



Typical view of internal streetscape within the existing Twin Rivers Community Housing Complex, showing one-story housing units.



Typical view of internal streetscape within the existing Twin Rivers Community Housing Complex, showing two-story housing units.

SOURCE: ESA

Twin Rivers Transit-Oriented Development and Light Rail Station Project . 140202

Figure 3.1-1
Representative Photos of the Existing
Twin Rivers Community Housing Complex



Overview of Expansion Area parcel, looking south.



View of Expansion Area and proposed Dos Rios LRT Station site, looking north from corner of North 12th Street and Sproule Avenue.

SOURCE: ESA

Twin Rivers Transit-Oriented Development and Light Rail Station Project . 140202

Figure 3.1-2
Representative Photos of the Twin Rivers
Community Housing Expansion Area



View looking north along North 12th Street, as viewed from existing Twin Rivers Community Housing Complex main entrance.



View looking north on Dos Rios Street, with existing Twin Rivers Community Housing Complex on the right, and warehouse-style buildings on the left.

SOURCE: ESA

Twin Rivers Transit-Oriented Development and Light Rail Station Project . 140202

Figure 3.1-3
Representative Photos of the Project Vicinity

Scenic Vistas/Corridors and Scenic Resources

Scenic Resources

The American River lies approximately 900 feet from the northern boundary of the existing Twin Rivers Community Housing Complex and approximately 700 feet from the northern boundary of the Twin Rivers Community Housing Expansion Area. The American River is identified as a scenic resource in the City's 2035 General Plan (City of Sacramento, 2015). In addition, the American River (Lower) was included as part of the National Wild and Scenic Rivers System in 1981. Rivers can be designated as Wild River Areas, Scenic River Areas, or Recreational River Areas. The portion of the American River near the project area is designated as a Recreational River Area. Areas so designated are defined as rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past [16 USC 1273(a)(b)(3)].

Intervening land uses between the project site and the American River include major arterial roadways (Richards Boulevard, North 12th Street, and North 16th Street), large industrial and commercial buildings on multi-acre lots, and associated urban development such as streetlights and above-ground power lines. Due to the flat nature of the surrounding terrain, the intervening land uses, and the river's adjoining levee, the river is not visible from the project site, nor is the project area visible from the river or its adjoining banks.

Scenic Highways

There are no designated State Scenic Highways in the vicinity of the project site. The nearest such highway is State Route (SR) 160, with the nearest designated portion lying approximately 9 miles to the south of the project site.

Gateways to Downtown

Historical gateways into the City of Sacramento have been largely obscured by the network of freeways that now dominate the landscape. The sole northern gateway along SR 160/North 12th Street is more intentional in its layout as an entry than typical freeway offramps and has the benefit of the American River as a gateway element. Upon crossing the river going southbound, SR 160 provides a view of the buildings in downtown Sacramento. At Richards Boulevard SR 160 becomes North 12th Street, and the view of the Central City becomes obstructed by intervening buildings and is no longer visible. The entry experience is compromised by the intervening industrial area and the railroad underpass near the northern boundary of the Central City. At the intersection of Richards Boulevard and North 12th Street, about 700 feet south of the American River crossing, the triangular Twin Rivers Community Housing Expansion Area is visible as a vacant lot adjacent to the light rail line. Billboards and other signage are also prominent along this portion of North 12th Street. Commercial and industrial buildings adjacent to the roadway are typically fronted by paved parking areas and parked vehicles, with minimal landscaping. A consistent architectural theme is not present along the North 12th Street corridor.

3.1.3 Applicable Policies and Regulations

Wild and Scenic Rivers Act

The Wild and Scenic Rivers Act (16 USC 1271-1287) established a method for providing federal protection for certain free-flowing rivers, preserving them and their immediate environments for the use and enjoyment of present and future generations. Eligible rivers can be designated as Wild River Areas, Scenic River Areas, or Recreational River Areas. The American River is designated as a Recreational River from the confluence with the Sacramento River to Nimbus Dam, located just east of the city. Recreational River Areas are “[t]hose rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past.”

The Wild and Scenic Rivers Act, under Section 10, includes management direction for designated rivers, stating that “...primary emphasis shall be given to protecting its aesthetic, scenic, historic, archaeological, and scientific features.”

California Scenic Highway Program

In 1963, the State legislature established the California Scenic Highway Program through Senate Bill 1467. This Senate Bill added Section 260 et seq. to the Streets and Highway Code. In these statutes, the State proclaims its intent to: “...establish the State’s responsibility for the protection and enhancement of California’s natural scenic beauty” (Caltrans 2008).

A Scenic Corridor is defined as the area of land generally adjacent to, and visible from, the highway. It is usually limited by topography and/or jurisdictional boundaries. Local jurisdictions, with support of their citizens, must adopt programs to protect the scenic qualities of qualifying corridors, and zoning and land use along the highway must meet the State’s minimum requirements for scenic highway corridor protection. Actions required by Section 261 of the code include:

- Regulation of land use and density of development,
- Detailed land and site planning,
- Control of outdoor advertising,
- Careful attention to, and control of, earthmoving and landscaping, and
- Regulation of the design and appearance of structures and equipment (i.e., placement of utility structures, microwave receptors, etc.).

City of Sacramento 2035 General Plan

The City of Sacramento adopted its 2035 General Plan on March 3, 2015. The General Plan includes redevelopment of the Twin Rivers Community Housing Complex and the construction of the proposed Dos Rios LRT Station in its long range plans. A summary of General Plan policies that are relevant to the proposed project is provided below.

River District Specific Plan

The River District Specific Plan (RDSP) was adopted in 2011 and established planning and design standards for the redevelopment of approximately 773 acres of land (City of Sacramento, 2011). The RDSP area includes the entirety of the proposed project area under consideration in this IS/EA, and includes a number of elements that are directly applicable to the proposed project. Along with the RDSP are the associated River District Design Guidelines (City of Sacramento, 2016) that govern both Private Realm and Public Realm development within the RDSP area. Projects proposed in the area are subject to review by the Planning and Design Commission for consistency with the Design Guidelines. A summary of RDSP policies that are relevant to the proposed project is provided below.

3.1.4 Summary of Analysis under the 2035 General Plan Master EIR and River District Specific Plan EIR

2035 General Plan Master EIR

The 2035 General Plan Master EIR (City of Sacramento, 2014) described the existing visual conditions in the City of Sacramento and the potential changes to those conditions that could result from development consistent with the 2035 General Plan. See Master EIR, Chapter 4.13, *Visual Resources*.

The Master EIR identified potential impacts related to light and glare (Impact 4.13-1) and concluded that impacts would be less than significant. The Master EIR also determined that implementation of the General Plan could interfere with important existing scenic resources and degrade the view of those resources as seen from visually sensitive public locations (Impact 4.13-2). Those impacts were determined to be less than significant with implementation of the visual resources policies contained within the General Plan. The following General Plan policies are applicable to the proposed project.

Policy LU 6.1.12: Compatibility with Adjoining Uses. The City shall ensure that the introduction of higher-density mixed-use development along major arterial corridors is compatible with adjacent land uses, particularly residential uses, by requiring such features as:

- Buildings setback from rear or side yard property lines adjoining single-family residential uses;
- Building heights stepped back from sensitive adjoining uses to maintain appropriate transitions in scale and to protect privacy and solar access;
- Landscaped off-street parking areas, loading areas, and service areas screened from adjacent residential areas, to the degree feasible; and
- Lighting shielded and directed downward to minimize impacts on adjacent residential uses.

Policy ER 7.1.1: Protect Scenic Views. The City shall avoid or reduce substantial adverse effects of new development on views from public places to the Sacramento and American Rivers and adjacent greenways, landmarks, and the State Capitol along Capitol Mall.

Policy ER 7.1.3: Lighting. The City shall minimize obtrusive light by limiting outdoor lighting that is misdirected, excessive, or unnecessary, and requiring light for development to be directed downward to minimize spill-over onto adjacent properties and reduce vertical glare.

Policy ER 7.1.4: Reflective Glass. The City shall prohibit new development from: 1) using reflective glass that exceeds 50 percent of any building surface and on the bottom three floors; 2) using mirrored glass; 3) using black glass that exceeds 25 percent of any surface of a building; 4) using metal building materials that exceed 50 percent of any street-facing surface of a primarily residential building; and 5) using exposed concrete that exceeds 50 percent of any building.

River District Specific Plan EIR

The River District Specific Plan EIR (City of Sacramento, 2010) evaluated effects of development within the Specific Plan area (see Draft EIR Chapter 4, *Land Use*). RDSP policies that are applicable to the project site include protecting established neighborhoods and promoting the design of complete and well-structured neighborhoods. The EIR stated that the RDSP would work in conjunction with the “River District Design Guidelines, which provide guidance for projects regarding the aesthetic form and functional quality of development.” The EIR found that impacts to aesthetics were found to be less than significant in that development associated with the RDSP’s implementation would not be incompatible with existing and planned land uses. The following RDSP goals and policies are applicable to the proposed project.

Goal LU3. Encourage areas to grow as distinct neighborhoods with unique characteristics and atmosphere.

Policy LU3d: Design and develop North 16th and North 12th Streets to reflect their important roles as major corridors within the Central City.

Policy LU3g: Support the incorporation of unique features such as rail spur alignments into the design of new projects and buildings.

Policy POS10c: Provide lighting for paths and walkways that provides safety without glare and intrusion into the natural landscape.

3.1.5 Impact Assessment and Mitigation Measures

City of Sacramento Standards of Significance

The significance criteria used to evaluate the project impacts to aesthetics under CEQA are based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines, thresholds of significance adopted by the City in applicable general plans and previous environmental documents, and professional judgment. Under CEQA, a significant impact related to aesthetics would occur if the project would:

- Create a source of glare that would cause a public hazard or annoyance?
- Create a new source of light that would be cast onto oncoming traffic or residential uses?
- Substantially degrade the existing visual character of the site or its surroundings?

Department of Housing and Urban Development Evaluation Criteria

For aesthetics and visual resources, neither HUD nor the Council on Environmental Quality (CEQ) NEPA regulations define specific thresholds or standards to determine the level of significance for a project's impacts. According to 40 CFR 1508.27, "significance" as used in NEPA requires consideration of an action's *context* and *intensity*. For context, "the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action" [42 CFR 1508.27(a)]. In determining an effect's *intensity*, federal agencies consider "factors" such as public health, characteristics of the geographic area, controversy, uncertain risks, precedent-setting aspects, cumulative effects, and conformance with applicable federal, state, or local regulations [40 CFR 1508.27(b)].

The online HUD Exchange provides guidance documents for considering context and intensity impacts associated with aesthetics and visual resources (HUD, 2013). Specific factors to consider include the project's compatibility with existing land use and zoning, appropriate scale, coherence, and urban design.

- HUD regulations also provide a listing of federal laws, regulations, and executive orders against which all HUD-assisted projects must be evaluated. These authorities are listed at 24 CFR Sections 58.5 and 58.6. The only listed statute that is relevant to the proposed project with respect to aesthetics and visual resources is the Wild and Scenic Rivers Act of 1968 (P.L. 90-542; 16 USC 1271-1287). Within the context of aesthetic and visual resources, proposed projects must be evaluated for potential effects to any scenic features associated with waterways that have been designated as part of the Act.

Other Applicable Evaluation Criteria

No other agency or jurisdiction has implemented standards or thresholds for aesthetics and visual resources that are applicable to the proposed project.

Environmental Analysis

AES-1. Would the project create a source of glare that would cause a public hazard or annoyance?

Alternative 1 – No Project

Under this alternative, existing activities in or around the project area would remain unchanged. Under NEPA, there would be **no effect**. Under CEQA, there would be **no impact** with respect to this criterion.

Alternative 2 – Twin Rivers Transit-Oriented Development and Light Rail Station Project

Reflective light, or glare, is caused by sunlight or artificial light reflecting from finished surfaces such as window glass or other reflective materials. The reflectivity of surface materials, including glass, can vary widely. Buildings constructed of highly reflective materials from which the sun reflects at a low angle commonly cause adverse glare. Existing sources of reflective light at and in

the vicinity of the project site are largely attributable to reflections from vehicles and windows of commercial and industrial buildings. Because of the many street trees and other landscape trees and vegetation in the area, and the overall low building heights, current overall glare levels are low.

