICH HAS A PARTICULAR AND UNUSUAL PITCH) OR FOR NOISES CONSISTING PRIMARILY OF SPEECH OF FOR RECURRING IMPULSIVE NOISES (I.E., SOUNDS OF SHORT DURATION, USUALLY LESS THAN ONE SECOND, WITH AN ABRUPT ONSET AND RAPID DECAY SUCH AS THE DISCHARGE OF FIREARMS).
SOURCE: CITY OF RIVERBANK GENERAL PLAN, NOISE ELEMENT, TABLE N-3.

City of Riverbank Municipal Code

Chapter 93 of the City of Riverbank Municipal Code prohibits excessive or annoying noise or vibration to residential and commercial properties in the City. The following general rules are outlined in the Municipal Code:

93.04 EXTERIOR NOISE STANDARDS

A. It is unlawful for any person at any location within the incorporated area of the city to create any noise, or to allow the creation of any noise, on property owned, leased, occupied or otherwise controlled by such person which causes the exterior noise level when measured at any affected single- or multiple-family residence, school, church, hospital or public library situated in either the incorporated or unincorporated area to exceed the noise level standards as set forth in [Table 3.11-7 of this section].
B. In the event the measured ambient noise level exceeds the applicable noise level standard, the applicable standard shall be adjusted so as to equal the ambient noise level.
C. Each of the noise level standards specified above shall be reduced by five dB(A) for simple tone noises, noises consisting primarily of speech or music or for recurring impulsive noises.
D. If the intruding noise source is continuous and cannot reasonably be discontinued or stopped for a time period so that the ambient noise level can be measured, the noise level measured while the source is in operation shall be compared to the noise level standards specified above.

TABLE 3.11-7: EXTERIOR NOISE LEVEL STANDARDS

TIME PERIOD	*ALLOWABLE EQUIVALENT HOUR SOUND LEVEL (L_{EQ})*	*ALLOWABLE MAXIMUM SOUND LEVEL (L_{MAX})*
7 a.m. – 10 p.m.	50 dBA	70 dBA
10 p.m. – 7 a.m	45 dBA	65 dBA

SOURCE: RIVERBANK, CALIFORNIA CODE OF ORDINANCES, TITLE IX: GENERAL REGULATIONS, CHAPTER 93: NOISE

93.05 INTERIOR NOISE STANDARDS

A. It is unlawful for any person, at any location within the city, to operate or cause to be operated within a dwelling unit, any source of sound or to allow the creation of any noise which causes the noise level when measured inside a receiving dwelling unit situated in the area either within the city or adjacent to the city to exceed the noise level standards as set forth in [Table 3.11-8 of this section]:
B. In the event the measured ambient noise level exceeds the applicable noise level standard, the applicable standard shall be adjusted so as to equal the ambient noise level.
C. Each of the noise level standards specified above shall be reduced by five dB(A) for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises.
D. If the intruding noise source is continuous and cannot reasonably be discontinued or stopped for a time period so that the ambient noise level can be measured, the noise level measured while the source is in operation shall be compared to the noise level standards specified above.

TABLE 3.11-8: INTERIOR NOISE LEVEL STANDARDS

TIME PERIOD	*ALLOWABLE EQUIVALENT HOUR SOUND LEVEL (L_{EQ})*	*ALLOWABLE MAXIMUM SOUND LEVEL (L_{MAX})*
7 a.m. – 10 p.m.	40 dBA	60 dBA
10 p.m. – 7 a.m.	35 dBA	55 dBA

SOURCE: RIVERBANK, CALIFORNIA CODE OF ORDINANCES, TITLE IX: GENERAL REGULATIONS, CHAPTER 93: NOISE

93.07 NOISE SOURCE EXEMPTIONS

The following activities shall be exempt from the provisions of this chapter:

A. Activities conducted in unlighted public parks, public playgrounds and public or private school grounds, during the hours of 7:00 a.m. to 10:00 p.m., and in lighted public parks, public playgrounds and public or private school grounds, during the hours of 7:00 am. to 11:00 p.m., including but not limited to school athletic and school entertainment events.
B. Any mechanical device, apparatus or equipment used, related to or connected with emergency activities or emergency work
C. Noise sources associated with construction provided such activities do not take place between 6:30 p.m. and 6:00 a.m. on weekdays or 5:00 p.m. and 8:00 a.m. on weekends and legal holidays.
D. Noise sources associated with agricultural activities on agricultural zoned property.
E. Noise sources associated with the collection of waste, garbage, and street sweeping.

F. Any activity to the extent regulation thereof has been preempted by state or federal law.
G. Noise sources associated with work performed by private or public utilities in the maintenance or modification of its facilities.
H. Noise sources associated with the maintenance of residential property provided such activities take place between the hours of 7:00 a.m. and 7:00 p.m., Monday through Friday or 8:00 a.m. and 7:00 p.m., Saturday, Sunday, and holidays.
I. Noise sources associated with public supported events (that is, Farmers Market, Cheese and Wine Festival, parades, and similar events.)

VIBRATION STANDARDS

Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration will depend on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities.

The City of Riverbank does not have specific policies pertaining to vibration levels. However, vibration levels associated with construction activities and railroad operations are addressed as potential noise impacts associated with Project implementation.

Human and structural response to different vibration levels is influenced by several factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table 3.11-9 indicates that the threshold for damage to structures ranges from 0.2 to 0.6 peak particle velocity in inches per second (in/sec p.p.v). One-half this minimum threshold or 0.1 in/sec p.p.v. is considered a safe criterion that would protect against architectural or structural damage. The general threshold at which human annoyance could occur is noted as 0.1 in/sec p.p.v.

TABLE 3.11-9: EFFECTS OF VIBRATION ON PEOPLE AND BUILDINGS

PEAK PARTICLE VELOCITY		HUMAN REACTION	EFFECT ON BUILDINGS
MM/SEC.	IN./SEC.		
0.15-0.30	0.006-0.019	Threshold of perception; possibility of intrusion	Vibrations unlikely to cause damage of any type
2.0	0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
2.5	0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of "architectural" damage to normal buildings
5.0	0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations)	Threshold at which there is a risk of "architectural" damage to normal dwelling - houses with plastered walls and ceilings. Special types of finish such as lining of walls, flexible ceiling treatment, etc., would minimize "architectural" damage
10-15	0.4-0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage.

SOURCE: CALTRANS. TRANSPORTATION RELATED EARTHBORN VIBRATIONS. TAV-02-01-R9601 FEBRUARY 20, 2002.

3.11.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the Project will have a significant impact related to noise if it will result in:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;
- A substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project;
- A substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without Project;
- 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, expose people residing or working in the Project area to excessive noise levels within two miles of a public airport or public use airport; or
- For a Project within the vicinity of a private airstrip, expose people residing or working in the Project area to excessive noise levels.

The Project site is not located within two miles of a public or private airport or airstrip. The nearest airport, the Modesto City-County Airport, is located approximately 5.75 miles south of the Project site. Therefore, airports and airport noise are not discussed further in this analysis.

NOISE STANDARDS

The noise standards applicable to the Project include the relevant portions of the City of Riverbank General Plan, the Regulatory Setting section (Section 3.11.2), and the following standards. Generally, a project may have a significant effect on the environment if it will substantially increase the ambient noise levels for adjoining areas or expose people to severe noise levels. In practice, more specific professional standards have been developed. These standards state that a noise impact may be considered significant if it would generate noise that would conflict with local project criteria or ordinances, or substantially increase noise levels at noise sensitive land uses. The potential increase in traffic noise from the project is a factor in determining significance. Research into the human perception of changes in sound level indicates the following:

- A 3-dB change is barely perceptible;
- A 5-dB change is clearly perceptible; and
- A 10-dB change is perceived as being twice or half as loud.

A limitation of using a single noise level increase value to evaluate noise impacts is that it fails to account for pre-project-noise conditions. Table 3.11-10 is based upon recommendations made by the Federal Interagency Committee on Noise (FICON) to provide guidance in the assessment of changes in ambient noise levels resulting from aircraft operations. The recommendations are based upon studies that relate aircraft noise levels to the percentage of persons highly annoyed by the noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, it has been accepted that they are applicable to all sources of noise described in terms of cumulative noise exposure metrics such as the L_{dn}.

TABLE 3.11-10: SIGNIFICANCE OF CHANGES IN NOISE EXPOSURE

AMBIENT NOISE LEVEL WITHOUT PROJECT, L_{DN}	*INCREASE REQUIRED FOR SIGNIFICANT IMPACT*
<60 dB	+5.0 dB or more
60-65 dB	+3.0 dB or more
>65 dB	+1.5 dB or more

SOURCE: FEDERAL INTERAGENCY COMMITTEE ON NOISE (FICON)

Based on the Table 3.11-10 data, an increase in the traffic noise level of 5 dB or more would be significant where the pre-project noise levels are less than 60 dB L_{dn}, or 3 dB or more where existing noise levels are between 60 to 65 dB L_{dn}. Extending this concept to higher noise levels, an increase in the traffic noise level of 1.5 dB or more may be significant where the pre-project traffic noise level exceeds 65 dB L_{dn}. The rationale for the Table 3.11-10 criteria is that, as ambient noise levels increase, a smaller increase in noise resulting from a project is sufficient to cause annoyance.

IMPACTS AND MITIGATION MEASURES

Impact 3.11-1: Construction of the proposed Project may generate significant noise. (Less Than Significant with Mitigation)

The proposed development, maintenance of roadways during construction, installation of public utilities, and infrastructure improvements associated with the Project will require construction activities. These activities include the use of heavy equipment and impact tools. Table 3.11-11 provides a list of the types of equipment which may be associated with construction activities and the associated noise levels.

TABLE 3.11-11: CONSTRUCTION EQUIPMENT NOISE

TYPE OF EQUIPMENT	PREDICTED NOISE LEVELS, L_{MAX} dB				DISTANCES TO NOISE CONTOURS (FEET)	
	NOISE LEVEL AT 50'	NOISE LEVEL AT 100'	NOISE LEVEL AT 200'	NOISE LEVEL AT 400'	70 dB L_{MAX} CONTOUR	65 dB L_{MAX} CONTOUR
Backhoe	78	72	66	60	126	223
Compactor	83	77	71	65	223	397
Compressor (air)	78	72	66	60	126	223
Concrete Saw	90	84	78	72	500	889
Dozer	82	76	70	64	199	354
Dump Truck	76	70	64	58	100	177
Excavator	81	75	69	63	177	315
Generator	81	75	69	63	177	315
Jackhammer	89	83	77	71	446	792
Pneumatic Tools	85	79	73	67	281	500

SOURCE: ROADWAY CONSTRUCTION NOISE MODEL USER'S GUIDE. FEDERAL HIGHWAY ADMINISTRATION. FHWA-HEP-05-054. JANUARY 2006. J.C. BRENNAN & ASSOCIATES, INC. 2012.

Activities involved in Project construction would typically generate maximum noise levels ranging from 70 to 84 dB at a distance of 100-feet. The nearest sensitive receptor would be located approximately 100-feet or more to the west of on-site construction activities.

Construction could result in periods of elevated ambient noise levels and the potential for annoyance. Policy 2.3 of the City of Riverbank General Plan restricts maximum noise levels from construction to the standards listed in Table 3.11-6. Because the existing ambient noise level exceeds the standards in Table 3.11-6, Policy 2.3 states that the applicable standard becomes the ambient level plus 5 dB(A). In addition, the Section 93.07 of the City Municipal Code exempts noise from construction provided that the construction occurs during the allowable hours of operation, as follows:

> Noise sources associated with construction provided such activities do not take place between 6:30 p.m. and 6:00 a.m. on weekdays or 5:00 p.m. and 8:00 a.m. on weekends and legal holidays.

Implementation of the following mitigation measures will ensure that these potential impacts are reduced to a **less-than-significant** level.

MITIGATION MEASURE(S)

Mitigation Measure 3.11-1: *Construction activities shall not occur between 6:30 p.m. and 6:00 a.m. on weekdays or 5:00 p.m. and 8:00 a.m. on weekends and legal holidays, as required by the City of Riverbank Municipal Code. This requirement shall be noted in the improvements plans prior to approval by the City's Public Works Department.*

Mitigation Measure 3.11-2: *In an effort to comply with the City General Plan standards contained in Table 3.11-6 (Table N-3 of the General Plan), all equipment shall be fitted with factory equipped mufflers, and in good working order. In addition, all staging areas shall be located as far as feasibly possible from residential areas. This requirement shall be noted in the improvements plans prior to approval by the City's Public Works Department.*

Impact 3.11-2: Construction of the proposed Project may result in vibration impacts. (Less than Significant)

The primary vibration-generating activities associated with the proposed Project would occur during construction when activities such as demolition, grading, utilities placement, and parking lot construction occur. Sensitive receptors which could be impacted by construction related vibrations, especially vibratory compactors/rollers, are located approximately 100-feet or further from the on-site construction activities. At distances of 100-feet or more, construction vibrations are not predicted to exceed acceptable levels. Additionally, construction activities would be temporary in nature and would likely occur during normal daytime working hours.

Construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. Building damage can take the form of cosmetic or structural. Table 3.11-12 shows the typical vibration levels produced by construction equipment.

TABLE 3.11-12: VIBRATION LEVELS FOR VARYING CONSTRUCTION EQUIPMENT

TYPE OF EQUIPMENT	PEAK PARTICLE VELOCITY @ 25 FEET (INCHES/SECOND)	PEAK PARTICLE VELOCITY @ 50 FEET (INCHES/SECOND)	PEAK PARTICLE VELOCITY @ 100 FEET (INCHES/SECOND)
Large Bulldozer	0.089	0.031	0.011
Loaded Trucks	0.076	0.027	0.010
Small Bulldozer	0.003	0.001	0.000
Auger/drill Rigs	0.089	0.031	0.011
Jackhammer	0.035	0.012	0.004
Vibratory Hammer	0.070	0.025	0.009
Vibratory Compactor/roller	0.210	0.074	0.026

SOURCE: FEDERAL TRANSIT ADMINISTRATION, TRANSIT NOISE AND VIBRATION IMPACT ASSESSMENT GUIDELINES, MAY 2006

The Table 3.11-12 data indicate that construction vibration levels anticipated for the Project are less that the 0.2 in/sec p.p.v. threshold of damage to buildings and less than the 0.1 in/sec threshold of annoyance criteria at distances of 50-feet. Therefore, construction vibrations are not

predicted to cause damage to existing buildings or cause annoyance to sensitive receptors provided that the compactor/roller is located a minimum distance of 50-feet from other structures. Therefore, this impact would be considered **less than significant**.

Impact 3.11-3: The proposed Project may generate unacceptable traffic noise levels at existing receptors. (Significant and Unavoidable)

The FHWA traffic noise prediction model was used for determining traffic noise levels. Where existing sound walls exist, a -5 dB correction was used in the modeling to account for shielding. Figure 3.11-2 shows the locations of the existing sound walls in the Project vicinity. Tables 3.11-13 and 3.11-14 show the predicted increases in traffic noise levels due to the Project at existing residences.

TABLE 3.11-13: EXISTING AND EXISTING PLUS CWSP TRAFFIC NOISE LEVELS

ROADWAY	SEGMENT	NOISE LEVELS (L_{DN}, dB) AT 75-FEET FROM CENTERLINE				
		EXISTING	EXISTING + CWSP	CHANGE	CRITERIA[1]	SIGNIFICANT?
Patterson Road	McHenry Avenue to Coffee Road	67.9	68.3	+0.4	+1.5	No
Patterson Road	Coffee Road to Oakdale Road	62.3	62.3	+0.0	+3.0	No
Patterson Road	Oakdale Road to Jackson Avenue	63.9	64.3	+0.4	+3.0	No
Morrill Road	Coffee Road to Oakdale Road	54.1	54.1	+0.0	+5.0	No
Crawford Road	N-S Collector to Oakdale Road	49.3	59.0	+9.7	+5.0	Yes
Crawford Road	Oakdale Road to Squire Wells Road	54.4	54.7	+0.3	+5.0	No
Claribel Road	McHenry Avenue to Coffee Road	70.3	72.0	+1.7	+1.5	**Yes**
Claribel Road	Coffee Road to N-S Collector	65.2	66.7	+1.5	+1.5	**Yes**
Claribel Road	N-S Collector to Oakdale Road	70.2	71.3	+1.1	+1.5	No
Claribel Road	Oakdale Road to Roselle Avenue	67.7	69.2	+1.5	+1.5	**Yes**
Claribel Road	Roselle Avenue to Claus Road	67.6	69.1	+1.5	+1.5	**Yes**
Coffee Road	Patterson Road to Morrill Road	61.6	63.4	+1.8	+3.0	No
Coffee Road	Morill Road to Crawford Road	62.9	65.4	+2.5	+3.0	No
Coffee Road	Crawford Road to Claribel Road	64.7	68.0	+3.3	+3.0	**Yes**
Coffee Road	Claribel Road to Claratina Avenue	64.3	66.1	+1.8	+3.0	No
Oakdale Road	Patterson Road to Morrill Road	59.4	60.3	+0.9	+5.0	No
Oakdale Road	Morrill Road to Crawford Road	60.6	62.0	+1.4	+3.0	No
Oakdale Road	Crawford Road to Claribel Road	62.5	64.3	+1.8	+3.0	No
Oakdale Road	Claribel Road to Claratina Avenue	65.6	66.7	+1.1	+1.5	No
Roselle Avenue	Claribel Road to Claratina Avenue	59.4	59.9	+0.5	+5.0	No

NOTE: [1] WHERE EXISTING NOISE LEVELS ARE LESS THAN 60 DB AN INCREASE OF 5 DB WOULD BE A SIGNIFICANT INCREASE. ADDITIONALLY, ANY INCREASE CAUSING NOISE LEVELS TO EXCEED THE CITY'S NORMALLY ACCEPTABLE 60 DB L_{DN} NOISE LEVEL STANDARD AT AN EXISTING OUTDOOR ACTIVITY AREA OF A RESIDENTIAL USE WOULD ALSO BE SIGNIFICANT. WHERE EXISTING NOISE LEVELS EXCEED 60 DB BUT ARE LESS THAN 65 DB, AN INCREASE OF 3 DB OR MORE WOULD BE SIGNIFICANT. WHERE EXISTING NOISE LEVELS EXCEED 65 DB, AN INCREASE OF 1.5 DB OR MORE WOULD BE SIGNIFICANT.

SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2017.

Table 3.11-13 shows increases in traffic noise levels based upon Existing and Existing Plus CWSP conditions, and Table 3.11-14 shows the traffic noise level increases based upon Cumulative and Cumulative Plus CWSP conditions. Predicted traffic noise levels are based upon a typical distance of 75-feet from the roadway centerlines.

TABLE 3.11-14: CUMULATIVE AND CUMULATIVE PLUS CWSP TRAFFIC NOISE LEVELS

ROADWAY	SEGMENT	NOISE LEVELS (L_{DN}, dB) AT 75-FEET FROM CENTERLINE				
		CUMULATIVE	CUMULATIVE + CWSP	CHANGE	CRITERIA[1]	SIGNIFICANT?
Patterson Road	McHenry Avenue to Coffee Road	69.0	69.3	+03	+1.5	No
Patterson Road	Coffee Road to Oakdale Road	63.2	63.2	+0.0	+3.0	No
Patterson Road	Oakdale Road to Jackson Avenue	65.4	65.7	+0.3	+1.5	No
Morrill Road	Coffee Road to Oakdale Road	58.9	61.3	+2.4	+5.0	No
Crawford Road	N-S Collector to Oakdale Road	53.7	59.0	+5.3	+5.0	**Yes**
Crawford Road	Oakdale Road to Squire Wells Road	54.1	55.1	+1.0	+5.0	No
Claribel Road	Coffee Road to N-S Collector	54.0	59.9	+5.9	+5.0	**Yes**
Claribel Road	N-S Collector to Oakdale Road	64.1	67.3	+3.2	+3.0	**Yes**
Claribel Road	Oakdale Road to Roselle Avenue	64.7	66.3	+1.6	+3.0	No
Claribel Road	Roselle Avenue to Claus Road	63.7	63.8	+0.1	+3.0	No
Coffee Road	Patterson Road to Morrill Road	64.3	65.3	+1.0	+3.0	No
Coffee Road	Morill Road to Crawford Road	66.9	67.9	+1.0	+1.5	No
Coffee Road	Crawford Road to Claribel Road	67.9	69.6	+1.7	+1.5	**Yes**
Coffee Road	Claribel Road to NCC	66.1	69.6	+3.5	+1.5	**Yes**
Coffee Road	NCC to Claratina Avenue	66.3	67.3	+1.0	+1.5	No
Oakdale Road	Patterson Road to Morrill Road	60.8	61.4	+0.6	+3.0	No
Oakdale Road	Morrill Road to Crawford Road	60.1	61.7	+1.6	+3.0	No
Oakdale Road	Crawford Road to Claribel Road	61.0	63.9	+2.9	+3.0	No
Oakdale Road	Claribel Road to NCC	69.6	71.7	+2.1	+1.5	**Yes**
Oakdale Road	NCC to Claratina Avenue	55.4	56.8	+1.4	+5.0	No
Roselle Avenue	Claribel Road to NCC	60.4	61.3	+0.9	+3.0	No

NOTE: [1] WHERE EXISTING NOISE LEVELS ARE LESS THAN 60 DB AN INCREASE OF 5 DB WOULD BE A SIGNIFICANT INCREASE. ADDITIONALLY, ANY INCREASE CAUSING NOISE LEVELS TO EXCEED THE CITY'S NORMALLY ACCEPTABLE 60 DB L_{DN} NOISE LEVEL STANDARD AT AN EXISTING OUTDOOR ACTIVITY AREA OF A RESIDENTIAL USE WOULD ALSO BE SIGNIFICANT. WHERE EXISTING NOISE LEVELS EXCEED 60 DB BUT ARE LESS THAN 65 DB, AN INCREASE OF 3 DB OR MORE WOULD BE SIGNIFICANT. WHERE EXISTING NOISE LEVELS EXCEED 65 DB, AN INCREASE OF 1.5 DB OR MORE WOULD BE SIGNIFICANT.

SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2017.

The FHWA traffic noise prediction model was used for determining traffic noise levels. Where existing sound walls exist, a -5 dB correction was used in the modeling to account for shielding. Figure 3.11-2 shows the locations of the existing sound walls in the Project vicinity. Traffic noise levels are predicted at 75-feet from the centerline along each roadway segment. Appendix E provides the complete inputs and results of the FHWA traffic noise modeling.

The data in Table 3.11-13 indicates that some noise-sensitive receptors located along Project-area roadways are currently exposed to exterior traffic noise levels exceeding the City of Riverbank 60

dB L_{dn} exterior noise level standard for residential uses (shown in Table 3.11-4). These receptors would continue to experience elevated exterior noise levels with implementation of the proposed Project. Under Existing Conditions, sensitive receptors located adjacent to Patterson Road, Claribel Road, Coffee Road, and Oakdale Road exceed the City's 60 dB L_{dn} exterior noise level standard for transportation noise sources. Under Existing Plus CWSP conditions, these roadways will continue to exceed the City standards. The Project's contributions range between 0 dB and 3.3 dB L_{dn}. In some cases, the increases also exceed the FICON and City of Riverbank criteria of +1.5 dB where existing noise levels exceed 65 dB.

Under Cumulative conditions, sensitive receptors located adjacent to Patterson Road, Claribel Road, Coffee Road, and Oakdale Road exceed the City's 60 dB L_{dn} exterior noise level standard for transportation noise sources. Under Cumulative Plus CWSP conditions, these roadways will continue to exceed the City standards. The Project's contributions range between 0 dB and 5.9 dB L_{dn}. In some cases, the increases also exceed the FICON and City of Riverbank criteria of +1.5 dB where existing noise levels exceed 65 dB.

Tables 3.11-13 and 3.11-14 indicate where increases in traffic noise levels due to the Project exceed the City standards and the FICON criteria for increases in traffic noise. Therefore, this would be a significant impact at these locations.

In some locations, the proposed Project is predicted to cause increases in traffic noise levels which would cause a new exceedance of the City's noise level standards in Table 3.11-4, or exceed the FICON allowable increase criteria outlined in Table 3.11-10. The greatest number of significant traffic noise increases would occur under the Cumulative Plus CWSP condition.

Table 3.11-15 indicates where significant traffic noise increases will occur, and the segments which the Project would result in an exceedance of the City of Riverbank exterior noise levels standard, under the Cumulative Plus CSWP condition.

TABLE 3.11-15: SIGNIFICANT TRAFFIC NOISE INCREASES - CUMULATIVE AND CUMULATIVE PLUS CWSP TRAFFIC NOISE LEVELS

ROADWAY	SEGMENT	NOISE LEVELS (L_{DN}, dB) AT 75-FEET FROM CENTERLINE				
		CUMULATIVE	CUMULATIVE + CWSP	CHANGE	SIGNIFICANT?[1]	CREATES NEW EXCEEDANCE[2]?
Morrill Road	Coffee Road to Oakdale Road	58.9	61.3	+2.4	No	**Yes**
Claribel Road	Coffee Road to N-S Collector	54.0	59.9	+5.9	**Yes**	No
Claribel Road	N-S Collector to Oakdale Road	64.1	67.3	+3.2	**Yes**	No
Coffee Road	Crawford Road to Claribel Road	67.9	69.6	+1.7	**Yes**	No
Coffee Road	Claribel Road to NCC	66.1	69.6	+3.5	**Yes**	No
Oakdale Road	Claribel Road to NCC	69.6	71.7	+2.1	**Yes**	No

NOTES:
1. A SIGNIFICANT IMPACT IS DETERMINED BY THE FICON CRITERIA IN TABLE 3.11-10
2. AN EXCEEDANCE OF CITY STANDARDS IS DETERMINED BY THE CITY OF RIVERBANK EXTERIOR NOISE LEVEL STANDARDS IN TABLE 3.11-4
SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2017.

Based upon Tables 3.11-13, and 3.11-14, the Project would cause increased noise levels exceeding the City of Riverbank 60 dB L_{dn} exterior noise level standard for transportation noise sources at some existing residential receptors. Therefore, this would be a **potentially significant** impact. In addition, the traffic noise level increases would exceed the FICON substantial increase criteria shown in Table 3.11-10, which would be a **potentially significant** impact.

Potential mitigation measures would require increasing the height of existing sound walls, building new off-site sound walls, including traffic calming measures to reduce vehicle speeds, or using quieter pavement technologies. Generally, construction of new sound walls is not practical due to the openings for driveway accesses which would compromise any barrier effectiveness. Increasing the heights of existing sound walls requires additional engineering of footings and is also not practical. Traffic calming measures generally have not been found to reduce overall traffic noise levels by a significant amount. The use of quiet pavement technologies is the most practical mitigation measure and would generally reduce traffic noise levels between 4 and 5 dB. Under the Cumulative scenarios shown in Table 3.11-14, each roadway segment which shows a significant impact could include future overlays of alternative pavements such as rubberized asphalt or open gap asphalt. However, the implementation of these types of measures along six different roadway segments may not be considered practical due to overall costs and benefits at all locations. Therefore, this would be a **significant unavoidable** impact.

Impact 3.11-4: The proposed Project may result in traffic noise at new sensitive receptors. (Less Than Significant with Mitigation)

Based upon the analysis, traffic noise levels along Oakdale Road, Morrill Road and Claribel Road are could exceed the City of Riverbank exterior noise level criteria, where residential development occurs. Site Plans and Tentative Maps depicting building locations, elevations, and floor plans are not currently available for the Project. Therefore, traffic noise levels at the typical building setbacks adjacent to Oakdale Road, Morrill Road, and Claribel Road are estimated at a distance of 75-feet from the roadway centerlines. Traffic noise levels from Crawford Road within the Project site do not exceed the noise level standards.

Table 3.11-16 shows the predicted Cumulative Plus CWSP condition noise levels at the building facades due to traffic on roadways adjacent to the Project site.

TABLE 3.11-16: PREDICTED CUMULATIVE PLUS CWSP TRAFFIC NOISE LEVELS

LOCATION	PREDICTED NOISE LEVELS	
	1ST FLOOR FACADES/OUTDOOR AREAS	2ND FLOOR FACADES
Oakdale Road	62 dB L_{dn}	65 dB L_{dn}
Morrill Road	62 dB L_{dn}	65 dB L_{dn}
Claribel Road	67 dB L_{dn}	70 dB L_{dn}

SOURCE: J.C. BRENNAN & ASSOCIATES, INC. – 2017.

Based upon the data in Table 3.11-16, the predicted Cumulative Plus CWSP traffic noise levels for roadways adjacent to the Project site range between 62 dB and 67 dB L_{dn} at first floor locations, and between 65 dB and 70 dB L_{dn} at second floor locations. Mitigation measures can take the form

of sound walls, berms, setbacks or shielding from building facades. With implementation of the following mitigation, a **less than significant** impact would result

MITIGATION MEASURE(S)

Mitigation Measure 3.11-3: *The Project applicant(s) shall determine the appropriate methods for reducing traffic noise levels at the Project site to within the City of Riverbank noise level criteria. It is expected that traffic noise levels could exceed the City standards at residential areas adjacent to Oakdale Road, Morrill Road and Claribel Road. Mitigation can take the form of sound walls, berms, a combination of walls and berms, setbacks and shielding from building facades. The effectiveness of the proposed mitigation shall be documented by acoustical analyses. The appropriate mitigation will be determined prior to the approval of tentative maps or site plans, and subject to review and approval by the City of Riverbank.*

Impact 3.11-5: The proposed Project may result in noise from on-site activities at sensitive receptors. (Less Than Significant with Mitigation)

Figure 2.0-8 in Section 2.0, Project Description, depicts the conceptual land use plan, including where neighborhood parks, school sites and the expanded Riverbank Sports Complex would be located. Generally, neighborhood parks are considered passive in nature, with some small play areas. The site plan shows two separate neighborhood parks within the Project site: one north of Morrill Road, and one south of Crawford Road. These facilities are not considered to be significant noise-generators. Active play areas or sports fields and courts associated with schools or the Riverbank Sports Complex, could be a potential noise source. In addition, school sites include student drop-off areas, parking lots, and school bus loading areas. Because finalized site plans depicting school site designs, or where active play areas, ball fields or soccer fields would be located is not available, detailed analyses of noise impacts cannot be determined. This is a **potentially significant** impact.

Noise sources associated with play areas or play fields would primarily be shouting and cheering adults or children during intermittent periods of the sporting events and practice sessions. The data indicate that average and maximum noise levels during games are approximately 60 dB L_{eq} and 75 dB L_{max} at a distance of 100 feet from the focal point of the playing fields. These reference noise levels are based upon crowd sizes of approximately 100 people.

For playing fields or play areas, the focal point of noise varies with considerable excitement generated when the ball is near either goal, but with the sound of the participants generally spread out over the entire field and the sounds of spectators spread out along the sidelines and in the bleachers. Generally, the cumulative noise generation is analyzed at the approximate center of the playing fields or areas. As a means of achieving the exterior noise level standards of 50 dB L_{eq} and 70 dB L_{max}, the center of the play fields should be located at a distance of 275-feet from the nearest residences.

For school sites, noise levels associated with drop-off areas, parking areas or bus circulation areas is determined based upon the trip generation at those particular areas. The noise impacts can be identified when the site plans and detailed traffic studies have been developed.

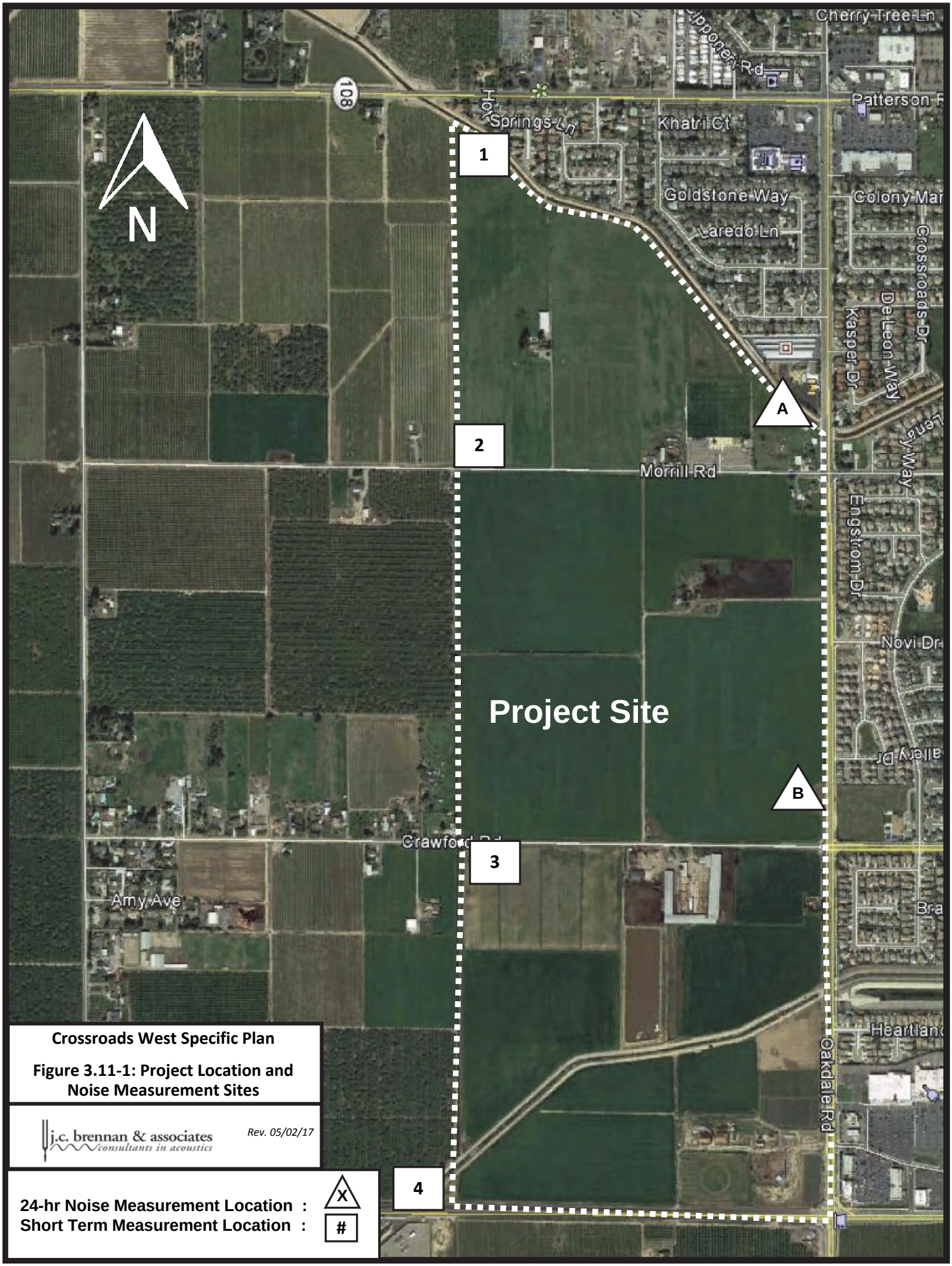
The following mitigation measures will reduce playing field and school site noise levels to a **less than significant** level.

MITIGATION MEASURE(S)

Mitigation Measure 3.11-4: *The center of the play fields shall be located at a minimum distance of 275-feet from the nearest residences. This requirement shall be noted in the improvements plans prior to approval by the City's Public Works Department.*

Mitigation Measure 3.11-5: *Use of the play fields shall be restricted to the daytime hours of 7:00 a.m. to 10:00 p.m. This requirement shall be noted in the improvements plans prior to approval by the City's Public Works Department.*

Mitigation Measure 3.11-6: *When school site plans have been developed, a detailed analysis of school site noise impacts shall be identified and appropriate mitigation measures shall be included in the project designs. The City shall review and approve the analysis of school site noise impacts, as well as any mitigation measures resulting from the analysis*



Crossroads West Specific Plan

Figure 3.11-1: Project Location and Noise Measurement Sites

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24-hr Noise Measurement Location : X
Short Term Measurement Location : #

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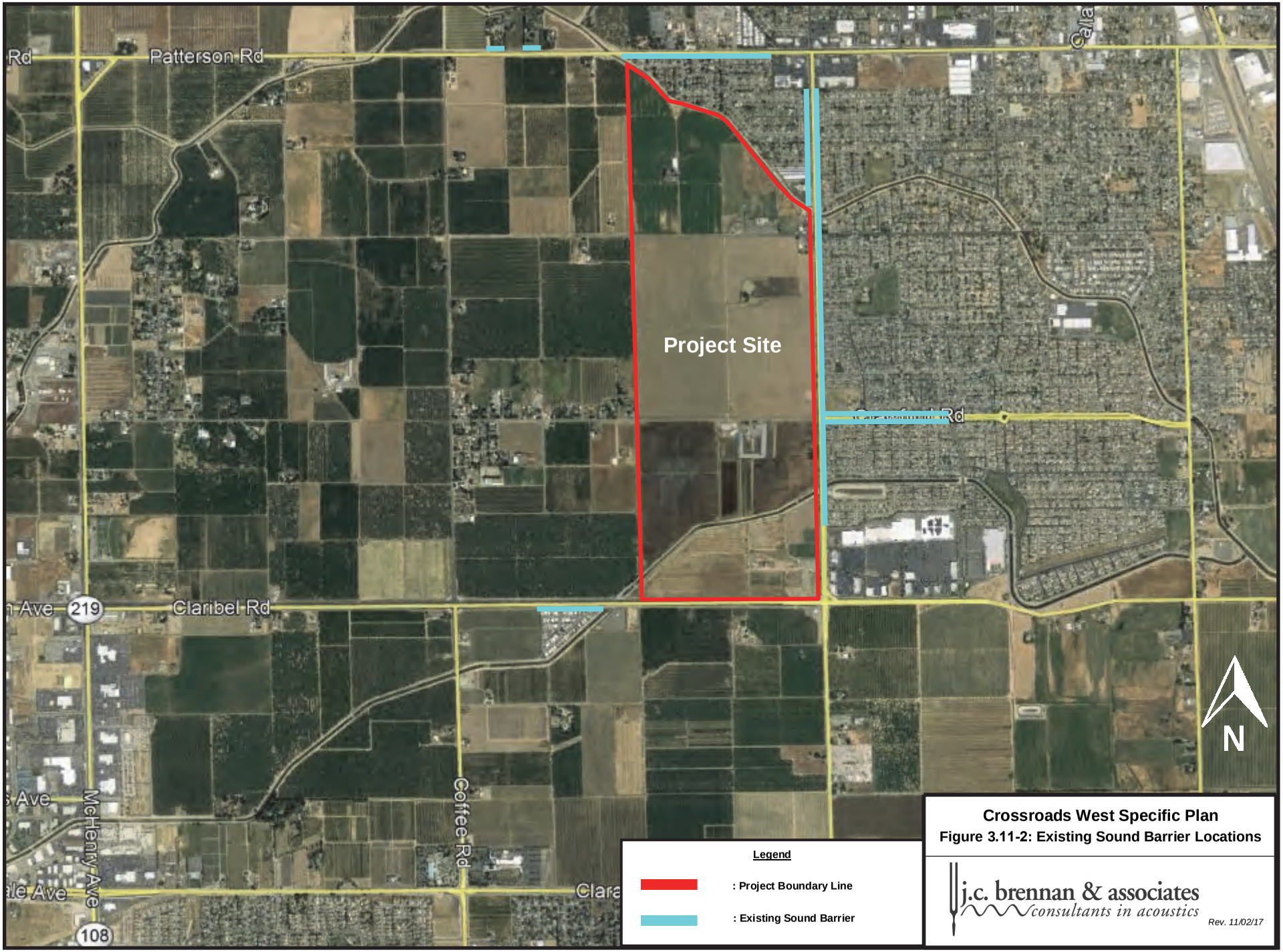

Crossroads West Specific Plan

Figure 3.11-2: Existing Sound Barrier Locations

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Rev. 11/02/17

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This section describes and evaluates potential impacts associated with the provision of police protection, fire protection and emergency services, parks and recreation, schools, and other public facilities for the proposed Project. The information in this section is primarily derived from the *City of Riverbank General Plan 2005-2025* (City of Riverbank, 2009), the *City of Riverbank Draft Environmental Impact Report for the 2005-2025 General Plan Update* (City of Riverbank, 2008), *Municipal Services Review & Sphere of Influence Update* (City of Riverbank, 2016). Comments from the Stanislaus Consolidated Fire Protection District, Modesto City Schools, Stanislaus Local Agency Formation Commission (LAFCo), and Sylvan Union School District were received during the NOP comment period regarding public services and recreation. Full comments received are included in Appendix A.

3.12.1 ENVIRONMENTAL SETTING

CITY OF RIVERBANK SERVICES

The City of Riverbank receives funds for the provision of public services through development fees, property taxes, and connection and usage fees. As land is developed within the City and annexed into the City of Riverbank, these fees apply. The City of Riverbank reviews these fee structures on an annual basis to ensure that they provide adequate financing to cover the provision of City services. The City is responsible for continual oversight to ensure that the fee structures are adequate. The City reviews the referenced fees and user charges on an annual basis to determine the correct level of adjustment required to reverse any deficits and assure funding for needed infrastructure going forward. The City intends to include discussion of these fees and charges as part of the annual budget hearings.

City of Riverbank Police Services

The City of Riverbank is served under contract by the Stanislaus County Sheriff through Riverbank Police Services. Riverbank's police station is located at 6727 Third Street in downtown Riverbank. Staffing includes one Lieutenant (Chief of Police), two Sergeants, 15 Deputy Sheriffs/Detectives, one Supervising Legal Clerk, two Legal Clerks and one Community Service Officer. In total, 18 sworn officers provide police services within the City of Riverbank.

The contract between the Stanislaus County Sheriff and the City specifies a minimum of 0.85 officers per thousand residents. General Plan Policy PUBLIC 8.2 establishes a goal or future target for the City to provide 1.25 sworn officers per 1,000 residents. The City's population estimate as of January 1, 2015 was 23,485. The ratio of sworn police officers to the stated population is approximately 0.77 officers per thousand residents. The estimated population for the City of Riverbank as of January 1, 2017 was 24,610.

The City's total budget for Riverbank Police Services in Fiscal Year 2015-2016 is $3,808,800. According to the City's FY 2015/16 adopted budget, there are two unfunded positions within the Riverbank Police Services Department: one Deputy Sheriff and one Detective. Once these positions are funded, the City will reach its targeted contract rate of 0.85 officers per 1,000 residents.

Riverbank Police Services received 571 Priority 1 calls for service in 2014. Response time for Priority 1 (life-threatening) calls averaged 2:26 minutes, which is within the City's General Plan goal.

The City receives funding for law enforcement improvements through capital improvement fees, and operational funding of the Police Department occurs through the General Fund.

Approved and pending development projects in the City will result in additional demand for law enforcement services. Capital costs for new facilities and equipment would be funded through development impact fees, and operating costs would be funded through a combination of an increased tax base and the annexation to a new community facility districts (CFD) or formation of a new CFD.

The City has adopted a police staffing level of 1.25 officers per 1,000 residents. The City considers response time to be the most important indicator of police services. Current response times are well within the General Plan policy of ensuring a four-minute average response.

Table 3.12-1 shows the recent crime statistics for the City of Riverbank between 2014 and 2016.

TABLE 3.12-1: RIVERBANK POLICE DEPARTMENT CRIME STATISTICS (2014-2016)

CATEGORY/CRIME	*2014*	*2015*	*2016*
Total Violent Crimes	28	35	22
Homicide	1	1	1
Rape	1	3	3
Robbery	9	16	1
Assault	17	15	17
Total Property Crimes	688	616	339
Burglary	216	130	114
Motor Vehicle Theft	406	43	14
Larceny	66	443	211
Arson	0	0	0

SOURCE: FBI CRIME STATISTICS; HTTPS://UCR.FBI.GOV/.

City of Riverbank Fire Services

Stanislaus Consolidated Fire Protection District (SCFPD) provides fire protection and first response to emergencies for the City of Riverbank, as well as the unincorporated area within its Sphere of Influence. SCFPD has 11 fire stations throughout Stanislaus County and currently has 81 paid employees (79 full-time and 2 part-time) and approximately 25 volunteers. SCFPD handles in excess of 4,200 calls per year, ranging from medical aids, structural fires, hazardous materials responses, wildland fires, and miscellaneous calls. SCFPD Station No. 36, located at 3324 Topeka Street, serves the City of Riverbank 24-hours a day. This station is located approximately 1.5 miles northeast of the Plan Area.

In 2014, SCFPD Station No. 36 received 1,790 calls for service. Out of this, 154 calls were fire related, 1,083 were EMS/Rescue related and 301 were considered good intent. The District as a whole

responded to 4,235 incidents during the same period. Table 3.12-2 below breaks down the calls for service that Fire Station No. 36 received in 2014.

TABLE 3.12-2: STATION NO. 36 INCIDENT TYPE RESPONSE SUMMARY (2014)

CALL TYPE	NUMBER OF CALLS
Fire	154
EMS/Rescue	1,083
Hazardous Condition	32
Service Call	156
Good Intent	301
False Call	46
Rupture/Explosion	4
Severe Weather	0
Other	14
Total	1,790

SOURCE: CITY OF RIVERBANK MSR & SOI UPDATE, 2016.

The FY 2014-2015 budget for SCFPD was $11,974,242. Of this, approximately $6.2 million came from special assessments, $2.1 million came from secured property taxes, and $1.5 and $1.4 million came from contract revenue from the City of Oakdale and Oakdale Fire Protection District, respectively.

ISO RATING

The Insurance Services Office (ISO) Public Protection Classification Program currently rates the overall Fire District as Class 3 on a scale of 1 to 10, with 1 being the highest possible protection rating and 10 being the lowest. The ISO rating measures individual fire protection agencies against a Fire Suppression Rating Schedule, which includes such criteria as facilities and support for handling and dispatching fire alarms, first-alarm response and initial attack, and adequacy of local water supply for fire-suppression purposes.

As included in General Plan Policy PUBLIC 7.5, the City's goal is for an ISO rating of Class 2. The ISO rating (Public Protection Classification [PPC]) is completed whenever it appears that there is a possibility of a classification change. The ISO rating measures and evaluates information on fire suppression capabilities. For SCFPD, this survey was completed in 2014.

SCFPD's long-range goals also include constructing a second fire station near the proposed Project. The location has not been finalized but a potential site has been included as part of the Project. A third fire station is to be located in the Bruinville area (eastern section of Riverbank). The specific location and timing of this eastern station is yet to be determined. SCFPD does not have a Fire Management Protection Master Plan.

The District's current (2016) ISO rating in the City of Riverbank is Class 4. According to the City's 2016 Municipal Service Review, staff has indicated that in order to meet the City's goal of Class 2, the District would need to increase staffing and expand their number of fire stations. The proposed Project contemplates the expansion of SCFPD, including a proposed fire station located near the corner of Crawford and Oakdale Road.

The City of Riverbank and SCFPD will work cooperatively to ensure new development pays its fair share for facilities associated with new growth. The imposition of Fire Mitigation Fees to provide the financial tools necessary to guarantee capacity will be available in the future. In addition, the General Plan recognizes the need for increased fire services for new development and sets forth polices that support fire protection staffing, facilities, and minimum fire flow requirements.

FACILITIES IMPACT STUDY

The SCFPD is currently updating their Facilities Impact Study.[1] The Study will summarize an analysis of the need for fire facilities by the SCFPD to accommodate new development within their service area. The SCFPD has contracted Capitol Public Finance Group to complete the Study.

City of Riverbank Parks and Recreation Department

The Riverbank Parks and Recreation Department's mission is to provide community through people, parks, and programs. The Department is continually expanding its services and offers a variety of recreation cultural and social activities for all ages and abilities within the City of Riverbank.

The Recreation and Park Development Division oversees all recreational programs, classes, Aquatics, Teen Center, Sports, Gymnasium and special events. The Parks and Recreation Department oversees the annual Cheese & Wine Festival. The facility and park reservations are handled through the Parks and Recreation Department.

There are currently 16 city parks that the City's Parks and Recreation Department maintains, including the recently constructed Plaza Del Rio Park. The Parks and Recreation Department consists of four full time workers, a part-time weekend park aide, and two volunteer park hosts.

The City's Building Maintenance staff consists of one full time worker that maintains the City Hall buildings, Sheriff's Department, Public Works buildings, Community Center, and Scout Hall. The City employs one part-time maintenance worker to work on weekends for facility rentals and mid-week for facility set ups and take downs for various groups.

The Parks and Recreation Department also oversees the Youth and Teen Committee, which is a group that assists the staff in developing programs for youth and teens in the community. Facility use and park and field reservations are handled under the Parks and Recreation Department. This includes scheduling, collecting fees, securing agreements, assignments of site monitors, and custodial services. The Department works closely with local organizations and clubs on facility use and with the local sports organizations for field reservations.

[1] Personal communication between John Anderson, contract planner for the City of Riverbank, and Michael Wapnowski, deputy chief of the Stanislaus Consolidated Fire Protection District. February 1, 2018.

The Department oversees park development and serves as a liaison between the Friends of Jacob Myers Park and the City. Grant writing and park master plan development and implementation are responsibilities of the Parks and Recreation Department. The Recreation Department represents the City in the Stanislaus Elder Abuse Alliance, the Rio Altura Healthy Start Collaborative, and District V of the California Parks and Recreation Society.

OTHER AGENCY SERVICES

The Riverbank Planning Area is served by four school districts: Riverbank Unified School District, Sylvan Union School District, Modesto City Schools, and Stanislaus Union School District. The Stanislaus Union School District only serves the far west end of the Planning Area west of Coffee Road. The Sylvan Union School District and Stanislaus Union School District only provide kindergarten through eighth grade instruction. Students from the Riverbank Planning Area who attend elementary and middle school in these districts attend the Modesto City Schools district for high school. Riverbank Unified School District provides kindergarten through 12th grade instruction.

The Plan Area would be served by the Sylvan Union School District for kindergarten through eighth grade instruction. High school students within the Plan Area would be served by the Modesto City Schools district.

Sylvan Union School District

The Plan Area is located within the service boundaries of the Sylvan Union School District. The Sylvan Union School District provides school services for over 8,000 students through the grades of K through 8 in Riverbank and for adjacent unincorporated areas. The Sylvan Union School District operates ten elementary schools and three middle schools. See Table 3.12-3 for the Sylvan Union School District school inventory.

TABLE 3.12-3: SYLVAN UNION SCHOOL DISTRICT SCHOOL INVENTORY

SCHOOL	*GRADES SERVED*	*ADDRESS*	*ENROLLMENT 2015-2016 SCHOOL YEAR*
ELEMENTARY SCHOOLS			
C.F. Brown Elementary	K-5	2024 Vera Cruz Drive, Modesto	429
Crossroads Elementary	K-5	5800 Saxon Way, Riverbank	844
Freedom Elementary	K-5	2101 Fine Avenue, Modesto	689
Mary Ann Elementary	K-5	3101 Fine Avenue, Modesto	599
Orchard Elementary	K-5	1800 Wisdom Way, Modesto	557
Sherwood Elementary	K-5	819 E. Rumble Road, Modesto	475
Standiford Elementary	K-5	605 Tokay Avenue, Modesto	452
Stockard Coffee Elementary	K-5	3900 Northview Drive, Modesto	513
Sylvan Elementary	K-5	2908 Coffee Road, Modesto	302
Woodrow Elementary	K-5	800 Woodrow Avenue, Modesto	404
MIDDLE SCHOOLS			
Daniel J. Savage Middle	6-8	1900 Maid Marianne Lane, Modesto	906
Elizabeth Ustach Middle	6-8	2701 Kodiak Drive, Modesto	1,035
Somerset Middle	6-8	1037 Floyd Avenue, Modesto	985

SOURCE: SYLVAN UNION SCHOOL DISTRICT SCHOOL ACCOUNTABILITY REPORT CARDS 2015-16.

As shown in Table 3.12-3, the Sylvan Union School District schools had a total enrollment of approximately 8,190 students, of which 5,264 were enrolled in elementary school (grades K – 5) and 2,926 were enrolled in middle school (grades 6 – 8).

Modesto City Schools

As noted above, High school students within the Plan Area would be served by the Modesto City Schools district. The Modesto City Schools district provides school services for almost 15,000 students through the grades of 9 through 12 within its 250 square mile boundaries, including portions of Riverbank. Modesto City Schools operate seven comprehensive and one alternative high schools (grades 9-12). See Table 3.12-4 for the Modesto City Schools school inventory.

TABLE 3.12-4: MODESTO CITY SCHOOLS DISTRICT SCHOOL INVENTORY

SCHOOL	*GRADES SERVED*	*ADDRESS*	*ENROLLMENT 2015-2016 SCHOOL YEAR*
HIGH SCHOOL			
Fred C. Beyer High	9-12	1717 Sylvan Avenue, Modesto	1,716
Grace M. Davis High	9-12	1200 W. Rumble Road, Modesto	1,661
Thomas Downey High	9-12	1000 Coffee Road, Modesto	2,026
James C. Enochs High	9-12	3201 Sylvan Avenue, Modesto	2,407
Joseph A. Gregori High	9-12	3701 Pirrone Road, Modesto	2,205
Modesto High	9-12	18 H Street, Modesto	2,450
Johansen High	9-12	641 Norseman Drive, Modesto	1,747
Elliott Alternative Education Center	9-12	1440 Sunrise Avenue, Modesto	507

SOURCE: MODESTO CITY SCHOOLS SCHOOL ACCOUNTABILITY REPORT CARD 2015-16.

As shown in Table 3.12-4, the Modesto City Schools District had a total enrollment of approximately 14,719 students in high school (grades 9 – 12).

Library Services

The Riverbank Public Library, a branch library of the Stanislaus County Library system, is located at 3442 Santa Fe Street. The library offers a circulating collection of books, magazines, CDs, and DVDs in both English and Spanish.

3.12.2 REGULATORY SETTING

STATE

Police Protection

There are no federal or state regulations related to police protection services applicable to the proposed Project.

Fire Protection and Emergency Response

CALIFORNIA OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

In accordance with California Code of Regulations Title 8 Sections 1270 "Fire Prevention" and 6773 "Fire Protection and Fire Equipment" the California Occupational Safety and Health Administration (Cal/OSHA) has established minimum standards for fire suppression and emergency medical services. The standards include, but are not limited to, guidelines on the handling of highly combustible materials, fire hose sizing requirements, restrictions on the use of compressed air, access roads, and the testing, maintenance, and use of all firefighting and emergency medical equipment.

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.

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.

FIRE PROTECTION

The California Fire Code contains regulations relating to construction and maintenance of buildings and the use of premises. Topics addressed in the Code include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions to protect and assist first responders, industrial processes, and many other general and specialized fire safety requirements for new existing buildings and premises.

UNIFORM FIRE CODE

The Uniform Fire Code with the State of California Amendments contains regulations relating to construction, maintenance, and use of buildings. Topics addressed in the California Fire Code include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions intended to protect and assist fire responders, industrial processes, and many other general and specialized fire-safety requirements for new and existing buildings and the surrounding premises. The Fire Code contains specialized technical regulations related to fire and life safety.

CALIFORNIA HEALTH AND SAFETY CODE

State fire regulations are set forth in Sections 13000 et seq. of the California Health and Safety Code. This includes regulations for building standards (as also set forth in the California Building Code), fire

protection and notification systems, fire protection devices such as extinguishers and smoke alarms, high-rise building and childcare facility standards, and fire suppression training.

NFPA 1710

The NFPA 1710 Standards are applicable to urban areas and where staffing is comprised of career Firefighters. According to these guidelines, a career fire department needs to respond within six minutes, 90 percent of the time with a response time measured from the 911 call to the time of arrival of the first responder.

The standards are divided as follows:

- Dispatch time of one (1) minute or less for at least 90 percent of the alarms
- Turnout time of one (1) minute or less for EMS calls (80 seconds for fire and special operations response)
- Fire response travel time of four (4) minutes or less for the arrival of the first arriving engine company at a fire incident and eight (8) minutes or less travel time for the deployment of an initial full alarm assignment at a fire incident
- Eight (8) minutes or less travel time for the arrival of an advanced life support (ALS) (4 minutes or less if provided by the fire department

Parks/Recreation

QUIMBY ACT

The Quimby Act (California Government Code Section 66477) states that "the legislative body of a city or county may, by ordinance, require the dedication of land or impose a requirement of the payment of fees in lieu thereof, or a combination of both, for park or recreational purposes as a condition to the approval of a tentative or parcel map." Requirements of the Quimby Act apply only to the acquisition of new parkland and do not apply to the physical development of new park facilities or associated operations and maintenance costs. The Quimby Act seeks to preserve open space needed to develop parkland and recreational facilities; however, the actual development of parks and other recreational facilities is subject to discretionary approval and is evaluated on a case-by-case basis with new residential development. The City requires parkland dedication and improvement or collects impact fees to build park facilities in the future. The park land dedication requirements (Quimby Act compliance) are determined at the time of Final Map and parks impact fees are collected at the time of building permit issuance.

Schools

CALIFORNIA CODE OF REGULATIONS

The California Code of Regulations, Title 5 Education Code, governs all aspects of education within the State.

CALIFORNIA DEPARTMENT OF EDUCATION

The California Department of Education (CDE) School Facilities Planning Division (SFPD) prepared a School Site Selection and Approval Guide that provides criteria for locating appropriate school sites in the State of California. School site and size recommendations were changed by the CDE in 2000 to reflect various changes in educational conditions, such as lowering of class sizes and use of advanced technology. The expanded use of school buildings and grounds for community and agency joint use and concern for the safety of the students and staff members also influenced the modification of the CDE recommendations.

Specific recommendations for school size are provided in the School Site Analysis and Development Guide. This document suggests a ratio of 1:2 between buildings and land. CDE is aware that in a number of cases, primarily in urban settings, smaller sites cannot accommodate this ratio. In such cases, the SFPD may approve an amount of acreage less than the recommended gross site size and building-to-ground ratio.

Certain health and safety requirements for school site selection are governed by state regulations and the policies of the SFPD relating to:

- Proximity to airports, high-voltage power transmission lines, railroads, and major roadways;
- Presence of toxic and hazardous substances;
- Hazardous facilities and hazardous air emissions within one-quarter mile;
- Proximity to high-pressure natural gas lines, propane storage facilities, gasoline lines, pressurized sewer lines, or high-pressure water pipelines;
- Noise;
- Results of geological studies or soil analyses;
- Traffic and school bus safety issues.

LEROY F. GREENE SCHOOL FACILITIES ACT OF 1998 (SB 50)

The "Leroy F. Greene School Facilities Act of 1998," also known as Senate Bill No. 50 or SB 50 (Chapter 407, Statutes of 1998), governs a school district's authority to levy school impact fees. This comprehensive legislation, together with the $9.2 billion education bond act approved by the voters in November 1998 known as "Proposition 1A", reformed methods of school construction financing in California. SB 50 instituted a new school facility program by which school districts can apply for state construction and modernization funds. It imposed limitations on the power of cities and counties to require mitigation of school facilities impacts as a condition of approving new development and provided the authority for school districts to levy fees at three different levels:

- **Level I** fees are the current statutory fees allowed under Education Code 17620. This code section provides the basic authority for school districts to levy a fee against residential and commercial construction for the purpose of funding school construction or reconstruction of facilities. These fees vary by district for residential construction and commercial construction and are increased biannually.

- **Level II** fees are outlined in Government Code Section 65995.5, allowing school districts to impose a higher fee on residential construction if certain conditions are met. These conditions include having a substantial percentage of students on multi-track year-round scheduling, having an assumed debt equal to 15–30 percent of the district's bonding capacity (percentage is based on revenue sources for repayment), having at least 20 percent of the district's teaching stations housed in relocatable classrooms, and having placed a local bond on the ballot in the past four years which received at least 50 percent plus one of the votes cast. A Facility Needs Assessment must demonstrate the need for new school facilities for unhoused pupils is attributable to projected enrollment growth from the construction of new residential units over the next five years.
- **Level III** fees are outlined in Government Code Section 655995.7. If State funding becomes unavailable, this code section authorizes a school district that has been approved to collect Level II fees to collect a higher fee on residential construction. This fee is equal to twice the amount of Level II fees. However, if a district eventually receives State funding, this excess fee may be reimbursed to the developers or subtracted from the amount of state funding.

The Sylvan Union School District completed a School Facilities Fee Plan – Level I Developer Fee Justification Study in April 2016. According to the Study, the residential fee of $3.48 per square foot is applied 60 percent ($2.09) at the elementary level and 40 percent ($1.39) at the high school level. The fee is collected on covered and enclosed residential space, except garages and carports. The amount of this fee is adjusted every other year according to the state-wide cost index for Class B construction as adopted by the State Allocation Board.

LOCAL

City of Riverbank General Plan

GOALS: PUBLIC SERVICES AND FACILITIES ELEMENT

- PUBLIC-7. Police Enforcement Services, Staffing and Deployment Adequate to Serve the Needs of Existing and Planned Development.
- PUBLIC-8. Fire Protection Services, Staffing, and Deployment Adequate to Serve the Needs of Existing and Planned Development.
- PUBLIC-9. School Facilities that Serve Existing and Future Needs and Complement Our Neighborhoods.
- PUBLIC-11. Develop a Diversified Park System in a Variety of Scales and Environments to Meet Existing and Future Needs.

POLICIES: PUBLIC SERVICES AND FACILITIES ELEMENT

- PUBLIC-7.1. The City will ensure that adequate fire flow pressure is available in relation to structure size, design, requirements for construction, and/or built-in fire protection systems. Maintenance of adequate fire flows includes factors such as adequate storage,

system gridding, hydrant spacing, and spacing and sizing of water mains, as specified in the City's Water Master Plan.

- PUBLIC-7.2. For new development, the City will require a minimum fire flow pressure of 1,500 GPM (sustainable for at least two hours) for residential use. For new development, the City will require a minimum fire flow pressure of approximately 3,600 GPM (sustainable for longer periods) for larger residences and for other building types, depending on the particular use and structure characteristics, and in coordination with the fire service provider.
- PUBLIC-7.3. The City will require that fire stations be located to ensure the appropriate level of service (including adequate response time per Policy PUBLIC-7.5), community compatibility, and efficiency, including the location of such facilities relative existing and planned public parks, libraries, and other activity centers.
- PUBLIC-7.4. The City will coordinate with fire protection providers, including through reciprocity arrangements, to ensure equipment, staffing, and facilities for emergency medical services, urban search and rescue, hazardous materials emergency response, and other relevant needs, as appropriate. The City will ensure consistency with National Fire Protection Association and Stanislaus Consolidated Fire Protection District response requirements.
- PUBLIC-7.5. The City will coordinate with fire protection providers to an emergency response system capable of achieving the following standards in 95% of all cases: first fire emergency response unit within six minutes of dispatch; full alarm assignment within 10 minutes of dispatch; second alarm assignment within 15 minutes of dispatch; and an Insurance Service Office (ISO) rating of Class 2 for areas within the City.
- PUBLIC-7.6. The City will work with property owners in existing developed portions of the City to achieve a minimum fire flow pressure of 1,500 GPM (sustainable for at least two hours) for residential use and approximately 3,600 GPM (sustainable for longer periods) for larger residences and for other building types, depending on the particular use and structure characteristics, and in coordination with the fire service provider.
- PUBLIC-8.1. New developments shall fund and/or construct adequate law enforcement facilities to serve new growth areas, as required, in coordination with law enforcement service providers.
- PUBLIC-8.2: The City's goal is to provide 1.25 sworn officers per 1,000 residents. The City will plan and budget and coordinate with service providers with this service standard as a goal.
- PUBLIC-8.3: The City will coordinate with law enforcement service providers to ensure a four-minute average response time for emergency calls within the City.
- PUBLIC-8.4: The City will require design of structures, streetscapes, pathways, project sites, and other elements of the urban environment to allow for surveillance of publicly accessible areas.
- PUBLIC-8.5: The City will coordinate with applicable law enforcement service providers to ensure adequate funding, staffing, training, and direction to provide City residents with responsive and effective law enforcement services of all types, including investigative, patrol, and other non-emergency services.

- PUBLIC-9.1: New development projects shall provide impact fees, land dedication, school construction, special taxes, and/or other means to the satisfaction of affected school districts to ensure levels of service, in accordance with State law.
- PUBLIC-9.2: The City will circulate development application materials to the appropriate school district representatives in association with CEQA and project review and incorporate school district comments into City actions on such development projects.
- PUBLIC-9.3: The City will work with local school districts in long-range land use planning to allow planning for school facilities for servicing new growth.
- PUBLIC-9.4: The City will work with local school districts to take advantage of joint-use opportunities that could benefit the City, especially for park and recreation facilities that could be used by schoolchildren during the school day and the community in the evening, on weekends, and during school breaks.
- PUBLIC-9.5: The City will ensure that areas around school sites are designed to allow easy pedestrian and bicycle access from surrounding neighborhoods. New development project applicants shall demonstrate to the satisfaction of the City that there are safe routes to and from school sites from surrounding planned neighborhoods prior to approval.
- PUBLIC-11.1: New developments shall set aside land and dedicate improved parkland according to City standards at a minimum rate of five acres per 1,000 residents. Landscaped areas along streets or other rights-of-way without trails, or other park and recreational facilities do not count toward this standard. Other open spaces without park facilities do not count toward the five-acre parkland minimum, although this land may be required to meet open space or landscaping requirements of the City's applicable development codes. For small projects, in cases of financial hardship, or where the required facility would serve areas outside the proposed project or plan, the City may allow participation in an in-lieu fee program to provide improved parkland. The distribution of parkland shall be as follows:
    - Community Parks: Minimum of 1.5 acres per 1,000 residents. Minimum of 15 acres in size. Specific design and facilities are as directed by the City based on population density, demographic structure, community preferences, use levels, and other criteria.
    - Neighborhood Parks: Minimum of 1.5 acres per thousand residents. Minimum of 5 acres in size. Maximum of ½ mile from all proposed residences. Specific design and facilities are as directed by the City based on population density, demographic structure, community preferences, use levels, and other criteria.
    - Playgrounds, plazas, tot lots, linear parks, recreation trails, and other similar parklands may count for up to 1.5 acre per thousand of the 5-acre standard. Maximum of ¼ mile from all proposed residences. There is no minimum size. Specific design and facilities are as directed by the City based on population density, demographic structure, community preferences, use levels, and other criteria.
- PUBLIC-11.2: The City of Riverbank will maintain park in-lieu fees at a level adequate to provide parks in a ratio of acres to population, as established by this element.
- PUBLIC-11.3: The City will maintain and improve existing parks and develop new parks to serve existing developed portions of the City, as feasible.

- PUBLIC-11.4: The City will encourage the use of greenways and natural open space areas for certain compatible recreational opportunities, such as pedestrian pathways, while preserving important ecological habitats.

GOAL: LAND USE ELEMENT

- LAND-5. Full Range of Public Services and Facilities for All Area of the Community.

POLICIES: LAND USE ELEMENT

- LAND-5.1: The City will maintain public services and facilities in the existing developed City and make improvements as necessary to maintain a consistent Citywide level of service.
- LAND-5.3: Approved projects, plans, and subdivisions in new growth areas will set aside, in areas convenient and safe for all travel modes, adequate land for parks and schools; or, in-lieu of parkland and school property dedication, approved projects, plans, and subdivisions in new growth areas will participate in joint funding and siting of such facilities.
- LAND-5.5: Approved projects, plans, and subdivisions in new growth areas will set aside adequate land for, and shall otherwise accommodate public infrastructure and service needs consistent with General Plan policy.

GOAL: SAFETY ELEMENT

- SAFE-2. Provide Adequate Access for Emergency Response.

POLICIES: SAFETY ELEMENT

- SAFE-1.1. The City will ensure that approved development projects and public investments are consistent with the information provided in the Stanislaus County Multi-Jurisdictional Hazard Mitigation Plan.
- SAFE-1.2. The City will continue to enforce State of California Building Standards Commission uniform codes, such as the California Building Code and California Fire Code with adopted Fire District amendments.
- SAFE-1.3. The City will encourage the retrofitting of older buildings to current safety standards, and require compliance to recommendations of the fire and law enforcement service providers and the State Building Standards Commission uniform codes in coordination with major remodeling or additions.
- SAFE-1.4. The City will require set backs, ignition resistant building materials, or other measures to reduce exposure to potential wildfires in areas designated for natural open space preservation, in coordination with California Department of Forestry and Fire Protection recommendations and Maintenance of Defensible Space Measures, as appropriate.
- SAFE-1.5. Approved plans, projects, and subdivision requests will ensure adequate fire flow per City and Fire District standards. The installation of automatic fire sprinklers may, at the discretion of the City and the Fire Chief, allow for a reduction in the required fire flow, while still complying with the California Fire Code requirements.

- SAFE-1.8. The City will require that hazardous materials are used, stored, transported, and disposed in a safe manner and in compliance with local, State, and federal safety standards.
- SAFE-1.9. Developments located on farmland or former farmland shall prepare reports that analyze residual agricultural chemicals that may be present on-site. Developments on such sites shall include measures to remove any risk due to hazardous materials for on-site proposed land uses, as well as existing and proposed land uses and users in the vicinity.
- SAFE-1.10. The City will review development requests and require that any airborne, waterborne, windborne, and other hazardous materials issues are fully disclosed, analyzed, and mitigated to ensure against any risk relative to any nearby planned or existing land uses and their users.
- SAFE-2.1. The City will require development and maintenance of a road system that provides adequate access for emergency equipment.
- SAFE-2.4. The City will coordinate with the County Office of Emergency Services to identify evacuation routes and operational plans to be used in case of dam failure, flood disaster, and wildfire for any new growth areas in addition to any updates required to serve the existing developed City.

City of Riverbank Municipal Code

Section 152.037, Park and Recreation Dedication and Fees, of the City Municipal Code outlines the parkland requirements for new development within the City. Section 152.037(B) of the Code states:

> *As a condition of approval of a parcel map or tentative map, the subdivider shall dedicate and develop land, pay a fee in lieu thereof, or both, at the option of the city for park or recreational purposes at the time, and according to the standards and formula contained in this section.*
>
> *(1) The subdivider shall without credit:*
>
> *(a) Provide full public improvements, utility expansions and connections, including but not limited to sidewalks, curbs, gutters, street paving, traffic control devices, and street trees to land which is dedicated pursuant to this section;*
>
> *(b) Provide fencing along the property line of that portion of the subdivision contiguous to the dedicated land;*
>
> *(c) Provide improved drainage through the site; and*
>
> *(d) Provide other improvements which the city determines to be essential to the acceptance of the land for recreational purposes.*
>
> *(2) Access. All land offered for dedication to local park or recreational purposes shall have access to at least one existing or proposed public street that will provide access to the park or recreational facility by the time that the facility is completed.*

Additionally, Section 152.037(D) outlines the standards and formula for dedication of land. According to this section of the Code, "*Where a park or recreational facility has been designated in the recreation element of the general plan of the city, and is to be located in*

whole or in part within the proposed subdivision to serve the immediate and future needs of the residents of the subdivision, the subdivider shall dedicate land for a local park sufficient in size and topography to serve the residents of the subdivision. The amount of land to be provided shall be determined pursuant to the standards and formula listed below. If the amount of land needed for the park according to the recreational element exceeds the amount of land to be dedicated according to the formula, the city shall pay compensation in an amount as determined pursuant to Cal. Code Civ. Proc. §§ 1260.010 et seq. and §§ 1263.010 et seq."

3.12.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed Project will have a significant impact on public services if it would result in:

- Substantial adverse physical impacts associated with the provisions of new or physically altered government facilities, and/or the 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 following public services:
    - Police Protection
    - Fire Protection
    - Parks and Recreation
    - Schools
    - Other public facilities
- Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment.
- Would increase the use of existing neighborhood and regional parks or other recreational facilities, such that substantial physical deterioration of the facility would occur or be accelerated.

IMPACTS AND MITIGATION MEASURES

Impact 3.12-1: The proposed Project has the potential to require the construction of police department facilities which may cause substantial adverse physical environmental impacts. (Less than Significant with Mitigation)

The City's General Plan includes policies that would allow for the City's Police Services to continue providing adequate staffing levels. Below is a list of relevant policies:

- The City's goal is to provide 1.25 sworn officers per 1,000 residents. The City will plan and budget and coordinate with service providers with this service standard as a goal (Policy PUBLIC-8.1).

- The City will coordinate with law enforcement service providers to ensure a four-minute average response time for emergency calls within the City (Policy PUBLIC-8.3).
- The City will coordinate with applicable law enforcement service providers to ensure adequate funding, staffing, training, and direction to provide City residents with responsive and effective law enforcement services of all types, including investigative, patrol, and other non-emergency services (Policy PUBLIC-8.5).

Impact fees from new development are collected based upon projected impacts from each development. The adequacy of impact fees is reviewed on an annual basis to ensure that the fee is commensurate with the service. Payment of the applicable impact fees by the Project applicant, and ongoing revenues that would come from property taxes, sales taxes, and other revenues generated by the proposed Project, would fund capital and labor costs associated with police services.

As noted previously, capital costs for new facilities and equipment would be funded through development impact fees. Operating costs could be funded through a combination of an increased tax base and the formation of a new services CFD or annexation into an existing services CFD.

Based on the current adequacy of existing response times and the ability of the Riverbank Police Services to serve the City, it is anticipated that the existing police department facilities are sufficient to serve the proposed Project. The proposed Project would not require the construction of police department facilities in order to serve the Project.

Policy PUBLIC 8.1 of the 2005-2025 Riverbank General Plan states "new developments shall fund and/or construct adequate law enforcement facilities to serve new growth areas, as required, in coordination with law enforcement service providers". In addition, General Plan Policy PUBLIC 8.2 states "the City goal is to provide 1.25 sworn officers per 1,000 residents". Riverbank's police station is located at 6727 Third Street in downtown Riverbank. Staffing includes one Lieutenant (Chief of Police), two Sergeants, 15 Deputy Sheriffs/Detectives, one Supervising Legal Clerk, two Legal Clerks and one Community Service Officer. In total, 18 sworn officers provide police services within the City of Riverbank. Currently, the calculated ratio of police officers per 1,000 is 73.14 per 1,000 population, using the Department of Finance population estimate for the City of 24,610 (January 1, 2017). The Riverbank City Council, in adopting Resolutions 2016-115 and 116 on October 23, 2016, set policy that requires all new development to annex into Community Facilities District No. 2016-01 for police protection. "The increase of Police Services created by development will create an adverse impact to City financial capacity". Therefore, the mitigation measure listed below would ensure that impacts are **less than significant**.

MITIGATION MEASURE(S)

Mitigation Measure 3.12-1: *Prior to the City recording a "Final Map" for each Project within the Plan Area, the owner of the project/map shall either annex the mapped property into a Community Facilities District ("CFD"), or create a new CFD for the mapped property, which will include funding for operational services with the Riverbank Police Department (Stanislaus County Sheriff).*

Impact 3.12-2: The proposed Project has the potential to require the construction of fire department facilities which may cause substantial adverse physical environmental impacts. (Significant and Unavoidable)

The City's General Plan includes policies that would allow for SCFPD to continue providing adequate facilities and staffing levels. Below is a list of relevant policies:

- The City will require that fire stations be located to ensure the appropriate level of service (including adequate response time per Policy PUBLIC-7.5), community compatibility, and efficiency, including the location of such facilities relative to existing and planned public parks, libraries, and other activity centers (Policy PUBLIC-7.3).
- The City will coordinate with fire protection providers, including through reciprocity arrangements, to ensure equipment, staffing, and facilities for emergency medical services, urban search and rescue, hazardous materials emergency response, and other relevant needs, as appropriate. The City will ensure consistency with National Fire Protection Association and Stanislaus Consolidated Fire Protection District response requirements (Policy PUBLIC-7.4).
- The City will coordinate with fire protection providers to an emergency response system capable of achieving the following standards in 95% of all cases: first fire emergency response unit within six minutes of dispatch; full alarm assignment within 10 minutes of dispatch; second alarm assignment within 15 minutes of dispatch; and an ISO rating of Class 2 for areas within the City (Policy PUBLIC-7.5).
- The City's goal is to provide 1.25 sworn officers per 1,000 residents. The City will plan and budget and coordinate with service providers with this service standard as a goal (Policy PUBLIC-8.1).

According to the City's General Plan EIR, there are no official services standards for fire protection services. The basic standard of cover for the Riverbank response area is:

- Respond to 95 percent of all calls for emergency assistance within 5 minutes of dispatch;
- Provide a minimum of 11 firefighters for initial attack to structure fires within 10 minutes;
- Provide a minimum of 20 firefighters for sustained attack to structural fires within 20 minutes of dispatch.

Also, SCFPD works to ensure that firefighters will reach a victim of a full respiratory or cardiac arrest within six minutes, as the chances of reviving the victim are very small after this point.

The proposed Project includes dedication of a fire station site near the corner of Crawford and Oakdale Road; however, it is unclear at this time when the station will be constructed. The construction of this potential future station would have a beneficial impact on response times and response effectiveness; this will directly affect the ISO rating and enhance service to the citizens of Riverbank.

As noted previously, the City of Riverbank and SCFPD will work cooperatively to ensure new development pays its fair share for facilities associated with new growth. The imposition of Fire Mitigation Fees provide the financial tools necessary to guarantee capacity will be available in the future. In addition, the General Plan recognizes the need for increased fire services for new development and sets forth polices that support fire protection staffing, facilities, and minimum fire flow requirements. Ultimately, the City of Riverbank would have oversight for assessing future fees for the Project.