Under Alternative 2, some of the new residential buildings would be taller than those that are currently present in the area, and could therefore be sources of glare if appropriate building materials and applicable standards are not met. However, all new construction would be required to comply with all local anti-glare and reflective glass standards as set forth in the City's 2035 General Plan and the River District's Design Guidelines, which includes façade guidance under Private Realm Design Guidelines Part D, Massing and Building Configuration. Compliance with these standards, as reviewed by the Planning and Design Commission, would minimize any potentially adverse effects. Therefore, under NEPA, there would be **no adverse effect** with respect to glare. Under CEQA, the impact would be **less than significant**.

AES-2. Would the project create a new source of light that would be cast onto oncoming traffic or residential uses?

Alternative 1 – No Project

The No Project alternative would result in the Twin Rivers Transit-Oriented Development and Light Rail Station Project not being constructed or operated. The project area would remain in its existing condition. Any existing activities in or around the project area would remain unchanged. Under NEPA, there would be **no effect**. Under CEQA, there would be **no impact** with respect to this criteria.

Alternative 2 – Twin Rivers Transit-Oriented Development and Light Rail Station Project

Construction Effects

Construction lighting is not expected to be required during work on the existing Twin Rivers Community Housing Complex, as work in that area would take place primarily during daylight hours.

Certain elements of the construction of the Dos Rios Light Rail Station, however, would require night work to avoid disruption to existing light rail services and to minimize traffic impacts along North 12th Street. Based on the hours of existing RT operations along the line, any work that could not be accommodated during light rail operations would need to be done between the hours of 12:30 a.m. and 4:00 a.m. In these instances, temporary lighting would be required during certain periods of construction for security, safety, and operational reasons. Construction of the station would occur before construction and occupancy of the new housing in the expansion area east of North 12th Street. No other existing housing is present in the proposed station area, and all existing uses in the area are commercial or industrial in nature. The existing Twin Rivers Housing Complex is more than 400 feet from the proposed station site, and is separated from the site by intervening buildings and trees. As such, no residents would be present in the area of night-time construction and there would therefore be no effects to residents or other light sensitive land uses. Further, all construction lighting would be focused on work areas and appropriately directed to

minimize spillover onto adjoining properties. Under NEPA, there would be **no effect** with respect to construction-related lighting. Under CEQA, there would likewise be **no impact**.

Operational Effects

Once constructed, the new buildings at both the Twin Rivers Community Housing Complex and the Expansion Area would be prominent new features. Given the height of the buildings, indoor nighttime lighting of the buildings could affect nighttime views in the vicinity of the project site. However, the project site is located within a developed and urbanized area where nighttime lighting is already part of the existing environment. Vehicle headlights, street lighting at intersections and along streets, parking lot lighting, security lighting, and building lighting as well as various other sources of light from surrounding urban uses characterize current nighttime conditions. Any new lighting associated with the proposed project would be consistent with these existing conditions. Further, all new development would be required to comply with all local lighting standards as set forth in the City's 2035 General Plan and the River District's Design Guidelines, which includes light guidance under both the Public and Private Realm Design. Compliance with these standards, as reviewed by the Planning and Design Commission, would minimize any potentially adverse effects. Under NEPA, there would be **no adverse effect** with respect to operational lighting. Under CEQA, the impact would be **less than significant**.

AES-3. Would the project substantially degrade the existing visual character of the site or its surroundings?

Alternative 1 – No Project

The No Project alternative would result in the Twin Rivers Transit-Oriented Development and Light Rail Station Project not being constructed or operated. The project area would remain in its existing condition. Any existing activities in or around the project area would remain unchanged. Under NEPA, there would be **no effect**. Under CEQA, there would be **no impact** with respect to this criteria.

Alternative 2 – Twin Rivers Transit-Oriented Development and Light Rail Station Project

The proposed project has been designated for the proposed use (housing and a light rail station) under both the City General Plan and the River District Specific Plan. The type of development being considered for the proposed project has been envisioned for many years. The housing and light rail station envisioned for the expansion area east of North 12th Street would complement the new residential facilities at the Twin Rivers Community Housing Complex. In both areas, these changes would be consistent with and complimentary to other development that is currently underway in nearby areas of the City of Sacramento. They would also be consistent with the redevelopment of the larger River District area as envisioned in the River District Specific Plan and analyzed under the RDSP EIR. The visual character would change, but those changes would occur within the context of implemented plans for the area, and would also occur in compliance with applicable design guidelines.

Design oversight for the proposed project would be carried out by the City of Sacramento as required by the Planning and Design Commission. All architectural features would be required to be

consistent with all applicable City design standards including the RDSP Design Guidelines. The RDSP Design Guidelines outline specific goals and policies related to the design and functionality of all new development in the area. This includes issues such as building placement, design, setbacks, heights, massing and overhangs, as well as landscape treatments, streetscapes, lighting, signage and the design of public and civic open spaces. Compliance with these requirements would ensure that the proposed project would be developed in a manner that would be consistent with and complimentary to the overall development vision as set forth in the Specific Plan. Therefore, the project would not degrade but would actually improve the existing visual character of the area. Under NEPA, there would be a **beneficial effect**. Under CEQA, the impact would also be **beneficial**.

AES-4. Other NEPA-related aesthetic and visual resource criteria related to the Wild and Scenic Rivers Act.

Alternative 1 – No Project

The No Project alternative would result in the Twin Rivers Transit-Oriented Development and Light Rail Station Project not being constructed or operated. The project area would remain in its existing condition. Any existing activities in or around the project area would remain unchanged. Under NEPA, there would be **no effect**.

Alternative 2 – Twin Rivers Transit-Oriented Development and Light Rail Station Project

As part of its environmental review responsibilities under NEPA, HUD is required to consider a project's potential effects on scenic resources associated with Wild and Scenic Rivers. As mentioned previously, the American River lies 700 to 900 feet north of the site. The American River has been identified as a Recreational River Area under the authority of the Federal National Wild and Scenic Rivers Act. Views from the river to the project site are blocked by intervening industrial and commercial buildings, arterial roadways, and typical urban facilities such as above-ground power lines and street lights. In addition, a substantial levee runs parallel to the river, with many large trees lining the riverbank. Due to the flat nature of the surrounding terrain, the intervening land uses, and the aforementioned levee, the river would not be visible from the project site, nor would the project areas be visible from the river or its adjoining banks. There would therefore be no effect to the scenic and visual characteristics that made the river eligible for inclusion into the National Wild and Scenic Rivers System. There would therefore be **no adverse effect** to the resource.

Mitigation Measures

None required.

References

- City of Sacramento. 2016. City of Sacramento; Urban Design; Central City Urban Design Guidelines; Section 6- River District Design Guidelines. Available online at: <http://www.cityofsacramento.org/Community-Development/Planning/Urban-Design>. Accessed December 1, 2016.
- City of Sacramento. 2015. City of Sacramento 2035 General Plan Update Background Report. Available online at: <http://www.cityofsacramento.org/Community-Development/Resources/Online-Library/General-Plan>. Accessed April 7, 2016.
- City of Sacramento. 2014. City of Sacramento 2035 General Plan Update Draft Environmental Impact Report. Available online at: <https://www.cityofsacramento.org/Community-Development/Planning/Environmental/Impact-Reports>. Accessed April 7, 2016.
- City of Sacramento. 2010. River District Specific Plan Draft Environmental Impact Report. Available online at: <https://www.cityofsacramento.org/Community-Development/Planning/Environmental/Impact-Reports>. Accessed April 7, 2016.
- Department of Housing and Urban Development (HUD). 2013. Environmental Assessment Factors Guidance. Available online at: <https://www.hudexchange.info/resource/3306/environmental-assessment-factors-guidance/>. Accessed April 7, 2016.

3.2 Air Quality and Greenhouse Gas Emissions

3.2.1 Introduction

This section assesses the potential air quality and greenhouse gas impacts associated with construction and operation of the proposed project and the no project alternative and identifies feasible mitigation measures where appropriate. Emission estimates are compared to local, State, and federal thresholds.

The analysis included herein was based on project-specific construction and operational features, and data provided in the City of Sacramento 2035 General Plan, City of Sacramento 2035 General Plan Master Environmental Impact Report, the Sacramento Metropolitan Air Quality Management District Guide to Air Quality Assessment, and traffic information provided by Fehr & Peers.

3.2.2 Environmental Setting

The Sacramento Metropolitan Air Quality Management District (SMAQMD) is the primary local agency with respect to air quality for Sacramento County, in which the proposed project is located. The City of Sacramento is within the Sacramento Valley Air Basin (SVAB), which also includes all of Butte, Colusa, Glenn, Sacramento, Shasta, Sutter, Tehama, Yolo, and Yuba Counties, the western portion of Placer County, and the eastern portion of Solano County.

Physical Setting

Climate and Meteorology

Air quality is affected by the rate, amount, and location of pollutant emissions and the associated meteorological conditions that influence pollutant movement and dispersal. Atmospheric conditions (e.g., wind speed, wind direction, air temperature) in combination with local surface topography (e.g., mountains, valleys), determine how air pollutant emissions affect local air quality.

The SVAB has a Mediterranean climate, with mild, rainy winter weather from November through March and warm to hot, dry weather from May through September. Sacramento Valley temperatures range from 20 to 115 degrees Fahrenheit (°F) and the average annual rainfall is 20 inches. The topographic features that define the SVAB are the Coast Range to the west, the Sierra Nevada to the east, and the Cascade Range to the north. These mountain ranges channel winds through the SVAB, but also inhibit the dispersion of pollutant emissions.

Wind directions in the Sacramento Valley are influenced by the predominant wind flow pattern associated with each season. The predominant wind pattern in the Sacramento Valley for most of the year is the full sea breeze, commonly referred to as Delta breezes. These cool winds originate from the Pacific Ocean and flow through the Carquinez Strait, a sea-level gap in the Coast Range. In the winter (December to February), northerly winds predominate. However, during about half the days from July through September, a phenomenon called the “Schultz Eddy” occurs. This is a large isotropic vertical-axis eddy on the north side of the Carquinez Strait that prevents the Delta breezes from transporting pollutants north and out of the Sacramento

Valley, causes the wind pattern to circle back south and keeps air pollutants in the Sacramento Valley. This phenomenon's effect exacerbates the pollution levels in the area and increases the likelihood of violating State or federal standards.

The vertical and horizontal movement of air is an important atmospheric component involved in the dispersion and subsequent dilution of air pollutants. Without movement, air pollutants can collect and concentrate in a single area, increasing the associated health hazards. For instance, in the winter, the SVAB typically experiences calm atmospheric conditions that result in stagnant air and increased air pollution. As a result, persistent inversions occur frequently in the SVAB, especially during autumn and early winter, and restrict the vertical dispersion of pollutants released near ground level.

Existing Air Quality

Criteria Air Pollutants

As required by the Federal Clean Air Act (FCAA) passed in 1970, the U.S. Environmental Protection Agency (USEPA) has identified six criteria air pollutants that are pervasive in urban environments and for which state and national health-based ambient air quality standards have been established. The USEPA calls these pollutants "criteria air pollutants" because the agency has regulated them by developing specific public health- and welfare-based criteria as the basis for setting permissible levels. Ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter, and lead are the six criteria air pollutants. Particulate matter is measured in two size ranges: PM₁₀ for particles less than 10 microns in diameter and PM_{2.5} for particles less than 2.5 microns in diameter.

The California Air Resources Board (CARB) regional air quality monitoring network provides information on ambient concentrations of non-attainment criteria air pollutants. The monitoring stations that include data representative of the proposed project site are located on T Street (monitors ozone, PM₁₀, and PM_{2.5}) approximately 2 miles southwest of the project area and at Goldenland Court (monitors CO) approximately 6 miles north of the project area. **Table 3.2-1** presents a five-year summary of air pollutant (concentration) data collected at these monitoring stations for ozone, PM₁₀, PM_{2.5}, and CO.

While the data gathered at these monitoring stations may not necessarily reflect the specific meteorological environment of the project site nor the proximity of site-specific stationary and street pollutant sources, they do present the nearest available benchmark and provide a reference point to what the pollutants of greatest concern are in the region and the degree to which the area is out of attainment with specific air quality standards.

Ozone

Ozone is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG, also sometimes referred to as volatile organic compounds or VOC by some regulating agencies) and nitrogen oxides (NO_x). The main sources of ROG and NO_x, often referred to as ozone precursors, are combustion processes

**TABLE 3.2-1
SUMMARY OF AIR QUALITY MONITORING DATA (2011–2015)**

Pollutant	Applicable Standard	Number of Days Standards Were Exceeded and Maximum Concentrations Measured ^a				
		2011	2012	2013	2014	2015
Ozone – T Street Station						
Days 1-hour State Std. Exceeded	>0.09 ppm ^b	7	3	0	0	0
Max. 1-hour Conc. (ppm)		0.107	0.102	0.091	0.085	0.092
Days 8-hour National Std. Exceeded	>0.075 ppm ^c	1	4	0	0	1
Days 8-hour State Std. Exceeded	>0.07 ppm ^b	5	9	0	4	4
Max. 8-hour Conc. (ppm)		0.087	0.093	0.068	0.072	0.077
Suspended Particulates (PM10) – T Street Station						
Estimated Days Over 24-hour National Std. ^d	>150 µg/m ³ c	0	0	-	0	0
Estimated Days Over 24-hour State Std. ^d	>50 µg/m ³ b	0	0	-	-	-
Max. 24-hour Conc. National/State (µg/m ³)		38.8/42.2	36.2/36.7	53.1/ 92.3	105.7/ 106.4	57.8/ 59.1
State Annual Average (µg/m ³)	>20 µg/m ³ b	19.2	17.8	-	-	-
Suspended Particulates (PM2.5) – T Street Station						
Estimated Days Over 24-hour National Std. ^d	>35 µg/m ³ c	18.4	0	6.1	0	3.0
Max. 24-hour Conc. National (µg/m ³)		50.5	27.1	39.2	26.3	36.3
Annual Average (µg/m ³)	>12 µg/m ³ b	10.1	8.3	10.0	8.0	9.5
Carbon Monoxide (CO) – Goldenland Court						
Days 8-hour Std. Exceeded	>9 ppm ^b	0	0	-	-	-
Max. 8-hour Conc. (ppm)		1.6	1.55	-	-	-
Days 1-hour Std. Exceeded	>20 ppm ^b	0	0	0	0	0
Max. 1-hour Conc. (ppm)		1.9	1.9	1.9	2.1	1.3

NOTES:

Bold values are in excess of applicable standard. "NA" indicates that data is not available.

conc. = concentration; ppm = parts per million; ppb=parts per billion;

µg/m³ = micrograms per cubic meter

- = No data or insufficient data.

^a Number of days exceeded is for all days in a given year, except for particulate matter. PM10 and PM2.5 are monitored every six days.

^b State standard, not to be exceeded.

^c National standard, not to be exceeded.

^d Particulate matter sampling schedule of one out of every six days, for a total of approximately 60 samples per year. Estimated days exceeded mathematically estimates how many days concentrations would have been greater than the level of the standard had each day been monitored.

SOURCE: California Air Resources Board, 2016. *Summaries of Air Quality Data, 2011-2015*. www.arb.ca.gov/adam/cgi-bin/db2www/polltrends.d2w/start. Accessed July 1, 2016.; U.S. Environmental Protection Agency, 2016. *AirData Monitor Value Report*. https://www3.epa.gov/airdata/ad_rep_mon.html. Accessed July 5, 2016.

(including motor vehicle engines) and the evaporation of solvents, paints, and fuels. Ozone is referred to as a regional air pollutant because its precursors are transported and diffused by wind concurrently with ozone production through the photochemical reaction process. Ozone causes eye irritation, airway constriction, and shortness of breath and can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema.

Carbon Monoxide

CO is an odorless, colorless gas usually formed as the result of the incomplete combustion of fuels. The single largest source of CO is motor vehicle engines; the highest emissions occur during low travel speeds, stop-and-go driving, cold starts, and hard acceleration. Exposure to high concentrations of CO reduces the oxygen-carrying capacity of the blood and can cause headaches, nausea, dizziness, and fatigue, impair central nervous system function, and induce angina (chest pain) in persons with serious heart disease. Very high levels of CO can be fatal.

Particulate Matter (PM₁₀ and PM_{2.5})

PM₁₀ and PM_{2.5} consist of particulate matter that is 10 microns or less in diameter and 2.5 microns or less in diameter, respectively.¹ PM₁₀ and PM_{2.5} represent fractions of particulate matter that can be inhaled into the air passages and the lungs and can cause adverse health effects. Some sources of particulate matter, such as wood burning in fireplaces, demolition, and construction activities, are more local in nature, while others, such as vehicular traffic, have a more regional effect. Very small particles of certain substances (e.g., sulfates and nitrates) can cause lung damage directly, or can contain adsorbed gases (e.g., chlorides or ammonium) that may be injurious to health. Particulates also can damage materials and reduce visibility.

Large dust particles (i.e., diameter greater than 10 microns) settle out rapidly and are easily filtered by human breathing passages. This large dust is of more concern as a soiling nuisance rather than a health hazard. The remaining fraction, PM₁₀ and PM_{2.5}, are a health concern particularly at levels above the federal and State ambient air quality standards. PM_{2.5} (including diesel exhaust particles) is thought to have greater effects on health, because these particles are so small and are able to penetrate to the deepest parts of the lungs. Scientific studies have suggested links between fine particulate matter and numerous health problems including asthma, bronchitis, and acute and chronic respiratory symptoms, such as shortness of breath and painful breathing. Recent studies have shown an association between morbidity and mortality and daily concentrations of particulate matter in the air. Children are more susceptible to the health risks of PM₁₀ and PM_{2.5} because their immune and respiratory systems are still developing.

Mortality studies since the 1990s have shown a statistically significant direct association between mortality (premature deaths) and daily concentrations of particulate matter in the air. Despite important gaps in scientific knowledge and continued reasons for some skepticism, a comprehensive evaluation of the research findings provides persuasive evidence that exposure to fine particulate air pollution has adverse effects on cardiopulmonary health (Dockery and Pope, 2006).

¹ A micron is 1/1,000,000th of a meter.

Nitrogen Dioxide (NO₂)

NO₂ is a reddish brown gas that is a byproduct of combustion processes. Automobiles and industrial operations are the main sources of NO₂. Aside from its contribution to ozone formation, NO₂ can increase the risk of acute and chronic respiratory disease and reduce visibility. NO₂ may be visible as a coloring component on high pollution days, especially in conjunction with high ozone levels.

Sulfur Dioxide (SO₂)

SO₂ is a combustion product of sulfur or sulfur-containing fuels such as coal and diesel. SO₂ is also a precursor to the formation of particulate matter, atmospheric sulfate, and atmospheric sulfuric acid formation that could precipitate downwind as acid rain. The maximum SO₂ concentrations recorded in the project area are well below federal and state standards. Accordingly, the region is in attainment status with both federal and state SO₂ standards.

Lead

Leaded gasoline (phased out in the United States beginning in 1973), lead based paint (on older houses and cars), smelters (metal refineries), and manufacture of lead storage batteries have been the primary sources of lead released into the atmosphere. Lead has a range of adverse neurotoxic health effects, which puts children at special risk. Some lead-containing chemicals cause cancer in animals. Lead levels in the air have decreased substantially since leaded gasoline was eliminated. Ambient lead concentrations in California are only monitored on an as-warranted, site-specific basis.

Non-Criteria Air Pollutants

Toxic Air Contaminants (TACs)

Non-criteria air pollutants or TACs are airborne substances that are capable of causing short-term (acute) and/or long-term (chronic or carcinogenic, i.e., cancer causing) adverse human health effects (i.e., injury or illness). TACs include both organic and inorganic chemical substances. They may be emitted from a variety of common sources including gasoline stations, automobiles, diesel engines, dry cleaners, industrial operations, and painting operations. TACs are regulated differently than criteria air pollutants at both federal and state levels. At the federal level these airborne substances are referred to as Hazardous Air Pollutants (HAPs). The state list of TACs identifies 243 substances and the federal list of HAPs identified 189 substances.

The CARB identified diesel particulate matter (DPM) as a toxic air contaminant in 1998, primarily based on evidence demonstrating cancer effects in humans. The exhaust from diesel engines includes hundreds of different gaseous and particulate components, many of which are toxic. Mobile sources such as trucks and buses are among the primary sources of diesel emissions, and concentrations of DPM are higher near heavily traveled highways and rail lines with diesel locomotive operations. The risk from DPM as determined by the CARB declined from 750 in one million in 1990 to 570 in one million in 1995; by 2000, the CARB estimated the average statewide cancer risk from DPM at 540 in one million (CARB, 2009). This calculated cancer risk values from ambient air exposure can be compared against the lifetime probability of being diagnosed with cancer in the United States, from all causes, which is more than 40 percent (based on a sampling of

17 regions nationwide), or greater than 400,000 in one million, according to the National Cancer Institute (NCI, 2012).

Asbestos is also a TAC of concern during demolition of buildings and structures. Asbestos is a fibrous mineral, which is both naturally occurring in ultramafic rock (a rock type commonly found in California) and used as a processed component of building materials. Because asbestos has been proven to cause serious adverse health effects, including asbestosis and lung cancer, it is strictly regulated based on its natural widespread occurrence and its use as a building material.

Odorous Emissions

Odors are generally regarded as an annoyance rather than a health hazard. Manifestations of a person's reaction to odors can range from psychological (e.g., irritation, anger, anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, headache). The ability to detect odors varies considerably among the population and overall is quite subjective. People may have different reactions to the same odor. An odor that is offensive to one person may be perfectly acceptable to another (e.g., coffee roaster). An unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. Known as odor fatigue, a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity. The occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of receptors. The SMAQMD has identified typical odor sources in its *Guide to Air Quality Assessment in Sacramento County* (SMAQMD, 2009). These include wastewater treatment plants, sanitary landfills, composting and green waste facilities, recycling facilities, petroleum refineries, chemical manufacturing plants, painting and coating operations, rendering plants, and food packaging plants.

Odor impacts should be considered for any proposed new odor sources located near existing receptors, as well as any new sensitive receptors located near existing odor sources. Generally, increasing the distance between the receptor and the odor source will mitigate odor impacts.

Sensitive Receptors

Air quality does not affect every individual or group in the population in the same way, and some groups are more sensitive to adverse health effects caused by exposure to air pollutants than others. Population subgroups sensitive to the health effects of air pollutants include the elderly and the young, those with higher rates of respiratory disease such as asthma and chronic obstructive pulmonary disease, and with other environmental or occupational health exposures (e.g., indoor air quality) that affect cardiovascular or respiratory diseases. Land uses such as schools, children's day care centers, hospitals, and nursing and convalescent homes are considered to be more sensitive than the general public to poor air quality because the population groups associated with these uses have increased susceptibility to respiratory distress. Parks and playgrounds are considered moderately sensitive to poor air quality because persons engaged in strenuous work or exercise also have increased sensitivity to poor air quality; however, exposure times are generally far shorter in parks and playgrounds than in residential locations and schools, which typically reduce overall exposure to pollutants. Residential areas are considered more sensitive to air quality conditions compared to commercial and industrial areas because people

generally spend longer periods of time at their residences, with associated greater exposure to ambient air quality conditions.² Workers are not considered sensitive receptors because all employers must follow regulations set forth by the Occupation Safety and Health Administration (OSHA) to ensure the health and well-being of their employees.

Greenhouse Gases

“Global warming” and “global climate change” are the terms used to describe the increase in the average temperature of the earth’s near-surface air and oceans since the mid-20th century and its projected continuation. Warming of the climate system is now considered to be unequivocal (IPCC, 2007). Natural processes and human actions have been identified as the causes of this warming. The International Panel on Climate Change (IPCC) has concluded that variations in natural phenomena such as solar radiation and volcanoes produced most of the warming from pre-industrial times to 1950 and had a small cooling effect afterward. After 1950, however, increasing greenhouse gas concentrations resulting from human activity such as fossil fuel burning and deforestation are believed to be responsible for most of the observed temperature increase. Increases in GHG concentrations in the earth’s atmosphere are thought to be the main cause of human-induced climate change. Certain gases in the atmosphere naturally trap heat by impeding the exit of solar radiation that has hit the earth and is reflected back into space. This is sometimes referred to as the “greenhouse effect” and the gases that cause it are called “greenhouse gases.” Some GHGs occur naturally and are necessary for keeping the earth’s surface inhabitable. However, increases in the concentrations of these gases in the atmosphere during the last 100 years have decreased the amount of solar radiation that is reflected back into space, intensifying the natural greenhouse effect and resulting in the increase of global average temperature.

Carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆) are the principal GHGs. When concentrations of these gases exceed natural concentrations in the atmosphere, the greenhouse effect may be intensified. CO₂, CH₄, and N₂O occur naturally, and are also generated through human activity. Emissions of CO₂ are largely by-products of fossil fuel combustion, whereas CH₄ results from off-gassing associated with agricultural practices and landfills.³ Other human-generated GHGs include fluorinated gases such as SFCs, PFCs, and SF₆, which have much higher heat-absorption potential than CO₂, and are byproducts of certain industrial processes.

CO₂ is the reference gas for climate change because it is the predominant GHG emitted. The effect that each of the aforementioned gases can have on global warming is a combination of the mass of their emissions and their global warming potential (GWP). GWP indicates, on a pound-for-pound basis, how much a gas is predicted to contribute to global warming relative to how much warming would be predicted to be caused by the same mass of CO₂. For example, CH₄ and N₂O are substantially more potent GHGs than CO₂, with GWPs of 21 and 310 times that of CO₂, respectively.

² The factors responsible for variation in exposure are also often similar to factors associated with greater susceptibility to air quality health effects. For example, poorer residents may be more likely to live in crowded substandard housing and be more likely to live near industrial or roadway sources of air pollution.

³ Off-gassing is defined as the release of chemicals under normal conditions of temperature and pressure.

In emissions inventories, GHG emissions are typically reported in terms of pounds or metric tons of CO₂ equivalents (CO₂e). CO₂e are calculated as the product of the mass emitted of a given GHG and its specific GWP. While CH₄ and N₂O have much higher GWPs than CO₂, CO₂ is emitted in such vastly higher quantities that it accounts for the majority of GHG emissions in CO₂e, both from residential developments and human activity in general.

Potential Effects of Human Activity on GHG Emissions

Fossil fuel combustion, especially for the generation of electricity and powering of motor vehicles, has led to substantial increases in CO₂ emissions (and thus substantial increases in atmospheric concentrations). In 1994, atmospheric CO₂ concentrations were found to have increased by nearly 30 percent above pre-industrial (ca. 1860) concentrations.

There is international scientific consensus that human-caused increases in GHGs have contributed and will continue to contribute to global warming. Potential global warming impacts in California may include, but are not limited to, loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years. Secondary effects are likely to include the displacement of thousands of coastal businesses and residences, impacts on agriculture, changes in disease vectors, and changes in habitat and biodiversity. As the CARB *Climate Change Scoping Plan* noted, the legislature in enacting Assembly Bill (AB) 32 found that global warming would cause detrimental effects to some of the State's largest industries, including agriculture, winemaking, tourism, skiing, commercial and recreational fishing, forestry, and the adequacy of electrical power generation. The *Climate Change Scoping Plan* states as follows: "The impacts of global warming are already being felt in California. The Sierra snowpack, an important source of water supply for the State, has shrunk 10 percent in the last 100 years. It is expected to continue to decrease by as much as 25 percent by 2050. World-wide changes are causing sea levels to rise – about 8 inches of increase has been recorded at the Golden Gate Bridge over the past 100 years – threatening low coastal areas with inundation and serious damage from storms" (CARB, 2008). AB 32 is discussed further below under Regulatory Setting.

Impacts of Climate Change

Ecosystem and Biodiversity Impacts

Climate change is expected to have effects on diverse types of ecosystems (EPA, 2008a). As temperatures and precipitation change, seasonal shifts in vegetation would occur; this could affect the distribution of associated flora and fauna species. As the range of species shifts, habitat fragmentation could occur, with acute impacts on the distribution of certain sensitive species. The IPCC states that "Twenty percent to 30 percent of species assessed may be at risk of extinction from climate change impacts within this century if global mean temperatures exceed 2 to 3 degrees Celsius (°C), or 3.6 to 5.4°F, relative to pre-industrial levels" (IPCC, 2007). Shifts in existing biomes could also make ecosystems vulnerable to encroachment by invasive species. Wildfires, which are an important control mechanism in many ecosystems, may become more severe and more frequent, making it difficult for native plant species to repeatedly re-germinate. In general terms, climate change is expected to put a number of stressors on ecosystems, with potentially catastrophic effects on biodiversity.

Human Health Impacts

Climate change may increase the risk of vector-borne infectious diseases, particularly those found in tropical areas and spread by insects such as malaria, dengue fever, yellow fever, and encephalitis. Cholera, which is associated with algal blooms, could also increase. While these health impacts would largely affect tropical areas in other parts of the world, effects would also be felt in California. Warming of the atmosphere would be expected to increase smog and particulate pollution, which could adversely affect individuals with heart and respiratory problems, such as asthma. Extreme heat events would also be expected to occur with more frequency and could adversely affect the elderly, children, and the homeless. Finally, the water supply impacts and seasonal temperature variations expected as a result of climate change could affect the viability of existing agricultural operations, making the food supply more vulnerable (EPA 2008b).

Greenhouse Gas Emissions Estimates

Global Emissions

Worldwide emissions of GHGs in 2004 were approximately 30 billion tons of CO₂e per year (United Nations, 2012). This includes both ongoing emissions from industrial and agricultural sources, but excludes emissions from land use changes.

U.S. Emissions

In 2009, the United States emitted about 6.7 billion tons of CO₂e, or about 21 tons per year per person. Of the four major sectors nationwide — residential, commercial, industrial, and transportation — transportation accounts for the highest fraction of GHG emissions (approximately 33 percent); these emissions are entirely generated from direct fossil fuel combustion (EPA, 2011).

State of California Emissions

In California, the transportation sector is the largest emitter of GHGs, followed by electricity generation. Emissions of CO₂ are byproducts of fossil fuel combustion. CH₄ (methane), a highly potent GHG, results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices and landfills. N₂O is also largely attributable to agricultural practices and soil management. CO₂ sinks, or reservoirs, include vegetation and the ocean, which absorb CO₂ through sequestration and dissolution, respectively, two of the most common processes of CO₂ sequestration. California produced approximately 452 million gross metric tons of CO₂e in 2010. Combustion of fossil fuel in the transportation sector was the single largest source of California's GHG emissions in 2010, accounting for 38 percent of total GHG emissions in the state. This sector was followed by the electric power sector at 21 percent (including both in-state and out-of-state sources) and the industrial sector at 19 percent (CARB, 2013).

City of Sacramento Emissions

Based on the 2005 GHG inventory for the City of Sacramento, the transportation sector represents the largest source of GHG emissions, accounting for 48.4 percent of the City's annual emissions of 4.16 million metric tons of CO₂e. Electricity and natural gas combustion for the operation, heating, and cooling of commercial, industrial, and residential buildings accounted for another 42.5 percent of annual CO₂e emissions. The other CO₂e emission sectors included in the inventory were waste

(5.8 percent), wastewater treatment (1.4 percent), industrial specific sources (0.7 percent), water related (0.3 percent), and municipal operations (1.9 percent) (City of Sacramento, 2012).

3.2.3 Applicable Policies and Regulations

Sacramento Metropolitan Air Quality Management District

The SMAQMD is the regional agency responsible for air quality regulation within the SVAB. The SMAQMD regulates air quality through its planning and review activities and has permit authority over most types of stationary emission sources and can require operators of stationary sources to obtain permits, can impose emission limits, set fuel or material specifications, and establish operational limits to reduce air emissions. The SMAQMD regulates new or modified stationary sources of TACs.

For State air quality planning purposes, Sacramento County is classified as a severe non-attainment area for ozone. The “severe” classification triggers various plan submittal requirements and transportation performance standards. In order to demonstrate its ability to eventually meet the federal ozone standards, the SMAQMD, along with the other air districts in the nonattainment area, maintains the region’s portion of the SIP for ozone. The SVAB’s part of the SIP is a compilation of regulations that govern how the region and State will comply with the FCAA requirements to attain and maintain the federal ozone standard. The compilation of rules that comprises the Sacramento nonattainment area’s portion of the SIP, including revisions to the SIP, is contained in the *Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan (2013 SIP Revisions)*, which addresses attainment of the federal 8-hour ozone standard, as well as the *2009 Triennial Report and Plan Revision*, which addresses attainment of the state ozone standard, are the latest plans issued by the SMAQMD (SMAQMD, 2009a, 2013).

These attainment plans depend heavily on the SMAQMD’s permit authority, which is exercised through its rules and regulations. With respect to the construction phase of the proposed project, the applicable SMAQMD regulations would relate to construction and stationary equipment, particulate matter generation, architectural coatings, and paving materials. Equipment used during Proposed Project construction would be subject to the requirements of SMAQMD Regulation 4 (Prohibitory Rules), Rule 401 (Ringelmann Chart/Opacity), Rule 402 (Nuisance), Rule 403 (Fugitive Dust), Rule 404 (Particulate Matter), Rule 405 (Dust and Condensed Fumes), Rule 442 (Architectural Coatings), and Rule 453 (Cutback and Emulsified Asphalt Paving Materials).

City of Sacramento Climate Action Plan

In 2012, City of Sacramento adopted a community wide Climate Action Plan (CAP). The CAP outlines multiple initiatives intended to help the City achieve its overall goals of reducing community-wide emissions by 15 percent below 2005 levels by 2020, 38 percent below 2005 levels by 2030, and 83 percent below 2005 levels by 2050. Included in the CAP are a comprehensive set of strategies, measures and implementing actions to achieve the 2020 GHG reduction target. These GHG reduction measures and actions apply to both existing sources within the City as of the 2005 baseline and projected emissions from new growth and development anticipated in the 2035 General Plan. In addition, the CAP identifies potentially

adverse physical effects related to climate change on the community and includes specific adaptation measures to address and mitigate such effects.

3.2.4 Summary of Analysis under the 2035 General Plan Master EIR and Applicable General Plan Policies

2035 General Plan Master EIR

The Master EIR addressed the potential effects of the 2035 General Plan on ambient air quality and the potential for exposure of people, especially sensitive receptors such as children or the elderly, to unhealthful pollutant concentrations. See Master EIR, Chapter 4.2.

Policies in the 2035 General Plan Environmental Resources element were identified as mitigating potential effects of development that could occur under the 2035 General Plan. For example, Policy ER 6.1.1 calls for the City to work with the CARB and SMAQMD to meet state and federal air quality standards; Policy ER 6.1.2 requires the City to review proposed development projects to ensure that the projects incorporate feasible measures that reduce construction and operational emissions; Policies ER 6.1.4 and ER 6.1.11 both call for coordination of City efforts with SMAQMD; and Policy ER 6.1.15 requires the City to give preference to contractors using reduced-emission equipment.

The Master EIR identified exposure to sources of TACs as a potential effect. Policies in the 2035 General Plan would reduce the effect to a less-than-significant level. The policies include ER 6.1.4, requiring coordination with SMAQMD in evaluating exposure of sensitive receptors to TACs, and imposition of appropriate conditions on projects to protect public health and safety; as well as Policy LU 2.7.5, requiring extensive landscaping and trees along freeways fronting elevation and design elements that provide proper filtering, ventilation, and exhaust of vehicle air emissions from buildings.

The Master EIR found that greenhouse gas emissions that would be generated by development consistent with the 2035 General Plan would contribute to climate change on a cumulative basis. Policies of the General Plan identified in the Master EIR that would reduce construction related GHG emissions include: ER 6.1.2 and ER 6.1.11, requiring coordination with SMAQMD to ensure feasible mitigation measures are incorporated to reduce GHG emissions, and ER 6.1.15, which requires the City to educate the public about efforts they can make to improve air quality and reduce GHG emissions. The 2035 General Plan incorporates the GHG reduction strategy of the 2012 Climate Action Plan (CAP), which demonstrates compliance mechanisms for achieving the City's adopted GHG reduction target of 15 percent below 2005 emissions by 2020. Policy ER 6.1.8 commits the City to assess and monitor performance of GHG emission reduction efforts beyond 2020, and progress toward meeting long-term GHG emission reduction goals. ER 6.1.9 also commits the City to evaluate the feasibility and effectiveness of new GHG emissions reduction measures in view of the City's longer-term GHG emission reductions goal. The discussion of GHG emissions and climate change in the 2035 General Plan Master EIR are incorporated by reference in this IS/EA, as allowed under CEQA Guidelines Section 15150. The Master EIR identified

numerous policies included in the 2035 General Plan that addressed greenhouse gas emissions and climate change. See Draft Master EIR, Chapter 4.14, and pages 4.14-1 et seq.