Additionally, as noted above, the SCFPD is currently updating their Facilities Impact Study.[2] The Study will summarize an analysis of the need for fire facilities by the SCFPD to accommodate new development within their service area. The SCFPD has contracted Capitol Public Finance Group to complete the Study.

Impact fees from new development are collected based upon projected impacts from each development. The adequacy of impact fees is reviewed on an annual basis to ensure that the fee is commensurate with the service. Payment of the applicable impact fees by the Project applicant, and ongoing revenues that would come from property taxes, sales taxes, and other revenues generated by the proposed Project, would fund capital costs associated with fire protection facilities. Potential environmental impacts associated with the future construction of a fire station within the Plan Area are addressed throughout this EIR.

This EIR analyzes the physical environmental effects that may occur as a result of development and introduction of new urban land uses within the Plan Area. A future fire station, if constructed, would fall within the range of environmental impacts disclosed in this EIR, and would be subject to relevant mitigation measures included in this EIR. It is noted, however, that development of a fire station within the proposed Plan Area would contribute to significant and unavoidable impacts related to aesthetics (Impacts 3.1-1 and 4.2), agricultural resources (Impacts 3.2-1 and 4.4), air quality (Impacts 3.3-1,3.3-2, and 4.5), greenhouse gases (Impacts 3.7-1,3.7-2, and 4.9), noise (Impacts 3.11-3 and 4.17), and transportation and circulation (Impacts 3.13-1, 3.13-2, 3.13-5, 3.13-6, 3.13-7, 3.13-8, 3.13-10, 3.13-15, 3.13-16, 3.13-17, 3.13-18, 3.13-20, 3.13-22, 3.13-23, 3.13-24, 3.13-25, 3.13-26, 3.13-27, 3.13-28, 4.17, 4.19, 4.20, 4.21, 4.23, 4.25, 4.26, 4.27, 4.28, 4.29, 4.30, and 4.31) . Therefore, consistent with the analysis included in this Draft EIR, impacts related to constructing new fire facilities to serve the proposed Project are considered **significant and unavoidable**.

[2] Personal communication between John Anderson, contract planner for the City of Riverbank, and Michael Wapnowski, deputy chief of the Stanislaus Consolidated Fire Protection District. February 1, 2018.

Impact 3.12-3: The proposed Project has the potential to require the construction of school facilities which may cause substantial adverse physical environmental impacts. (Significant and Unavoidable)

The Riverbank Planning Area is served by four school districts: Riverbank Unified School District, Sylvan Union School District, Modesto City Schools, and Stanislaus Union School District. The Stanislaus Union School District only serves the far west end of the Planning Area west of Coffee Road. The Sylvan Union School District and Stanislaus Union School District only provide kindergarten through eighth grade instruction. Students from the Riverbank Planning Area who attend elementary and middle school in these districts attend the Modesto City Schools district for high school. Riverbank Unified School District provides kindergarten through 12th grade instruction.

The Plan Area would be served by the Sylvan Union School District for kindergarten through eighth grade instruction. High school students within the Plan Area would be served by the Modesto City Schools district.

The Sylvan Union School District provides school services for over 8,000 students through the grades of K through 8 in Riverbank, Modesto and for adjacent unincorporated areas. The Sylvan Union School District operates ten elementary schools and three middle schools. The Sylvan Union School District schools had a total enrollment of approximately 8,190 students, of which 5,264 were enrolled in elementary school (grades K – 5) and 2,926 were enrolled in middle school (grades 6 – 8).

The Modesto City Schools district provides school services for almost 15,000 students through the grades of 9 through 12 within its 250 square miles of boundaries including parts of Riverbank. Modesto City Schools operate seven comprehensive and one alternative high schools (grades 9-12). The Modesto City Schools District had a total enrollment of approximately 14,719 students in high school (grades 9 – 12).

The proposed Project includes residential units that would directly increase the student population in the area. The proposed Project may indirectly increase the number of persons in the area as a result of employment potential; however, it is not possible to determine at this time whether employment opportunities would be utilized by the existing population with existing students in the schools or if employees would be recruited from outside the region, bringing new students to Riverbank.

The proposed Project would include the development of up to 2,852 dwelling units (up to 2,064 single-family and up to 788 multi-family), which would directly cause population growth and increase enrollment in the local school districts. Table 3.12-5 shows the anticipated number of elementary and middle school students that would be generated by the project.

TABLE 3.12-5: SYLVAN UNION SCHOOL DISTRICT STUDENT GENERATION (K-8 GRADES)

PROPOSED LAND USE	*GENERATION RATE*	*PROJECTED NUMBER OF STUDENTS*
ELEMENTARY SCHOOL		
2,064 SINGLE FAMILY DWELLINGS	0.280 STUDENTS/UNIT	578
788 MULTI-FAMILY DWELLINGS	0.083 STUDENTS/UNIT	65
	SUBTOTAL	*643*
MIDDLE SCHOOL		
2,064 SINGLE FAMILY DWELLINGS	0.150 STUDENTS/UNIT	310
788 MULTI-FAMILY DWELLINGS	0.111 STUDENTS/UNIT	87
	SUBTOTAL	*397*
	GRAND TOTAL	***1,040***

SOURCE: SYLVAN UNION SCHOOL DISTRICT SCHOOL FACILITIES FEE PLAN, 2016.

Utilizing the student generation rates provided by the Sylvan Union School District in the NOP comment letter for the Project (dated April 11, 2017), the proposed Project would be expected to generate approximately up to 643 new elementary school students and up to 397 new middle school students, for a total of 1,040 students generated at the Sylvan Union School District.

Table 3.12-6 shows the anticipated number of high school students that would be generated by the project.

TABLE 3.12-6: MODESTO CITY SCHOOLS STUDENT GENERATION (9-12 GRADES)

	GRADES 9-12 GENERATION RATE	*PROJECTED NUMBER OF STUDENTS*
2,064 SINGLE FAMILY DWELLINGS	0.176	363
788 MULTI-FAMILY DWELLINGS	0.176	139
	GRAND TOTAL	***502***

SOURCE: MODESTO CITY SCHOOLS NOP COMMENT LETTER RE: RESPONSE TO NOTICE OF PREPARATION, CROSSROADS WEST SPECIFIC PLAN, 2017.

Utilizing the student generation rates provided by the Modesto City Schools in the NOP comment letter for the Project (dated April 18, 2017), the proposed Project would be expected to generate approximately up to 502 new high school students. It is noted that, according to the Modesto City Schools in the NOP comment letter for the Project, the Plan Area is currently in the Beyer High School attendance area. However, the Board of Education may change high school attendance boundaries to accommodate enrollment at any time. The 2015/16 enrollment at Beyer High was 1,716 students. According to the Modesto City Schools in the NOP comment letter, this school is currently at approximately 75 percent capacity; however, some of this capacity comes from relocatable buildings that are well past their useful lives and may be removed from the campus. Enochs High School is at approximately 90 percent capacity.

The Specific Plan accommodates the possibilities for a future 10- to 12-acre elementary school as well as a 20-acre middle school within the Plan Area; however, it is unclear at this time when sufficient funding and/or approval of the site by the State will occur. Until a new elementary school and/or middle school site is developed, students within the Plan Area would most likely attend Crossroads Elementary School, Elizabeth Ustach Middle School, and Beyer High School, subject to

determination by the Sylvan Union School District and the Modesto City Schools District. The Plan Area is located in the aforementioned school attendance boundaries.

Both the Sylvan Union School District and the Modesto City Schools collect impact fees from new developments under the provisions of SB 50. Payment of the applicable impact fees by the Project applicant, would fund capital and labor costs associated with school construction. The adequacy of fees may be reviewed on an annual basis to ensure that the fee is commensurate with the service. Payment of the applicable impact fees by the Project applicant, and ongoing revenues that would come from property taxes, sales taxes, and other revenues generated by the proposed Project, would fund improvements associated with school services.

The Sylvan Union School District submitted a comment letter regarding the NOP for the proposed Project. In the NOP comment letter, the District suggests three preferred areas within the Plan Area for schools. One location (#1 in comment letter) is located directly across the street from the Alexander Dairy (Assessor's Parcel Number [APN] 074-014-006, south of Crawford Road). Another location (#3 in the comment letter) is located just west of location #1. The last location (#2 in the comment letter) is located approximately 0.3 miles southeast of the proposed school location.

Development of a school at one of the three suggested locations and at the proposed school location would require mitigation in order to address environmental concerns related to the current and past agricultural operations. For example, implementation of Mitigation Measure 3.8-2, which requires a soil sampling program to be implemented to assess potential agrichemical (including pesticides, herbicides, diesel, petrochemicals, etc.), would be required before a school is developed at any of the four locations.

Potential environmental impacts associated with the future construction of an elementary school within the Plan Area are addressed throughout this EIR. This EIR analyzes the physical environmental effects that may occur as a result of development and introduction of new urban land uses within the Plan Area. A future elementary school, if constructed, would fall within the range of environmental impacts disclosed in this EIR, and would be subject to relevant mitigation measures included in this EIR.

It is noted, however, that development of a fire station within the proposed Plan Area would contribute to significant and unavoidable impacts related to aesthetics (Impacts 3.1-1 and 4.2), agricultural resources (Impacts 3.2-1 and 4.4), air quality (Impacts 3.3-1,3.3-2, and 4.5), greenhouse gases (Impacts 3.7-1,3.7-2, and 4.9), noise (Impacts 3.11-3 and 4.17), and transportation and circulation (Impacts 3.13-1, 3.13-2, 3.13-5, 3.13-6, 3.13-7, 3.13-8, 3.13-10, 3.13-15, 3.13-16, 3.13-17, 3.13-18, 3.13-20, 3.13-22, 3.13-23, 3.13-24, 3.13-25, 3.13-26, 3.13-27, 3.13-28, 4.17, 4.19, 4.20, 4.21, 4.23, 4.25, 4.26, 4.27, 4.28, 4.29, 4.30, and 4.31). Therefore, consistent with the analysis included in this Draft EIR, impacts related to constructing new school facilities to serve the proposed Project are considered **significant and unavoidable**.

Impact 3.12-4: The proposed Project has the potential to have effects on other public facilities. (Less than Significant)

The proposed Project will bring residents and could bring employees to the area which may require the use of other public services such as libraries, etc. The City collects impact fees from new development based upon projected impacts from each development, including impacts on other public services. The City also reviews the adequacy of impact fees on an annual basis to ensure that the fee is commensurate with services provided. Payment of the applicable impact fees by the Project applicant, and ongoing revenues that would come from property taxes, sales taxes, and other revenues generated by the proposed Project, would fund capital and labor costs associated with these other public services.

The proposed Project does not trigger the need for new facilities associated with other public services. Consequently, new facilities for other public services are not proposed at this time. The proposed Project would not result in the need for new facilities for other public services, thus it will have a **less-than-significant** impact relative to this topic.

Impact 3.12-5: The proposed Project has the potential to require the construction of park and recreational facilities which may cause substantial adverse physical environmental impacts. (Less than Significant with Mitigation)

The proposed Project directly increases the number of persons in the area as a result of employment potential, and residential uses. The proposed Project includes up to 2,852 residential units, which is projected to increase the population by an estimated 9,469 (based on 3.32 persons per household). According to the most recent U.S. Census (2011-2015), the average number of persons residing in a dwelling unit in the City of Riverbank is 3.32. For the purposes of collecting fees to mitigate for increase park demands (Quimby Act), the California Government Code Section 66477 states: *The amount of land dedicated or fees paid shall be based upon the residential density, which shall be determined on the basis of the approved or conditionally approved tentative map or parcel map and the average number of persons per household. There shall be a rebuttable presumption that the average number of persons per household by units in a structure is the same as that disclosed by the most recent available federal census or a census taken pursuant to Chapter 17 (commencing with Section 40200) of Part 2 of Division 3 of Title 4.*

The Plan Area is home to the 11-acre Regional Sports Park owned and operated by the City of Riverbank. The proposed project would provide opportunity to expand the Regional Sports Park by an additional 11 acres. As shown in Figure 2.0-8 in Section 2.0, the proposed Crossroads West Specific Plan (CWSP) includes an average of nine acres of Neighborhood Park, 20-acres of dual-use park basin, and expansion of the Regional Sports Park to 22 acres. It is important to note that park lands used for dual-use purpose are allowable if they are correctly designed with ADA access and enough space for soccer or baseball play and a possible restroom facility. Ideal size for a dual-use

facility would be 12 acres minimum. In this case, the City of Riverbank would consider granting fee credit towards the City of Riverbank's park land dedication requirement for such a facility.

The proposed Project includes an additional 42 acres of park, open space, and Regional Sports Park uses to serve the community and surrounding area. The City's General Plan identifies a park standard based on a goal of five acres of developed parkland per 1,000 residents. The addition of 42 acres of park space falls short of the five acre per 1000 goal by 5.35 acres.

The actual amount of parkland dedication required for the Project will be determined during Tentative Subdivision Map approval and will be based on the number of proposed residential lots. Any parkland area not provided within the Plan Area will need to be covered with in-lieu fees.

Depending on the ultimate residential unit count for the Project and the amount of park land proposed for dedication, the Project developer might be required to pay the City of Riverbank parkland dedication in lieu fees to represent the shortage of park lands needed for the development. These in lieu fees would be used to pay for future land acquisition and development of park space. As such, with the addition of the proposed park space and implementation of the following mitigation, the proposed Project will result in a **less-than-significant** impact.

MITIGATION MEASURE(S)

Mitigation Measure 3.12-2: *Prior to the recording of any Final Maps, or in connection with any other final approvals for the MU-1 "Mixed Use Retail" area dedicated to residential development, the project developer shall dedicate and finance the improvement of sufficient park land in accordance with a park improvement plan, subject to approval by the City, or pay sufficient in lieu fees in accordance with the Quimby Act and the City's General Plan policy, to develop at least five acres of parkland per 1,000 residents. If sufficient park area is not provided for in the subdividable lands in accordance with the Quimby Act and City Ordinances, the Project applicant shall demonstrate where the parkland dedication may occur and provide surety of its dedication and improvement according to a defined time line for dedication and improvement. This dedication requirement shall include development of full park improvement plans to be approved by the Director of Parks and Recreation. The timing of the park improvements shall be negotiated with the developer unless stipulated in a Development Agreement or Subdivision Improvement Agreement.*

Impact 3.12-6: The proposed Project has the potential to increase the use of existing neighborhood and regional parks or other recreational facilities, such that substantial physical deterioration of the facility would occur or be accelerated. (Less than Significant)

As stated previously, the proposed Project will directly, and may indirectly increase the number of persons in the area as a result of employment potential and visitor-serving uses. It is not anticipated that the proposed Project would result in a significant increase in the use of existing neighborhood and regional parks or other recreational facilities from people associated with the employment

potential and visitor-serving uses. The proposed Project does, however, include extensive new recreational facilities for the community and residents within the Plan Area, which more than offset any new demand for parks or recreational facilities that could result from the employment potential and residential uses.

The proposed Project would not significantly increase the use of an existing park, or other recreational facility. Therefore, it is not anticipated that any substantial physical deterioration of existing facilities would occur or be accelerated. As such, the proposed Project would have a **less-than-significant** impact relative to this topic.

This section of the EIR analyzes the potential impacts of the proposed Crossroads West Specific Plan (CWSP) Project (proposed Project) on the surrounding transportation system including roadways, bicycle/pedestrian facilities, and transit facilities/services. This section identifies the significant impacts of the proposed Project and recommends mitigation measures to lessen their significance. An evaluation of vehicular access to the Project is also provided. All technical calculations are in the Appendix F of the Draft EIR.

3.13.1 ENVIRONMENTAL SETTING

PROJECT LOCATION

The Plan Area is located within the unincorporated area of Stanislaus County. The approximately 390-acre Plan Area is adjacent to the City of Riverbank (City) limits to the north and east. The Plan Area is contained within the City's existing Sphere of Influence (SOI), and the Plan Area was previously analyzed at a programmatic level in the City's 2005-2025 General Plan Update Environmental Impact Report (EIR).

The Plan Area is bounded on the east by Oakdale Road, on the south by Claribel Road, on the north by the Modesto Irrigation District (MID) Main Canal and the City of Riverbank city limits, and on the west by those property lines approximately 0.5-mile west of Oakdale Road. The proposed Project would result in the annexation of the APN's described in Table 2.0-1 of Section 2.0, Project Description, into the City of Riverbank.

Regional access to the Plan Area is provided by many roads that fall under the jurisdiction of the City of Riverbank, as well as the City of Modesto, Stanislaus County, and the California Department of Transportation (Caltrans). Patterson Road (State Route [SR] 108) and Claribel Road connect the project with the northern Modesto and SR 99 area to the west and with the Oakdale area to the east. North-south streets such as McHenry Avenue, Coffee Road, Oakdale Road, Roselle Avenue, and Claus Road link the Plan Area with the Modesto area to the south. Figure 3.13-1 displays the regional location of the Project site relative to the surrounding transportation system.

STUDY AREA ROADWAYS AND INTERSECTIONS

Two major streets front the Plan Area:

Claribel Road is a major east-west arterial that extends easterly from an intersection on McHenry Avenue (SR 108) past the Plan Area along the south side of Riverbank into rural Stanislaus County beyond Oakdale-Waterford Highway. Claribel Road is designated an Arterial in the Riverbank General Plan Circulation Element. Claribel Road is currently a four-lane facility from McHenry Avenue to Oakdale Road, but between Oakdale Road and Squire Wells Way, the north side has been widened to its ultimate four-lane width. The posted speed limit is 45 miles per hour (mph).

Traffic counts conducted for the proposed Project traffic study (November 2016) indicate that Claribel Road carried 20,080 vehicles per day (vpd) in the area from McHenry Avenue to Coffee

Road, 19,720 vpd from Coffee Road to Oakdale Road, 14,250 vpd from Oakdale Road to Roselle Avenue, and 10,930 vpd from Roselle Avenue to Claus Road.

Oakdale Road is a major north-south arterial that extends from an intersection on Patterson Road (SR 108) south through Riverbank into Modesto to its southern terminus on Scenic Drive along the Tuolumne River. Oakdale Road is a divided four-lane facility in most of Riverbank. The segment from Morrill Road to Crawford Road has a single southbound lane. Oakdale Road narrows to two-lanes in Modesto between Claribel Road and Claratina Avenue. The route gains a second southbound lane south of Claratina Avenue and is four-lanes south of Sylvan Avenue. The posted speed limit on Oakdale Road is 50 mph in Riverbank.

Traffic counts indicated that Oakdale Road carried 13,790 vpd between Patterson Road and Morrill Road, 13,620 vpd between Morrill Road and Crawford Road, 17,510 vpd between Crawford Road and Claribel Road and 18,840 vpd between Claribel Road and Claratina Avenue.

The study area includes these east-west streets:

Patterson Road is a major east-west arterial that extends easterly from an intersection on McHenry Avenue through Riverbank across rural Stanislaus County into the area south of Oakdale to its eastern terminus at the Albers Road / Oakdale Road / Waterford Highway intersection. The segment through western Riverbank to Callander Avenue is also SR 108. Patterson Road is a two-lane rural highway from McHenry Avenue to the Hot Springs Lane intersection in western Riverbank. The route is a four-lane facility from that point east to Jackson Avenue and is a two-lane road from Jackson Avenue through the Callander Avenue intersection. Patterson Road continues east as a two-lane road through Riverbank.

Caltrans traffic counts for SR 108 indicate that Patterson Road carried an Annual Average Daily Traffic (AADT) volume of 14,100 vpd east of McHenry Avenue to Coffee Road, 15,600 vpd from Coffee Road to Oakdale Road and 16,700 vpd east of Oakdale Road.

Morrill Road is an east-west collector street that runs from Coffee Road to Roselle Avenue through western Riverbank. Morrill Road is a two-lane facility. Traffic counts conducted for this study indicated that Morrill Road carried 1,770 vpd between Coffee Road and Oakdale Road and 4,660 vpd east of Oakdale Road.

Crawford Road is an east-west collector that extends easterly from Coffee Road through the middle of the Plan Area across Oakdale Road to Roselle Avenue. Crawford Road is a two-lane roadway. The western area of Crawford Road provides access to several rural residences and a raised median has been installed in the Oakdale Road / Crawford Road intersection to preclude east-west through traffic.

The daily traffic counts observed on Crawford Road totaled 480 vpd between Coffee Road and Oakdale Road and 4,890 vpd east of Oakdale Road.

Claratina Avenue – Pelandale Avenue is an east-west expressway across northern Modesto from SR 99 to Oakdale Road. Claratina Avenue is currently a two-lane road east of McHenry Avenue, but the City of Modesto is pursuing a project to widen Claratina Avenue to four-lanes.

Mable Avenue is a two-lane collector street that runs from Coffee Road to Oakdale Road.

Standiford Avenue – Sylvan Avenue is a major arterial street that runs from SR 99 to Claus Road. Claus Road is a four-lane facility.

Future North County Corridor (NCC). Future plans for regional circulation in this area of Stanislaus County involve the development of bypass routes to reduce traffic on existing state routes and other major facilities. The NCC Expressway is expected to link SR 99 in northern Modesto with SR 120/108 east of Oakdale. The NCC is identified in the Riverbank General Plan Element, and the NCC's EIR for this two-lane / six-lane facility was available for public review as the CWSP traffic study was being prepared. The alignment of NCC has not been adopted. NCC alternative alignments all make use of a similar route across the southern Riverbank – Northern Modesto area, and four alternatives for the area east of Riverbank and east of Oakdale are being evaluated in the EIR. The NCC will become State Route 108 when completed.

The study area includes these north-south streets:

McHenry Avenue is a major north-south arterial that extends from the City of Modesto across the Stanislaus River to Escalon. The portion of McHenry Avenue south of Patterson Road is also SR 108. McHenry Avenue varies in width, as the roadway has six lanes south of Coralwood Road, four-lanes from Coralwood Road through the Kiernan Avenue / Claribel Road intersection, and two-lanes north to San Joaquin County. Stanislaus County is currently pursuing a project to widen northern McHenry Avenue to four lanes.

Caltrans traffic counts (2015) indicate that McHenry Avenue carried 19,200 AADT south of Kiernen Avenue and 13,300 AADT south of Patterson Road.

Coffee Road is a north-south arterial street that extends south from Patterson Road across Claribel Road into Modesto and its southern terminus on Scenic Drive along the Tuolumne River. Coffee Road is a two-lane facility from Patterson Road to Mable Avenue and is a four-lane facility from that point south.

Traffic counts made for the CWSP traffic study indicate that Coffee Road carried 3,750 vpd from Patterson Road to Crawford Road, 5,610 vpd between Crawford Road and Claribel Road, and 10,930 vpd south of Claribel Road.

Roselle Avenue is an arterial street that extends south from Patterson Road in downtown Riverbank across Claribel Road into Modesto. Roselle Avenue is generally a two-lane roadway through Riverbank, but portions of the alignment have been widened to the ultimate four-lane

width as development has proceeded. South of the Claribel Road intersection. Roselle Road is a two-lane facility but widens to four-lanes at Floyd Avenue.

The daily traffic volume on Roselle Avenue was observed to be 9,260 vpd south of Claribel Road.

Terminal Avenue is a two-lane north-south collector street that lies east of and parallel to the Burlington Northern Santa Fe (BNSF) railroad and extends from Patterson Road south to an intersection on Claus Road north of Sylvan Avenue.

Claus Road is a north-south arterial street that originates at an intersection on SR 108 in northeastern Riverbank and continues southerly through Modesto to an intersection on SR 132 in eastern Modesto. Claus Road is a two-lane facility through Riverbank, although the roadway has been widened to its ultimate width in various locations. Claus Road widens to a four-lane facility at Briggsmore Avenue in Modesto.

EXISTING PEDESTRIAN AND BICYCLE FACILITIES

The pedestrian and bicycle facilities in the study area are described below.

Pedestrian System

A majority of roadways in the developed areas of the City of Riverbank provide sidewalks and crossings for pedestrians, but these facilities are limited in the rural areas of the community that have not been developed and in the unincorporated areas of Stanislaus County near Riverbank. Sidewalks exist on the west side of Oakdale Road north of Morrill Road and has a shared Class 1 bikeway from Crawford Road to Claribel Road. Sidewalk is present on the east side of Oakdale Road from Patterson Road to Claribel Road.

Bicycle Facilities

The Stanislaus Council of Governments (StanCOG) 2013 Non-Motorized Transportation Master Plan provides guidance with regard to regional bicycle facilities and suggests the following classifications for bikeways:

- Class 1 Bikeways: Bike paths that are separated from vehicular traffic;
- Class 2 Bikeways: Bike lanes that are striped on streets alongside vehicular traffic;
- Class 3.5 Bikeways: Bike routes where bicycles and vehicles share the road but where wide shoulders are available;
- Class 3 Bikeways: Bike routes where bicycles and vehicles share the road but are only signed.

The wide sidewalks along the east side of Oakdale Road north of Claribel Road currently serve as Class 1 paths. A separated path also exists on the north side of the MID canal from Oakdale Road east to Roselle Avenue.

Class 2 lanes exist on:

- Claribel Road from McHenry Avenue to Oakdale Road;
- Morrill Road east of Oakdale Road;
- Crawford Road east of Oakdale Road.

The Non-Motorized Transportation Master Plan suggests that:

- The MID trail should be extended westerly to Coffee Road;
- A new trail should be constructed along the Hetch Hetchy right-of-way;
- The Oakdale Road trail should be extended north beyond Crawford Road;
- The Crawford Road and Morrill Road bike lanes should extend westerly to Coffee Road;
- The Claribel Road bike lanes should extend easterly to Claus Road;
- Class 2 bike lanes should be created on Coffee Road, Oakdale Road and Roselle Avenue south of Claribel Road.

TRANSIT SERVICE

Riverbank is served by one transit provider, Stanislaus Regional Transit (StaRT). StaRT offers fixed route services. StaRT Route 60 operates Monday through Friday between 5:00 AM and 9:43 PM. This bus operates thirteen round trips between Modesto and Oakdale and passes through Riverbank. On Saturday between 6:15 AM and 8:34 PM, seven round trips are provided. The Saturday service is combined with the Modesto/Turlock route. This route follows Claribel Road and Oakdale Road and has a designated stop on Oakdale Road north of the Freddi Lane intersection. The Riverbank Dial-A-Ride service is available from 6:30 AM to 5:30 PM, Monday through Friday. The ADA Paratransit service is provided as a compliment to fixed route service and is available to individuals with disabilities Monday from 5:00 AM to 10:00 PM and Saturday from 6:15 AM to 9:00 PM.

3.13.2 ANALYSIS METHODS

"Level of Service" (LOS) was determined at study area intersections and on roadway segments to quantitatively evaluate traffic conditions and to provide a basis for comparing operating conditions with and without Project-generated traffic.

LOS is a quantitative measure of traffic operating conditions whereby a letter grade "A" through "F" is assigned to an intersection. LOS "A" through "F" represents progressively worsening traffic conditions. The characteristics associated with the various LOS for intersections are presented in Table 3.13-1. The City of Riverbank General Plan has established LOS D as the minimum standard. Stanislaus County identifies LOS C as its minimum but defers to the standard of the applicable city within the adopted SOI. The City of Modesto General Plan identifies LOS D as the general standard but identifies specific locations where LOS E and LOS F are accepted.

TABLE 3.13-1: INTERSECTION LOS CRITERIA

LOS	*SIGNALIZED INTERSECTION*	*UNSIGNALIZED INTERSECTION*	*ROADWAY (DAILY)*
A	Uncongested operations, all queues clear in a single-signal cycle. Delay ≤ 10.0 sec	Little or no delay. Delay ≤ 10 sec/veh	Completely free flow.
B	Uncongested operations, all queues clear in a single cycle. Delay > 10.0 sec and ≤ 20.0 sec	Short traffic delays. Delay > 10 sec/veh and ≤ 15 sec/veh	Free flow, presence of other vehicles noticeable.
C	Light congestion, occasional backups on critical approaches. Delay > 20.0 sec and ≤ 35.0 sec	Average traffic delays. Delay > 15 sec/veh and ≤ 25 sec/veh	Ability to maneuver and select operating speed affected.
D	Significant congestions of critical approaches but intersection functional. Cars required to wait through more than one cycle during short peaks. No long queues formed. Delay > 35.0 sec and ≤ 55.0 sec	Long traffic delays. Delay > 25 sec/veh and ≤ 35 sec/veh	Unstable flow, speeds and ability to maneuver restricted.
E	Severe congestion with some long-standing queues on critical approaches. Blockage of intersection may occur if traffic signal does not provide for protected turning movements. Traffic queue may block nearby intersection(s) upstream of critical approach(es). Delay > 55.0 sec and ≤ 80.0 sec	Very long traffic delays, failure, extreme congestion. Delay > 35 sec/veh and ≤ 50 sec/veh	At or near capacity, flow quite unstable.
F	Total breakdown, stop-and-go operation. Delay > 80.0 sec	Intersection blocked by external causes. Delay > 50 sec/veh	Forced flow, breakdown.

NOTE: SEC/VEH = SECONDS PER VEHICLE.
SOURCE: HIGHWAY CAPACITY MANUAL, TRANSPORTATION RESEARCH BOARD, 2010.

INTERSECTION AND ROADWAY SEGMENT LOS CALCULATION

LOS were calculated for this study at intersection using the methodology contained in the 2010 Highway Capacity Manual (HCM 2010). Synchro 10.0 software was employed. The overall LOS for intersections was determined based on the average length of delays for all motorists at signalized intersections and locations controlled by all-way stops. At unsignalized intersections, the LOS was predicated on the length of the average delay experienced by motorists who must yield the right of way before turning or continuing through an intersection, and the LOS calculated for the approach with greatest delays was employed for analysis to provide a “worst case” evaluation.

The general LOS on roadway segments was determined based on adopted planning level thresholds.

TRAFFIC SIGNAL WARRANTS

The extent to which traffic signals may be justified is determined based on evaluation of guidelines published in the Manual of Uniform Traffic Control Devices (MUTCD)[1]. These guidelines make use of a system of nine traffic signal warrants that consider various aspects of the effects of traffic controls, including traffic volumes at various times, pedestrian activity, collision history, etc. For this analysis, Warrant 3 (peak hour volume warrant) has been applied. It is important to note that satisfaction of a single warrant is not by itself justification for installing a traffic signal. While useful for evaluating the relative effects of a project, an evaluation based on peak hour volumes should be supplemented by consideration of other applicable warrants before making a decision to install a signal.

CITY OF RIVERBANK FACILITIES

Service levels for roadways within the SOI of the City of Riverbank are determined by comparing traffic volumes for selected roadway segments with daily LOS capacity thresholds. These thresholds, shown in Table 3.13-2, are taken from the City of Riverbank General Plan EIR.

TABLE 3.13-2: LOS THRESHOLDS BASED ON SEGMENT TRAFFIC VOLUME

CLASSIFICATION / TERRAIN	*LOS THRESHOLD*				
	A	*B*	*C*	*D*	*E*
Two Lane Collector	-	-	7,700	11,600	12,900
Two Lane Undivided Urban Arterial	-	10,200	13,500	14,800	15,700
Four Lane Divided Urban Arterial	-	22,800	29,500	31,700	33,400
Six Lane Divided Urban Arterial	-	35,100	45,000	47,900	50,300
Rural Road - two lanes in "Level" terrain (HCS)	105 vph	285 vph	510 vph	920 vph	1,965 vph

NOTE: VPH = VEHICLES PER HOUR.
SOURCE: CITY OF RIVERBANK GPU EIR, TABLE 4.15-2.

STANISLAUS COUNTY FACILITIES

Service levels for roadways in Stanislaus County are determined by comparing traffic volumes for selected roadway segments with the daily LOS capacity thresholds. These thresholds are shown in Table 3.13-3 and were developed for the Stanislaus County Circulation Element (Dowling Associates Inc., November 2005). The Stanislaus County thresholds are much lower than the City of Riverbank thresholds. This is due to the rural nature of Stanislaus County roadways. Rural roadway capacities are based on different characteristics than urban roadways, such as amount of time spent following another vehicle.

[1] Manual of Uniform Traffic Control Devices, Transportation Research Board, 2014

TABLE 3.13-3: STANISLAUS COUNTY ROADWAY SEGMENTS – LOS CRITERIA

FACILITY TYPE	MAXIMUM DAILY VOLUME				
	LOS A	LOS B	LOS C	LOS D	LOS E
2-lane Collector	700	1,900	3,400	5,900	10,000
4-lane Collector	5,600	9,400	13,200	15,800	20,000
2-lane Arterial	1,400	3,800	6,800	11,800	20,000
4-lane Arterial	10,080	16,520	23,760	28,440	36,000

SOURCE: TRAFFIC ANALYSIS OF STANISLAUS COUNTY CIRCULATION ELEMENT (DOWLING ASSOCIATES INC, NOVEMBER 2005).

CITY OF MODESTO FACILITIES

The City of Modesto General Plan identifies roadway segment LOS based on peak hour directional lane capacity. Table 3.13-4 presents these thresholds.

TABLE 3.13- 4: CITY OF MODESTO ROADWAY SEGMENTS – LOS CRITERIA

TYPE OF ROADWAY SEGMENT	HOURLY CAPACITY (VEH/LN/HR)	MAXIMUM VOLUME					
		A	B	C	D	E	F
Maximum v/c		0.60	0.70	0.80	0.90	1.00	>1.00
Freeway Mainline	2,000	1,200	1,400	1,600	1,800	2,000	--
Expressway (Class A)	1,500	900	1,050	1,200	1,350	1,500	--
Expressway (Class B)	1,250	750	875	1,000	1,125	1,250	--
Expressway (Class C)	1,000	600	700	800	900	1,000	--
Arterial (Signalized)	750	450	525	600	675	750	--
Arterial (Un-signalized)	1,000	600	700	800	900	1,000	--
Collector (Signalized)	500	300	350	400	450	500	--
Collector (Un-signalized)	750	450	525	600	675	750	--
Rural Road	900	540	630	720	810	900	--

NOTES: VEH/LN/HR = VEHICLES PER LANE PER HOUR; V/C = VOLUME-TO-CAPACITY RATIO.
SOURCE: CITY OF MODESTO GENERAL PLAN.

ANALYSIS SCENARIOS

The transportation system was analyzed for the following scenarios:

- Existing Conditions;
- Existing Plus Project Conditions;
- Existing Plus Approved Projects (EPAP) Conditions;
- EPAP Plus Project Conditions;
- Cumulative No Project Conditions;
- Cumulative Plus Project Conditions.

DATA COLLECTION

To quantify existing traffic conditions, a base of current peak hour and daily traffic volume information was assembled from new traffic counts completed by KDAnderson & Associates in 2016. Figure 3.13-2 identifies the recorded daily traffic volumes, as well as the location of study area intersections. Figure 3.13-3 presents the observed weekday AM and PM peak hour traffic counts made at key intersections while area schools were in session. Current information

regarding the number of lanes and traffic control devices assumed for LOS analysis are also presented in that figure.

Intersections

In urban areas, the quality of traffic flow during peak traffic hours is typically governed by the flow of traffic through major intersections. This analysis considers 17 existing intersections in the vicinity of Plan Area:

The **Patterson Road (SR 108) / Coffee Road intersection** is a "tee" intersection controlled by a stop sign on the southbound Coffee Road approach. The intersection is configured with single approach lanes which combine through and turning traffic. No crosswalks exist at this location.

The **Patterson Road / Oakdale Road intersection** is controlled by an actuated traffic signal. The three lane Oakdale Road approaches each have a separate left turn, a through lane, and a right turn, and the northbound right turn lane operates with an overlap phase. The westbound Patterson Road approach has dual left turn lanes. Crosswalks are striped across all legs of the intersection.

The **Coffee Road / Morrill Road intersection** is a "tee" intersection controlled by a stop sign on the westbound Morrill Road approach. Each approach has a single lane, and there are no crosswalks at this intersection.

The **Oakdale Road / Morrill Road intersection** is controlled by an actuated traffic signal. Each approach has three lanes. The Morrill Road approaches have separate left turn, right turn, and through lanes, as does the southbound Oakdale Road approach. The northbound Oakdale Road approach has a left turn lane, a through lane, and a combined through and right turn lane. Crosswalks are available on all legs of the intersection.

The **Coffee Road / Crawford Road intersection** is a "tee" intersection controlled by a stop sign on the westbound Crawford Road approach. Each approach has a single lane, and there are no crosswalks at this location.

The **Oakdale Road / Crawford Road intersection** is controlled by a traffic signal with a center median that precludes east-west through traffic. The eastbound and westbound Crawford Road approaches have separate left turn and right turn lanes. The Oakdale Road approaches have separate left turn lanes. Crosswalks are striped on all legs of the intersection.

The **Oakdale Road / Freddi Lane intersection** provides access to the Crossroads Shopping Center. The intersection is controlled by a traffic signal. Oakdale Road has two through lanes in each direction, as well as separate left turn lanes and a northbound right turn lane. The westbound Freddi Lane approach has dual left turn lanes and a separate right turn lane. Crosswalks are striped across the north and east legs of the intersection.

The **McHenry Boulevard (SR 108) / Kiernan Avenue intersection** is controlled by an actuated traffic signal. The four-lane McHenry Boulevard approaches have two through lanes and separate left turn and right turn lanes. The six-lane eastbound Kiernan Avenue approach has dual left turn lanes, three through lanes, and a separate right turn lane. The westbound Claribel Road approach has dual left turn lanes, a through lane, and a combined through and right turn lane. Crosswalks are striped across each leg of the intersection.

The **Coffee Road / Claribel Road intersection** is controlled by an actuated traffic signal. The three lane Coffee Road approaches have separate left turn, through lane, and right turn lanes. The four lane Claribel Road approaches have a left turn, two through lanes, and a right turn lane. Crosswalks are striped across each leg of the intersection.

The **Oakdale Road / Claribel Road intersection** is controlled by an actuated traffic signal. The Claribel Road approaches have two through lanes and a separate left turn lane, and the westbound approach has a separated right turn lane. The northbound Oakdale Road approach has a left turn lane, a through lane, and a combined through and right turn lane. The three-lane southbound Oakdale Road approach has separate left turn, through, and right turn lanes. Crosswalks exist on all four legs of the intersection.

The **Claribel Road / Squire Wells Way intersection** is a "tee" intersection controlled by an actuated traffic signal. Each approach has two lanes. The southbound Squire Wells Way approach has separate left turn and right turn lanes. The eastbound Claribel Road approach has a left turn lane and a single through lane. The westbound approach has a through lane and a combined through and right turn lane. A crosswalk is striped on the north leg of the intersection.

The **Claribel Road / Roselle Road intersection** is currently controlled by an all-way stop, but the City of Riverbank and Stanislaus County are currently working to install a traffic signal at this intersection. The plans for the new intersection perpetuate single through lanes on each approach, with separate left turn lanes and a right turn lane on eastbound Claribel Road. Crosswalks will be installed in coordination with the traffic signal.

The **Claribel Road / Terminal Avenue intersection** is controlled by a traffic signal that is coordinated with the adjoining BNSF railroad crossing, which is equipped with an advance signal indication at the crossing. The Claribel Road approaches are single lanes, and the Terminal Avenue approaches have separate right turn lanes. There are no crosswalks at this intersection.

The **Claribel Road / Claus Road intersection** is controlled by an actuated traffic signal. Each approach has three lanes that are configured as separate left turn, through, and right turn lanes. Crosswalks exist at the intersection.

The **Claratina Avenue / Oakdale Road intersection** in Modesto is a "tee" intersection controlled by a stop sign on the eastbound Claratina Avenue approach. The City of Modesto has secured funding to install a traffic signal at this location, but no changes to intersection geometry will occur. The intersection features a single through lane in each direction on Oakdale Road, and a

northbound left turn lane is provided. The eastbound Claratina Avenue approach has separate left turn and right turn lanes, and the right turn lane continues beyond the intersection as the second southbound lane on Oakdale Road. There are currently no crosswalks at the intersection.

The **Coffee Avenue / Claratina Avenue intersection** in Modesto is controlled by an "interim" single lane roundabout. The intersection is expected to be modified as part of the City's pending Claratina Avenue Improvement Project.

The **Oakdale Road / Mable Avenue intersection** in Modesto is controlled by an actuated traffic signal. Oakdale Road currently has a single northbound through lane and two southbound through lanes at this intersection. Separate left turn lanes are provided on Oakdale Road, and a separated southbound right turn lane is also available. The two-lane eastbound Mable Avenue approach has a separate left turn and a combined through and right turn lane. The westbound Mable Avenue approach is a single lane. Crosswalks are striped across the north, south, and west legs of the intersection.

The **Oakdale Road / Sylvan Avenue intersection** in Modesto is controlled by an actuated traffic signal. The intersection currently provides two through lanes in each direction. Separate left turn and right turn lanes are available on the Sylvan Avenue approaches. Dual left turns exist on the Oakdale Road approaches, and the southbound approach has a separate right turn lane. Crosswalks are provided.

Intersection improvements are a condition of approval for the adjoining marketplace shopping center. These improvements will add a northbound right turn lane.

The **Roselle Avenue / Sylvan Avenue intersection** is controlled by a two-lane roundabout.

EXISTING INTERSECTION OPERATIONS

Current AM and PM peak hour LOS were calculated at existing study intersections under the Existing conditions, and the results are presented in Table 3.13-5.

As indicated, with four exceptions, the LOS at each location satisfies the minimum LOS D standard established by the respective agencies. The four exceptions are:

- **Patterson Road / Coffee Road**, where the northbound approach operates at LOS E.
- **Claribel Road / Roselle Avenue**, where the All-Way Stop operates at LOS F; however, the City of Riverbank and Stanislaus County are installing intersection improvements, including a signal. With that improvement, the intersection will operate at LOS C.
- **Oakdale Road / Claratina Avenue**, where the eastbound approach operates at LOS F. The City of Modesto has plans to install a traffic signal and, with signalization, the intersection will operate at LOS C in the AM and LOS B in the PM.

- **Coffee Road / Claratina Avenue**, where the existing single lane roundabout operates at LOS F. The City of Modesto is currently preparing plans for overall Claratina Avenue improvements, which will include a two-lane roundabout at this intersection. A two-lane roundabout will provide a LOS that satisfies the City's minimum LOS D standard.

With planned improvements, all study intersections will operate with LOS that satisfy minimum standards.

TABLE 3.13-5: INTERSECTION OPERATIONS – EXISTING CONDITIONS

INTERSECTION	TRAFFIC CONTROL	AM PEAK HOUR			PM PEAK HOUR		
		DELAY	LOS	SIGNAL WARRANT MET?	DELAY	LOS	SIGNAL WARRANT MET?
Patterson Rd (SR 108) / Coffee Rd NB approach	NB Stop	**40.2**	**E**	**Yes**	**39.0**	**E**	**Yes**
Patterson Rd (SR 108) / Oakdale Rd	Signal	26.6	C	n.a.	38.1	D	n.a.
Coffee Rd / Morrill Rd WB approach	WB Stop	11.9	B	No	11.4	B	No
Oakdale Rd / Morrill Rd	Signal	14.4	B	n.a.	16.4	B	n.a.
Coffee Rd / Crawford Rd WB approach	WB Stop	12.0	B	No	11.7	B	No
Oakdale Rd / Crawford Rd	Signal	16.2	B	n.a.	25.9	C	n.a.
McHenry Ave (SR 108) / Claribel Rd	Signal	28.9	C		35.0	D	
Claribel Rd / Coffee Rd	Signal	8.9	A		8.4	A	
Claribel Rd / Oakdale Rd	Signal	30.4	C		32.4	C	
Claribel Rd /Squire Wells Way	Signal	14.2	B		13.0	B	
Claribel Rd / Roselle Ave	AWS	**56.7**	**F**	Yes	**63.9**	**F**	Yes
	Signal	22.2	C	n.a.	20.3	C	n.a.
Claribel Rd / Terminal Ave	Signal	7.2	A		7.5	A	
Claribel Rd / Claus Rd	Signal	18.3	B		21.4	B	
Oakdale Rd / Claratina Ave EB approach	EB Stop	**70.1**	**F**	Yes	**186.0**	**F**	Yes
	Signal	21.6	C	n.a.	13.2	B	n.a.
Oakdale Rd / Freddi Lane	Signal	8.1	A		19.8	B	
Roselle Ave / Sylvan Lane	Roundabout	16.2	C		12.1	B	
Oakdale Rd / Sylvan Ave	Signal	15.9	B		14.5	B	
Coffee Rd / Claratina Ave	Roundabout	27.0	D		**51.5**	**F**	
Oakdale Rd /Mable Ave	Signal	22.1	C		24.4	C	

*NOTES: **BOLD** INDICATES UNACCEPTABLE OPERATIONS.*
NB = NORTHBOUND; WB = WESTBOUND; EB = EASTBOUND; AWS = ALL-WAY STOP.
SOURCE: KDANDERSON & ASSOCIATES, 2018.

EXISTING PEAK HOUR TRAFFIC SIGNAL WARRANTS

Current traffic volumes were compared to the thresholds contained in Warrant 3 (peak hour volume) to determine whether traffic signals might be justified today at any un-signalized intersection that is not already planned for signalization. The results are also indicated in Table 3.13-5. As shown, current peak hour volumes at the Patterson Road / Coffee Road intersection satisfy peak hour volume warrants. Volumes at other locations do not reach the level that satisfies the peak hour warrant.

EXISTING ROADWAY SEGMENT LOS

Current daily and peak hour traffic volumes on key roadway segments in the vicinity of the Plan Area were compared to adopted LOS thresholds. The results are presented in Table 3.13-6.

TABLE 3.13-6: ROADWAY SEGMENT OPERATIONS – EXISTING CONDITIONS

ROADWAY	*LOCATION*	*CLASSIFICATION*	*JURISDICTION*	*MAX. VOL.*	*CURRENT VOL.*	*V/C*	*LOS*
Patterson Rd (SR 108)	McHenry Ave to Coffee Rd	2-lane Arterial	Caltrans / County	20,000	**14,100**		**E**
	Coffee Rd to Oakdale Rd	2-lane Arterial	Caltrans / Riverbank	15,700	**15,600**		**E**
	Oakdale Rd to Jackson Ave	4-lane Arterial	Caltrans / Riverbank	33,400	16,700		B
Morrill Rd	Coffee Rd to Oakdale Rd	2-lane Rural	Riverbank	1,965 vph	205 vph		B
Crawford Rd	Coffee Rd to Oakdale Rd	2-lane Rural	Riverbank	1,965 vph	42 vph		A
	Oakdale Rd to Squire Wells Rd	2-lane Collector	Riverbank	12,900	4,890		C
Claribel Rd	McHenry Ave to Coffee Rd	4-lane Arterial	County	36,000	20,080		C
	Coffee Rd to Oakdale Rd	4-lane Arterial	Riverbank	33,400	19,720		B
	Oakdale Rd to Roselle Ave	2-lane Arterial	Riverbank	15,700	14,250		D
	Roselle Ave to Claus Rd	2-lane Arterial	Riverbank	15,700	10,930		C
Coffee Rd	Patterson Rd to Morrill Rd	2-lane Rural	Riverbank	1,965 vph	330 vph		C
	Morrill Rd to Crawford Rd	2-lane Rural	Riverbank	1,965 vph	442 vph		C
	Crawford Rd to Claribel Rd	2-lane Rural	Riverbank	1,965 vph	476 vph		C
	Claribel Rd to Claratina Ave	2-lane Arterial	Modesto	750 vph	507 vph	0.68	B
Oakdale Rd	Patterson Road to Morrill Rd	4-lane Arterial	Riverbank	33,400	13,790		B
	Morrill Rd to Crawford Rd	2-lane Arterial	Riverbank	15,700	13,620		D
	Crawford Rd to Claribel Rd	4-lane Arterial	Riverbank	33,400	17,510		B
	Claribel Rd to Claratina Ave	2-lane Arterial	Modesto	750 vph	**861 vph**	**1.15**	**F**
Roselle Ave	Claribel Rd to Claratina Ave	2-lane Arterial	Modesto	750 vph	488 vph	0.65	B

*NOTES: **BOLD** INDICATES UNACCEPTABLE OPERATIONS; V/C = VOLUME-TO-CAPACITY RATIO.*
SOURCE: KDANDERSON & ASSOCIATES, 2018.

While most roadways carry volumes that satisfy the applicable minimum LOS goal, three segments operate with unacceptable LOS:

- The two-lane segment of Patterson Road west of Riverbank from McHenry Avenue to Hot Springs Lane operates at LOS E. This exceeds Stanislaus County and City of Riverbank minimum standards. A four-lane roadway would be needed to deliver the minimum LOS. The City of Riverbank mitigation fee program includes funds for this work, but no construction in this area is currently programmed.

- In Modesto, the two-lane segment of Oakdale Road south of Claribel Road carries a directional peak hour volume (p.m. northbound) that is indicative of LOS F under the City's General Plan thresholds. A four-lane section would be needed to deliver the minimum LOS today, and this roadway is included in the City of Modesto's Capital Facilities Fees (CFF) program as a six-lane major arterial street.

3.13.3 PROJECT TRAVEL CHARACTERISTICS

PROJECT DESCRIPTION

The proposed Project includes development of up to 1,872 Low Density Residential (LDR) units, up to 192 Medium Density Residential (MDR) units, and up to 388 High Density Residential (HDR) units. The Project also includes up to 550,000 square feet (sf) of Mixed Use 1 (MU-1) uses, and up to 27,000 sf of Mixed Use 2 (MU-2) uses. It is noted that development in MU-1 could consist of a maximum of 550,000 sf of retail uses and no residential uses, or up to 350 units of residential uses and 360,000 sf of retail uses. The CWSP is designed to provide flexibility, so there are various other hypothetical combinations of retail and residential development, but not more than the maximum density presented would be allowed without an amendment approved by the City. Additionally, the proposed Project would increase the size of the existing 11-acre Regional Park, the Riverbank Sports Complex, to 22 acres. A 10 to 12-acre elementary school is also proposed within the Plan Area. The proposed Project would provide approximately 42 acres of park, open space, and Regional Sports Park uses.

According to the Project site plan, access to the proposed Project would be provided via Morrill Road, Oakdale Road, Crawford Road, and Claribel Road.

TRIP GENERATION

The amount of automobile trips generated by development of the CWSP has been estimated based on the trip generation characteristics of the proposed uses.

Trip Generation Rates

Table 3.13-7 presents the trip generation rates employed for this analysis. These rates are taken from the Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition, and Trip Generation Handbook, 3rd Edition. Because the trip generation rates for retail uses vary greatly based on the size and character of the specific use, it was necessary to identify individual trip generation rates and pass-by percentages for the potential mixed use retail centers.

TABLE 3.13-7: TRIP GENERATION RATES FOR CWSP

ITE CODE	DESCRIPTION	QUANTITY	TRIPS PER UNIT						
			DAILY	AM PEAK HOUR			PM PEAK HOUR		
				IN	OUT	TOTAL	IN	OUT	TOTAL
820	MU Retail – (1) (550 ksf)	ksf	33.39	62%	38%	0.80	48%	52%	3.41
820	MU Retail – (1) (360 ksf)	ksf	43.38	62%	38%	0.95	48%	52%	3.92
820	MU Retail – (2) (average)	ksf	42.70	62%	38%	0.96	48%	52%	3.71
488	Sports Park	field	71.33	57%	43%	1.12	67%	33%	17.70
210	LDR / MDR / MU Residential (Detached Single Family Residential)	du	9.52	25%	75%	0.75	63%	37%	1.00
220	HDR / MU (Residential Apartments)	du	6.65	20%	80%	0.51	65%	35%	0.62
251	Senior Detached Housing	du	3,68	35%	65%	0.22	61%	39%	0.27
520	Elementary School	student	1.29	55%	45%	0.45	49%	51%	0.15
522	Middle School / Junior High School	student	1.62	55%	45%	0.54	49%	51%	0.16
412	Park	acre	2.28	61%	39%	0.02	61%	39%	0.09
488	Sports Park – soccer	fields	71.33	57%	43%	1.12	67%	33%	17.70
-	Fire Station	firefighter	4.34	50%	50%	2.00	50%	50%	2.00

NOTES: KSF = THOUSAND SQUARE FEET; DU = DWELLING UNIT.
SOURCE: KDANDERSON & ASSOCIATES, 2018.

Trip Generation Forecasts

As shown in Table 3.13-8, development of all of the area within the CWSP could result in about 33,163 new daily trips, with 1,790 trips generated in the AM peak hour and 3,490 trips generated in the PM peak hour.

Table 3.13-9 presents the estimate for a development alternative which reduces the amount of retail area and replaces it with additional residences. This alternative generates slightly more trips on a daily basis and in the AM peak hour, but less trips during the PM peak hour.

TABLE 3.13-8: TRIP GENERATION FORECASTS FOR PROPOSED CWSP

ITE CODE	DESCRIPTION	QUANTITY	TRIPS PER UNIT						
			DAILY	AM PEAK HOUR			PM PEAK HOUR		
				IN	OUT	TOTAL	IN	OUT	TOTAL
820	*Mixed Use Retail (1)*	550 ksf	18,370	273	168	441	901	976	1,877
	Pass-by (24%)		4,409	66	40	106	216	235	451
	Net New Trips		**13,961**	**207**	**128**	**335**	**685**	**741**	**1,426**
820	*Mixed Use Retail (2)*	27 ksf	1,153	16	10	26	48	52	100
	Pass-by (34%)		392	5	4	9	16	18	34
	Net New Trips		**761**	**11**	**6**	**17**	**32**	**34**	**66**
210	*LDR / MDR / MU Residential*	1,703 du	16,213	319	958	1,277	1,073	630	1,703
	Net New Trips		**16,213**	**319**	**958**	**1,277**	**1,073**	**630**	**1,703**
880	*HDR / MU Residential*	310 du	2,015	32	126	158	125	67	192
	Net New Trips		**2,015**	**32**	**126**	**158**	**125**	**67**	**192**
488	*Sports Park*	3 fields	214	2	1	3	36	17	53
	Net New Trips		**214**	**2**	**1**	**3**	**36**	**17**	**53**
	PROJECT TOTAL NET NEW TRIPS		**33,163**	**571**	**1,219**	**1,790**	**1,951**	**1,489**	**3,440**
520	12-acre Elementary School*	600 students	774	149	121	270	44	46	90
522	20-acre Middle School / Jr. HS	1,000 students	1,622	297	243	540	78	82	160
The elementary school would occupy 10± to 12± acres and at 6.5 du per acre will displace 65 to 78 LDR units. While a school would generate more traffic than the alternative residential use in the AM peak hour, those trips would generally be internal to the project site if an elementary school is developed, and greater external traffic would result from the residential alternative. The school's PM peak hour trip generation would be similar to the residential alternative, but again, most of those trips would remain internal to the plan area. While a school would contribute considerable traffic to the adjoining local streets and this impact will need to be assessed when a school site is selected, the underlying residential uses represent the "worst case" approach to external trip generation. The middle school would occupy 20± acres and at 6.5 du per acre will displace 130 LDR units. While a school would generate more traffic than the alternative residential use in the AM peak hour, many of those trips would be internal to the project site developed, and greater external traffic would result from the residential alternative. The school's PM peak hour trip generation would be similar to the residential alternative, but again, most of those trips would remain internal to the plan area. While a school would contribute considerable traffic to the adjoining local streets and this impact will need to be assessed when a school site is selected, the underlying residential uses represent the "worst case" approach to external trip generation									
-	Fire Station	4 firefighters	18	4	4	8	4	4	8
The fire station would occupy 1-3± acres and displace 7 to 20 LDR units. The trip generation associated with this use is less than that associated with development under the LDR designation. While a fire station has access requirements that may influence the configuration of plan area streets adjoining the site, the underlying residential use represents the "worst case" approach to estimating trip generation.									
Residences limited to Active Adults may be developed on the site. Because the trip generation rates associated with this use are lower than those for convention residential development, the "worst case" analysis assumes the project is developed with conventional residential units.									

NOTES: KSF = THOUSAND SQUARE FEET; DU = DWELLING UNIT.

SOURCE: KDANDERSON & ASSOCIATES, 2018.

TABLE 3.13-9: TRIP GENERATION FORECASTS FOR ALTERNATIVE CWSP

ITE CODE	DESCRIPTION	QUANTITY	TRIPS PER UNIT						
			DAILY	AM PEAK HOUR			PM PEAK HOUR		
				IN	OUT	TOTAL	IN	OUT	TOTAL
820	*Mixed Use Retail (1)*	360 ksf*	15,615	211	130	341	678	735	1,413
	Pass-by (28%)		4,372	59	36	95	190	206	396
	Net New Trips		**11,243**	**152**	**94**	**246**	**488**	**529**	**1,017**
820	*Mixed Use Retail (2)*	27 ksf	1,153	16	10	26	48	52	100
	Pass-by (34%)		392	5	4	9	16	18	34
	Net New Trips		**761**	**11**	**6**	**17**	**32**	**34**	**66**
210	*LDR / MDR/MU Residential*	2,053 du	19,545	385	1,155	1,540	1,293	760	2,053
	Net New Trips		**19,545**	**385**	**1,155**	**1,540**	**1,293**	**760**	**2,053**
880	*HDR*	310 du	2,015	32	126	158	125	67	192
	Net New Trips		**2,015**	**32**	**126**	**158**	**125**	**67**	**192**
488	*Sports Park*	3 fields	214	2	1	3	36	17	53
	Net New Trips		**214**	**2**	**1**	**3**	**36**	**17**	**53**
PROJECT TOTAL NET NEW TRIPS			**33,778**	**582**	**1,381**	**1,963**	**1,974**	**1,407**	**3,381**

NOTES: KSF = THOUSAND SQUARE FEET; DU = DWELLING UNIT.
SOURCE: KDANDERSON & ASSOCIATES, 2018.

Access and Circulation Assumptions

The proposed circulation plan identifies the system of arterial and collector streets that will serve the Plan Area. A new north-south collector street will traverse the project site from Claribel Road to Morrill Road. This roadway is consistent with the General Plan Circulation Diagram, and full access is anticipated at the new intersection on Claribel Road.

Crawford Road will be realigned as part of the Project, but not all of the long-term changes will be implemented immediately. The Oakdale Road / Crawford Road intersection will be opened by removing the existing median island to allow through east-west traffic. Crawford Road west of the Plan Area will be separated from the Plan Area. When the area west of the Plan Area is developed, a new east-west extension of Crawford Road will be routed to the north to avoid the existing rural residential neighborhood near Coffee Road, and a new full access intersection will be created on Coffee Road. This work is not proposed by the Project.

Ultimately, the segment of Claribel Road west of the Plan Area will be rerouted to the north to intersect Coffee Road when the NCC expressway is constructed. This construction is not proposed by the Project and is assumed to be built as part of the NCC project.

TRIP DISTRIBUTION AND ASSIGNMENT

The regional distribution of the trips generated by the Project will reflect the Project's location on the northern end of the Modesto area and in the western portion of Riverbank.

The regional distribution of Project trips and the share of trips that will remain internal to the Plan Area were identified from a "select zone" analysis conducted with the regional travel demand forecasting model also employed for the cumulative analysis. The paths taken by trips generated in residential and commercial areas were determined separately, and the results are presented in Table 3.13-10.

TABLE 3.13-10: SHORT TERM TRIP DISTRIBUTION ASSUMPTIONS

DIRECTION	ROUTE	PERCENTAGE OF TOTAL TRIPS			
		RESIDENTIAL		NON-RESIDENTIAL	
		AM	PM	AM	PM
West	Patterson Rd beyond Coffee Rd	12%	7%	3%	1%
	Claribel Rd beyond Coffee Rd	33%	30%	24%	30%
East	Patterson Rd beyond Oakdale Rd	8%	9%	6%	1%
	Morrill Rd and Crawford Rd	4%	2%	2%	3%
	Existing Crossroads Shopping Center	2%	5%	0%	3%
	Claribel Rd beyond Roselle Rd	9%	11%	13%	15%
South	Coffee Rd beyond Claribel Rd	9%	16%	29%	11%
	Oakdale Rd beyond Claribel Rd	11%	6%	18%	24%
	Roselle Rd beyond Claribel Rd	5%	4%	3%	4%
Internal	--	7%	10%	2%	8%%
	Total	100%	100%	100%	100%

SOURCE: KDANDERSON & ASSOCIATES, 2018.

As indicated, the primary travel directions for both residential and non-residential uses are to the south and west. Roughly seven to ten percent of the trips generated by new residential uses will remain on site, and two to eight percent of the trips generated by retail uses are internal. Figure 3.13-4 shows these trip distribution assumptions graphically. It is important to note that the distribution patterns employed herein may differ from retail use characteristics suggested in other project documents. This methodology yields conservative (i.e., worst case) assumptions based on the gravity model and does not reflect customer choices based on the quality of alternative retail destinations in the area. Thus, these assumptions may differ from those suggested in the Urban Decay analysis which can consider those factors.

Project trips were assigned to the local area street system under the distribution assumptions presented above and the access assumptions described previously. The resulting "project only" trip assignment is presented in Figure 3.13-5.

3.13.4 REGULATORY SETTING

Existing transportation policies, laws, and regulations that would apply to the proposed Project are summarized below. This information provides a context for the impact discussion related to the Project's consistency with applicable regulatory conditions and development of significance criteria for evaluating Project impacts.

STATE REGULATIONS

Caltrans is responsible for planning, designing, constructing, operating, and maintaining all state-owned roadways in California. Federal highway standards are implemented in California by Caltrans. Any improvements or modifications to the state highway system within the City of Riverbank need to be approved by Caltrans. The City of Riverbank does not have the ability to unilaterally make improvements to the state highway system.

SR 108 is under the jurisdiction of Caltrans. Caltrans developed a Transportation Concept Report (TCR) for SR 108 in 2014. The TCR identifies existing and cumulative operational deficiencies on state routes and identifies potential improvements. According to the SR 108 TCR, SR 108 from McHenry Avenue to Oakdale Road is designated as part of the Interregional Road System (IRRS), and is subject to the general LOS criteria (LOS C). This portion of SR 108 will ultimately be a four-lane facility. The Concept LOS is LOS D east of Oakdale Road.

Caltrans policy regarding applicable traffic controls has recently been expanded based on Traffic Operations Policy Directive 13-02. This directive requires that Caltrans consider the relative merits of alternative traffic controls when it becomes necessary to stop traffic on state highways, and all-way stops, traffic signals, and roundabouts are to be considered. The policy directive requires preparation of an Intersection Control Evaluation (ICE) to determine the preferred traffic control.

ICE refers to the process and framework that a growing number of transportation agencies are adopting to provide a more balanced or holistic approach to the consideration and selection of access strategies and concepts during transportation planning, project identification, and initiation processes that contemplate the addition, expansion, or full control of major intersections (including interchange ramp termini). “Full control” involves the use of signal, stop or yield control on each of the through and most major movements.

The ICE directive establishes an integrated, systematic, performance-based approach to engineering and investment decisions affecting state highway intersections and interchanges, primarily through the consideration and evaluation of the following:

- Alternative intersection control practices, access configurations, and management strategies.
- The context of the proposed project and highway facility, including the operating speed and speed differential among highway system users.
- The need of drivers, pedestrians, bicyclists, and commercial vehicle operators, including those with disabilities.
- The costs and cost savings related to project implementation, estimated system performance benefits and impacts, and life-cycle economic analysis.

LOCAL REGULATIONS

City of Riverbank General Plan

GOALS: CIRCULATION

- CIRC-1 Riverbank's Circulation Network Provides Convenience and Choice among All Modes of Transportation.
- CIRC-2 The City's Urban Development Pattern Supports All Locally Available Modes of Transportation.
- CIRC-3 Increase the Availability and Use of Transit.
- CIRC-4 Move Freight and Passengers Efficiently.

POLICIES: CIRCULATION

- CIRC-1.1 Approved plans, projects, and subdivision requests in new growth areas shall include the construction or pro-rata funding of transportation infrastructure that includes a connected and integrated system of bicycle facilities and pedestrian facilities, designed to comply with the Americans with Disabilities Act.
- CIRC-1.2 Approved plans, projects, and subdivision requests in new growth areas shall provide a fully connected network of smaller roadways that provide many alternative routes between each point of origin and destination.
- CIRC-1.3 Approved projects, plans, and subdivision requests in new growth areas shall arrange streets in an interconnected block pattern, so that pedestrians, bicyclists, and drivers are not forced onto arterial streets for inter- or intra-neighborhood travel. This approach will also ensure safe and efficient movement of emergency responders.
- CIRC-1.4 Approved projects, plans, and subdivision requests with an internal street network shall provide an internal connectivity index of 1.4 or higher. The connectivity index is calculated by dividing the total number of road segments the number of nodes. Nodes are intersections plus cul-de-sacs. Roadway segments are between intersections. Cul-de-sacs are prohibited except where physical constraints make any other roadway solution impossible. The City may require higher levels of connectivity, beyond this standard, and will review plans and projects to take advantage of opportunities to provide more connectivity.
- CIRC-1.5 Approved projects, plans, and subdivision requests shall connect with adjacent roadways and stubbed roads and shall provide frequent stubbed roadways in coordination with future planned development areas. Plans and projects shall connect to adjacent planned development areas and adjacent roadways at a minimum of 600-foot intervals. This minimum interval does not apply to development areas that are adjacent to existing or planned future limited-access highways, freeways, or expressways.
- CIRC-1.6 Approved projects, plans, and subdivision requests shall provide a roadway network such that driving distance from any dwelling to the nearest collector street is a maximum of 2,000 feet and no more than three turning movements at intersections are required in order to travel from any home to a collector street

- CIRC-1.7 The City will ensure frequent street and trail connections between new residential developments and established neighborhoods, between downtown and surrounding neighborhoods, across the railroad, across the river, and between other important origin and destination points.
- CIRC-1.8 City street improvement standards and the street classification system will reflect the need to accommodate the full range of locally available travel modes.
- CIRC-1.9 In new and existing developed areas, the City will invest in a convenient, well-maintained, and safe system of pedestrian and bicycle paths that connect residences with shopping centers, public buildings, parks, places of employment, and schools.
- CIRC-1.10 The City will incorporate pedestrian and bicycle improvement projects into the City's Capital Improvements Program.
- CIRC-1.11 The City's level of service standards will balance the need to provide convenient vehicular travelways during peak hours of demand with other community goals, such as the desire to accommodate pedestrian and bicycle access.
- CIRC-1.12 The City will use Level of Service D as the goal for roadway segments, as measured on a daily basis. The City's goal for peak hour intersection level of service is LOS D. The City may elect to exceed of these standards in favor of other community planning and environmental goals and policies.
- CIRC-1.13 City environmental documents and associated mitigation programs will explicitly consider compact development, mixing of land uses, affordable housing, and other pedestrian, bicycle, and transit oriented design elements that generate fewer vehicle trips. Such approved plans, projects, and subdivision requests will have a correspondingly lower contribution toward any roadway or intersection improvement mitigation measures required in City environmental documents.
- CIRC-1.14 The City will ensure provision of signage and secure storage facilities in appropriate locations for bicycles.
- CIRC-1.15 The City will ensure that the pedestrian network is safe, accessible, attractive and efficient, running largely along public spaces (including streets and open spaces) fronted by houses, and avoids uses that generate major breaks in surveillance on routes to and from public transport and other routes used at night.
- CIRC-2.1 Approved plans, projects, and subdivision requests in new growth areas shall include the construction or pro-rata funding of transportation infrastructure that includes a connected and integrated system of bicycle facilities and pedestrian facilities, designed to comply with the Americans with Disabilities Act.
- CIRC-2.1 Approved plans, projects, and subdivision requests in new growth areas will provide an appropriate balance of higher-activity land uses, such as schools, parks, retail and commercial services, small offices, civic uses, apartments, in accessible neighborhood centers. Higher-activity land uses shall not be focused in a linear pattern along large roadways.
- CIRC-2.2 The City will not allow large, unbroken surface parking lots, which unnecessarily inhibit travel on foot and by bicycle. Please refer also to Community Character and Design Element policies that address the location and nature of surface parking.

- CIRC-2.3 Approved projects, plans, and subdivisions shall provide shade trees in parking areas at a ratio of at least one tree for every four parking spaces. These trees shall be dispersed throughout the parking area.
- CIRC-2.4 The City will ensure that redevelopment and revitalization efforts in the existing City are designed to accommodate and encourage pedestrian and bicycle travel, as well as public transit options, as such options become more widely available.
- CIRC-2.5 The City will be flexible in parking requirements or eliminate off-street parking requirements for redevelopment, infill, and multifamily projects by allowing cooperative shared use of parking between properties with different parking demand peaking periods, utilization of on-street parking spaces to meet parking requirements, allowing parking reductions for projects located in walkable areas with improvements that accommodate alternative forms of travel, and allowing parking reductions for multi-family development to reflect the trip generation characteristics of this type of development.
- CIRC-2.6 The City will pursue in the existing developed area, and require in new growth areas pedestrian amenities, such as street furniture, shade trees, pedestrian lighting, water fountains, and pedestrian oriented signage.
- CIRC-2.7 The City will encourage and support appropriate home-based businesses in residential areas and telecommuting centers in appropriate areas.
- CIRC-3.1 The City will coordinate planning efforts and project entitlements with the Riverbank Oakdale Transit Agency, the Stanislaus Area Regional Transit District (START), and any future providers serving Riverbank to enhance and expand transit services throughout the City and surrounding region.
- CIRC-3.2 The City will promote the development, improvement, expansion, and increased ridership of transit within the City, including the development of new transit agencies and new forms of transit, as they become available.
- CIRC-3.3 Approved plans, projects, and subdivision requests will accommodate transit facilities consistent with transit agency planning.
- CIRC-3.4 When transit stops are required in existing developed portions of Riverbank or new growth areas, the City will ensure that stops are safe, convenient, comfortable, well maintained, and complementary to the urban design in the surrounding vicinity.
- CIRC-3.5 The City will coordinate with local and regional transit providers in developing transit plans that link important origin and destination points affecting Riverbank residents and businesses.
- CIRC-3.6 The City will support and provide incentives to encourage local businesses and transit providers to develop transit incentive programs.
- CIRC-3.7 The City will coordinate with all agencies involved in planning for a future east-west expressway through northern Stanislaus County to ensure that transit service is provided along the route, including potentially the use of HOV/transit only lanes during peak hours.
- CIRC-4.1 The City will work with relevant public agencies and the railroad to appropriately regulate the movement of truck traffic and hazardous materials throughout the City.
- CIRC-4.2 The City will enforce weight limits as a means to safely regulate truck traffic in noise sensitive areas, such as residential neighborhoods and near schools and hospitals.

- CIRC-4.3 The City will ensure that signage indicating weight limits is clearly posted throughout the City.
- CIRC-4.4 The City will support the development and implementation of a quick-response emergency services program for railroad corridors and continue to support the County's Hazardous Materials Team.
- CIRC-4.5 The City will coordinate with rail transportation operators, such as BN&SF and Amtrak, to ensure safe and reliable rail transportation in and through the Planning Area.
- CIRC-4.6 The City will limit, with a maximum weight limits, truck traffic to appropriate routes. Truck routes include Highway 108 through the City (Patterson Road, Callander Avenue, and Atchison Street), Roselle Avenue, First Street in the downtown area, Claus Road, Claribel Road, Snedigar Avenue, and Coffee Road. Areas of the aforementioned listed streets not within the City limits will be formally designated by the City upon any annexation that may occur in the future. Although Claribel Road may not be fully within City limits, it is likely that this would be a major roadway serving the County at some point in the future and appropriate for truck traffic. The City will designate, post signage, and otherwise restrict truck traffic from using other streets, with an emphasis on streets that are primarily residential. Trucks may go by direct route to and from restricted streets, where required for the purpose of making pickups and deliveries of goods, but are otherwise restricted to truck routes.

City of Riverbank Impact Fee Program

The City of Riverbank has adopted a mitigation fee program to address the impacts of anticipated development. The current program was updated in 2015. Table 3.13-11 identifies the location of planned improvements in the study area that are addressed by the fee program.

TABLE 3.13-11: CITY OF RIVERBANK MITIGATION FEE TRANSPORTATION IMPROVEMENTS

INDEX	*LOCATION*	*IMPROVEMENT*
14	SR 108	Widen to 4 lanes from McHenry Ave to Coffee Road
15	SR 108	Widen to 4 lanes from Coffee Road to Oakdale Road
16	SR 108	Widen to 4 lanes from Oakdale Road to Jackson Street
22	Claribel Road	Widen to 4 lanes from Squire Wells Way to Roselle Avenue
23	Claribel Road	Widen to 4 lanes from Roselle Avenue to Terminal Avenue
24	Claribel Road	Widen to 4 lanes from Roselle Avenue to Claus Road
25	Claribel Road	Widen to 4 lanes from Claus Road to Eleanor Avenue
27	Roselle Avenue	Build to Ultimate configuration from Patterson Road to Claribel Road
29	Claus Road	Widen to 4 lanes from Townsend Street to Claribel Road
30	SR 108 / Coffee Road	Construct Traffic Signal
31	Claribel Road / Retail Access	Construct Traffic Signal
41	Hetch Hetchy Trail System	N/A
45	Claribel Road / Terminal Avenue	Construct Traffic Signal

SOURCE: CITY OF RIVERBANK FINAL NEXUS FEE STUDY, ADE, JANUARY 29, 2015.

Public Facilities Fee Program / Regional Traffic Impact Fee

Development in Stanislaus County and its incorporated cities pay fees toward the cost of circulation system improvements of regional benefit through the Public Facilities Fee (PFF) program's Regional Transportation Impact Fee (RTIF). The PFF was last published in September 2017. The planned update to the Stanislaus County Public Facilities Fee have yet to be adopted. The draft regional fees project list is shown in Table 3.13-12.

TABLE 3.13-12: STANISLAUS COUNTY REGIONAL TRANSPORTATION FEE PROJECTS

STREET	LOCATION	IMPROVEMENT
North County Corridor	SR 99 to SR 120	New Expressway
McHenry Avenue	Ladd Road to San Joaquin County	5 lanes

SOURCE: ADM DRAFT STANISLAUS COUNTY COMPREHENSIVE PUBLIC FACILITIES IMPACT FEE UPDATE, WILDAN, SEPTEMBER 15, 2017.

City of Modesto

CFFs are impact fees established to mitigate the impacts of new development as outlined in Section 66000 of the California Government Code. These fees may be used for the purchase, construction, expansion, rehabilitation, or acquisition of public facilities, including street improvements. CFF projects in the study area are listed in Table 3.13-13.

TABLE 3.13-13: MODESTO CAPITAL FACILITIES FEE PROJECTS

STREET	LOCATION	IMPROVEMENT
Claratina Avenue	McHenry Avenue to Coffee Road	6 lanes
	Coffee Road to Oakdale Road	6 lanes
	Oakdale Road to Roselle Road	6 lanes
	Roselle Road to R/R Tracks	4 lanes
Claus Road	Claribel Road to Sylvan Avenue	6 lanes
	Sylvan Avenue to Floyd Road	4 lanes
Coffee Road	Claribel Road to Claratina Avenue	4 lanes
	Claratina Avenue to Mable Avenue	4 lanes
McHenry Avenue	Kiernan Avenue to Pelandale Avenue	6 lanes
	Pelandale Avenue to Standiford Avenue	6 lanes
Oakdale Road	Claribel Road to Claratina Avenue	6 lanes
	Claratina Avenue to Sylvan Avenue	6 lanes
Roselle Avenue	Claribel Road to Claratina Avenue	4 lanes
	Claratina Avenue to Sylvan Avenue	4 lanes
Sylvan Avenue	McHenry Avenue to Oakdale Road	6 lanes
Claratina Avenue	Coffee Road	New
Claratina Avenue	Oakdale Road	New
Claratina Avenue	Roselle Avenue	New
Claribel Road	Oakdale Road	New
Claribel Road	Roselle Avenue	New
Claribel Road	Claus Road	New

SOURCE: DOCUMENTATION OF JUSTIFICATION FOR IMPACT FEE MITIGATION, TOWN HALL SERVICES AND OMNI-MEANS, JUNE 3, 2003, APPENDIX VIII-A.

3.13.5 THRESHOLDS OF SIGNIFICANCE

This section describes the thresholds or criteria that determine whether the Project causes a significant impact on roadway, bicycle, pedestrian, or transit systems. With the exception of Policy CIR 1.12 that defines LOS minimum, the City of Riverbank has not adopted formal traffic impact study guidelines to identify impact significance criteria. For this analysis, the following criteria have been employed based on consideration of General Plan policies, CEQA guidelines, and the criteria employed by adjoining jurisdictions.

Riverbank Facilities - Signalized Intersections

A significant Project impact is defined to occur at a signalized or roundabout intersection if the addition of Project traffic causes either of the following:

- An intersection operating at an acceptable level (LOS D or better) to degrade to an unacceptable level (LOS E or worse).
- An increase in control delay of more than five seconds of overall delay a signalized or roundabout intersection that currently operates at an unacceptable level.

Riverbank Facilities - Unsignalized Intersections

A significant Project impact is defined to occur at an un-signalized or roundabout intersection if the addition of Project traffic causes either of the following:

- An intersection operating at an acceptable level (LOS D or better) to degrade to an unacceptable level (LOS E or worse).
- An increase in control delay of more than five seconds of overall delay at an all-way stop operating at an unacceptable level.
- An increase in approach delay of five seconds and satisfaction of traffic signal warrants at an un-signalized intersection that currently operates at an unacceptable level.