River District Specific Plan EIR

The River District Specific Plan EIR evaluated the potential for the buildout of the proposed River District Specific Plan (RDSP) to conflict with or obstruct implementation of applicable air quality plans; to violate an air quality standard or contribute substantially to an existing or projected air quality violation; to result in cumulatively considerable net increase of greenhouse gases or any criteria pollutant for which the project region is nonattainment; or expose sensitive receptors to substantial pollutant concentrations. The EIR determined that the RDSP would not conflict with or obstruct implementation of an applicable air quality plan.

3.2.5 Impact Assessment and Mitigation Measures

Standards of Significance

The significance criteria used to evaluate the project impacts to air quality and greenhouse gas emissions under CEQA are based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines, thresholds of significance adopted by the City in applicable general plans and previous environmental documents, and professional judgment. The project alternatives would have a significant adverse effect if they would:

- Result in short-term (construction) emissions of NO_x above 85 pounds per day;
- Result in short-term (construction) emissions of PM₁₀ above zero pounds per day without implementation of all best management practices and above 80 pounds per day or 14.6 tons per year after implementation of all best management practices;
- Result in short-term (construction) emissions of PM_{2.5} above 0 pounds per day without implementation of all best management practices and above 82 pounds per day or 15.0 tons per year after implementation of all best management practices;
- Result in long-term (operational) emissions of NO_x or ROG above 65 pounds per day;
- Result in long-term (operational) emissions of PM₁₀ above 0 pounds per day without implementation of all best management practices and above 80 pounds per day or 14.6 tons per year after implementation of all best management practices;
- Result in long-term (operational) emissions of PM_{2.5} above 0 pounds per day without implementation of all best management practices and above 82 pounds per day or 15.0 tons per year after implementation of all best management practices;
- Result in CO concentrations that exceed the 1-hour State ambient air quality standard (i.e., 20.0 ppm) or the 8-hour state ambient standard (i.e., 9.0 ppm);
- Create objectionable odors affecting a substantial number of people, as defined by SMAQMD;
- TAC exposures create a lifetime cancer risk exceeding 10 in 1 million for stationary sources, or substantially increase the lifetime cancer risk as a result of increased exposure to TACs from mobile sources;

- For GHG emissions, a project would be considered to have a significant impact if it fails to satisfy the requirements of the City’s Climate Action Plan.

Conformity Requirements

For projects that receive federal funding, a general conformity determination is required. General conformity is required if a project’s annual construction or operational emissions exceed *de minimis* thresholds (EPA, 2016). This evaluation is limited to emissions of pollutants (or their precursors) for which an area is classified as nonattainment or maintenance status for the federal ambient air quality standards. For ozone precursors (ROG and NO_x), the *de minimis* thresholds depend on the severity of the nonattainment classification. For other pollutants, the threshold is set at 100 tons per year. The SVAB is designated as severe nonattainment for ozone, moderate nonattainment for PM₁₀, and nonattainment for PM_{2.5}. The *de minimis thresholds* for these pollutants are 25 tons per year for ozone precursors (ROG and NO_x), and 100 tons per year for CO and PM₁₀.

The SVAB is currently designated as severe non-attainment for the federal 8-hour ozone standard and moderate maintenance area for the federal PM₁₀ and CO standards. **Table 3.2-2** shows the applicable general conformity thresholds that apply to the project in the SMAQMD.

**TABLE 3.2-2
 GENERAL CONFORMITY DE MINIMIS THRESHOLDS FOR PROJECTS IN THE
 SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT**

Pollutant	SMAQMD (tpy)
NO _x	25
ROG	25
PM ₁₀	100
CO	100

SOURCE: U.S. EPA, 2016. General Conformity De Minimis Emission Levels. Accessed at: <https://www.epa.gov/general-conformity/de-minimis-emission-levels>. Accessed on: July 5, 2016.

Federal Reporting GHG Thresholds

The Council on Environmental Quality (CEQ) issued Draft Guidance for Greenhouse Gas Emissions and Climate Change Impacts in December 2014 (CEQ, 2014). This guidance indicates that NEPA analyses should consider climate change issues that arise in relation to the consideration of the GHG emissions effects *of* a proposed action and alternative actions, as well as the relationship of climate change effects *to* a proposed action or alternatives, including the relationship to proposed design, environmental impacts, and mitigation and adaptation measures. Further, it identifies the FCAA reporting requirement of 25,000 MT or more of CO_{2e} as an indication that GHG emissions could be considered a potential adverse impact of a federal action, but specifies that the reporting requirement should not necessarily be used as a threshold. The project’s GHG emissions have been calculated and compared to the federal reporting threshold for the purposes of assessing impacts under NEPA.

Environmental Analysis

AQ-1. Would the project produce construction emissions of NO_x, ROG, PM₁₀ or PM_{2.5} that would exceed the SMAQMD's construction significance thresholds?

Alternative 1 – No Project

The No Project alternative would result in the Twin Rivers Transit-Oriented Development and Light Rail Station Project not being constructed or operated. The project area would remain in its existing condition. Any existing activities in or around the project area would remain unchanged. Under NEPA, there would be **no adverse effect**. Under CEQA, there would be **no impact** with respect to this criterion.

Alternative 2 – Twin Rivers Transit-Oriented Development and Light Rail Station Project

Construction-related emissions arise from a variety of activities, including: 1) grading, excavation, road building, and other earth moving activities; 2) travel by construction equipment and employee vehicles, especially on unpaved surfaces; 3) exhaust from construction equipment; 4) architectural coatings; and 5) asphalt paving.

Construction-related fugitive dust emissions would vary from day to day, depending on the level and type of activity, silt content of the soil, and the weather. In the absence of mitigation, construction activities may result in significant quantities of dust, and as a result, local visibility and PM₁₀ concentrations may be adversely affected on a temporary and intermittent basis. In addition, fugitive dust generated by construction would include not only PM₁₀, but also larger particles, which would fall out of the atmosphere within several hundred feet of the site and could result in nuisance-type impacts.

For purposes of modeling construction emissions, it was assumed that project development would begin with construction of the Dos Rios light rail transit station in 2017 on the Twin Rivers Community Housing Expansion Area. Construction would then commence in 2018 on the multi-family housing apartment structures in the Expansion Area. On the existing Twin Rivers Community Housing Complex, demolition of the existing structures and construction of the replacement structures would occur in phases, beginning in 2019 and ending in 2025.

Construction emissions were estimated for the proposed project using the methods contained in SMAQMD's Guide to Air Quality Assessment in Sacramento County (SMAQMD 2009b, 2016). The CalEEMod model⁴ was used to quantify construction NO_x emissions from off-road equipment, haul trucks associated with demolition and soils export, on-road worker vehicle emissions, and vendor delivery trips. Predicted unmitigated construction emissions for the worst-

⁴ The California Emissions Estimator Model (CalEEMod) is a statewide land use emissions computer model designed to provide a uniform platform to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with both construction and operations from a variety of land use projects. The model was developed for the California Air Pollution Officers Association (CAPCOA) in collaboration with the California Air Districts. Default data (e.g., emission factors, trip lengths, meteorology, source inventory, etc.) have been provided by the various California Air Districts to account for local requirements and conditions.

case day for each of the construction years are presented in **Table 3.2-3** and compared to the SMAQMD significance thresholds.

**TABLE 3.2-3
 UNMITIGATED MAXIMUM DAILY CONSTRUCTION EMISSIONS (POUNDS PER DAY)^{1,2}**

Category	NO _x	PM ₁₀	PM _{2.5}
Maximum Daily – 2017	51	3	3
Maximum Daily – 2018	70	10	7
Maximum Daily – 2019	62	20	12
Maximum Daily – 2020	30	4	2
Maximum Daily – 2021	24	2	1
Maximum Daily – 2022	14	1	1
Maximum Daily – 2023	12	3	1
Maximum Daily – 2024	13	3	1
Maximum Daily – 2025	6	<1	1
Construction Significance Threshold ³	85	0	0
Exceed Construction Threshold?	No	Yes	Yes

NOTES:

- ¹ Project construction emissions estimates were made using CalEEMod version 2013.2.2. See Appendix A for model outputs and more detailed assumptions
- ² Values in **bold** are in excess of the applicable SMAQMD significance threshold.
- ³ SMAQMD has established a zero emissions threshold for PM₁₀ and PM_{2.5} when project do not implement their Best Available Practices (BMP).

SOURCE: ESA, 2016.

As shown in Table 3.2-3, maximum daily construction NO_x emissions would not exceed the SMAQMD significance thresholds for each construction year. However, according to the SMAQMD CEQA guidance, project-related construction emissions that exceed zero pounds per day of PM₁₀ and PM_{2.5} would result in a significant impact, unless all feasible Best Available Control Technologies/Best Management Practices (BACT/BMPs) are implemented (SMAQMD, 2009). As shown in Table 3.2-3, construction of the proposed project would result in the generation of PM₁₀ and PM_{2.5} emissions that would exceed the SMAQMD significance thresholds for each construction year. For these reasons, project construction would result in an **adverse effect** under NEPA. Under CEQA, the impact would be **significant**. However, application of **Mitigation Measure 3.2-1** would require the implementation of SMAQMD’s Basic Construction Emission Control Practices, which serve as SMAQMD’s recommended BACT/BMPs. As shown in **Table 3.2-4**, implementation of the SMAQMD’s Basic Construction Emission Control Practices would reduce construction emissions to below the mitigation SMAQMD significance threshold for PM₁₀ and PM_{2.5}, thereby reducing this impact to **no adverse effect** under NEPA and **less than significant with mitigation** under CEQA.

**TABLE 3.2-4
 MITIGATED MAXIMUM DAILY CONSTRUCTION EMISSIONS (POUNDS PER DAY)^{1,2}**

Category	NO _x	PM ₁₀	PM _{2.5}
Maximum Daily – 2017	51	3	3
Maximum Daily – 2018	70	5	4
Maximum Daily – 2019	62	9	6
Maximum Daily – 2020	30	3	2
Maximum Daily – 2021	24	2	1
Maximum Daily – 2022	14	1	1
Maximum Daily – 2023	12	1	1
Maximum Daily – 2024	13	1	1
Maximum Daily – 2025	6	<1	1
Construction Significance Threshold	85	80	82
Exceed Construction Threshold?	No	No	No

NOTES:

- ¹ Project construction emissions estimates were made using CalEEMod version 2013.2.2. See Appendix AX for model outputs and more detailed assumptions
² Values in **bold** are in excess of the applicable SMAQMD significance threshold.

SOURCE: ESA, 2016.

AQ-2. Would the project produce operational emissions of NO_x, ROG, PM₁₀ or PM_{2.5} that would exceed the SMAQMD’s long-term (operational) significance thresholds?

Alternative 1 – No Project

The No Project alternative would result in the Twin Rivers Transit-Oriented Development and Light Rail Station Project not being constructed or operated. The project area would remain in its existing condition. Any existing activities in or around the project area would remain unchanged. Under NEPA, there would be **no adverse effect**. Under CEQA, there would be **no impact** with respect to this criterion.

Alternative 2 – Twin Rivers Transit-Oriented Development and Light Rail Station Project

Over the long-term, the proposed project would increase operational emissions primarily by generating motor vehicle trips. Compared to mobile sources, onsite area sources would result in lesser quantities of criteria pollutant emissions.⁵ Operational emissions in the year 2025 were calculated using CalEEMod. The key inputs to CalEEMod included the proposed project land uses and the traffic data provided in the project’s transportation analysis. The estimates shown below in **Table 3.2-5** are based on average daily traffic (ADT) trips generated by the proposed

⁵ Area sources include water and space heaters that are powered by natural gas, and landscape maintenance equipment that is typically powered by gasoline.

project, which would include up to 486 residential units, 522 parking spaces and a new Light Rail Station on North 12th Street. Modeling assumptions and output files are included in Appendix A.

**TABLE 3.2-5
 UNMITIGATED MAXIMUM DAILY PROJECT OPERATIONAL EMISSIONS (POUNDS PER DAY)**

Sources	Pollutant Emissions			
	ROG	NO _x	PM ₁₀	PM _{2.5}
Area Sources	8.5	0.3	0.1	0.1
Energy Sources	0.1	0.9	0.1	0.1
Mobile Sources	3.1	4.8	7.3	2.0
Total Proposed Project	11.7	5.9	7.5	2.2
SMAQMD Thresholds of Significance ¹	65	65	82	80
Exceed Operational Threshold?	No	No	No	No

NOTES: Unmitigated operational emissions were estimated using CalEEMod2013. Detailed CalEEMod results can be found in Appendix A.

¹ SMAQMD has established a zero emissions threshold for PM₁₀ and PM_{2.5} when projects do not implement BMPs during operation. However, since the proposed project would include BMPs to minimize onsite operational emissions already recommend by the SMAQMD, project-related emissions of PM₁₀ and PM_{2.5} are compared to the SMAQMD's mitigated significance threshold of 80 and 82 pounds per day, respectively.

SOURCE: ESA, 2016.

Since the proposed project would replace the day-to-day operations of the existing Twin Rivers development, the criteria pollutant emissions currently being generated by the existing development were subtracted from the estimated emissions that would be generated by the proposed project after full build-out to assess the total net increase in criteria pollutant emissions, which can be found in Table 3.2-5.

As shown in Table 3.2-5, maximum daily operational emissions of ROG and NO_x would not exceed the SMAQMD significance thresholds after the full build-out of the proposed project. However, operation of the proposed project would exceed the SMAQMD's zero pounds per day unmitigated threshold for PM₁₀ and PM_{2.5}. According to the SMAQMD CEQA guidance, project-related operational emissions that exceed zero pounds per day of PM₁₀ and PM_{2.5} would result in a significant impact, unless all feasible BACT/BMPs are implemented (SMAQMD, 2009).

The proposed project would already include BMP measures as part of its final design that would include those recommended by SMAQMD to reduce operational PM₁₀ and PM_{2.5} emissions. These BMPs include high-efficiency water fixtures and toilets, high-efficiency glazing, insulation and sealing, all appliances would be Energy-Star rated and each unit would have a programmable thermostat attached to its energy-star, central HVAC system. All of these features would be part of the overarching goal for the project to attain Leadership in Energy and Environmental Design (LEED) certification, which combines energy-efficiency measures similar to those described above with New Urbanist principles such as neighborhood connectivity, smart locations, neighborhood design, and access to jobs, quality schools, quality services, and retail. With implementation of these design features in the proposed project's final design, SMAQMD's

mitigated PM₁₀ and PM_{2.5} thresholds would apply. As shown in Table 3.2-5, the operational emissions of PM₁₀ and PM_{2.5} generated under the proposed project would not exceed the SMAQMD's significance threshold for PM₁₀ and PM_{2.5} after all feasible BMPs are applied. For these reasons, there would be **no adverse effect** under NEPA. Under CEQA, the impact would be **less than significant**.

AQ-3. Would the project produce CO concentrations that exceed the 1-hour State ambient air quality standard (i.e., 20.0 ppm) or the 8-hour State ambient standard (i.e., 9.0 ppm)?

Alternative 1 – No Project

The No Project alternative would result in the Twin Rivers Transit-Oriented Development and Light Rail Station Project not being constructed or operated. The project area would remain in its existing condition. Any existing activities in or around the project area would remain unchanged. Under NEPA, there would be **no adverse effect**. Under CEQA, there would be **no impact** with respect to this criterion.

Alternative 2 – Twin Rivers Transit-Oriented Development and Light Rail Station Project

Traffic during project operation would primarily be generated by residential trips. These traffic volumes would contribute to the existing and future intersection volumes in the vicinity of the project site. A transportation impact study was completed for the proposed project to evaluate the long-term effects of intersections in the vicinity of the proposed project site (see Section 3.12 of this IS/EA, Transportation and Circulation). The proposed project could potentially contribute traffic volumes to area intersections that would increase delays and idling.

Intersections that are categorized as a level of service (LOS) E or F would result in increased delays and idling times. These intersections have the potential to create CO hotspots, which is an exceedance of the 1- or 8- hour state CO standard. A CO hotspot can result in the exposure of nearby sensitive receptors to unhealthy CO concentrations. The SMAQMD's CEQA Guide to Air Quality Assessment in Sacramento County provides screening criteria to assess whether project-related vehicle trips would result in the generation of CO emissions that exceed or contribute to an exceedance to the California Air Quality Standard for CO (SMAQMD, 2009).

The SMAQMD's recommended screening criteria are divided into a two tiers, as follows:

First Tier

The proposed project would result in a less-than-significant impact to air quality for local CO if:

- Traffic generated by the proposed project would not result in deterioration of intersection LOS to E or F; and
- The project would not contribute additional traffic to an intersection that already operates at LOS of E or F.

If the first tier of screening criteria is not met, then the second tier of screening criteria must be applied.

Second Tier

If all of the following criteria are met, the proposed project would result in a less than-significant impact to air quality for local CO.

- The project would not result in an affected intersection experiencing more than 31,600 vehicles per hour;
- The project would 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 would be substantially limited; and
- The mix of vehicle types at the intersection would not be anticipated to be substantially different from the county average (as identified by the EMFAC⁶ or CalEEMod models).

The operation of the proposed project would result in increases in vehicle trips along roadways in the vicinity of the proposed project site. Based on the traffic study conducted for the project, the proposed development would generate approximately 243 AM and 275 PM peak hour trips, and result in a total of 2,888 daily trips, of which 1,764 would be added by the proposed project over existing conditions.

According to SMAQMD's first tier, a project would result in a less than significant impact if both First Tier categories described above are met. As described in the transportation impact study, traffic generated by the proposed project during the PM peak hour cumulative plus project conditions would result in LOS deterioration of Richards Boulevard/I-5 SB Ramps, Richards Boulevard/I-5 NB Ramps, Vine Street/Street W, North B Street/16th Street, Richards Boulevard/Street W and Richards Boulevard/ North 16th Street to LOS E or F.

Since the proposed project would not meet the first tier screening criteria, the project was compared to SMAQMD's second tier screening criteria. According to SMAQMD's second tier, a project would result in a less than significant impact if all three categories described above are met. As determined in the transportation impact study, under cumulative plus project peak hour conditions, none of the intersections affected by the proposed project would exceed the SMAQMD AM or PM peak hour threshold of 31,600 vehicles per hour. The project would not result in the contribution of traffic to any tunnel, parking garage, bridge underpass, urban street canyon, or below-grade roadways. Lastly, the mix of vehicle types at the effected intersections is not anticipated to be substantially different from the county average. Therefore, the proposed project would meet all of the SMAQMD's CO hotspot second tier screening criteria and, therefore, would not cause or contribute to violations of either the federal or California CO ambient air quality standards. For these reasons, there would be **no adverse effect** under NEPA. Under CEQA, the impact would be **less than significant**.

⁶ The EMFAC model is a computer model that can estimate emission rates for on-road mobile sources ("motor vehicles") for calendar years from 2000 to 2050 operating in California. Pollutant emissions for hydrocarbons (HC), CO, NO_x, PM₁₀, PM_{2.5}, lead, CO₂, and sulfur oxides are output from the model. Emissions are calculated for 51 different vehicle classes composed of passenger cars, various types of trucks and buses, motorcycles, and motor homes.

AQ-4. Would the project expose sensitive receptors to substantial pollutant concentrations?

Alternative 1 – No Project

The No Project alternative would result in the Twin Rivers Transit-Oriented Development and Light Rail Station Project not being constructed or operated. The project area would remain in its existing condition. Any existing activities in or around the project area would remain unchanged. Under NEPA, there would be **no adverse effect**. Under CEQA, there would be **no impact** with respect to this criterion.

Alternative 2 – Twin Rivers Transit-Oriented Development and Light Rail Station Project

As discussed above in impact discussions AQ-1 through AQ-3, construction- and operational-related emissions would not exceed the SMAQMD's thresholds after implementation of **Mitigation Measure 3.2-1**, which would require the applicant to apply the SMAQMD's Basic Construction Emission Control Practices. In addition, toxic air contaminant (TAC) emissions generated during the construction and operation of the proposed project would not be significant, as discussed in impact discussion AQ-6 below. For these reasons, there would be **no adverse effect** under NEPA. Under CEQA, the impact would be **less than significant with mitigation**.

AQ-5. Would the project create objectionable odors?

Alternative 1 – No Project

The No Project alternative would result in the Twin Rivers Transit-Oriented Development and Light Rail Station Project not being constructed or operated. The project area would remain in its existing condition. Any existing activities in or around the project area would remain unchanged. Under NEPA, there would be **no adverse effect**. Under CEQA, there would be **no impact** with respect to this criterion.

Alternative 2 – Twin Rivers Transit-Oriented Development and Light Rail Station Project

The proposed project would not include uses that have been identified by SMAQMD as potential sources of objectionable odors. Diesel equipment used during construction can produce odorous exhaust, but equipment use in any one area of the project site would be temporary and potential odors would not affect a substantial number of people. For these reasons, there would be **no adverse effect** under NEPA. Under CEQA, the impact would be **less than significant**.

AQ-6. Would the project create TAC exposures risk of 10 in 1 million for stationary sources, or substantially increase the risk of exposure to TACs from mobile sources?

Alternative 1 – No Project

The No Project alternative would result in the Twin Rivers Transit-Oriented Development and Light Rail Station Project not being constructed or operated. The project area would remain in its existing condition. Any existing activities in or around the project area would remain unchanged.

Under NEPA, there would be **no adverse effect**. Under CEQA, there would be **no impact** with respect to this criterion.

Alternative 2 – Twin Rivers Transit-Oriented Development and Light Rail Station Project

Construction

Project construction would result in short-term emissions of diesel particulate matter (DPM), which is a TAC. Off-road heavy-duty diesel equipment would emit DPM during site preparation (e.g., excavation, grading), paving, installation of utilities, materials transport and handling, building construction, and other construction activities. SMAQMD has not adopted a methodology for analyzing such impacts and has not recommended that health risk assessments be completed for construction-related emissions of TACs. Due to the phasing of the construction process, including demolition, site preparation, grading, building construction, paving and architectural coatings at different times, the relatively short-term construction period in any one location, and the varying distances to sensitive receptors as construction proceeds, the proposed project would not result in significant construction-related health risks. For these reasons, there would be **no adverse effect** under NEPA for construction emissions. Under CEQA, the impact would be **less than significant**.

Operations

Operation of the proposed project would not include any new stationary source of TACs. In addition, there are no existing or planned nearby sources of TACs that represent a health concern to future project residents. According to SMAQMD guidance, since the proposed project would locate new residential uses more than 500 feet from the nearest high traffic volume roadway (defined as a freeway or urban roadway with greater than 100,000 vehicles per day), the proposed project would meet the CARB guidance distance and no further roadway-related air quality evaluations are required. For these reasons, there would be **no adverse effect** under NEPA for operational emissions. Under CEQA, the impact would be **less than significant**.

AQ-7. Would the project fail to satisfy the requirements of the City's Climate Action Plan?

Alternative 1 – No Project

The No Project alternative would result in the Twin Rivers Transit-Oriented Development and Light Rail Station Project not being constructed or operated. The project area would remain in its existing condition. Any existing activities in or around the project area would remain unchanged. Under NEPA, there would be **no adverse effect**. Under CEQA, there would be **no impact** with respect to this criterion.

Alternative 2 – Twin Rivers Transit-Oriented Development and Light Rail Station Project

The City has developed a Climate Action Plan Consistency Review Checklist for use in determining the consistency of proposed projects with the CAP. The checklist includes six criteria that a project must be evaluated against. Projects that are consistent with each of the six criteria

are considered consistent with Sacramento's CAP and would not have a significant GHG impact. The following discussion evaluates the proposed project for each of these six criteria.