Riverbank Facilities - Roadway Segments

A significant Project impact is defined to occur at a roadway segment if the addition of Project traffic causes either of the following:

- A roadway segment operating at an acceptable level (LOS D or better) to degrade to an unacceptable level (LOS E or worse).
- An increase in volume-to-capacity ratio of more than 0.05 on a roadway segment that currently operates at an unacceptable level.

Bicycle/Pedestrian System

A significant Project impact on bicycle or pedestrian facilities would occur if the Project would:

- eliminate or adversely affect an existing bikeway or pedestrian facility in a way that would discourage its use;
- interfere with the implementation of a planned bikeway as shown in the Bicycle Master Plan; or
- result in unsafe conditions for bicyclists or pedestrians, including unsafe bicycle/pedestrian, bicycle/motor vehicle, or pedestrian/motor vehicle conflicts.

Transit System

A Project is considered to have a significant impact on the public transit system if the Project would generate ridership which may exceed available or planned system capacity.

Modesto Facilities

City of Modesto General Plan standards specify the following:

> *"The City may allow individual locations to fall below the City's LOS standards in instances where the construction of physical improvements would be infeasible, be prohibitively expensive, significantly impact adjacent properties or the environment, significantly impact non-motorized transportation systems, or have a significant adverse effect on the character of the community. To the extent feasible, the City shall strive for* ***LOS D*** *on all streets and intersections.*
>
> *Individual development projects that could affect conditions on traffic facilities predicted by the General Plan Traffic Analysis to operate at LOS "E" (as shown in [Appendix A] of the Master EIR) shall not, without further study, cause conditions on those facilities to exceed LOS "E" at any time prior to 2025.*
>
> *Individual development projects that could affect conditions on traffic facilities predicted by the General Plan Traffic Analysis to achieve LOS "F" (as shown in [Appendix A] of the Master EIR) shall not, without further study, cause further substantial degradation of conditions. Further substantial degradation shall be defined as an increase in the daily vehicle/capacity (v/c) ratio of 0.05 or greater for roadway segments whose v/c ratio is estimated to be 1.00 or higher in 2025 by the traffic model."*

With this context, and in an effort to be consistent with the methodology incorporated in other adjacent traffic studies, Project impacts were considered to be significant if the Project would result in any of the following:

A. Deterioration of a **signalized** intersection from LOS D (or better) to LOS E or LOS F, an increase in the service volume of any approach by five percent or more for a signalized intersection operating at LOS E or LOS F under baseline conditions, or an increase in average delay of five or more seconds for a signalized intersection operating at LOS E or LOS F under baseline conditions

B. Deterioration of a controlled movement at an **unsignalized** intersection from LOS E or better to LOS F or, at intersections where a controlled movement already operates at LOS F, the satisfaction of one of the following conditions.
    a. The satisfaction of the peak hour volume signal warrant as a result of project traffic;
    b. An increase in minor movement delay of 30 seconds or more; or
    c. If the peak hour volume signal warrant is already met without the project and delay cannot be measured, an increase in traffic of ten or more vehicles per lane on any approach.
C. Deterioration of a **roadway segment** from LOS D or better, to LOS E or LOS F, or an increase in the Volume to Capacity (V/C) ratio of 0.05 or more for a segment operating at LOS E or LOS F under Baseline Conditions.

Stanislaus County Facilities

For study roadway segments that are within the jurisdiction of Stanislaus County, a separate set of criteria determines the acceptable operating standards. According to Policy 2.1 from the Circulation Element of the Stanislaus County General Plan, originally adopted in 1987 and most recently revised in 2000, the minimum acceptable operating standards has been determined as follows:

- The County shall maintain LOS C or better for all County roadways and intersections, except, within the sphere of influence of a city that has adopted a lower LOS standard, the City standard shall apply.

The following describes the criteria for determining the significance of potential impacts on Stanislaus County facilities:

Intersections. A significant Project impact is defined to occur at a signalized or un-signalized intersection if the addition of Project traffic causes either of the following:

- An intersection operating at an acceptable level (LOS C or better) to degrade to an unacceptable level (LOS D or worse).
- An increase in control delay of more than five seconds at an approach/movement at a signalized or un-signalized intersection that currently operates at an unacceptable level.

Roadway Segment. A significant Project impact is defined to occur at a roadway segment if the addition of Project traffic causes either of the following:

- A roadway segment operating at an acceptable level (LOS C or better) to degrade to an unacceptable level (LOS D or worse).
- An increase in volume-to-capacity ratio of more than 0.05 on a roadway segment that currently operates at an unacceptable level.

Caltrans Facilities

The following describes the criteria for determining the significance of potential impacts on Caltrans facilities:

Intersections. A significant Project impact is defined to occur at a signalized or un-signalized intersection if the addition of Project traffic causes either of the following:

- An intersection operating at an acceptable level to degrade to an unacceptable level; or
- An increase in control delay at a signalized or un-signalized intersection that currently operates at an unacceptable level.

Roadway Segments. A significant Project impact is defined to occur at a roadway segment if the addition of Project traffic causes either of the following:

- A roadway segment operating at an acceptable level to degrade to an unacceptable level; or
- An increase in volume on a roadway segment that currently operates at an un-acceptable level.

3.13.6 IMPACTS AND MITIGATION MEASURES

EXISTING PLUS PROJECT TRAFFIC IMPACT ANALYSIS

An Existing Plus Project analysis was performed to identify potential impacts under Existing conditions. This scenario focuses on the Project-specific effects of the Project. The analysis of Project impacts assumes 100% build out of the CWSP and superimposes external Project traffic onto current background traffic volumes. The Existing Plus Project traffic volumes are presented in Figure 3.13-6.

Intersection LOS and Signal Warrants

The traffic impacts resulting from development of the CWSP have been evaluated based on the LOS at key intersections, as shown in Table 3.13-14, and traffic signal warrants, as shown in Table 3.13-15. As indicated in Table 3.13-14, under the Existing Plus Project condition, three intersections would operate with LOS that exceed the LOS D minimum:

- Patterson Road / Coffee Road intersection;
- Claribel Road / Oakdale Road intersection;
- Claribel Road / N-S Collector intersection.

TABLE 3.13-14: INTERSECTION LOS – EXISTING PLUS PROJECT CONDITIONS

INTERSECTION	TRAFFIC CONTROL	AM PEAK HOUR				PM PEAK HOUR			
		EXISTING		EXISTING + PROJECT		EXISTING		EXISTING + PROJECT	
		DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS
Patterson Rd (SR 108) / Coffee Rd NB approach	NB Stop	**40.2**	**E**	**477.1**	**F**	**39.0**	**E**	**67.6**	**F**
	Roundabout	15.3	B	27.2	B	14.0	B	18.6	C
	Signal	--	--	13.3	B	--	--	15.1	B
Patterson Rd (SR 108) / Oakdale Rd	Signal	26.6	C	27.1	C	38.1	D	18.6	C
Coffee Rd / Morrill Rd WB approach	WB Stop	11.9	B	21.9	C	11.4	B	15.1	B
Oakdale Rd / Morrill Rd	Signal	14.4	B	20.0	C	16.4	B	38.7	D
Coffee Rd / Crawford Rd WB approach	WB Stop	12.0	B	14.4	B	11.7	B	22.6	C
Oakdale Rd / Crawford Rd	Signal	16.2	B	36.4	D	25.9	C	24.8	C
McHenry Ave (SR 108) / Claribel Rd	Signal	28.9	C	32.5	C	35.0	D	15.5	C
Claribel Rd / Coffee Rd	Signal	8.9	A	11.7	B	8.4	A	32.9	C
Claribel Rd / N-S Collector SB approach	SB Stop	--	--	25.0	C	--	--	**>999**	**F**
	Mitigated (Signal)	--	--	7.6	A	--	--	26.3	C
Claribel Rd / Oakdale Rd	Signal	30.4	C	44.4	D	32.4	C	**67.0**	**E**
	Mitigated (Signal)	--	--	37.2	D	--	--	49.0	D
Claribel Rd /Squire Wells Way	Signal	14.2	B	14.2	B	13.0	B	15.2	B
Claribel Rd / Roselle Ave	Signal	22.2	C	24.4	C	20.3	C	32.0	C
Claribel Rd / Terminal Ave	Signal	7.2	A	7.2	A	7.5	A	9.2	A
Claribel Rd / Claus Rd	Signal	18.3	B	20.0	B	21.4	B	29.0	C
Oakdale Rd / Claratina Ave	Signal	21.6	C	41.1	D	13.2	B	30.8	C
Oakdale Rd / Freddi Lane	Signal	8.1	A	10.1	B	19.8	B	31.8	C
Roselle Ave / Sylvan Lane	Roundabout	16.2	C	20.6	C	12.1	B	13.4	B
Oakdale Rd / Sylvan Ave	Signal	15.9	B	39.5	D	14.5	B	23.3	C
Coffee Rd / Claratina Ave	Roundabout	10.6	B	13.5	B	12.0	B	20.0	C
Oakdale Rd /Mable Ave	Signal	22.1	C	22.9	C	24.4	C	30.4	C

*NOTES: **BOLD** INDICATES UNACCEPTABLE OPERATIONS. SHADED INDICATES VALUES WHICH ARE SIGNIFICANT IMPACTS.*
NB = NORTHBOUND; WB = WESTBOUND; EB = EASTBOUND; SB = SOUTHBOUND. AWS = ALL-WAY STOP.
SOURCE: KDANDERSON & ASSOCIATES, 2018.

TABLE 3.13-15: TRAFFIC SIGNAL WARRANTS – EXISTING PLUS PROJECT CONDITIONS

INTERSECTION	PEAK HOUR VOLUMES											
	AM PEAK HOUR						PM PEAK HOUR					
	EXISTING			EXISTING + PROJECT			EXISTING			EXISTING + PROJECT		
	MAJOR	MINOR	MET?	MAJOR	MINOR	MET?	MAJOR	MINOR	MET?	MAJOR	MINOR	MET?
Patterson Rd (SR 108) / Coffee Rd	**1,261**	**120**	**YES**	**1,324**	**241**	**YES**	**1,420**	**136**	**YES**	**1,514**	**190**	**YES**
Coffee Rd / Morrill Rd	352	98	no	**446**	**356**	**YES**	298	75	no	**569**	**230**	**YES**
Coffee Rd / Crawford Rd	442	26	no	633	26	no	440	17	no	734	17	no
Claribel Rd / N-S Collector	1,344	0	no	**1,687**	**244**	**YES**	1,647	0	no	**2,572**	**306**	**YES**

NOTE: SHADED INDICATES VALUES WHICH ARE SIGNIFICANT IMPACTS.
SOURCE: KDANDERSON & ASSOCIATES, 2018.

Roadway Segment Operations

Segment traffic volumes on study area roads have been projected, and these forecasts are presented in Table 3.13-16. These volumes were then compared to the LOS threshold adopted by each agency, and the resulting LOS are noted. As indicated in Table 3.13-16, under the Existing Plus Project condition, seven roadway segments will be impacted by the project at build out:

- Patterson Road from McHenry Avenue to Coffee Road;
- Claribel Road from McHenry Avenue to Coffee Road;
- Claribel Road from Oakdale Road to Roselle Avenue;
- Claribel Road from Roselle Avenue to Claus Road;
- Coffee Road between Claribel Road and Claratina Avenue in the City of Modesto;
- Oakdale Road between Morrill Road and Crawford Road;
- Oakdale Road between Claribel Road and Claratina Avenue in the City of Modesto.

Impact 3.13-1: Under Existing conditions, the proposed Project would result in a significant impact at the Patterson Road / Coffee Road intersection. (Significant and Unavoidable)

Under the Existing Plus Project condition, the Patterson Road / Coffee Road intersection would operate at LOS F on the northbound approach. Based on the change in average delay and satisfaction of signal warrants, as noted in Table 3.13-14, this is a potentially significant impact.

Improvements to address the potential impact to the Patterson Road / Coffee Road intersection would include installation of a roundabout intersection or improvements that involve auxiliary turn lanes and a traffic signal. Either option would result in a LOS that satisfies the City of Riverbank's minimum LOS requirement. However, under current Caltrans directives, the exact nature of the needed improvement cannot be confirmed without completion of an ICE Report. Caltrans typically requires a complete evaluation of all traffic signal warrants prior to installing a traffic signal.

Improvements to the Patterson Road / Coffee Road intersection are included in the adopted City of Riverbank Impact Fee program. With implementation of the following mitigation, the operations at this intersection would improve. However, because improvements to this location are subject to Caltrans' approval process regarding design and installation, improvements may not be installed before the impact occurs. Because there is no guarantee regarding the timing of installation, the impact is **significant and unavoidable**.

TABLE 3.13-16: ROADWAY SEGMENT OPERATIONS – EXISTING PLUS PROJECT CONDITIONS

ROADWAY	LOCATION	CLASSIFICATION	MAX. VOL.	EXISTING			EXISTING + PROJECT			
							VOLUME		V/C	LOS
				VOL.	V/C	LOS	PROJECT ONLY	TOTAL		
Patterson Rd (SR 108)	McHenry Ave to Coffee Rd	2-lane Arterial	20,000	**14,100**	0.71	**E**	**1,350**	**15,450**	**0.77**	**E**
		4-lane Arterial	36,000	--	--	--		15,400	0.43	B
	Coffee Rd to Oakdale Rd	2-lane Arterial	15,700	**15,600**	0.99	**E**	**80**	**15,680**	**1.00**	**E**
	Oakdale Rd to Jackson Ave	4-lane Arterial	33,400	16,700	--	B	1,750	18,450	0.55	
Morrill Rd	Coffee Rd to NS Collector	2-lane Rural	1,965 vph	205 vph		B	419 vph	624 vph	0.32	D
	NS Collector to Oakdale Rd	2-lane Collector	12,900	1,770		--	3,480	5,250	0.41	C
Crawford Rd	Coffee Rd to Project	2-lane Rural	1,965 vph	42 vph		A	0 vph	42 vph	0.02	A
	NS Collector to Oakdale Rd	2-lane Collector	12,900	580		C	3,680	4,260	0.33	C
	Oakdale Rd to Squire Wells Rd	2-lane Collector	12,900	4,890		C	350	5,240	0.41	C
Claribel Rd	McHenry Ave to Coffee Rd	4-lane Arterial	36,000	20,080		C	**9,630**	**29,710**	**0.83**	**E**
	Coffee Rd to NS Collector	4-lane Arterial	33,400	19,720		--	10,850	30,570	0.83	D
	NS Collector to Oakdale Rd	4-lane Arterial	33,400	19,720		B	5,800	25,520	0.75	C
	Oakdale Rd to Roselle Ave	2-lane Arterial	15,700	14,250		D	**5,525**	**19,775**	**1.26**	**F**
	Roselle Ave to Claus Rd	2-lane Arterial	15,700	10,930		C	**4,250**	**15,180**	**0.98**	**E**
Coffee Rd	Patterson Rd to Morrill Rd	2-lane Rural	1,965 vph	330 vph		C	140 vph	470vph	0.24	C
	Morrill Rd to Crawford Rd	2-lane Rural	1,965 vph	442 vph		C	294 vph	736 vph	0.37	D
	Crawford Rd to Claribel Rd	2-lane Rural	1,965 vph	476 vph		C	294 vph	732 vph (1)	0.37	D
	Claribel Rd to Claratina Ave	2-lane Arterial	750 vph	507 vph	0.68	B	**231 vph**	**738 vph**	**0.98**	**E**
		4-lane Arterial	1,500 vph	--	--	--	231 vph	738 vph	0.50	A
Oakdale Rd	Patterson Road to Morrill Rd	4-lane Arterial	33,400	13,790	--	B	2,620	16,405	0.49	B
	Morrill Rd to Crawford Rd	2-lane Arterial	15,700	13,620		D	**5,250**	**18,870**	**1.20**	**F**
		4-lane Arterial	--	--		--	5,075	18,870	0.56	B
	Crawford Rd to Claribel Rd	4-lane Arterial	33,400	17,510		B	9,990	27,500	0.82	C
	Claribel Rd to Claratina Ave	2-lane Arterial	750 vph	**861 vph**	**1.15**	**F**	**262 vph**	**1,123 vph**	**1.50**	**F**
		4-lane Arterial	1,500 vph	--	--	--		1,123 vph	0.75	C
Roselle Ave	Claribel Rd to Claratina Ave	2-lane Arterial	750 vph	488 vph	0.65	B	59 vph	547 vph	0.73	C

*NOTES: **BOLD** INDICATES UNACCEPTABLE OPERATIONS. (1) WITH PROJECT TRAFFIC PEAK VOLUME IS PM PEAK HOUR; V/C = VOLUME-TO-CAPACITY RATIO.*
SOURCE: KDANDERSON & ASSOCIATES, 2018.

MITIGATION MEASURE(S)

Mitigation Measure 3.13-1: *Prior to issuance of any Building Permits for the CWSP Project, each project applicant in the Plan Area shall pay the applicable City of Riverbank Impact Fee towards the improvement of the Patterson Road / Coffee Road intersection in order to satisfy their fair share obligation.*

Impact 3.13-2: Under Existing conditions, the proposed Project would result in a significant impact at the Claribel Road / Oakdale Road intersection. (Significant and Unavoidable)

Under the Existing Plus Project condition, the Claribel Road / Oakdale Road intersection would operate at LOS E upon buildout of the CWSP Project. Based on the change from acceptable to unacceptable LOS, this is a potentially significant impact.

Improvements to address the potential impact to the Claribel Road / Oakdale Road to meet the minimum standard would include adding a second southbound through lane on Oakdale Road through the intersection and a separate northbound right turn lane. Creating the southbound lane requires widening Oakdale Road south of Claribel Road to a distance sufficient to accommodate through travel and merging back into a single southbound lane. The distance needed to accommodate the auxiliary through lane and transition back to a single lane is roughly ¼ mile.

Improvements to the Oakdale Road / Claribel Road intersection are not in the adopted City of Riverbank Impact Fee program, but the Oakdale Road widening is included in the City of Modesto's CFF program. With this improvement, the impact would not be significant. However, as work on Oakdale Road south of Claribel Road falls under the jurisdiction of Stanislaus County and the City of Modesto, there is no guarantee that these agencies will allow this improvement to be constructed or provide funding for their share of needed improvements that may benefit others. As a result, this impact is **significant and unavoidable**.

MITIGATION MEASURE(S)

Mitigation Measure 3.13-2: *Prior to the approval of a Final Map or improvement plans, each applicant within the CWSP Project shall be responsible for the project's fair share impacts towards the cost of widening Oakdale Road to provide a second southbound travel lane that continues beyond Claribel Road a distance sufficient to accommodate efficient intersection traffic operations and a transition back to a single lane, as well as a northbound right turn lane. The distance needed to accommodate the auxiliary through lane and transition back to a single lane is roughly ¼ mile. This roadway improvement shall be noted on the project improvement plans.*

The sum of each project applicant's fair share cost shall be equal to the total cost to construct the entire improvement, and the sum of the fair share costs shall be used by the developer(s) to construct the entire improvement. The specific segments of roadway which would be widened shall

be completed as determined by the City Engineer based on the level of development being proposed at the time.

Impact 3.13-3: Under Existing conditions, the proposed Project would result in a significant impact at the Claribel Road / N-S Collector intersection. (Less than Significant with Mitigation)

Under the Existing Plus Project condition, the Claribel Road / N-S Collector intersection would operate at LOS F. Because LOS F exceeds the minimum standard, and because traffic signal warrants are satisfied, this is a potentially significant impact.

A traffic signal and auxiliary turn lanes are needed to result in LOS that satisfies the City of Riverbank's minimum LOS standards. A new traffic signal on Claribel Road serving the retail center is not included in the City of Riverbank Impact Fee program. This improvement can be applied to the new N-S Collector intersection. With implementation of the following mitigation, the proposed Project would have a **less than significant** impact.

MITIGATION MEASURE(S)

Mitigation Measure 3.13-3: *Prior to approval of a Final Map or improvement plans, each applicant within the CWSP Project shall be responsible for the project's fair share impacts towards the cost of constructing a traffic signal and ancillary lanes at the Claribel Road / N-S Collector intersection. When warranted, construction of the traffic signal shall be required, to the satisfaction of the City of Riverbank City Engineer. The additional ancillary lanes shall be completed as determined by the City Engineer based on the level of development being proposed at the time. When warranted, this roadway improvement shall be noted on the improvement plans for such project.*

The sum of each project applicant's fair share cost shall be equal to the total cost to construct the entire improvement, and the sum of the fair share costs shall be used by the developer(s) to construct the entire improvement.

Impact 3.13-4: Under Existing conditions, the proposed Project would not result in a significant impact at the Coffee Road / Morrill Road intersection. (Less than Significant)

Under the Existing Plus Project condition, the Coffee Road / Morrill Road intersection would carry traffic volumes that satisfy rural peak hour warrants.

As noted in Section 3.13.2, Analysis Methods, satisfaction of peak hour warrants is one of several criteria employed to determine whether a traffic signal is justified. As noted in the analysis of intersection LOS, this intersection would operate within the City's LOS D minimum standard without signalization. Thus, it is likely that development of the CWSP alone may not justify a traffic signal. While signalization is not recommended for the Existing Plus Project condition, and no mitigation is required, this issue will be considered again under the Cumulative Plus Project

condition. See Impact 3.13-17 for this discussion. Under the Existing Plus Project condition, the proposed Project would have a **less than significant** impact.

Impact 3.13-5: Under Existing conditions, the proposed Project would result in a significant impact at the segment of Patterson Road from McHenry Avenue to Coffee Road. (Significant and Unavoidable)

Under the Existing Plus Project condition, the two-lane segments of Patterson Road from McHenry Avenue to Coffee Road would to continue to operate with a LOS that exceeds the County / Caltrans minimum LOS C standard. Because conditions exceed the adopted standard with and without the Project, the significance of the Project's impact is based on the incremental change in the v/c ratio. In this case, the difference is 0.07, which exceeds the 0.05 increment permitted under County guidelines. This is a potentially significant impact.

Improving the LOS in this area requires widening SR 108 to four lanes. This improvement is addressed by the City of Riverbank Impact Fee program. As with any improvement implemented by a fee program, the possibility exists that short-term impacts may occur as the City of Riverbank and Caltrans assemble the funds needed to complete the widening. With implementation of the following mitigation, operations at this segment would improve. However, because improvements to this location are subject to Caltrans' approval process regarding design and installation, improvements may not be installed before the impact occurs. Because there is no guarantee regarding the timing of installation, the impact is **significant and unavoidable**.

MITIGATION MEASURE(S)

Mitigation Measure 3.13-4: *Prior to issuance of any Building Permits for each project in the Plan Area, each project applicant shall pay the applicable City of Riverbank Impact Fee towards widening of SR 108 to four-lanes in order to satisfy their fair share obligation.*

Impact 3.13-6: Under Existing conditions, the proposed Project would result in a significant impact at the segment of Claribel Road from McHenry Avenue to Coffee Road. (Significant and Unavoidable)

Under the Existing Plus Project condition, the segment of Claribel Road from McHenry Avenue to Coffee Road would operate at LOS E. Because the Project will cause the minimum LOS standard to be exceeded, this impact is potentially significant.

Improving the LOS in this area would either require widening Claribel Road to six lanes, or creating additional parallel east-west capacity to reduce the volume of traffic on Claribel Road. The future NCC will provide parallel east-west capacity, and this improvement is included in the County's RTIF. As with any regional improvement, short-term impacts may occur during the period prior to completion of the NCC. Because the NCC is already included in the adopted RTIF program, payment of the adopted fees would mitigate the Project impact. However, because the City of Riverbank does not control the County RTIF program, there is no guarantee that the NCC will be

constructed in time to mitigate the Project impact. Even with implementation of the following mitigation, the proposed Project would have a **significant and unavoidable** impact.

MITIGATION MEASURE(S)

Mitigation Measure 3.13-5: *Prior to issuance of any Building Permits for each project in the Plan Area, each project applicant shall pay the applicable County RTIF fee towards construction of the North County Connector in order to satisfy their fair share obligation.*

Impact 3.13-7: Under Existing conditions, the proposed Project would result in a significant impact at the segment of Claribel Road from Oakdale Road to Claus Road. (Significant and Unavoidable)

Under the Existing Plus Project condition, the two-lane segments of Claribel Road from Oakdale Road to Claus Road would operate at LOS F with the addition of Project trips, which exceeds the City of Riverbanks' minimum LOS D standard. Because the Project will cause the minimum LOS standard to be exceeded, this is a potentially significant impact.

Improving the LOS in this area would either require widening Claribel Road to four lanes, or creating additional parallel east-west capacity to reduce the volume of traffic on Claribel Road. Widening Claribel Road is included in the City of Riverbank Impact Fee program. The NCC would provide parallel east-west capacity, and this improvement is included in the County's RTIF program. As with any regional improvement, short term impacts may occur during the period prior to completion of programmed improvements.

Because the widening Claribel Road is already included in the City of Riverbank Impact Fee program and the NCC is already included in the adopted County RTIF program, paying the adopted fees would mitigate the Project's impact. However, because the City of Riverbank does not control the Country RTIF program, there is no guarantee that the NCC will be constructed in time to mitigate the Project impact. Even with implementation of the following mitigation, the proposed Project would have a **significant and unavoidable** impact.

MITIGATION MEASURE(S)

Mitigation Measure 3.13-6. *Prior to issuance of Building Permits for the Project, each project applicant in the Plan Area shall pay the applicable City of Riverbank Impact Fee and County RTIF fee towards the improvement of Claribel Road from Oakdale Road to Claus Road in order to satisfy their fair share obligation.*

Impact 3.13-8: Under Existing conditions, the proposed Project would result in a significant impact at the segment of Coffee Road between Claribel Road and Claratina Avenue, located in the City of Modesto. (Significant and Unavoidable)

Under the Existing Plus Project condition, the two-lane section of Coffee Road between Claribel Road and Claratina Avenue in the City of Modesto would decrease to LOS F. Because LOS F exceeds the City of Modesto's minimum LOS D standard, this is a potentially significant impact.

Improving the LOS in this area would either require improving Coffee Road to Modesto's four-lane arterial street standard. This improvement is included in the City of Modesto's CFF traffic impact fee program, and a portion is within the NCC project area. While development in the City of Riverbank is required to pay RTIF fees, development does not contribute Modesto CFF fees.

The precedent for development projects within a particular jurisdiction contributing to the cost of improvements in other jurisdictions outside of adopted fee programs is limited. The Tivoli Specific Plan EIR[2] notes that:

> *Currently no funding mechanism exists by which development in the City of Modesto can contribute to traffic improvements within the City of Riverbank, just as no mechanism exists by which development within the City of Riverbank contributes to funding traffic improvements in the City of Modesto. Development of such a mechanism would require negotiations between the two agencies to figure out if and acceptable, bilateral funding arrangement could be developed. if such an arrangement were to be developed, then project development could be conditioned on payment towards such improvements at the time of tentative map approval for individual subdivisions within the project area*.

No mechanism has been created to allow Tivoli Specific Plan development to contribute to the cost of traffic improvements in the City of Riverbank.

Because no mechanism exists for the Project to contribute to the cost of improvements in the City of Modesto, and because the City of Riverbank does not control the RTIF or Modesto CFF program, there is no guarantee that the City of Modesto would allocate CFF funds to this improvement. As such, because installation cannot be assured by the City of Riverbank, this impact would be **significant and unavoidable**.

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[2] City of Modesto, Tivoli Specific Plan Project, Final Environmental Impact Report, February 26, 2008, Findings and Statements Required under California Environmental Quality Act, page 10.

Impact 3.13-9: Under Existing conditions, the proposed Project would result in a significant impact at the Oakdale Road between Morrill Road and Crawford Road segment. (Less than Significant with Mitigation)

Under the Existing Plus Project condition, the two-lane section of Oakdale Road between Morrill Road and Crawford Road would decrease to LOS F at CWSP buildout. Because LOS F exceeds the City of Riverbank's minimum LOS D standard, this is a potentially significant impact.

Improving the LOS in this area would require improving Oakdale Road to a four-lane arterial street standard. This improvement is consistent with the City of Riverbank's policy for frontage improvements. The volume of traffic on this portion of Oakdale Road in the future will be dependent on the location of Project development, and regular monitoring would be needed to confirm when LOS D is exceeded. With implementation of the following mitigation, the proposed Project would have a **less than significant** impact.

MITIGATION MEASURE(S)

Mitigation Measure 3.13-7: *Prior to issuance of any Building Permits each project within the Plan Area, each project applicant shall be responsible for contributing the fair share contribution towards the costs of widening Oakdale Road to four lanes by providing a second southbound through travel lane between Morrill Road and Crawford Road. The applicant shall be responsible for widening Oakdale Road when determined by the City Engineer.*

Impact 3.13-10: Under Existing conditions, the proposed Project would result in a significant impact at the segment of Oakdale Road between Claribel Road and Claratina Avenue, located in the City of Modesto. (Significant and Unavoidable)

Under the Existing Plus Project condition, the two-lane section of Oakdale Road between Claribel Road and Claratina Avenue in the City of Modesto would operate at LOS F. Because LOS F exceeds the City of Modesto's minimum LOS D standard, and Project trips would increase the v/c ratio by more than 0.05, this is a potentially significant impact.

Improving the LOS in this area would require improving Oakdale Road to Modesto's four-lane arterial street standard. This improvement is included in the City of Modesto's CFF traffic impact fee program. However, development in the City of Riverbank does not contribute Modesto CFF fees. This area is also within the project limits of the NCC, and Oakdale Road is likely to be widened with this improvement project funded via CFF fees. Because no mechanism exists for the Project to contribute to the cost of improvements in the City of Modesto, and because the City of Riverbank does not control the RTIF or Modesto CFF program, there is no guarantee that the City of Modesto would allocate CFF funds to this improvement. As such, because installation cannot be assured by the City of Riverbank, this impact would be **significant and unavoidable**.

Impact 3.13-11: The proposed Project would adversely affect pedestrian and bicycle facilities. (Less Than Significant with Mitigation)

Pedestrian and bicycle activity would occur as development in the Plan Area proceeds, and the proposed improvements are consistent with the StanCOG Non-Motorized Transportation Master Plan. The proposed alternative transportation circulation is shown in Figure 2.0-10 in Section 2.0, Project Description. The CWSP identifies the locations of Class II bike lanes on Morrill Road, Coffee Road, Oakdale Road, and on the new N-S Collector. Class I bike trails are planned along the MID Main Canal at the north end of the Plan Area and along MID Lateral #6 to the south. These facilities would be linked by a trail on western Morrill Road and on the N-S Collector. A Class I trail is also planned along Claribel Road. Ultimately, pedestrian facilities would be created along the frontage of future development associated with the Project. Thus, the Project does not interfere with the implementation of the planned bicycle and pedestrian system.

Potential safety impacts could occur as the Project connects to existing pedestrian and bicycle facilities. Existing traffic signals provide adequate pedestrian crossings on Oakdale Road to link the Project with most of the City of Riverbank. However, a protected crossing would be needed for the MID Lateral trail across Oakdale Road, and the distance between Morrill Road and Crawford Road may justify another east-west crossing on Oakdale Road. While the Morrill Road / N-S Collector intersection may not carry traffic volumes that justify signalization based on vehicular warrants, a protected crossing for the trail to the MID Main Canal may be needed. The nature of the crossings would need to be considered in consultation with the City of Riverbank. The crossing may feature a Hybrid Pedestrian Beacon to stop traffic when pedestrians are present, and would remain dark when pedestrians are not present. This is a potentially significant impact.

Depending on the actual location of initial development within the CWSP, there may be instances when short term “gaps” between existing crossings / sidewalks and the proposed facilities. The Project applicant and the City of Riverbank should monitor development within the Plan Area to identify gaps that result in conflicts between pedestrians and automobiles, and require interim paths that provide a safe route. Similarly, development of the sports park and school sites within the CWSP may result in travel by school age children prior to completion of the overall circulation system. Interim facilities may be needed. Incremental development of the CWSP could result in short term gaps in the pedestrian circulation and bicycle systems that result in conflicts between pedestrians, bicycles, and motor vehicles, particularly on Oakdale Road. This is a potentially significant impact.

With implementation of the following mitigation measures, the proposed Project would have a **less than significant** impact.

MITIGATION MEASURE(S)

Mitigation Measure 3.13-8: *Each project applicant in the Plan Area shall work with City of Riverbank staff to identify applicable pedestrian crossing features and shall install the features, when warranted, to the satisfaction of the City of Riverbank City Engineer.*

Mitigation Measure 3.13-9: *Each project applicant in the Plan Area shall monitor pedestrian, bicycle, and motor vehicle safety conditions as development proceeds. Any identified safety conditions as a result of this monitoring shall be installed to alleviate these concerns, as applicable, to the satisfaction of the City of Riverbank City Engineer.*

Impact 3.13-12: The proposed Project would adversely affect transit services or facilities. (Less than Significant with Mitigation)

Development in the CWSP could result in an increase in demand for transit service. Currently, StaRT Route 60 passes the Plan Area on Claribel Road and Oakdale Road. This Route operates Monday through Friday between 5:00 AM and 9:43 PM, with thirteen round trips between Modesto and Oakdale, passing through Riverbank. On Saturday between 6:15 AM and 8:34 PM, seven round trips are provided. The Saturday service is combined with the Modesto/Turlock route. This route follows Claribel Road and Oakdale and has a designated stop on Oakdale Road at the Freddi Lane intersection.

The proposed alternative transportation circulation is shown in Figure 2.0-10 in Section 2.0, Project Description. As shown in the figure, public transit locations are proposed along Oakdale Road, Crawford Road, Morrill Road, and the proposed N-S Collector. The CWSP anticipates that bus shelters and pullouts will be installed at key locations within the Plan Area, to be determined in consultation with StaRT.

The StaRT routes that are available would be adequate to serve the CWSP. The Project applicant would need to work with StaRT to identify applicable locations for stops and pullouts and install these improvement as development proceeds. The ultimate decisions regarding the nature of any routes that may circulate through the CWSP would be made by StaRT. The Project's impacts to transit services would not be significant. However, mitigation would be required in order to ensure that transit facilities are incorporated into the Project.

With implementation of the following mitigation measure, the proposed Project would have a **less than significant** impact.

MITIGATION MEASURE(S)

Mitigation Measure 3.13-10: *The project applicants in the CWSP Area shall install the transit elements included in the CWSP. The project applicants shall work with Stanislaus Regional Transit staff to identify applicable on-site transit facilities and features in order to ensure that transit facilities are incorporated into the project. The transit facilities and features may include, but would not be limited to, bus turnouts, bus stops, and signage. The project applicants shall install the features, when warranted, to the satisfaction of the City Engineer.*

EPAP PLUS PROJECT TRAFFIC IMPACT ANALYSIS

An EPAP Plus Project analysis was performed to identify potential impacts under EPAP conditions. This section considers the impacts of the Project within the context of conditions with occupancy

other approved projects identified in consultation with City of Riverbank and City of Modesto staff.

Approved Projects List

Table 3.13-17 identifies approved development projects identified by Modesto and Riverbank staff for this analysis. The development within Riverbank's Community Facilities District (CFD) 2016-1 is located on the east side of Riverbank off of Claus Road. The list of Modesto's approved projects includes both retail and residential development projects.

TABLE 3.13-17: APPROVED PROJECTS LIST

JURISDICTION	NAME	DESCRIPTION	TRIP GENERATION		
			DAILY	AM PEAK HOUR	PM PEAK HOUR
Riverbank	CFD	285 SFR and 72 MFR east of Claus Rd near Patterson Rd	2,925	230	302
Modesto	The Marketplace	168 ksf retail center at Oakdale / Sylvan	11,332	214	909
	Hillglen Parks	62 SFR @ Hillglen / Caden	590	47	62
	Hillglen	39 SFR @ Roselle/ Hillglen	371	29	39
	Lincoln Parks	58 SFR @ Kodiak / Lincoln Oak	552	44	58
	Rose Villas	114 SFR @ Oakdale / Mable	1,085	86	114
	Millbrook Manor	14 SFR @ Kodiak & Millbrook	133	11	14
	Falling Leaf	203 SFR @ Floyd & Claus	1,933	152	203
		Total	**18,921**	**813**	**1,701**

NOTE: AM PEAK HOUR DATA WAS NOT EVALUATED BY THE CITY OF MODESTO.
SOURCE: KDANDERSON & ASSOCIATES, 2018.

As indicated in Table 3.13-17, these approved projects would generate a total of 18,921 new daily trips, with 369 trips in the AM peak hour and 1,701 trips in the PM peak hour.

Traffic Volume Forecasts. The trips associated with approved projects were assigned to the regional street system based on information contained in their respective traffic studies or based on a distribution developed for the regional travel demand forecasting model. Figure 3.3-7 presents the resulting traffic volume at study locations.

Intersection LOS and Signal Warrants

Intersection LOS. The LOS occurring at study intersections under the EPAP baseline, conditions with and without the proposed Project, were calculated and are identified in Table 3.13-18.

The trips identified for the Project were superimposed onto the EPAP baseline condition to create the EPAP Plus Project volumes, which are shown in Figure 3.13-8 and Table 3.13-18. These volumes are the basis for the subsequent analysis of LOS and traffic signal warrants. As shown, if the other approved projects proceed, then the intersections which currently operate with LOS below the adopted minimum standard under Existing conditions will continue to do so. No additional locations would operate unacceptably under EPAP conditions.

TABLE 3.13-18: INTERSECTION LOS – EPAP PLUS PROJECT CONDITIONS

INTERSECTION	TRAFFIC CONTROL	AM PEAK HOUR				PM PEAK HOUR			
		EPAP		EPAP + PROJECT		EPAP		EPAP + PROJECT	
		DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS
Patterson Rd (SR 108) / Coffee Rd NB approach	NB Stop	**40.9**	**E**	**489.7**	**F**	**40.6**	**E**	**199.9**	**F**
	Roundabout	15.7	C	27.2	D	14.3	B	19.1	B
	Signal	--	--	24.2	C	--	--	20.5	C
Patterson Rd (SR 108) / Oakdale Rd	Signal	26.9	C	28.4	C	35.5	D	39.5	D
Coffee Rd / Morrill Rd WB approach	WB Stop	11.9	B	21.9	C	11.4	B	22.6	C
Oakdale Rd / Morrill Rd	Signal	14.2	B	20.3	C	17.1	B	25.9	C
Coffee Rd / Crawford Rd WB approach	WB Stop	12.0	B	14.4	B	11.7	B	15.5	B
Oakdale Rd / Crawford Rd	Signal	16.2	B	36.8	D	18.1	B	33.8	C
McHenry Ave (SR 108) / Claribel Rd	Signal	26.8	C	32.8	C	35.4	D	**56.6**	**E**
Claribel Rd / Coffee Rd	Signal	8.7	A	11.9	B	19.1	B	48.8	D
Claribel Rd / N-S Collector SB approach	SB Stop	--	--	26.6	D	--	--	**>999**	**F**
	Signal	--	--	7.6	A	--	--	24.7	C
Claribel Rd / Oakdale Rd	Signal	30.9	C	46.8	D	34.3	C	**70.9**	**E**
	Mitigated	--	--	39.1	D	--	--	50.8	D
Claribel Rd /Squire Wells Way	Signal	14.7	B	14.6	B	13.0	B	15.5	B
Claribel Rd / Roselle Ave	Signal	21.8	C	26.0	C	20.8	C	35.2	D
Claribel Rd / Terminal Ave	Signal	7.2	A	7.3	A	7.6	A	9.5	A
Claribel Rd / Claus Rd	Signal	18.5	B	20.2	C	22.0	C	29.5	C
Oakdale Rd / Claratina Ave	Signal	26.6	C	49.7	D	16.8	B	44.0	D
Oakdale Rd / Freddi Lane	Signal	8.6	A	10.8	B	22.0	C	31.8	C
Roselle Ave / Sylvan Lane	2-Lane Roundabout	18.0	C	20.6	C	13.9	B	15.6	C
Oakdale Rd / Sylvan Ave	Signal	23.2	C	32.8	C	20.6	C	26.8	C
Coffee Rd / Claratina Ave	2-Lane Roundabout	11.2	B	13.5	B	13.4	B	23.6	C
Oakdale Rd /Mable Ave	Signal	27.6	C	30.3	C	33.6	C	47.2	D

*NOTES: **BOLD** INDICATES UNACCEPTABLE OPERATIONS. SHADED INDICATES VALUES WHICH ARE SIGNIFICANT IMPACTS.*
NB = NORTHBOUND; WB = WESTBOUND; EB = EASTBOUND; SB = SOUTHBOUND. AWS = ALL-WAY STOP.
SOURCE: KDANDERSON & ASSOCIATES, 2018.

Traffic Signal Warrants. The extent to which the addition of trips from approved projects affects the status of traffic signal warrants at un-signalized intersection is noted in Table 3.13-19. As shown, no additional intersections satisfy peak hour warrants due to the approved projects. The same locations that satisfied warrants under Existing Plus Project conditions do so under the EPAP Plus Project conditions.

TABLE 3.13-19: TRAFFIC SIGNAL WARRANTS – EPAP PLUS PROJECT CONDITIONS

INTERSECTION	PEAK HOUR VOLUMES											
	AM PEAK HOUR						PM PEAK HOUR					
	EPAP			EPAP + PROJECT			EPAP			EPAP + PROJECT		
	MAJOR	MINOR	MET?	MAJOR	MINOR	MET?	MAJOR	MINOR	MET?	MAJOR	MINOR	MET?
Patterson Rd (SR 108) / Coffee Rd	1,271	120	Yes	1,333	241	YES	1,434	136	YES	1,528	190	YES
Coffee Rd / Morrill Rd	352	98	No	446	356	YES	298	75	No	569	230	YES
Coffee Rd / Crawford Rd	442	26	No	633	26	no	440	17	No	734	17	No
Claribel Rd / N-S Collector	1,385	0	No	1,728	244	YES	1,699	0	No	2,624	306	YES

NOTE: SHADED INDICATES VALUES WHICH ARE SIGNIFICANT IMPACTS.
SOURCE: KDANDERSON & ASSOCIATES, 2018.

Roadway Segment Operations

The addition of trips from approved projects will increase the traffic volumes on some study area roadways. Table 3.13-20 compares roadways segment LOS with and without the Project. Compared to Existing Conditions, the LOS on one segment will drop below the LOS D threshold. The daily volume on the two-lane segment of Claribel Road between Oakdale Road and Roselle Avenue will increase, and this segment will operate at LOS E. As indicated, the same locations which were deficient under Existing Plus Project conditions operate with LOS below LOS D under EPAP Plus Project conditions. The Project's impacts and mitigation requirements based on roadway segment LOS would be the same.

Intersection Queues

The distance between signalized intersections on Oakdale Road warrants evaluation of peak period queues as capacity can be affected and safety issues created when queuing traffic extends beyond the available storage lanes.

Table 3.13-21 compares the 95th percentile queues occurring in key turn lanes at intersections on Oakdale Road under the EPAP Plus Project conditions. This represents the worst case condition in this area prior to the implementation of the NCC.

Additionally, as shown, there are several locations where the projected queues would exceed available storage in the EPAP Plus Project condition: Oakdale Road / Crawford Road intersection, Oakdale Road / Freddi Lane intersection, and Oakdale Road / Claribel Road intersection.

TABLE 3.13-20: ROADWAY SEGMENT OPERATIONS – EPAP PLUS PROJECT CONDITIONS

ROADWAY	LOCATION	CLASSIFICATION	MAX. VOL.	EPAP			EPAP + PROJECT			
							VOLUME		V/C	LOS
				VOL.	V/C	LOS	PROJECT ONLY	TOTAL		
Patterson Rd (SR 108)	McHenry Ave to Coffee Rd	2-lane Arterial	20,000	**14,360**	**0.71**	**E**	**1,350**	**15,710**	**0.78**	**E**
	Coffee Rd to Oakdale Rd	2-lane Arterial	15,700	**15,725**	**1.00**	**E**	**80**	**15,805**	**1.01**	**E**
	Oakdale Rd to Jackson Ave	4-lane Arterial	33,400	16,990		B	1,750	18,740	0.56	B
Morrill Rd	Coffee Rd to NS Collector	2-lane Rural	1,965 vph	205 vph		B	419 vph	624 vph	0.32	D
	NS Collector to Oakdale Rd	2-lane Collector	12,900	1,770		--	3,480	5,250	0.41	C
Crawford Rd	Coffee Rd to Project	2-lane Collector	1,965 vph	42 vph		C	0 vph	42 vph	0.02	A
	NS Collector to Oakdale Rd	2-lane Collector	12,900	580		C	3,680	4,260	0.33	C
	Oakdale Rd to Squire Wells Rd	2-lane Collector	12,900	4,890		C	350	5,240	0.41	C
Claribel Rd	McHenry Ave to Coffee Rd	4-lane Arterial	36,000	20,570		C	**9,630**	**31,200**	**0.83**	**E**
	Coffee Rd to NS Collector	4-lane Arterial	33,400	20,235		B	10,850	31,085	0.83	C
	NS Collector to Oakdale Rd	4-lane Arterial	33,400	20,210		B	5,800	26,020	0.75	C
	Oakdale Rd to Roselle Ave	2-lane Arterial	15,700	**14,920**		**E**	**5,525**	**20,445**	**1.30**	**F**
	Roselle Ave to Claus Rd	2-lane Arterial	15,700	11,550		C	**4,250**	**15,800**	**1.01**	**F**
Coffee Rd	Patterson Rd to Morrill Rd	2-lane Rural	1,965 vph	330 vph		C	140 vph	470 vph	0.24	C
	Morrill Rd to Crawford Rd	2-lane Rural	1,965 vph	442 vph		C	294vph	736 vph	0.37	D
	Crawford Rd to Claribel Rd	2-lane Rural	1,965 vph	476 vph		C	294 ph	734 vph (1)	0.37	D
	Claribel Rd to Claratina Ave	2-lane Arterial	750 vph	512 vph	0.68	B	**231 vph**	**743 vph**	**0.99**	**E**
Oakdale Rd	Patterson Road to Morrill Rd	4-lane Arterial	33,400	13,950		B	2,620	16,570	0.49	B
	Morrill Rd to Crawford Rd	4-lane Arterial	33,400	13,840		B	5,250	19,090	0.57	B
	Crawford Rd to Claribel Rd	4-lane Arterial	33,400	17,690		B	9,990	27,680	0.83	C
	Claribel Rd to Claratina Ave	2-lane Arterial	750 vph	**934 vph**	1.2.5	**F**	**262 vph**	**1,196vph**	**1.59**	**F**
Roselle Ave	Claribel Rd to Claratina Ave	2-lane Arterial	750 vph	496 vph	0.66	B	59 vph	555 vph	0.73	C

*NOTES: **BOLD** INDICATES UNACCEPTABLE OPERATIONS. (1) WITH PROJECT TRAFFIC PEAK VOLUME IS PM PEAK HOUR; V/C = VOLUME-TO-CAPACITY RATIO.*
SOURCE: KDANDERSON & ASSOCIATES, 2017

TABLE 3.13-21: TRAFFIC SIGNAL WARRANTS – EPAP PLUS PROJECT CONDITIONS

APPROACH	LANE	STORAGE (FT.)	AM PEAK HOUR		PM PEAK HOUR	
			EPAP + PROJECT VOL. (VPH)	95TH % QUEUE	EPAP + PROJECT VOL. (VPH)	95TH % QUEUE
Oakdale Road / Crawford Road						
NB	Left turn	300	71	110	195	220
WB	Left turn	180	379	**370**	191	**245**
Oakdale Road / Freddi Lane						
WB	Left + thru	100	-	-	77	50
	Right turn	100	-	-	244	80
NB	Left turn	240	-	-	308	**310**
SB	Left turn	420	-	-	201	230
EB	Left turn	-			141	175
	Right turn	-			271	120
Oakdale Road / Claribel Road						
SB	Left turn	300	166	180	194	300
EB	Left turn	400	166	215	447	**585**
WB	Left turn	320	263	360	297	**420**
NB	Left turn	130	150	240	167	**275**

*NOTES: **BOLD** VALUES ARE QUEUES THAT EXCEED AVAILABLE STORAGE.*
NB = NORTHBOUND; WB = WESTBOUND; EB = EASTBOUND; SB = SOUTHBOUND.
SOURCE: KDANDERSON & ASSOCIATES, 2018.

Impact 3.13-13: Under EPAP conditions, the proposed Project would result in a significant impact to queue lengths. (Less than Significant with Mitigation)

As shown in Table 3.13-21, development of the Project would increase the length of queues occurring at key intersections and increase the possibility of queues extending into adjoining travel lanes. Without mitigation, this is a potential safety impact.

At the Oakdale Road / Crawford Road intersection, the queue of westbound traffic on Crawford Road turning left onto southbound Oakdale Road exceeds the available storage. To an appreciable degree, this is an existing problem as the Project itself adds little traffic to the left turning volume.

At the Oakdale Road / Freddi Lane intersection, the projected queue in the northbound left turn lane is expected to exceed the available storage. The lane would need to be lengthened or dual left turn lanes installed, and the design choice would need to be made by the City of Riverbank when a plan for the mixed use retail center comes forward. Similarly, the design of the mixed use retail area would need to accommodate eastbound queues, but the nature of these lanes cannot be determined until a development plan is proposed.

At the Oakdale Road / Claribel Road intersection, anticipated 95th percentile queues exceed available left turn lane storage on three approaches. To an appreciable degree, the need to lengthen these lanes is linked to the construction of the NCC as that improvement would alter

traffic volumes in this area. In lieu of that improvement, the storage in the westbound, northbound, and eastbound left turn lanes would need to be lengthened.

Implementation of Mitigation Measure 3.13-11 would reduce the potential safety impact to a **less than significant** level.

MITIGATION MEASURE(S)

Mitigation Measure 3.13-11*: Prior to approval of a Final Map or improvement plans, each project applicant within the CWSP Area shall be responsible for lengthening the available storage in left turn lanes at the Oakdale Road / Crawford Road, Oakdale Road / Freddi Lane, and Oakdale Road / Claribel Road intersections. The applicants shall be responsible for lengthening specific turn lanes when determined by the City Engineer. These roadway improvements shall be noted on the project improvement plans.*

Impact 3.13-14: Under EPAP conditions, the proposed Project would result in a significant impact at the proposed mixed use retail area access. (Less than Significant with Mitigation)

Development of the proposed mixed use retail area could create safety conflicts or capacity bottlenecks at driveways if access is improperly designed. Direct access to the southern mixed use retail area is anticipated on both Oakdale Road and Claribel Avenue, as well as at the new N-S Collector. Although no formal development plan has been created for this area, the proposed Circulation Plan envisions numerous points of access on the 2,000 feet from the N-S Collector to Oakdale Road and onto Oakdale Road on both sides of Freddi Lane intersection.

Raised medians either exist today or are planned on both Oakdale Road and Claribel Road. While the distance along Oakdale Road may not be adequate to permit additional median openings, it would be possible to modify the Claribel Road median to allow access. While the conceptual access locations have not been quantitatively analyzed as part of the LOS analysis, feasibility would depend on factors, such as:

- Completion of the NCC in the area of the Project and the realignment of Claribel Road to a new intersection on Coffee Road.
- The distance between driveways and proximity to public road intersections.
- Presence of access on the south side of Claribel Road.
- Applicable standards for minimum turn lane length based on storage and deceleration.
- The layout of the eventual land uses in the mixed use retail area.

The feasibility of driveway access based on the distance between intersections has been evaluated conceptually under short term and long-term conditions. The proposed Circulation Plan suggests three midblock access points on Claribel Road between the N-S Collector and Oakdale Road. The average spacing would be 500 feet between intersections.

Before NCC is completed, Claribel Road will still carry appreciable background traffic, and it is likely that a traffic signal will be needed to accommodate outbound left turns. Under these circumstances, it is reasonable to expect that a single traffic signal could be permitted midway between the N-S Collector and Oakdale Road and that the other locations would be limited to right turns only.

Once the NCC is completed, full access at each location could theoretically be developed, and the City will need to consider the probable minimum length of turn lanes and bay tapers at each opening. If full access to the properties on the south side of Claribel Road is to be allowed, then the 500-foot average distance between driveways may be too short to accommodate back-to-back left turn lanes.

The issues associated with retail access may represent a potential safety issue if congestion occurs or if inadequate turn lanes are created. Implementation of Mitigation Measure 3.13-12 would reduce the potential safety impact to a **less than significant** level.

MITIGATION MEASURE(S)

Mitigation 3.13-12: *Prior to approval of a Final Map or improvement plans for the "MU-1 Mixed Use Retail" area, the project applicant shall be responsible for providing a design for vehicular access to the satisfaction of the City of Riverbank City Engineer when development of the "MU-1 Mixed Use Retail" area proceeds. This roadway design shall be noted on the project improvement plans.*

Impact 3.13-15: Under EPAP conditions, the proposed Project would result in a significant impact at the McHenry Avenue / Kiernan Avenue / Claribel Avenue intersection. (Significant and Unavoidable)

Under the EPAP Plus Project conditions, the McHenry Avenue / Kiernan Avenue / Claribel Avenue intersection would operate at LOS E. Based on the change to an unacceptable LOS, this is a potentially significant impact.

Improving the LOS at this intersection would require additional intersection capacity, and the NCC project includes improvements to this location. The NCC is included in the County's RTIF. As with any regional improvement, short term impacts may occur during the period prior to completion of the NCC. However, because the City of Riverbank does not control the Regional Fee program, there is no guarantee that the NCC will be constructed in time to mitigate the project impact. The Project applicant would be required to pay the fair share fee towards the NCC project. Because installation cannot be assured by the City of Riverbank, this impact would be **significant and unavoidable**.

MITIGATION MEASURE(S)

Mitigation Measure 3.13-13: *Prior to issuance of Building Permits for each project in the Plan Area, each project applicant shall pay the applicable County RTIF fee towards construction of the North County Connector in order to satisfy their fair share obligation.*

CUMULATIVE PLUS PROJECT CONDITIONS TRAFFIC IMPACT ANALYSIS

This section considers the impacts of the Project within the context of long term traffic conditions that may accompany the development of regional circulation system improvements and regional residential and non-residential development.

Approach to Traffic Volume Forecasting

Available sources of information regarding long term traffic conditions were reviewed, and the basis for cumulative analysis was selected in consultation with City of Riverbank. The City of Riverbank General Plan Update EIR regional travel demand forecasting model was considered. That tool was created from the StanCOG regional model as it existed when the General Plan Update began in 2007 and may not represent the most current information regarding regional development. The traffic model employed for the most recent StanCOG Regional Transportation Plan Updated (RTP) was obtained and reviewed. That tool was obtained and reviewed but, as the specific traffic volume forecasts for study area roadways have not been endorsed by local agencies, this alternative was not selected.

The regional traffic model employed for the pending NCC Draft EIR was reviewed and found to be the best available resource. This model produced "Year 2042" land use forecasts that represent a "Worst Case" view of regional growth, and the results identified in the Traffic Operational Analysis accompanying the Draft EIR have been accepted by Caltrans and Stanislaus County.

Modeling Approach in NCC Area. The approach to using the regional traffic model was intended to make use of information presented in the NCC Draft EIR while reflecting comments received from the City of Riverbank and City of Modesto during the preparation of the proposed Project traffic impact analysis. Because the NCC analysis addressed some but not all of the locations to be evaluated for the Project, two alternative measures were employed.

Where NCC analysis forecasts were available, the traffic model was reviewed and modified to reflect the specific land use assumptions inherent to the Project, and the local roadway network was modified to reflect the proposed Project. The locations evaluated under this approach generally lie along the NCC corridor north of and including Claratina Avenue. In this area, intersection turning movement forecasts were identified from the model for Year 2042 with Project conditions, and these results were compared to the model as employed for the NCC. The net differences were applied to the published turning movements presented in the NCC traffic operational analysis to create adjusted Year 2042 Plus Project volumes. This approach was

particularly applicable since the information in the NCC analysis reflected a degree of "post processor" manual adjustment that would be impossible to duplicate for this analysis.

Modeling Approach Outside of NCC Area. An alternative approach was taken where the NCC Draft EIR analysis did not provide specific forecasts. These areas generally include locations in Modesto south of Claratina Avenue, but information relative to locations in Riverbank was also created for comparison to NCC data. Two land use changes were made in areas separate from the Project at the request of the City of Riverbank and the City of Modesto:

1. Potential residential development along and adjoining the NCC corridor that might someday be developed was assumed to occur after 2042 and, at the direction of the City of Riverbank, was not included.
2. In Modesto, the City asked that the approved Tivioli Specific Plan be assumed to be 100% occupied. This change primarily reflected retail use added at the employee density employed by the City of Modesto in their traffic model.

To best account for inherent limitations of a regional model, an "incremental" approach was taken to create the Cumulative Year 2042 traffic volumes for this analysis. The Cumulative Year 2042 Plus Project model run results were compared to the NCC model's calibrated baseline year forecasts and the incremental difference in segment volume was identified on a daily and peak hour basis. These increments were added to observed Cumulative Year 2017 volumes to create the "adjusted" future condition. Individual growth rates were then calculated for each segment and intersection approach by comparing observed and adjusted future volumes. Finally, these growth rates were applied to the turning movement volumes at each intersection, and the results were balanced using the techniques contained in the Transportation Research Board's (TRB's) *NCHRP Report 255, Highway Data for Urbanized Area Project Planning and Design*.

As noted earlier, the analysis of future conditions assumes implementation of the NCC, and the planned expressway is included in the model. While four alternative alignments have been included in the Draft EIR analysis contained in the NCC's environmental document, this analysis follows the direction of the City of Riverbank and Alternative 2B has been assumed. In general, all NCC alternatives are similar in the area of the Project but differ in the paths followed east of Claus Road.

Figures 3.13-9 and 3.13-10 display resulting Cumulative Year 2042 AM and PM peak hour traffic volumes for conditions with and without the Project.

Project Access. Because any regional model lacks the ability to account for specific local access conditions, the specific assignment of Project trips was identified assuming implementation of the future circulation system. The new trips associated with the Project were then manually assigned to the local intersections adjoining the Project, and the results adjusted to balance to the forecasts at regional intersections.

No Project Conditions. To identify the incremental effects of the Project in the Cumulative Year 2042 conditions, the trips associated with the Project were manually subtracted from the Cumulative Year 2042 Plus Project forecasts. Under the Cumulative Year 2042 No Project condition, Crawford Road would remain at its current location.

Long-Term Circulation System Improvements

This analysis addresses implementation of improvements that are reasonably foreseeable by the Cumulative Year 2042.

The NCC project included the following study area improvements:

- Realignment of Claribel Road west of CWSP along a new alignment to Coffee Road, with improvements to Coffee Road between the NCC and Claribel Road.
- Realignment of Claribel Road east of Roselle Avenue over the BN&SF to a new intersection on Claus Road.

In Riverbank, improvements addressed by the City's Impact Fee program are assumed to be completed. These include:

- Widening SR 108 to four lanes from McHenry Avenue through Riverbank to Snediger Road.
- Widening Claribel Road to four lanes from Squire Wells Way to Claus Road.
- Widening Patterson Road to four lanes from Roselle Avenue to Terminal Avenue.

In Modesto, improvements addressed by the City's CFF will occur in concert with assumed development. These include widening Coffee Road, Oakdale Road, and Roselle Avenue.

Intersection LOS

The results of LOS analysis for both peak hour conditions at study area intersections are summarized in Table 3.13-22.

As noted in Table 3.13-22, LOS satisfying the City's minimum LOS D standard are anticipated at most locations if the Project was not developed, but four intersections would operate with a deficient LOS (i.e., LOS E or worse):

- SR 108 (Patterson Road / Coffee Road) intersection: LOS F;
- Oakdale Road / Claratina Avenue: LOS E;
- Roselle Avenue / Sylvan Avenue intersection: LOS F;
- Coffee Road / Claratina Avenue intersection: LOS F.

Table 3.13-22 compares Cumulative (Year 2042) intersection LOS with and without the Project. As indicated, six intersections are projected to operate with LOS that exceed the minimum LOS D standard.

TABLE 3.13-22: INTERSECTION LOS – CUMULATIVE (YEAR 2042) PLUS PROJECT CONDITIONS

INTERSECTION	TRAFFIC CONTROL	AM PEAK HOUR				PM PEAK HOUR			
		CUMULATIVE		CUMULATIVE + PROJECT		CUMULATIVE		CUMULATIVE + PROJECT	
		DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS
Patterson Rd (SR 108) / Coffee Rd NB approach	NB Stop	**42.2**	**E**	**480.6**	**F**	22.3	C	**85.3**	**F**
	Roundabout	35.0	D	64.9	F	15.0	C	19.3	C
	2-Lane Roundabout	--	--	9.9	A	--	--	--	--
	Signal	--	--	14.0	B	--	--	9.3	A
Patterson Rd (SR 108) / Oakdale Rd	Signal	31.8	C	33.4	C	46.1	D	52.6	D
Coffee Rd / Morrill Rd WB approach	WB Stop	14.5	B	**43.7**	**E**	18.5	C	**90.9**	**F**
Oakdale Rd / Morrill Rd	Signal	14.6	B	19.2	C	16.8	B	28.4	C
Coffee Rd / Crawford Rd WB approach	WB Stop	14.0	B(1)	**36.4**	**E(2)**	17.2	B (1)	**115**	**F**
	Signal			10.3	B			13.2	B
Oakdale Rd / Crawford Rd	Signal	23.2	C	38.9	D	18.4	B	30.2	C
McHenry Ave (SR 108) / Claribel Rd	Signal	16.3	B	20.0	B	31.0	C	25.9	C
Claribel Rd / Coffee Rd	Signal	33.8	C	49.8	D	19.5	B	25.4	C
Claribel Rd / N-S Collector SB approach	SB Stop	-	-	9.8	A	-	-	**50.1**	**F**
	Signal	-	-	12.5	B	-	-	17.3	B
Claribel Rd / Oakdale Rd	Signal	24.5	C	28.5	C	32.9	C	**60.9**	**E**
	Mitigated							26.9	C
Claribel Rd /Squire Wells Way	Signal	11.3	B	11.1	B	12.9	B	13.3	B
Claribel Rd / Roselle Ave	Signal	20.7	C	25.1	C	25.9	C	36.4	C
Claribel Rd / Terminal Ave	Signal	6.4	A	6.4	A	7.1	A	7.1	A
Claribel Rd / Claus Rd	Signal	24.7	C	25.1	C	35.7	D	39.8	D
Oakdale Rd / Claratina Ave	Signal	**59.4**	**E**	**61.5**	**E**	30.1	C	32.1	C
Oakdale Rd / Freddi Lane	Signal	8.0	A	15.8	B	15.4	B	32.9	C
Roselle Ave / Sylvan Lane	2-Lane Roundabout	**62.4**	**F**	**71.0**	**F**	**88.3**	**F**	**108.1**	**F**
Oakdale Rd / Sylvan Ave	Signal	32.3	C	36.8	D	42.3	D	36.3	D
Coffee Rd / Claratina Ave	2-Lane Roundabout	**243.5**	**F**	**259.0**	**F**	**254.0**	**F**	**331.9**	**F**
Oakdale Rd /Mable Ave	Signal	17.2	B	17.5	B	19.7	B	20.7	C

*NOTES: **BOLD** INDICATES UNACCEPTABLE OPERATIONS. SHADED INDICATES VALUES WHICH ARE SIGNIFICANT IMPACTS.*
NB = NORTHBOUND; WB = WESTBOUND; EB = EASTBOUND; SB = SOUTHBOUND. AWS = ALL-WAY STOP.
(1) EXISTING CRAWFORD ROAD INTERSECTION; (2) RELOCATED CRAWFORD ROAD.
SOURCE: KDANDERSON & ASSOCIATES, 2018.

Signal Warrants

If the Project does not proceed, then one intersection would continue to satisfy peak hour traffic signal warrants (Patterson Road / Coffee Road intersection), as noted in Table 3.13-23.

TABLE 3.13-23: TRAFFIC SIGNAL WARRANTS – CUMULATIVE PLUS PROJECT CONDITIONS

INTERSECTION	PEAK HOUR VOLUMES											
	AM PEAK HOUR						PM PEAK HOUR					
	CUMULATIVE			CUMULATIVE + PROJECT			CUMULATIVE			CUMULATIVE + PROJECT		
	MAJOR	MINOR	MET?	MAJOR	MINOR	MET?	MAJOR	MINOR	MET?	MAJOR	MINOR	MET?
Patterson Rd (SR 108) / Coffee Rd	1,804	154	YES	1,865	275	YES	1,651	126	YES	1,745	180	YES
Coffee Rd / Morrill Rd	592	146	No	730	350	YES	829	83	No	1,115	210	YES
Coffee Rd / Crawford Rd	676	30	No	670	205	YES	884	25	No	1,365	205	YES
Claribel Rd / N-S Collector				490	115	No				860	280	YES

NOTE: SHADED INDICATES VALUES WHICH ARE SIGNIFICANT IMPACTS.
SOURCE: KDANDERSON & ASSOCIATES, 2018.

Impact 3.13-16: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the Patterson Road / Coffee Road intersection. (Significant and Unavoidable)

With development of the Project, the Patterson Road / Coffee Road intersection would operate at LOS F on the northbound approach. Based on the change in average delay and satisfaction of signal warrants, as noted in Table 3.13-23, this is a potentially significant impact.

As noted in the discussion of Impact 3.13-1, improvements to address this impact would include installation of a two-lane roundabout intersection or improvements that involve auxiliary turn lanes and a traffic signal. Either solution would result in a LOS that satisfies the City of Riverbank's minimum LOS requirement. However, under current Caltrans directives, the exact nature of the needed improvement cannot be confirmed without completion of an ICE. Caltrans typically requires a complete evaluation of all traffic signal warrants prior to installing a traffic signal.

Mitigation Measure 3.13-1 addresses this impact, and no additional mitigation is required**.** Because intersection improvements are already included in the adopted City of Riverbank Impact Fee program, development in the Project would mitigated its impact by paying adopted fees. However, for the same reasons noted early (see Impact 3.13-1), because the City of Riverbank cannot guarantee that the improvement will be installed, the impact would be **significant and unavoidable**.

MITIGATION MEASURE(S)

*Implement **Mitigation Measure 3.13-1.***

Impact 3.13-17: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the Coffee Road / Morrill Road intersection. (Significant and Unavoidable)

With development of the Project, the Coffee Road / Morrill Road intersection would operate at LOS F on the westbound approach. Based on the change in average delay and satisfaction of signal warrants, as noted in Table 3.13-23, this is a potentially significant impact.

A traffic signal would improve the LOS at this location to a condition that satisfies the City's minimum LOS standard. While the Coffee Road / Morrill Road intersection is noted as a potential signal location in the Riverbank General Plan Update EIR, it is not included in any adopted fee program. Because the need for this improvement will dependent on the location and extent of development within the Project site, conditions should be monitored as development proceeds and a traffic signal should be installed when warrants are met to the satisfaction of the City of Riverbank. Implementation of Mitigation Measure 3.13-14 would reduce the potential impact. However, because this improvement is not included in any adopted fee program, there is no guarantee that the improvement will be installed. Thus, the Project's cumulative impact is **significant and unavoidable**.

MITIGATION MEASURE(S)

Mitigation Measure 3.13-14: *Prior to approval of a Final Map or improvement plans, each applicant within the CWSP Project shall be responsible for the project's fair share impacts towards the cost of installing a traffic signal at the Coffee Road / Morrill Road intersection. When warranted, construction of the traffic signal shall be required, to the satisfaction of the City of Riverbank City Engineer. When warranted, this roadway improvement shall be noted on the improvement plans for such project.*

Impact 3.13-18: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the Coffee Road / Relocated Crawford Road intersection. (Significant and Unavoidable)

With development of the Project, the Coffee Road / Relocated Crawford Road intersection would operate at LOS F on the westbound approach. Based on the change in average delay and satisfaction of signal warrants, as noted in Table 3.13-23, this is a potentially significant impact.

A traffic signal would improve the LOS at this location to a condition that satisfies the City's minimum LOS standard. While the intersection is noted as a potential signal location in the Riverbank General Plan Update EIR, it is not included in any adopted fee program. Because the need for this improvement will dependent on the location and extent of development within the Project site, conditions should be monitored as development proceeds and a traffic signal should be installed when warrants are met to the satisfaction of the City of Riverbank City Engineer. Implementation of Mitigation Measure 3.13-15 would reduce the potential impact. However, because this improvement is not included in any adopted fee program, there is no guarantee that the improvement will be installed. Thus, the Project's cumulative impact is **significant and unavoidable**.

MITIGATION MEASURE(S)

Mitigation Measure 3.13-15: *Prior to approval of a Final Map or improvement plans, each project applicant shall be responsible for its fair share of the cost of installing traffic signal at the Coffee*

Road / Relocated Crawford Road intersection. The signal shall be installed when conditions warrant, as determined by the City of Riverbank City Engineer.

Impact 3.13-19: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the Claribel Road / N-S Collector intersection. (Less than Significant with Mitigation)

With development of the Project, the Claribel Road / N-S Collector intersection would operate at LOS E, and traffic signal warrants would be met. As LOS E exceeds the LOS D standard, this is a potentially significant impact. A traffic signal is needed at this location. This improvement is identified as Mitigation Measure 3.13-3. With implementation of this mitigation, this impact would be **less than significant**.

MITIGATION MEASURE(S)

*Implement **Mitigation Measure 3.13-3.***

Impact 3.13-20: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the Claribel Road / Oakdale Road intersection. (Significant and Unavoidable)

With development of the Project, the Claribel Road / Oakdale Road intersection will operate at LOS E. Based on the change from acceptable to unacceptable LOS, this is a potentially significant impact.

Improving the LOS would require adding a second northbound left turn lane on Oakdale Road and reorienting the four-lane westbound approach to provide dual left turns, a through lane, and a separate right turn lane. Improving the Oakdale Road / Claribel Road intersection is not in the Riverbank impact fee program, but the intersection is within the project area of the NCC. The second northbound left turn lane has not been included in the NCC project as described in the Draft EIR. With the aforementioned improvements, and contributing to the cost of the NCC by paying regional fees to cover other intersection costs, the City's minimum LOS standard would be met. However, because the City of Riverbank does not control the NCC Project, nor the regional fee program, there is no guarantee that the improvement will be installed. Therefore, this impact would remain **significant and unavoidable.**

MITIGATION MEASURE(S)

Mitigation Measure 3.13-16: *Prior to approval of a Final Map or improvement plans, each applicant in the Plan Area shall be responsible for the project's fair share impacts towards the cost of adding a second northbound left turn lane at the Claribel Road / Oakdale Road intersection, as determined by the City of Riverbank City Engineer. When warranted, the addition of a second northbound left turn lane shall be required, to the satisfaction of the City of Riverbank City*

Engineer. When warranted, this roadway improvement shall be noted on the improvement plans for such project.

Impact 3.13-21: Under Cumulative (Year 2042) conditions, the proposed Project would not result in a significant impact at the Oakdale Road / Claratina Road intersection. (Less than Significant)

The Oakdale Road / Claratina Road intersection is projected to operate at LOS E with and without the Project. Delay at this intersection would slightly increase under the Cumulative (Year 2042) Plus Project condition. However, because the incremental increase in delay is less than the 5.0 second increment used by the City of Modesto, the project's impact is **less than significant**.

Impact 3.13-22: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the Roselle Avenue / Sylvan Avenue intersection. (Significant and Unavoidable)

The Roselle Avenue / Sylvan Avenue intersection is projected to operate at LOS F with and without the Project. Because the incremental change in delay exceeds the 5.0 second threshold employed by the City of Modesto, this is a potentially significant impact. The existing two-lane roundabout might be enhanced to increase the capacity of this intersection. However, a three-lane roundabout would not improve the capacity to LOS D.

Because no mechanism exists for the Project to contribute to the cost of improvements in the City of Modesto, and because the City of Riverbank does not control the RTIF or Modesto CFF program, there is no guarantee that the City of Modesto would allocate CFF funds to any improvement. Because mitigation does not appear feasible and installation of any improvement cannot be assured by the City of Riverbank, the Project's cumulative impact is **significant and unavoidable**.

Impact 3.13-23: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the Coffee Avenue / Claratina Avenue intersection. (Significant and Unavoidable)

The Coffee Avenue / Claratina Avenue intersection is projected to operate at LOS F with and without the Project. Because the incremental change in delay exceeds the 5.0 second threshold employed by the City of Modesto, this is a potentially significant impact. The anticipated two-lane roundabout might be enhanced to increase its capacity. However, a three-lane roundabout would not improve the capacity to LOS D.

Because no mechanism exists for the Project to contribute to the cost of improvements in the City of Modesto, and because the City of Riverbank does not control the RTIF or Modesto CFF program, there is no guarantee that the City of Modesto would allocate CFF funds to any improvement. Because mitigation does not appear feasible and installation of any improvement

cannot be assured by the City of Riverbank, the project's cumulative impact is **significant and unavoidable**.

Roadway Segment Operations

Cumulative (Year 2042) No Project Roadway Segment LOS. If the Project does not develop, then one roadway will operate with a LOS in excess of LOS D. The two-lane segment of **Coffee Road from the NCC to the realigned Claribel frontage road intersection** would operate at LOS E. This segment would need to be improved to a two-lane arterial standard. This segment is within the project limits identified for the NCC and would be expected to be completed as part of that project.

Cumulative (Year 2042) Plus Project Roadway Segment LOS. Segment traffic volumes on study area roads have been projected, and these forecasts are presented in Table 3.13-24. These volumes were then compared to the LOS threshold adopted by each agency, and the resulting LOS noted. As shown, four roadway segments will be impacted by the Project at build out.

Impact 3.13-24: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the segment of Coffee Road between Morrill Road and the relocated Crawford Road. (Significant and Unavoidable)

The addition of trips generated by the Project would result in LOS F conditions on the two-lane rural section of Coffee Road between Morrill Road and the relocated Crawford Road. Because LOS F exceeds the City's minimum LOS D standard, this is a potentially significant impact.

Improving the LOS in this area would require improving Coffee Road to the functional equivalent of a two-lane arterial standard. This would provide LOS C with the forecast traffic volume. Not all of the overall improvements included in the City's arterial street standard are needed to improve the LOS, and the functional equivalent of an arterial street will include a travel lane in each direction, center two-way left-turn lane, and applicable shoulders. This work is not included in the City's traffic impact fee program.

By improving Coffee Road, the City's minimum LOS D standard will be satisfied. Implementation of Mitigation Measure 3.13-17 would reduce the potential impact. However, because this improvement is not included in any adopted fee program, there is no guarantee that the improvement will be installed. Thus, the Project's cumulative impact is **significant and unavoidable**.

TABLE 3.13-24: ROADWAY SEGMENT OPERATIONS – CUMULATIVE PLUS PROJECT CONDITIONS

ROADWAY	LOCATION	CLASSIFICATION	MAX. VOL.	CUMULATIVE			CUMULATIVE + PROJECT			
							VOLUME		V/C	LOS
				VOL.	V/C	LOS	PROJECT ONLY	TOTAL		
Patterson Rd (SR 108)	McHenry Ave to Coffee Rd	4-lane Arterial	36,000	17,825	0.50	C	1,375	19,200	0.53	C
	Coffee Rd to Oakdale Rd	4-lane Arterial	33,400	18,925	0.57	B	75	19,000	0.57	B
	Oakdale Rd to Jackson Ave	4-lane Arterial	33,400	23,525	**0.**70	C	1,775	25,300	0.76	C
Morrill Rd	Coffee Rd to Oakdale Rd	2-lane Collector	12,900	5,325	0.41	C	3,875	9,200	0.71	D
Crawford Rd	Coffee Rd to Oakdale Rd	2-lane Collector	12,900	1,325	0.10	C	3,175	4,500	0.35	C
	Oakdale Rd to Squire Wells Rd	2-lane Collector	12,900	4.550	0.35	C	450	5,800	0.45	C
Claribel Rd (Realigned)	Coffee Rd to N-S Collector	2-lane Arterial	15,700	1,500	0.10	B	4,300	5,800	0.37	B
	N-S Collector to Oakdale Rd	4-lane Arterial	33,400	4,800	0.14	B	5,200	10,000	0.30	B
	Oakdale Rd to Roselle Ave	4-lane Arterial	33,400	5,600	0.17	B	2,400	8,000	0.24	B
	Roselle Ave to Claus Rd	2-lane Arterial	15,700	5,575	0.36	B	125	5,700	0.36	B
Coffee Rd	Patterson Rd to Morrill Rd	2-lane Rural	1,965 vph	364 vph	0.19	C	166 vph	530 vph	0.25	C
		2-lane Arterial	15,700	5,100	0.33	B	1,300	6,400	0.41	B
	Morrill Rd to Crawford Rd	2-lane Rural	1,965 vph	866 vph	0.44	D	**339 vph**	**1,205 vph**	**0.61**	**E**
		2-lane Arterial	15,700	11,050	0.70	C	3,050	14,100	0.902	D
	Crawford Rd to Claribel Rd	2-lane Rural	1,965 vph	857 vph	0.44	D	**573 vph**	**1,430 vph**	**0.56**	**E**
		2/4-lane Arterial	33,400	11,475	0.34	C(2)	5,525	17,000	0.51	B
	Claribel Rd to NCC	2-lane Rural	1,965 vph	**972vph**	**0.50**	**E**	**963 vph**	**1,935 vph**	**0.98**	**F**
		2/4-lane Arterial	33,400	7,725	0.49	B	9,275	17,000	0.51	B
	NCC to Claratina Ave	6-lane Arterial	2,250 vph	801	0.36	A	219	1,020 vph	0.45	A
Oakdale Rd	Patterson Road to Morrill Rd	4-lane Arterial	33,400	19,100	0.57	B	2,700	21,800	0.65	B
	Morrill Rd to Crawford Rd	4-lane Arterial	33,400	12,225	0.37	B	5,275	17,500	0.52	B
	Crawford Rd to Claribel Rd	4-lane Arterial	33,400	12,300	0.37	B	11,600	23,900	0.72	C
	Claribel Rd to NCC	4-lane Arterial	33,400	21,675	0.65	B	**13,875**	**35,500**	**1.06**	**F**
		6-lane Arterial	50,300	-	-	-	**--**	--	0.71	C
	NCC to Claratina Ave	6-lane Arterial	2,250 vph	839	0.37	A	311	1,150	0.51	A
Roselle Ave	Claribel Rd to NCC	2-lane Arterial	750 vph	627 vph	0.84	D	**143 vph**	**770 vph**	**1.03**	**F**
		4-lane Arterial	1,500 vph	--	--	--	--	--	0.52	A

*NOTES: **BOLD** INDICATES UNACCEPTABLE OPERATIONS. (1) WITH PROJECT TRAFFIC PEAK VOLUME IS PM PEAK HOUR; V/C = VOLUME-TO-CAPACITY RATIO.*
SOURCE: KDANDERSON & ASSOCIATES, 2017

MITIGATION MEASURE(S)

Mitigation Measure 3.13-17: *Prior to approval of a Final Map or improvement plans, each project applicant in the Plan Area shall be responsible for the fair share of the cost of improving Coffee Road from Morrill Road to the relocated Crawford Road intersection to provide the functional equivalent of a two-lane arterial street standard, as determined by the City of Riverbank City Engineer.*

Impact 3.13-25: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the segment of Coffee Road between the relocated Crawford Road and the realigned Claribel Road intersection. (Significant and Unavoidable)

The addition of trips generated by the Project would contribute to LOS F conditions on the two-lane rural section of Coffee Road between the relocated Crawford Road and the realigned Claribel Road intersection. While LOS F is projected with and without the Project, because change in v/c ratio exceeds the 0.05 increment permitted by the City of Riverbank, this is a potentially significant impact.

Improving the LOS in this area would require improving Coffee Road to an arterial standard. The projected volume exceeds the capacity of a two-lane arterial and a four-lane arterial would provide LOS B with the forecast traffic volume. Not all of the overall improvements included in the City's arterial street standard are needed to improve the LOS, and the functional equivalent of an arterial street will include two travel lanes in each direction, center two-way left-turn lane, and applicable shoulders. This work is not included in the City's traffic impact fee program.

By improving Coffee Road, the City's minimum LOS D standard will be satisfied. Implementation of Mitigation Measure 3.13-18 would reduce the potential impact. However, because this improvement is not included in any adopted fee program, there is no guarantee that the improvement will be installed. Thus, the Project's cumulative impact is **significant and unavoidable**.

MITIGATION MEASURE(S)

Mitigation Measure 3.13-18: *Prior to approval of a Final Map or improvement plans, each project applicant in the Plan Area shall be responsible for contributing its fair share to the cost of improving Coffee Road from the relocated Crawford Road intersection to the realigned Claribel Road intersection to the equivalent of a four-lane arterial street standard, as determined by the City of Riverbank City Engineer.*

Impact 3.13-26: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the segment of Coffee Road between the realigned Claribel Road intersection and NCC. (Significant and Unavoidable)

The addition of trips generated by the Project would contribute to LOS F conditions on the two-lane rural section of Coffee Road between the realigned Claribel Road intersection and NCC. While LOS F is projected with and without the Project, because change in v/c ratio exceeds the 0.05 increment permitted by the City of Riverbank, this is a potentially significant impact.

Improving the LOS in this area would require improving Coffee Road to a four-lane arterial standard. This work is not included in the City's traffic impact fee program. The area is within the limits of the NCC project area, and the project may contribute to this work through payment of Regional Impact Fees.

By improving the Coffee Road, the City's minimum LOS D standard would be satisfied, and the project's impact would not be significant. However, because the City of Riverbank does not control the NCC or regional fee, there is no guarantee that the improvement will be installed. Therefore, the Project's impact is **significant and unavoidable**.

MITIGATION MEASURE(S)

Mitigation Measure 3.13-19: *Prior to approval of a Final Map or improvement plans, each project applicant in the Plan Area shall be responsible for contributing its fair share fee to the cost of improving Coffee Road from the realigned Claribel Road intersection to NCC to a four-lane arterial street standard.*

Impact 3.13-27: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the segment of Oakdale Road between the Claribel Road intersection and NCC in the City of Modesto. (Significant and Unavoidable)

The addition of trips generated by the Project would contribute to LOS F conditions on the four-lane section of Oakdale Road between the Claribel Road intersection and NCC. Because LOS F exceeds the minimum LOS D standard, this is a potentially significant impact.

Improving the LOS in this area would require improving Oakdale Road to a six-lane arterial standard. This work is not included in the City's traffic impact fee program. The area is within the limits of the NCC project area, and the Project may contribute to this work through Regional Impact Fees.

Because no mechanism exists for the Project to contribute to the cost of improvements in the City of Modesto, and because the City of Riverbank does not control the RTIF or Modesto CFF program, there is no guarantee that the City of Modesto would allocate CFF funds to this

improvement. Because installation cannot be assured by the City of Riverbank, the Project's impact is **significant and unavoidable**.

Impact 3.13-28: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the segment of Roselle Avenue between the Claribel Road intersection and NCC. (Significant and Unavoidable)

The addition of trips generated by the Project would create LOS F conditions on the two-lane section of Roselle Avenue between the Claribel Road intersection and NCC. Because LOS F exceeds the minimum LOS D standard, this is a potentially significant impact.

Improving the LOS in this area would require improving Roselle Avenue to a four-lane arterial standard. This work is not included in the City's traffic impact fee program. The area is within the limits of the NCC project area and is included in Modesto's CFF, and the project may contribute to this work through Regional Impact Fees.

Because no mechanism exists for the Project to contribute to the cost of improvements in the City of Modesto, and because the City of Riverbank does not control the RTIF or Modesto CFF program, there is no guarantee that the City of Modesto would allocate CFF funds to this improvement. Because installation cannot be assured by the City of Riverbank, the Project's impact is **significant and unavoidable**.

ADDITIONAL IMPACT ANALYSIS

Impact 3.13-29: The proposed Project would not result in conflicts with existing rail lines. (Less than Significant)

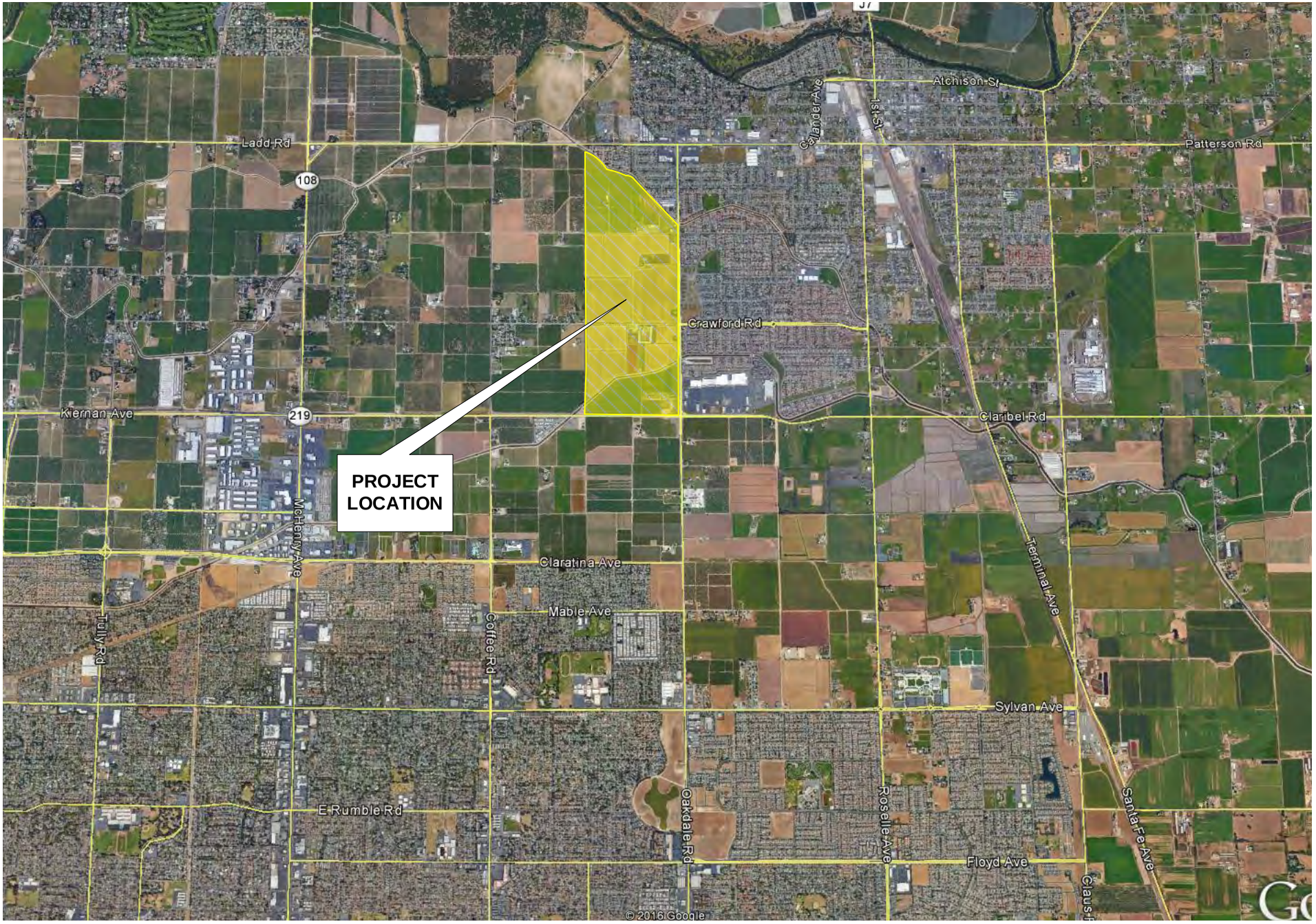
The Project would result in increased automobile traffic over the existing BNSF crossing on Claribel Road. However, this crossing is already equipped with applicable gates and is linked to the adjoining traffic signal at Terminal Avenue. The additional traffic caused by the Project would not result in unsafe conditions. Therefore, the Project's impact related to rail conflict would be **less than significant**. No mitigation is required.

Impact 3.13-30: The proposed Project would not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks. (Less than Significant)

The Project site is not located within an airport land use plan or within two miles of a public or private airport or airstrip. The nearest airport, the Modesto City-County Airport, is located approximately 5.75 miles south of the Project site. The proposed Project would not require any changes to existing regional air traffic activity. This impact is **less than significant**, and no mitigation is required.

Impact 3.13-31: The proposed Project would not result in inadequate emergency vehicle access. (Less than Significant)

Access to the Project site would be provided along Oakdale Road, Claribel Road, Crawford Road, and Morrill Road. Because the Project consists of multiple vehicular access points, emergency vehicles can access the site from multiple directions. Therefore, the Project's impact related to emergency vehicle access would be **less than significant**. No mitigation is required.



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VICINITY MAP

Figure 3.13-1

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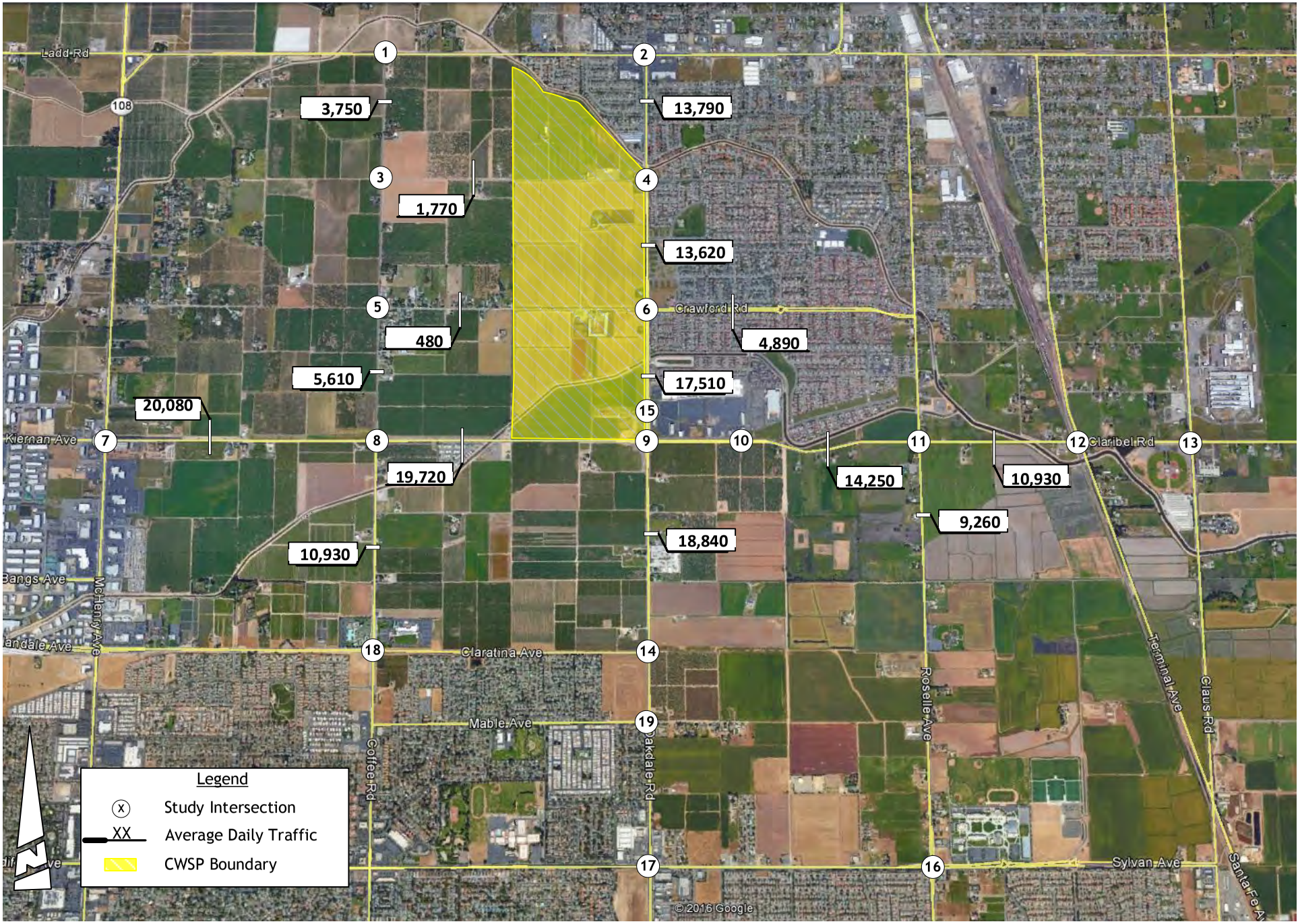

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AVERAGE DAILY TRAFFIC VOLUMES AND STUDY INTERSECTION INDEX

Figure 3.13-2

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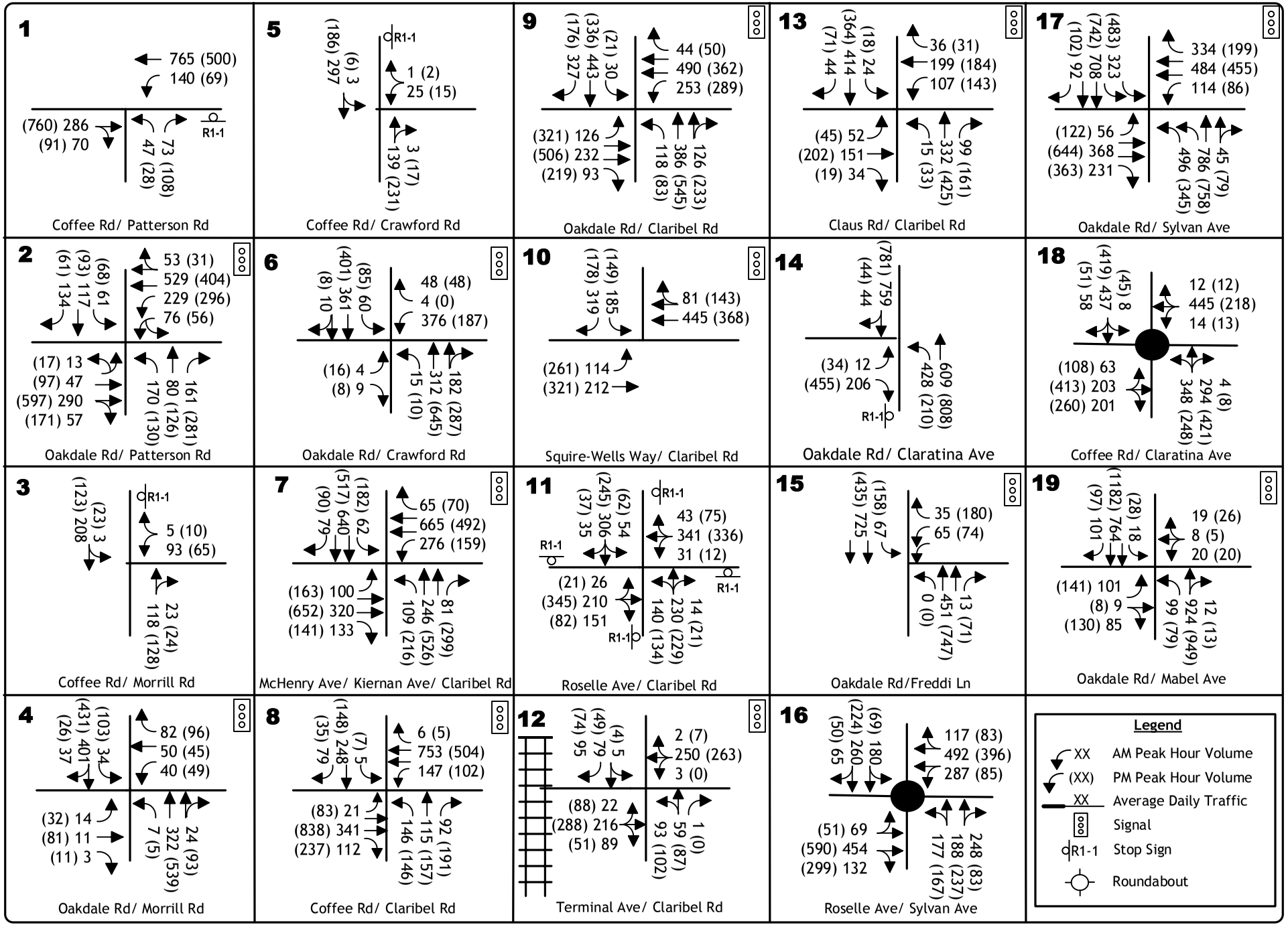

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EXISTING TRAFFIC VOLUMES AND LANE CONFIGURATIONS

Figure 3.13-3

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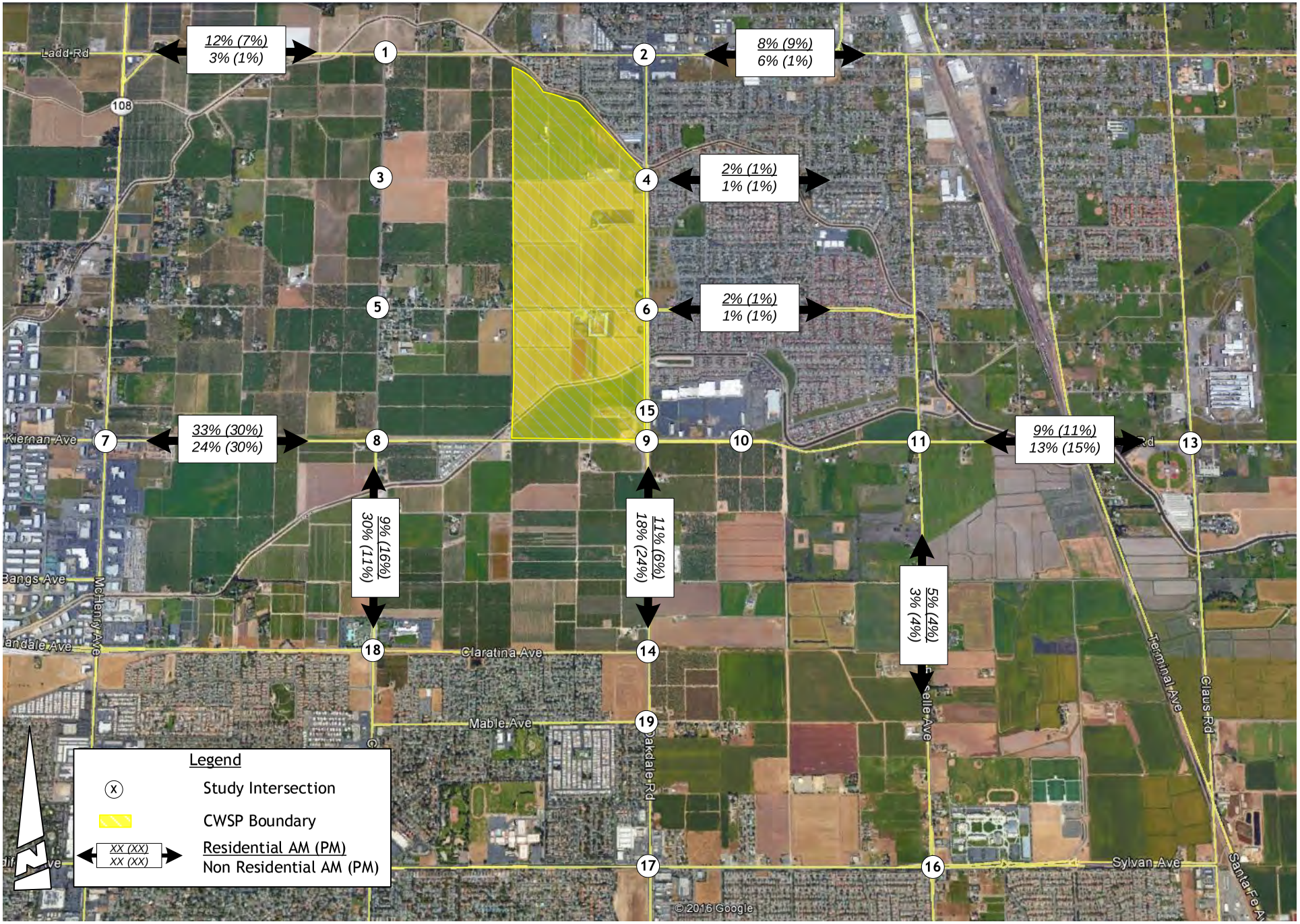

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TRIP DISTRIBUTION ASSUMPTIONS

Figure 3.13-4

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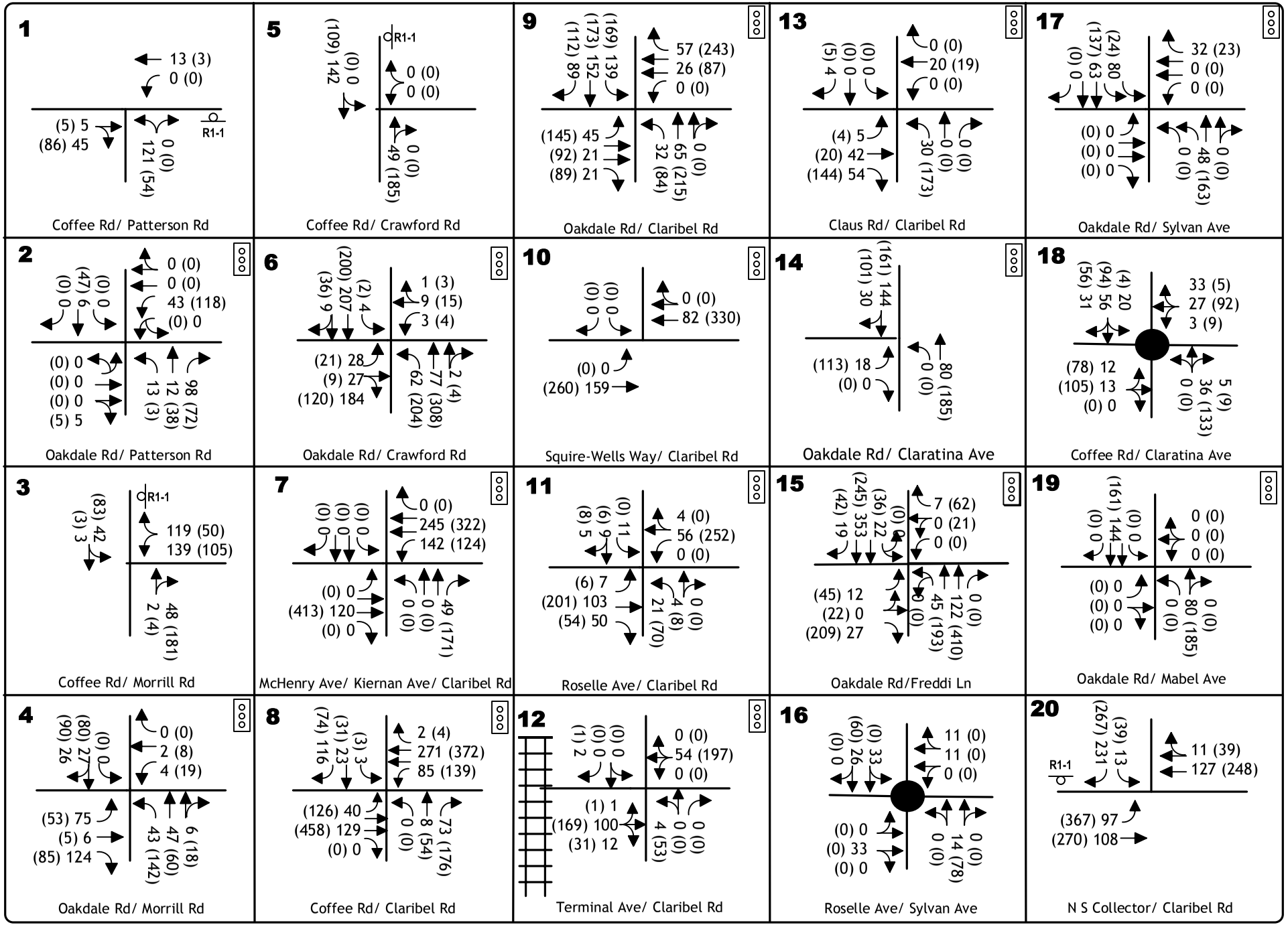

CROSSROADS WEST ONLY
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

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Figure 3.13-5

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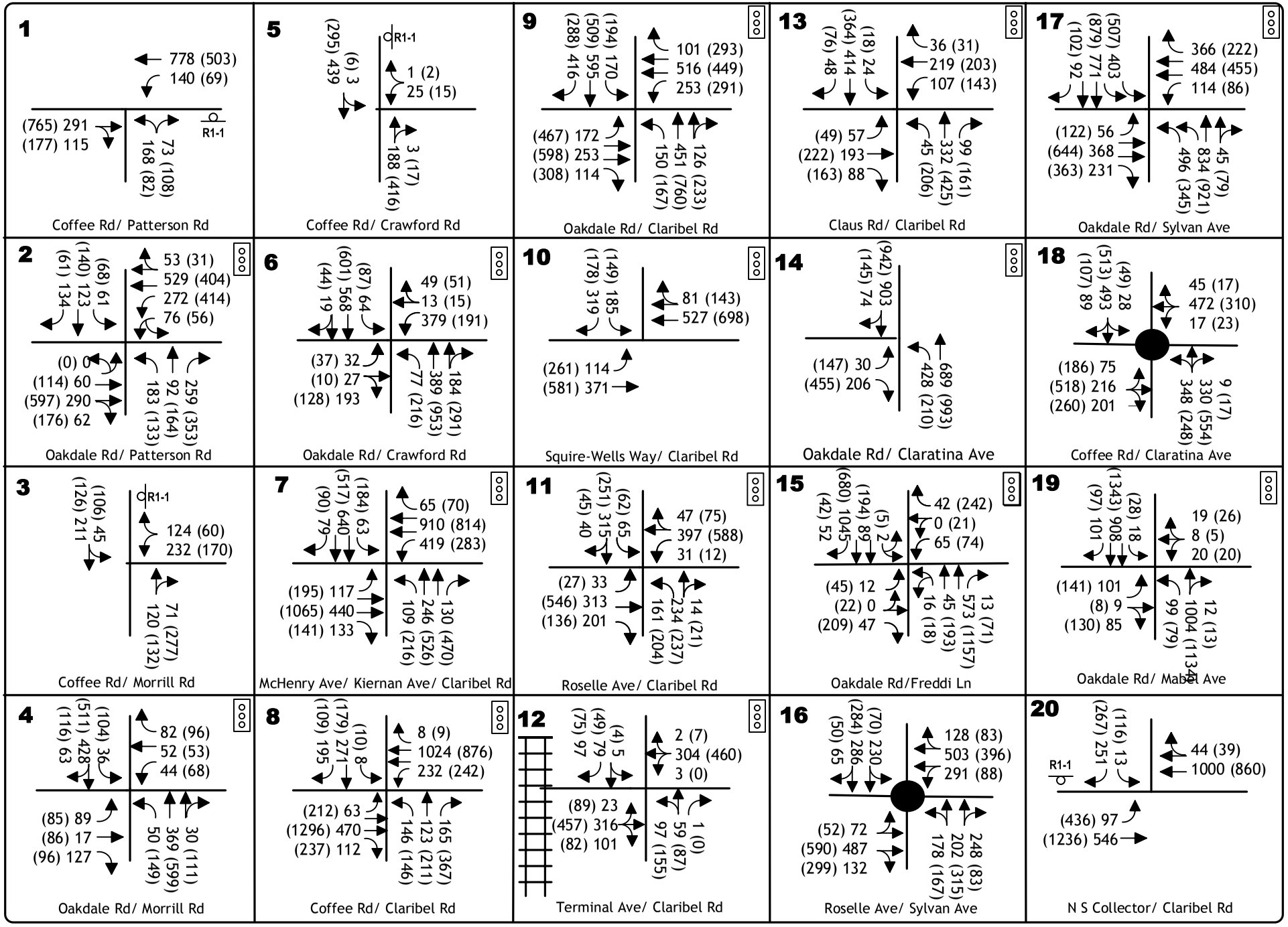

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EXISTING PLUS CROSSROADS WEST
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

Figure 3.13-6

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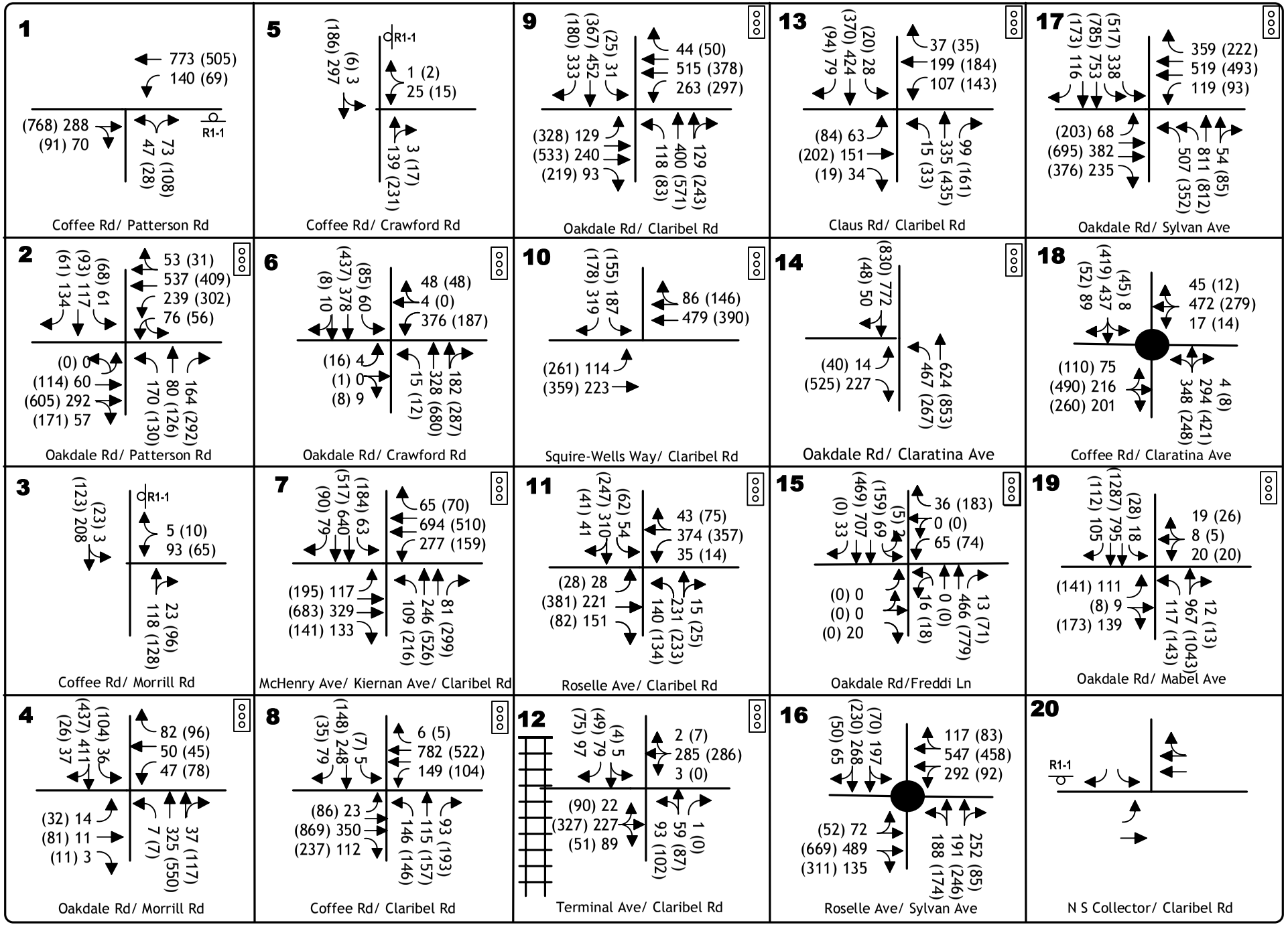

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EXISTING PLUS APPROVED PROJECTS
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

Figure 3.13-7

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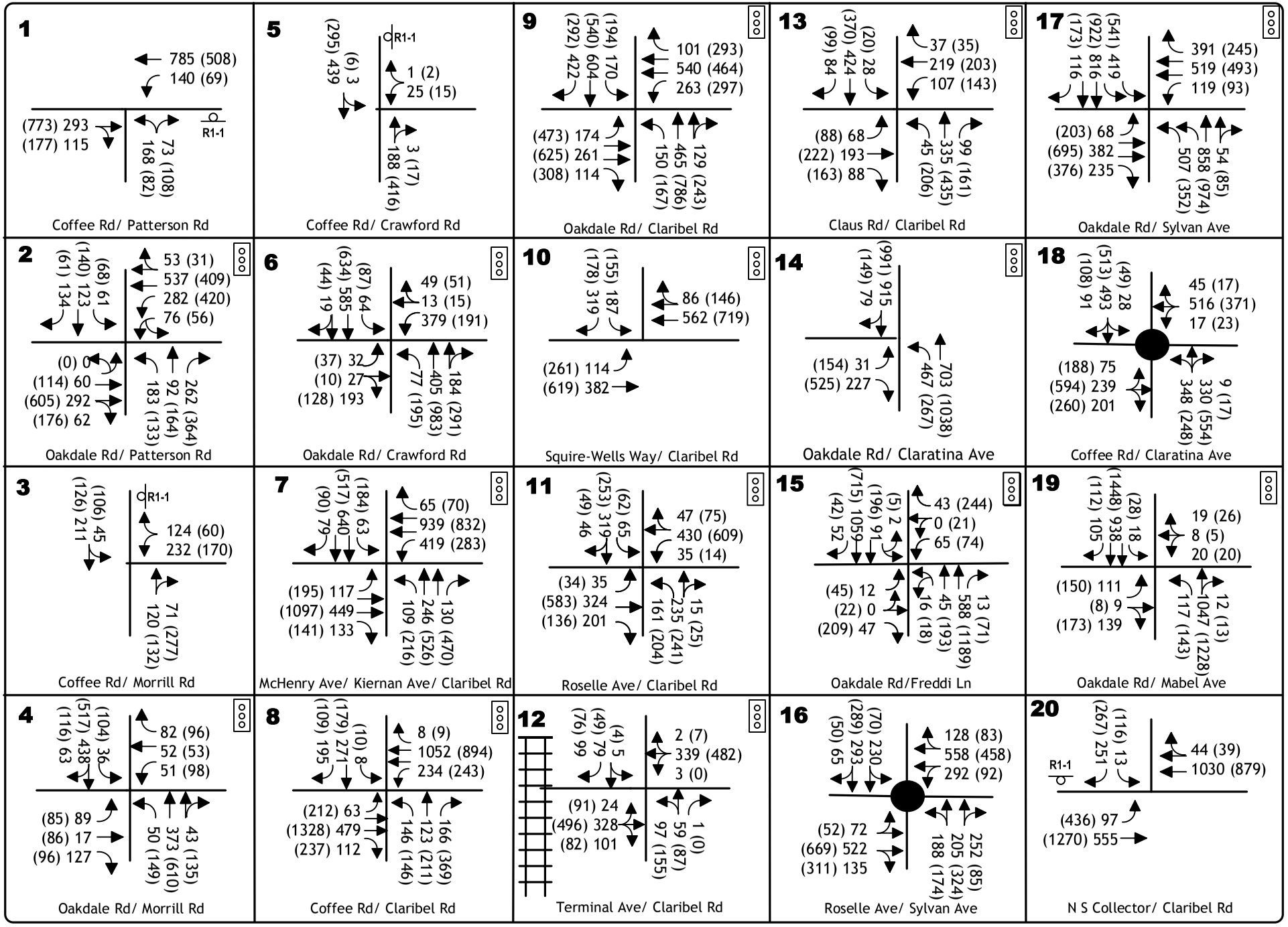

EPAP PLUS CROSSROADS WEST
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

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Figure 3.13-8

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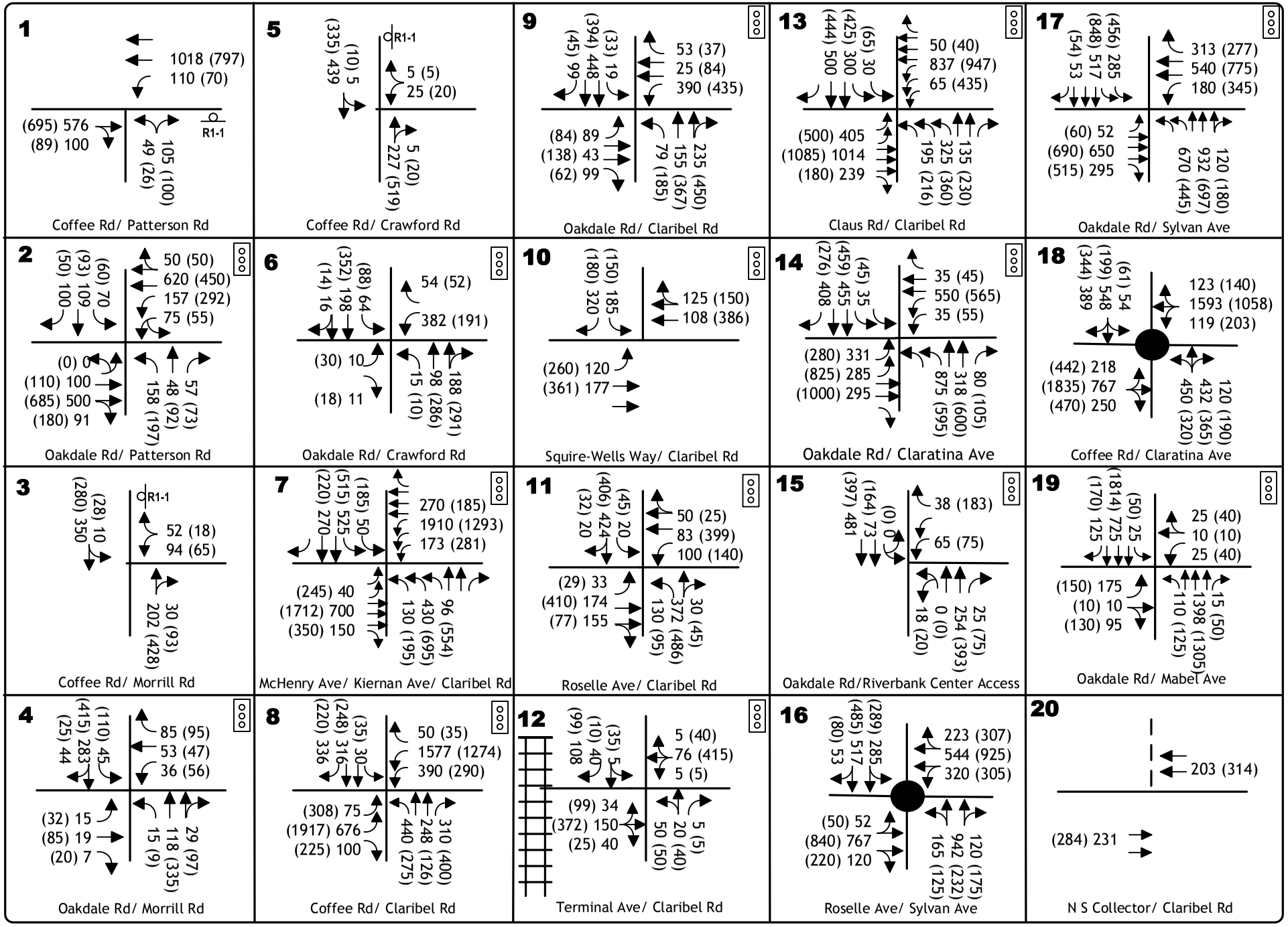

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2042 NO PROJECT TRAFFIC VOLUMES AND LANE CONFIGURATIONS

Figure 3.13-9

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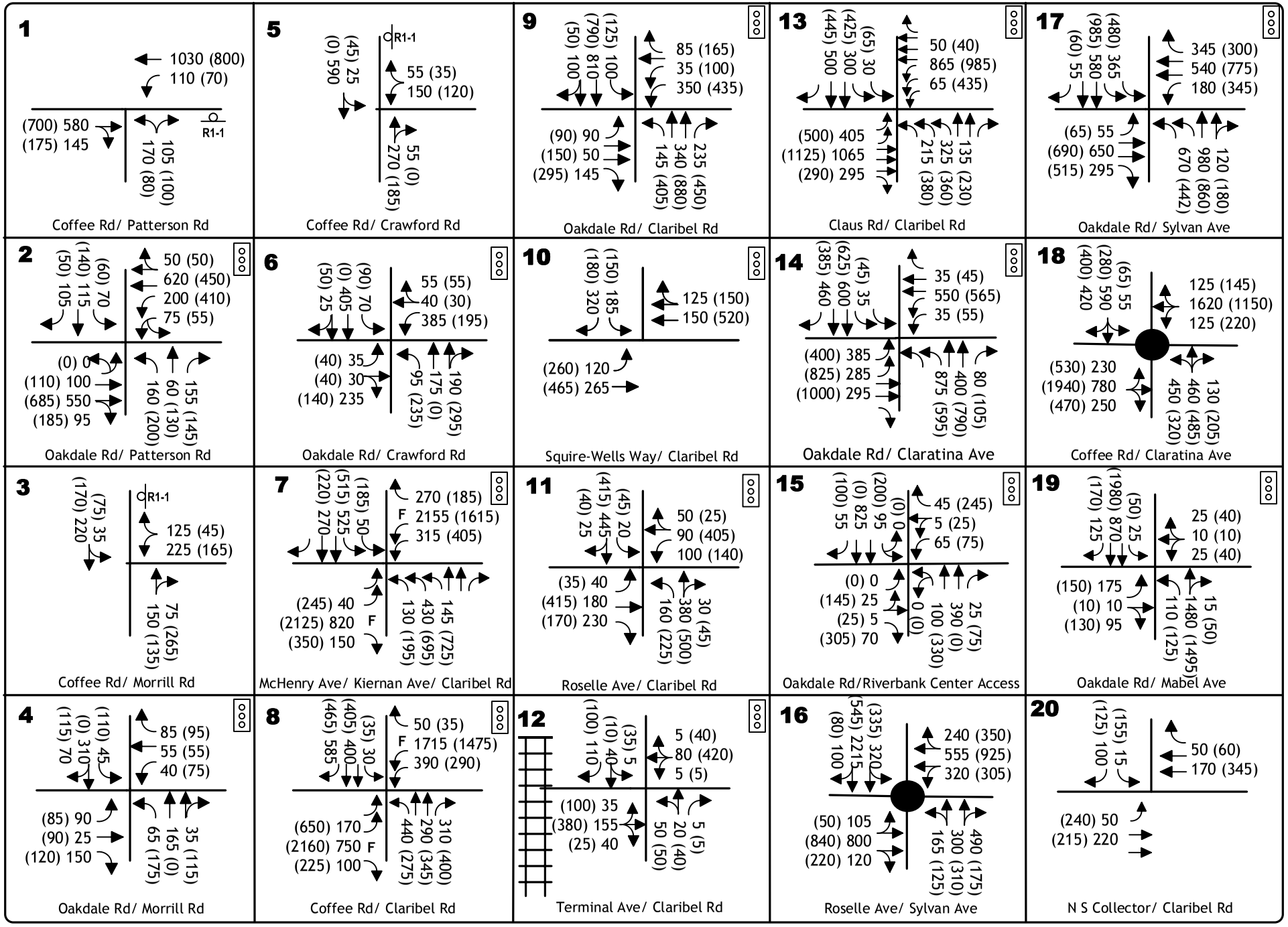

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2042 WITH CROSSROADS TRAFFIC VOLUMES AND LANE CONFIGURATIONS

Figure 3.13-10

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This section describes the regulatory setting, impacts associated with wastewater services, water services, storm drainage, and solid waste disposal that are likely to result from Project implementation, and measures to reduce potential impacts to wastewater, water supplies, storm drainage, and solid waste facilities. This section is based in part on the following documents, reports and studies: *California's Groundwater,* CalRecycle *Solid Waste Information System,* CalRecycle *Jurisdiction Diversion/Disposal Rate Summary*, *City of Riverbank Municipal Service Review & Sphere of Influence Update* (City of Riverbank, 2016), the *Integrated Regional Groundwater Management Plan for the Modesto Subbasin* (2005), *2015 Urban Water Management Plan* (2016), *Water Supply Study and Water Master Plan* (2007), *Storm Drain System Master Plan* (2008), and *Sewer Collection System Master Plan* (2007), and *Water Supply Assessment for the Crossroads West Specific Plan* (West Yost, 2018). Comments were received during the public review period for the Notice of Preparation from the Central Valley Regional Water Quality Control Board, the City of Modesto, the Modesto Irrigation District, and the Stanislaus Local Agency Formation Commission.

3.14.1 WASTEWATER SERVICES

ENVIRONMENTAL SETTING

Wastewater service is provided by the City of Riverbank via their network of collection infrastructure and the City wastewater treatment plant (WWTP), which is located just north of the City limits at 23865 S. Santa Fe Road. The City Public Works Department Sewer Division repairs and maintains the sewer collection system, including laterals, sewer mains, and the WWTP. The collection system serves the existing city, approximately bound by the Stanislaus River, Hetch Hetchy right-of-way, Oakdale Road, and Claus Road. Existing average daily wastewater flows in the city are 1.64 million gallons per day (mgd) (as of November 2015). The maximum treatment capacity in Riverbank is 7.9 mgd (as of 2015).

Wastewater Conveyance

The City's Public Works Department Sewer Division repairs and maintains the sewer collection system, including sewer mains, lift stations, and the WWTP. The collection system consists of 6-inch to 36-inch diameter collection piping and nine lift/pump stations. All wastewater is conveyed from the collection system to the WWTP through a 27-inch gravity line located on a trestle over the Stanislaus River. Wastewater is then treated in aerated lagoons and disposed in infiltration basins.

PUMP STATIONS

As shown in Table 3.14-1, the City maintains nine pump stations located throughout the City. The closest pump station to the Plan Area is the Silverock pump station. This station has two pumps with 500 gallon per minute (gpm) capacities, for a combined capacity of 1,000 gpm.

TABLE 3.14-1: SUMMARY OF WASTEWATER PUMP STATIONS

STATION	*LOCATION*	*# OF PUMPS*	*CAPACITY, EACH (GPM)*	*HORSEPOWER, EACH (HP)*
Candlewood	Candlewood at Arrowwood	2	500	10
Estelle	Colony Manor at Estelle	2	850	4.7
Jackson	Jackson at Ward	2	700	5
Talbot	Roselle at Talbot	2 1 1	619 1,180.9 840	4.7 12 10
Terminal	Terminal at Virginia	2	250	2
Townsend	Terminal at Eighth	2	250	2.7
River Cove	River Cove Drive	2	481	15
Crawford	Crawford at Roselle	2 1	1,544 3,171	28 33.5
Silverock	Silverock at Oakdale	2	500	8.5

SOURCE: 2007 SEWER COLLECTION SYSTEM MASTER PLAN, TABLE 3-1.

WASTEWATER COLLECTION SYSTEM IN PLAN AREA

The Plan Area is located within the secondary urban service boundary. The CWSP intends to tie-in to the City of Riverbank's existing sanitary sewer system at two different locations. An eight-inch line in Morrill Road, west of Oakdale Road, was installed to service the Regional Sports Park in the northern portion of the Plan Area. This line ties into the sewer manhole at the intersection of Oakdale Road and Morrill Road and is ultimately a part of the residential sewer collection system. An 18-inch line runs across Oakdale Road to Crawford Road, which was planned for the future development of the CWSP. This stub is an extension of the main trunk line that services the existing Crossroads development to the east and extends to Roselle Avenue. In addition, subject to additional engineering study and evaluation, the MU-1 property may be able to discharge sewer effluent through the Crossroads Commercial area immediately east of Oakdale Road.

Wastewater Treatment

Wastewater from the city is currently treated at the WWTP. The City owns and operates the WWTP. The WWTP has a peak capacity of 7.9 mgd. The City has completed numerous improvements and upgrades to the WWTP following regulatory actions by the Regional Water Quality Control Board (RWQCB). In April 2001, the RWQCB issued Cleanup & Abatement Order No. 5-01-703 to the City requiring numerous tasks to prevent unauthorized discharges and bring the treatment plant into compliance. Following progress made by the City to comply with the original order, a revised Cleanup & Abatement Order was then issued. In March 2003, the City was issued a Notice of Violation citing issues with disposal capacity, odors, potential groundwater impacts, and biosolids (sludge) management.

To remedy these concerns, the City acquired additional property for disposal capacity, made upgrades to the treatment system, and ultimately improved the operational flexibility at the WWTP. Three groundwater monitoring wells were also added to the site to ensure that activities at the site were not degrading groundwater quality. Regulatory compliance has ultimately led to a more efficient WWTP that now has a peak capacity of 7.9 mgd. As of 2015, the Waste Discharge Requirements (WDRs) for the City's WWTP is 7.9 mgd. The regulatory compliance allows for that

capacity and if the City ever wanted to increase capacity, the State Water Resource Control Board (SWRCB) and the Central Valley RWQCB would write a new Report of Waste Discharge for the WWTP which would include stricter treatment and monitoring requirements. At this time, the City does not have future improvements or plans for increasing the capacity of the WWTP.

The current WWTP upgrading project provides new lined treatment ponds with the same capacity as the old unlined treatment ponds. Also as part of this upgrade, a new headwork channel, pipelines, and gates are being constructed that will facilitate future plant capacity expansions.

The latest expansion has given the WWTP the capacity to serve the equivalent of 30,000 residents plus the current industrial users, including a major local tomato processing plant (which has closed). The General Plan Update has designated the processing plant site as Mixed Use, which allows a variety of retail, residential, and office uses. These uses would result in far less demand for sewer treatment than the processing plant. Without the tomato processing plant, the estimated capacity for the WWTP would accommodate approximately 50,000 people.

The Riverbank sewer system serves all of the City of Riverbank city limits area. The only area outside the city limits served by the sewer system is around the Riverbank Army Ammunition Plant.

The City's *2007 Sewer Collection System Master Plan* (2007) and the *City of Riverbank Municipal Service Review & Sphere of Influence Update* (2016) are the primary documents that outline the City's long-term strategy for meeting future discharge and capacity requirements for a planning horizon that extends to build-out of the General Plan.

WASTEWATER QUALITY

According to the City's Municipal Service Review, the WWTP has primary treatment only through aerated lagoons and uses percolation ponds rather than discharging effluent. The primary treatment is accomplished in four treatment ponds through the use of surface aerators to provide oxygen for the biological process. Once sewage is adequately treated, it is transferred to the percolation ponds through the opening of sluice gates or weir gates. The City does not utilize wastewater for irrigating City or other landscaping once treated.

The City's WWTP is subject to WDRs Order No. 94-100, which were adopted by the Central Valley RWQCB in April 1994. These requirements do not specify any limits for effluent BOD, TSS, and Nitrogen.

Future Demand

The City's Municipal Service Review (adopted in 2016) provides projections of future sewer flows. The document estimates that further growth within the existing City limits could generate an average flow of approximately 2.20 mgd. Growth in the General Plan area (which extends beyond the existing City limits including the SOI expansion) could generate an average of 4.01 mgd.

Planned Infrastructure Upgrades

A new lift station (Crawford Road Pump Station) was constructed as recommended in the 2001 Sewer Master Plan. The service area of the pump station includes the Crossroads residential area and other areas south and east of the Modesto Irrigation District (MID) Main Canal. An 18-inch trunk line was also installed within Crawford Road to feed the Crawford Road Pump Station.

To account for the additional wastewater flows in the Project area after the construction of the proposed Project, additions to the existing wastewater infrastructure will be needed. The sanitary sewer collection will be by an underground collection system installed as per the City of Riverbank standards, criteria and specifications. Sanitary sewer disposal will flow to the City of Riverbank WWTP for treatment.

As shown in Figure 2.0-11 in Section 2.0, new sewer main lines and an extension of the 18-inch trunk line will be constructed in the new arterial and collector roads in the Plan Area. These improvements will service the majority of the Plan Area; however, a portion of development south of Crawford Road will be required to utilize a sewer pump station that will be placed in the southwest portion of the site, near the Mixed Use Area 1 (MU-1) land use north of MID lateral No. 6.

An 18-inch line in Crawford Road; a 10-inch line in Morrill Road; and an eight-inch line where Crawford Road intersects the westerly boundary of the Plan Area. All new sewer lines will be installed at varying slopes to provide the best service for the Project. Should any area develop prior to the necessary sewer improvements or trunk line extension, this flow may be required to utilize a temporary lift station that connects to the 10-inch line in Morrill Road.

The development of the MU-1 property may require the construction of an interim sewer lift station to serve the entire site and be connected by way of a force main to the Crossroads Commercial development easterly of Oakdale Road. At the time the residential development occurs north of MID Lateral No. 6, and concurrent with the construction of the north-south collector roadway through the Plan Area and the construction of the bridge over MID Lateral 6, the sewer line will be extended to the south side of MID Lateral 6 to allow for a gravity connection from within the MU-1 property. If this occurs in advance of development of the MU-1 property, then this connection will be available to serve the MU-1 property. If the MU-1 property site has constructed a temporarily lift station and connection along Oakdale Road, at the time the new sewer connection becomes available, the temporary pump station and force main will be abandoned and connected to the new gravity sewer line in the north/south collector road.

A preliminary analysis was performed on the downstream system in Roselle, north of the Crawford Road Lift Station (CRLS). The existing flows from the CRLS are greater than the capacity in the stretch of 18-inch from CRLS to Talbot Lift Station (TLS) and from TLS to First Street. Therefore, a force main or a new and larger gravity main would need to be extended to a point downstream where the existing gravity sewer has adequate capacity.

The reduction of the CRLS flows from the TLS flows would be 1,172 gpm (3,272 - 2,100 = 1,172). This flow is less than the 80 percent full capacity of the 18-inch line it currently ties into. Therefore,

the existing line could remain and be utilized by the TLS. As mentioned above, the CRLS would need to have a force main extended past the TLS to a point where the gravity line could accept the flow plus any additional flow due to future upgrades to the CRLS. A proposed solution to the lack of capacity would be to extend a 16-inch force main from CRLS to the existing 30-inch sewer main near First Street.

REGULATORY SETTING

Clean Water Act (CWA) / National Pollutant Discharge Elimination System (NPDES) Permits

The CWA is the cornerstone of water quality protection in the United States. 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."

The CWA regulates discharges from "non-point source" and traditional "point source" facilities, such as municipal sewage plants and industrial facilities. Section 402 of the Act creates the NPDES regulatory program which makes it illegal to discharge pollutants from a point source to the waters of the United States without a permit. Point sources must obtain a discharge permit from the proper authority (usually a state, sometimes EPA, a tribe, or a territory). NPDES permits cover industrial and municipal discharges, discharges from storm sewer systems in larger cities, storm water associated with numerous kinds of industrial activity, runoff from construction sites disturbing more than one acre, mining operations, and animal feedlots and aquaculture facilities above certain thresholds.

Permit requirements for treatment are expressed as end-of-pipe conditions. This set of numbers reflects levels of three key parameters: (1) biochemical oxygen demand (BOD), (2) total suspended solids (TSS), and (3) pH acid/base balance. These levels can be achieved by well-operated sewage plants employing "secondary" treatment. Primary treatment involves screening and settling, while secondary treatment uses biological treatment in the form of "activated sludge."

All so-called "indirect" dischargers are not required to obtain NPDES permits. An indirect discharger is one that sends its wastewater into a city sewer system, so it eventually goes to a sewage treatment plant. Although not regulated under NPDES, "indirect" discharges are covered by another CWA program called pretreatment. "Indirect" dischargers send their wastewater into a city sewer system, which carries it to the municipal sewage treatment plant, through which it passes before entering surface water.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act is California's statutory authority for the protection of water quality. Under the Porter-Cologne Act, the State is required to adopt policies, plans, and objectives that will protect the State's waters for the use by and enjoyment of Californians. In

California, the SWRCB has the authority and responsibility for establishing policy related to the State's water quality. Regional authority is delegated by the SWRCB to a RWQCB. The Porter-Cologne Act authorizes the SWRCB and RWQCB to issue NPDES permits.

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

City of Riverbank General Plan

GOAL: LAND USE

- LAND-5. Full Range of Public Services and Facilities for All Area of the Community.

POLICIES: LAND USE

- LAND-5.1. The City will maintain public services and facilities in the existing developed City and make improvements as necessary to maintain a consistent Citywide level of service.
- LAND-5.2. Infill development will be given priority to remaining capacity for water supply and delivery, wastewater treatment and conveyance, stormwater collection and conveyance, and other services and infrastructure currently in place. Development impact fees shall reflect the existing capacity to serve infill development areas. Any urban development of new growth areas shall plan and finance necessary infrastructure and service expansion to serve those areas.
- LAND-5.5. Approved projects, plans, and subdivisions in new growth areas will set aside adequate land for, and shall otherwise accommodate public infrastructure and service needs consistent with General Plan policy.

GOAL: PUBLIC SERVICES AND FACILITIES

- PUBLIC-3. Full Range of Public Services and Facilities for All Area of the Community.

POLICIES: LAND USE

- PUBLIC-3.1. The City will require that wastewater collection, conveyance, and treatment facilities meet or exceed local, State, and federal standards, as addressed in the City's Sewer Collection System Master Plan.
- PUBLIC-3.2. The City will identify and utilize, as feasible, best environmental practices and technologies for wastewater collection, conveyance, and treatment.
- PUBLIC-3.3. The City will not induce urban growth by providing wastewater facilities to areas outside the Planning Area or areas not planned for urban development, such as areas designated for agriculture or open space.

City of Riverbank Municipal Code

Chapter 51, Sewers, of the Riverbank Municipal Code outlines the general provisions for sewer service in the City, sets forth requirements for industrial wastewater users, and summarizes regulations which aid in the prevention of sanitary sewer blockages and obstructions from contributions and accumulation of fats, oils and greases into the sanitary sewer system from industrial or commercial establishments, particularly food preparation and serving facilities. Section 51.03, Rates and Charges, of the Code requires developers of property to pay a sewer facility development fee.

Utility Master Plans

The City of Riverbank maintains a variety of Master Plan documents that guide the design, development, and maintenance of the utilities within the city limits. These include: *2015 Urban Water Management Plan* (2016), *Water Supply Study and Water Master Plan* (2007), *Storm Drain System Master Plan* (2008), and *Sewer Collection System Master Plan* (2007).

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed Project will have a significant impact on the environment associated with wastewater services if it will:

1. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.
2. Require or result in the construction of new wastewater treatment and/or collection facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
3. Result in a determination by the wastewater treatment and/or collection provider which serves or may serve the Project that is does not have adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments.

IMPACTS AND MITIGATION MEASURES

Impact 3.14-1: The proposed Project has the potential to exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board. (Less than Significant)

WASTE DISCHARGE REQUIREMENTS (WDRS) BOARD ORDER NUMBER NO. 94-100

The City's Public Works Department Sewer Division repairs and maintains the sewer collection system, including sewer mains, lift stations, and the WWTP. The City provides sanitary sewer service to the City of Riverbank. As of 2015, the WDRs for the City's WWTP is 7.9 mgd.

According to the City's Municipal Service Review, the WWTP has primary treatment only through aerated lagoons and uses percolation ponds rather than discharging effluent. The primary treatment is accomplished in four treatment ponds through the use of surface aerators to provide

oxygen for the biological process. Once sewage is adequately treated, it is transferred to the percolation ponds through the opening of sluice gates or weir gates. The City does not utilize wastewater for irrigating City or other landscaping once treated.

The City of Riverbank's wastewater treatment system is currently in compliance with the WDR requirements of Order No. 94-100. The development of the proposed Project would not exceed the wastewater discharge requirements in this Order. The proposed Project is anticipated to have a **less than significant** impact relative to this topic. The allocation of wastewater service capacity is discussed in the following impact topic.

Impact 3.14-2: The proposed Project has the potential to require or result in the construction of new wastewater treatment or collection facilities or expansion of existing facilities, the construction of which could cause significant environmental effects. (Less than Significant)

The wastewater collection and conveyance system that will serve the proposed Project will consist of engineered infrastructure consistent with the City's existing infrastructure requirements. Sizing of existing infrastructure in the City varies based on location, but generally includes gravity sewers and force mains ranging in size from 8 to 10 inches, and lift stations. The existing facilities have undergone environmental review and have waste discharge permits from the State.

New wastewater collection and conveyance infrastructure needed for the proposed Project will require trenching/excavation of earth, and placement of pipe within the trenches at specific locations, elevations, and gradients. The location of the wastewater collection and conveyance infrastructure within the Plan Area is outlined in Figure 2.0-12 in Section 2.0. The applicant will refine the wastewater collection/conveyance infrastructure design through the development of improvements plans which undergo a review by the Public Works Department to ensure consistency with the City's engineering standards. This improvement plan process will include full engineering design (i.e. location, depth, slope, etc.) of all conveyance infrastructure as well as a review of new sewer pump stations and new force mains if needed. Ultimately, the sanitary sewer collection system will be an underground collection system installed as per the City of Riverbank standards, criteria, and specifications. Sanitary sewer disposal and treatment will be to the City of Riverbank WWTP.

As shown in Figure 2.0-12 in Section 2.0, new sewer main lines and an extension of the 18-inch trunk line will be constructed in the new arterial and collector roads in the Plan Area. These improvements will service the majority of the Plan Area; however, a portion of development south of Crawford Road will be required to utilize a sewer pump station that will be placed in the southwest portion of the site, near the MU-1 land use.

An 18-inch line in Crawford Road; a 10-inch line in Morrill Road; and an eight-inch line where Crawford Road intersects the westerly boundary of the Plan Area. All new sewer lines will be installed at varying slopes to provide the best service for the Project. Should any area develop prior to the necessary sewer improvements or trunk line extension, this flow may be required to utilize a temporary lift station that connects to the 10-inch line in Morrill Road.

The development of the MU-1 property may require the construction of an interim sewer lift station to serve the entire site and be connected by way of a force main to the Crossroads Commercial development easterly of Oakdale Road. At the time the residential development occurs north of MID Lateral No. 6, and concurrent with the construction of the north-south collector roadway through the Plan Area and the construction of the bridge over MID Lateral 6, the sewer line will be extended to the south side of MID Lateral 6 to allow for a gravity connection from within the MU-1 property. If this occurs in advance of development of the MU-1 property, then this connection will be available to serve the MU-1 property. If the MU-1 property site has constructed a temporarily lift station and connection along Oakdale Road, at the time the new sewer connection becomes available, the temporary pump station and force main will be abandoned and connected to the new gravity sewer line in the north/south collector road.

A preliminary analysis was performed on the downstream system in Roselle, north of the Crawford Road Lift Station (CRLS). The existing flows from the CRLS are greater than the capacity in the stretch of 18-inch from CRLS to Talbot Lift Station (TLS) and from TLS to First Street. Therefore, a force main or a new and larger gravity main would need to be extended to a point downstream where the existing gravity sewer has adequate capacity.

The reduction of the CRLS flows from the TLS flows would be 1,172 gpm (3,272 - 2,100 = 1,172). This flow is less than the 80 percent full capacity of the 18-inch line it currently ties into. Therefore, the existing line could remain and be utilized by the TLS. As mentioned above, the CRLS would need to have a force main extended past the TLS to a point where the gravity line could accept the flow plus any additional flow due to future upgrades to the CRLS. A proposed solution to the lack of capacity would be to extend a 16-inch force main from CRLS to the existing 30-inch sewer main near First Street.

The WWTP would not require upgrades or improvements in order to serve the proposed Project. The installation of the wastewater collection and conveyance system infrastructure to serve the proposed Project would have a **less than significant** impact.

Impact 3.14-3: The proposed Project has the potential to result in a determination by the wastewater treatment and/or collection provider which serves or may serve the Project that is does not have adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments. (Less than Significant)

The City's *Municipal Service Review & Sphere of Influence Update* includes projected wastewater generation factors for various land uses. Based on these calculations, it was determined that the City will have flows totaling 6.63 mgd with a WWTP buildout capacity of 7.9 mgd as a result of buildout of the General Plan.

The overall collection sewer strategy for the City of Riverbank, including the proposed Project, consist of laterals and sewer mains with pump stations located along the collection system to convey wastewater to a 27-inch gravity line which conveys the wastewater to the City's WWTP.

The proposed Project's wastewater generation is shown in Table 3.14-2. The City's Sewer Collection System Master Plan (2007) includes recommended wastewater generation factors for existing and future development land use areas for the City. As shown in Table 3.14-2, the total wastewater generated by the proposed Project is estimated to be approximately 568,740 gpd (0.568 mgd). The wastewater would be treated at the WWTP. The proposed Project would require sewer allocation and would be required to pay connection fees.

TABLE 3.14-2: TYPICAL EFFLUENT QUALITY PRIOR TO PHASE III EXPANSION PROJECT

LAND USE	*PROPOSED ACREAGE*	*GENERATION FACTOR (GPD/AC)*	*WASTEWATER GENERATION (GPD)*
LDR – Low Density Residential	234.0	1,500	351,000
MDR – Medium Density Residential	12.0	2,500	30,000
HDR – High Density Residential	15.5	4,000	62,000
MU-1 – Mixed Use 1	54.0	1,760	95,040
MU-2 – Mixed Use 2	5.0	1,760	8,800
P – Parks/Open Space/Regional Sports Park	42.0	400	16,800
S – Elementary School	12.0	425	5,100
		TOTAL	***568,740***

SOURCE: SEWER COLLECTION SYSTEM MASTER PLAN (2007), TABLE 4-3.

The City has available capacity to serve the proposed Project in addition to the existing commitments. The City's MSR determination included growth within the City's SOI, which included the proposed Project. Additionally, any recent expansion to the WWTP with a subsequent allocation of capacity to the proposed Project would ensure that there would not be a determination by the wastewater treatment and/or collection provider that there is inadequate capacity to serve the proposed Project's projected demand in addition to the provider's existing commitments. Payment of the City's System Development fee would ensure this impact is **less than significant**.

3.14.2 WATER SUPPLIES

ENVIRONMENTAL SETTING

The Plan Area is located within the unincorporated area of Stanislaus County. The Plan Area is contained within the City's existing Sphere of Influence (SOI), and the Plan Area was previously analyzed at a programmatic level in the City's 2005-2025 General Plan Update Environmental Impact Report. The City of Riverbank will be the water purveyor for the proposed Project. The proposed Project, if approved by the City, is capable of being served from the City's existing and future portfolio of water supplies. The water supply for the proposed Project will have the same water supply reliability and water quality as the water supply available to each of the City's other existing and future water customers.

The following information is contained in the *Water Supply Assessment for the Crossroads West Specific Plan* (West Yost Associates, 2018) (see Appendix G). The City's most recently adopted *Urban Water Management Plan* (UWMP) (the City's 2015 UWMP) was adopted by the City Council on October 25, 2016. The City's 2015 UWMP included existing and projected water demands for existing and projected future land uses to be developed within the City's SOI through 2035, which included the Plan Area. The water demand projections in the City's 2015 UWMP included existing City water demands, future water demands for developments within the existing City limit, and future water demands for future service areas outside the existing City limit.

City of Riverbank Water Service

This section presents the City's water service area including history and growth information for the City.

CITY OF RIVERBANK WATER SERVICE AREA

The City is located within the Stanislaus and San Joaquin Basins of the Great Central Valley, adjacent and south of the Stanislaus River. The City is approximately four miles to the southwest of the City of Oakdale and is just northeast of the City of Modesto. The Riverbank area is considered semi-arid and is characterized by hot, dry summers and mild, wet winters. In 2015, the City's population was 23,572.

The City supplies potable water to all the residential, commercial, and institutional/governmental water users within City limits. The City also supplies water to several residential locations and complexes outside the City limits, but within the SOI.

CITY OF RIVERBANK CURRENT AND PROJECTED POPULATION

From 2005 to 2015, the population increased by approximately 3,495 residents per the State of California, Department of Finance (DOF). Growth rates have been as high as 5.9 percent between 2014-2015 and as low as 0.6 percent between 2011-2012. For purposes of the 2015 UWMP, a future projected average population growth rate for the City of 1.6 percent, based on historical average growth data from 2005 through 2015, was assumed. Table 3.14-3 summarizes the

projected population growth of the City to the year 2035, including the projected build-out population based on the City's General Plan 2005-2025.

TABLE 3.14-3: HISTORICAL AND PROJECTED POPULATION FOR CITY OF RIVERBANK

CALENDAR YEAR	ESTIMATED POPULATION
2015	23,572
2020	25,458
2025	27,344
2030	29,229
2035	31,115

SOURCE: CITY OF RIVERBANK 2015 UWMP, TABLE 3-1.

The City's population growth rate has fluctuated in recent years. Between 2014 and 2015, the population grew 5.9 percent while between 2011 and 2012, population growth was only 0.6 percent. The City's 2009 General Plan assumed a 140 percent increase in population, from 21,757 in 2008 to 52,500 in 2025, the year of buildout of the General Plan. However, recent trends in population growth suggest that the population is not growing as quickly as anticipated in the General Plan.

Proposed Project Water Demand and Supply

PROJECTED WATER DEMAND FOR THE PROPOSED PROJECT

Residential water use factors are based on the City's 2007 Water Master Plan. The residential land use water use factors shown in Table 3.14-4 were applied to the proposed land uses to project total water demands for the Project.

TABLE 3.14-4: UNIT WATER DEMAND FACTORS[(A)]

LAND USE DESIGNATION	WATER USE FACTOR
RESIDENTIAL	
Low Density Residential (LDR)	625 gpd/du
Medium Density Residential (MDR)	600 gpd/du
High Density Residential (HDR)	435 gpd/du
NON-RESIDENTIAL	
Mixed Use 1 (MU-1)[(B)]	435 gpd/ac
Mixed Use 2 (MU-2)[(C)]	435 gpd/ac
Park, Open Space, Regional Sports Park (P)	2,500 gpd/ac
Elementary School (S)	2,000 gpd/ac

NOTES: GPD/DU = GALLONS PER DAY PER DWELLING UNIT; GPD/AC = GALLONS PER DAY PER ACRE.

[(A)] MU-1 COULD CONSIST OF A MAXIMUM OF 550,000 SF OF RETAIL USES AND NO RESIDENTIAL USES, OR UP TO 350 UNITS OF RESIDENTIAL USES AND 360,000 SF OF RETAIL USES. UNIT DEMAND FACTOR FOR LAND USE CATEGORY "MIXED USE OFFICE RETAIL RESIDENTIAL, RESIDENTIAL" WAS USED FOR MU-1.

[(B)] MU-2 IS ESTIMATED TO DEVELOP WITH UP TO 27,000 SF OF RETAIL, AND APPROXIMATELY 25 TO 50 MDR OR HDR UNITS. UNIT DEMAND FACTOR FOR LAND USE CATEGORY "MIXED USE OFFICE RETAIL RESIDENTIAL, RESIDENTIAL" WAS USED FOR MU-2.

SOURCE: WATER SUPPLY ASSESSMENT FOR THE CROSSROADS WEST SPECIFIC PLAN (WEST YOST ASSOCIATES, 2018).

Based on the water use factors shown in Table 3.14-4, the projected water demand for the Project is shown in Table 3.14-5. As indicated in Table 3.14-5, the total projected annual potable water

demand for the Project is projected to be 2,013 AFY. The water demand projection includes a 11.7 percent factor for unaccounted-for water to match the system water loss reported in the City's 2015 American Water Works Association Water Auditing Worksheet, included in the 2015 UWMP as Appendix C.

TABLE 3.14-5: PROJECTED WATER DEMAND FOR BUILDOUT OF THE PROPOSED PROJECT

LAND USE	*QUANTITY*	*WATER USE FACTOR*	*ANNUAL WATER DEMAND (GPD)*	*ANNUAL WATER DEMAND (AFY)*
RESIDENTIAL				
LDR	1,872 DU	625 gpd/du	1,170,000	1,311
MDR	192 DU	600 gpd/du	115,200	129
HDR	388 DU	435 gpd/du	168,780	189
NON-RESIDENTIAL				
MU-1	54 acres	435 gpd/ac	23,490	26
MU-2	5 acres	435 gpd/ac	2,175	2
P	42 acres	2,500 gpd/ac	105,000	118
S	12 acres	2,000 gpd/ac	24,000	27
Right-of-Way and MID Facilities	15.5 acres	0 gpd/ac	0	0
Unaccounted-for-Water[(A)]	-	-	188,211	211
		Total Water Demand	*1,796,856*	*2,013*

NOTES: GPD/AC = GALLONS PER DAY PER ACRES, GPD/DU = GALLONS PER DAY PER DWELLING UNIT, AFY = ACRE-FEET PER YEAR.
[(A)] BASED ON 11.7 PERCENT OF TOTAL WATER PRODUCTION (CITY'S 2015 AMERICAN WATER WORKS ASSOCIATION WATER AUDITING WORKSHEET AND CITY 2015 UWMP, OCTOBER 2016).
SOURCE: WATER SUPPLY ASSESSMENT FOR THE CROSSROADS WEST SPECIFIC PLAN (WEST YOST ASSOCIATES, 2018).

The parcels in the Plan Area are currently served by surface water from MID. The MID water supply source is the Tuolumne River. Although historical water use records are not available for the Plan Area parcels, it is estimated, based on MID allocation limits set between 2010 and 2017 applied to the entire approximately 381-acre Plan Area, that existing surface water use in the Plan Area averages up to 1,111 AFY and may be as high as 1,523 AFY in some years. Records of supplemental groundwater pumping by individual farmers or landowners, if any, were not available at the time the Water Supply Assessment for the proposed Project was prepared. Based on the Project's projected potable water demand of 2,013 AFY, the Project's water demand is expected to be greater than the current water use in the Plan Area.

PROJECTED WATER SUPPLY FOR THE PROPOSED PROJECT

Water demands for the proposed Project will be served using the City's existing and future portfolio of water supplies. The inclusion of existing and planned future supplies is specifically allowed by the Water Code:

> *Water Code section 10631(b): Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a) [in five year increments, for at least 20 years, or as far as data is available].*

The applicants for the proposed Project will provide their proportionate share of required funding to the City for the acquisition and delivery of potable water to the Project site.

City of Riverbank Water Demand

The following topics are covered in this section:

- Existing and projected water demand; and
- Dry year water demand.

EXISTING AND PROJECTED WATER DEMAND

The City's 2015 UWMP describes the projected City water demand through 2040. The City's water demand has fluctuated over time with a peak of 5,187 acre-feet (AF) water use occurring in 2007 followed by a noticeable decrease in annual water use despite a steady population increase within the City's sphere of influence. City staff believes the reduction in water use after 2007 was due to conservation efforts and the effect of the economic downturn. In the future, water demand is expected to increase as approved projects build out and new developments are approved and constructed in accordance with the City's water service area. The existing and projected total water demand, assuming normal year conditions, for the City in 5-year increments through 2035, based on the City's 2015 UWMP, is shown in Table 3.14-6.