1. *Is the proposed project consistent with the land use and urban form designation, allowable floor area ratio (FAR) and/or density standards in the City's 2035 General Plan?*

The proposed project would construct a total of 376 new and replacement residential units replacing the existing 218 housing units on the currently occupied 21-acre Twin Rivers Community Housing Complex and 110 new units on the currently vacant 3.2-acre Expansion Area across North 12th Street. Therefore, residential development on both the currently occupied area and the vacant area would fall within the allowable density range for Suburban Corridor, and would collectively meet the density requirements (486 units/ 24.2 acres = 20 units/acre).

2. *Would the proposed project include traffic-calming measures?*

Arterial roadways (i.e., North 12th Street, North 16th Street, Richards Boulevard) would not be modified as part of the proposed project. Internal roadways within the redeveloped Twin Rivers Community Housing Complex, however, would contain appropriate traffic-calming measures to alter driver behavior and enhance safety for pedestrians and other non-motorized street users within the residential complex. These measures would likely include curb extensions (also known as "bulb-outs"), speed bumps, signaled pedestrian crossings, traffic circles, and other appropriate features.

3. *Would the proposed project incorporate pedestrian facilities and connections to public transportation consistent with the City's Pedestrian Master Plan?*

Part of the proposed project design involves realignment of existing streets within the existing Twin Rivers Community Housing Complex area to facilitate mobility, accessibility, access, development, and continuity with the projected buildout of the RDSP.

The level of pedestrian improvements necessary to determine the project's consistency with the City's Pedestrian Master Plan and thus CAP consistency is measured according to the "Basic, Upgrade, or Premium" categories defined in Appendix A to the Pedestrian Master Plan (Sacramento, 2006). The differences between these three categories are based on several criteria, including project location, surrounding land uses, and proximity to transit. The "Pedestrian Smart Growth Scorecard" (from Appendix A of the Pedestrian Master Plan) was completed for the project, resulting in a score of 3.28. According to the City's Pedestrian Master Plan, A high rating (between 3 and 4) would indicate a development is likely to be pedestrian oriented. Since the proposed project rating is calculated to be 3.28, it is likely that the proposed project would meet this standard and would be consistent with the Pedestrian Master Plan (see Appendix A of this document). Based on a comparison of the project's pedestrian features with the criteria of the Pedestrian Master Plan, the proposed project would qualify as offering a Premium level of pedestrian amenities.⁷

⁷ "Premium" improvements include all of the basic and upgraded level improvements, plus additional elements that make the pedestrian setting an active urban place such as extra-wide sidewalks, special lighting, signage, and seating.

Based on this evaluation, the proposed project's pedestrian amenities would meet the City of Sacramento's Consistency Checklist for pedestrian facilities.

4. Would the proposed project incorporate bicycle facilities consistent with the City's Bikeway Master Plan, and meet or exceed minimum standards for bicycle facilities in the Zoning Code and CALGreen?

Several bicycle pathways and lanes are present in the project vicinity. The American River Bike Trial, as noted in Chapter 2 (Project Alternatives), is just north of the project site along the American River and is accessible from the intersection of Richards Boulevard and North 12th Street. There are also Class II bike lanes provided along both sides of Richards Boulevard north of the project site. In addition to the existing bike path nearby, the proposed project would add a bike lane in both directions along the new "Street W", which serves as the main roadway within the complex. The City is currently in the design phase for the North 12th Street Complete Street project, which would add a designated bicycle trackway within the existing North 12th Street right-of-way from Richards Boulevard southwards to H Street. Therefore, since the project site is accessible by existing and planned on-street bikeways, the proposed project would be consistent with the Bikeway Master Plan and would meet the City of Sacramento's Consistency Checklist for bicycle facilities (Sacramento, 2011).

5. For residential projects of 10 or more units, commercial projects greater than 25,000 square feet, or industrial projects greater than 100,000 square feet, would the project include on-site renewable energy systems (e.g., photovoltaic systems) that would generate at least a minimum of 15 percent of the project's total energy demand on-site? (CAP Actions: 3.4.1 and 3.4.2)

The proposed project would not generate 15 percent of its energy demand on-site. However, the proposed project would be designed in compliance with the 2016 Title 24 Building Energy Efficiency Standards, effective January 1, 2017, or the latest standards in effect at the time of project design review. At a minimum, the proposed residential dwelling units would be built to 2016 standards, which would use about 28 percent less energy for lighting, heating, cooling, ventilation, and water heating than those built to the 2013 standards (CEC 2016). In addition, residential unit designs would include multiple energy efficiency and water conservation features, including, high-efficiency water fixtures and toilets; high-efficiency glazing, insulation, and sealing; and Energy-Star rated appliances, including central HVAC system.

6. Would the proposed project (if constructed on or after January 1, 2014) comply with minimum CALGreen Tier 1 water efficiency standards? (CAP Action: 5.1.1)

The proposed project would comply with the following CALGreen Tier 1 water efficiency measures that were assumed in the Climate Action Plan Technical Appendix (page E-29):

- **Residential Buildings/Space:** 20 percent improvement on indoor water efficiency (compared to 2008 Plumbing Code baseline; per CALGreen Mandatory Measures), and kitchen faucets shall have a maximum flow rate no greater than 1.5 gallons per minute; and outdoor potable water use reduction to a quantity that does not exceed 65 percent of the reference evapotranspiration (ET_o) times the landscape area plus two voluntary outdoor water efficiency and conservation measures as listed in the CALGreen Residential Voluntary Measures.

The proposed project would comply with the above-referenced CALGreen Tier 1 Water Efficiency Measures as a condition of approval, and would therefore be consistent with CAP Action 5.1.1.

Based on this review, the proposed project would meet each applicable CAP Consistency Review Checklist item. Therefore, the proposed project would be consistent with the City's CAP. For these reasons, there would be **no adverse effect** under NEPA. Under CEQA, the impact would be **less than significant**.

AQ-8. Would construction-related and operational emissions exceed the General Conformity Thresholds?

Alternative 1 – No Project

The No Project alternative would result in the Twin Rivers Transit-Oriented Development and Light Rail Station Project not being constructed or operated. The project area would remain in its existing condition. Any existing activities in or around the project area would remain unchanged. Under NEPA, there would be **no adverse effect**.

Alternative 2 – Twin Rivers Transit-Oriented Development and Light Rail Station Project

As discussed in impact discussions AQ-1 and AQ-2, construction and operational emissions were calculated using CalEEMod. The key inputs to CalEEMod included the proposed project land uses and the traffic data provided in the project's traffic analysis.

To determine whether a Federal General Conformity Determination analysis would be required, annual emissions from the proposed project activities were calculated for ozone precursors ROG and NO_x, as well as PM₁₀, PM_{2.5}, and CO, and compared to the *de minimis* thresholds (calculations are in Appendix A).

The unmitigated emissions of ozone precursors, PM₁₀, and CO during onsite construction are summarized in **Table 3.2-6**. Construction equipment emissions were calculated for each year that construction would occur. As shown in Table 3.2-6, construction emissions are estimated to be below the General Conformity *de minimis* thresholds. Consequently, Alternative 2 would not be subject to General Conformity requirements for construction-related emissions. For these reasons, there would be **no adverse effect** under NEPA.

The unmitigated emissions of ozone precursors, PM₁₀, and CO during onsite operation are summarized in **Table 3.2-7**. As shown in Table 3.2-7, these operational emissions are estimated to be below the General Conformity *de minimis* thresholds. As proposed, Alternative 2 would be exempt from General Conformity requirements for operations-related emissions. For these reasons, there would be **no adverse effect** under NEPA.

**TABLE 3.2-6
 UNMITIGATED ANNUAL CONSTRUCTION POLLUTANT EMISSIONS (TONS PER YEAR)^{1,2}**

Construction Year	ROG	NO _x	PM ₁₀	CO
2017	0.6	6.6	0.4	4.9
2018	0.5	4.3	0.2	3.6
2019	1.0	2.8	0.3	2.6
2020	0.8	2.1	0.2	2.2
2021	0.9	1.1	0.1	1.4
2022	0.2	1.8	0.2	2.4
2023	0.6	0.8	0.1	1.0
2024	0.2	0.8	0.1	1.1
2025	0.5	0.3	0.0	0.5
General Conformity <i>de minimis</i> Thresholds	25	25	100	100
Exceed Construction Threshold?	No	No	No	No

NOTES:

- ¹ Project construction emissions estimates were made using CalEEMod version 2013.2.2. See Appendix A for model outputs and more detailed assumptions
- ² Values in bold are in excess of the applicable *de minimis* significance threshold.

SOURCE: ESA, 2016.

**TABLE 3.2-7
 UNMITIGATED ANNUAL PROJECT OPERATIONAL EMISSIONS (TONS PER YEAR)**

Sources	Pollutant Emissions			
	ROG	NO _x	PM ₁₀	CO
Area Sources	1.52	0.03	0.02	2.76
Energy Sources	0.01	0.16	0.01	0.07
Mobile Sources	0.98	1.03	1.41	5.46
Total Proposed Project	2.51	1.22	1.44	10.32
General Conformity <i>de minimis</i> Thresholds	25	25	100	100
Exceed Operational Threshold?	No	No	No	No

NOTES: Unmitigated operational emissions were estimated using CalEEMod2013. Detailed CalEEMod results can be found in Appendix A.

SOURCE: ESA, 2016.

AQ-9. Would the proposed project generate GHG emissions that would exceed the Federal GHG Reporting Threshold?

Alternative 1 – No Project

The No Project alternative would result in the Twin Rivers Transit-Oriented Development and Light Rail Station Project not being constructed or operated. The project area would remain in its existing condition. Any existing activities in or around the project area would remain unchanged. Under NEPA, there would be **no effect**.

Alternative 2 – Twin Rivers Transit-Oriented Development and Light Rail Station Project

Direct GHG emissions under Alternative 2 would be generated onsite by the use of off-road equipment such as loaders and excavators. For the purpose of comparison to the Federal reporting threshold of 25,000 MT CO₂e, direct and indirect emissions were combined and are presented for each construction year as shown in **Table 3.2-8**. As indicated in the table, combined direct and indirect GHG emissions would be below the Federal reporting threshold during the construction and operation of the proposed project. For these reasons, there would be **no adverse effect** under NEPA.

**TABLE 3.2-8
 GHG EMISSIONS BY YEAR (MT CO₂E)**

Category	Construction									Operation
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2025
Federal Reporting Threshold	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000
Project GHG Emissions	535	432	357	316	207	349	148	177	79	1,874

Mitigation Measures

Mitigation Measure 3.2-1: City approval of any grading or improvement plans shall include the following SMAQMD Basic Construction Emission Control Practices:

- All exposed surfaces shall be watered two times daily. Exposed surfaces include, but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads.
- Cover or maintain at least two feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways shall be covered.
- Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited.
- Limit vehicle speeds on unpaved roads to 15 miles per hour.
- All roadways, driveways, sidewalks, parking lots shall be paved as soon as possible. In addition, building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes (as required by the state airborne toxics control measure [Title 13, Section 2485 of the California Code of Regulations]). Provide clear signage that posts this requirement for workers at the entrances to the site.

- Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment shall be checked by a certified mechanic and determine to be running in proper condition before it is operated.

References

- California Air Resources Board, 2008. *Climate Change Scoping Plan*. Adopted December 11, 2008, re-approved August 24, 2011. p. 10.
- _____, 2009. Detailed California-Modified GREET Pathway for Compressed Natural Gas (CNG) from Landfill Gas, February 28, 2009. http://www.arb.ca.gov/fuels/lcfs/022709lcfs_lfg.pdf
- _____, 2013. *California Greenhouse Gas Inventory for 2000-2010 — by Category Defined in the Scoping Plan*. February 19, 2013. pp. 1-2.
- California Energy Commission, 2016. 2016 Building Energy Efficiency Standards Frequently Asked Questions. Access at: http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/2016_Building_Energy_Efficiency_Standards_FAQ.pdf. Accessed July 7, 2016.
- City of Sacramento, 2006. *City of Sacramento Pedestrian Master Plan: Making Sacramento the Walking Capital*. September 2006. Available online: <http://www.cityofsacramento.org/Public-Works/Transportation/Programs-and-Services/Pedestrian-Program>. Accessed August 9, 2016.
- _____, 2012. *Sacramento Climate Action Plan*. Adopted February 14, 2012. p. 2-7
- _____, 2015. *Sacramento 2035 General Plan*. Adopted March 3, 2015.
- _____, 2015. *City of Sacramento 2035 General Plan Master Environmental Impact Report* (SCH No. 2012122006). Certified March 3, 2015.
- Council on Environmental Quality. 2014. *Revised Draft Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews*.
- County of Sacramento, 2011. *Sacramento County Bicycle Master Plan*. <http://www.sacdot.com/Pages/BikewayMasterPlan.aspx>. Accessed August 9, 2016.
- Dockery, D. W. and C.A. Pope, III, 2006. *Health Effects of Fine Particulate Air Pollution: Lines that Connect*. Journal Air & Waste Management Association. pp. 709–742.
- Intergovernmental Panel on Climate Change, 2007. *Climate Change 2007: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* [Parry, Martin L., Canziani, Osvaldo F., Palutikof, Jean P., van der Linden, Paul J., and Hanson, Clair E. (eds.)]. Cambridge University Press, Cambridge, United Kingdom. 2007. p. 9 and p. 38.