TABLE 3.14-6: CITY OF RIVERBANK EXISTING AND PROJECTED TOTAL WATER DEMAND IN NORMAL YEARS, AFY

	2015[(A)]	*2020[(B)]*	*2025[(B)]*	*2030[(B)]*	*2035[(B)]*	*2040[(C)]*
Total Water Demand	3,878	4,165	4,475	4,786	5,096	5,402

NOTES: AFY = ACRE-FEET PER YEAR.
[(A)] BASED ON THE CITY'S 2015 URBAN WATER MANAGEMENT PLAN, TABLE 4-1.
[(B)] BASED ON THE CITY'S 2015 URBAN WATER MANAGEMENT PLAN, TABLE 4-2.
[(C)] THE CITY'S 2015 URBAN WATER MANAGEMENT PLAN DID NOT INCLUDE A PROJECTION FOR PROJECTED WATER DEMAND IN 2040. THE VALUE SHOWN HERE IS BASED ON INCREASING DEMANDS BY 310 AF FROM 2035 PROJECTIONS. THIS SAME METHOD OF ADDING 310 AF TO THE PREVIOUS 5-YEAR INCREMENT'S DEMAND PROJECTION IS THE METHOD USED IN THE 2015 UWMP FOR PROJECTING THE WATER DEMAND IN YEARS 2025 THROUGH 2035. THIS PROJECTED WATER DEMAND INCREASE ASSUMES AN APPROXIMATE 1.6 PERCENT GROWTH IN WATER DEMANDS, TO BE CONSISTENT WITH THE 1.6 PERCENT INCREASE IN HISTORICAL AVERAGE POPULATION GROWTH FROM 2005 THROUGH 2015, ACCORDING TO THE 2015 UWMP.
SOURCE: WATER SUPPLY ASSESSMENT FOR THE CROSSROADS WEST SPECIFIC PLAN (WEST YOST ASSOCIATES, 2018).

The projected future water demand shown above in Table 3.14-6 is based on future normal hydrologic years. However, as indicated in the 2015 UWMP, the City does not anticipate a reduction in available water supplies under any hydrologic condition as described in the following sections.

DRY YEAR WATER DEMAND

The City has a Water Shortage Contingency Plan (WSCP) included in the 2015 UWMP to address situations when catastrophic water supply interruptions occur due to regional power outage, earthquake, or other disasters; and when drought occurs. The City's WSCP describes four stages of short-term water demand reduction measures that would be required during times when potable

water supply is reduced. As discussed below, the City does not anticipate any reduction in potable supply due to dry year conditions through 2035. Therefore, the water shortage stages will most likely be implemented due to power outages, earthquakes, or other disasters rather than drought-related supply issues. The water shortage stages, and their respective anticipated reduction in potable water demand, are shown in Table 3.14-7.

TABLE 3.14-7: WATER SHORTAGE CONTINGENCY PLAN PROJECTED DEMAND REDUCTION

WATER SHORTAGE STAGE DESCRIPTION	*PERCENT DEMAND REDUCTION*
Baseline Water Conservation	0
Stage I – Minimal Action	15
Stage II – Moderate Action	25
Stage III – Severe Action	35
Stage IV – Critical Action	50

SOURCE: CITY OF RIVERBANK 2015 UWMP, TABLE 8-1.

As indicated in the 2015 UWMP, the City does not anticipate a change in available water supplies or water demands during single-dry year hydrologic conditions. Therefore, the City would not expect the Project water demand to vary in single-dry years compared to normal hydrologic circumstances.

Additionally, as indicated in the 2015 UWMP, during a multi-dry year event, the City does not anticipate a change in available water supplies or water demands. Although demand may be reduced City-wide in dry years as a result of the City's implementation of its Water Shortage Contingency Plan, such reduction in demand was not assumed or relied upon for purposes of the Single Dry Year and Multiple Dry Year evaluation in the Water Supply Assessment prepared for this Project. This is a conservative assumption as additional water conservation may indeed occur as a result of the City's implementation of additional water conservation measures as outlined in the City's Water Shortage Contingency Plan in response to multiple dry years or other water supply shortages. As a result, in order to provide a conservative analysis, this EIR assumes that Project water demand will not vary in response to multi-dry year events, as compared to normal hydrologic circumstances. Dry year demand is, therefore, assumed to be the same as normal demand.

City of Riverbank Water Supply

As the City relies exclusively on groundwater as a potable water supply, water supply for the Project would be groundwater. The water supply for the Project will have the same water supply reliability and water quality as the water supply available to the City's other existing and future water customers. Proponents of the Project will provide their proportionate share of required funding to the City for the acquisition and delivery of potable groundwater to the Project area.

The water supplies needed to serve the Project (together with existing water demands and planned future uses) are described in the City's 2015 UWMP. Therefore, the summary description of the City's groundwater supplies, provided below, have been taken for the most part, from the City's 2015 UWMP, which was adopted in October 2016.

GROUNDWATER SUPPLY

The City, and its General Plan area, is located within the Stanislaus and San Joaquin Basins of the Great Central Valley. As detailed in the City's 2015 UWMP, the City's groundwater wells are located in the Modesto groundwater subbasin and the City is part of the Stanislaus and Tuolumne Rivers Groundwater Basin Association and was a part of the development of the Integrated Regional Groundwater Management Plan (IRGMP) for the Modesto Subbasin in 2005. Based on the IRGMP for the Modesto Subbasin, and various groundwater investigations performed on groundwater availability in the subbasin, including the Self-Certification of Supply Reliability for Three Additional Years of Drought (as required by the State Water Resources Control Board in 2016), the City's groundwater supplies are expected to be highly reliable as is described in further detail below.

Groundwater Production. According to California's Groundwater Bulletin 118, updated February 27, 2004, the estimated specific yield for the Modesto Subbasin is 8.8 percent. The estimated storage capacity to a depth of 300 feet is approximately 6,500,000 acre-feet. The annual water demand for the basin was estimated at 590,000 AF in 2000. Groundwater accounted for 206,500 AF of the total supply. Total annual recharge to the basin was estimated at 310,000 acre-feet, the largest component of which is from irrigation followed by precipitation.

Assuming no recharge, the current City of Riverbank groundwater usage of 6,851 AFY (in 2017) is less than 1 percent of the total annual subbasin withdrawals, and less than 0.1 percent of the total estimated storage capacity of the basin. At full build-out under the growth scenario analyzed for the City's entire General Plan Area, the City's annual groundwater requirements were estimated to be 3.4 times the current volume. It is uncertain when the full build-out scenario would occur, but the anticipated groundwater requirements would amount to less than 0.2 percent of the total amount of subbasin groundwater storage and less than 5 percent of the total annual basin recharge.

City-Produced Groundwater. The City's sole source of water supply is groundwater. The City's potable groundwater is delivered through a pressurized distribution system. The City's water supply and distribution system includes nine active wells with pumps, two (2) one million-gallon (MG) storage tanks with booster pump stations, and over 44 miles of pipeline 8 inches to 12 inches in diameter. There are also several miles of 4-inch and 6-inch diameter pipelines. The City's wells range in depth from 240 feet to 830 feet with an average depth of 440 feet. Yields from the wells range from 620 gallons per minute (gpm) at Well No. 2 to 1,500 gpm at Wells No. 10 and 12. The average yield is about 1,000 gpm, while the total available yield from all wells is 10,785 gpm (17,400 AFY if operated continuously). The average specific capacity of the City's wells between 1999 and 2015 was approximately 71 gpm per foot of drawdown. A summary of the well capacities and other well data is shown in Table 3.14-8.

TABLE 3.14-8: CITY OF RIVERBANK WELL DATA

WELL NUMBER	*CONSTRUCTION DATE*	*COMPLETED DEPTH (FT.)*	*WELL CAPACITY (GPM)*	*SPECIFIC CAPACITY RANGE (GPM/FT. DRAWDOWN)*	*ESTIMATED PUMPING LEVEL (FT. BGS) AT MAX. PRODUCTION AND MAX. STATIC DTW*
2	1956	240	660	45 to 47	85
3	1965	420	625	24 to 35	90
4	1972	436	900	Up to 74	75
5	1978	385	900	56 to 81	90
6	1981	560	1,000	Up to 122	76
7	1990	N/A	1,200	Up to 75	82
8	2001	260	1,200	Unknown	116
9	2004	392	1,300	Up to 50	89
10	2007	830	1,500	N/A	N/A
12	2010	602	1,500	Up to 43	120
Total Well Capacity (gpm)			*10,785*	--	--
Firm Well Capacity (gpm)			*9,285*	--	--

NOTES: FT. BGS = FEET BELOW GROUND SURFACE; FIRM WELL CAPACITY IS THE TOTAL WELL CAPACITY WITH THE LARGEST WELL OUT OF SERVICE.
SOURCE: WATER SUPPLY ASSESSMENT (WEST YOST 2018).

In addition to the wells shown in Table 3.14-8, the Project would be required to build a new municipal water well so the available capacity would be even greater than what is shown in the table. The new well associated with the Project is not included in Table 3.14-8 as it is only conceptual at present.

Historical Groundwater Pumping. For the year 2015, the City produced about 3,878 AF of groundwater from the nine active wells (Well No. 1 has been removed from service). Additionally, the City produced about 3,750 AF of groundwater in the year 2016, and 6,851 AF in the year 2017. The annual production for each well has steadily increased over the past twenty years through 2017, which was the maximum groundwater pumped by the City at 6,851 AF. From 2007 through 2013, the City saw a noticeable decrease in annual pumping, even though there has been a steady population increase within the City's SOI. City staff believes the reduction in annual pumping is due to conservation efforts and the effect of the economic downturn.

The maximum daily use typically occurs in July or August. The largest monthly volume pumped was in July 2007, when 720 AF of ground water was produced. This is equal to about 23 AF per day or 5,260 gpm (7.6 mgd).

As noted above, it is estimated that at full build-out for the entire General Plan area (i.e., future demand within the City limits and General Plan Area), the projected water demand will be 3.4 times the 2010 production, or 14,610 AFY. Suggested facilities for the entire General Plan Area include the addition of sixteen new groundwater wells (including Well No. 11), each at a capacity of 1,500 gpm. These additional wells are needed in order to meet 20 percent reserve capacity

provisions and maximum daily demands, as well as fire flows and emergency storage requirements at buildout conditions. Groundwater pumping by the City from 2011 to 2015 is summarized in Table 3.14-9.

TABLE 3.14-9: HISTORICAL GROUNDWATER PUMPING, AFY

	2011	*2012*	*2013*	*2014*	*2015*
Groundwater Supply	4,220	4,220	4,094	4,035	3,878

SOURCE: CITY OF RIVERBANK 2015 UWMP, APPENDIX F.

Water Supply Availability and Reliability

The City's groundwater supply reliability as described in the City's 2015 UWMP is summarized below.

GROUNDWATER SUPPLY RELIABILITY

There are many factors that can affect groundwater supply reliability, including current storage conditions, water quality, seasonal groundwater level variations, and climate change. Due to the relatively minor amount of groundwater used annually by the City in comparison to the subbasin's capacity, the City does not anticipate a quantitative reduction in available water supplies under any hydrologic condition. Therefore, the City has considered 17,400 AFY as the long-term sustainable yield for groundwater during normal years, since dry years and multiple dry years. Furthermore, historic water quality at the City's wells has been excellent, with no Safe Drinking Water Act violations to date. The City expects this water quality to continue and, therefore, does not project any water supply changes due to water quality. Although drought-related reductions may be enforced by the state or through the City's Water Shortage Contingency Plan due to regulatory reasons, these reductions do not affect the City's availability and reliability of water during dry years.

An eleventh well, Well No. 11, has been designed and is planned for the south side of Santa Fe Street, east of Central Avenue in rural northeastern Riverbank. The City's 2007 WMP suggested the addition of sixteen new groundwater wells (including Well No. 11), with a capacity of 1,500 gpm each, to meet 20 percent reserve capacity provisions and maximum day demands, as well as emergency storage requirements at build-out conditions. Eight of these new wells would be in the area west of the current City limits, two of which would be in the Project area. With the exception of Well No. 11, all other additional wells are currently only conceptual.

Aside from plans to gradually add wells to the City's groundwater network, the City does not have other planned future potable water supplies. At present, conjunctive (surface water) uses are limited to natural groundwater recharge from surface water. Should Oakdale Irrigation District embark on a program of supplying treated surface water for municipal uses, opportunities to purchase water may become available.

Determination of Water Supply Sufficiency

Water Code section 10910 states:

> *10910(c)(4) The water supply assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses.*

Pursuant to Water Code section 10910(c)(4), and based on the technical analyses described in the *Water Supply Assessment for the Crossroads West Specific Plan*, the total projected water supplies determined to be available for the proposed Project during normal, single-dry, and multiple-dry water years during a 20-year projection will meet the projected water demand associated with the proposed Project, in addition to existing and planned future uses.

According to the City's 2015 UWMP, the total water supplies available in 2015 (17,400 AF), satisfied the actual water demand in 2015 (3,878 AF). Therefore, the City had approximately 13,522 AF of unallocated water supply in 2015. The 2015 unallocated water supply significantly exceeds the 2,013 AFY total water demand of the Project.

The total water supplies projected to be available in 2035 in all year types (17,400 AF) satisfies the projected potential water demand in 2035 in all year types (5,096 AF). With the projection of supply and demand presented previously for 2040, the total water supplies projected to be available in 2040 in all year types (17,400 AF) satisfies the projected potential water demand in 2040 in all year types (5,406 AF). Therefore, the City is projected to have approximately 11,994 AF of unallocated water supply in 2040 under all water year types. The future anticipated unallocated water supply significantly exceeds the 2,013 AFY total water demand of the Project.

The comparison of projected potable water demand and supplies for the 20-year planning period is shown in Table 3.14-10. As shown in the table, demand within the City's service area is not expected to exceed the City's supplies in any normal year between 2020 and 2040.

Using the dry year demand assumptions stated previously, no potential deficits in potable water supply occur with implementation of the proposed Project. In other words, the City's available supplies and demand reduction plans are sufficient to meet projected demands through 2040. Therefore, the City's total projected water supplies can easily satisfy the Project demands during Normal, Single Dry, and Multiple Dry water years over a 20-year projection.

Pursuant to Water Code section 10910(c)(4), and based on the technical analyses described in the Water Supply Assessment, the total projected water supplies documented to be available for the Project during Normal, Single Dry, and Multiple Dry water years during a 20-year projection are more than sufficient to meet the projected water demand associated with the Project, in addition to existing and planned future uses.

TABLE 3.14-10: SUMMARY OF POTABLE WATER DEMAND VS. SUPPLY DURING HYDROLOGIC NORMAL, SINGLE-DRY, AND MULTIPLE-DRY YEARS

HYDROLOGIC CONDITION		SUPPLY AND DEMAND COMPARISON, AFY				
		2020	2025	2030	2035	2040
Normal Year						
Available Water Supply		17,400	17,400	17,400	17,400	17,400
Total Water Demand (W/ Project)[b]		6,178	6,488	6,799	7,109	7,419
	Potential Surplus (Deficit)	**11,222**	**10,912**	**10,601**	**10,291**	**9,981**
Single Dry Year						
Available Water Supply		17,400	17,400	17,400	17,400	17,400
Total Water Demand (W/ Project)[b]		6,178	6,488	6,799	7,109	7,419
	Potential Surplus (Deficit)	**11,222**	**10,912**	**10,601**	**10,291**	**9,981**
Multiple Dry Year						
Multiple-Dry Year 1	Available Water Supply	17,400	17,400	17,400	17,400	17,400
	Total Water Demand (W/ Project)	6,178	6,488	6,799	7,109	7,419
	Potential Surplus (Deficit)	**11,222**	**10,912**	**10,601**	**10,291**	**9,981**
Multiple-Dry Year 2	Available Water Supply	17,400	17,400	17,400	17,400	17,400
	Total Water Demand (W/ Project)	6,178	6,488	6,799	7,109	7,419
	Potential Surplus (Deficit)	**11,222**	**10,912**	**10,601**	**10,291**	**9,981**
Multiple-Dry Year 3	Available Water Supply	17,400	17,400	17,400	17,400	17,400
	Total Water Demand (W/ Project)	6,178	6,488	6,799	7,109	7,419
	Potential Surplus (Deficit)	**11,222**	**10,912**	**10,601**	**10,291**	**9,981**

NOTES: AFY = ACRE-FEET PER YEAR.

[a] NORMAL YEAR DEMANDS ARE FROM TABLE -1 OF THE WSA AND DRY YEAR DEMANDS ARE BASED OFF THE DEMAND ASSUMPTIONS STATED IN SECTION 5.2 OF THE WSA. AVAILABLE WATER SUPPLIES ARE FROM TABLE 6-2 OF WSA.

[b] FROM TABLES 2-3 AND 502 OF THE WSA.

SOURCE: WATER SUPPLY ASSESSMENT (WEST YOST 2018).

Planned Infrastructure Updates

Water supply will be provided by the City of Riverbank, which relies solely on groundwater. Water distribution will be by an underground distribution system installed as per the City of Riverbank standards and specifications. Domestic water service will be provided to the Plan Area through the installation of water mains in the proposed arterial and collector roadways. Each land use will be connected to these main lines through an interconnected master water system. The installation of a 12-inch water main line from the existing stub at Crawford Road will service a portion of the Plan Area. Flows and demands for that portion of the Plan Area will be determined at the design stage of development. This 12-inch line will serve as the initial supply for the first phase of development which is likely to occur on the east side of the Plan Area.

With the development of the MU-1 property at the corner of Claribel Road and Oakdale Road, connections will be made through a loop water system connecting to existing water lines in Oakdale Road and to a new water line constructed along the Claribel frontage of the MU-1 property. These lines will be looped through the Plan Area to serve development. In the future, when the new north south collector road is constructed as part of the residential development north of MID Lateral 6, and the MID Lateral 6 roadway crossing is constructed, the water lines north of MID Lateral 6 will be stubbed to the south side of MID Lateral 6 for future connection at the time of development of the MU-1 site.

In addition to the installation of water main lines, the proposed Project includes construction of a 1.69-million-gallon water tank to be located in the linear park near MID Lateral 6. A booster pump station will be constructed in conjunction with the water tank to distribute water to areas that will not be adequately served by the 12-inch main line. The ultimate water system build out will feature a tie-in to the existing 12-inch line which will provide uniform water distribution for the balance of the Plan Area. A new water well is proposed to be located in the Regional Park expansion area near the MID Main Lateral in the northern portion of the Plan Area. This well will be used to supplement the overall water system for Crossroads West.

The timing of the construction of the new water tank and well will be determined by a water balance and consumption report prepared at the time of site development. All water improvements shown are part of the City's Master Water Plan and are funded through the payment of City impact fees, also known as System Development Fees. If an adequate amount of fee revenue has not been collected when the well and/or tank are required, the developer will be required to front the cost of the master water improvements, subject to reimbursement through fee offsets, and/or repayments as fees are collected from other areas in the City.

The City of Riverbank Public Works Department will be responsible for the operation and maintenance of the proposed water supply, transmission main lines, water storage tank, and well site upon approval and certification of the Improvement Plans submitted by the master developer.

REGULATORY SETTING

Safe Drinking Water Act

The federal Safe Drinking Water Act as passed in 1947 and amended in 1986 and 1996. It is the Country's primary law regulating drinking water quality and in implemented by the United States Environmental Protection Agency (US EPA). The Safe Drinking Water Act authorizes the US EPA to set national health-based standards for drinking water and requires actions to protect drinking water and its sources. Additionally, it provides for treatment, monitoring, sampling, analytical methods, reporting, and public information requirements. Implementation of the Act, in California, is under the jurisdiction of the California Department of Public Health (CDPH), Division of Drinking Water and Environmental Management. Drinking Water regulations are set forth in the California Code of Regulations (CCR), Titles 7 and 22.

Water Conservation Projects Act

California's requirements for water conservation are codified in the Water Conservation Projects Act of 1985 (Water Code Sections 11950 – 11954).

Consistent with California Water Code Sections 11950 – 11954, the City has implemented various water conservation efforts, as well as Water Shortage Contingency Plan that identifies actions that can be taken to respond to catastrophic interruption of water supply.

California Water Code

Water Code section 10910 states:

> *10910(c)(2) If the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate the requested information from the urban water management plan in preparing the elements of the assessment required to comply with subdivisions (d), (e), (f) and (g).*
>
> *10910(d)(1) The assessment required by this section shall include an identification of any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and a description of the quantities of water received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts.*
>
> *10910(d)(2) An identification of existing water supply entitlements, water rights, or water service contracts held by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall be demonstrated by providing information related to all of the following:*
>
> *(A) Written contracts or other proof of entitlement to an identified water supply.*
>
> *(B) Copies of a capital outlay program for financing the delivery of a water supply that has been adopted by the public water system.*
>
> *(C) Federal, state, and local permits for construction of necessary infrastructure associated with delivering the water supply.*
>
> *(D) Any necessary regulatory approvals that are required in order to be able to convey or deliver the water supply.*
>
> *10910(e) If no water has been received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts, the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall also include in its water supply assessment pursuant to subdivision (c), an identification of the other public water systems or water service contract-holders that receive a water supply or have existing water supply entitlements, water rights, or water service contracts, to the same source of water as the public water system, or the city or county if either is required to comply with this part pursuant to*

subdivision (b), has identified as a source of water supply within its water supply assessments.

Additionally, Water Code section 10910 states:

10910(f) If a water supply for a proposed project includes groundwater, the following additional information shall be included in the water supply assessment.

10910(f)(1) A review of any information contained in the urban water management plan relevant to the identified water supply for the proposed project.

10910(f)(2) A description of any groundwater basin or basins from which the proposed project will be supplied. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current bulletin of the department that characterizes the condition of the groundwater basin, and a detailed description by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), of the efforts being undertaken in the basin or basins to eliminate the long term overdraft condition.

10910(f)(3) A detailed description and analysis of the amount and location of groundwater pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), for the past five years from any groundwater basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historical use records.

A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), from any basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historical use records.

10910(f)(4) An analysis of the sufficiency of the groundwater from the basin or basins from which the proposed project will be supplied to meet the projected water demand associated with the proposed project.

A water assessment shall not be required to include the information required by this paragraph if the public water system determines, as part of the review required by paragraph (1), that the sufficiency of groundwater necessary to meet the initial and projected water demand associated with the project was addressed in the description and analysis required by paragraph (4) of subdivision (b) of Section 10631.

Senate Bill (SB) 610

Senate Bill (SB) 610 was adopted in 2001 and reflects the growing awareness of the need to incorporate water supply and demand analysis at the earliest possible stage in the land use planning process. SB 610 amended the statutes of the Urban Water Management Planning Act, as well as the California Water Code Section 10910 et seq. The foundation document for compliance with SB 610 is the Urban Water Management Plan (UWMP), which provides an important source of information for cities and counties as they update their general plans. Likewise, planning documents such as general plans and specific plans form the basis for the demand information contained in an UWMP, as well as a Water Supply Assessment required under SB 610.

Water Code Section 10910 (c)(4) states "If the city or county is required to comply with this part pursuant to subdivision (b), the water assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses."

Water supply planning under SB 610 requires reviewing and identifying adequate available water supplies necessary to meet the demand generated by a project, as well as the cumulative demand for the general region over the next 20 years, under a broad range of water conditions. This information is typically found in the current UWMP for the project area. SB 610 requires the identification of the public water supplier for a project.

In addition, SB 610 requires the preparation of a Water Supply Assessment if a project meets the definition of a "Project" under Water Code Section 10912 (a). The code defines a "Project" as meeting any of the following criteria:

- A proposed residential development of more than 500 dwelling units;
- A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space;
- A commercial building employing more than 1,000 persons or having more than 250,000 square feet of floor space;
- A hotel or motel with more than 500 rooms;
- A proposed industrial, manufacturing, or processing plant, or industrial park, planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area;
- A mixed-use project that includes one or more of these elements; or

- A project creating the equivalent demand of 500 residential units.

Alternately, if a public water system has less than 5,000 service connections, the definition of a "Project" includes any proposed residential, business, commercial, hotel or motel, or industrial development that would account for an increase of 10 percent or more in the number of service connections for the public water system.

Based on the following assumptions, SB 610 does apply to the proposed Project:

1. The proposed Project is subject to CEQA and an EIR is required.
2. The proposed Project, with up to 2,852 proposed residential dwelling units, and other non-residential land uses, meets the definition of a "Project" as specified in Water Code section 10912(a) paragraph (1) as defined for residential development.

The proposed Project has not been the subject of a previously adopted WSA and has not been included in an adopted WSA for a larger project. Thus, a WSA, as required by these criteria under SB 610, has been prepared for the Project. The Water Supply Assessment is included in Appendix F of this EIR.

Sustainable Groundwater Management Act

On September 16, 2014, Governor Jerry Brown signed into law a three-bill legislative package, composed of AB 1739 (Dickinson), SB 1168 (Pavley), and SB 1319 (Pavley), collectively known as the Sustainable Groundwater Management Act (SGMA). SGMA requires governments and water agencies of high and medium priority basins to halt overdraft and bring groundwater basins into balanced levels of pumping and recharge. Under SGMA, these basins should reach sustainability within 20 years of implementing their sustainability plans. For critically over-drafted basins, that will be 2040. For the remaining high and medium priority basins, 2042 is the deadline.

SGMA empowers local agencies to form Groundwater Sustainability Agencies (GSAs) to manage basins sustainably and requires those GSAs to adopt Groundwater Sustainability Plans (GSPs) for crucial groundwater basins in California. As noted previously, the Stanislaus and Tuolumne Rivers Groundwater Basin Association became the exclusive GSA for the Modesto Subbasin on May 27, 2017. As detailed in the City's 2015 UWMP, the City's groundwater wells are located in the Modesto groundwater subbasin and the City is part of the Stanislaus and Tuolumne Rivers Groundwater Basin Association and was a part of the development of the IRGMP for the Modesto Subbasin in 2005.

City of Riverbank General Plan

GOAL: LAND USE

- LAND-5. Full Range of Public Services and Facilities for All Area of the Community.

POLICIES: LAND USE

- LAND-5.1. The City will maintain public services and facilities in the existing developed City and make improvements as necessary to maintain a consistent Citywide level of service.
- LAND-5.2. Infill development will be given priority to remaining capacity for water supply and delivery, wastewater treatment and conveyance, stormwater collection and conveyance, and other services and infrastructure currently in place. Development impact fees shall reflect the existing capacity to serve infill development areas. Any urban development of new growth areas shall plan and finance necessary infrastructure and service expansion to serve those areas.
- LAND-5.5. Approved projects, plans, and subdivisions in new growth areas will set aside adequate land for, and shall otherwise accommodate public infrastructure and service needs consistent with General Plan policy.

GOAL: PUBLIC SERVICES AND FACILITIES

- PUBLIC-2. Adequate Supply of Quality Water to Serve Existing and Future Projected Development Needs.

POLICIES: PUBLIC SERVICES AND FACILITIES

- PUBLIC-2.1. The City will require that water supply, treatment, and delivery meet or exceed local, State, and federal standards.
- PUBLIC-2.2. The City will manage and enhance the City's water supply and facilities to accommodate existing and planned development, as identified in the City's Water Master Plan, Urban Water Management Plan, and Groundwater Source Efficiency Report.
- PUBLIC-2.3. New developments shall incorporate water conservation techniques to reduce water demand in new growth areas, including the use of reclaimed water for landscaping and irrigation.
- PUBLIC-2.4. The City will condition approval of new developments on demonstrating the availability of adequate water supply and infrastructure, including multiple dry years, as addressed in the City's Water Master Plan, Urban Water Management Plan, and Groundwater Source Efficiency Report.
- PUBLIC-2.5. The City will not induce urban development by providing provide water services in areas outside the Planning Area or areas not planned for urban development, such as areas designated for agriculture or open space.

GOAL: CONSERVATION AND OPEN SPACE

- CONS-6. Maintain or Increase Surface and Groundwater Quality and Supply.

POLICIES: PUBLIC SERVICES AND FACILITIES

- CONS-6.6. The City will encourage the use of recycled water for appropriate use, including but not limited to outdoor irrigation, toilet flushing, fire hydrants, and commercial and industrial processes.

Utility Master Plans

The City of Riverbank maintains a variety of Master Plan documents that guide the design, development, and maintenance of the utilities within the city limits. These include: *2015 Urban Water Management Plan* (2016), *Water Supply Study and Water Master Plan* (2007), *Storm Drain System Master Plan* (2008), and *Sewer Collection System Master Plan* (2007).

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed Project may have a significant impact on the environment associated with water supplies if it would:

1. Require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects; or
2. Have insufficient water supplies available to serve the Project from existing entitlements and resources, or if new or expanded entitlements are needed.

IMPACTS AND MITIGATION MEASURES

Impact 3.14-4: The proposed Project has the potential to require construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects. (Less than Significant)

The provision of public services and the construction of onsite infrastructure improvements will be required to accommodate the development of the proposed Project. Water distribution will be by an underground distribution system to be installed as per the City of Riverbank standards and specifications.

The proposed Project would require extension of offsite water conveyance infrastructure to the Plan Area for potable water and irrigation water. All offsite water utility improvements will be in or adjacent to existing roadways along the perimeter of the Plan Area, thereby limiting any potential impact to areas that were not already disturbed. Construction of the potable water infrastructure would not have the potential to induce growth beyond what is proposed because the infrastructure is not oversized to accommodate additional projects or growth.

The proposed Project would also require the construction of new onsite water conveyance infrastructure for potable water and irrigation water. All onsite water utility improvements will be within existing agricultural lands, the impacts of which are discussed in Section 3.2, Agricultural Resources. Construction of the onsite potable water infrastructure would not have the potential to

induce growth beyond what is proposed because the infrastructure is not oversized to accommodate additional projects or growth.

The proposed Project would not require the construction of new water treatment facilities or expansion of existing water treatment facilities for water service. Implementation of the proposed Project would have a **less than significant** impact relative to this topic.

Impact 3.14-5: The proposed Project has the potential to have insufficient water supplies available to serve the Project from existing entitlements and resources. (Less than Significant)

PROJECT WATER DEMAND

According to the analysis included in the Water Supply Assessment completed for the proposed Project (Appendix F) and as analyzed in this EIR in the Environmental Setting above, the City has adequate water supplies to support existing demand in the City in addition to the proposed Project under average daily and maximum daily demand conditions. The City's total water supplies projected to be available in 2035 in all year types (17,400 AF) satisfies the projected potential water demand in 2035 in all year types (5,096 AF). With the projection of supply and demand presented previously for 2040, the total water supplies projected to be available in 2040 in all year types (17,400 AF) satisfies the projected potential water demand in 2040 in all year types (5,406 AF). Therefore, the City is projected to have approximately 11,994 AF (17,400 AF [total City water supplies for all year types] minus 5,406 AF [City's potential water demand in 2040]) of unallocated water supply in 2040 under all water year types. The future anticipated unallocated water supply (11,994) significantly exceeds the 2,013 AFY total water demand of the Project.

A comparison of the City's projected water supplies and demand is shown in Table 3.14-10 for Normal, Single-Dry, and Multiple-Dry Years. The supply-demand difference in Table 3.14-10 indicates that the City will have sufficient water to meet its customers' needs through 2040.

It is anticipated that water supply for the proposed Project would be local groundwater supplies by the City. The applicant for the proposed Project will provide their proportionate share of required funding to the City for the acquisition and delivery of water supplies to the Project site through connection fees and other means.

The timing of the construction of the new peaking reservoir and well will be determined by a water balance and consumption report prepared at the time of site development for each phase of the CWSP. All water improvements shown are part of the City's Master Water Plan and are funded through the payment of City capital fees, also known as System Development Fees. If an adequate amount of fee revenue has not been collected when the well and/or peaking reservoir are required, the developer will be required to finance the cost of the master water improvements, subject to reimbursement through System Development Fee (SDF) credits or reimbursements, or other finance mechanisms provided in the CWSP.

CONCLUSION

The Water Supply Assessment completed for the proposed Project demonstrates that the City's existing and additional potable water supplies are sufficient to meet the City's existing and projected future potable water demands to the year 2040 under all hydrologic conditions.

As identified above, the proposed Project would not result in insufficient water supplies available to serve the Project from existing entitlements and resources. Therefore, the proposed Project would result in a **less than significant** impact to water supplies.

3.14.3 STORM WATER

ENVIRONMENTAL SETTING

Existing Drainage Facilities

In general, the City of Riverbank drains from east to west. The City conveys runoff to multiple points along the Stanislaus River and to two MID canals (MID Main and Lateral No. 6). As indicated in the Storm Drain System Master Plan (Nolte, 2007c), the City storm drain system generally consists of the following facilities: collection piping ranging from 12 inches to 54 inches, four detention basins, six storm water pump stations, seven gravity storm water outfalls to the Stanislaus River, and one outfall to a MID Canal. MID and the City have entered into two storm drain discharge agreements authorizing a total of seven discharge points.

Typically, storm water is collected into detention basins and then pumped out within 24 to 48 hours following a storm. Additionally, the City enforces storm drain regulations established by the US EPA and the State of California. Storm drainage from industrial areas within the City is typically disposed of on site with the exception of the closed cannery, which may have drained into the sanitary sewer. Storm drainage from the newer commercial/industrial areas is either detained on site or released to the city system after the peak discharge has passed, or is disposed of on site.

MID distributes a combination of Tuolumne River water and groundwater via a network of storage facilities, canals, pipelines, pumps, drainage facilities and control structures. Additionally, the MID provides irrigation water to approximately 3,100 agricultural customers who irrigate close to 60,000 acres of permanent and annual crops. Water is transported to area farms via MID's 208 miles of canals and pipelines that operate on a gravity flow system. Surface water from the Tuolumne River flows downhill all the way from the beginning (MID's Upper Main Canal at La Grange) to the end of MID's canal system (several locations where there are drains into the San Joaquin, Stanislaus and Tuolumne rivers).

The MID water conveyance and distribution system was designed to deliver water by gravity flow from La Grange Dam on the east to the San Joaquin River on the west. This gravity conveyance system is energy efficient, but occasionally creates operational outflows to downstream tributaries. While these operational outflows are of relatively high quality and generate no environmental impacts, they are a lost resource to MID. The need for on-farm surface drainage within the District is minimal, as the majority of the land within the irrigation service area is well drained. Much of the land is irrigated with the use of level basins allowing agricultural water users to retain all irrigation water applied on-farm within the parcels' boundaries.

There have been substantial improvements to MID's main and secondary canals since they were built in the early part of the 20th century. In addition to the District facilities, irrigators constructed ditches and pipelines necessary to convey water from the District's canals to the irrigated fields.

Future Storm Water Drainage Demand and System Improvements

The City of Riverbank completed a Storm Drain System Master Plan in 2008 that evaluated existing storm drainage infrastructure, identified system deficiencies, and recommended improvements.

System deficiencies were identified in specific areas of the City, including the Castleberg System, the Candlewood System, and the First Street Basin. The Castleberg Basin, for example, is currently at capacity and can no longer accept further connections to the system in this area. Additionally, the City estimates that approximately 60 acres of development within City limits discharges storm water into the sanitary sewer system. The Storm Drain System Master Plan recommends various improvements, by priority level, for existing system deficiencies and, in some cases, recommends further analysis that may potentially alleviate multiple areas where surcharging is likely to occur.

The City's 2015-2020 Capital Improvement Plan has identified a number of improvements to be made to the City's storm drain system, including storm drain improvements along Central and Kentucky Avenue and outfall repairs. These improvements, among others, are scheduled to be completed during the 2015-2020 period.

Any development and urbanization would increase runoff and will require adequate storm drainage facilities and improvements. The City's General Plan policies state that the City will enforce a no-net-runoff policy for areas proposed for development outside the current City limits. The City also has policies encouraging new development to utilize pervious surfaces and percolation ponds, for natural storm water collection and filtration, in concert with the City's existing and future drainage infrastructure, to help reduce the amount of runoff and encourage groundwater recharge. Developers will be required to fund and install drainage infrastructure in their projects. In addition, critical components of the system must be in place so as to prevent an increase in flow beyond the existing capacity.

Existing Flood Concerns

Flooding events can result in damage to structures, injury or loss of human and animal life, exposure of waterborne diseases, and damage to infrastructure. In addition, standing floodwater can destroy agricultural crops, undermine infrastructure and structural foundations, and contaminate groundwater.

The Plan Area is currently located in Zone X, which by definition indicates an area protected by levees from the 1% annual chance flood. The Plan Area is not located within the 200-year floodplain as delineated on the most recent 200-year flood plain maps for Riverbank. Figure 3.9-2 in Section 39, Hydrology and Water Quality, shows the 100- and 500-year flood boundaries.

State floodplain legislation (Senate Bill 5) for the San Joaquin River region has resulted in stricter development standards beginning in 2016. Urban areas that depend on levee protection are required to have a 200-year level of flood protection. SB 5 prohibits a city or county within the Central Valley Flood Protection Plan area from approving a development agreement, discretionary permit or entitlement, tentative map or parcel map for any property within a flood hazard zone unless they can demonstrate any of the following:

- the project has already achieved the applicable level of flood protection,
- conditions have been imposed on the project approval that will eventually result in the applicable level of flood protection, or
- adequate progress is being made towards achievement of the applicable level of flood protection.

Adequate progress is defined as meeting all of the following:

1. The project scope, cost and schedule have been developed;
2. In any given year, at least 90% of the revenues scheduled for that year have been appropriated and expended consistent with the schedule;
3. Construction of critical features is progressing as indicated by the actual expenditure of budget funds;
4. The city or county has not been responsible for any significant delay in completion of the system; and
5. The above information has been provided to the DWR and the Central Valley Flood Protection Board and the local flood management agency shall annually report on the efforts to complete the project.

Areas along the Stanislaus River within the City of Riverbank are within the Central Valley Flood Protection Plan area. The Project site is not located within any 200-year floodplain area.

REGULATORY SETTING

Clean Water Act

The Clean Water Act (CWA) regulates the water quality of all discharges into waters of the United States including wetlands, perennial and intermittent stream channels. Section 401, Title 33, Section 1341 of the CWA sets forth water quality certification requirements for "any applicant applying for a federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters." Section 404, Title 33, Section 1344 of the CWA in part authorizes the U.S. Army Corps of Engineers to:

- Set requirements and standards pertaining to such discharges: subparagraph (e); Issue permits "for the discharge of dredged or fill material into the navigable waters at specified disposal sites": subparagraph (a);
- Specify the disposal sites for such permits: subparagraph (b);
- Deny or restrict the use of specified disposal sites if "the discharge of such materials into such area will have an unacceptable adverse effect on municipal water supplies and fishery areas": subparagraph (c);
- Specify type of and conditions for non-prohibited discharges: subparagraph (f);
- Provide for individual State or interstate compact administration of general permit programs: subparagraphs (g), (h), and (j);
- Withdraw approval of such State or interstate permit programs: subparagraph (i);

- Ensure public availability of permits and permit applications: subparagraph (o);
- Exempt certain Federal or State projects from regulation under this Section: subparagraph (r);
- Determine conditions and penalties for violation of permit conditions or limitations: subparagraph (s);
- Section 401 certification is required prior to final issuance of Section 404 permits from the U.S. Army Corps of Engineers.

The California State Water Resources Control Board and RWQCBs enforce State of California statutes that are equivalent to or more stringent than the Federal statutes. RWQCBs are responsible for establishing water quality standards and objectives that protect the beneficial uses of various waters including the Stanislaus River, and other waters in the Riverbank Planning Area. In the Riverbank Planning Area, the RWQCB is responsible for protecting surface and groundwater from both point and non-point sources of pollution. Water quality objectives for all water bodies within the Riverbank Planning Area were established by the RWQCB and are listed in its Basin Plan.

National Pollutant Discharge Elimination System (NPDES)

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

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

These NPDES permits regulate discharges from publicly owned treatment works, industrial discharges, stormwater runoff, dewatering operations, and groundwater cleanup discharges. NPDES permits are issued for five years or less, and are therefore to be updated regularly. The rapid and dramatic population and urban growth in the Central Valley Region has caused a significant increase in NPDES permit applications for new waste discharges. To expedite the permit issuance process, the SWRCB has adopted several general NPDES permits, each of which regulates numerous discharges of similar types of wastes. The SWRCB has issued general permits for stormwater runoff from industrial and construction sites statewide. Stormwater discharges from industrial and construction activities in the Central Valley Region can be covered under these general permits, which are administered jointly by the SWRCB and RWQCB.

A Phase II Small Municipal Separate Storm Sewer (MS4) General Permit was adopted by the State Water Resources Control Board on February 5, 2013 became effective July 1, 2013. The Permit has numerous new components and the City is required to implement these components in stages over the five-year period of the Permit.

These Phase II MS4s are required to implement various storm water management programs. To comply with this permit, the City of Riverbank has taken necessary steps and adopted storm water management programs, including but not limited to:

- Post Construction Low Impact Development (LID) Standards, 2014;
- Low Impact Development Alternative Compliance Study, May 2015;
- Best Management Practices (BMP).

Federal Emergency Management Agency (FEMA)

The Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program to provide subsidized flood insurance to communities that comply with FEMA regulations that limit development in floodplains. FEMA also issues Flood Insurance Rate Maps (FIRMs) that identify which land areas are subject to flooding. These maps provide flood information and identify flood hazard zones in the community.

The design standard for flood protection is established by FEMA, with the minimum level of flood protection for new development determined to be the 1-in-100 annual exceedance probability (AEP) (i.e., the 100-year flood event). Specifically, where levees provide flood protection, the levee crown is required by FEMA to have 3 feet of freeboard above the 1-in-100-AEP water surface elevation, except in the vicinity of a structure such as a bridge, where the levee crown must have 4 feet of freeboard for a distance of 100 feet upstream and downstream from the structure.

The City of Riverbank boundary does not include areas within the 100-year floodplain. However, a portion of the northwest portion of the Riverbank Planning Area contains areas within a 100-year flood zone, based on the FEMA FIRM Map Number 0603910280 A, Panel 280, September 30, 2004. The Plan Area is not located within the 100-year floodplain.

Department of Water Resources

The Department of Water Resources' (DWR) major responsibilities include preparing and updating the California Water Plan to guide development and management of the State's water resources, planning, designing, constructing, operating, and maintaining the State Water Resources Development System, protecting and restoring the Sacramento-San Joaquin Delta, regulating dams, providing flood protection, assisting in emergency management to safeguard life and property, educating the public, and serving local water needs by providing technical assistance. In addition, the DWR cooperates with local agencies on water resources investigations; supports watershed and river restoration programs; encourages water conservation; explores conjunctive use of ground and surface water; facilitates voluntary water transfers; and, when needed, operates a State drought water bank.

California Water Code

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

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

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 Quality Control Plan for the Central Valley Region

The Water Quality Control Plan for the Central Valley Region (Basin Plan) includes a summary of beneficial water uses, water quality objectives needed to protect the identified beneficial uses, and implementation measures. The Basin Plan establishes water quality standards for all the ground and surface waters of the region. The term "water quality standards," as used in the

Federal Clean Water Act, includes both the beneficial uses of specific water bodies and the levels of quality that must be met and maintained to protect those uses. The Basin Plan includes an implementation plan describing the actions by the RWQCB and others that are necessary to achieve and maintain the water quality standards.

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

200-Year Flood Protection in Central Valley

By July 1, 2008, DWR is required to provide preliminary maps of areas within 100- and 200-year floodplains protected by "project levees" (Water Code 9610). "Project levees" are those levees that are part of the facilities of the State Plan of Flood Control. Generally, these are levees for which the Department or CVFPB are responsible for ensuring that they provide flood protection. Currently, the 100-year floodplain is the most frequently cited standard for flood risk and flood protection. DWR is also required, by December 31, 2008, to prepare maps that show levee protection zones, including those lands where flooding would be more than three feet deep if a levee were to fail (Water Code 9130). DWR will forward suggested requirements for adoption by the Building Standards Commission related to construction in areas protected by project levees where flood waters would exceed three feet in a 200-year flood (Health and Safety Code 50465).

By January 1, 2012, DWR is required to have prepared the Central Valley Flood Protection Plan (Water Code 9612). The Plan was adopted on June 29, 2012 and is currently being updated. The Draft 2017 Central Valley Flood Protection Plan was released for a public review period that ended on March 31, 2017.

The Plan Area is outside the 200-year flood plain and is not directly affected by this issue.

City of Riverbank Municipal Code

Chapter 151, Flood Plain Management, of the Municipal Code outlines the City's general food plain provisions, administration procedures, provisions for flood hazard reduction and conditions for variances.

Section 151.04 states that:

In order to accomplish its purposes, this subchapter includes regulations to:

(A) Restrict or prohibit uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or flood heights or velocities;

(B) Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;

(C) Control the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel flood waters;

(D) Control filling, grading, dredging, and other development which may increase flood damage; and

(E) Prevent or regulate the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards in other areas.

City of Riverbank General Plan

GOAL: LAND USE

- LAND-5. Full Range of Public Services and Facilities for All Area of the Community.

POLICIES: LAND USE

- LAND-5.1. The City will maintain public services and facilities in the existing developed City and make improvements as necessary to maintain a consistent Citywide level of service.
- LAND-5.2. Infill development will be given priority to remaining capacity for water supply and delivery, wastewater treatment and conveyance, stormwater collection and conveyance, and other services and infrastructure currently in place. Development impact fees shall reflect the existing capacity to serve infill development areas. Any urban development of new growth areas shall plan and finance necessary infrastructure and service expansion to serve those areas.
- LAND-5.5. Approved projects, plans, and subdivisions in new growth areas will set aside adequate land for, and shall otherwise accommodate public infrastructure and service needs consistent with General Plan policy.

GOALS: CONSERVATION AND OPEN SPACE

- CONS-4. Preserve Habitat Associated with the Stanislaus River While Increasing Public Access.
- CONS-6. Maintain or Increase Surface and Groundwater Quality and Supply.

POLICIES: CONSERVATION AND OPEN SPACE

- CONS-4.2. Approved projects, plans, and subdivisions shall provide for collection, conveyance, treatment, detention, and other stormwater management measures in a way

that does not decrease water quality or alter hydrology in the Stanislaus River or associated groundwater recharge areas.

- CONS-6.3. Approved projects, plans, and subdivisions in new growth areas shall incorporate natural drainage system design that emphasizes infiltration and decentralized treatment (rather than traditional piped approaches that quickly convey stormwater to large centralized treatment facilities).[1]
- CONS-6.4. The City will encourage the use of permeable surfaces for hardscape. Impervious surfaces such as driveways, streets, and parking lots will be minimized so that land is available for a natural drainage system to absorb stormwater, reduce polluted urban runoff, recharge groundwater, and reduce flooding.
- CONS-6.5. City street standards and parking requirements will balance the needs of transportation with the full range of community planning issues, including water quality, storm drainage, air quality, and other considerations.

GOAL: PUBLIC SERVICES AND FACILITIES

- PUBLIC-4. Storm Drainage Systems that Protect Public Safety, Preserve Natural Resources, and Prevent Erosion and Flood Potential.

POLICIES: PUBLIC SERVICES AND FACILITIES

- PUBLIC-4.1. The City will maintain and improve, as necessary, existing public storm basins and flood control facilities, as identified in the Stormwater Master Plan.
- PUBLIC-4.2. The City will coordinate with County and Regional agencies, as well as the railroad, in the maintenance and improvement of storm drainage facilities to protect the City's residents, property, and structures from flood hazards.
- PUBLIC-4.3. The City will consider a variety of means for floodplain management, depending on the context, which may include development, improvement, and maintenance of structural flood control facilities; land use policy and zoning to prohibit incompatible urban development within the floodplain; erosion control techniques; setbacks from flood-prone areas; and other measures, as circumstances dictate.
- PUBLIC-4.4. The City will identify areas, such as wetlands, low-lying natural runoff areas, and pervious surfaces and percolation ponds, for natural storm water collection and filtration, in concert with the City's existing and future drainage infrastructure, to help reduce the amount of runoff and encourage groundwater recharge.
- PUBLIC-4.5. New development shall be designed to control surface runoff discharges to comply with the National Pollutant Discharge Elimination System Permit and the receiving water limitations assigned by the Regional Water Quality Control Board.

[1] New growth areas are those included in the Riverbank Planning Area and outside of the City's Sphere of Influence as of January 1, 2007.

- PUBLIC-4.6. The City will establish and new development shall implement nonpoint source pollution control measures and programs designed to reduce and control the discharge of pollutants into the City's storm drains and river.
- PUBLIC-4.7. The City will require minimization of the amount of new impervious surfaces and directly connected impervious surfaces in areas of new development and redevelopment and, where feasible, maximize onsite infiltration of stormwater runoff.
- PUBLIC-4.8. The City will encourage pollution prevention methods, supplemented by pollutant source controls and treatment. Use small collection strategies located at, or as close to possible to the source (i.e., the point where water initially meets the ground) to minimize the transport or urban runoff and pollutants off-site.
- PUBLIC-4.9. The City will require the preservation and, where possible, will encourage that creation or restoration of areas that provide important water quality benefits, such as riparian corridors, wetlands, and buffer zones.
- PUBLIC-4.10. The City will limit disturbances of natural water bodies and natural drainage systems cause by development, including roads, highways, and bridges.
- PUBLIC-4.11. The City will require that new development avoid development in areas that are particularly susceptible to erosion and sediment loss; or, will require that these areas are identified and protected from erosion and sediment loss.
- PUBLIC-4.12. The City will encourage and/or require the use of open, vegetated swales, stormwater cascades, and small wetland ponds instead of pipes and vaults, as a part of urban development proposed outside current City limits to mitigate stormwater impacts.
- PUBLIC-4.13. The City will enforce a no-net-runoff policy for areas proposed for development outside the current City limits.

GOAL: SAFETY

- SAFE-1. Minimize the Loss of Life and Damage to Property Natural and Human-Caused Hazards.

POLICIES: SAFETY

- SAFE-1.6. The City will not allow the development of housing in the 100- and 200-year floodplain, as determined by the Federal Emergency Management Agency. The City may permit placement of non-residential improvements within the 100- and 200-year floodplain under a very limited set of circumstances. Any development project that includes structures or disturbances of natural features within the 100-year floodplain shall prove that the proposal does not:
    - Create danger to life and property due to increased flood heights or velocities caused by excavation, fill, roads, or intended use.
    - Create difficult emergency vehicle access in times of flood.
    - Create a safety hazard due to the unexpected heights, velocity, duration, rate of rise and sediment transport of the flood water expected at the site.
    - Create excessive costs in providing governmental services during and after flood conditions, including maintenance and repair of public facilities.

  - Interfere with the existing waterflow capacity of the floodway.
  - Substantially increase erosion and/or sedimentation.
  - Contribute to the deterioration of any watercourse or the quality of water in any body of water.
- SAFE-1.7. The City will require any public facilities and critical facilities (e.g., hospitals, emergency command centers, communication facilities, fire stations, and police stations) in the 100- and 200-year flood zones to be flood-proofed to a point at or above the base flood level elevation from the Stanislaus River and be designed to mitigate potential flood risk to ensure functional operation during a flood event.
- SAFE-1.13. Ensure the City is in compliance with the Central Valley Flood Protection Plan (CVFPP)
- SAFE-1.14. The City, as necessary, will participate in a Regional Flood Management Plan.
- SAFE-1.15. The City will maintain, update, and make available to the public, as appropriate, FEMA 100- and 500-year Flood Insurance Rate Maps (FIRMs) and 200-year Floodplain maps, as they become available from the Department of Water Resources (DWR).
- SAFE-1.16. The City will use the best available flood hazard information and mapping from regional, State, and federal agencies and use this information to inform land use and public facilities investment decisions.

City of Riverbank Municipal Code

CHAPTER 151, FLOOD PLAIN MANAGEMENT

Chapter 151, Flood Plain Management, of the Municipal Code outlines the City's general food plain provisions, administration procedures, provisions for flood hazard reduction and conditions for variances.

Section 151.04 states that:

> *In order to accomplish its purposes, this subchapter includes regulations to:*
>
> *(A) Restrict or prohibit uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or flood heights or velocities;*
>
> *(B) Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;*
>
> *(C) Control the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel flood waters;*
>
> *(D) Control filling, grading, dredging, and other development which may increase flood damage; and*
>
> *(E) Prevent or regulate the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards in other areas*.

CHAPTER 152, SUBDIVISIONS

Chapter 152, Subdivisions, of the Municipal Code outlines the subdivisions regulations for new development within the City. This chapter of the Code requires all new streets to be designed with curbs, gutters, sidewalks, storm drainage, and pavement. Section 152.038 of the Code summarizes the drainage facility requirements for new installation.

CHAPTER 155, GRADING

Chapter 155, Grading, of the Municipal Code outlines the grading and clearing performance standards for development within the City. Specifically, Section 155.04 of the Code outlines the standards for erosion and drainage control. The Code outlines the requirements for a person seeking a major grading permit. An application for a major grading/clearing permit requires a completed grading/clearing permit application, grading/clearing plan, grading/clearing statement, soils report (as required) and drainage improvement plan prepared by a registered civil engineer or licensed landscape architect.

Utility Master Plans

The City of Riverbank maintains a variety of Master Plan documents that guide the design, development, and maintenance of the utilities within the city limits. These include: *2015 Urban Water Management Plan* (2016), *Water Supply Study and Water Master Plan* (2007), *Storm Drain System Master Plan* (2008), and *Sewer Collection System Master Plan* (2007).

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed Project may have a significant impact on the environment associated with storm water if it would:

1. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

IMPACTS AND MITIGATION MEASURES

Impact 3.14-6: The proposed Project has the potential to require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects. (Less than Significant with Mitigation)

Flooding events can result in damage to structures, injury or loss of human and animal life, exposure of waterborne diseases, and damage to infrastructure. In addition, standing floodwater can destroy agricultural crops, undermine infrastructure and structural foundations, and contaminate groundwater. The Plan Area is currently located in Zone X, which by definition indicates an area protected by levees from the 1% annual chance flood. The Plan Area is not located within the 200-year floodplain as delineated on the most recent 200-year flood plain maps for Riverbank.

The City receives funding for storm water drainage improvements through capital improvement fees. In addition, developers are required to install infrastructure improvements to ensure adequate project-related stormwater drainage, and are required to submit a grading and drainage plan for review as part of the development approval process.

The following discussions provide details and guidelines which show the adherence to the City of Riverbank's LID Practices, MS4 Permit Regulations and California Stormwater Quality Association (CASQA) compliance.

EXISTING CONDITIONS

Currently, the Regional Sports Park located at the northern end of the Plan Area is the only existing development within the CWSP boundary that has drainage facilities to accommodate storm water runoff. The facilities at the Regional Sports Park were developed as part of the overall plan for the Park and tie into the existing City of Riverbank facilities located in Morrill Road and Oakdale Road. Any remaining storm runoff flows onto adjacent properties as there are no other formal drainage systems in the area. Some water is retained on-site and is used for the agricultural uses that exist on the site. The runoff generally flows to the south and west as that is how the Plan Area naturally slopes.

PROPOSED STORM DRAINAGE SYSTEM

Onsite storm drainage would be installed to serve the proposed Project. The City of Riverbank adopted a Low Impact Development Design and Specifications Manual to assist developers in meeting State and local mandates for storm water drainage. Negative impacts to the Stanislaus River, the San Joaquin Delta and regional wildlife have prompted many municipalities to design and adopt LID practices and guidelines. The CWSP is identified as a greenfield/rural residential property in the Low Impact Development Design and Specifications Manual and does not have any other land data available due to it being outside the current City limit line.

As shown in Figure 2.0-13 in Section 2.0, a standalone drainage system that will detain all storm water runoff on-site in detention basins is proposed. Because of the greenfield/rural residential designation within the Low Impact Development Design and Specifications Manual, maintaining existing hydrological conditions by conserving natural areas and existing drainage features is an important consideration, where possible. Impervious hardscape surfaces (i.e., conventional roofs and paving) will be designed to discharge to pervious areas to help filter and infiltrate the stormwater runoff. To further aid infiltration, native soil compaction in landscaped areas will be minimized.

Land planning for CWSP, the preliminary drainage studies, and the preliminary drainage design are integrated to emphasize water conservation, protect water quality, help reduce flooding, and improve the overall watershed health. The proposed LID practices are appropriate for the local and existing conditions found on the Plan Area.

The Project proposed to construct and use three major storm water detention basins. The first proposed basin will be located in the 11-acre expansion proposed for the Regional Sports Park and

will drain the areas north of Morrill Road. The two remaining detention basins will be located north and south of the major collector road on the west side of the Plan Area.

Soil boring and percolation testing in the locations of the proposed retention ponds has been performed. Each pond had two percolation tests performed for a total of six tests along with one deep boring at each pond to classify the deeper underlying soil. The percolation tests were performed at a depth that would be consistent with the proposed bottom of the proposed retention ponds. These rates will be used as recommended in the report for design and sizing of the retention ponds. The deeper tests may be utilized for the design of an absorption trench to percolate any nuisance water that may occur.

LID practices can greatly improve storm water quality by encouraging processes (such as sedimentation, filtration, or evapotranspiration) which reduce the pollutants present in urban and suburban runoff. The CWSP will utilize LID guidelines and specifications throughout the proposed storm drainage system to ensure better water quality, recharging of ground water supplies where feasible, and reduce community infrastructure costs. While the City of Riverbank collects fees for storm water collection and disposal, the Plan Area will be exempted from these fees. This exemption is appropriate as the CWSP will construct all necessary storm water collection and disposal facilities to serve the Plan Area, as well as set up a Community Facilities District (CFD) or similar type financing district to maintain the system. Should the City require any of these facilities to provide capacity above and beyond the needs of the CWSP, reimbursement may be considered.

BMP'S go hand in hand with LID guidelines to help address significant water quality issues and hydrologic concerns that developments create. Several design goals are required by the City, including:

- conserve natural areas and drainages;
- minimize impervious surfaces, drain to pervious area;
- minimize soil compaction;
- mitigate peak runoff and associated erosion; and
- treat runoff in storm water BMPs.

Construction of the Project is anticipated to be phased and will be directed by demand and need. Because of this, temporary basins will be needed to handle storm water runoff until the permanent facilities are constructed. Water levels will not exceed four feet with two feet of freeboard for the temporary storm drain basins.

The landscape in the storm drain basins will serve two purposes: provide a visually appealing place for recreational activities, and serve as retention and assist in the detention of storm water runoff. Through the use of bio-swales, infiltration, inlets, and conduits, storm water will be managed efficiently while adhering to the strict standards set forth by the City of Riverbank LID Practices.

The MU-1 property of the CWSP intends to utilize onsite storage and transmission to the existing offsite basin in the existing Crossroads development. Preliminary calculations that were computed for the site and existing grades helped to determine that the existing basin just east of Oakdale

Road and south of MID Lateral 6 has approximately eight acre-feet of additional storage capacity available to serve the proposed Project. It is the intent of the MU-1 property developer to use an on-site basin in conjunction with underground storage of storm water, surface water storage in parking areas, and landscaped swale areas. The design and construction of these improvements will adhere to the City's LID Practices.

The MU-2 property will either need its own on-site collection system, or may tie into the collection facilities north or south of Morrill Road. The location of this connection will be determined as development occurs.

The MID Discharge Agreement currently on file for the existing Crossroads development will be modified to accommodate the proposed Project. The agreement currently permits the discharge out of existing basins into the MID Lateral 6 and will be modified to add the additional discharge from the proposed Project. On-site percolation will also be utilized if it is determined through soils analysis that storm water disposal is needed.

All new construction projects in the City of Riverbank are classified in the Low Impact Development Design and Specifications Manual based on their intended use (i.e., residential, Mixed Use 1 and 2, parking areas, etc.). The following design standards must be implemented for all project classifications:

- Mitigate peak run-off flow rates
- Conserve and create natural areas
- Minimize storm water pollutants of concern
- Protect slopes and channels
- Provide storm drain stenciling and signage
- Properly design outdoor material and trash storage areas
- Provide proof of ongoing BMP practices and maintenance
- Incorporate treatment control BMP's for water quality

LID practices are most effective when they are dispersed throughout a development project. The CWSP has been designed with this in mind and features linear park drainage basins running north and south throughout the Plan Area. Treatment and attenuation of flows throughout the Plan Area can be achieved by draining sidewalks to vegetated filter strips, constructing parking lots with permeable pavement, and outletting roof leaders to the surface of a bio-retention area.

The Plan Area features mostly Greenfield Sandy Loam and Madera Sandy Loam soil with a hardpan layer below, anywhere from 20- to 54-inches from the surface. Hardpan conditions affect most of Riverbank and call for special consideration when considering filtration options for projects. Infiltration is acceptable for the CWSP because the hardpan layer is at a depth less than 10 feet and the soils types are well draining.

To summarize, the CWSP will conform to and utilize the LID practices set forth by the City of Riverbank. A combination of methods will be used in the Plan Area including underground filtration, which will be integrated into parking areas and landscape areas; bio-retention areas,

such as the park basins; vegetated swales, which can be located in street landscape areas and parking lots; filter strips, designed to treat sheet flow from adjacent surfaces; and permeable pavement, which is a porous, load-bearing pavement that allows storm water runoff to pass through its surface layer.

CONCLUSION

Because the Plan Area could increase runoff significantly, Project impacts to stormwater are considered potentially significant. The following mitigation measure requires the Project applicant to install a drainage system that meets this performance standard and, prior to issuance of grading permits, provide a drainage plan and report to the City of Riverbank for review and approval. With the implementation of the following mitigation measure, drainage impacts would be reduced to **less than significant**.

MITIGATION MEASURE(S)

Mitigation Measure 3.14-1*: Prior to the issuance of a building or grading permit, the Project applicant shall submit a drainage plan to the City of Riverbank for review and approval. The plan shall include an engineered storm drainage plan that demonstrates attainment of pre-Project runoff requirements prior to release and describes the volume reduction measures and treatment controls used to reach attainment consistent with the Riverbank Low Impact Development Design and Specifications Manual, the Riverbank Storm Drain System Master Plan, and the Crossroads West Specific Plan.*

3.14.4 SOLID WASTE

ENVIRONMENTAL SETTING

Solid Waste service is provided via contract with Gilton Solid Waste Management. Areas outside the Riverbank City limits to the east of are also served by Gilton Solid Waste. Bertolotti Disposal serves the areas within the Riverbank Planning Area that are outside of the City limits to the west. Gilton Solid Waste Management provides: full-scale residential, commercial, and industrial disposal and recycling services; public waste processing and transportation services; comprehensive yard waste and organic material composting and sales; construction and demolition waste processing, diversion and disposal; scrap wood processing, diversion and transportation; and waste tire collection and recycling.

Solid waste collection and disposal is typically a contracted service since private firms are able to service a small community like Riverbank at a more reasonable cost due to the large initial cost associated with the equipment and staffing needed to collect solid waste.

Gilton Solid Waste serves approximately 6,000 residences in the City, spending approximately 86 manhours per week serving these customers. Gilton Solid Waste serves approximately 700 homes per day per truck (via 10-hour days). Therefore, to serve 6,000 customers it takes 8.57 days per week (85.7 hours). Each driver works 40 hours per week, so at one driver per truck, it takes the equivalent of 2.14 trucks to service the City each week.

Annually, Gilton Solid Waste hauls 10,063 tons of waste from Riverbank residential customers, or about 1.68 tons per household. Gilton Solid Waste hauls 2,403 tons of waste from commercial sources and 2,553 tons of waste from industrial and construction sources annually in the City. As the franchise waste hauler, Gilton is contractually obligated to accommodate any increase in the need for residential and commercial waste management services.

Commercial size containers ranging from two cubic yards to six cubic yards are available for commercial trash. Gilton Solid Waste Management also provides commercial compacting bins. The City of Riverbank does not have a sorting facility; however, the solid waste transferred to the Forward Landfill is sorted onsite.

Residential trash is picked up on a weekly basis. Residents may choose which size trash collection toter they want to use (30 gallon or 90 gallon).

Solid waste hauled by Gilton Solid Waste from Riverbank is deposited in two landfills and a waste-to-energy facility. These are the Forward, Inc. landfill in San Joaquin County, the Fink Road Landfill in Stanislaus County (administered by the County Public Works Department), and the Covanta Waste-to-Energy Facility in Stanislaus County (administered by County Department of Environmental Resources). The Covanta Facility was built with an official manufacturer's capacity of 243,000 tons, and the service area is contractually required to send at least this amount to the facility per year. Recently the facility has handled 250,000 to 260,000 tons per year. The Fink Road Landfill is currently at approximately 50 percent capacity with a projected closing date of 2023 and an overall capacity of 12 million cubic feet.

The two landfills are summarized in Table 3.14-11 below. Table 3.14-12 summarizes the Stanislaus County Regional Solid Waste Planning Agency disposal rate targets, as identified by Cal Recycle. Disposal rate targets for the City of Riverbank are not available.

TABLE 3.14-11: CITY OF RIVERBANK LANDFILL SUMMARY

LANDFILL	*LOCATION*	*MAXIMUM DAILY THROUGHPUT (TONS/DAY)*	*REMAINING CAPACITY (CUBIC YARDS)*	*ANTICIPATED CLOSURE DATE*
Forward Sanitary	Manteca	8,668	23.7 Million	2021
Fink Road Landfill	Crows Landing	2,400	8.24 Million	2023

SOURCE: CAL RECYCLE, 2017.

TABLE 3.14-12: STANISLAUS COUNTY REGIONAL SOLID WASTE PLANNING AGENCY WASTE DISPOSAL RATE TARGETS (POUNDS/DAY)

RESIDENT		*EMPLOYMENT*	
Target	*Annual*	*Target*	*Annual*
6.3	4.5	21.2	14.4

SOURCE: CAL RECYCLE, 2017.

REGULATORY SETTING

AB 939: California's Integrated Waste Management Act of 1989

California's Integrated Waste Management Act of 1989 (AB 939) set a requirement for cities and counties to divert 50 percent of all solid waste from landfills by January 1, 2000, through source reduction, recycling and composting. In order to achieve this goal, AB 939 requires that each City and County prepare and submit a Source Reduction and Recycling Element. AB 939 also established the goal for all California counties to provide at least 15 years of ongoing landfill capacity.

AB 939 also established requirements for cities and counties to develop and implement plans for the safe management of household hazardous wastes. In order to achieve this goal, AB 939 requires that each city and county prepare and submit a Household Hazardous Waste Element.

AB 341 (75 Percent Solid Waste Diversion)

AB 341 requires CalRecycle to issue a report to the Legislature that includes strategies and recommendations that would enable the state to divert 75 percent of the solid waste generated in the state from disposal by January 1, 2020, requires businesses that meet specified thresholds in the bill to arrange for recycling services by January 1, 2012, and also streamlines various regulatory processes.

SB 1374 (Construction and Demolition Waste Materials Diversion)

Senate Bill 1374 (SB 1374), Construction and Demolition Waste Materials Diversion Requirements, requires that jurisdictions summarize their progress realized in diverting construction and

demolition waste from the waste stream in their annual AB 939 reports. SB 1374 required the CIWMB to adopt a model construction and demolition ordinance for voluntary implementation by local jurisdictions.

AB 2176 (Montanez, Chapter 879, Statues of 2004)

This law requires the largest venue facilities and events (as defined) in each city and county to plan and implement solid waste diversion programs, and annually report the progress of those upon the request of their local government. In turn, local jurisdictions must report to the CIWMB waste diversion information for the top 10 percent of venues and events by waste generation.

A large event is defined as:

1. Serves an average of more than 2,000 individuals per day of operation (both people attending the event and those working at it—including volunteers—are included in this number); and
2. Charges an admission price or is run by a local agency.

The bill specifically includes public, nonprofit, or privately-owned parks, parking lots, golf courses, street systems, or other open space when being used for an event, including, but not limited to, a sporting event or a flea market in addition to events that meet both of the above.

A large venue is defined as:

- A permanent facility that annually seats or serves an average of more than 2,000 individuals within the grounds of the facility per day of operation (both people attending the event and those working at it—including volunteers too—are included in this number).

Venues include, but are not limited to airports, amphitheaters, amusement parks, aquariums, arenas, conference or civic centers, fairgrounds, museums, halls, horse tracks, performing arts centers, racetracks, stadiums, theaters, zoos, and other public attraction facilities.

California Green Building Standards Code (CALGreen)

CALGreen requires the diversion of at least 50 percent of the construction waste generated during most new construction projects (CALGreen Sections 4.408 and 5.408) and some additions and alterations to nonresidential building projects.

City of Riverbank General Plan

GOAL: LAND USE

- LAND-5. Full Range of Public Services and Facilities for All Area of the Community.

POLICIES: LAND USE

- LAND-5.1. The City will maintain public services and facilities in the existing developed City and make improvements as necessary to maintain a consistent Citywide level of service.

- LAND-5.5. Approved projects, plans, and subdivisions in new growth areas will set aside adequate land for, and shall otherwise accommodate public infrastructure and service needs consistent with General Plan policy.

GOAL: PUBLIC SERVICES AND FACILITIES

- PUBLIC-5. Adequate Capacity for Solid Waste Disposal.

POLICIES: LAND USE

- PUBLIC-5.1. The City will approve new development projects only if adequate capacity exists to accommodate solid waste demand, including processing, recycling, transportation, and disposal.
- PUBLIC-5.5. The City will encourage provision of recycling and conservation service and public education to reduce the amount of solid waste at the landfill.

City of Riverbank Municipal Code, Chapter 50

Chapter 50 of the Municipal Code regulates the management of garbage, recyclables, and other wastes. Chapter 50 sets forth solid waste collection and disposal requirements for residential, commercial, industrial, and other uses and addresses yard waste, hazardous materials, recyclables, and other forms of solid waste.

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed Project will have a significant impact on the environment associated with solid waste if it will:

1. Be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs.
2. Comply with federal, State, and local statutes and regulations related to solid waste.

IMPACTS AND MITIGATION MEASURES

Impact 3.14-7: The proposed Project has the potential to be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs and comply with federal, State, and local statutes and regulations related to solid waste. (Less than Significant)

As previously described, permitted maximum disposal at the Forward Landfill is 8,668 tons per day. The total permitted capacity of the landfill is 51.04 million cubic yards, which is expected to accommodate an operational life until January 1, 2021. The remaining capacity is 23.7 million cubic yards.

Additionally, permitted maximum disposal at the Fink Road Landfill is 2,440 tons per day. The total permitted capacity of the landfill is 10.6 million cubic yards (Class 3) and 4.1 million cubic yards

(Class 3),[2] which is expected to accommodate an operational life until January 1, 2023. The remaining capacity is 8.24 million cubic yards.

Solid waste generated by the proposed Project was estimated based on CalRecycle generation rate estimates by use (discussed below).

The Mixed Use area is estimated to generate roughly 2.5 pounds per day per 1,000 square feet. It is estimated that the 577,000 square feet of commercial space would generate 1,442.5 pounds per day of solid waste. It is noted that this estimate of the square footage for the commercial space is considered a worst-case scenario and may very well prove to be an overestimate.

The single-family residential portion of the Plan Area is estimated to generate roughly 10 pounds per day per household. It is estimated that the proposed 2,064 single-family residential units would generate 20,640 pounds per day of solid waste. The multi-family residential portion of the Plan Area is estimated to generate roughly 5.31 pounds per day per household. It is estimated that the proposed 788 multi-family residential units would generate 4,184.3 pounds per day of solid waste. It is noted that these estimates of the unit counts for the residential components of the Project are considered a worst-case scenario and may very well prove to be an overestimate.

The total solid waste generated by the proposed project is estimated to be 26,266.8 pounds per day (13.13 tons per day). As previously described, solid waste generated in the City is disposed at the Forward Landfill and the Fink Road Landfill. The Stanislaus County Regional Solid Waste Planning Agency's solid waste per capita generation has decreased since 2007 due to the waste diversion efforts of the City and County.

The addition of solid waste associated with the proposed Project, approximately 13.13 tons per day at total buildout, to the Forward Landfill and the Fink Road Landfill would not exceed the landfills' remaining capacity. The City will need to secure a new location of disposal of all solid waste generated in the City when the Forward Landfill and/or Fink Road Landfill is/are ultimately closed. There are several options that the City will have to consider for solid waste disposal at that time, which is estimated to be 2023. The Project would increase the local waste stream, and could require the City to invest in additional resources for the collection and disposal of solid waste.

Development fees would address all capital facilities costs created by new development, and General Plan polices are in place to ensure the provision of adequate services for current and future populations through the management and collection of development fees as well as the annexation into applicable maintenance districts. Additionally, future residents and businesses resulting from Project development would be required to pay monthly fees for waste collection services. These monthly fees are typically used to fund collection of waste and associated landfill costs. With payment of development fees and monthly waste collection service revenues, solid waste impacts would be **less than significant**.

[2] Class 3 landfill indicates a municipal landfill that is not authorized to accept hazardous waste, and a Class 2 landfill indicates a landfill facility that is not authorized to accept hazardous waste.

This section provides an analysis of the potential for the proposed project to result in urban decay. In order to determine the potential for the proposed project to result in blight or urban decay, an Urban Decay Analysis has been prepared. Under CEQA, an EIR should only consider direct and indirect physical effects of projects. Section 15064(d) of the CEQA Guidelines states that, "In evaluating the significance of the environmental effect of a project, the Lead Agency shall consider direct physical changes in the environment which is caused by and immediately related to the project." Section 15064(d)(3) further states that, "An indirect physical impact is to be considered only if that change is a reasonably foreseeable impact which may be caused by the project. A change which is speculative or unlikely to occur is not reasonably foreseeable." In addition, CEQA requires that a determination that a project may have a significant environmental effect must be based on substantial evidence (CEQA Guidelines §15064(f)).

On the secondary socioeconomic effects of projects, Section 15131(a) of the CEQA Guidelines indicates that, "Economic and social effects of a project shall not be treated as significant effects on the environment. An EIR may trace a chain of cause and effect from a proposed decision on a project through anticipated economic or social changes resulting from the project to physical changes caused in turn by the economic or social changes. The intermediate economic or social changes need not be analyzed in any detail greater than necessary to trace the chain of cause and effect. The focus of the analysis shall be on the physical changes." In other words, economic and social changes are not, in themselves, considered under CEQA to be significant effects on the environment.

Since only physical effects are to be considered under CEQA, economic and social changes resulting from a project may be considered if they in turn produce changes in the physical environment. To fully satisfy the requirements of an EIR, an economic analysis must start with the economic impacts. The analysis would then follow the causal chain to assess the likelihood of new retail space causing long-term vacancies in existing retail space and ultimately leading to urban decay and physical deterioration of existing retail centers and nodes.

In recent years, the California Courts have identified the term "urban decay" as the physical manifestation of a project's potential socioeconomic impacts and have specifically identified the need to address the potential for urban decay in environmental documents for large retail projects, or mixed use projects with a notable retail component. The leading case is *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, in which the court set aside two environmental impact reports for two proposed Wal-Mart projects that would have been located less than five miles from each other. This was the first court decision to use the term "urban decay," as opposed to the term "blight." The court quoted "experts [who] are now warning about land use decisions that cause a chain reaction of store closures and long-term vacancies, ultimately destroying existing neighborhoods and leaving decaying shells in their wake." (Id. at p. 1204.) The court also discussed prior case law that addressed the potential for large retail projects to cause "physical deterioration of [a] downtown area" or "a general deterioration of [a] downtown area." (Id. at pp. 1206, 1207). The Bakersfield court also described the circumstances in which the duty to address urban decay issues arise.

Accordingly, there are two pertinent questions to be asked with regard to the effects of the proposed project in terms of this economic impact and urban decay analysis: 1) would the proposed new retail uses result in sales losses that are sufficiently large at existing retail establishments to force some to close; and 2) would the affected closed stores stay idle long enough to create physical changes that could be defined as urban decay?

While the measurement of urban decay is not strictly defined under CEQA, this analysis assumes that the term describes significant deterioration of existing structures and/or their surroundings. This is based upon the premise that such deterioration occurs when property owners reduce property maintenance activities below that required to keep such properties in good condition. It assumes that property owners make rational economic decisions about maintaining their property and are likely to make reductions in maintenance activities only under conditions where they see little likelihood of future positive returns from such expenditures. Where vacancy rates are low or growth rates are high, property owners are likely to see the prospect of keeping properties leased-up at favorable rents. Where vacancy rates are high and persistent, and growth rates are low, property owners are more likely to have a pessimistic view of the future and be prone to reducing property maintenance as a way to reduce costs.

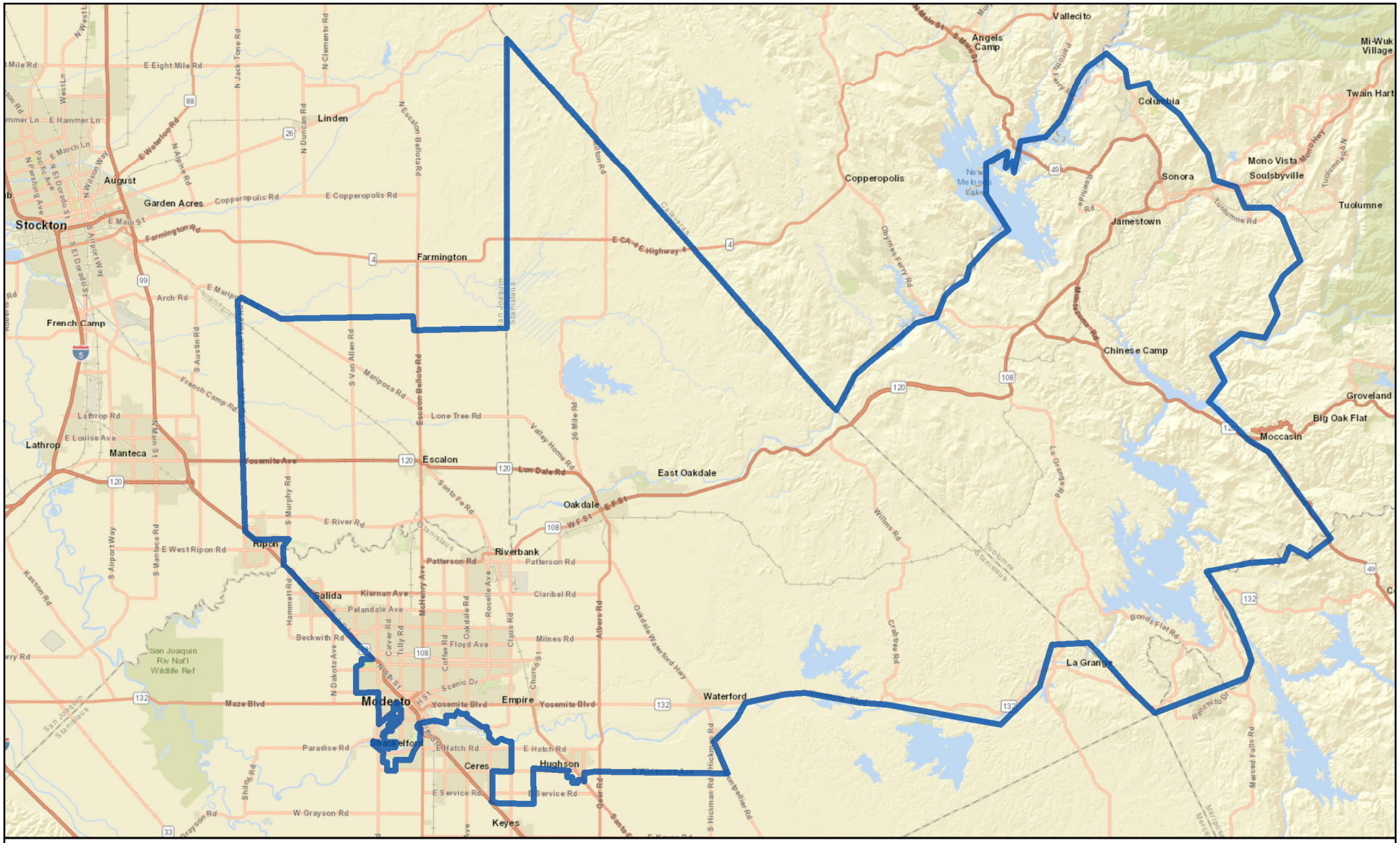
However, whether or not conditions in between those discussed above (i.e. moderate vacancy levels that persist for a few years) are likely to lead to "urban decay" depends on many factors including the growth prospects of the market area, the future state of the national and local economy, financial strength of existing tenants and landlords, and the profitability and viability of existing commercial centers.

This section describes the existing retail trade and household demographics in the region, describes the applicable land use regulations, and evaluates the environmental effects of implementation of the proposed Project related to urban decay. Information in this section is based on information provided in the Project materials and the following reference documents: *Riverbank Crossroads West Specific Plan Urban Decay Analysis* (Applied Development Economics, Inc., 2018), *City of Riverbank General Plan 2005-2025* (City of Riverbank, 2009), and the *City of Riverbank Draft Environmental Impact Report for the 2005-2025 General Plan Update* (City of Riverbank, 2008). There were no comments received during the NOP scoping process related to this environmental topic.

3.15.1 ENVIRONMENTAL SETTING

REGIONAL TRADE AREA

Figure 3.15-1 shows the regional market trade area in which the proposed shopping center is located. The primary market area within the regional market trade area is the City of Riverbank. The secondary market comprises the cities, unincorporated places, and census block groups outside of the City of Riverbank and within the indicated boundary.



CROSSROADS WEST SPECIFIC PLAN

Figure 3.15-1. Regional Market Trade Area

Legend

Regional Market Trade Area

N

0 2½ 5

Miles

1:400,000

De Novo Planning Group

A Land Use Planning, Design, and Environmental Firm

Source: Applied Develelopment Economics, Inc. Map date: February 3, 2018.

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The northern and southern boundaries of the regional market trade area were delineated by Applied Development Economics (ADE) with the cities of Escalon and Valley Home, to the north, and Modesto, to the south. Census block groups around Escalon and Valley Home are included in the market area on the theory that residents in these places who are employed in Modesto (and points south of Modesto) will commute along roads that bring them close to Riverbank. One very large Stanislaus County Census block group (block group 2 of Census tract 1.01) near unincorporated Valley Home contributes to the non-uniform shape of the regional market trade area. Salida and Ripon to the west of Riverbank are not included in the trade area on the assumption that residents there have an abundance of easily-accessible regional shopping destination to choose from, including in Manteca to the north or the various Modesto destinations along SR 99. For the same reason, cities, unincorporated areas, and census block groups west and south of Modesto are also excluded from the regional market trade area. Waterford and Hickman to the southeast of the project area are included given the roads connecting these places with Oakdale, which allows Riverbank to compete for traffic on the Oakdale-to-Waterford-Hickman corridor.[1]

HOUSEHOLD DEMOGRAPHICS

The household demographics for the primary market area and secondary market area for the Plan Area are discussed in detail below.

Primary Market Area Demographics

According to the most current demographic data from the U.S. Census American Community Survey (ACS), there are 7,041 households in the City of Riverbank with an average household income of around $69,800. This information is shown in Table 3.15-1.

Riverbank has a total of 7,041 households. Of the 7,041 households, an estimated 2,888 Riverbank households (capture rate of about 41 percent) would potentially support the proposed retail commercial uses. Potential spending is based on the 41 percent capture rate, rather than the total of 7,041 households.

[1] Additional market support could potentially come from the communities well east of Oakdale outside of the secondary market area, and up into Tuolumne County (including Sonora and Twain Harte). Those communities would increase the household count in the secondary market area by 1.4 percent. Assuming a market capture rate consistent with the secondary market area, this would potentially increase the available retail spending in Riverbank by about $3.16 million.

TABLE 3.15-1: PRIMARY MARKET AREA HOUSEHOLDS BY INCOME GROUP: TOTAL HOUSEHOLDS AND WEIGHTED HOUSEHOLD CAPTURE

	PRIMARY MARKET AREA: RIVERBANK					
	ALL HOUSEHOLDS			*HOUSEHOLDS AFTER GRAVITY MODEL*		
	ALL	*HOMEOWNERS*	*RENTERS*	*ALL*	*HOMEOWNERS*	*RENTERS*
Total	*7,041*	*4,848*	*2,193*	2,888	1,989	899
Less than $10,000	228	79	149	93	32	61
$10,000 to $14,999	305	119	186	125	49	76
$15,000 to $19,999	331	130	201	135	53	82
$20,000 to $24,999	342	173	169	140	71	69
$25,000 to $29,999	273	138	135	112	57	55
$30,000 to $34,999	439	222	217	180	91	89
$35,000 to $39,999	438	272	166	180	112	68
$40,000 to $44,999	261	162	99	107	66	41
$45,000 to $49,999	332	206	126	137	85	52
$50,000 to $59,999	570	432	138	234	177	57
$60,000 to $74,999	1,018	771	247	417	316	101
$75,000 to $99,999	960	836	124	394	343	51
$100,000 to $124,999	811	661	150	333	271	62
$125,000 to $149,999	241	197	44	99	81	18
$150,000 to $199,999	321	294	27	132	121	11
$200,000 or more	171	156	15	70	64	6
Avg. Income	*$69,814*	*$80,080*	*$47,120*	$69,812	$80,080	$47,094

SOURCE: ADE, INC.; DATA FROM US CENSUS ACS 5-YEAR 2011-2015 SAMPLE

Secondary Market Area Demographics

In addition to the primary market area, the proposed retail commercial uses would potentially attract customers from a secondary market area. See Table 3.15-2.

The estimated number of households in Riverbank (and the surrounding secondary market) expected to shop frequently is based on data presented by the City of Riverbank, using data collected from the existing Crossroads Shopping Center. The data on current Crossroads Shopping Center shoppers found that approximately 28 percent of all sales generated by stores at the Crossroads Shopping Center come from shoppers who reside in Riverbank. The analysis applied the 28 percent factor against expected sales generated by the proposed Project to obtain a discrete amount of future sales attributable to Riverbank households alone. This estimate was further compared to the future sales amount against total retail sales generated by all households in Riverbank. Thus, if 28 percent of the existing Crossroads Shopping Center's sales come from Riverbank, then 41 percent of Riverbank households will shop regularly at the proposed shopping center.

TABLE 3.15-2: SECONDARY MARKET AREA HOUSEHOLDS BY INCOME GROUP: TOTAL HOUSEHOLDS AND WEIGHTED HOUSEHOLD CAPTURE

	SECONDARY MARKET AREA					
	ALL HOUSEHOLDS			*HOUSEHOLDS AFTER GRAVITY MODEL*		
	ALL	*HOMEOWNERS*	*RENTERS*	*ALL*	*HOMEOWNERS*	*RENTERS*
Total	116,950	69,515	47,435	14,179	9,275	4,905
Less than $10,000	6,952	2,195	4,757	723	312	411
$10,000 to $14,999	7,396	2,302	5,094	695	220	474
$15,000 to $19,999	6,344	2,304	4,041	681	292	389
$20,000 to $24,999	5,631	2,485	3,146	636	315	321
$25,000 to $29,999	6,477	2,693	3,784	747	342	405
$30,000 to $34,999	6,635	2,733	3,902	792	345	447
$35,000 to $39,999	5,692	2,966	2,726	671	386	285
$40,000 to $44,999	6,007	3,130	2,877	656	375	281
$45,000 to $49,999	4,814	2,527	2,286	518	291	227
$50,000 to $59,999	9,758	6,358	3,400	1,156	790	366
$60,000 to $74,999	11,463	7,508	3,956	1,410	992	417
$75,000 to $99,999	14,356	10,568	3,788	1,925	1,551	373
$100,000 to $124,999	8,786	7,290	1,496	1,359	1,141	218
$125,000 to $149,999	6,058	5,022	1,036	777	641	137
$150,000 to $199,999	5,691	5,089	602	804	719	86
$200,000 or more	4,891	4,345	546	629	563	66
Avg. Income	$71,267	$87,563	$47,387	$73,110	$87,191	$46,482

SOURCE: ADE, INC.; DATA FROM US CENSUS ACS 5-YEAR 2011-2015 SAMPLE

In addition to Riverbank-related sales data, the City of Riverbank also shared that approximately 39 percent of sales at the existing Crossroads Shopping Center come from residents of Modesto, particularly the northern, northeast, and eastern portions of Modesto. In addition, about 33 percent of shoppers come from an expansive area that includes Escalon to the north, Oakdale and East Oakdale to the northeast, and the areas east of Riverbank that stretch from the far east foothills of Stanislaus County to the unincorporated areas in Tuolumne County up to (and including) the Town of Sonora. The analysis determined that, if 39 percent of store sales come from shoppers in northern, northeast, and eastern Modesto, then almost 13 percent of the households in these parts of Modesto will shop regularly at the proposed shopping center. Similarly, the 33 percent Escalon-to-Oakdale-to-Sonora sales figure indicates that 17 percent of households in this broad area would be expected to shop regularly at the proposed shopping center. ADE applied the 13 percent and 17 percent secondary market household spending capture rates to the cities. These capture rates correspond to the block groups immediately surrounding these cities and towns that are also in the secondary markets.

In total, there are currently 116,950 households in the secondary market area, with an average household income of $71,267. Of the total of 116,950 households in the secondary market area, ADE estimates that 14,179 households will shop regularly at the proposed Project (capture rate of 12 percent), with an average household income of over $73,100.

Altogether, the equivalent of 17,067 households make up the primary and secondary market support for the proposed retail commercial uses (see Table 3.15-3). The retail spending equivalent of 14,179 households would come from the secondary market.

TABLE 3.15-3: ESTIMATED HOUSEHOLD SPENDING SUPPORT FOR CWSP: PRIMARY AND SECONDARY MARKETS

	HOUSEHOLDS AFTER GRAVITY MODEL		
	ALL	*PRIMARY*	*SECONDARY*
Total	17,067	2,888	14,179
Less than $10,000	816	93	723
$10,000 to $14,999	820	125	695
$15,000 to $19,999	816	135	681
$20,000 to $24,999	776	140	636
$25,000 to $29,999	859	112	747
$30,000 to $34,999	972	180	792
$35,000 to $39,999	851	180	671
$40,000 to $44,999	763	107	656
$45,000 to $49,999	655	137	518
$50,000 to $59,999	1,390	234	1,156
$60,000 to $74,999	1,827	417	1,410
$75,000 to $99,999	2,319	394	1,925
$100,000 to $124,999	1,692	333	1,359
$125,000 to $149,999	876	99	777
$150,000 to $199,999	936	132	804
$200,000 or more	699	70	629

SOURCE: ADE, INC.; DATA FROM US CENSUS ACS 5-YEAR SAMPLE 2011-2015

HOUSEHOLD SPENDING

Household spending represents the demand side of the retail leakage calculation. The local retail demand for Riverbank includes household spending from Riverbank households, as well as secondary market area shoppers coming to Riverbank from surrounding communities such as Oakdale, Escalon, and north Modesto.

The household spending calculation comes from ADE's retail demand model, which estimates merchandise line spending as a percentage of household income, and distributes the merchandise line spending into demand by store type for over 50 different retail categories. Because the potential retail tenants for the proposed retail commercial uses are unknown, the retail demand was estimated at a more aggregated level. In addition, household spending patterns vary by income group, so the retail demand model calculates the household spending separately for each of the income groups shown in Tables 3.15-1 and 3.15-2, and then combines them into a composite household spending total for Riverbank and for the secondary market area shown in Table 3.15-3.

Because the level of household spending support included in the demand calculation is weighted using a gravity model, the analysis accounts for a portion of retail spending by Riverbank households leaving the City. For Riverbank, the model calculates that about 41 percent of the household retail spending can be captured by Riverbank stores.

The results from retail demand model are shown in Table 3.15-4.

TABLE 3.15-4: RIVERBANK AND SECONDARY MARKET HOUSEHOLD RETAIL SPENDING UNDER EXISTING CONDITIONS

RETAIL GROUP	RIVERBANK WEIGHTED HOUSEHOLD SPENDING	SECONDARY AREA WEIGHTED HOUSEHOLD SPENDING	TOTAL MARKET AREA HOUSEHOLD SPENDING
Total (Existing Conditions)	**$54,923,744**	**$271,888,562**	**$326,812,306**
Apparel Store Group	**$2,753,869**	**$13,798,693**	**$16,552,562**
General Merchandise Group	**$9,885,276**	**$48,763,835**	**$58,649,111**
Specialty Retail Group	**$2,651,361**	**$13,102,409**	**$15,753,771**
Food, Eating, and Drinking Group	**$19,262,534**	**$94,851,104**	**$114,113,638**
Grocery and Specialty Food Stores	$8,898,384	$43,657,783	$52,556,168
Liquor Stores	$416,764	$2,063,190	$2,479,954
Restaurants and Other Eating Places	$9,947,386	$49,130,130	$59,077,516
Building Materials and Home-furnishings Group	**$3,712,247**	**$18,351,678**	**$22,063,925**
Furniture, Appliances, Electronics	$1,951,513	$9,668,029	$11,619,542
Building Materials and Home Improvement	$1,760,734	$8,683,648	$10,444,382
Automotive Group	**$16,658,456**	**$83,020,844**	**$99,679,300**
New and Used Vehicles	$9,734,459	$48,843,002	$58,577,461
Gasoline Service Stations	$6,591,033	$32,536,308	$39,127,342
Auto Parts and Accessories	$332,963	$1,641,534	$1,974,497

NOTES: HOUSEHOLD SPENDING TOTALS ARE WEIGHTED BASED ON GRAVITY MODELING, AND REPRESENT HOUSEHOLD DEMAND TARGETED TO RIVERBANK.
SOURCE: ADE, INC.; RETAIL DEMAND MODEL DERIVED FROM US ECONOMIC CENSUS AND BUREAU OF LABOR STATISTICS CONSUMER EXPENDITURE SURVEY DATA.

The results indicate that Riverbank households can support approximately $54.9 million of overall retail spending in Riverbank. In addition, Riverbank can attract approximately $271.9 million in spending from outside of the City. Combined, the total household retail demand for Riverbank is about $326.8 million.

The largest retail spending categories are general merchandise, grocery stores, restaurants, vehicle dealerships, and gasoline service stations.

RETAIL SALES AND LEAKAGE

Household spending represents the demand side of the retail leakage calculation. The local retail demand for Riverbank includes household spending from Riverbank households, as well as secondary market area shoppers coming to Riverbank from surrounding communities such as Del Rio, Oakdale, Escalon, and north Modesto.

Based on sales tax data provided by the City of Riverbank, retail stores and restaurants in Riverbank generated total sales of about $307.8 million in 2016, as shown in Table 3.15-5. This includes an estimate of both taxable and non-taxable items. Compared to the supportable market area household demand of $326.8 million, this means that Riverbank retailers have a net leakage of only about $19.0 million in unmet demand. On balance, Riverbank's retail market is performing about as expected, with significant capture from surrounding communities. The actual leakage

varies by individual store type. However, the overall net leakage serves as the best indicator for potential economic impacts at this time, given the lack of details about the tenant mix for the proposed future commercial uses.

TABLE 3.15-5: RIVERBANK MARKET AREA NET RETAIL LEAKAGE

TOTAL MARKET AREA HOUSEHOLD SPENDING	RIVERBANK RETAIL SALES	NET LEAKAGE
$326,812,306	$307,789,323	$19,022,984

NOTES: HOUSEHOLD SPENDING TOTALS ARE WEIGHTED BASED ON GRAVITY MODELING, AND REPRESENT HOUSEHOLD DEMAND TARGETED TO RIVERBANK. RIVERBANK RETAIL SALES IS DERIVED FROM TAXABLE SALES DATA, AND INCLUDES AN ADJUSTMENT TO ACCOUNT FOR NONTAXABLE ITEM SALES.
SOURCE: ADE, INC.; DATA FROM CALIFORNIA BOARD OF EQUALIZATION AND MUNISERVICES; RETAIL DEMAND MODEL DERIVED FROM US ECONOMIC CENSUS AND BUREAU OF LABOR STATISTICS CONSUMER EXPENDITURE SURVEY DATA.

As shown in Table 3.15-6, the largest sources of retail sales in Riverbank are general merchandise, grocery stores, restaurants, building materials/home improvement, and gas stations. Even though Riverbank's retail supply and demand are roughly balanced when looking at the overall market, there are numerous imbalances between supply and demand when accounting for the categorical details.

TABLE 3.15-6: RIVERBANK MARKET AREA SALES LEAKAGE AND NET CAPTURE OF REGIONAL SALES BY RETAIL GROUP

RETAIL GROUP	TOTAL MARKET AREA HOUSEHOLD SPENDING	RIVERBANK RETAIL SALES	SALES LEAKAGES	NET CAPTURE OF REGIONAL SALES
Apparel Store Group	**$16,552,562**	**$5,020,076**	**$11,532,486**	**$0**
General Merchandise Group	**$58,649,111**	**$67,484,897**	**$0**	**$8,835,786**
Specialty Retail Group	**$15,753,771**	**$22,581,193**	**$0**	**$6,827,422**
Food, Eating, and Drinking Group	**$114,113,638**	**$90,432,514**	**$23,681,123**	**$0**
Grocery and Specialty Food Stores	$52,556,168	$48,325,977	$4,230,190	$0
Liquor Stores	$2,479,954	$3,140,479	$0	$660,525
Restaurants and Other Eating Places	$59,077,516	$38,966,058	$20,111,458	$0
Building Materials and Home-furnishings Group	**$22,063,925**	**$80,221,506**	**$0**	**$58,157,581**
Furniture, Appliances, Electronics	$11,619,542	$22,016,802	$0	$10,397,259
Building Materials and Home Improvement	$10,444,382	$58,204,704	$0	$47,760,322
Automotive Group	**$99,679,300**	**$42,049,136**	**$57,630,163**	**$0**
New and Used Vehicles	$58,577,461	$4,696,070	$53,881,391	$0
Gasoline Service Stations	$39,127,342	$29,892,110	$9,235,231	$0
Auto Parts and Accessories	$1,974,497	$7,460,956	$0	$5,486,459

NOTES: HOUSEHOLD SPENDING TOTALS ARE WEIGHTED BASED ON GRAVITY MODELING, AND REPRESENT HOUSEHOLD DEMAND TARGETED TO RIVERBANK. RIVERBANK RETAIL SALES IS DERIVED FROM TAXABLE SALES DATA, AND INCLUDES AN ADJUSTMENT TO ACCOUNT FOR NONTAXABLE ITEM SALES.
SOURCE: ADE, INC.; DATA FROM CALIFORNIA BOARD OF EQUALIZATION AND MUNISERVICES; RETAIL DEMAND MODEL DERIVED FROM US ECONOMIC CENSUS AND BUREAU OF LABOR STATISTICS CONSUMER EXPENDITURE SURVEY DATA.

Net Capture of Regional Sales

Riverbank has a net capture of regional sales in some key retail categories. This results when the store sales exceed the expected household demand. The largest net capture in Riverbank occurred in the building materials and home furnishings store group. With furniture, appliance, electronics stores, and home improvement and building materials stores, the store sales are often skewed

higher in areas with a lot of new residential development activity, which would describe Riverbank. In addition, the large net capture of regional sales in the building materials and home improvement category could reflect high demand from business-to-business and contractor sales, which is also typical in areas with high rates of residential development growth.

Other store categories with net capture of regional sales include general merchandise stores, specialty retail, liquor stores, and auto parts stores.

Retail Leakage by Category

In general, Riverbank's largest existing sources of retail leakage come from restaurants, vehicle dealerships, and apparel stores. In particular, Riverbank's lack of new car dealerships is by far the City's largest source of unmet consumer demand. Apparel stores also have a comparatively large unmet demand, when comparing the sales with the unmet demand as a ratio.

The unmet demand for restaurants in Riverbank could reflect higher capture rates in the surrounding communities by local restaurants operating out in the secondary market area. This could also reflect restaurant segments that are not currently served in Riverbank.

COMPETITIVE SHOPPING AREAS IN REGIONAL MARKET TRADE AREA

This section summarizes the state of shopping areas that the Project would potentially compete with. These competing centers comprised the type of retail that is typically the object of urban decay analyses (i.e., foot-traffic generating retail that tends to anchor shopping areas, such as supermarkets and general merchandise stores). The analysis examined five areas in Modesto, two in Riverbank, and areas in Oakdale and Escalon.

Modesto - McHenry Avenue (Between Pelandale and Briggsmore)

Within the McHenry Avenue shopping area between Pelandale and Briggsmore Avenues, there are two sub-areas with foot-traffic generating uses. The sub-area on McHenry Avenue between Pelandale and Standiford includes a Super Walmart, a shopping center called the Promenade Shopping Center, Target, and another shopping center anchored by Marshalls. All of these stores and shopping centers are in fairly good shape, in terms of their respective built environments. The Promenade center has a breadth of parking, easy access to and from the street, and a pleasant visual-appeal of these shopping centers and stores, all of which contribute to a shopping sub-area that appears to be performing well.

To underscore how well this area is performing, the Promenade Shopping Center still has a Barnes & Noble book store, many of which across North America have shuttered in recent years. A prominent corner space (1,980 square feet [sf]) is vacant at the Promenade. But, given how well-maintained this center is and the presence of traffic-generating uses such as Barnes & Noble, Ross, and Starbucks, there is no reasons to believe that the space will remain vacant indefinitely.

Across from the Promenade Shopping Center is the Target Store on the west side of McHenry and a shopping center called Marshalls Plaza (68,000 sf) on the southeast side of the McHenry

Avenue/Standiford Avenue intersection. The built environment of this center is also well-maintained: the Marshalls Plaza has plenty of parking, easy-access to either Standiford Avenue or McHenry Avenue, much foliage and mini-green areas in the parking lot, and is visually-pleasing in terms of design and paint. Currently there are five vacancies at the Plaza for a total of 9,000 available sf.

The second sub-area within the McHenry Avenue from Pelandale Avenue to Briggsmore Avenue stretches from Woodrow Avenue to Briggsmore Avenue. Northgate Village is the first shopping center if one is driving southward on McHenry Avenue toward Briggsmore Avenue. While this center has five vacancies (7,400 sf), this shopping center primarily has local-serving uses, such as dental and other health offices, beauty salons, and banks. The center is within close proximity to Target, Ross, Marshalls and Barnes and Noble to the immediate north, and Hobby Lobby to the south. There is also a Footlocker and a Play It Again Sports across the street from Hobby Lobby.

The shopping center south of Hobby Lobby at 2401 McHenry Avenue will soon have one major vacancy. The 30,800 sf Furniture Outlet will soon close, leaving the 66,200 sf center almost half empty. Other occupants include Party City, Goodwill, a 99 Cent Store, and Dollar Tree. While 2401 McHenry appears to be occupied by lower-rent uses, the sub-area itself is not lower-rent, as the next block to the south of 2401 McHenry is a well-maintained shopping center anchored by Safeway and Burlington Coat Factory. Like other centers on McHenry Avenue, 2401 McHenry Avenue has ample parking and a built environment that is relatively well-maintained, meaning that even as it weathers its current vacancies and struggles with lower-rent uses, center owners have still been able to maintain the facilities.

Modesto - McHenry Avenue (Between Briggsmore Avenue and Needham Street)

The primary commercial spots in the McHenry Avenue corridor stretching from Briggsmore Avenue to Needham are at the southeast and southwest corners of the McHenry Avenue and Briggsmore Avenue intersection. Sprouts Farmers Market recently opened in McHenry Village near McHenry Avenue and Briggsmore Avenue. This is a good sign for the commercial prospects of the area because Sprouts typically locates in areas with disposable income. See's Candy also operates at the same center as Sprouts. Beyond the Briggsmore/McHenry intersection travelling south on McHenry, a number of thrift and antique stores operate in this portion of McHenry Avenue, as do a number of auto-related uses. Traffic-generating uses in the area include Walgreen, a Walmart, CVS, Rite Aid, and Sprouts. Other than these stores, this part of McHenry Avenue does not have as much foot-traffic generating uses as the portion of McHenry between Pelandale Avenue and Briggsmore Avenue.

Downtown Modesto

While downtown Modesto has approximately 114 establishments, only one of these establishments is a traffic-generating retail use, a Smart & Final store, with the remainder of the business as restaurants, drinking places, and specialty retail establishments.

Modesto (SR 99 Corridor) - Costco, Target, Best Buy, and Vintage Faire Mall

Retailers along SR 99 from Pelandale Avenue to Standiford Avenue draw customers from throughout Stanislaus County, as well as from San Joaquin County. This stretch of SR 99 boasts major retailers, from large-format general merchandise stores, such as Costco and Target, to specialty retail shops, such as Pier 1 Imports and Cost Plus. Electronics stores such as Apple and Best Buy also attract shoppers from throughout the region, as do quality retail establishment such as Macy's and Coach.

Retailers in this corridor are known for their differentiated goods, which vary significantly from one retailer to the next (e.g., branded items), are new to consumers (e.g., electronic goods), or specialty items (e.g., fine handbags or jewelry).[2] Retailers here also sell comparison and common good items. While this corridor is known as Stanislaus County's center of differentiated goods, retailers here are not immune from the larger changes underway in retail. While Macy's and Sears' national headquarters did not place their Modesto stores on their respective closure lists, the possibility is still worrisome. Aside from these broader challenges, the built environments of shopping areas along this corridor are well-maintained, and have amenities needed to compete over the long haul, such as parking and proximity and access to major roads.

Modesto (SR 99 Corridor) - Kohls, Walmart, and Grocery Outlet

The shops in this area tend to sell comparison and common good items, unlike the wealth of differentiated products sold at retailers on the other part of the Modesto SR 99 retail corridor. Walmart and Kohls at the Central Valley Plaza, and Grocery Outlet and Sears Outlet at the Briggsmore Plaza, are key retailers here. Stores here are relatively well-maintained, have ample parking, and easy access to the freeway. However, Town and Country Square behind the Starbucks suggests that while re-tenanting has occurred, a few of the new tenants at this location are atypical for a shopping center close to a highway. Town and Country has a shooting range, a bible store, and an auto insurance store, indicating that owners have had to reach beyond conventional retail businesses to fill their spaces. It is important to note that Town and Country Square is not programmed for traffic generating retail uses that are typically the object of urban decay analyses. Owners of the Briggsmore Plaza also went outside of conventional retail businesses to finding tenants to occupy prime spots, with a gym occupying a space vacated due to

[2] Hodson, Perrigo, and Hardman, "2017 Retail Trends" (Price Waterhouse and Coopers). Available: <http://bit.ly/2vkgFoU>.

the demise of Sports Authority. Another shopping center in this area - Sills Plaza - is anchored by Food Maxx, Office Depot, and CVS.

Riverbank - Oakdale and Patterson Roads and Downtown

There is a relatively new shopping center at the Oakdale Road and Patterson Road intersection that is anchored by CVS and Dollar Tree. This center is well-maintained and includes plentiful parking. Across the street is another shopping center anchored by O'Brien's Supermarket. While this center is well-maintained and has plentiful parking, tenants occupying this center include a lot of non-retail uses such as nail salons, mail drop services, and travel agents.

Riverbank's historic downtown has attracted significant place-making public investment in the form of mini pocket-parks, and street and sidewalk beautification projects. However, the presence of the vacant and boarded-up Del Rio Restaurant signals that much work still needs to be done. The retail area between Third Street and Fourth Street along Atchison Avenue also shows signs of blight. Yet, two key traffic-generating grocery stores (Fair Deal Market and Garcia's Market) in the downtown still operate in spite of competition from the Target store at Claribel Road and Oakdale Road and the CVS store at Oakdale Road and Patterson Road. Outward signs indicate that they are performing relatively well. These stores' primary customers are Spanish-speaking. While the periphery of the downtown shopping area along Atchison Street shows some blighted conditions, the downtown core is relatively well-maintained, has plentiful parking, and has an aesthetically-pleasing built-environment as a result of public and private investments.

Riverbank - Oakdale and Claribel Roads (Crossroads Shopping Center)

The Crossroads Shopping Center at the northeast corner of Oakdale Road and Claribel Road in Riverbank was built in 2005 and recently expanded. The center has several businesses that draw customers from beyond Riverbank. The center is anchored by Target and includes other major retailers such as Best Buy, Kohls and Home Depot. A Savemart supermarket is also at this site.

Oakdale - Downtown

Oakdale's major shopping area is on Route 108 (F Street) in the direction of the Oakdale-East Oakdale border, at Route 108 and Maag Avenue. There are three shopping centers there. One is anchored by Raley's and includes a Big 5 Sporting Goods store. Another is anchored by Kmart and includes a Dollar Tree. The third shopping center is anchored by Savemart and includes a Rite Aid. While the Kmart remains open, over the past year, this national chain has been shuttering stores across the United States. The Raley's center opened in 2008, and the center with Savemart and Rite Aid has recently completed substantial renovation. There is also a relatively new Dollar General Store on the western portion of Route 108 that, while a stand-alone pad, is contiguous to a strip shopping center called Randy Plaza. Randy Plaza shows signs of aging, is tenanted largely with local-serving uses, and, given the mid-block location, is somewhat difficult for shoppers to leave to get onto the heavily-trafficked Route 108.

Escalon - Downtown and Outskirts

The City of Escalon has a limited number of stores that are typically the object of urban decay analyses. There is a relatively new, well-designed shopping center anchored by a grocery store called Mar-Val's Main Street Market. Immediately next to this small shopping center is a stand-alone Dollar General. One block away from Dollar General is another discount retailer (Dollar Tree), which is also on a stand-alone pad. A Rite Aid is located on the outskirts of downtown. All stores and centers are in generally good shape in terms of their respective built environment (building design, building upkeep, availability of parking).

PROPOSED PROJECT POTENTIAL RETAIL SALES

The proposed Project would include development of two mixed use areas ("MU-1" and "MU-2"). These mixed use areas would include 387,000 to 577,000 sf of mainly retail uses.

The MU-1 area includes a total of 54.5 acres, with a minimum of 39 acres for retail commercial uses. With the proposed floor area ratio (FAR) (maximum of 0.30 FAR), the proposed retail commercial area within MU-1 would range from 360,000 to 550,000 sf. The MU-1 area could also include up to 350 dwelling units. The MU-2 area includes a total of 5.0 acres. The proposed retail commercial area within MU-2 would provide up to 27,000 sf of retail commercial uses and between 25 and 50 dwelling units.

The MU-1 area would be located at the northwest corner of Claribel Road and Oakdale Road. The MU-2 area would be located at the southwest corner of Claribel Road and Morrill Road. The existing Crossroads Shopping Center is directly across the street east of the designated MU-1 area. This existing 528,000 sf shopping center was initially built in 2005, with additional pads built in 2015. Major tenants at the Crossroads Shopping Center include a discount department store, home improvement center, electronics/appliances store, supermarket, clothing stores, restaurants, and other specialty retail stores.

Potential Project Retail Sales

Because the tenant mix for the proposed commercial development areas is not known at this point, the following analysis is based entirely on a more generic and aggregated summation of the retail market. In order to calculate potential retail sales, the analysis used an aggregated national benchmark for retail tenant productivity from CoStar, showing an average of $330 in annual sales per sf.[3]

Using this benchmark, the projected retail sales for the proposed retail uses were calculated. As shown in Table 3.15-7, the projected retails sales resulting from development of the Project range

[3] CoStar Group; "RETAIL OUTLOOK: Shopping Center Owners Brace for More Downsizing as Space Rationalization Still in Early Stages"; January 4, 2017.

from $127.7 million to $190.4 million.[4] The actual retail sales for the completed development will depend on the retail tenant mix, and whether any portion of the development will incorporate other types of uses, such as professional offices and other services. With more building area going to non-retail uses, the expected retail sales would be less. In addition, the national benchmark might differ considerably from the sales per sf that stores located in Stanislaus County and the Central Valley region can attract.

TABLE 3.15-7: PROJECTED RETAIL COMMERCIAL SALES

	LOW	*HIGH*
Retail Area (SF)	387,000	577,000
Sales Per SF	$330	$330
Projected Sales	$127,710,000	$190,410,000

SOURCE: ADE, INC.; DATA FROM COSTAR, AND DENOVO PLANNING GROUP.

REGULATORY SETTING

City of Riverbank General Plan

GOALS: ECONOMIC DEVELOPMENT

- ED-2. Strengthen Riverbank's economic base.
- ED-3. Strengthen existing industry concentrations in Riverbank and retain jobs in viable economic sectors.
- ED-5. Proactively create and maintain a positive business climate.
- ED-7. Continue to increase Riverbank's base of regional commercial uses, while addressing market opportunities with locally-oriented commercial uses.
- ED-9. Ensure that development patterns can be feasibly sustained when accounting for the fiscal benefits and costs associated with different land uses.

POLICIES: ECONOMIC DEVELOPMENT

- ED-2.1. The City of Riverbank will take a targeted approach to business attraction that focuses on industry sectors that help the City address the following priorities:
    - Attract businesses that tie into regional growth opportunities
    - Attract businesses that address local-serving and regional retail market opportunities
    - Attract uses that contribute towards a vibrant and revitalized downtown district.
- ED-2.7. The City will identify appropriate sites for new businesses and expansion of existing businesses in the following areas:
    - Identifying new development sites appropriate to particular land uses, such as commercial and industrial

[4] The $330 per SF benchmark represents a national average for publicly traded retail tenants across multiple retail categories, as observed by CoStar Group. Actual retailer productivity will vary considerably by store category and individual retail tenants.

  - Tracking vacant spaces with existing buildings
  - Identifying infill and reuse sites for new development, including potential opportunity sites for mixed use development:
- ED-3.1. The City will continue to place a priority on local business retention, with a focus on retaining those businesses that are significant sources for jobs and/or tax revenue for the City.
- ED-3.2. Business retention activities will include exploring opportunities for local business expansion. These opportunities include the following:
  - Businesses looking to expand within their existing space
  - Businesses seeking to relocate to a different location
  - Businesses that want to add an additional location
- ED-3.3. Existing industries in Riverbank and Stanislaus County will be strengthened by exploring business attraction opportunities for comparable businesses that can create supplier relationships and clustered industry activity where businesses benefit from operating in close proximity to their clients.
- ED-5.1. The City will work with the business community to continually identify areas for improvement and/or streaming in the building and development permit approval process, City operations, public input, and other processes.
- ED-5.2. The City will proactively maintain responsiveness to addressing any business climate shortcomings identified through outreach and communication with local businesses.
- ED-5.3. The City will encourage the formation of business district committees that address specific business climate issues for Riverbank as a whole, and within specific areas within the community. Where appropriate, use these committee processes to assess the potential for Business Improvement District formation.
- ED-5.4. The City will identify programs and projects that can be funded through redevelopment actions that help improve business conditions in the redevelopment project areas.
- ED-7.1. The City will continue to pursue regional retail development opportunities that would serve the growing population in Riverbank and surrounding communities.
- ED-7.2. The City will explore the potential for regional entertainment and recreational uses that would serve Riverbank residents, and attract patrons from surrounding communities and other visitors. These uses would potentially include performing arts and indoor recreational facilities.
- ED-7.3. The City will pursue locally-oriented commercial uses that are currently underserved in Riverbank, and expand upon the existing base of local-serving retail and service establishments as population increases create additional market demand.
- ED-9.1. The City will continue to take the fiscal benefits and costs for new development into account during the approval process.
- ED-9.2. The City will encourage the attraction of nonretail businesses that generate sales tax revenue.

THRESHOLDS OF SIGNIFICANCE

Under CEQA, an EIR should only consider direct and indirect physical effects of projects. Section 15064(d) of the CEQA Guidelines states that, "In evaluating the significance of the environmental effect of a project, the Lead Agency shall consider direct physical changes in the environment which is caused by and immediately related to the project." Section 15064(d)(3) further states that, "An indirect physical impact is to be considered only if that change is a reasonably foreseeable impact which may be caused by the project. A change which is speculative or unlikely to occur is not reasonably foreseeable." In addition, CEQA requires that a determination that a project may have a significant environmental effect must be based on substantial evidence (CEQA Guidelines §15064(f)).

On the secondary socioeconomic effects of projects, Section 15131(a) of the CEQA Guidelines indicates that, "Economic and social effects of a project shall not be treated as significant effects on the environment. An EIR may trace a chain of cause and effect from a proposed decision on a project through anticipated economic or social changes resulting from the project to physical changes caused in turn by the economic or social changes. The intermediate economic or social changes need not be analyzed in any detail greater than necessary to trace the chain of cause and effect. The focus of the analysis shall be on the physical changes." In other words, economic and social changes are not, in themselves, considered under CEQA to be significant effects on the environment.

Since only physical effects are to be considered under CEQA, economic and social changes resulting from a project may be considered if they in turn produce changes in the physical environment. To fully satisfy the requirements of an EIR, an economic analysis must start with the economic impacts. The analysis would then follow the causal chain to assess the likelihood of new retail space causing long-term vacancies in existing retail space and ultimately leading to urban decay and physical deterioration of existing retail centers and nodes

METHODS OF ANALYSIS

An analysis of the proposed Project's impacts depends significantly on the market demand for its uses. Vital issues to consider include: whether the market has enough excess consumer spending that a project can absorb, or if the market viability depends on taking sales away from existing local stores.

It is important to note that the retail analysis measures the proposed Project's impacts based on existing market conditions by using retail sales and household figures for 2016. The projected project impacts account for existing conditions, as well as the additional households that would be added as part of the proposed residential uses.

Accordingly, the following information only estimates the amount of new sales that the proposed retail commercial uses would potentially attract to Riverbank, and the sales that will be taken from existing stores, based solely on existing conditions. This represents the most extreme hypothetical case, and does not account for the more likely scenarios in which retail commercial development would likely phase in alongside new housing development and other regional household growth.

Methodology – Retail Demand Model

In order to estimate household demand, the analysis used ADE's proprietary retail demand model. This model estimates spending based on the differential demand characteristics by merchandise line for households of different groupings. The retail model makes merchandise line calculations for over 40 different groupings and nine different income groupings. The merchandise line calculations are then distributed into demand for over 50 different retail store categories.

On average, the relationship between household income and retail spending is not linear. Using the income group differentiation ensures that the model does not underestimate retail demand by lower income households, or overestimate retail demand by higher income households.

The retail demand model uses the Bureau of Labor Statistics Consumer Expenditure Survey and the IPUMS raw datasets from 2015 to derive the merchandise line spending by income group. The distributions by retail store type are derived from the 2012 Economic Census Source of Sales data for retail trade and for hospitality sectors.

Methodology – Household Capture Rates

While the market shed from which the proposed Project would draw customers covers a wide area, ADE does not assume that 100 hundred percent of primary and\or secondary market household spending will occur in Riverbank when calculating household demand. Household demand from the primary and secondary markets is based on a combination of information. First, the City of Riverbank provided ADE with information on where shoppers at the existing Crossroads Shopping Center tend to come from. Shoppers typically come from three general areas: 1) Riverbank; 2) North Modesto/Northeast Modesto/East Modesto; and 3) Escalon/Oakdale/East Oakdale/unincorporated eastern Stanislaus County foothills (including areas around and including the Town of Sonora in Tuolumne County). According to the City of Riverbank, approximately 28 percent of sales generated at the existing Crossroads Shopping Center come from Riverbank, with about 39 percent coming from the Modesto area. Thirty-three percent of sales come from the Escalon /Oakdale/Foothills area.

ADE converted the sales information by location into spending capture rates by location. Thus, if 28 percent of sales at the existing Crossroads Shopping Center come from Riverbank, then 41 percent of Riverbank households shop regularly at this center. Similarly, if 39 percent of sales come from Modesto, particularly North Modesto/Northeast Modesto/East Modesto, then almost 13 percent of the households in these parts of Modesto shop regularly at the existing Crossroads Shopping Center. The 33 percent Escalon/Oakdale/Foothills sales distribution means that 17 percent of households in this broad area shop regularly at the existing Crossroads Shopping Center. ADE applied these household spending capture rates to the cities and towns these capture rates correspond to, as well as to the block groups immediately surrounding these cities and towns. For areas outside of the three defined areas, ADE applies household spending capture rates based on the Huff Gravity Model, which is described below.

Methodology – Huff Gravity Model

Gravity-models are accepted in the planning field, not just in retail analysis, but also traffic modeling and planning. "The Huff model is widely regarded as the industry standard for determining the probability of a retail location to attract customers."[5] The following summary of the Huff Model is found on the website of the geographic information systems (GIS) data and tool vendor, ESRI:

- The Huff Model is a spatial interaction model that calculates gravity-based probabilities of consumers at each origin location patronizing each store in the store dataset. From these probabilities, sales potential can be calculated for each origin location based on disposable income, population, or other variables. The probability values at each origin location can optionally be used to generate probability surfaces and market areas for each store in the study area.
- ... To account for differences in the attractiveness of a store relative to other stores, a measure of store utility such as sales volume, number of products in inventory, square footage of sales floor, store parcel size, or gross leasable area is used in conjunction with the distance measure. Potential store locations can also be input into the model to determine new sales potential as well as the probabilities of consumers patronizing the new store instead of other stores.[6]

The Gravity Model "rests on the assumption that group behavior is predictable on the basis of mathematical probability because the idiosyncrasies of any one individual or small group tend to be canceled out."[7] The underlying principle is analogous to Isaac Newton's theory of gravitational attraction in that "interaction between two areas of population is a direct function of the size of the masses and an inverse function of the distance between them"[8] Below is one expression of the Huff Gravity Model equation.

$$\text{probability formula} = P_{1,2,3,n} = \frac{(a_{weight1} / d^2{}_1)}{\text{divided by}\ \text{sum}(a_{weight1,2,3,n} / d^2{}_{1,2,3,n})}$$

$a_{weight1}$ = aggregate retail jobs of place "a_1" d_1 = distance between place "a_1" and Rvrbnk

$a_{weight2}$ = aggregate retail jobs of place "a_2" d_2 = distance between place "a_2" and Rvrbnk

$a_{weight3}$ = aggregate retail jobs of place "a_3" d_3 = distance between place "a_3" and Rvrbnk

$a_{weightn}$ = aggregate retail jobs of place "a_n" d_n = distance between place "a_n" and Rvrbnk

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[5] Anderson, Volker and Phillips "Converse's Breaking-Point Model Revised" (02/19/09) (http://www.aabri.com/manuscripts/09219.pdf)

[6] https://www.arcgis.com/home/item.html?id=f4769668fc3f486a992955ce55caca18

[7] Huff, D.L. (1962) "A Probabilistic Analysis of Consumer Spatial Behavior" in W.S. Decker (Ed.), Emerging concepts in Marketing, Chicago: American Marketing Association.

[8] Mason, J. Barry (1975), "Retail Market Area Shape and Structure: Problems and Prospects", in Schlinger, Mary Jane (Ed.), Advances in Consumer Research Volume 02: Association for Consumer Research, pages 173 – 186.

The Huff Gravity Model is a tool by which analysts can answer the following question in a quantitative manner: what is the probability that a household in, say Escalon, will shop at the proposed Project given the amount of retail at the proposed site and the distance of that site from Escalon, and further given other shopping areas within the regional market trade area and the distance of each of these other areas to Escalon? All things being equal, households will tend to shop at stores and shopping areas that are closest to them, unless shopping areas further away provide a selection of stores and goods not available nearby. Thus, ADE performed over 40 separate gravity model calculations for various cities, unincorporated areas and census block groups in the regional trade area, with each individual calculation determining the likelihood that a household will shop in 16 different shopping areas, including the proposed Project.

For Riverbank as a whole, ADE estimates that 41 percent of the households will shop regularly at the proposed Project.

Huff Gravity Model and Distribution of Impacts: In addition to using the model to determine from where households will come to shop at the proposed Project, the Huff Gravity Model distributes impacts stemming from the Project. The results of this model are shown in Table 3.15-8.

TABLE 3.15-8: DISTRIBUTION OF IMPACTS ON EXISTING BUSINESSES STEMMING FROM PROPOSED PROJECT

	DISTANCE TO PLAN AREA (MILES)	*IMPACT DISTRIBUTION*
Riverbank	2.1	28.0%
Escalon	6.0	7.9%
Oakdale	6.4	24.2%
East Oakdale	7.8	0.8%
Modesto: McHenry	7.5	5.1%
Modesto: Super Walmart/Target	5.9	18.9%
Modesto: Downtown	9.5	1.7%
Modesto: Hwy 99 Costco-Target-Vintage	10.4	11.0%
Modesto: Hwy 99 Walmart/Kohls	13.9	2.2%
Waterford	13.4	0.2%
Hughson	14.1	0.1%
		100.0%

SOURCE: ADE, INC.

The closest competitive shopping area to the proposed Project is in Riverbank itself, resulting in an estimate that 28.0 percent of the total impacts generated by the Project would fall on existing Riverbank retailers.

Distribution of Impacts Based on Crossroads Shopping Center Share and Huff Gravity Model: In addition to using the gravity model and actual Crossroads Shopping Center market share data to determine from where households will come, ADE used these inputs to distribute impacts stemming from the Project. According to the data provided by the City of Riverbank, approximately 28 percent of all sales generated by stores at the Crossroads Shopping Center come from Riverbank. Thus, if the proposed Project generates $86.4 million in sales, then it is estimated that 28 percent of sales would also come from Riverbank, resulting in an aggregate impact to

current Riverbank stores of an estimated $24.2 million (since $24.2 million is 28 percent of $86.4 million).

In the case of impacts to Modesto retailers, the information provided by the City of Riverbank indicates that 39 percent of current sales come from North Modesto, Northeast Modesto, and East Modesto. As there are a number of Modesto-based shopping centers that will compete with the proposed Project for household spending from North Modesto, Northeast Modesto, and east Modesto households, ADE distributed the 39 percent impact across the various Modesto shopping centers by combining the overall 39 percent impact figure provided by the City of Riverbank with the shopping center-specific gravity model impact calculation.

For example, using the City of Riverbank estimate of 39 percent rate, if the proposed retail center generates $86.4 million in annual sales (at a minimum), then $33.5 million would come from households in North Modesto, Northeast Modesto, and East Modesto. In turn, the $33.5 million represents an impact to current Modesto shopping centers, an amount that is then distributed across the various Modesto shopping centers via the gravity model percentages. As a result, of the $33.5 million in Modesto impacts, ADE estimates that the largest impact at $16.3 million would come at the expense of the Modesto shopping district on McHenry anchored by Super Walmart and Target (sales of $404,076,000) or a 3 to 4 percent impact within this shopping center. The Walmart/Kohls project on Highway 99 would be subject to an estimated $1.9 million in impacts and a 0.6 percent impact on current sales estimates of $334,331,000, which is less than the impact to the Super Walmart-Target district on McHenry because it is further away from the future Crossroads project.

IMPACTS AND MITIGATION MEASURES

Impact 3.15-1: Impacts related to the physical deterioration and urban decay of existing retail commercial development in the City of Riverbank and surrounding area. (Less than Significant)

The following discussion is based on the *Riverbank Crossroads West Specific Plan Urban Decay Analysis* completed for the Project by ADE, Inc. (January 2018) (see Appendix H).

POTENTIAL IMPACTS UNDER EXISTING CONDITION

The existing conditions scenario represents a worst-case scenario that estimates the impacts of the proposed Crossroads West Specific Plan (CWSP) retail commercial uses without any of the additional residential growth proposed in the CWSP and the supporting primary and secondary market areas described above.

Depending on the size of the retail center built at the proposed Plan Area, total sales could equal between $127.7 million and $190.4 million. As discussed previously, Riverbank currently experiences about $19.0 million in net sales leakage, which could potentially be captured by the proposed Project. This would leave a range of $108.7 million to $171.4 million to be attracted from existing retail centers in the market area or from future growth. In the Riverbank market area,

each household is estimated to spend $19,000 per year on retail goods. At this rate, the Project would need future growth of approximately 5,700 to 9,000 new housing units to avoid attracting sales from existing customers of other retail centers in the market area. The relatively small unmet retail demand for the Riverbank market area means that, if the proposed development is built under existing conditions, about $108.7 million to $171.4 million in potential impacts on existing stores would result. This is shown in Table 3.15-9.

TABLE 3.15-9: POTENTIAL ECONOMIC IMPACTS BY PROPOSED RETAIL USES UNDER EXISTING CONDITIONS

	LOW	*HIGH*
Projected Sales	$127,710,000	$190,410,000
Retail Leakage	$19,022,984	$19,022,984
Potential Impacts	$108,687,016	$171,387,016
Equivalent Housing Units	5,700 units	9,000 units

NOTES: HOUSEHOLD SPENDING TOTALS ARE WEIGHTED BASED ON GRAVITY MODELING, AND REPRESENT HOUSEHOLD DEMAND TARGETED TO RIVERBANK. RIVERBANK RETAIL SALES IS DERIVED FROM TAXABLE SALES DATA, AND INCLUDES AN ADJUSTMENT TO ACCOUNT FOR NONTAXABLE ITEM SALES.
SOURCE: ADE, INC.; DATA FROM CALIFORNIA BOARD OF EQUALIZATION AND MUNISERVICES; RETAIL DEMAND MODEL DERIVED FROM US ECONOMIC CENSUS AND BUREAU OF LABOR STATISTICS CONSUMER EXPENDITURE SURVEY DATA.

Because there is currently no timetable for development of the proposed retail commercial uses, these existing conditions impacts should be considered highly speculative, if not improbable.

In addition, because the actual retail store tenants that would comprise the proposed retail commercial uses are not known, the impact analysis can only look at the market as a whole, rather than examining potential impacts by individual store type.

GEOGRAPHIC DISTRIBUTION OF IMPACTS UNDER EXISTING CONDITION

The gravity model for distribution of impacts found that about 28.0 percent of the potential impacts from the proposed retail commercial uses would affect Riverbank retail stores. Assuming no mitigation, the worst-case scenario would range from $30.4 million to $48.0 million in sales reductions for Riverbank businesses. The gravity model also found that about 36.6 percent of the impacts would affect stores located in Modesto, resulting in potential sales reductions of $42.1 million to $66.4 million. The geographic distribution of these possible losses by shopping area within Modesto is shown in Table 3.15-10.

TABLE 3.15-10: GEOGRAPHIC DISTRIBUTION OF POTENTIAL ECONOMIC IMPACTS BY PROPOSED RETAIL USES UNDER EXISTING CONDITIONS

COMMUNITY AND SHOPPING AREA	*DISTANCE (MILES)*	*IMPACT DISTRIBUTION*	*EXISTING CONDITIONS IMPACTS (LOW)*	*EXISTING CONDITIONS IMPACTS (HIGH)*
Riverbank	2.1	28.0%	$30,432,365	$47,988,365
Escalon	6.0	7.9%	$8,619,961	$13,592,695
Oakdale	6.4	24.2%	$26,354,962	$41,558,766
East Oakdale	7.8	0.8%	$829,945	$1,308,728
Modesto: McHenry	7.5	5.1%	$5,525,866	$8,713,661
Modesto: Super Walmart/Target	5.9	18.9%	$20,491,775	$32,313,189
Modesto: Downtown	9.5	1.7%	$1,817,814	$2,866,485
Modesto: Hwy. 99 Costco-Target-Vintage	10.4	11.0%	$11,904,328	$18,771,767
Modesto: Hwy. 99 Walmart/Kohls	13.9	2.2%	$2,396,824	$3,779,517
Waterford	13.4	0.2%	$176,203	$277,852
Hughson	14.1	0.1%	$75,126	$118,465

NOTES: HOUSEHOLD SPENDING TOTALS ARE WEIGHTED BASED ON GRAVITY MODELING, AND REPRESENT HOUSEHOLD DEMAND TARGETED TO RIVERBANK. ECONOMIC IMPACTS ARE DISTRIBUTED GEOGRAPHICALLY USING GRAVITY MODELING, BASED ON PATTERNS OF RETAIL EMPLOYMENT BY BLOCK GROUP.
SALES DATA FOR THE EMPIRE AND VALLEY HOME CDPS WAS NOT AVAILABLE, SO THOSE IMPACTS WERE EXCLUDED. THE IMPACT DISTRIBUTION FOR THOSE CDPS WAS LESS THAN 0.1%.
SOURCE: ADE, INC.; DATA FROM CALIFORNIA BOARD OF EQUALIZATION AND MUNISERVICES; RETAIL DEMAND MODEL DERIVED FROM US ECONOMIC CENSUS AND BUREAU OF LABOR STATISTICS CONSUMER EXPENDITURE SURVEY DATA.

The potential for store closures resulting from these economic impacts would depend on the extent to which these economic effects are dispersed across store categories and individual businesses, and whether they are geographically concentrated.

As shown in Table 3.15-11, the impacts in Riverbank under existing conditions would result in reductions of existing sales of between 9.9 and 15.6 percent. Household growth in Riverbank over the next 10 to 12 years is projected to average 1.3 percent to 1.6 percent per year, meaning that it would take seven to 12 years for existing retail businesses to absorb this magnitude of sales loss.

In neighboring Oakdale, the business impacts would potentially result in existing sales reductions of 7.1 to 11.2 percent. With household growth projected to average 1.3 to 1.5 percent per year, this means that it would take between five and nine years for businesses to absorb the potential sales losses.

TABLE 3.15-11: GEOGRAPHIC DISTRIBUTION OF POTENTIAL ECONOMIC IMPACTS AS PERCENTAGE OF EXISTING RETAIL SALES UNDER EXISTING CONDITIONS

COMMUNITY AND SHOPPING AREA	*EXISTING SALES*	*IMPACT AS PERCENT OF SALES (LOW)*	*IMPACT AS PERCENT OF SALES (HIGH)*
Riverbank	$307,789,323	9.9%	15.6%
Escalon	$127,314,000	6.8%	10.7%
Oakdale	$371,321,000	7.1%	11.2%
East Oakdale	$27,837,000	3.0%	4.7%
Modesto: McHenry	$184,530,000	3.0%	4.7%
Modesto: Super Walmart/Target	$404,076,000	5.1%	8.0%
Modesto: Downtown	$126,068,000	1.4%	2.3%
Modesto: Hwy. 99 Costco-Target-Vintage	$791,948,000	1.5%	2.4%
Modesto: Hwy. 99 Walmart/Kohls	$334,221,000	0.7%	1.1%
Waterford	$701,527,000	0.2%	0.4%
Hughson	$157,815,000	0.0%	0.1%

NOTES: THE EXISTING RETAIL SALES FOR RIVERBANK IS BASED ON SALES TAX DATA PROVIDED BY THE CITY, AND INCLUDES AN ADJUSTMENT TO ACCOUNT FOR NONTAXABLE ITEM SALES. FOR OTHER COMMUNITIES, THE EXISTING SALES IS BASED ON DATA FROM SALESGENIE/INFOUSA.

SOURCE: ADE, INC.; DATA FROM CALIFORNIA BOARD OF EQUALIZATION AND MUNISERVICES, AND SALESGENIE/INFOUSA; RETAIL DEMAND MODEL DERIVED FROM US ECONOMIC CENSUS AND BUREAU OF LABOR STATISTICS CONSUMER EXPENDITURE SURVEY DATA.

By comparison, the economic impacts in the surrounding communities results in a much lower sales reduction as a percentage of existing retail sales. While the projected economic impact on Modesto businesses is nearly equal to the impact on Riverbank businesses, the impact as a percentage of sales is considerably lower because the shopping areas in Modesto generate much higher sales and the possible retail sales locations are distributed throughout the community.[9] Modesto is projected to grow slightly more than one percent per year over the next 15 years. The Super Walmart/Target center would require about five to eight years to recoups sales losses from the proposed Project if it were built immediately. The McHenry retail corridor would require three to five years to fully recover, while other parts of the secondary market area would only need a couple years to gain back lost sales. As noted before, any actual business impacts will greatly depend on the tenant mix and scale of development for the proposed retail commercial uses.

POTENTIAL IMPACTS UNDER CWSP BUILDOUT CONDITION

This section estimates the retail impacts that would potentially occur with full buildout of the proposed CWSP and pending regional projects like Tivoli in the City of Modesto, including the proposed retail commercial and residential uses.

Buildout of the CWSP land uses would include between 1,514 and 2,852 new dwelling units. Table 3.15-12 shows that the weighted new market demand that the proposed dwelling units would potentially bring into Riverbank represents the equivalent of 619 to 1,169 new households. The

[9] The retail sales data for communities outside of Riverbank comes from Salesgenie/InfoUSA. This database uses credit reports to develop sales information. It should be noted that the sales data for many of these businesses are broad estimates.

analysis assumes that the average household income and the income distribution of the proposed households would be equivalent to the existing condition.

TABLE 3.15-12: ESTIMATED HOUSEHOLD SPENDING SUPPORT FOR CWSP: RIVERBANK UNDER CWSP BUILDOUT

ESTIMATED HOUSEHOLD SPENDING	*ADDITIONAL RIVERBANK HOUSEHOLDS AFTER CWSP BUILDOUT (WEIGHTED BY GRAVITY MODEL)*	
	LOW GROWTH	*HIGH GROWTH*
Total	**619**	**1,169**
Less than $10,000	20	38
$10,000 to $14,999	27	51
$15,000 to $19,999	29	55
$20,000 to $24,999	30	57
$25,000 to $29,999	24	45
$30,000 to $34,999	38	73
$35,000 to $39,999	38	73
$40,000 to $44,999	23	43
$45,000 to $49,999	29	55
$50,000 to $59,999	50	95
$60,000 to $74,999	89	169
$75,000 to $99,999	84	160
$100,000 to $124,999	72	135
$125,000 to $149,999	22	40
$150,000 to $199,999	28	53
$200,000 or more	15	28

NOTE: GROWTH BASED ON CROSSROADS WEST SPECIFIC PLAN HOUSING USES AT BUILDOUT. HOUSEHOLD COUNTS WEIGHTED BASED ON GRAVITY MODELING.
SOURCE: ADE, INC.; DATA FROM US CENSUS ACS 5-YEAR SAMPLE 2011-2015.

Because the proposed CWSP includes variations in both the number of housing units and the designated retail commercial square footage, separate scenarios were calculated for low and high potential impacts. The low impact scenario assumes the highest number of built housing units (2,852 units), and the lowest retail commercial square footage (387,000 sf). The high impact scenario assumes the low number of built housing units (1,514 units), and the highest retail commercial square footage (577,000 sf).

At buildout of the CWSP, the potential retail demand from Riverbank households will increase from $54.9 million to between $67.1 million and $77.2 million (see Table 3.15-13). This has the effect of increasing the retail leakage to between $30.8 million and $41.3 million. This leakage represents unmet demand. Assuming projected sales of $127.7 million to $190.4 million, the potential impacts on existing stores would range from $86.4 million to $159.6 million at CWSP buildout. This buildout scenario does not assume any change to the secondary market area housing spending. However, as discussed below, growth in the market area will reduce the potential for business disruption by the Project.

As with the existing condition scenario, the actual retail impacts will depend on the composition of the retail tenants, how the retail commercial buildout coincides with housing development within the CWSP area, and the potential additional units within the secondary market area.

TABLE 3.15-13: POTENTIAL ECONOMIC IMPACTS BY PROPOSED RETAIL USES UNDER CWSP BUILDOUT (LOW AND HIGH IMPACT SCENARIOS)

	LOW IMPACT	*HIGH IMPACT*
Projected Sales	$127,710,000	$190,410,000
Retail Leakage	$41,302,651	$30,836,327
Potential Impacts	$86,407,349	$159,573,673

NOTE: HOUSEHOLD SPENDING TOTALS ARE WEIGHTED BASED ON GRAVITY MODELING, AND REPRESENT HOUSEHOLD DEMAND TARGETED TO RIVERBANK. RIVERBANK RETAIL SALES IS DERIVED FROM TAXABLE SALES DATA, AND INCLUDES AN ADJUSTMENT TO ACCOUNT FOR NONTAXABLE ITEM SALES.

SOURCE: ADE, INC.; DATA FROM CALIFORNIA BOARD OF EQUALIZATION AND MUNISERVICES; RETAIL DEMAND MODEL DERIVED FROM US ECONOMIC CENSUS AND BUREAU OF LABOR STATISTICS CONSUMER EXPENDITURE SURVEY DATA.

GEOGRAPHIC DISTRIBUTION OF IMPACTS UNDER CWSP BUILDOUT CONDITION

Using the same distribution of impact assumptions, the potential impacts from the proposed future retail commercial uses would potentially result in $24.2 million to $44.7 million in sales reductions for Riverbank businesses (Table 3.15-14). The gravity model also found that impacts on stores located in Modesto would result in sales reductions of $33.5 million to $61.9 million. The geographic distribution of these potential impacts by shopping area within Modesto and other surrounding areas is shown in Table 3.15-14.

TABLE 3.15-14: GEOGRAPHIC DISTRIBUTION OF POTENTIAL ECONOMIC IMPACTS BY CROSSROADS WEST RETAIL USES UNDER CWSP BUILDOUT (LOW AND HIGH IMPACT SCENARIOS)

COMMUNITY AND SHOPPING AREA	*DISTANCE (MILES)*	*IMPACT DISTRIBUTION*	*CWSP BUILDOUT IMPACTS (LOW)*	*CWSP BUILDOUT IMPACTS (HIGH)*
Riverbank	2.1	28.0%	$24,194,058	$44,680,628
Escalon	6.0	7.9%	$6,852,962	$12,655,779
Oakdale	6.4	24.2%	$20,952,479	$38,694,208
East Oakdale	7.8	0.8%	$659,815	$1,218,520
Modesto: McHenry	7.5	5.1%	$4,393,123	$8,113,046
Modesto: Super Walmart/Target	5.9	18.9%	$16,291,182	$30,085,910
Modesto: Downtown	9.5	1.7%	$1,445,182	$2,668,905
Modesto: Hwy. 99 Costco-Target-Vintage	10.4	11.0%	$9,464,069	$17,477,869
Modesto: Hwy 99 Walmart/Kohls	13.4	2.2%	$1,905,501	$3,519,003
Waterford	13.4	0.2%	$140,083	$258,701
Hughson	14.1	0.1%	$59,726	$110,299

NOTE: HOUSEHOLD SPENDING TOTALS ARE WEIGHTED BASED ON GRAVITY MODELING, AND REPRESENT HOUSEHOLD DEMAND TARGETED TO RIVERBANK. ECONOMIC IMPACTS ARE DISTRIBUTED GEOGRAPHICALLY USING GRAVITY MODELING, BASED ON PATTERNS OF RETAIL EMPLOYMENT BY BLOCK GROUP.

SALES DATA FOR THE EMPIRE AND VALLEY HOME CDPS WAS NOT AVAILABLE, SO THOSE IMPACTS WERE EXCLUDED. THE IMPACT DISTRIBUTION FOR THOSE CDPS WAS LESS THAN 0.1%.

SOURCE: ADE, INC.; DATA FROM CALIFORNIA BOARD OF EQUALIZATION AND MUNISERVICES; RETAIL DEMAND MODEL DERIVED FROM US ECONOMIC CENSUS AND BUREAU OF LABOR STATISTICS CONSUMER EXPENDITURE SURVEY DATA.

The additional housing under the proposed CWSP buildout scenario would reduce the potential for store closures resulting from these economic impacts. As with the existing condition scenario, actual store closures would depend how sales impacts are distributed by store categories and individual businesses. The impacts in Riverbank under the CWSP buildout condition would

potentially reduce existing sales by 7.9 and 14.5 percent (Table 3.15-15). The reductions in potential impacts would also considerably reduce the effect on Modesto businesses as a percentage of sales.

TABLE 3.15-15: GEOGRAPHIC DISTRIBUTION OF POTENTIAL ECONOMIC IMPACTS AS PERCENTAGE OF EXISTING RETAIL SALES UNDER CWSP BUILDOUT

COMMUNITY AND SHOPPING AREA	*EXISTING SALES*	*IMPACT AS PERCENT OF SALES (LOW IMPACT)*	*IMPACT AS PERCENT OF SALES (HIGH IMPACT)*
Riverbank	$307,789,323	7.9%	14.5%
Escalon	$127,314,000	5.4%	9.9%
Oakdale	$371,321,000	5.6%	10.4%
East Oakdale	$27,837,000	2.4%	4.4%
Modesto: McHenry	$184,530,000	2.4%	4.4%
Modesto: Super Walmart/Target	$404,076,000	4.0%	7.4%
Modesto: Downtown	$126,068,000	1.1%	2.1%
Modesto: Hwy. 99 Costco-Target-Vintage	$791,948,000	1.2%	2.2%
Modesto: Hwy. 99 Walmart/Kohls	$334,221,000	0.6%	1.1%
Waterford	$70,527,000	0.2%	0.4%
Hughson	$157,815,000	0.0%	0.1%

NOTES: THE EXISTING RETAIL SALES FOR RIVERBANK IS BASED ON SALES TAX DATA PROVIDED BY THE CITY. FOR OTHER COMMUNITIES, THE EXISTING SALES IS BASED ON DATA FROM SALESGENIE/INFOUSA.
SOURCE: ADE, INC.; DATA FROM CALIFORNIA BOARD OF EQUALIZATION AND MUNISERVICES, AND SALESGENIE/INFOUSA; RETAIL DEMAND MODEL DERIVED FROM US ECONOMIC CENSUS AND BUREAU OF LABOR STATISTICS CONSUMER EXPENDITURE SURVEY DATA.

IMPACTS OVER TIME

The lower level of residential development in the CWSP (1,514 units) would likely take approximately ten years to develop. If the project represents all the residential development in the City during that time, then the potential loss of sales for existing Riverbank businesses would be $24.2 million, as shown in Table 3.15-14. However, if other housing development also occurs, then the impacts would be lessened due to the additional growth in household retail demand.

During this time, the secondary market area household spending would also have grown by more than 10 percent, more than enough to eliminate competitive impacts from the proposed retail center.

For the higher level of residential development in the CWSP (2,852 units), the absorption period is likely to be at least 22 years. In this scenario, if development of the larger retail center (577,000 square feet) proceeds over a five to ten year period after residential development has commenced, then growth in the secondary market area would be able to maintain pace with market absorption, and the likelihood of significant sales losses from the proposed retail center would be reduced.

FUTURE GROWTH UNDER GENERAL PLAN BUILDOUT CONDITION

Based on the regional growth projections, the maximum amount of retail square footage proposed by the Project could be fully absorbed within a decade in most of the competing retail shopping

areas in and around Riverbank. While existing Riverbank stores in the interim show the highest levels of potential sales reductions, it should be noted that the configuration of the proposed retail center will likely follow the existing Crossroads Shopping Center as a regionally oriented center. Aside from the existing Crossroads Shopping Center, there are no other commercial centers in Riverbank with a similar configuration.

There is sufficient development potential in Riverbank to fully support the Project at full build out of the General Plan, which would include development of about 10,700 additional housing units, including those in the CWSP.

URBAN DECAY POTENTIAL: COMPETITIVE SHOPPING AREAS IN REGIONAL MARKET TRADE AREA

In the present context, issues of building vacancies, loss of necessary commercial facilities, and high turnover rates are all potential results of the kind of commercial transitions and changes in retail mix that the proposed Project could create. Urban decay generally results when these types of economic conditions contribute to the physical deterioration of buildings and districts, and create a causal chain effect that lead to a general decline in an area. The following discussion evaluates the potential for the proposed Project to create urban decay based on the market analysis and site visit observations of competing retail centers in Riverbank and the surrounding communities. The analysis examines the general impacts that could result in competing retail commercial areas. The urban decay potential at this juncture cannot be defined down to specific store categories because the retail commercial portion of the Project remains broadly defined and without a proposed timeline. As noted previously, the analysis examined five areas in Modesto, two in Riverbank, and areas in Oakdale and Escalon.

Modesto - McHenry Avenue (Between Pelandale and Briggsmore): Based on the site visit and data gathered from local realtors, impacts stemming from the proposed Project in Riverbank will not trigger urban decay in the part of the McHenry Avenue shopping area between Pelandale Avenue and Standiford Avenue. The sub-area between Pelandale Avenue and Standiford Avenue has centers that are well-designed and well-maintained, and are on highly-traversed roads, a point noted by commercial realtors in seeking to fill current vacancies on McHenry as retailers seeking places to locate desire proximity to high-traffic streets. In addition, the second sub-area stretching from Standiford Avenue and McHenry Avenue to Briggsmore Avenue and McHenry Avenue similarly will not experience urban decay as a result of impacts stemming from the proposed Project. While Furniture Outlet will soon close resulting in a shopping center becoming half vacant, its proximity to McHenry Avenue and foot-traffic generating stores such as Safeway, Target, and Hobby Lobby suggest this should be re-tenanted within a reasonable time-frame. Indeed, commercial realtors tout the availability of the Furniture Outlet site as a “rare” large-foot print site of interest to prospective tenants, meaning sites like this do not occur frequently on McHenry Avenue given the positive attributes of this street to retailers. Because the proposed retail commercial uses do not yet have a construction timeline, the proposed Project cannot be deemed to have caused the closure of Furniture Outlet and directly contributed to the triggering (if any) of urban decay there.

Modesto - McHenry Avenue (Between Briggsmore Avenue and Needham Street): Impacts resulting from the proposed Project will not trigger urban decay in this portion of McHenry Avenue. Aside from Sprouts Farmers Market project at Briggsmore Avenue and McHenry Avenue and the Walmart store, most uses along this portion of McHenry are not the typical retail uses that are the object of urban decay analyses. However, given that a Super Walmart store opened at the other end of McHenry Avenue, it cannot be conclusively said that the proposed Project in Riverbank caused this Walmart to close if it does eventually close. The same reasoning holds for the Walgreens, as there are two other pharmacies (CVS and Rite Aid) within the stretch of McHenry Avenue between Briggsmore and Pelandale.

Downtown Modesto: For purposes of the urban decay analysis, impacts stemming from the proposed Project on Modesto's downtown area would not in all likelihood result in urban decay as narrowly understood.

Modesto (SR 99 Corridor) - Costco, Target, Best Buy, and Vintage Fair Mall: The stretch of retail along SR 99 between Pelandale and Standiford provides a diversity of retail stores and products and in a well-designed, aesthetically-pleasing, built environment that shield it from the potential for urban decay due to impacts stemming from the proposed Project. Decisions made in corporate headquarters of chains such as Sears, Macy's, and JC Penney in response to changing ways consumers make their retail purchases will have a greater role in whether these stores remain at this part of SR 99 than impacts stemming from the proposed Project many miles away in Riverbank. Thus, it is not expected that the proposed Project will cause stores along this route to close, and in such a way as to result in urban decay.

Modesto (SR 99 Corridor) - Kohls, Walmart, and Grocery Outlet: While the proposed retail commercial uses might impact Central Valley Plaza, Briggsmore Plaza, Town and Country, and Sills Plaza, the review of the built environment (pleasant design, well-maintained buildings, plentiful parking, easy access to roads with high traffic volume) and recent re-tenanting activity indicates that impacts stemming from the Project will not result in urban decay.

Riverbank - Oakdale and Patterson Roads and Downtown: Whether the proposed Project will lead to closing of key stores, such as O'Briens Supermarket, that in turn result in urban decay is speculative. The relatively new CVS/Dollar Tree project indicates that private investors still see Oakdale Road and Patterson Road as a place to invest. The recent addition of an IMAX Movie Theater to the nearby Galaxy Movie Theater further underscores the resilience of this part of Riverbank in the face of competition, starting with the Crossroads at Riverbank development. The continued success of Garcia's Market and the Fair Deal Market illustrates that Riverbank's historic downtown is somewhat shielded by major changes in Riverbank's retail landscape, although Atchison Road shows that signs of decline that pre-date the proposed Project, as well as the Crossroads at Riverbank center. However, it is important to note that the sales absorption analysis indicates that sales losses by existing retail centers in Riverbank could range from 7.9 to 14.5 percent (Table 3.15-15), even after the residential portion of the Project is built. While Riverbank is projected to grow at more than one percent per year over the next ten to fifteen years, a number of years would be required in order for Riverbank retailers to absorb this potential sales loss from

the proposed Project unless substantial additional residential development occurs. It is not likely that existing retailers in downtown would be affected. Depending on the types of retail uses that would ultimately be developed within the CWSP area, the Project may or may not impact the ability of the City to stimulate new retail development downtown. In addition, the newer retail at Oakdale and Patterson Roads may be affected, depending on the mix of retail at the proposed commercial center.

Riverbank - Oakdale and Claribel Roads (Crossroads at Riverbank Shopping Center): The breadth of retail and other amenities in this area, and the newness of the built environment, suggest that the proposed Project is in a position to compete with the Crossroads at Riverbank Shopping Center. While the proposed retail commercial uses may impact the Crossroads at Riverbank Shopping Center, it is not expected that the Project will cause stores to close, and in such a way that results in urban decay.

Oakdale - Downtown: Decisions made in corporate headquarters of chains such as Sears/K-Mart in response to changing ways consumers make their retail purchases will have a greater role in whether this store remain in Oakdale than impacts stemming from a project such, as the Crossroads West Specific Plan, many miles away in Riverbank; however, decision-makers will most certainly be influenced to make decisions based on store-by-store performance.

While the Oakdale K-Mart location was not included in the latest round of store closures by Sears Holdings (which owns K-Mart), the parent company has shrunk from over 3,000 stores in 2006 to around 1,000 stores in 2017, with nearly 100 stores slated for closure in 2017.[10]

The proposed Project is estimated to have a sales impact in Oakdale of between 5.6 and 10.4 percent, while the Oakdale household retail demand is growing at 1.5 percent per year. These sales losses, if they occur, would be recouped in about four to seven years. At this point, it is speculative to say that the proposed Project would cause the K-Mart to shutter (and shutter in a fashion that leads to urban decay) in the near future, largely due to the close proximity of two successful general merchandise stores (Dollar General and Dollar Tree) in direct competition with K-Mart. The Dollar General down the street from K-Mart is a relatively new store, and its opening is part of a larger corporate strategy at grabbing additional share of both value-oriented and brand-conscious shopper.[11,12] The K-Mart location currently competes with the Target store in the existing Crossroads Shopping Center.

In addition, while the proposed Project might impact Savemart or Raley's, it is worth noting that whether these stores survive might have less to do with the proposed Project and more with the

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[10] Holland, John; "Sears and Kmart Announce More Store Closures as Parent Company Continues to Struggle"; Modesto Bee, January 4, 2018; http://www.modbee.com/latest-news/article193101174.html.

[11] Bhattarai, Abha; "More People Are Buying Food at Dollar General, Helping Boost the Company's Sales"; Wall Street Journal; December 7, 2017; http://archive.is/TFxuI.

[12] Nassauer, Sarah; "How Dollar General Became Rural America's Store Choice"; Wall Street Journal; December 8, 2017; http://archive.is/PvglL.

fact that Savemart and Raley's are directly across the street from each other. Given the recent substantial investment made in Savemart and the relative newness of Raley's, owners of these projects more than likely believe that Oakdale and the immediate surroundings is big enough for both of the stores.

Escalon - Downtown and Outskirts: While stores in this area might be impact by the proposed Project, there is no reason to believe impacts will lead to any closures, or closures of a nature that results in urban decay.

CONCLUSION

Based on the economic impact analysis and site visits to competing retail commercial sites, there appears to be no evidence that implementation of the proposed Project would result in urban decay in retail centers outside of Riverbank, and only a limited possibility of such impacts within Riverbank. This conclusion is based on the general descriptions of the land uses as they currently exist, prior to development proposals and more finalized distribution of businesses and square footage.

The above analysis found that, at the current general level, without other mitigations, full build out of the proposed land uses would result in sales reductions for other businesses. However, even if the sales reductions result in business closures, vacancies do not by themselves result in urban decay. The key issue is whether the market area is dynamic and growing sufficiently to stimulate demand for the vacant spaces from other businesses.

In addition, the site visits found that competing business centers in the surrounding communities are generally in good physical condition, and have visibility and access that is superior in many cases to the proposed Project site itself; in turn, these factors lessen the likelihood of prolonged vacancies leading to urban decay conditions.

It is noted that if the proposed retail center attracts a similar mix of businesses and building configurations as the existing Crossroads Shopping Center, the proposed retail center would likely function as a regionally-oriented retail center, which would limit the impacts on more locally-focused retail centers. The existing Crossroads Shopping Center draws its customers from across a large geographic area, with the largest proportion of customers coming from the northern and eastern parts of Modesto. Those areas also have the largest concentration of direct regional competition. Because the projected impacts resulting from development of the Project represent a comparatively small percentage of sales, the likelihood of urban decay from regionally-oriented competition from Riverbank is low. Therefore, impacts related to the physical deterioration and urban decay of existing retail commercial development in the City of Riverbank and surrounding area would be **less than significant**.

CEQA requires an EIR to evaluate a project's effects in relationship to broader changes occurring, or that are foreseeable to occur, in the surrounding environment. Accordingly, this chapter presents a discussion of CEQA-mandated analysis for cumulative impacts, significant irreversible effects, and significant and unavoidable impacts associated with the proposed Project.

4.1 CUMULATIVE SETTING AND IMPACT ANALYSIS

INTRODUCTION

The California Environmental Quality Act (CEQA) requires that an Environmental Impact Report (EIR) contain an assessment of the cumulative impacts that could be associated with the proposed Project. According to CEQA Guidelines Section 15130(a), "an EIR shall discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable." "Cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects (as defined by Section 15130). As defined in CEQA Guidelines Section 15355, a cumulative impact consists of an impact that is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts. A cumulative impact occurs from:

> *…the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.*

In addition, Section 15130(b) identifies that the following three elements are necessary for an adequate cumulative analysis:

1) Either:

   (A) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency; or,

   (B) A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact. Any such planning document shall be referenced and made available to the public at a location specified by the lead agency.

2) A summary of the expected environmental effects to be produced by those projects with specific reference to additional information stating where that information is available; and

3) A reasonable analysis of the cumulative impacts of the relevant projects. An EIR shall examine reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects.

Where a lead agency is examining a project with an incremental effect that is not "cumulatively considerable," a lead agency need not consider that effect significant, but shall briefly describe its basis for concluding that the incremental effect is not cumulatively considerable.

CUMULATIVE SETTING

The cumulative setting uses growth projections listed in the General Plan, Municipal Services Review, other planning documents, and Department of Finance statistics. Table 4.0-1 shows growth projections for the City, County, and State.

TABLE 4.0-1: GROWTH PROJECTIONS

CALENDAR YEAR	ESTIMATED POPULATION (RIVERBANK)	ESTIMATED POPULATION (STANISLAUS COUNTY)	ESTIMATED POPULATION (CALIFORNIA)
2015	26,264	540,853	38,896,969
2020	29,678	589,156	40,619,346
2025	33,536	674,859	42,373,301
2030	37,896	759,027	44,085,600
2035	42,822	861,984	45,747,645
2040	48,389	953,580	47,233,240

SOURCE: CITY OF RIVERBANK HOUSING ELEMENT (2016).

In addition to those cumulative growth projections listed above, this EIR uses a list of past, present, and probable future projects within the City of Riverbank and nearby communities to determine cumulative growth in the area. The list of past, present, and probable future projects used for this cumulative analysis is restricted to those projects that are planned to occur within the City of Riverbank and City of Modesto. Table 3.13-17 in Section 3.13 identifies development project identified by Modesto and Riverbank staff for the cumulative analysis. The approved and/or pending projects include:

1. CFD (City of Riverbank): 285 single-family residences and 72 multi-family residences east of Claus Road near Patterson Road;
2. The Marketplace (City of Modesto): 168 ksf retail center at Oakdale / Sylvan;
3. Hillglen Parks (City of Modesto): 62 single-family residences at Hillglen / Caden;
4. Hillglen (City of Modesto): 39 single-family residences at Roselle/ Hillglen;
5. Lincoln Parks (City of Modesto): 58 single-family residences at Kodiak / Lincoln Oak;
6. Rose Villas (City of Modesto): 114 single-family residences at Oakdale / Mable;
7. Millbrook Manor (City of Modesto): 14 single-family residences at Kodiak / Millbrook; and
8. Falling Leaf (City of Modesto): 203 single-family residences at Floyd / Claus.

Additionally, two land use changes were made in areas separate from the Project at the request of the City of Riverbank and the City of Modesto:

1. Potential residential development along and adjoining the NCC corridor that might someday be developed was assumed to occur after 2042 and, at the direction of the City of Riverbank, was not included.
2. In Modesto, the City asked that the approved Tivioli Specific Plan be assumed to be 100% occupied. This change primarily reflected retail use added at the employee density employed by the City of Modesto in their traffic model.

CUMULATIVE EFFECTS OF THE PROJECT

Cumulative settings are identified under each cumulative impact analysis. Cumulative settings vary because the area that the impact may affect is different. For example, noise impacts generally only impact the local surrounding area because noise travels a relatively short distance, while air quality impacts affect the whole air basin as wind currents control air flow and are not generally affected by natural or manmade barriers which would affect noise. Cumulative proposed Project impacts are addressed and summarized below.

Method of Analysis

Although the environmental effects of an individual project may not be significant when that project is considered separately, the combined effects of several projects may be significant when considered collectively. State CEQA Guidelines 15130 requires a reasonable analysis of a project's cumulative impacts, which are defined as "two or more individual effects which, when considered together are considerable or which compound or increase other environmental impacts." The cumulative impact that results from several closely related projects is: the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonable foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (State CEQA Guidelines 15355[b]). Cumulative impact analysis may be less detailed than the analysis of the project's individual effects (State CEQA Guidelines 15130[b]).

There are two approaches to identifying cumulative projects and the associated impacts. The list approach identifies individual projects known to be occurring or proposed in the surrounding area in order to identify potential cumulative impacts. The projection approach uses a summary of projections in adopted General Plans or related planning documents to identify potential cumulative impacts. This EIR uses a combination of the list approach and the projection approach for the cumulative analysis and considers the development anticipated to occur upon buildout of the various General Plans in the area in addition to the pending and proposed projects in the area.

Project Assumptions

The proposed Project’s contribution to environmental impacts under cumulative conditions is based on full buildout of the Project site. See Chapter 2.0, Project Description, for a complete description of the proposed Project.

Cumulative Impacts

Some cumulative impacts for issue areas are not quantifiable and are therefore discussed in general terms as they pertain to development patterns in the surrounding region. Exceptions to this are traffic, utilities, noise, and air quality (the latter two of which are associated with traffic volumes), which may be quantified by estimating future traffic patterns, pollutant emitters, etc. and determining the combined effects that may result. In consideration of the cumulative scenario described above, the proposed Project may result in the following cumulative impacts.

AESTHETICS AND VISUAL RESOURCES

The cumulative setting for aesthetics is the City of Riverbank and surrounding areas of Stanislaus County.

Impact 4.1: Cumulative Damage to Scenic Resources within a State Scenic Highway (Less than Significant and Less than Cumulatively Considerable)

As described in Section 3.1, Aesthetics and Visual Resources, there are no designated State Scenic Highways in the vicinity of the Project site. Only one highway section in Stanislaus County is listed as a Designated Scenic Highway by the California Department of Transportation (Caltrans) Scenic Highway Mapping System; the segment of Interstate 5 (I-5) from the San Joaquin to Merced County lines. Views from this route are primarily agricultural with distant views of the Coast Range. The City of Riverbank and the Plan Area are not visible from this roadway segment. As identified in the Stanislaus County General Plan Draft EIR, designated scenic corridors, trails, or rivers are not located in the County study area. Additionally, there are no “eligible” highway segments in the Project vicinity that may be included in the State Scenic Highway system.

Cumulative development in the City would not impact a Designated Scenic Highway. Implementation of the proposed Project would have a **less than significant** cumulative impact relative to this environmental topic. As such, the Project would have a **less than cumulatively considerable contribution** related to damage to scenic resources within a State Scenic Highway, and no mitigation is required.

Impact 4.2: Cumulative Degradation of the Existing Visual Character of the Region (Cumulatively Considerable and Significant and Unavoidable)

As described in Section 3.1, implementation of the proposed Project would convert the Project site from its existing agricultural character to a developed commercial and residential area with various buildings, landscaping, parks, and parking areas. Project implementation would alter the existing visual character of the Project site. Implementation of the proposed development standards and consistency with the General Plan and the Riverbank Zoning Ordinance would ensure that impacts are reduced to the greatest extent possible. Nevertheless, impacts related to degradation of the visual character of the site would be significant and unavoidable.

Under cumulative conditions, buildout of the General Plan for Riverbank and the surrounding jurisdictions could result in changes to the visual character and quality of the City of Riverbank through development of undeveloped areas and/or changes to the character of existing

communities. Development of the proposed Project, in addition to other future projects in the area, would change the existing visual and scenic qualities of the City. There are no mitigation measures that could reduce this impact except a ceasing of all future development, which is not a feasible option. As such, this is a **cumulatively considerable contribution** and a **significant and unavoidable** impact.

Impact 4.3: Cumulative Impact on Light and Glare (Less than Significant and Less than Cumulatively Considerable)

Implementation of the lighting plan required by Mitigation Measure 3.1-1 would ensure that lighting features do not result in light spillage onto adjacent properties and do not significantly impact views of the night sky. Adherence to the proposed development standards and the subsequent design review of future projects within the Project site would ensure that excessively reflective building materials are not used, and that the proposed Project would not result in significant impacts related to daytime glare. Future projects within Riverbank, Modesto, and Stanislaus County would be subject to the light and glare standards established by the individual jurisdictions. These regulations are designed to minimize potential light and glare impacts of new development. Implementation of these regulations would ensure that future projects minimize their potential light and glare impacts resulting in a **less than significant** cumulative impact relative to this environmental topic. As such, impacts related to nighttime lighting and daytime glare would be a **less than cumulatively considerable contribution**, and no mitigation is required.

AGRICULTURAL RESOURCES

The cumulative setting for agricultural resources is all of Stanislaus County. Over the past approximately 15 years, agricultural land throughout the County has changed uses. These changes include changing from one agricultural use to another, or changing from an agricultural use to a developed, urban use. For example, approximately 30,000 to 35,000 acres of land within the eastern and western portions of the County have been converted from grazing land to permanent cropland over the last couple of decades.[1]

Stanislaus County contains approximately 4,143 farms with an average farm size of approximately 185 acres. According to the Department of Conservation, approximately 978 acres of Prime Farmland in the County was developed for other uses between 2012 and 2014, resulting in an existing total of 252,700 acres of Prime Farmland (26 percent of agricultural land). The remaining agricultural land is comprised of Farmland of Statewide Importance (3.3 percent), Unique Farmland (10.9 percent), Farmland of Local Importance (2.9 percent), and Grazing Land (42.7 percent).

[1] Personal communication between Elise Carroll, associate planner for De Novo Planning Group, and Tom Orvis, Governmental Affairs for the Stanislaus County Farm Bureau. February 20, 2018.

Impact 4.4: Cumulative Impact on Agricultural Resources (Cumulatively Considerable and Significant and Unavoidable)

As described in Section 3.2, Agricultural Resources, development of the proposed Project would result in a conversion of 226.38 acres of Prime Farmland as shown on the map prepared under the Farmland Mapping and Monitoring Program (FMMP), to nonagricultural uses. The loss of Important Farmland as classified under the FMMP is considered a potentially significant environmental impact. development under the General Plan inherently involves the conversion of high-quality agricultural land. Mitigation Measure 3.2-1 requires the Project applicant to conserve Important Farmland of equal value to the land in the Plan Area that will be converted at a 1:1 ratio, in perpetuity, or pay in-lieu fees. Mitigation Measure 3.2-2 requires compliance with the City of Riverbank Sustainable Agricultural Strategies.

Development of the proposed Project would not conflict with existing zoning for agricultural use, or Williamson Act contracts. Additionally, implementation of Mitigation Measure 3.2-3 in Section 3.2 would ensure that the Project applicant complies with the County's right-to-farm ordinance due to the potential conflicts between the proposed residences in the southern and western portions of the Plan Area and the existing agricultural operations to the south and west of the Plan Area.

While the implementation of the mitigation measures included in Section 3.2 would assist in preserving farmland, the proposed Project would still result in the permanent conversion and loss of 347.39 acres of Important Farmland within Stanislaus County. As such, impacts related to agricultural resources would be **cumulatively considerable** and **significant and unavoidable**.

AIR QUALITY

The cumulative setting for air quality impacts is the San Joaquin Valley Air Basin (SJVAB), which consists of eight counties, stretching from Kern County in the south to San Joaquin County in the north. The SJVAB is bounded by the Sierra Nevada in the east, the Coast Ranges in the west, and the Tehachapi mountains in the south.

Impact 4.5: Cumulative Impact on the Region's Air Quality (Cumulatively Considerable and Significant and Unavoidable)

Under buildout conditions in Stanislaus County, the SJVAB would continue to experience increases in criteria pollutants. Stanislaus County has a state designation of Nonattainment for Ozone, respirable particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$) and is either Unclassified or Attainment for all other criteria pollutants. The County has a national designation of Nonattainment for ozone and $PM_{2.5}$. The County is designated either attainment or unclassified for the remaining national standards. Table 3.3-2 in Section 3.3 presents the State and Federal attainment status for Stanislaus County.

As discussed under Impact 3.3-1 in Section 3.3, Air Quality, the proposed Project would result in increased emissions. The San Joaquin Valley Air Pollution Control District (SJVAPCD) has established operations related emissions thresholds of significance and it was determined that annual emissions of reactive organic gases (ROG), nitrogen oxides (NO_X), and PM_{10} exceed the

SJVAPCD thresholds of significance. Implementation of Mitigation Measure 3.3-1 would require development projects in the Plan Area to mitigate operational NOx emissions by 33 percent and operational PM_{10} emissions by 50 percent over ten years. However, even with all reasonable and feasible measures that could be implemented into the Plan Area on-site, the mitigation is not expected to achieve reductions required under Rule 9510.

The proposed Project is subject to the SJVAPCD Rule 9510 (Indirect Source Rule [ISR]), which could result in substantial mitigation of NO_X and associated ROG emissions. The reductions are accomplished by the incorporation of mitigation measures into projects and/or by the payment of an Indirect Source Rule fee for any required reductions that have not been accomplished through Project mitigation commitments. The current fees are $9,350 per ton of NO_X. The actual calculations will be determined and finalized by the SJVAPCD and Project applicants as individual projects are brought forward for approval under Rule 9510.

The substantial reductions in NO_X (and associated ROG) and PM_{10} emissions accomplished by the application of the ISR represent the best achievable mitigation for indirect sources. However, even with the application of these measures, emissions levels would remain above the defined thresholds of significance. As such, implementation of the proposed Project would have a **cumulatively considerable contribution** and **significant and unavoidable** impact from air emissions.

BIOLOGICAL RESOURCES

The cumulative setting for biological resources includes the Project site and the greater Stanislaus County region. Development associated with implementation of the local General Plan(s) would contribute to the ongoing loss of natural and agricultural lands in Stanislaus County, including the Project site. Cumulative development would result in the conversion of existing habitat to urban uses. The local General Plan(s), in addition to regional, State, and federal regulations, includes policies and measures that mitigate impacts to biological resources associated with General Plan buildout.

Impact 4.6: Cumulative Loss of Biological Resources Including Habitats and Special-Status Species (Less than Significant and Less than Cumulatively Considerable)

Under cumulative conditions, buildout of the General Plan(s) within Stanislaus County will result in impacts to biological resources in the cumulative area through new and existing development. The General Plan(s) includes policies that are designed to minimize impacts to the extent feasible.

As described in Section 3.4, Biological Resources, construction in the Project site has the potential to result in impacts to special-status species in the region. Although there has been no documented sighting within the immediate area in, or near the Project site, the Project site provides potential habitat for several species, including those discussed in Section 3.4.

Mitigation Measure 3.4-1 requires the Project applicant to avoid or minimize impacts on western burrowing owl by completing an initial take avoidance survey using the recommended methods described in the Detection Surveys section of the March 7, 2012, California Department of Wildlife

(CDFW) Staff Report on Burrowing Owl Mitigation (CDFW 2012). Additionally, Mitigation Measure 3.4-2 requires the Project applicant to implement various measures in order to avoid and/or minimize impacts on Swainson's hawk and their habitat. As part of this measure, compensatory mitigation for the permanent loss of Swainson's hawk foraging habitat would be provided. The Project applicant shall either provide lands protected through fee title acquisition or conservation easement (acceptable to the CDFW) on agricultural lands or other suitable habitats which provide foraging habitat for Swainson's hawk. Surveys for other special-status species and other measures to minimize potential for effects during Project construction would also be required. See Mitigation Measures 3.4-1 through 3.4-4 for more information.

Additionally, the ongoing operational phase of the proposed Project requires stormwater to be drained into one of the on-site detention basins with final discharge into one of two (2) Modesto Irrigation District (MID) Lateral's, MID Main and MID lateral 6. The discharge of stormwater could result in indirect impacts if stormwater was not appropriately treated through Best Management Practices (BMPs) prior to its discharge. Mitigation Measure 3.9-1 in Section 3.9, Hydrology and Water Quality, requires the Project applicant to implement nonstructural BMPs that focus on preventing pollutants from entering stormwater.

Implementation of the mitigation measures in Section 3.4 and Mitigation Measure 3.9-1 in Section 3.9 would reduce potentially cumulative impacts to a **less than significant** level. As such, impacts to biological resources would be a **less than cumulatively considerable contribution**.

CULTURAL AND TRIBAL RESOURCES

The geography of cultural and tribal resources impacts can be defined by region, by political subdivision, or by the geography of the cultural resources present in an area, where sufficient inventory data is available to define it. The cumulative setting for cultural ad tribal resources includes all of Stanislaus County. There are extensive cultural sites located in the region.

Impact 4.7: Cumulative Impacts on Known and Undiscovered Cultural and Tribal Resources (Less than Significant and Less than Cumulatively Considerable)

Cumulative development anticipated in the City of Riverbank, including growth projected by adopted future projects, may result in the discovery and removal of cultural resources, including archaeological, paleontological, historical, and Native American resources and human remains. As discussed in Section 3.5, Cultural and Tribal Resources, four other historic period resources have been recorded within a 0.125-mile radius of the Plan Area, and nine surveys have been completed in the same radius. No prehistoric resources have ever been recorded in or in the immediate vicinity of the Plan Area.

Any previously unknown cultural and/or tribal resources which may be discovered during development of the proposed Project would be required to be preserved, either through preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures. With implementation of the mitigation measures provided in Section 3.5, the proposed

Project is not anticipated to considerably contribute to a significant reduction in cultural resources in the region.

All future projects in the regional vicinity would be subject to their respective General Plans (i.e., City of Riverbank and Stanislaus County), each of which have policies and measures that are designed to ensure protection of undiscovered cultural resources. In addition, all discretionary projects in these jurisdictions would require environmental review per regulations established in CEQA.

Implementation of the proposed Project would have a **less than significant** cumulative impact relative to this environmental topic. As such, impacts related to cultural and tribal resources would result in a **less than cumulatively considerable contribution**.

GEOLOGY AND SOILS

Impacts related to geology and soils are not inherently cumulative. Geology and soils concerns are related to risks, hazards or development constraints that are largely site-specific. However, seismic hazards are regional, and management of seismic hazards is vested with the local planning and building authority. For these reasons, the potential for cumulative geology and soils impacts are considered in the context of the City of Riverbank and vicinity.

Impact 4.8: Cumulative Impact on Geologic and Soils Resources (Less than Significant and Less than Cumulatively Considerable)

As discussed in Section 3.6, Geology and Soils, implementation of the proposed Project has limited potential for liquefaction, liquefaction induced settlement, and lateral spreading. However, mitigation measures provided in Section 3.6 ensure this impact will be less than significant. While the City is not within an area known for its seismic activity, there will always be a potential for groundshaking caused by seismic activity anywhere in California, including the Project site. Seismic activity could come from a known active fault such as the San Joaquin fault, or any number of other faults in the region. In order to minimize potential damage to the buildings and site improvements, all construction in California is required to be designed in accordance with the latest seismic design standards of the California Building Code. Additionally, the City of Riverbank has incorporated numerous policies relative to seismicity to ensure the health and safety of all people. Design in accordance with these standards and policies would reduce any potential impact to a less than significant level.

Geologic and soils impacts tend to be site-specific and Project-specific. With the mitigation measures presented in Section 3.6, implementation of the proposed Project would not result in increased risks or hazards related to geologic conditions in the cumulative setting area, nor would it result in any off-site or indirect impacts. Implementation of the proposed Project would have a **less than significant** cumulative impact relative to this environmental topic. As such, impacts related to geologic and soil resources would result in a **less than cumulatively considerable contribution**.

GREENHOUSE GASES, CLIMATE CHANGE, AND ENERGY

The cumulative setting for greenhouse gas emissions and climate change impacts for this analysis is Stanislaus County, which is the boundary for the California Air Resources Board's regional greenhouse gas emissions reduction targets.

Impact 4.9: Cumulative Impact on Climate Change from Increased Project-Related Greenhouse Gas Emissions (Significant and Unavoidable and Cumulatively Considerable)

Greenhouse gas emissions from a single Project will not cause global climate change; however, greenhouse gas emission from multiple projects throughout a region or state could result in a cumulative impact with respect to global climate change.

In California, there has been extensive legislation passed with the goal of reducing greenhouse gas emissions. The legislative goals are as follows: 1) 2000 levels by 2010, 2) 1990 levels by 2020 and 3) 80 percent below the 1990 levels by the year 2050. To achieve these goals, the CARB has developed regional greenhouse gas emission reduction targets for the automobile and light truck sectors (the largest single source of greenhouse gas emissions) for 2020 and 2035. The regional greenhouse gas emission reduction targets for each region in California were established by the California Air Resources Board.

In August 2008, the SJVAPCD adopted its Climate Change Action Plan. The Climate Change Action Plan directed the SJVAPCD's Air Pollution Control Officer to develop guidance to assist APCD staff, Valley businesses, land use agencies, and other permitting agencies in addressing GHG emissions as part of the CEQA process. Regarding CEQA guidance, some of the goals of the Climate Change Action Plan are to assist local land use agencies, developers, and the public by identifying and quantifying GHG emission reduction measures for development projects and by providing tools to streamline evaluation of Project-specific GHG effects, and to assist Valley businesses in complying with State law related to GHG emissions. A product of this direction to provide CEQA guidance is the *Final Staff Report – Climate Change Action Plan: Addressing GHG Emissions Impacts*, presented to the APCD Board in December 2009. A central component of the Final Staff Report is the establishment of Best Performance Standards, which are specifications or Project design elements that identify effective, feasible GHG emission reduction measures. Emission reductions achieved through Best Performance Standards implementation would be pre-quantified, thus negating the need for Project-specific quantification of GHG emissions. For projects not implementing Best Performance Standards, demonstration of a 29% reduction in GHG emissions from business-as-usual conditions is required to determine that a Project would have a less than cumulatively significant impact.

As described in Impact 3.7-1 in Section 3.7, implementation of the proposed Project would generate GHG emissions that wouldn't otherwise exist without the proposed Project. Given the length of construction activities for a Project of this size, the maximum short-term annual construction emissions of GHG associated with development of the Project in a single year are estimated to be 5,189 metric tons of carbon dioxide equivalents ($MTCO_2e$). The operational

emissions would be a long-term release totaling approximately 65,344 $MTCO_2e$ without mitigations and 61,026 $MTCO_2e$ with mitigation.

It is noted that the existing site operations currently emit criteria air pollutants and GHG emissions. GHG emissions are currently generated by the use of vehicles, agricultural equipment, and building energy use. Additionally, the existing dairy operations have a large potential to generate substantial amounts of biogenic CH_4 (methane) emissions (a potent source of GHGs). Such emissions are biological in origin; they are generated by the digestive activities of the dairy cows located within the Plan Area.

There are approximately 570 dairy cows (500 milking cows and 70 dry cows[2]) currently managed within the Plan Area. De Novo Planning Group calculated the approximate level of biogenic (i.e. methane) GHG emissions associated with the dairy cows under the existing scenario to be 1,922 MT CO_2e. The proposed Project with mitigation would generate substantially more GHGs than emitted by the dairy cows under the Existing Condition.

The City of Riverbank must weigh the economic and social benefits of development against the environmental impacts associated with development. The City of Riverbank's planning efforts included targeted growth that accommodates the economic and social needs of the community, while recognizing and seeking to mitigate environmental impacts when growth occurs. The proposed Project has incorporated mitigation measures that are intended to reduce emissions to the extent feasible. The State continues to implement measures that are intended to reduce emissions on a State-wide scale (i.e., vehicle fuel efficiency standards in fleets, low carbon fuels, etc.) that are consistent with Assembly Bill (AB) 32. These types of State-wide measures will benefit the proposed Project (and City as a whole) in the long-term as they come into effect; however, the City does not have the jurisdiction to create far reaching (i.e., State-wide) measures to reduce GHG emissions.

On a Project-by-Project case, the City of Riverbank evaluates a Project and the potential to impose Project-specific mitigation, which has been done through this greenhouse gas analysis. However, because the Project would result in a net increase in CO_2e emissions even with mitigation measures incorporated into the Project, it would result in a **significant and unavoidable** and **cumulatively considerable** impact.

HAZARDS AND HAZARDOUS MATERIALS

The cumulative context for the analysis of cumulative hazards and human health impacts is Stanislaus County, including all cumulative growth therein, as represented by full implementation of each respective General Plan (i.e., Riverbank, Modesto, and Stanislaus County).

[2] Email communication with Dave Romano, Project Applicant, on December 18, 2017.

Impact 4.10: Cumulative Impact Related to Hazards and Hazardous Materials (Less than Significant and Less than Cumulatively Considerable)

As discussed in Section 3.8, Hazards and Hazardous Materials, implementation of the proposed Project would not result in any significant impacts related to this environmental topic with the implementation of the mitigation measures provided in Section 3.8.

The proposed Project, in conjunction with cumulative development in the region, would include areas designated for a variety of urban, agricultural, and open space uses as defined by the applicable General Plan. Cumulative development would include continued operation of, or development of, new facilities as allowed under each land use designation. New development would inevitably increase the use of hazardous materials within the region, resulting in potential health and safety effects related to hazardous materials use. For the most part, potential impacts associated with new and future development would be confined to commercial and industrial areas and would not involve the use of hazardous substances in large quantities or that would be particularly hazardous. Incidents, if any, would typically be site specific and would involve accidental spills or inadvertent releases. Associated health and safety risks would generally be limited to those individuals using the materials or to persons in the immediate vicinity of the materials and would not combine with similar effects elsewhere (i.e., construction workers). Hazard-related impacts tend to be site-specific and Project-specific. The Project site is not associated with any existing hazardous materials spills; however, there are numerous areas throughout the County where hazardous conditions are present.

Implementation of the proposed Project would not result in significant increased risks of hazards in the cumulative setting area, nor would it result in any significant off-site or indirect impacts. Mitigation measures have been included to reduce the risk of on-site hazards associated with the use of on-site hazardous materials. Implementation of the proposed Project would have a **less than significant** cumulative impact relative to this environmental topic. As such, impacts related to hazards and hazardous materials would result in a **less than cumulatively considerable contribution**.

HYDROLOGY AND WATER QUALITY

Potential cumulative issues associated with surface waters can be addressed on a watershed basis, or in the case of groundwater, in the context of a groundwater basin. Because water resources are highly interconnected, the cumulative setting is based on Stanislaus County which is located in the San Joaquin River Hydrological Region. Cumulative development in this region, including the proposed Project, would impact the water quality and hydrological features of the San Joaquin River Hydrologic Region. The City of Riverbank and much of the surrounding area is located in the Modesto Groundwater Basin. The subbasin lies almost entirely within Stanislaus County. The approximate physical boundaries of the Modesto Groundwater Basin are the Stanislaus, Tuolumne and San Joaquin rivers. The Project site is located in the San Joaquin River watershed. Any matter that may affect water quality draining from the Project site will eventually end up in one of several on-site detention basins and be discharged into either MID Main Lateral, MID Lateral 6, or within the groundwater basin.

Impact 4.11: Cumulative Increases in Peak Stormwater Runoff from the Project site (Less than Significant and Less than Cumulatively Considerable)

Implementation of the proposed Project would increase the amount of impervious surfaces in the Project site, which could increase peak stormwater runoff rates and volumes on and downstream on the Project site. However, the proposed Project includes an extensive system of on-site stormwater collection facilities to accommodate the increased stormwater flows that would originate in the Project site.

The proposed stormwater collection system functions through storm drainage collection, treatment, detention, and discharge. The exact sizing of the underground piping and basins will be engineered during the preparation of the project related improvement plans. The Project proposes an on-site drainage system to collect the developed condition runoff in a combination of underground pipes and surface vegetated swales and then discharge the runoff into the three proposed major storm water detention basins. The dual use detention ponds have been designed with surface areas and volumes in compliance with City standards. The MID Discharge Agreements currently on file for the existing Crossroads development will be modified to accommodate the proposed Project. The agreement currently permits the discharge of municipal storm water out of existing basins into the MID Main Lateral and the MID lateral 6. and will be modified to add the additional discharge from the proposed Project.

With the design and construction of improvements included in the proposed storm drainage system, the proposed Project would not increase peak stormwater runoff. Implementation of the proposed Project would have a **less than significant** cumulative impact relative to this environmental topic. As such, impacts related to stormwater runoff would result in a **less than cumulatively considerable contribution**.

Impact 4.12: Cumulative Impacts Related to Degradation of Water Quality (Less than Significant and Less than Cumulatively Considerable)

The proposed Project, along with several of the related projects within the City of Riverbank, would ultimately discharge stormwater runoff to on-site detention basins, the City's system of MID Laterals, the Stanislaus River, or the groundwater basin. This would potentially degrade the water quality of the system.

Construction of the proposed Project would contribute to a cumulative increase in urban pollutant loading, which could adversely affect water quality. Cumulative development in the Riverbank area, including the proposed Project, would also result in increased impervious surfaces that could increase the rate and amount of runoff, thereby potentially adversely affecting existing surface water quality through increased erosion and sedimentation. The primary sources of water pollution include: runoff from roadways and parking lots; runoff from landscaping areas; non-stormwater connections to the drainage system; accidental spills; and illegal dumping. Runoff from roadway and parking lots could contain oil, grease, and heavy metals; additionally, runoff from landscaped areas could contain elevated concentrations of nutrients, fertilizers, and pesticides.

The proposed Project will be required to comply with Mitigation Measure 3.6-1 which requires the development and approval of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP will include BMPs to regulate stormwater quality for the Project site which will be designed in accordance with the National Pollutant Discharge Elimination System Permit (NPDES) Stormwater Program. Land planning for CWSP, the preliminary drainage studies, and the preliminary drainage design are integrated to emphasize water conservation, protect water quality, help reduce flooding, and improve the overall watershed health. The proposed low impact development (LID) practices are appropriate for the local and existing conditions found on the Plan Area.

While there are no assurances that other projects in the County would incorporate the same degree or methods of treatment as the proposed Project, several of the projects within the City of Riverbank would phase out existing agricultural runoff discharges from their respective sites and, similar to the proposed Project, could provide some level of water quality improvement. Also, each related Project that would discharge stormwater runoff would be required to comply with NPDES discharge permits from the Regional Water Quality Control Board (RWQCB), which adjusts requirements on a case-by-case basis to avoid significant degradation of water quality. Therefore, while a greater quantity of urban runoff may be discharged to the regional drainage system with implementation of the related projects, because of an increase in impervious surfaces, the associated surface water quality impacts would be expected to be less than significant because of improved or similar quality of runoff compared to existing conditions.

Compliance with City and County water quality protection regulations, approval from the RWQCB, and Mitigation Measure 3.6-1 would ensure that the proposed Project minimizes impacts to surface water quality. Additionally, the CWSP will conform to and utilize the LID practices set forth by the City of Riverbank. Implementation of the proposed Project would have a **less than significant** cumulative impact relative to this environmental topic. As such, impacts related to water quality would result in a **less than cumulatively considerable contribution**.

Impact 4.13: Cumulative Impacts Related to Degradation of Groundwater Supply or Recharge (Less than Significant and Less than Cumulatively Considerable)

The proposed Project would result in new impervious surfaces and could reduce rainwater infiltration and groundwater recharge. Infiltration rates vary depending on the overlying soil types. In general, sandy soils have higher infiltration rates and can contribute to significant amounts of ground water recharge; clay soils tend to have lower percolation potential; and impervious surfaces such as pavement significantly reduce infiltration capacity and increase surface water runoff.

The Plan Area has soils with hydrologic ratings of “A”, “C”, and “D”. Group “A” soils have low runoff potential when thoroughly wet, Group “C” soils have moderately high runoff potential when thoroughly wet, and Group “D” soils have high runoff potential when thoroughly wet. The Plan Area contains only 6.24 acres of Group “D” soils. Development of the Plan Area with impervious surfaces could reduce rainwater infiltration and groundwater recharge further. The proposed 42 acres of park, open space, and Regional Sports Park uses will remain largely pervious.

The collection of rainwater for those areas of impervious surfaces will be routed into the proposed Project's storm drainage system and eventually flow into the Stanislaus River.

As detailed in the City's 2015 Urban Water Management Plan (UWMP), the City's groundwater wells, including the proposed Project are, are located in the Modesto groundwater subbasin and the City is part of the Stanislaus and Tuolumne Rivers Groundwater Basin Association and was a part of the development of the Integrated Regional Groundwater Management Plan (IRGMP) for the Modesto Subbasin in 2005. Based on the IRGMP for the Modesto Subbasin, and various groundwater investigations performed on groundwater availability in the subbasin, including the Self-Certification of Supply Reliability for Three Additional Years of Drought (as required by the State Water Resources Control Board in 2016), the City's groundwater supplies are expected to be highly reliable.

According to California's Groundwater Bulletin 118, updated February 27, 2004, the estimated specific yield for the Modesto Subbasin is 8.8 percent. The estimated storage capacity to a depth of 300 feet is approximately 6,500,000 acre-feet (AF). The annual water demand for the basin was estimated at 590,000 AF in 2000. Groundwater accounted for 206,500 AF of the total supply. Total annual recharge to the basin was estimated at 310,000 AF, the largest component of which is from irrigation followed by precipitation.

While the Plan Area's soils have a range of low to high infiltration rates, much of the groundwater recharge in the basin occurs from irrigation followed by precipitation. Precipitation in the region is 13.81 inches, most of which falls between November through April. A portion of this annual rainfall infiltrates the soil and groundwater basin, while a portion is discharged downstream into MID discharge points. Additionally, the anticipated groundwater requirements would amount to less than 0.2 percent of the total amount of subbasin groundwater storage and less than 5 percent of the total annual basin recharge.

Much of the Plan Area would be maintained as pervious surface. The proposed Project would provide approximately 42 acres of park, open space, and Regional Sports Park uses. Additionally, the front and back yard areas of the proposed residential uses could maintain groundwater recharge areas. While the proposed Project would reduce the amount of pervious surfaces within the Plan Area, much of the site would be converted to impervious surface.

For the reasons mentioned above, the proposed Project would not cause the substantial depletion of groundwater supplies or interfere substantially with groundwater recharge. Implementation of the proposed Project would have a **less than significant** and **less than cumulatively considerable** impact relative to this topic.

Impact 4.14: Cumulative Impacts Related to Flooding (Less than Significant and Less than Cumulatively Considerable)

As shown on Figure 3.9-2, the Plan Area is not within a 100-year flood zone as delineated by the Federal Emergency Management Agency (FEMA). The Plan Area is not located within the 200-year floodplain as delineated on the most recent 200-year flood plain maps for Riverbank. Development of the proposed Project would not place housing or structures in a 100-year or 200-year flood

hazard area. As a result, the proposed Project is not at risk of the 100-year flood. Implementation of the proposed Project would have a **less than significant** cumulative impact relative to this environmental topic. Implementation of the proposed Project would have a **less than significant** and **less than cumulatively considerable** impact relative to this topic.

LAND USE, POPULATION, AND HOUSING

The cumulative setting for land use and population impacts is the City of Riverbank.

Impact 4.15: Cumulative Impact on Communities and Local Land Uses (Less than Significant and Less than Cumulatively Considerable)

Cumulative land use impacts, such as the potential for conflicts with adjacent land uses and consistency with adopted plans and regulations, are typically site- and Project-specific. Prior to Project authorization, City approval of the proposed Project would require approval of a General Plan amendment to change land uses on the Project site. Changes to the Land Use Element would include changing the 390-acre Project site from Lower Density Residential (LDR), Medium Density Residential (MDR), Higher Density Residential (HDR), Mixed Use (MU), Civic (C), Community Commercial (CC), and Park (P) to Specific Plan (SP). The current and proposed General Plan land uses are shown in Section 2.0, Figures 2.0-6a and 2.0-7a, respectively.

The Project is located within the City of Riverbank Sphere of Influence (SOI) and will provide for housing opportunities, and employment-generating uses that will promote employment and economic development, and a mix of land uses, while providing an attractive, sustainable neighborhood. The Project is consistent with the General Plan land use policies that encourage an orderly pattern of development that is contiguous with the City boundary, require growth to contribute to a diversified economic base and balance between employment and housing opportunities, and allowing for recreation uses.

The land uses as proposed are not consistent with the General Plan. When land uses are not consistent with a General Plan there are two courses of action: 1) the uses are not allowed due to the inconsistency, or 2) the land uses are changed through an amendment to the General Plan to create consistency. The proposed Project includes a General Plan amendment to change land uses on the Project site. Approval of the General Plan amendment would ensure that the proposed Project would be substantially consistent with the Riverbank General Plan land use requirements and would have a **less than significant** and **less than cumulatively considerable** impact relative to the Riverbank General Plan. It is noted that consistency with Riverbank General Plan policies and programs related to environmental topics other than land use (aesthetics, agricultural resources, biological resources, cultural resources, geology/soils, hazards, hydrology/water quality, noise, public services, transportation, and utilities) are discussed in the relevant sections of this EIR.

The Riverbank Zoning Code implements the General Plan. The Plan Area is currently within the jurisdiction of Stanislaus County. The Stanislaus LAFCO will require the Plan Area to be pre-zoned by the City of Riverbank in conjunction with the proposed annexation. The City's pre-zoning will include the Specific Plan (SP) zoning designation. The pre-zoning would go into effect upon

annexation into the City of Riverbank. The proposed pre-zoning for the Plan Area is shown on Figure 2.0-7b. These proposed zone changes would ensure that zoning would be consistent with the proposed General Plan designation within the Plan Area. Section 153.311 of the City's Zoning Code outlines the required contents of a specific plan proposed for the SP district. The purpose of the SP district is to provide a vehicle for implementing the City's General Plan on an area specific basis. A specific plan prepared in accordance with the standards set forth in Chapter 153 of the City's Zoning Code is intended to serve as a regulatory document, consistent with the General Plan. In the event of an inconsistency, or conflict between an adopted specific plan and comparable regulations of the Municipal Code, the specific plan will prevail.

The City will review each component of the proposed Project as plans (improvement plans, building plans, site plans, etc.) are submitted for final approval to ensure that they are consistent with the City's Zoning ordinance. Approval of the zone change would ensure that the proposed Project would be consistent with the Zoning Code and will have a **less than significant** and **less than cumulatively considerable** relative to this topic.

Impact 4.16: Cumulative Impacts on Population and Housing (Less than Significant and Less than Cumulatively Considerable)

As described in Section 3.10, the proposed Project would add residential housing structures in the Project site, and would directly increase the population of the City. There are approximately seven residential structures located on the Project site. Development of the Project would remove seven housing units onsite, and add up to 2,852 residential units. Therefore, the Project would more than replace the housing that would be removed and would not displace substantial numbers of people or existing housing.

Table V-5 of the Riverbank 2014-2023 Housing Element shows that approximately 2,155 housing units (1,755 LDR, 200 MDR, and 200 HDR) would be developed as part of the Crossroads West Specific Plan Project. The proposed Project provides planning and design flexibility that is estimated to create between 1,539 (minimum) to 2,852 units (maximum). The Housing Element estimate of 2,155 units for the Plan Area is within the estimated range of units for this site. The proposed Project would not result in indirect population growth beyond the City's planned capacity. Therefore, the proposed Project is not anticipated to exceed the planned growth (directly or indirectly) in the area beyond what is anticipated in the City of Riverbank General Plan.

While the proposed Project will result in growth, it is not anticipated to significantly induce growth beyond the levels analyzed in the City's General Plan and Housing Element, or displace substantial numbers of housing or people. Implementation of the proposed Project would have a **less than significant** cumulative impact relative to this environmental topic. As such, impacts related to population and housing would result in a **less than cumulatively considerable contribution**.

NOISE

The cumulative setting for noise impacts consists of the existing and future noise sources that could affect the Project site or surrounding uses.

Impact 4.17: Cumulative Exposure of Existing and Future Noise-Sensitive Land Uses to Increased Noise Resulting from Cumulative Development (Significant and Unavoidable and Cumulatively Considerable)

The cumulative context for noise impacts associated with the proposed Project consists of the existing and future noise sources that could affect the Project or surrounding uses. Noise generated by construction would be temporary, and would not add to the permanent noise environment or be considered as part of the cumulative context. The total noise impact of the proposed Project would be fairly small and would not be a substantial increase to the existing future noise environment. Thus, the proposed Project would result in a **less-than-significant** cumulative impact.

Traffic Noise: Cumulative noise impacts would occur primarily as a result of increased traffic on local roadways due to the proposed Project and on-site activities resulting from operation of the proposed Project. Table 3.11-14 in Section 3.11, Noise, shows cumulative traffic noise levels with and without the proposed Project. As discussed in Section 3.11, under Cumulative conditions, sensitive receptors located adjacent to Patterson Road, Claribel Road, Coffee Road, and Oakdale Road exceed the City's 60 dB L_{dn} exterior noise level standard for transportation noise sources. Under Cumulative Plus CWSP conditions, these roadways will continue to exceed the City standards. The Project's contributions range between 0 dB and 5.9 dB L_{dn}. In some cases, the increases also exceed the FICON and City of Riverbank criteria of +1.5 dB where existing noise levels exceed 65 dB.

Potential mitigation measures would require increasing the height of existing sound walls, building new off-site sound walls, including traffic calming measures to reduce vehicle speeds, and/or using quieter pavement technologies. Generally, construction of new sound walls is not practical due to the openings for driveway accesses which would compromise any barrier effectiveness. Increasing the heights of existing sound walls requires additional engineering of footings and is also not practical. Traffic calming measures generally have not been found to reduce overall traffic noise levels by a significant amount. The use of quiet pavement technologies is the most practical mitigation measure and would generally reduce traffic noise levels between 4 and 5 dB. Under the Cumulative conditions shown in Table 3.11-14, each roadway segment which shows a significant impact could include future overlays of alternative pavements, such as rubberized asphalt or open gap asphalt. However, the implementation of these types of measures along six different roadway segments may not be considered practical due to overall costs and benefits at all locations. Therefore, this would be a **significant unavoidable** impact.

Construction Noise: Noise generated by construction would be temporary, and would not add to the permanent noise environment or be considered as part of the cumulative context. Implementation of the proposed Project would have a **less than significant** cumulative impact relative to this environmental topic. As such, impacts related to construction noise would result a l**ess than cumulatively considerable contribution**.

Cumulative Conclusion: The traffic noise from the proposed Project would produce noise levels that would exceed City standards for sensitive receptors located adjacent to Patterson Road,

Claribel Road, Coffee Road, and Oakdale Road. Project related traffic noise level increases would exceed the FICON substantial increase criteria. Consequently, the total noise impact of the proposed Project would be a substantial increase to the future noise environment. As such, this is a **cumulatively considerable contribution** and **a significant and unavoidable** impact.

PUBLIC SERVICES AND RECREATION

The cumulative setting would include all areas covered in the service areas of the Stanislaus Consolidated Fire Protection District (SCFPD), Stanislaus County Sheriff, Parks and Recreation Department, the Sylvan Union School District, the Modesto City Schools district, and any other relevant public services.

Impact 4.18: Cumulative Impact on Public Services (Less than Significant and Less than Cumulatively Considerable)

Implementation of the proposed Project would contribute toward an increased demand for public services and facilities within the City of Riverbank. It has been determined that the impacts to the SCFPD, Stanislaus County Sheriff, the Sylvan Union School District, and the Modesto City Schools district would be less than significant. With implementation of Mitigation Measure 3.12-1 in Section 3.12, impacts related to parks and recreation would be less than significant. The proposed Project would be subject to all fees that are paid toward the enhancement of public services within the region. Payment of the applicable impact fees by the Project applicant, and ongoing revenues that would come from property taxes, sales taxes, and other revenues generated by the proposed Project, would assist in maintaining existing fire, police, schools, and park services. Implementation of the proposed Project would have a **less than significant** cumulative impact relative to this environmental topic. As such, impacts related to public services would result in a **less than cumulatively considerable contribution**.

TRANSPORTATION AND CIRCULATION

This section considers the impacts of the Project within the context of long term traffic conditions that may accompany the development of regional circulation system improvements and regional residential and non-residential development. See Section 3.13, Transportation and Circulation, for more information.

Impact 4.19: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the Patterson Road / Coffee Road intersection. (Cumulatively Considerable and Significant and Unavoidable)

With development of the Project, the Patterson Road / Coffee Road intersection would operate at LOS F on the northbound approach. Based on the change in average delay and satisfaction of signal warrants, this is a potentially significant impact.

Improvements to address this impact would include installation of a two-lane roundabout intersection or improvements that involve auxiliary turn lanes and a traffic signal. Either solution would result in a LOS that satisfies the City of Riverbank's minimum LOS requirement. However,

under current Caltrans directives, the exact nature of the needed improvement cannot be confirmed without completion of an ICE. Caltrans typically requires a complete evaluation of all traffic signal warrants prior to installing a traffic signal.

Mitigation Measure 3.13-1 in Section 3.13 addresses this impact, and no additional mitigation is required**.** Because intersection improvements are already included in the adopted City of Riverbank Impact Fee program, development in the Project would mitigated its impact by paying adopted fees. However, because improvements to this location are subject to Caltrans' approval process regarding design and installation, improvements may not be installed before the impact occurs. Because there is no guarantee regarding the timing of installation, the Project's cumulative impact is **cumulatively considerable** and **significant and unavoidable**.

Impact 4.20: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the Coffee Road / Morrill Road intersection. (Cumulatively Considerable and Significant and Unavoidable)

With development of the Project, the Coffee Road / Morrill Road intersection would operate at LOS F on the westbound approach. Based on the change in average delay and satisfaction of signal warrants, this is a potentially significant impact.

A traffic signal would improve the LOS at this location to a condition that satisfies the City's minimum LOS standard. While the Coffee Road / Morrill Road intersection is noted as a potential signal location in the Riverbank General Plan Update EIR, it is not included in any adopted fee program. Because the need for this improvement will dependent on the location and extent of development within the Project site, conditions should be monitored as development proceeds and a traffic signal should be installed when warrants are met to the satisfaction of the City of Riverbank. Implementation of Mitigation Measure 3.13-13 in Section 3.13 would reduce the potential impact. However, because this improvement is not included in any adopted fee program, there is no guarantee that the improvement will be installed. Thus, the Project's cumulative impact is **cumulatively considerable** and **significant and unavoidable**.

Impact 4.21: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the Coffee Road / Relocated Crawford Road intersection. (Cumulatively Considerable and Significant and Unavoidable)

With development of the Project, the Coffee Road / Relocated Crawford Road intersection would operate at LOS F on the westbound approach. Based on the change in average delay and satisfaction of signal warrants, this is a potentially significant impact.

A traffic signal would improve the LOS at this location to a condition that satisfies the City's minimum LOS standard. While the intersection is noted as a potential signal location in the Riverbank General Plan Update EIR, it is not included in any adopted fee program. Because the need for this improvement will dependent on the location and extent of development within the

Project site, conditions should be monitored as development proceeds and a traffic signal should be installed when warrants are met to the satisfaction of the City of Riverbank City Engineer. Implementation of Mitigation Measure 3.13-14 in Section 3.13 would reduce the potential impact. However, because this improvement is not included in any adopted fee program, there is no guarantee that the improvement will be installed. Thus, the Project's cumulative impact is **cumulatively considerable** and **significant and unavoidable**.

Impact 4.22: Under Cumulative (Year 2042) conditions, the proposed Project may result in a significant impact at the Claribel Road / N-S Collector intersection. (Less than Significant and Less than Cumulatively Considerable)

With development of the Project, the Claribel Road / N-S Collector intersection would operate at LOS E, and traffic signal warrants would be met. As LOS E exceeds the LOS D standard, this is a potentially significant impact. A traffic signal is needed at this location. This improvement is identified as Mitigation Measure 3.13-3 in Section 3.13. With implementation of this mitigation, this cumulative impact would be **less than significant**. As such, the Project would have a **less than cumulatively considerable contribution** related to this impact.

Impact 4.23: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the Claribel Road / Oakdale Road intersection. (Cumulatively Considerable and Significant and Unavoidable)

With development of the Project, the Claribel Road / Oakdale Road intersection will operate at LOS E. Based on the change from acceptable to unacceptable LOS, this is a potentially significant impact.

Improving the LOS would require adding a second northbound left turn lane on Oakdale Road and reorienting the four-lane westbound approach to provide dual left turns, a through lane, and a separate right turn lane. Improving the Oakdale Road / Claribel Road intersection is not in the Riverbank impact fee program, but the intersection is within the project area of the NCC. The second northbound left turn lane has not been included in the NCC project as described in the Draft EIR. With the aforementioned improvements, and contributing to the cost of the NCC by paying regional fees (RTIF) to cover other intersection costs, the City's minimum LOS standard would be met. Implementation of Mitigation Measure 3.13-15 in Section 3.13 requires payment of the Project's fair share fee. However, because the City of Riverbank does not control the NCC Project, nor the regional fee program, there is no guarantee that the improvement will be installed. Thus, the Project's cumulative impact is **cumulatively considerable** and **significant and unavoidable**.

Impact 4.24: Under Cumulative (Year 2042) conditions, the proposed Project would not result in a significant impact at the Oakdale Road / Claratina Road intersection. (Less than Significant and Less than Cumulatively Considerable)

The Oakdale Road / Claratina Road intersection is projected to operate at LOS E with and without the Project. Delay at this intersection would slightly increase under the Cumulative (Year 2042) Plus Project condition. However, because the incremental increase in delay is less than the 5.0 second increment used by the City of Modesto, the project's cumulative impact is **less than significant**.

Impact 4.25: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the Roselle Avenue / Sylvan Avenue intersection. (Cumulatively Considerable and Significant and Unavoidable)

The Roselle Avenue / Sylvan Avenue intersection is projected to operate at LOS F with and without the Project. Because the incremental change in delay exceeds the 5.0 second threshold employed by the City of Modesto, this is a potentially significant impact.

The existing two-lane roundabout might be enhanced to increase the capacity of this intersection. However, a three-lane roundabout would not improve the capacity to LOS D. Because no mechanism exists for the Project to contribute to the cost of improvements in the City of Modesto, and because the City of Riverbank does not control the RTIF or Modesto CFF program, there is no guarantee that the City of Modesto would allocate CFF funds to any improvement. Because mitigation does not appear feasible and installation of any improvement cannot be assured by the City of Riverbank, the Project's cumulative impact is **cumulatively considerable** and **significant and unavoidable**.

Impact 4.26: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the Coffee Avenue / Claratina Avenue intersection. (Cumulatively Considerable and Significant and Unavoidable)

The Coffee Avenue / Claratina Avenue intersection is projected to operate at LOS F with and without the Project. Because the incremental change in delay exceeds the 5.0 second threshold employed by the City of Modesto, this is a potentially significant impact.

The anticipated two-lane roundabout might be enhanced to increase its capacity. However, a three-lane roundabout would not improve the capacity to LOS D. Because no mechanism exists for the Project to contribute to the cost of improvements in the City of Modesto, and because the City of Riverbank does not control the RTIF or Modesto CFF program, there is no guarantee that the City of Modesto would allocate CFF funds to any improvement. Because mitigation does not appear feasible and installation of any improvement cannot be assured by the City of Riverbank, the project's cumulative impact is **cumulatively considerable** and **significant and unavoidable**.

Impact 4.27: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the segment of Coffee Road between Morrill Road and the relocated Crawford Road. (Cumulatively Considerable and Significant and Unavoidable)

The addition of trips generated by the Project would result in LOS F conditions on the two-lane rural section of Coffee Road between Morrill Road and the relocated Crawford Road. Because LOS F exceeds the City's minimum LOS D standard, this is a potentially significant impact.

Improving the LOS in this area would require improving Coffee Road to the functional equivalent of a two-lane arterial standard. This would provide LOS C with the forecast traffic volume. Not all of the overall improvements included in the City's arterial street standard are needed to improve the LOS, and the functional equivalent of an arterial street will include a travel lane in each direction, center two-way left-turn lane, and applicable shoulders. This work is not included in the City's traffic impact fee program.

By improving Coffee Road, the City's minimum LOS D standard will be satisfied. Implementation of Mitigation Measure 3.13-16 in Section 3.13 would reduce the potential impact. However, because this improvement is not included in any adopted fee program, there is no guarantee that the improvement will be installed. Thus, the Project's cumulative impact is **cumulatively considerable** and **significant and unavoidable**.

Impact 4.28: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the segment of Coffee Road between the relocated Crawford Road and the realigned Claribel Road intersection. (Cumulatively Considerable and Significant and Unavoidable)

The addition of trips generated by the Project would contribute to LOS F conditions on the two-lane rural section of Coffee Road between the relocated Crawford Road and the realigned Claribel Road intersection. While LOS F is projected with and without the Project, because change in v/c ratio exceeds the 0.05 increment permitted by the City of Riverbank, this is a potentially significant impact.

Improving the LOS in this area would require improving Coffee Road to an arterial standard. The projected volume exceeds the capacity of a two-lane arterial and a four-lane arterial would provide LOS B with the forecast traffic volume. Not all of the overall improvements included in the City's arterial street standard are needed to improve the LOS, and the functional equivalent of an arterial street will include two travel lanes in each direction, center two-way left-turn lane, and applicable shoulders. This work is not included in the City's traffic impact fee program.

By improving Coffee Road, the City's minimum LOS D standard will be satisfied. Implementation of Mitigation Measure 3.13-17 in Section 3.13 would reduce the potential impact. However, because this improvement is not included in any adopted fee program, there is no guarantee that the

improvement will be installed. Thus, the Project's cumulative impact is **cumulatively considerable** and **significant and unavoidable**.

Impact 4.29: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the segment of Coffee Road between the realigned Claribel Road intersection and NCC. (Cumulatively Considerable and Significant and Unavoidable)

The addition of trips generated by the Project would contribute to LOS F conditions on the two-lane rural section of Coffee Road between the realigned Claribel Road intersection and NCC. While LOS F is projected with and without the Project, because change in v/c ratio exceeds the 0.05 increment permitted by the City of Riverbank, this is a potentially significant impact.

Improving the LOS in this area would require improving Coffee Road to a four-lane arterial standard. This work is not included in the City's traffic impact fee program. The area is within the limits of the NCC project area, and the project may contribute to this work through payment of Regional Impact Fees.

By improving the Coffee Road, the City's minimum LOS D standard would be satisfied, and the project's impact would not be significant. However, because the City of Riverbank does not control the NCC or regional fee, there is no guarantee that the improvement will be installed. Therefore, the Project's impact is **cumulatively considerable** and **significant and unavoidable**.

Impact 4.30: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the segment of Oakdale Road between the Claribel Road intersection and NCC in the City of Modesto. (Cumulatively Considerable and Significant and Unavoidable)

The addition of trips generated by the Project would contribute to LOS F conditions on the four-lane section of Oakdale Road between the Claribel Road intersection and NCC. Because LOS F exceeds the minimum LOS D standard, this is a potentially significant impact.

Improving the LOS in this area would require improving Oakdale Road to a six-lane arterial standard. This work is not included in the City's traffic impact fee program. The area is within the limits of the NCC project area, and the Project may contribute to this work through Regional Impact Fees.

Because no mechanism exists for the Project to contribute to the cost of improvements in the City of Modesto, and because the City of Riverbank does not control the RTIF or Modesto CFF program, there is no guarantee that the City of Modesto would allocate CFF funds to this improvement. Because installation cannot be assured by the City of Riverbank, the Project's impact is **cumulatively considerable** and **significant and unavoidable**.

Impact 4.31: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the segment of Roselle Avenue between the Claribel Road intersection and NCC. (Cumulatively Considerable and Significant and Unavoidable)

The addition of trips generated by the Project would create LOS F conditions on the two-lane section of Roselle Avenue between the Claribel Road intersection and NCC. Because LOS F exceeds the minimum LOS D standard, this is a potentially significant impact.

Improving the LOS in this area would require improving Roselle Avenue to a four-lane arterial standard. This work is not included in the City's traffic impact fee program. The area is within the limits of the NCC project area and is included in Modesto's CFF, and the project may contribute to this work through Regional Impact Fees.

Because no mechanism exists for the Project to contribute to the cost of improvements in the City of Modesto, and because the City of Riverbank does not control the RTIF or Modesto CFF program, there is no guarantee that the City of Modesto would allocate CFF funds to this improvement. Because installation cannot be assured by the City of Riverbank, the Project's impact is **cumulatively considerable** and **significant and unavoidable**.

Impact 4.32: Under Cumulative (Year 2042) conditions, the proposed Project would not adversely affect bicycle facilities, pedestrian facilities, and transit facilities. (Less than Significant and Less than Cumulatively Considerable)

<u>Bicycle and Pedestrian Facilities</u>: Pedestrian and bicycle activity would occur as development in the Plan Area proceeds, and the proposed improvements are consistent with the StanCOG Non-Motorized Transportation Master Plan. The proposed alternative transportation circulation is shown in Figure 2.0-10 in Section 2.0, Project Description.

Potential safety impacts could occur as the Project connects to existing pedestrian and bicycle facilities. Existing traffic signals provide adequate pedestrian crossings on Oakdale Road to link the Project with most of the City of Riverbank. However, a protected crossing would be needed for the MID Lateral trail across Oakdale Road, and the distance between Morrill Road and Crawford Road may justify another east-west crossing on Oakdale Road. While the Morrill Road / N-S Collector intersection may not carry traffic volumes that justify signalization based on vehicular warrants, a protected crossing for the trail to the MID Main Canal may be needed. The nature of the crossings would need to be considered in consultation with the City of Riverbank. The crossing may feature a Hybrid Pedestrian Beacon to stop traffic when pedestrians are present, and would remain dark when pedestrians are not present. This is a potentially significant impact.

Implementation of Mitigation Measure 3.13-7 would require the Project applicant to work with City staff to identify pedestrian crossing features, as well as install the features. Implementation of Mitigation Measure 3.13-8 would require the Project applicant to monitor and identify any potentially safety conditions as development proceeds, as well as alleviate any potential concerns.

The mitigation measures included in Section 3.13 would ensure that this potential impact is reduced to a less than significant level.

Transit Facilities: Development in the CWSP could result in an increase in demand for transit service. The proposed alternative transportation circulation is shown in Figure 2.0-10 in Section 2.0, Project Description. The StaRT routes that are available would be adequate to serve the CWSP. The Project applicant would need to work with StaRT to identify applicable locations for stops and pullouts and install these improvement as development proceeds. The ultimate decisions regarding the nature of any routes that may circulate through the CWSP would be made by StaRT. The Project's impacts to transit services would not be significant. However, mitigation would be required in order to ensure that transit facilities are incorporated into the Project.

Implementation of Mitigation Measure 3.13-9 would require the Project applicant to work with Stanislaus Regional Transit staff to identify applicable on-site transit facilities and features, as well as install the features. The mitigation measures included in Section 3.13 would ensure that this potential impact is reduced to a less than significant level.

Conclusion: The Project would include development of pedestrian, bicycle, and transit facilities within the Plan Area. Mitigation measures included in Section 3.13 would ensure that the facilities are implemented in coordination with City staff and Stanislaus Regional Transit. As such, the Project would have a **less than cumulatively considerable contribution** related to this impact.

Impact 4.33: Under Cumulative (Year 2042) conditions, the proposed Project may result in issues related to site access and emergency vehicle access (Less than Significant and Less than Cumulatively Considerable)

Access to the Project site would be provided along Oakdale Road, Claribel Road, Crawford Road, and Morrill Road. Because the Project consists of multiple vehicular access points, emergency vehicles can access the site from multiple directions.

Additionally, development of the proposed mixed use retail area could create safety conflicts or capacity bottlenecks at driveways if access is improperly designed. Direct access to the southern mixed use retail area is anticipated on both Oakdale Road and Claribel Avenue, as well as at the new N-S Collector. Although no formal development plan has been created for this area, the proposed Circulation Plan envisions numerous points of access on the 2,000 feet from the N-S Collector to Oakdale Road and onto Oakdale Road on both sides of Freddi Lane intersection.

The issues associated with retail access may represent a potential safety issue if congestion occurs or if inadequate turn lanes are created. Implementation of Mitigation Measure 3.13-11 in Section 3.13 would require the Project applicant to provide a design for access of the MU-1 area, to the satisfaction of the City. As such, the Project would have a **less than cumulatively considerable** contribution related to this impact.

UTILITIES

The cumulative setting includes all areas covered in the service areas of the City's wastewater system, water system, stormwater system, and the solid waste collection and disposal services. Under General Plan buildout conditions, the City would see an increased demand for water service, sewer service, solid waste disposal services, and stormwater infrastructure needs.

Impact 4.34: Cumulative Impact on Wastewater Utilities (Less than Significant and Less than Cumulatively Considerable)

Wastewater service is provided by the City of Riverbank via their network of collection infrastructure and the City wastewater treatment plant (WWTP). As of 2015, the Waste Discharge Requirements (WDRs) for the City's WWTP is 7.9 million gallons per day (mgd).

The City of Riverbank's wastewater treatment system is currently in compliance with the WDR requirements of Order No. 94-100. The development of the proposed Project would not exceed the wastewater discharge requirements in this Order as described under Impact 3.14-1 in Section 3.14. Implementation of the proposed Project would have a **less than significant** and **less than cumulatively considerable** impact relative to this topic.

The wastewater collection and conveyance system that will serve the proposed Project will consist of engineered infrastructure consistent with the City's existing infrastructure requirements. Sizing of existing infrastructure in the City varies based on location, but generally includes gravity sewers and force mains ranging in size from 8 to 10 inches, and lift stations. The existing facilities have undergone environmental review and have waste discharge permits from the State.

New wastewater collection and conveyance infrastructure needed for the proposed Project will require trenching/excavation of earth, and placement of pipe within the trenches at specific locations, elevations, and gradients. The location of the wastewater collection and conveyance infrastructure within the Plan Area is outlined in Figure 2.0-12 in Section 2.0. The applicant will refine the wastewater collection/conveyance infrastructure design through the development of improvements plans which undergo a review by the Public Works Department to ensure consistency with the City's engineering standards. This improvement plan process will include full engineering design (i.e., location, depth, slope, etc.) of all conveyance infrastructure as well as a review of new sewer pump stations and new force mains if needed. Ultimately, the sanitary sewer collection system will be an underground collection system installed as per the City of Riverbank standards, criteria, and specifications. Sanitary sewer disposal and treatment will be to the City of Riverbank WWTP. Implementation of the proposed Project would have a **less than significant** and **less than cumulatively considerable** impact relative to this topic.

The City's Sewer Collection System Master Plan (2007) includes recommended wastewater generation factors for existing and future development land use areas for the City. As shown in Table 3.14-2 in Section 3.14, the total wastewater generated by the proposed Project is estimated to be approximately 568,740 gpd (0.568 mgd). The wastewater would be treated at the WWTP.

The proposed Project would require sewer allocation and would be required to pay connection fees.

The proposed Project would increase the amount of wastewater requiring treatment. The wastewater would be treated at the WWTP. The City has available capacity to serve the proposed Project in addition to the existing commitments. The City's Municipal Services Review determination included growth within the City's SOI, which included the proposed Project. Additionally, any recent expansion to the WWTP with a subsequent allocation of capacity to the proposed Project would ensure that there would not be a determination by the wastewater treatment and/or collection provider that there is inadequate capacity to serve the proposed Project's projected demand in addition to the provider's existing commitments. Implementation of the proposed Project would have a **less than significant** and **less than cumulatively considerable** impact relative to this topic.

Impact 4.35: Cumulative Impact on Water Utilities (Less than Significant and Less than Cumulatively Considerable)

The proposed Project would require extension of offsite water conveyance infrastructure to the Plan Area for potable water and irrigation water. All offsite water utility improvements will be in or adjacent to existing roadways along the perimeter of the Plan Area, thereby limiting any potential impact to areas that were not already disturbed. All onsite water utility improvements will be within existing agricultural lands, the impacts of which are discussed in Section 3.2, Agricultural Resources. Construction of the potable water infrastructure would not have the potential to induce growth beyond what is proposed because the infrastructure is not oversized to accommodate additional projects or growth.

In addition to the installation of water main lines, the proposed Project includes construction of a 1.69-million-gallon water tank to be located in the linear park near MID Lateral 6. A booster pump station will be constructed in conjunction with the water tank to distribute water to areas that will not be adequately served by the 12-inch main line. The ultimate water system build out will feature a tie-in to the existing 12-inch line which will provide uniform water distribution for the balance of the Plan Area. A new water well is proposed to be located in the Regional Park expansion area near the MID Main Lateral in the northern portion of the Plan Area. This well will be used to supplement the overall water system for Crossroads West.

The timing of the construction of the new water tank and well will be determined by a water balance and consumption report prepared at the time of site development. All water improvements shown are part of the City's Master Water Plan and are funded through the payment of City capital fees, also known as System Development Fees. If an adequate amount of fee revenue has not been collected when the well and/or tank are required, the developer will be required front the cost of the master water improvements, subject to reimbursement through fee offsets, and/or repayments as fees are collected from other areas in the City.

According to the analysis included in the Water Supply Assessment completed for the proposed Project (Appendix F), the City has adequate water supplies to support existing demand in the City

in addition to the proposed Project under average daily and maximum daily demand conditions. The total water supplies projected to be available in 2035 in all year types (17,400 AF) satisfies the projected potential water demand in 2035 in all year types (5,096 AF). With the projection of supply and demand presented previously for 2040, the total water supplies projected to be available in 2040 in all year types (17,400 AF) satisfies the projected potential water demand in 2040 in all year types (5,406 AF). Therefore, the City is projected to have approximately 11,994 AF of unallocated water supply in 2040 under all water year types.

It is noted that, while the Water Supply Assessment concludes that the City has adequate water supplies to support the Project, the Project would be required to construct the aforementioned water conveyance and storage infrastructure in order to serve the Project.

As shown in Table 3.14-12 in Section 3.14, the proposed Project's water demand is 2,013 AFY. The Water Supply Assessment completed for the proposed Project demonstrates that the City's existing and available potable water supplies are sufficient to meet the City's existing and projected future potable water demands to the year 2040 under all hydrologic conditions. Implementation of the proposed Project would have a **less than significant** and **less than cumulatively considerable** impact relative to this topic.

Impact 4.36: Cumulative Impact on Stormwater Facilities (Less than Significant and Less than Cumulatively Considerable)

The proposed Project includes storm drainage improvements. Onsite storm drainage would be installed to serve the proposed Project. As shown in Figure 2.0-13 in Section 2.0, a standalone drainage system that will detain all storm water runoff on-site in detention basins is proposed. Because of the greenfield/rural residential designation within the Low Impact Development Design and Specifications Manual, maintaining existing hydrological conditions by conserving natural areas and existing drainage features is an important consideration, where possible. Impervious hardscape surfaces (i.e., conventional roofs and paving) will be designed to discharge to pervious areas to help filter and infiltrate the stormwater runoff. To further aid infiltration, native soil compaction in landscaped areas will be minimized.

Land planning for CWSP, the preliminary drainage studies, and the preliminary drainage design are integrated to emphasize water conservation, protect water quality, help reduce flooding, and improve the overall watershed health. The proposed LID practices are appropriate for the local and existing conditions found on the Plan Area.

The Project proposed to construct and use three major storm water detention basins. The first proposed basin will be located in the 11-acre expansion proposed for the Regional Sports Park and will drain the areas north of Morrill Road. The two remaining detention basins will be located north and south of the major collector road on the west side of the Plan Area.

To summarize, the CWSP will conform to and utilize the LID practices set forth by the City of Riverbank. A combination of methods will be used in the Plan Area including underground filtration, which will be integrated into parking areas and landscape areas; bio-retention areas, such as the park basins; vegetated swales, which can be located in street landscape areas and

parking lots; filter strips, designed to treat sheet flow from adjacent surfaces; and permeable pavement, which is a porous, load-bearing pavement that allows storm water runoff to pass through its surface layer. Implementation of the proposed Project would have a **less than significant** and **less than cumulatively considerable** impact relative to this topic.

Impact 4.37: Cumulative Impact on Solid Waste Facilities (Less than Significant and Less than Cumulatively Considerable)

Solid waste generated in the City is disposed at the Forward Landfill and the Fink Road Landfill. The permitted maximum disposal at the Forward Landfill is 8,668 tons per day. The total permitted capacity of the landfill is 51.04 million cubic yards, which is expected to accommodate an operational life until January 1, 2021. The remaining capacity is 23.7 million cubic yards.

Additionally, permitted maximum disposal at the Fink Road Landfill is 2,440 tons per day. The total permitted capacity of the landfill is 10.6 million cubic yards (Class 3) and 4.1 million cubic yards (Class 3),[3] which is expected to accommodate an operational life until January 1, 2023. The remaining capacity is 8.24 million cubic yards.

The Mixed Use area is estimated to generate roughly 2.5 pounds per day per 1,000 square feet. It is estimated that the 577,000 square feet of commercial space would generate 1,442.5 pounds per day of solid waste. It is noted that this estimate of the square footage for the commercial space is considered a worst-case scenario and may very well prove to be an overestimate.

The single-family residential portion of the Plan Area is estimated to generate roughly 10 pounds per day per household. It is estimated that the proposed 2,064 single-family residential units would generate 20,640 pounds per day of solid waste. The multi-family residential portion of the Plan Area is estimated to generate roughly 5.31 pounds per day per household. It is estimated that the proposed 788 multi-family residential units would generate 4,184.3 pounds per day of solid waste. It is noted that these estimates of the unit counts for the residential components of the Project are considered a worst-case scenario and may very well prove to be an overestimate.

The total solid waste generated by the proposed Project is estimated to be 26,266.8 pounds per day (13.13 tons per day). Development fees would address all capital facilities costs created by new development, and General Plan polices are in place to ensure the provision of adequate services for current and future populations through the management and collection of development fees as well as the annexation into applicable maintenance districts. Additionally, future residents and businesses resulting from Project development would be required to pay monthly fees for waste collection services. These monthly fees are typically used to fund collection of waste and associated landfill costs.

The addition of solid waste associated with the proposed Project, approximately 13.13 tons per day at total buildout, to the Forward Landfill and the Fink Road Landfill would not exceed the landfills' remaining capacity. As such, implementation of the proposed Project would have a **less**

[3] Class 3 landfill indicates a municipal landfill that is not authorized to accept hazardous waste, and a Class 2 landfill indicates a landfill facility that is not authorized to accept hazardous waste.

than significant cumulative impact relative to this environmental topic. Thus, impacts related to solid waste facilities would be a **less than cumulatively considerable contribution**.

URBAN DECAY

The cumulative geographical setting includes all areas within the regional market trade area defined in Section 3.15, Urban Decay, and shown in Figure 3.15-1 of Section 3.15. The impact discussion is based whether there is sufficient development potential in Riverbank to fully support the Project at full build out of the General Plan.

As noted in Section 3.15, the northern and southern boundaries of the regional market trade area were delineated by Applied Development Economics (ADE) with the cities of Escalon and Valley Home, to the north, and Modesto, to the south. Census block groups around Escalon and Valley Home are included in the market area on the theory that residents in these places who are employed in Modesto (and points south of Modesto) will commute along roads that bring them close to Riverbank. One very large Stanislaus County Census block group (block group 2 of Census tract 1.01) near unincorporated Valley Home contributes to the non-uniform shape of the regional market trade area. Salida and Ripon to the west of Riverbank are not included in the trade area on the assumption that residents there have an abundance of easily-accessible regional shopping destination to choose from, including in Manteca to the north or the various Modesto destinations along SR 99. For the same reason, cities, unincorporated areas, and census block groups west and south of Modesto are also excluded from the regional market trade area. Waterford and Hickman to the southeast of the project area are included given the roads connecting these places with Oakdale, which allows Riverbank to compete for traffic on the Oakdale-to-Waterford-Hickman corridor.[4]

Impact 4.38: Cumulative Impact Related to Urban Decay (Less than Significant and Less than Cumulatively Considerable)

The following discussion is based on the *Riverbank Crossroads West Specific Plan Urban Decay Analysis* completed for the Project by ADE, Inc. (January 2018) (see Appendix H).

Based on the regional growth projections, the maximum amount of retail square footage proposed by the Project could be fully absorbed within a decade in most of the competing retail shopping areas in and around Riverbank. While existing Riverbank stores in the interim show the highest levels of potential sales reductions, it should be noted that the configuration of the proposed retail center will likely follow the existing Crossroads Shopping Center as a regionally oriented center. Aside from the existing Crossroads Shopping Center, there are no other commercial centers in Riverbank with a similar configuration.

[4] Additional market support could potentially come from the communities well east of Oakdale outside of the secondary market area, and up into Tuolumne County (including Sonora and Twain Harte). Those communities would increase the household count in the secondary market area by 1.4 percent. Assuming a market capture rate consistent with the secondary market area, this would potentially increase the available retail spending in Riverbank by about $3.16 million.

There is sufficient development potential in Riverbank to fully support the Project at full build out of the General Plan, which would include development of about 10,700 additional housing units, including those in the CWSP. If residential development in Riverbank proceeds faster than is currently projected by the StanCOG, then it is more likely the City could sustain full build out of the maximum retail center of CWSP without incurring impacts to existing retail centers which is measurable.

Based on the economic impact analysis and site visits to competing retail commercial sites, there appears to be no evidence that implementation of the proposed Project would result in urban decay in retail centers outside of Riverbank, and only a limited possibility of such impacts within Riverbank (if the phasing of the Project is properly managed). This conclusion is based on the general descriptions of the land uses as they currently exist, prior to development proposals and more finalized distribution of businesses and square footage. As the Project phasing, proposed business uses, and site configurations become more concrete, a more targeted assessment of business impacts could be developed.

It is noted that if the proposed retail center attracts a similar mix of businesses and building configurations as the existing Crossroads Shopping Center, the proposed retail center would likely function as a regionally-oriented retail center, which would limit the impacts on more locally-focused retail centers. The existing Crossroads Shopping Center draws its customers from across a large geographic area, with the largest proportion of customers coming from the northern and eastern parts of Modesto. Those areas also have the largest concentration of direct regional competition. Because the projected impacts resulting from development of the Project represent a comparatively small percentage of sales, the likelihood of urban decay from regionally-oriented competition from Riverbank is low. Thus, impacts related to the physical deterioration and urban decay of existing retail commercial development in the City of Riverbank and surrounding area would be a **less than cumulatively considerable contribution**.

4.2 SIGNIFICANT IRREVERSIBLE EFFECTS

LEGAL CONSIDERATIONS

CEQA Section 15126.2(c) and Public Resources Code Sections 21100(b)(2) and 21100.1(a), require that the EIR include a discussion of significant irreversible environmental changes which would be involved in the proposed action should it be implemented. Irreversible environmental effects are described as:

- The project would involve a large commitment of nonrenewable resources;
- The primary and secondary impacts of a project would generally commit future generations to similar uses (e.g., a highway provides access to previously remote area);
- The project involves uses in which irreversible damage could result from any potential environmental accidents associated with the project; or

- The phasing of the proposed consumption of resources is not justified (e.g., the project involves the wasteful use of energy).

Determining whether the proposed Project would result in significant irreversible effects requires a determination of whether key resources would be degraded or destroyed such that there would be little possibility of restoring them. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

Analysis

Implementation of the proposed Project would result in the conversion of 387.5 acres of land currently used for agricultural and rural residential uses for the development of residential and commercial uses. Development of the proposed Project would constitute a long-term commitment to these uses. It is unlikely that circumstances would arise that would justify the return of the land to its original condition as agricultural or vacant rural land.

A variety of resources, including land, energy, water, construction materials, and human resources would be irretrievably committed for the initial construction, infrastructure installation and connection to existing utilities, and its continued maintenance. Construction of the proposed Project would require the commitment of a variety of other non-renewable or slowly renewable natural resources such as lumber and other forest products, sand and gravel, asphalt, petrochemicals, and metals.

Additionally, a variety of resources would be committed to the ongoing operation and life of the proposed Project. The introduction of residential, commercial, and business industrial park uses to the Project site will result in an increase in area traffic over existing conditions. Fossil fuels are the principal source of energy and the proposed Project will increase consumption of available supplies, including gasoline and diesel. These energy resource demands relate to initial Project construction, Project operation and site maintenance and the transport of people and goods to and from the Project site.

4.4 SIGNIFICANT AND UNAVOIDABLE IMPACTS

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 proposed Project are discussed in Chapters 3.1 through 3.15 and previously in this chapter (cumulative-level). Refer to those discussions for further details and analysis of the significant and unavoidable impact identified below:

- Impact 3.1-1: Project implementation may result in substantial adverse effects on scenic vistas and resources or substantial degradation of visual character
- Impact 3.2-1: The proposed Project has the potential to result in the conversion of Farmlands, including Prime Farmland and Farmland of Statewide Importance, as shown on

the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural uses

- Impact 3.3-1: Project operation has the potential to conflict with or obstruct implementation of an applicable air quality plan, cause a violation of an air quality standard, or contribute substantially to an existing or projected air quality violation
- Impact 3.3-2: Project construction has the potential to cause a violation of an air quality standard or contribute substantially to an existing or projected air quality violation
- Impact 3.7-1: Potential to generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment or potential to conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases
- Impact 3.7-2: Cumulative impact on climate change from increased Project-related greenhouse gas emissions
- Impact 3.11-3: The proposed Project may generate unacceptable traffic noise levels at existing receptors
- Impact 3.12-2: The proposed Project has the potential to require the construction of fire department facilities which may cause substantial adverse physical environmental impacts
- Impact 3.12-3: The proposed Project has the potential to require the construction of school facilities which may cause substantial adverse physical environmental impacts
- Impact 3.13-1: Under Existing conditions, the proposed Project would result in a significant impact at the Patterson Road / Coffee Road intersection
- Impact 3.13-2: Under Existing conditions, the proposed Project would result in a significant impact at the Claribel Road / Oakdale Road intersection
- Impact 3.13-5: Under Existing conditions, the proposed Project would result in a significant impact at the segment of Patterson Road from McHenry Avenue to Coffee Road
- Impact 3.13-6: Under Existing conditions, the proposed Project would result in a significant impact at the segment of Claribel Road from McHenry Avenue to Coffee Road
- Impact 3.13-7: Under Existing conditions, the proposed Project would result in a significant impact at the segment of Claribel Road from Oakdale Road to Claus Road
- Impact 3.13-8: Under Existing conditions, the proposed Project would result in a significant impact at the segment of Coffee Road between Claribel Road and Claratina Avenue, located in the City of Modesto
- Impact 3.13-10: Under Existing conditions, the proposed Project would result in a significant impact at the segment of Oakdale Road between Claribel Road and Claratina Avenue, located in the City of Modesto
- Impact 3.13-15: Under EPAP conditions, the proposed Project would result in a significant impact at the McHenry Avenue / Kiernan Avenue / Claribel Avenue intersection
- Impact 3.13-16: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the Patterson Road / Coffee Road intersection
- Impact 3.13-17: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the Coffee Road / Morrill Road intersection

- Impact 3.13-18: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the Coffee Road / Relocated Crawford Road intersection
- Impact 3.13-20: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the Claribel Road / Oakdale Road intersection
- Impact 3.13-22: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the Roselle Avenue / Sylvan Avenue intersection
- Impact 3.13-23: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the Coffee Avenue / Claratina Avenue intersection
- Impact 3.13-24: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the segment of Coffee Road between Morrill Road and the relocated Crawford Road
- Impact 3.13-25: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the segment of Coffee Road between the relocated Crawford Road and the realigned Claribel Road intersection
- Impact 3.13-26: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the segment of Coffee Road between the realigned Claribel Road intersection and NCC
- Impact 3.13-27: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the segment of Oakdale Road between the Claribel Road intersection and NCC in the City of Modesto
- Impact 3.13-28: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the segment of Roselle Avenue between the Claribel Road intersection and NCC
- Impact 4.2: Cumulative Degradation of the Existing Visual Character of the Region
- Impact 4.4: Cumulative Impact on Agricultural Resources
- Impact 4.5: Cumulative Impact on the Region's Air Quality
- Impact 4.9: Cumulative Impact on Climate Change from Increased Project-Related Greenhouse Gas Emissions
- Impact 4.17: Cumulative Exposure of Existing and Future Noise-Sensitive Land Uses to Increased Noise Resulting from Cumulative Development
- Impact 4.19: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the Patterson Road / Coffee Road intersection
- Impact 4.20: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the Coffee Road / Morrill Road intersection
- Impact 4.21: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the Coffee Road / Relocated Crawford Road intersection
- Impact 4.23: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the Claribel Road / Oakdale Road intersection
- Impact 4.25: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the Roselle Avenue / Sylvan Avenue intersection
- Impact 4.26: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the Coffee Avenue / Claratina Avenue intersection

- Impact 4.27: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the segment of Coffee Road between Morrill Road and the relocated Crawford Road
- Impact 4.28: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the segment of Coffee Road between the relocated Crawford Road and the realigned Claribel Road intersection
- Impact 4.29: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the segment of Coffee Road between the realigned Claribel Road intersection and NCC
- Impact 4.30: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the segment of Oakdale Road between the Claribel Road intersection and NCC
- Impact 4.31: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the segment of Roselle Avenue between the Claribel Road intersection and NCC

5.1 CEQA REQUIREMENTS

CEQA requires that an EIR analyze a reasonable range of feasible alternatives that meet most or all project objectives while reducing or avoiding one or more significant environmental effects of the project. The range of alternatives required in an EIR is governed by a "rule of reason" that requires an EIR to set forth only those alternatives necessary to permit a reasoned choice (CEQA Guidelines Section 15126.6[f]). Where a potential alternative was examined but not chosen as one of the range of alternatives, the CEQA Guidelines require that the EIR briefly discuss the reasons the alternative was dismissed.

Alternatives that are evaluated in the EIR must be potentially feasible alternatives. However, not all possible alternatives need to be analyzed. An EIR must "set forth only those alternatives necessary to permit a reasoned choice." (CEQA Guidelines, Section 15126.6(f).) The CEQA Guidelines provide a definition for a "range of reasonable alternatives" and, thus limit the number and type of alternatives that need to be evaluated in an EIR.

First and foremost, alternatives in an EIR must be potentially feasible. In the context of CEQA, "feasible" is defined as:

> *… capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors.* (CEQA Guidelines 15364)

The inclusion of an alternative in an EIR is not evidence that it is feasible as a matter of law, but rather reflects the judgment of lead agency staff that the alternative is potentially feasible. The final determination of feasibility will be made by the lead agency decision-making body through the adoption of CEQA Findings at the time of action on the Project. (Mira Mar Mobile Community v. City of Oceanside (2004) 119 Cal.App.4th 477, 489 see also CEQA Guidelines, §§ 15091(a)) (3)(findings requirement, where alternatives can be rejected as infeasible); 15126.6 ([an EIR] must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation"). The following factors may be taken into consideration in the assessment of the feasibility of alternatives: site suitability, economic viability, availability of infrastructure, general plan consistency, other plan or regulatory limitations, jurisdictional boundaries, and the ability of the proponent to attain site control (Section 15126.6 (f) (1)).

Equally important to attaining the project objectives is the reduction of some or all significant impacts, particularly those that could not be mitigated to a less than significant level. The following significant and unavoidable impacts of the proposed Crossroads West Specific Plan are discussed in Sections 3.1 through 3.15 (project-level) and Chapter 4.0 (cumulative-level):

- Impact 3.1-1: Project implementation may result in substantial adverse effects on scenic vistas and resources or substantial degradation of visual character

- Impact 3.2-1: The proposed Project has the potential to result in the conversion of Farmlands, including Prime Farmland and Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural uses
- Impact 3.3-1: Project operation has the potential to conflict with or obstruct implementation of an applicable air quality plan, cause a violation of an air quality standard, or contribute substantially to an existing or projected air quality violation
- Impact 3.3-2: Project construction has the potential to cause a violation of an air quality standard or contribute substantially to an existing or projected air quality violation
- Impact 3.7-1: Potential to generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment or potential to conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases
- Impact 3.7-2: Cumulative impact on climate change from increased Project-related greenhouse gas emissions
- Impact 3.11-3: The proposed Project may generate unacceptable traffic noise levels at existing receptors
- Impact 3.12-2: The proposed Project has the potential to require the construction of fire department facilities which may cause substantial adverse physical environmental impacts
- Impact 3.12-3: The proposed Project has the potential to require the construction of school facilities which may cause substantial adverse physical environmental impacts
- Impact 3.13-1: Under Existing conditions, the proposed Project would result in a significant impact at the Patterson Road / Coffee Road intersection
- Impact 3.13-2: Under Existing conditions, the proposed Project would result in a significant impact at the Claribel Road / Oakdale Road intersection
- Impact 3.13-5: Under Existing conditions, the proposed Project would result in a significant impact at the segment of Patterson Road from McHenry Avenue to Coffee Road
- Impact 3.13-6: Under Existing conditions, the proposed Project would result in a significant impact at the segment of Claribel Road from McHenry Avenue to Coffee Road
- Impact 3.13-7: Under Existing conditions, the proposed Project would result in a significant impact at the segment of Claribel Road from Oakdale Road to Claus Road
- Impact 3.13-8: Under Existing conditions, the proposed Project would result in a significant impact at the segment of Coffee Road between Claribel Road and Claratina Avenue, located in the City of Modesto
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- Impact 3.13-18: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the Coffee Road / Relocated Crawford Road intersection
- Impact 3.13-20: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the Claribel Road / Oakdale Road intersection
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- Impact 3.13-27: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the segment of Oakdale Road between the Claribel Road intersection and NCC
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- Impact 4.29: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the segment of Coffee Road between the realigned Claribel Road intersection and NCC
- Impact 4.30: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the segment of Oakdale Road between the Claribel Road intersection and NCC
- Impact 4.31: Under Cumulative (Year 2042) conditions, the proposed Project would result in a significant impact at the segment of Roselle Avenue between the Claribel Road intersection and NCC

The following analysis of alternatives focuses on significant impacts, including both those that can be mitigated to a less-than-significant level and those that would remain significant even if mitigation is applied or for which no feasible mitigation is available.

A Notice of Preparation (NOP) was circulated to the public to solicit recommendations for a reasonable range of alternatives to the proposed project. Additionally, a public scoping meeting was held during the public review period to solicit recommendations for a reasonable range of alternatives to the proposed project. No specific alternatives were recommended by commenting agencies or the general public during the NOP public review process.

PROJECT OBJECTIVES

The principal objective of the proposed Project is the approval and subsequent implementation of the Crossroads West Specific Plan (CWSP) Project (the proposed Project). The quantifiable objectives of the proposed Project include annexation of 387.5 acres of land into the Riverbank City limits, and the subsequent development of land, which will include: Low Density Residential, Medium Density Residential, High Density Residential, Regional Sports Park, Mixed Use, Elementary School, Park/Basin, Neighborhood Park, and transportation and utility improvements.

The CWSP Project identifies the following objectives:

- Create opportunities for housing types responsive to current market conditions, with the flexibility to adapt to changing market conditions.

- Create synergy between this new Specific Plan Area, containing a mixture of urban uses, with Riverbank's existing commercial node at Crossroads Shopping Center east of Oakdale Road across from the Project site.
- Develop the next logical planning area adjacent (to the west and northwest) of the City's major existing commercial node at Crossroads Shopping Center.
- Provide housing opportunities for employees expected in Riverbank through the development of the Riverbank Industrial Complex.
- Provide opportunities for Riverbank residents to buy new homes in a newly created neighborhood.
- Eliminate the planning peninsula created by the city limits in northwest Riverbank by "squaring off" the city limits to the westernmost city limits at Patterson Road and the MID Main Canal.
- Develop areas adjacent to the city limits to minimize leap-frog development that has the fewest landowners and a land area with large parcels which improves the likelihood that the objectives of a specific plan can be achieved over time.
- Promote a balance of uses in the Plan including retail opportunities, schools, public facilities, parks and open space, and varying density residential.
- Promote a mix of urban uses that are linked to regional amenities and transportation systems.
- Provide a variety of pedestrian corridors throughout the Plan Area to promote connectivity, foster a sense of community and connect the residents of Riverbank to amenities and public facilities.
- Protect adjacent farmland operations by providing transitional buffers.
- Encourage energy efficiency and thoughtful use of resources through sustainable design practices and Low-Impact Design (LID) strategies.
- Promote friendly and inviting streetscapes through the use of landscape materials, street fixtures, furniture and design elements that reflect a high-quality development.
- Encourage the use of mixed architectural styles and materials.
- Reinforce existing retail uses to the east and designate sufficient retail, office and commercial land for job generating uses to improve the City's jobs-to-housing balance.
- Create a safe and accessible link between neighborhoods, community facilities and shopping centers within the Plan Area and to the surrounding neighborhoods.

5.2 ALTERNATIVES CONSIDERED IN THIS EIR

Four alternatives to the proposed Project were developed based on input from City staff, and the technical analysis performed to identify the environmental effects of the proposed Project. The alternatives analyzed in this EIR include the following four alternatives in addition to the proposed Project.

- **No Project (No Build) Alternative**: Under this alternative, development of the Plan Area would not occur, and the Plan Area would remain in its current existing condition.

- **Off-Site Location Alternative:** Under this alternative, the proposed Project would be developed with the same amenities as described in the Project Description, but at an off-site location.
- **Increased Density Alternative:** Under this alternative, the proposed Project would be developed with the same amenities as described in the Project Description, but the density of the residential uses would be increased, and the total development footprint would be decreased.
- **Lower Density Alternative:** Under this alternative, the proposed Project would be developed in such a way to promote larger lot sizes and to reduce the overall footprint of the developed areas.

NO PROJECT (NO BUILD) ALTERNATIVE

Under the No Project (No Build) Alternative development of the Plan Area would not occur, and the Plan Area would remain in its current existing condition. It is noted that the No Project (No Build) Alternative would fail to meet the Project objectives identified by the City of Riverbank.

OFF-SITE LOCATION ALTERNATIVE

Under the Off-Site Location Alternative, the proposed Project would be developed with the same amenities as described in the Project Description, but at an off-site location. As shown in Figure 5.0-1, this alternative would be located within the eastern portion of the City Primary Area Sphere of Influence (SOI), north of Claribel Road, west of Eleanor Avenue, south of California Avenue, and east of Claus Road. This alternative location includes approximately 376.52 acres. The existing City land use designations for the Off-Site Location Alternative include: Community Commercial (29.1 acres), Industrial / Business Park (77.2 acres), Lower Density Residential (127.9 acres), Medium-Density Residential (132.9 acres), and Mixed Use (2.0 acres).

Under the Off-Site Location Alternative, the same number of residential units as the proposed Project (1,539 to 2,852 units) would be constructed. Additionally, all of the residences would have equal lot sizes, and a comparable amount of parks and open space uses would be located throughout the off-site location. This alternative would also plan for possible future civic uses such as an elementary school, middle school, as well as a fire station site. The Off-Site Location Alternative would include the same amount of Mixed Use areas as the Project, and would provide an estimated 387,000 to 577,000 square feet (sf) of commercial/retail uses, identical to the proposed Project.

INCREASED DENSITY ALTERNATIVE

Under the Increased Density Alternative, the proposed Project would be developed with the same amenities as described in the Project Description, but the density of the residential uses would be increased. This alternative would include development of more apartments and auto court multi-family units than under the proposed Project. Under the Increased Density Alternative, the same number of residential units as the proposed Project (1,539 to 2,852 units) would be constructed. However, this alternative would include development of 50% medium

and high density units, and 50% low density units. The residential areas would be clustered throughout the Project site at increased densities to allow for a decrease in the total development area from 387.5 acres under the proposed Project to 300.0 acres. This alternative would also plan for possible future civic uses such as an elementary school, middle school, as well as a fire station site. Additionally, the Mixed Use areas would provide an estimated 387,000 to 577,000 sf of commercial/retail uses, identical to the proposed Project.

LOWER DENSITY ALTERNATIVE

Under the Lower Density Alternative, the proposed Project would be developed in such a way to promote larger lot sizes and to reduce the overall footprint of the developed areas. This alternative would include development of custom homes on approximately 10,000 sf lots, as compared to the 4,000 to 6,000 sf lot sizes for the low density residential units proposed by the Project. Under the Lower Density Alternative, the same number of residential units as the proposed Project (1,539 to 2,852 units) would be constructed. This alternative would also plan for possible future civic uses such as an elementary school, middle school, as well as a fire station site. Additionally, the Mixed Use areas would provide an estimated 387,000 to 577,000 sf of commercial/retail uses, identical to the proposed Project.

5.3 ENVIRONMENTAL ANALYSIS

The alternatives analysis provides a summary of the relative impact level of significance associated with each alternative for each of the environmental issue areas analyzed in this EIR. Following the analysis of each alternative, Table 5.0-1 summarizes the comparative effects of each alternative.

NO PROJECT (NO BUILD) ALTERNATIVE

Aesthetics and Visual Resources

The No Project (No Build) Alternative would leave the Project site in its existing state and would not result in increases in daytime glare or nighttime lighting. The visual character of the Project site would not change under this alternative compared to existing conditions.

As described in Section 3.1, the visual character of the Project site would be significantly altered as a result of Project implementation. Implementation of the proposed Design Guidelines and landscaping requirements, and consistency with the General Plan and the Riverbank Zoning Ordinance, would ensure that impacts are reduced to the greatest extent possible. Nevertheless, impacts related to degradation of the visual character of the site would be significant and unavoidable.

Implementation of the lighting plan required by Mitigation Measure 3.1-1 would ensure that lighting features do not result in light spillage onto adjacent properties and do not significantly impact views of the night sky. Adherence to the mitigation measure would ensure that excessively reflective building materials are not used, and that the proposed Project would not

result in significant impacts related to daytime glare. As such, impacts related to nighttime lighting and daytime glare would be less than significant with mitigation.

The proposed Project would result in potentially significant new sources of light and glare. The proposed Project would also result in impacts to the existing visual character or quality of the Project site and its surroundings. However, the No Project (No Build) Alternative would avoid these impacts altogether. As such, this impact would be reduced when compared to the proposed Project.

Agricultural Resources

Currently, the majority of the Project site is used for agricultural purposes. The No Project (No Build) Alternative would not result in development of the Project site. As such, this alternative would have no impact on agricultural land, no potential for conflicts with existing agricultural resources, and no potential for conflict with regulations and plans intended to protect those resources. As such, this impact would be reduced when compared to the proposed Project.

Air Quality

As described in Section 3.3, Stanislaus County has a state designation of Nonattainment for Ozone (O_3), respirable particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$) and is either Unclassified or Attainment for all other criteria pollutants. The County has a national designation of Nonattainment for ozone and $PM_{2.5}$. The County is designated either attainment or unclassified for the remaining national standards. Table 3.3-2 in Section 3.3 presents the state and federal attainment status for Stanislaus County.

As discussed under Impact 3.3-1 in Section 3.3, the proposed Project would result in increased emissions. The San Joaquin Valley Air Pollution Control District (SJVAPCD) has established operations related emissions thresholds of significance and it was determined that annual emissions of reactive organic gases (ROG), nitrogen oxides (NO_X), and PM_{10} exceed the SJVAPCD thresholds of significance. Implementation of Mitigation Measure 3.3-1 would require development projects in the Plan Area to mitigate operational NO_X emissions by 33 percent and operational PM_{10} emissions by 50 percent over ten years. However, even with all reasonable and feasible measures that could be implemented into the Plan Area on-site, the mitigation is not expected to achieve reductions required under Rule 9510.

The proposed Project is subject to the SJVAPCD Rule 9510 (Indirect Source Rule), which could result in substantial mitigation of NO_X and associated ROG emissions. The reductions are accomplished by the incorporation of mitigation measures into projects and/or by the payment of an Indirect Source Rule fee for any required reductions that have not been accomplished through Project mitigation commitments. The current fees are $9,350 per ton of NO_X. The actual calculations will be determined and finalized by the SJVAPCD and Project applicants as individual projects are brought forward for approval under Rule 9510.

Under the No Project (No Build) Alternative, the Project site would not be developed, and the existing operations within the Plan Area would continue. As described previously within this EIR

(Chapter 2.0: Project Description), the nine parcels that comprise the Plan Area are currently used primarily for agricultural operations including dairy operations, row crops, and fallow land. Additionally, an approximately 11-acre regional City park, the Riverbank Sports Complex, is currently developed in the northeastern portion of the Plan Area, near the intersection of Morrill Road and Oakdale Road. In addition to the criteria air pollutant emissions generated by the use of vehicles, agricultural equipment, and building energy use as a result of existing site operations, the dairy operations have a large potential to generate substantial amounts of biogenic CH_4 (methane) emissions (a potent source of greenhouse gas [GHG] emissions). Such emissions are biological in origin; they are generated by the digestive activities of the dairy cows located within the Plan Area.

There are approximately 570 dairy cows (500 milking cows and 70 dry cows[1]) currently managed within the Plan Area. Under the No Project (No Build) Alternative, there would be no net change in emissions and no potential for a conflict with any adopted plans or policies related to air quality. As such, this impact would be reduced when compared to the proposed Project.

Biological Resources

As described in Section 3.4, Biological Resources, construction on the Project site has the potential to result in impacts to special-status species in the region. Although there has been no documented sighting within the immediate area in, or near the Project site, the Project site provides potential habitat for several species, including those discussed in Section 3.4.

Mitigation Measure 3.4-1 requires the Project applicant to avoid or minimize impacts on western burrowing owl by completing an initial take avoidance survey using the recommended methods described in the Detection Surveys section of the March 7, 2012, California Department of Wildlife (CDFW) Staff Report on Burrowing Owl Mitigation (CDFW 2012). Additionally, Mitigation Measure 3.4-2 requires the Project applicant to implement various measures in order to avoid and/or minimize impacts on Swainson's hawk and their habitat. As part of this measure, compensatory mitigation for the permanent loss of Swainson's hawk foraging habitat would be provided. The Project applicant shall either provide lands protected through fee title acquisition or conservation easement (acceptable to the CDFW) on agricultural lands or other suitable habitats which provide foraging habitat for Swainson's hawk. Surveys for other special-status species and other measures to minimize potential for effects during Project construction would also be required. See Mitigation Measures 3.4-1 through 3.4-4 for more information.

Under the No Project (No Build) Alternative, the proposed Project would not be constructed, no habitat would be removed, and no ground disturbing activities would occur. As such, this impact would be reduced when compared to the proposed Project.

[1] Email communication with Dave Romano, Project Applicant, on December 18, 2017.

Cultural and Tribal Resources

As described in Section 3.5, during the field surveys conducted on the Project site there were no historical, archaeological, or paleontological resources identified. However, as with most projects in the region that involve ground-disturbing activities, there is the potential for discovery of a previously unknown cultural and/or historical resource or human remains. Implementation of mitigation measures in Section 3.5 would reduce unknown cultural resources impacts to a less than significant level.

The No Project (No Build) Alternative would result in no ground disturbing activities related to the proposed Project and would not have the potential to disturb or destroy cultural, tribal, historic, and archaeological resources, as well as paleontological resources. While the proposed Project is not anticipated to result in significant impacts to cultural or tribal resources with mitigation, the No Project (No Build) Alternative would result in less potential for impacts to cultural and tribal resources as the entire Project site would continue to be used for agriculture production. As such, this impact would be reduced when compared to the proposed Project.

Geology and Soils

The No Project (No Build) Alternative would result in the Project site remaining in its existing condition. There are currently approximately seven structures on the Project site that are subject to seismic or geologic risks, including earthquakes, liquefaction, subsidence, etc. The No Project (No Build) Alternative would not involve new construction that could be subject to seismic, geologic or soils hazards, thus this alternative would have no potential for impact. As such, this impact would be reduced when compared to the proposed Project.

Greenhouse Gases,Climate Change, and Energy

Short-term construction GHG emissions are a one-time release of GHGs and are not expected to significantly contribute to global climate change over the lifetime of the proposed Project. As described in Impact 3.7-1 in Section 3.7, implementation of the proposed Project will still generate GHG emissions that wouldn't otherwise exist without the proposed Project. Given the length of construction activities for a Project of this size, the maximum short-term annual construction emissions of GHG associated with development of the Project are estimated to be 51,419.38 metric tons of carbon dioxide equivalents ($MMTCO_2e$). The operational emissions would be a long-term release totaling approximately 63,343.4781 $MTCO_2e$.

Under the No Project (No Build) Alternative, the Project site would not be developed.. In addition to the emissions generated by the use of vehicles, agricultural equipment, and building energy use as a result of existing site operations, the dairy operations have a large potential to generate substantial amounts of biogenic CH_4 (methane) emissions (a potent source of GHG emissions).

Under the No Project (No Build) Alternative, there would be no net change in emissions and no potential for a conflict with any adopted plans or policies related to air quality. As such, this impact would be reduced when compared to the proposed Project.

Hazards and Hazardous Materials

The proposed Project includes components which will likely use a variety of common household hazardous materials including: paints, cleaners, and cleaning solvents. There will be a risk of release of these materials into the environment if they are not stored and handled in accordance with best management practices approved by the Stanislaus County Division of Environmental Resources and the Stanislaus Consolidated Fire Protection District.

Under the No Project (No Build) Alternative, no new land uses would be introduced to the Project site, and the potential for hazardous material release on the Project site would be eliminated. As such, this impact would be reduced when compared to the proposed Project.

Hydrology and Water Quality

As described in Section 3.9, implementation of the proposed Project has the potential to result in the violation of water quality standards and the discharge of pollutants into surface waters during both construction and long-term operations. Construction operations could result in temporary increases in runoff, erosion, sedimentation, soil compaction and wind erosion effects that could adversely affect soils and reduce the revegetation potential at construction sites and staging areas. The long-term operation of the proposed Project could result in long-term impacts to surface water quality from urban stormwater runoff and could enter groundwater or surface water systems. Mitigation measures provided in Section 3.6 (Geology and Soils) and 3.9 (Hydrology and Water Quality) reduce potential water quality impacts to a less than significant level. The proposed Project would not significantly impact groundwater recharge or place persons or structures in a flood hazard zone.

Under the No Project (No Build) Alternative, potential water quality impacts from construction and operation of the proposed Project would be eliminated. While groundwater recharge is not considered a significant impact under the proposed Project, under this alternative, the land will be kept in its present state with the majority of the Project site being used for agricultural purposes. The Project site has soils all have a hydrologic rating of “A”, “C”, and “D”. Group “A” soils have low runoff potential when thoroughly wet, Group “C” soils have moderately high runoff potential when thoroughly wet, and Group “D” soils have high runoff potential when thoroughly wet. The No Project (No Build) Alternative would have a greater chance of groundwater recharge because it would not introduce large areas of impervious surfaces as would the proposed Project. As such, potential impacts related to hydrology and water quality would be reduced under the No Project (No Build) Alternative when compared to the proposed Project.

Land Use, Population, and Housing

The proposed Project is not expected to induce population growth that has not already been accounted for as a part of the existing General Plan, or analyzed in detail in this EIR. The proposed Project does not displace substantial numbers of persons or housing units. The Project would require a zoning and General Plan amendment for land use changes, as well as

annexation to the City of Riverbank. However, impacts to land use are considered less than significant.

The No Project (No Build) Alternative would not result in changes to on-site land uses and would not result in development of the site. Because the No Project (No Build) Alternative would not add any additional population and would not changes land use patterns, impacts related to land use, population, and housing would be reduced when compared to the proposed Project.

Noise

The proposed Project could increase noise-generating activities associated with the maintenance and operation of the proposed Project, as well as from vehicular traffic. Mitigation measures provided in Section 3.11 would reduce nearly all potential impacts to a less than significant level. However, impacts associated with generation of unacceptable traffic noise levels at existing receptors would remain significant and unavoidable.

Under the No Project (No Build) Alternative, the Project site would not be developed and there would be no potential for new noise sources. As such, this impact would be reduced when compared to the proposed Project.

Public Services and Recreation

Under the No Project (No Build) Alternative, the Project site would remain undeveloped and there would be no increased demand for public services or recreation. The recreational amenities within the proposed Project, however, would not be developed for community use. The No Project (No Build) Alternative would have a reduced impact when compared to the proposed Project because demand on public services would be reduced with compared to the proposed Project, with the possible exception of recreational park facilities.

Transportation and Circulation

The No Project (No Build) Alternative would not introduce additional vehicle trips onto the study area roadways. It was determined that the proposed Project would cause an increase in traffic on roadways or intersections that would cause traffic operations to degrade to an unacceptable level of service. Mitigation was identified to alleviate identified impacts; however, certain impacts were deemed to be significant and unavoidable. Under the No Project (No Build) Alternative, these potential impacts would be avoided, and the No Project (No Build) Alternative would have a reduced traffic impact when compared to the proposed Project.

Utilities

Implementation of the proposed Project would result in increased flows to the public wastewater system. The wastewater system is capable of handling the increased flows with their existing permit and infrastructure.

Implementation of the proposed Project would result in increased demand for potable water. The City has adequate water supply to handle the increased demand with their existing supply and infrastructure.

Implementation of the proposed Project would result in increased storm drainage from new impervious surfaces. The proposed Project includes a storm drainage collection system to handle the increased storm drainage.

Implementation of the proposed Project would result in increased generation of solid waste. However, the landfill has adequate capacity to dispose the solid waste.

Under the No Project (No Build) Alternative the Project site would not increase the demand for any utilities, including wastewater services, potable water supplies, or solid waste disposal. There would be no need to construct stormwater drainage infrastructure. Overall, the demand for utilities would be reduced under the No Project (No Build) Alternative when compared to the proposed Project.

Urban Decay

The No Project (No Build) Alternative would not introduce retail or residential development into the City. As noted in Section 3.15, Urban Decay, there appears to be no evidence that implementation of the proposed Project would result in urban decay in retail centers outside of Riverbank, and only a limited possibility of such impacts within Riverbank. Under the No Project (No Build) Alternative, retail development which could compete with existing retail centers in the regional market trade area would not be constructed. Additionally, residential units which could support the existing retail stores in the vicinity would not be constructed. Overall, because the No Project (No Build) Alternative would not include development of retail uses, this alternative would have a reduced urban decay impact when compared to the proposed Project.

OFF-SITE LOCATION ALTERNATIVE

Aesthetics

Under the Off-Site Location Alternative, the proposed Project would be developed with the same number of residential units and square footage at an off-site location. The overall development intensity under this alternative would be similar to the proposed Project due to the similar site size. The buildings would be a similar height as the proposed Project, and parking would also be similar to the proposed Project. When compared to the proposed Project, approximately the same area of the off-site location would be developed with residential and mixed uses. This would result in similar impacts related to light and glare as well as the visual quality of the site and its surroundings. Overall, this alternative would have similar impacts to aesthetics when compared to the proposed Project.

Agricultural Resources

The current uses in the Plan Area are predominantly agricultural operations, including dairy operations, row crops, and fallow land. The Off-Site Location Alternative would result in development of the same uses as the Project, but at an off-site location. Development of the off-site location would result in conversion of approximately 223.9 acres of Farmland of Local Importance, 118.04 acres of Unique Farmland, and 25.6 acres of Grazing Land to non-

agricultural uses. Development of the proposed Project would result in conversion of approximately 226.38 acres of Prime Farmland, 85.55 acres of Unique Farmland, and 35.46 acres of Farmland of Local Importance to nonagricultural use.

"Important Farmland" includes Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Development of the Off-Site Location Alternative would result in conversion of 118.04 acres of Important Farmland, while development of the Plan Area would result in conversion of 347.39 acres of Important Farmland. As such, the Off-Site Location Alternative would reduce impacts associated with conversion of "Important Farmland" when compared to the Project. It is noted, however, that impacts to Important Farmland would remain significant and unavoidable under this alternative.

According to the County's Williamson Act Map (2010/2011), the majority of the off-site location is currently under a Williamson Act contract for Prime Agricultural Land. Similar to the Plan Area, the off-site location is currently zoned for agricultural uses by the County. Because the off-site location is currently under an existing Williamson Act contract, impacts associated with conflicts with existing zoning for agricultural uses and impacts associated with Williamson Act contracts would be increased under this alternative.

The majority of the off-site location is also used predominantly for agricultural operations. As such, this alternative would not reduce the impacts to agricultural lands when compared to the proposed Project. Impacts associated with the potential to result in conflicts with adjacent agricultural lands or indirectly cause conversion of agricultural lands would occur under both the Off-Site Location Alternative and the proposed Project. Overall, the Off-Site Location Alternative would result in equal impacts on agricultural resources when compared to the proposed Project.

Air Quality

As described in Section 3.2, implementation of the proposed Project would generate emissions during both the construction phase and the operational phase. Construction related impacts would be similar under this alternative when compared to the proposed Project, as the area of ground disturbance would be similar, and the duration of construction would be similar due to the construction of the same number of units as the Project. Additionally, under this alternative, mobile source emissions would be equal. Mobile source (vehicle emissions) are directly related to the number of vehicle trips generated by a project. Because this alternative would include the same number of residential units and the same amount of commercial use as the proposed Project, the number of trips would be equal to the Project. Therefore, this alternative would have similar impacts related to air quality when compared to the proposed Project.

Biological Resources

Potential impacts to biological resources are related primarily to the area proposed for disturbance and less to the type of urban uses that would occur on the Project site. Under this alternative, the majority of the 376.52-acre property in the eastern portion of the City SOI would be disturbed. The existing habitat on this consists of agricultural, ruderal, and landscaping. The habitat types on the proposed Project site and the off-site location are similar. Therefore, the

potential for impacts to biological resources would be similar compared to the proposed Project.

Cultural and Tribal Resources

Potential impacts to cultural resources are primarily related to the area proposed for disturbance and less to the type of urban uses that would occur on the Project site. Under this alternative, the majority of the 376.52-acre property in the eastern portion of the City SOI would be disturbed, and the potential for impacts to cultural resources would be similar when compared to the proposed Project.

Geology and Soils

This alternative would result in the construction of the same number of housing units and same amount of commercial square footage as compared to the proposed Project at an off-site location. These buildings and structures would be exposed to the same level of risk from geologic hazards as the proposed Project. Because both the proposed Project and the off-site location are both currently used mainly for agricultural operations, both sites likely exhibit similar soil characteristics. Because the same number of units would be constructed under the Off-Site Location Alternative, a similar number of residents would be exposed to the risks from geologic hazards as compared to the proposed Project. Therefore, this impact would be similar under this alternative when compared to the proposed Project.

Greenhouse Gases,Climate Change, and Energy

This alternative would result in the construction of the same number of housing units and the same amount of commercial/retail uses as the proposed Project over approximately 376.52 acres. As described above, this alternative would result in the same number of daily vehicle trips as the proposed Project. This would result in the same area, energy, mobile, waste, and water source emissions as the Project. Therefore, this impact would be similar to the proposed Project.

Hazards and Hazardous Materials

This alternative would result in the construction of the same number of residential units and same amount of commercial square footage as the proposed Project at an off-site location. The 376.52-acre property located within the eastern portion of the City SOI is currently used primarily for agricultural operations. Several small ranchette style homes are located at the off-site property. Prior to demolition of the on-site buildings, mitigation similar to the proposed Project would be required in order to ensure that demolition is completed according to existing local laws and regulations in order to ensure an accidental release of hazardous materials does not occur. Overall, this impact would be similar under this alternative when compared to the proposed Project.

Hydrology and Water Quality

Under this alternative, a slightly smaller amount of land would be covered with impervious surfaces compared to the proposed Project. In order to meet the guidelines and requirements set forth in the “Phase II Small MS4 General Permit, 2013-0001-DWQ,” dated February 5, 2013,

the Off-Site Location Alternative would be required to develop permanent storm water control measures and incorporate these measures into the alternative in order to mitigate the impacts of pollutants in storm water runoff from the alternative. Because the alternative would be required to implement improvements in order to manage and treat stormwater flows from the site, impacts related to water quality would be similar.

As described in Section 3.9, when the proposed Project is developed, the on-site impervious area would increase from the existing condition, leading to faster runoff rates. Because the off-site property is also used for similar uses as the Plan Area, the Off-Site Location Alternative would provide a similar amount of impervious surface on-site as compared to the proposed Project, which would also result in similar impacts related to rainfall infiltration and runoff during storm events as compared to the proposed Project.

As described in Section 3.9, Project implementation would result in the discharge of pollutants into on-site detention basins and storm drains, and would change the existing drainage pattern on the site, although these impacts are less than significant as a result of Project design and applied mitigation measures. Under the Off-Site Location Alternative, these potential impacts would be similar to the Project. Overall, potential impacts related to hydrology and water quality would be similar under the alternative when compared to the proposed Project.

Land Use, Population, and Housing

This alternative would result in the construction of the same number of housing units and same commercial square footage over a slightly smaller area as compared to the proposed Project. The existing City land use designations for the Off-Site Location Alternative include: Community Commercial (29.1 acres), Industrial / Business Park (77.2 acres), Lower Density Residential (127.9 acres), Medium-Density Residential (132.9 acres), and Mixed Use (2.0 acres). The City of Riverbank General Plan designates the Plan Area as Lower Density Residential (111.92 acres), Medium Density Residential (119.91), Higher Density Residential (10.50), Mixed Use (6.18), Civic (33.61), Community Commercial (54.04), and Park (44.70). Both the proposed Project and the off-site alternative would require a City of Riverbank General Plan Amendment to change land uses. Development of the off-site property would require similar land use entitlements as the proposed Project. This alternative would be required to be consistent with the General Plan, including the goals, policies, and standards, and the Zoning Code.

As discussed in Section 3.10, the proposed Project would not result in indirect population growth beyond the City's planned capacity. The off-site property is also designated for residential and commercial/retail uses and, thus, the population and housing growth for this off-site property was also analyzed in the City's General Plan EIR. The analysis in Section 3.10 concluded that the proposed Project would not result in any significant land use impacts. Additionally, because the off-site property is surrounded by similar development types (residential and agricultural) as the proposed Project, impacts related to potential land use conflicts would be similar to the proposed Project. Similar to the proposed Project, upon approval of the General Plan Amendment, this alternative would be consistent with the adopted

General Plan and other land use regulations, and therefore, would have similar impacts as the proposed Project.

Noise

As discussed above and in Section 3.11, the proposed Project could increase noise-generating activities associated with the maintenance and operation of the proposed Project, as well as from vehicular traffic. Mitigation measures provided in Section 3.11 would reduce nearly all potential impacts to a less than significant level. However, impacts associated with generation of unacceptable traffic noise levels at existing receptors would remain significant and unavoidable.

This alternative would result in the construction of the same number of housing units and square footage of commercial/retail uses as the proposed Project. Similar to the proposed Project, this alternative would expose new and existing residential uses to noise sources. This Off-Site Location Alternative is located near Claus Road and Claribel Road. As discussed in Section 3.11, under Cumulative conditions, sensitive receptors located adjacent to Patterson Road, Claribel Road, Coffee Road, and Oakdale Road exceed the City's 60 dB L_{dn} exterior noise level standard for transportation noise sources. Under Cumulative Plus CWSP conditions, these roadways will continue to exceed the City standards. Both the proposed Project and the Off-Site Alternative are located along Claribel Road. Impacts associated with cumulative traffic noise along Patterson Road, Coffee Road, and Oakdale Road would likely be reduced under this alternative. It is noted that, without noise measurements along Claus Road, it is unfeasible to analyze cumulative noise impacts along Claus Road for this alternative. Overall, this alternative would have similar impacts related to noise when compared to the proposed Project.

Public Services and Recreation

This alternative would result in the construction of the same number of housing units and same commercial square footage as compared to the proposed Project. As described in Section 3.12, implementation of the proposed Project would result in an increase in demand for police and fire protection services, as well as increased demand for schools, parks, and other public facilities. There would be an equal change in the population generated under this alternative when compared to the proposed Project. As such, this alternative would have an increased demand for public services equal to the proposed Project. Therefore, impacts related to public services and recreation would be equal to the proposed Project.

Transportation and Circulation

The Off-Site Location Alternative would introduce additional vehicle trips onto the roadways in the vicinity of this off-site location. As described above, this alternative would result in the same number of daily vehicle trips as the proposed Project. It was determined that the proposed Project would cause an increase in traffic on roadways or intersections that would cause traffic operations to degrade to an unacceptable level of service. Mitigation was identified to alleviate identified impacts; however, certain impacts were deemed to be significant and unavoidable. Because this alternative. Under the Off-Site Location Alternative, the proposed Project would be

developed with the same components as described in the Project Description, but at an off-site location.

Uses in the Off-Site Location Alternative would be required to adhere to the same mitigation measures as the proposed Project. It is noted that the, due to the off-site location, the increase in trips would be distributed along different roadway segments and intersections than the proposed Project. Nevertheless, because this alternative would result in the same number of daily vehicle trips as the proposed Project, the Off-Site Location Alternative would result in similar traffic related impacts when compared to the proposed Project

Utilities

This alternative would result in the construction of the same number of housing units and same commercial square footage as compared to the proposed Project. As shown in Table 3.14-2 in Section 3.14, the proposed Project would generate approximately 568,740 gallons per day (gpd) (0.568 million gallons per day [mgd]) of wastewater. The Off-Site Location Alternative would generate the same amount of wastewater.

As shown in Table 3.14-5 in Section 3.14, the total projected annual potable water demand for the Project is projected to be 2,013 acre-feet per year (AFY). The Off-Site Location Alternative would have a similar water demand as the Project.

Solid waste generated by the proposed Project was estimated based on CalRecycle generation rate estimates by use. The total solid waste generated by the proposed Project is estimated to be 25,366.3 pounds per day (12.68 tons per day). The Off-Site Location Alternative would generate a similar amount of solid waste as the Project.

Overall, under this alternative, wastewater generation, water demand, and solid waste generation would be similar to the Project. Overall, this alternative would have similar impacts to utilities when compared to the proposed Project.

Urban Decay

Under the Off-Site Location Alternative, the proposed Project would be developed with the same amenities as described in the Project Description, but at an off-site location. As noted in Section 3.15, Urban Decay, there appears to be no evidence that implementation of the proposed Project would result in urban decay in retail centers outside of Riverbank, and only a limited possibility of such impacts within Riverbank. Because the off-site location is located approximately 2.3 miles east of the Plan Area, the regional market trade area for this alternative would be similar to the proposed Project, despite the off-site location. Additionally, because this alternative would include construction of the same retail and residential uses as the Project, the potential for this alternative to result in urban decay within the trade area would be similar to the Project. Overall, this alternative would have similar impacts to urban decay when compared to the proposed Project.

INCREASED DENSITY ALTERNATIVE

Aesthetics and Visual Resources

As described in Section 3.1, the visual character of the Plan Area would be significantly altered as a result of Project implementation. Implementation of the proposed Design Guidelines and consistency with the General Plan and the Zoning Ordinance would ensure that impacts are reduced to the greatest extent possible. Nevertheless, impacts related to degradation of the visual character of the site would be significant and unavoidable. Additionally, implementation of the lighting plan required by Mitigation Measure 3.1-1 would ensure that lighting features do not result in light spillage onto adjacent properties and do not significantly impact views of the night sky. Adherence to the mitigation measure would ensure that excessively reflective building materials are not used, and that the proposed Project would not result in significant impacts related to daytime glare. As such, impacts related to nighttime lighting and daytime glare would be less than significant with mitigation.

These impacts would be similar with the Increased Density Alternative as this alternative is located on the same site and would have similar uses. This alternative would result in the same number of residential units, the same amount of commercial/retail uses, and the same amount of possible future civic uses. The impacts of light and glare would still occur and could be mitigated to a less than significant level. The impacts to the existing visual quality would be similar to the proposed Project as the majority of the Project site would be developed with the same uses as under the proposed Project, just at a higher density. However, this alternative would decrease the development footprint by 87.5 acres compared to the Project; as such, 87.5 acres of the Project site would remain in the existing state. Due to the decreased development footprint, the Increased Density Alternative would have a reduced impact on visual resources when compared to the proposed Project.

Agricultural Resources

Currently, the majority of the Project site is used for agricultural purposes. The Increased Density Alternative would result in development of 300 acres of the 387.5-acre Project site. Because this alternative would increase the residential density, 87.5 fewer acres of the Project site would be converted from agricultural use to urban use. As such, this alternative would reduce the impacts to agricultural lands when compared to the proposed Project. It is noted that the loss of the agricultural land, including Prime Farmland, would be a significant and unavoidable impact under both the Increased Density Alternative and the proposed Project. Overall, the Increased Density Alternative would have reduced impacts on agricultural resources when compared to the proposed Project.

Air Quality

As described in Section 3.3, Stanislaus County has a state designation of Nonattainment for O_3, PM_{10}, and $PM_{2.5}$ and is either Unclassified or Attainment for all other criteria pollutants. The County has a national designation of Nonattainment for ozone and $PM_{2.5}$. The County is

designated either attainment or unclassified for the remaining national standards. Table 3.3-2 in Section 3.3 presents the state and federal attainment status for Stanislaus County.

As discussed under Impact 3.3-1 in Section 3.3, the proposed Project would be a direct and indirect source of air pollution, in that it would generate and attract vehicle trips in the region (mobile source emissions) and it would increase area source emissions and energy consumption. The SJVAPCD has established operations related emissions thresholds of significance and it was determined that annual emissions of ROG, NOx, and PM_{10} exceed the SJVAPCD thresholds of significance. Annual emissions of $PM_{2.5}$ would not exceed the SJVAPCD thresholds of significance.

Implementation of Mitigation Measure 3.3-1 would require development projects in the Plan Area to mitigate operational NOx emissions by 33 percent and operational PM_{10} emissions by 50 percent over ten years. However, even with all reasonable and feasible measures that could be implemented into the Plan Area on-site, the mitigation is not expected to achieve reductions required under Rule 9510.

The proposed Project is subject to the SJVAPCD Rule 9510 (Indirect Source Rule), which could result in substantial mitigation of NO_x and associated ROG emissions. The reductions are accomplished by the incorporation of mitigation measures into projects and/or by the payment of an Indirect Source Rule fee for any required reductions that have not been accomplished through Project mitigation commitments. The current fees are $9,350 per ton of NO_x. The actual calculations will be determined and finalized by the SJVAPCD and Project applicants as individual projects are brought forward for approval under Rule 9510.

Implementation of the proposed Project would cause an increase in criteria air pollutants, and area and mobile source emissions are the dominant sources of air emissions associated with the proposed Project. Under the Increased Density Alternative, the proposed Project would be developed with the same components as described in the Project Description, but the density of the residential uses would be increased, and the total development footprint would be decreased. Because construction emissions are directly correlated to the size of the construction footprint, the construction-related emissions would decrease under this alternative when compared to the proposed Project.

The total operational development, including residential units and non-residential building square footage, would be equal to the proposed Project. Therefore, the amount of traffic generated from the Project site would be equal under this alternative and the proposed Project. Mobile source air emissions are directly correlated to traffic volume; therefore, it is estimated that the similar trip volume would result in a similar amount of the mobile source emissions. Additionally, the area source emissions would be similar to the Project.

Uses in the Increased Density Alternative would be required to adhere to the same mitigation measures as the proposed Project. Due to the decreased disturbance area, the Increased Density Alternative would result in slightly reduced air emissions when compared to the proposed Project.

Biological Resources

As described in Section 3.4, Biological Resources, construction on the Project site has the potential to result in impacts to special-status species in the region. There are no known special-status species that have been observed on the Project site although there is suitable habitat for various special-status species. Through the implementation of various mitigation measures found in Section 3.4, implementation of the proposed Project will have a less than significant impact on biological resources.

The Increased Density Alternative would result in development of 300 acres of the 387.5-acre Project site. Under this alternative, the same amenities and uses would be developed, but 87.5 acres of the Project site would not be disturbed. Depending on the location, the 87.5 acres, which would remain undeveloped under this alternative, could continue to provide habitat (i.e., trees, ditches, and agricultural fields) for species. As such, the Increased Density Alternative would result in slightly reduced impacts to biological resources when compared to the proposed Project.

Cultural and Tribal Resources

As described in Section 3.5, during the field surveys conducted on the Project site there were no historical, archaeological, or paleontological resources identified. However, as with most projects in the region that involve ground-disturbing activities, there is the potential for discovery of a previously unknown cultural and/or historical resource or human remains. Implementation of mitigation measures in Section 3.5 would reduce unknown cultural resources impacts to a less than significant level.

The Increased Density Alternative would result in development of 300 acres of the 387.5-acre Project site. Under this alternative, the same amenities and uses would be developed, but the total disturbance area would decrease by 87.5 acres. This would result in a reduced potential to disturb or destroy cultural, historic, and archaeological resources, as well as paleontological resources. Although the proposed Project is not anticipated to result in significant impacts to cultural resources with mitigation, the Increased Density Alternative would result in a slightly reduced potential for impacts to cultural resources.

Geology and Soils

As described in Section 3.6, implementation of the proposed Project would result in the construction of new structures on the Project site. The new structures would be subject to seismic, geologic, and soils hazards for the life of the Project. Mostly notably, the proposed Project would be subject to liquefaction, liquefaction induced settlement, and lateral spreading. Mitigation measures identified in Section 3.6 would reduce the potential impacts to a less than significant level.

Under the Increased Density Alternative, the amount of developed area would decrease by 87.5 acres compared to the Project, and an equal number of structures would be subject to hazardous geological conditions. However, this alternative would decrease the disturbance area from 387.5 acres under the proposed Project to 300 acres; the 87.5 acres of undisturbed area

would result in a reduced potential for loss of topsoil and soil erosion compared to the Project. Although the proposed Project is not anticipated to result in significant impacts from geology and soils with mitigation, the Increased Density Alternative would result in a slightly reduced potential for impacts related to geology and soils when compared to the proposed Project.

Greenhouse Gases,Climate Change, and Energy

As stated previously, short-term construction GHG emissions are a one-time release of GHGs and are not expected to significantly contribute to global climate change over the lifetime of the proposed Project. As described in Impact 3.7-1 in Section 3.7, implementation of the proposed Project will still generate GHG emissions that wouldn't otherwise exist without the proposed Project. Given the length of construction activities for a Project of this size, the maximum short-term annual construction emissions of GHG associated with development of the Project are estimated to be 51,419.38 $MTCO_2e$. The operational emissions would be a long-term release totaling approximately 63,343.4781 $MTCO_2e$.

On a Project-by-Project case, the City of Riverbank evaluates a Project and the potential to impose Project-specific mitigation, which has been done through this GHG analysis. However, because the Project would result in a net increase in CO_2e emissions even with mitigation measures incorporated into the Project, the proposed Project would have an individual and cumulative impact that is significant and unavoidable.

Under the Increased Density Alternative, 300-acres of the Project site would be developed with the same types of uses and structures as the proposed Project. All uses in the Increased Density Alternative would be required to adhere to the same mitigation measure as the proposed Project. The equal number of residential units would result in a corresponding equal level of operational greenhouse gas emissions when compared to the proposed Project. Because construction greenhouse gas emissions are directly correlated to the size of the construction footprint, the construction-related emissions would decrease under this alternative when compared to the proposed Project. As such, the greenhouse gas emissions impact would be slightly reduced when compared to the proposed Project.

Hazards and Hazardous Materials

The proposed Project includes components which will likely use a variety of common household hazardous materials including: paints, cleaners, and cleaning solvents. There will be a risk of release of these materials into the environment if they are not stored and handled in accordance with best management practices approved by the Stanislaus County Division of Environmental Resources and the Stanislaus Consolidated Fire Protection District.

Under the Increased Density Alternative, the range of residential and non-residential uses on the site would not change when compared to the proposed Project. This alternative would still use the hazardous materials identified under the proposed Project. As such, this alternative would have equal impacts from hazards and hazardous materials impacts when compared to the proposed Project.

Hydrology and Water Quality

As described in Section 3.9, implementation of the proposed Project has the potential to result in the violation of water quality standards and the discharge of pollutants into surface waters during both construction and long-term operations. Construction operations could result in temporary increases in runoff, erosion, sedimentation, soil compaction and wind erosion effects that could adversely affect soils and reduce the revegetation potential at construction sites and staging areas. The long-term operation of the proposed Project could result in long-term impacts to surface water quality from urban stormwater runoff and could enter groundwater or surface water systems. Mitigation measures provided in Section 3.6 and 3.9 reduce potential water quality impacts to a less than significant level. The proposed Project would not significantly impact groundwater recharge or place persons or structures in a flood hazard zone.

Under the Increased Density Alternative, potential construction-related and long-term operational impacts to water quality or waste discharge related to stormwater runoff would be comparable to the proposed Project. However, this alternative would convert 87.5 fewer acres of agricultural land to urban uses. The 87.5-acres of largely undeveloped agricultural land under this alternative would remain pervious to precipitation, which would facilitate groundwater recharge and the natural biofiltration of stormwater. This alternative will still include stormwater detention/basins, and provide natural BMPs to reduce pollutants in stormwater runoff. As such, potential impacts related to hydrology and water quality would be slightly reduced under the Increased Density Alternative when compared to the proposed Project.

Land Use, Population, and Housing

The proposed Project is not expected to induce population growth that has not already been accounted for as a part of the existing General Plan, or analyzed in detail in this EIR. The proposed Project does not displace substantial numbers of persons or housing units. The Project would require a zoning and general plan amendment for land use changes, as well as annexation to the City of Riverbank. However, impacts to land use are considered less than significant.

The Increased Density Alternative is not expected to induce substantial population growth in the area. There are approximately seven residential structures located in the Plan Area. Similar to the proposed Project, development of the Increased Density Alternative would remove seven housing units onsite, and add up to 2,852 new residential units. Therefore, impacts relating to land use, population and housing would be equal under this alternative.

Noise

The proposed Project could increase noise-generating activities associated with the maintenance and operation of the proposed Project, as well as from vehicular traffic. Mitigation measures provided in Section 3.11 would reduce nearly all potential impacts to a less than significant level. However, impacts associated with generation of unacceptable traffic noise levels at existing receptors would remain significant and unavoidable.

The Increased Density Alternative would result in the same number of residential units and the same amount of commercial buildings as the Project; therefore, the noise impacts associated

with the alternative would be equal to the vehicular and operational activities of the proposed Project. All noise issues would be mitigated, as appropriate, through noise attenuation and best management practices; therefore, under this alternative, noise impacts would be equal when compared to the proposed Project.

Public Services and Recreation

Development in the Plan Area will be required to pay all applicable fees and assessments required to fund its fair share of public services and recreation. This funding would assist in the development of facilities in order to meet the City's standards. The proposed Project would have a less than significant impact to fire, police, schools, and recreational facilities.

Under the Increased Density Alternative, the majority of the site would be developed with the same range of allowable uses as described in the Project Description, and the size of the residential and non-residential components would be equal. Due to the similar population growth anticipated as a result of the Project and the Increased Density Alternative, the demand for fire protection, police protection, schools, and recreational facilities would be similar to the Project. As such, public services and recreation impacts would be equal when compared to the proposed Project.

Transportation and Circulation

As described in Section 3.13, implementation of the proposed Project would cause an increase in traffic on roadways or intersections. It was determined that the proposed Project would cause an increase in traffic on roadways or intersections that would cause traffic operations to degrade to an unacceptable level of service. Mitigation was identified to alleviate identified impacts; however, certain impacts were deemed to be significant and unavoidable. As noted above, the total development, including residential units and non-residential building square footage, would be equal to the proposed Project under this alternative. Therefore, the amount of traffic generated from the Project site would be equal under this alternative and the proposed Project. Uses in the Increased Density Alternative would be required to adhere to the same mitigation measures as the proposed Project; therefore, under this alternative, transportation and circulation impacts would be equal when compared to the proposed Project.

Utilities

Implementation of the proposed Project would result in less-than-significant impacts to the public wastewater, water, and solid waste collection and disposal system. Mitigation Measure 3.14-1 provided in Section 3.14 would reduce the potential impact to storm drainage system to a less than significant level.

Under the Increased Density Alterative, the proposed Project would be developed with the same components as described in the Project Description, and the size of the residential and non-residential components would be equal. This would result in an equal amount of wastewater, water demand, and solid waste generated from the Project site. The residential areas would be clustered throughout the Project site at increased densities to allow for a

decrease in the total development area. The 87.5-acres of largely undeveloped agricultural land would result in more acres of pervious soils, thereby increasing opportunities for stormwater retention at the Project site. However, uses in the Increased Density Alterative would be required to adhere to the same mitigation measures as the proposed Project, and the equal amount of square footage would result in similar utility demands. The Increased Density Alternative would result in similar demand on utility systems when compared to the proposed Project.

Overall, this alternative would have equal wastewater treatment demand, equal water demand, equal solid waste generated, and similar storm water runoff when compared to the proposed Project. As such, this alternative would have equal impacts when compared to the proposed Project.

Urban Decay

As noted in Section 3.15, Urban Decay, there appears to be no evidence that implementation of the proposed Project would result in urban decay in retail centers outside of Riverbank, and only a limited possibility of such impacts within Riverbank. Because this alternative would be located on the same site as the Project, the regional market trade area for this alternative would be identical to the proposed Project. Additionally, because the size of the residential and non-residential components would be equal to the Project under this alternative, the potential for this alternative to result in urban decay within the trade area would be identical to the Project. The increased density of the residential uses included in this alternative would not impact existing retail sales in the area more or less than the proposed Project. Overall, this alternative would have similar impacts to urban decay when compared to the proposed Project.

LOWER DENSITY ALTERNATIVE

Aesthetics and Visual Resources

As described in Section 3.1, the visual character of the Project site would be significantly altered as a result of Project implementation. Implementation of the proposed Design Guidelines and landscaping requirements and consistency with the General Plan and the Riverbank Zoning Ordinance would ensure that impacts are reduced to the greatest extent possible. Nevertheless, impacts related to degradation of the visual character of the site would be significant and unavoidable.

Implementation of the lighting plan required by Mitigation Measure 3.1-1 would ensure that lighting features do not result in light spillage onto adjacent properties and do not significantly impact views of the night sky. Adherence to the mitigation measure would ensure that excessively reflective building materials are not used, and that the proposed Project would not result in significant impacts related to daytime glare. As such, impacts related to nighttime lighting and daytime glare would be less than significant with mitigation.

Under the Lower Density Alternative, portions of the Project site that are currently agricultural land would be converted to urban uses. As such, there would still be an impact to the visual

character under this alternative. The impact associated with increased light and glare in the developed area would be mitigated. Under this alternative, the changes to the existing visual quality would be similar to the proposed Project as the entire site would be developed with the same amount of residential and non-residential uses. As such, this alternative would have similar impacts as the proposed Project.

Agricultural Resources

Currently, the majority of the Project site is used for agricultural purposes. The Lower Density Alternative would result in development of the entire Project site. While this alternative would promote larger lot sizes and to reduce the overall footprint of the developed areas, the entire Project site would still be converted from agricultural use. As such, this alternative would not reduce the impacts to agricultural lands when compared to the proposed Project. The loss of the agricultural land, including Prime Farmland, would be a significant and unavoidable impact under both the Lower Density Alternative and the proposed Project. Therefore, the Lower Density Alternative would have equal impacts on agricultural resources when compared to the proposed Project.

Air Quality

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

As discussed under Impact 3.3-1 in Section 3.3, the proposed Project would be a direct and indirect source of air pollution, in that it would generate and attract vehicle trips in the region (mobile source emissions) and it would increase area source emissions and energy consumption. The SJVAPCD has established operations related emissions thresholds of significance and it was determined that annual emissions of ROG, NOx, and PM_{10} exceed the SJVAPCD thresholds of significance. Annual emissions of $PM_{2.5}$ would not exceed the SJVAPCD thresholds of significance.

Implementation of Mitigation Measure 3.3-1 would require development projects in the Plan Area to mitigate operational NOx emissions by 33 percent and operational PM_{10} emissions by 50 percent over ten years. However, even with all reasonable and feasible measures that could be implemented into the Plan Area on-site, the mitigation is not expected to achieve reductions required under Rule 9510.

The proposed Project is subject to the SJVAPCD Rule 9510 (Indirect Source Rule), which could result in substantial mitigation of NO_x and associated ROG emissions. The reductions are accomplished by the incorporation of mitigation measures into projects and/or by the payment of an Indirect Source Rule fee for any required reductions that have not been accomplished through Project mitigation commitments. The current fees are $9,350 per ton of NO_x. The actual

calculations will be determined and finalized by the SJVAPCD and Project applicants as individual projects are brought forward for approval under Rule 9510.

Implementation of the proposed Project would cause an increase in criteria air pollutants, and area and mobile source emissions are the dominant sources of air emissions associated with the proposed Project. Under the Lower Density Alternative, the proposed Project would be developed with the same components as described in the Project Description, but the density of the residential uses would be decreased. The total development, including residential units and non-residential building square footage, would be equal to the proposed Project. Therefore, the amount of traffic generated from the Project site would be equal under this alternative and the proposed Project. Mobile source air emissions are directly correlated to traffic volume; therefore, it is estimated that the similar trip volume would result in a similar amount of the mobile source emissions. Additionally, the area source emissions would be similar to the Project.

Uses in the Lower Density Alternative would be required to adhere to the same mitigation measures as the proposed Project. The Lower Density Alternative would result in similar air emissions when compared to the proposed Project.

Biological Resources

As described in Section 3.4, Biological Resources, construction on the Project site has the potential to result in impacts to special-status species in the region. There are no known special-status species that have been observed on the Project site although there is suitable habitat for various special status species. Through the implementation of various mitigation measures found in Section 3.4, implementation of the proposed Project will have a less than significant impact on biological resources.

The Lower Density Alternative would result in development of the entire Project site. Under this alternative, the same amenities and uses would be developed. As such, the Lower Density Alternative would result in similar impacts to biological resources when compared to the proposed Project.

Cultural and Tribal Resources

As described in Section 3.5, during the field surveys conducted on the Project site there were no historical, archaeological, or paleontological resources identified. However, as with most projects in the region that involve ground-disturbing activities, there is the potential for discovery of a previously unknown cultural and/or historical resource or human remains. Implementation of mitigation measures in Section 3.5 would reduce unknown cultural resources impacts to a less than significant level.

The Lower Density Alternative would result in development of the entire Project site. Under this alternative, the same amenities and uses would be developed. This would result in a similar potential to disturb or destroy cultural, historic, and archaeological resources, as well as paleontological resources. While the proposed Project is not anticipated to result in significant

impacts to cultural resources with mitigation, the Lower Density Alternative would result in a similar potential for impacts to cultural resources.

Geology and Soils

As described in Section 3.6, implementation of the proposed Project would result in the construction of new structures on the Project site. The new structures would be subject to seismic, geologic, and soils hazards for the life of the Project. Mostly notably, the proposed Project would be subject to liquefaction, liquefaction induced settlement, and lateral spreading. Mitigation measures identified in Section 3.6 would reduce the potential impacts to a less than significant level.

Under the Lower Density Alternative, the amount of developed area would be similar to the Project and an equal number of structures would be subject to hazardous geological conditions. While the proposed Project is not anticipated to result in significant impacts from geology and soils with mitigation, the Lower Density Alternative would result in similar potential for impacts when compared to the proposed Project.

Greenhouse Gases,Climate Change, and Energy

As stated previously, short-term construction GHG emissions are a one-time release of GHGs and are not expected to significantly contribute to global climate change over the lifetime of the proposed Project. As described in Impact 3.7-1 in Section 3.7, implementation of the proposed Project will still generate GHG emissions that wouldn't otherwise exist without the proposed Project. Given the length of construction activities for a Project of this size, the maximum short-term annual construction emissions of GHG associated with development of the Project are estimated to be 51,419.38 $MTCO_2e$. The operational emissions would be a long-term release totaling approximately 63,343.4781 $MTCO_2e$.

On a Project-by-Project case, the City of Riverbank evaluates a Project and the potential to impose Project-specific mitigation, which has been done through this GHG analysis. However, because the Project would result in a net increase in CO_2e emissions even with mitigation measures incorporated into the Project, the proposed Project would have an individual and cumulative impact that is significant and unavoidable.

Under the Lower Density Alternative, the Project site would be developed with the same types of uses and structures as the proposed Project. All uses in the Lower Density Alternative would be required to adhere to the same mitigation measure as the proposed Project. The equal number of residential units would result in a corresponding equal level of greenhouse gas emissions when compared to the proposed Project. As such, the greenhouse gas emissions impacts would be equal when compared to the proposed Project.

Hazards and Hazardous Materials

The proposed Project includes components which will likely use a variety of common household hazardous materials including: paints, cleaners, and cleaning solvents. There will be a risk of release of these materials into the environment if they are not stored and handled in

accordance with best management practices approved by the Stanislaus County Division of Environmental Resources and the Stanislaus Consolidated Fire Protection District.

Under the Lower Density Alternative, the range of residential and non-residential uses on the site would not change when compared to the proposed Project. This alternative would still use the hazardous materials identified under the proposed Project. As such, this alternative would have equal impacts from hazards and hazardous materials impacts when compared to the proposed Project.

Hydrology and Water Quality

As described in Section 3.9, implementation of the proposed Project has the potential to result in the violation of water quality standards and the discharge of pollutants into surface waters during both construction and long-term operations. Construction operations could result in temporary increases in runoff, erosion, sedimentation, soil compaction and wind erosion effects that could adversely affect soils and reduce the revegetation potential at construction sites and staging areas. The long-term operation of the proposed Project could result in long-term impacts to surface water quality from urban stormwater runoff and could enter groundwater or surface water systems. Mitigation measures provided in Section 3.6 and 3.9 reduce potential water quality impacts to a less than significant level. The proposed Project would not significantly impact groundwater recharge or place persons or structures in a flood hazard zone.

Under the Lower Density Alternative, potential construction-related and long-term operational impacts to water quality or waste discharge related to stormwater runoff would be comparable to the proposed Project. The increased areas of lot sizes and associated front and backyard areas under this alternative will remain pervious to precipitation, which will facilitate groundwater recharge and the natural biofiltration of stormwater. This alternative will still include stormwater detention/basins, and provide natural BMPs to reduce pollutants in stormwater runoff. As such, potential impacts related to hydrology and water quality would be slightly reduced under the Lower Density Alternative when compared to the proposed Project.

Land Use, Population, and Housing

The proposed Project is not expected to induce population growth that has not already been accounted for as a part of the existing General Plan, or analyzed in detail in this EIR. The proposed Project does not displace substantial numbers of persons or housing units. The Project would require a zoning and general plan amendment for land use changes, as well as annexation to the City of Riverbank. However, impacts to land use are considered less than significant.

The Lower Density Alternative is not expected to induce substantial population growth in the area. There are approximately seven residential structures located in the Plan Area. Similar to the proposed Project, development of the Lower Density Alternative would remove seven housing units onsite, and add up to 2,852 new residential units. Therefore, impacts relating to land use, population and housing would be equal under this alternative.

Noise

The proposed Project could increase noise-generating activities associated with the maintenance and operation of the proposed Project, as well as from vehicular traffic. Mitigation measures provided in Section 3.11 would reduce nearly all potential impacts to a less than significant level. However, impacts associated with generation of unacceptable traffic noise levels at existing receptors would remain significant and unavoidable.

The Lower Density Alternative would result in the same number of residential units and the same amount of commercial buildings as the Project; therefore, the noise impacts associated with the alternative would be equal to the vehicular and operational activities of the proposed Project. All noise issues would be mitigated, as appropriate, through noise attenuation and best management practices; therefore, under this alternative, noise impacts would be equal when compared to the proposed Project.

Public Services and Recreation

Development in the proposed Project will pay all applicable fees and assessments required to fund its fair share of public services and recreation. This funding would assist in the development of facilities in order to meet the City's standards. The proposed Project would have a less than significant impact to fire, police, schools, and recreational facilities.

Under the Lower Density Alternative, the site would be developed with the same range of allowable uses as described in the Project Description, and the size of the residential and non-residential components would be equal. Although this alternative would provide large front and backyard areas due to the increases lot sizes, this alternative would not provide an increase in public recreational opportunities as compared to the Project. As such, this impact would be similar to the proposed Project.

Transportation and Circulation

As described in Section 3.13, implementation of the proposed Project would cause an increase in traffic on roadways or intersections. Uses in the Increased Density Alternative would be required to adhere to the same mitigation measures as the proposed Project. It was determined that the proposed Project would cause an increase in traffic on roadways or intersections that would cause traffic operations to degrade to an unacceptable level of service. Mitigation was identified to alleviate identified impacts; however, certain impacts were deemed to be significant and unavoidable. As noted above, the total development, including residential units and non-residential building square footage, would be equal to the proposed Project under this alternative. Therefore, the amount of traffic generated from the Project site would be equal under this alternative and the proposed Project. Uses in the Lower Density Alternative would be required to adhere to the same mitigation measures as the proposed Project; therefore, under this alternative, transportation and circulation impacts would be equal when compared to the proposed Project.

Utilities

Implementation of the proposed Project would result in less-than-significant impacts to the public wastewater, water, and solid waste collection and disposal system. Mitigation Measure 3.14-1 provided in Section 3.14 would reduce the potential impact to storm drainage system to a less than significant level.

Under the Lower Density Alterative, the proposed Project would be developed with the same components as described in the Project Description, and the size of the residential and non-residential components would be equal. This would result in an equal amount of wastewater, water demand, and solid waste generated from the Project site. Under the Lower Density Alternative, the proposed Project would be developed in such a way to promote larger lot sizes and to reduce the overall footprint of the developed areas. The increased front and backyard areas would result in more acres of pervious soils, thereby increasing opportunities for stormwater retention at the Project site. However, uses in the Lower Density Alterative would be required to adhere to the same mitigation measures as the proposed Project, and the equal amount of square footage would result in similar utility demands. The Lower Density Alternative would result in similar demand on utility systems when compared to the proposed Project.

Overall, this alternative would have equal wastewater treatment demand, equal water demand, equal solid waste generated, and equal storm water runoff when compared to the proposed Project. As such, this alternative would have equal impacts when compared to the proposed Project.

Urban Decay

As noted in Section 3.15, Urban Decay, there appears to be no evidence that implementation of the proposed Project would result in urban decay in retail centers outside of Riverbank, and only a limited possibility of such impacts within Riverbank. Because this alternative would be located on the same site as the Project, the regional market trade area for this alternative would be identical to the proposed Project. Additionally, because the size of the residential and non-residential components would be equal to the Project under this alternative, the potential for this alternative to result in urban decay within the trade area would be identical to the Project. Overall, this alternative would have similar impacts to urban decay when compared to the proposed Project.

ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires that an environmentally superior alternative be identified among the alternatives that are analyzed in the EIR. If the No Project (No Build) Alternative is the environmentally superior alternative, an EIR must also identify an environmentally superior alternative among the other alternatives (CEQA Guidelines Section 15126.6(e)(2)). The environmentally superior alternative is that alternative with the least adverse environmental impacts when compared to the proposed Project.

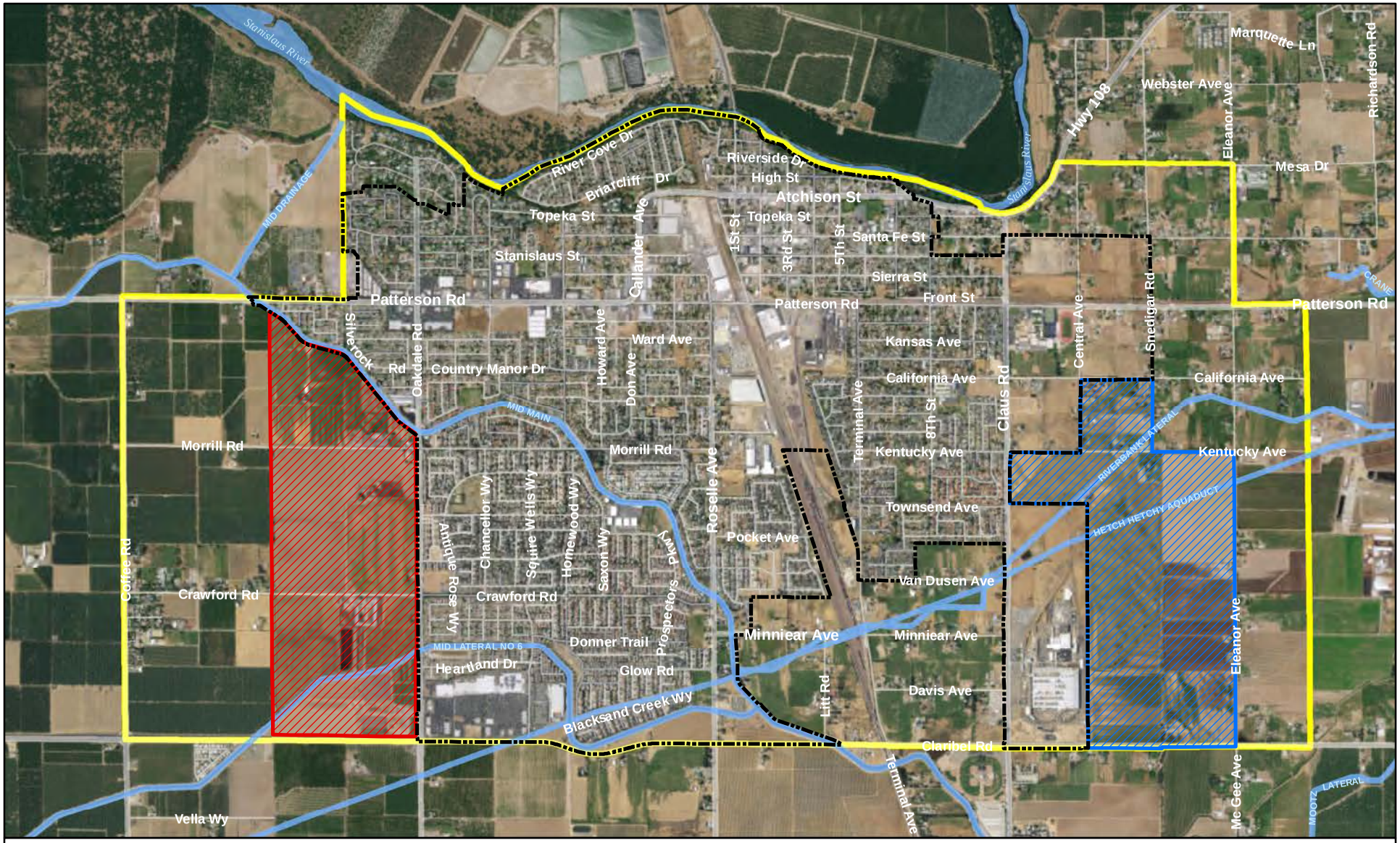
As Table 5.0-1 presents a comparison of the alternative Project impacts with those of the proposed Project. As shown in the table, the No Project (No Build) Alternative is the

environmentally superior alternative. However, as required by CEQA, when the No Project (No Build) Alternative is the environmentally superior alternative, the environmentally superior alternative among the others must be identified. The Off-Site Location Alternative would not reduce impacts related to any environmental issue. The Increased Density Alternative would reduce impacts in eight areas, and the Lower Density Alternative would reduce impacts in one area. Therefore, the Increased Density Alternative would be the next environmentally superior alternative.

TABLE 5.0-1: COMPARISON OF ALTERNATIVE PROJECT IMPACTS TO THE PROPOSED PROJECT

ENVIRONMENTAL ISSUE	*NO PROJECT (NO BUILD) ALTERNATIVE*	*OFF-SITE LOCATION ALTERNATIVE*	*INCREASED DENSITY ALTERNATIVE*	*LOWER DENSITY ALTERNATIVE*
Aesthetics and Visual Resources	Less	Equal	Less	Equal
Agricultural Resources	Less	Equal	Less	Equal
Air Quality	Less	Equal	Less	Equal
Biological Resources	Less	Equal	Less	Equal
Cultural and Tribal Resources	Less	Equal	Less	Equal
Geology and Soils	Less	Equal	Less	Equal
Greenhouse Gases, Climate Change, and Energy	Less	Equal	Less	Equal
Hazards and Hazardous Materials	Less	Equal	Equal	Equal
Hydrology and Water Quality	Less	Equal	Less	Less
Land Use, Population, and Housing	Less	Equal	Equal	Equal
Noise	Less	Equal	Equal	Equal
Public Services and Recreation	Less	Equal	Equal	Equal
Transportation and Circulation	Less	Equal	Equal	Equal
Utilities	Less	Equal	Equal	Equal
Urban Decay	Less	Equal	Equal	Equal

GREATER = GREATER IMPACT THAN THAT OF THE PROPOSED PROJECT
LESS = LESS IMPACT THAN THAT OF THE PROPOSED PROJECT
EQUAL = NO SUBSTANTIAL CHANGE IN IMPACT FROM THAT OF THE PROPOSED PROJECT



Legend

- Project Site
- Alternative Location
- Riverbank City Boundary
- Riverbank Sphere of Influence

N

0 1,000 2,000

Feet

1:30,000

Sources: LAFCO; Stanislaus County GIS; ESRI's ArcGIS Online World Imagery Map Service. Map date: July 6, 2017.

CROSSROADS WEST SPECIFIC PLAN

Figure 5.0-1. Alternative Location

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

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