- National Cancer Institute, 2012. *Lifetime Risk (Percent) of Being Diagnosed with Cancer by Site and Race/Ethnicity, Both Sexes: 18 SEER Areas, 2007-2009 (Table 1.14)*. http://seer.cancer.gov/csr/1975_2009_pops09/results_merged/topic_lifetime_risk_diagnosis.pdf. Accessed on July 6, 2016.
- Sacramento Area Council of Governments, 2016. *2035 MTP, Appendix F: Air Quality Conformity Determination*. Website: http://www.sacog.org/sites/main/files/file-attachments/appendix_f-1_conformity_determination.pdf. Accessed July 5, 2016.
- Sacramento Metropolitan Air Quality Management District, 2009a. *2009 Triennial Report and Plan Revision*. December 2009.
- _____. 2009b. *Guide to Air Quality Assessment in Sacramento County*. Revised March 2016. Available online: <http://www.airquality.org/ceqa/ceqaguideupdate.shtml>. Accessed August 9, 2016.
- _____, 2013. *Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan (2013 SIP Revisions)*. September 26, 2013.
- United Nations Framework Convention on Climate Change, 2012. *Total CO₂ Equivalent Emissions without counting Land-Use, Land-Use Change and Forestry (LULUCF)*.
- U.S. Environmental Protection Agency, 2008a. *Climate Change – Ecosystems and Biodiversity*. <https://www3.epa.gov/climatechange/impacts/ecosystems.html>. Accessed July 6, 2016.
- _____, 2008b. *Climate Change – Health and Environmental Effects*. <https://www3.epa.gov/climatechange/impacts/health.html>. Accessed July 6, 2016.
- _____, 2011. *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2009; Executive Summary, Table ES-2*. April 2011. pp. 5-7.
- _____, 2016. *General Conformity De Minimis Emission Levels*. <https://www.epa.gov/general-conformity/de-minimis-emission-levels>. Accessed July 5, 2016.

3.3 Biological Resources

3.3.1 Introduction

This section describes the biological resources found in the project area and the potential impacts of project implementation on those resources. Biological resources include special-status plant and wildlife species and their habitats, as well as wetlands and other waters that receive protection under various federal and state regulations.

3.3.2 Environmental Setting

In conformance with City of Sacramento General Plan Policy ER 2.1.10, a habitat assessment was conducted on the project site by a qualified professional biologist. The assessment evaluated the suitability of the project site to support sensitive plant and animal species, sensitive habitats, wetlands, nesting birds, and trees regulated by the City of Sacramento Tree Ordinance (Sacramento City Code 12.56). An arborist report that provided detailed analysis concerning the site's tree resources was also prepared (Tree Associates, 2017a).

Vegetation Communities/Land Cover Types

Wildlife habitats are generally described in terms of vegetation types along with landform, level of disturbance, and other unique environmental characteristics. Vegetation types are assemblages of plant species that occur together in the same area and are repeated across landscapes, and are defined by species composition and relative abundance. Habitat types on the proposed project site are dominated by non-native ornamental and weedy plants, and overall are highly managed landscapes. These habitats are considered “semi-natural stands” and do not conform to traditional vegetation classification systems such as those defined in Mayer and Laudenslayer (1988) or Sawyer, Keeler-Wolf, and Evens (2009). Nevertheless, habitats on the project site are described below.

Urban/Developed

The existing 21-acre Twin Rivers Community Housing Complex is comprised entirely of Urban/Developed habitat. This habitat type consists of buildings, roadways, and other built infrastructure. Vegetation in the area consists of managed landscaping, which includes lawns, ornamental shrubs, shade trees and hedges. Wildlife species observed or expected to occur in this type of habitat include common species such as house sparrow (*Passer domesticus*), house finch (*Carpodacus mexicanus*), western scrub jay (*Aphelocoma californica*), American crow (*Corvus brachyrhynchos*), Brewer's blackbird (*Euphagus cyanocephalus*), Nuttall's woodpecker (*Picoides nuttallii*), and black phoebe (*Sayornis nigricans*).

Ruderal Grassland

The 3.2-acre Twin Rivers Community Housing Complex Expansion Area parcel is comprised of ruderal grassland. This habitat type is typical of areas associated with high levels of regular ground disturbance, which would include grading, vehicle use, and/or intensive vegetation

maintenance. Due to the disturbance regime, these areas remain sparsely vegetated and are dominated by assemblages of introduced weedy species including wild oats (*Avena* sp.), foxtail barley (*Hordeum murinum* spp. *leporinum*), soft chess (*Bromus hordeaceus*), and rigpgut brome (*Bromus diandrus*). Forb species include yellow starthistle (*Centaurea solstitialis*), sunflower (*Helianthus annuus*), lamb's quarters (*Chenopodium album*), and telegraph weed (*Heterotheca grandiflora*). Tree of heaven (*Ailanthus altissima*) is the dominant tree species within this portion of the project site. Eleven elderberry shrubs (*Sambucus nigra* subsp. *caerulea*) with stems greater than 1-inch diameter are located along the western edge of the Expansion Area parcel.

The Lower American River and American River Parkway support riparian woodland vegetation and riverine aquatic habitats approximately 700 to 900 feet north of the proposed project site. A flood control levee and commercial urban development separate habitat along the American River from the proposed project site.

Sensitive Plant and Wildlife Species

The biological resources investigation conducted for this IS/EA included identification of sensitive species and habitats known to be present or with potential to occur in the project area. The California Department of Fish and Wildlife's (CDFW) Natural Diversity Database (CNDDDB) was queried to determine if any special status plant or wildlife species have been recorded within five miles of the project site. The U.S. Fish and Wildlife Service (USFWS) was also contacted to determine whether federally listed threatened or endangered species under its jurisdiction would be likely to occur in the project area. The USFWS response letter is attached to this IS/EA as Appendix A. The combined results of the CNDDDB and USFWS queries were compiled on a map, which is also included in Appendix A. **Table 3.3-1** presents a complete list of sensitive species with potential to occur in the area. The list also includes a brief evaluation of the likelihood of occurrence of those species within the project area itself based upon the presence or absence of suitable habitat.

As can be seen in the table, a number of special status species are known to have occurred in the project vicinity. Nearly all of these species are not expected to occur on the project site itself because the site lacks suitable habitat, is outside the range of the species, or the species has been extirpated from the area.

The results of this analysis indicated that one federally listed species has the potential to occur in the project area and be affected by implementing the project: the valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), which is federally listed as threatened. This potential is based on the presence of 11 elderberry shrubs (*Sambucus nigra* subsp. *caerulea*) located along the western edge of the Expansion Area parcel. During the habitat assessment survey, the locations of each of the shrubs were recorded. The size class of the stems and whether or not beetle exit holes were present were also recorded. None of the shrubs are located in riparian habitat. Three shrubs had one or more stems with a diameter between 1 and 3 inches, one shrub had two stems with a diameter between 3 and 5 inches, and seven shrubs had stems smaller than 1 inch diameter. No exit holes were found in any of the stems greater than 1 inch diameter, which would generally indicate that beetles are not present. Details of the assessment can be found in the Biological Assessment (BA) that was prepared for the project and submitted to USFWS for review and concurrence. The BA and all correspondence with USFWS can be found in Appendix A of this IS/EA.

**TABLE 3.3-1
SPECIAL-STATUS SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE PROJECT SITE**

Scientific Name	Common Name	Listing Status: Federal/State/Other	Habitat Description	Potential for Occurrence within the Project Site ¹
Invertebrates				
<i>Andrena subapasta</i>	None: an andrenid bee	--/--/--	Collects pollen primarily from <i>Arenaria californica</i> but also <i>Orthocarpus erianthus</i> & <i>Lasthenia</i> sp.	Unlikely. No suitable habitat for this species within the project site. Host plants are not present on the site, and the species is not known to occur within five miles of the project site.
<i>Branchinecta lynchi</i>	Vernal pool fairy shrimp	FT/--/--	Vernal pools and other seasonal wetlands in open grassland habitat.	Unlikely. No suitable habitat for this species within the project site. Vernal pools are not present on the site.
<i>Branchinecta mesovallensis</i>	Midvalley fairy shrimp	--/--/--	Vernal pools in the Central Valley.	Unlikely. No suitable habitat for this species within the project site. Vernal pools are not present on the site.
<i>Cicindela hirticollis abrupta</i>	Sacramento Valley tiger beetle	--/--/--	Sandy floodplain habitat in the Sacramento valley. Requires fine to medium sand, terraced floodplains or low sandy water edge flats.	Unlikely. No suitable habitat for this species within the project site.
<i>Desmocerus californicus dimorphus</i>	valley elderberry longhorn beetle	FT/--/--	Occurs only in the Central Valley of California, in association with blue elderberry (<i>Sambucus nigra</i> ssp. <i>caerulea</i>). Prefers to lay eggs in elderberries 2-8 inches in diameter; some preference shown for "stressed" elderberries.	Low Potential. Elderberry shrubs with stems measuring at least one inch in diameter occur within the development footprint in the project area. No exit holes were found in any of the stems greater than one inch diameter.
<i>Dumontia oregonensis</i>	Hairy water flea	--/--/--	Vernal pools. In California, known only from Mather Field.	Unlikely. No suitable habitat for this species within the project site. Vernal pools are not present on the site.
<i>Hydrochara rickseckeri</i>	Ricksecker's water scavenger beetle	--/--/--	Natural history of this aquatic species is not well known. Regionally, it is known to occur in Mather Field Regional Park.	Unlikely. No suitable habitat for this species within the project site. There are no suitable aquatic habitats on the site.
<i>Lepidurus packardii</i>	Vernal pool tadpole shrimp	FE/--/--	Vernal pools and other seasonal wetlands in open grassland habitat.	Unlikely. No suitable habitat for this species within the project site. Vernal pools are not present on the site.
<i>Linderiella occidentalis</i>	California linderiella	--/--/--	Seasonal pools in unplowed grasslands with old alluvial soils underlain by hardpan or in sandstone depressions. Water in the pools has very low alkalinity, conductivity, and total dissolved solids.	Unlikely. No suitable habitat for this species within the project site. Vernal pools are not present on the site.
Reptiles				
<i>Emys marmorata</i>	Western pond turtle	--/CSC/--	Streams, rivers, ponds, marshes and other aquatic habitats. Requires secure basking area where they can easily escape to water. Upland nesting sites can be as much as 300 feet from aquatic habitat, but are usually closer.	Unlikely. No suitable habitat for this species within the project site. There are no suitable aquatic habitats on the site.
<i>Thamnophis gigas</i>	giant garter snake	FT/ST/--	Prefers freshwater marsh and low gradient streams. Has adapted to drainage canals & and irrigation ditches. This is the most aquatic of the garter snakes in California.	Unlikely. No suitable habitat for this species within the project site.

TABLE 3.3-1 (CONTINUED)
SPECIAL-STATUS SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE PROJECT SITE

Scientific Name	Common Name	Listing Status: Federal/State/Other	Habitat Description	Potential for Occurrence within the Project Site ¹
Amphibians				
<i>Ambystoma californiense</i>	California tiger salamander	FT/ST/--	Grassland, oak savanna, and edges of mixed woodland and lower elevation coniferous forest. Requires temporary breeding ponds to breed. Spends most time underground in animal burrows, especially those of California ground squirrels, valley pocket gophers, and moles. Requires both suitable upland terrestrial habitat with mammal burrows for refuge and temporary breeding ponds in order to survive and reproduce.	Unlikely. No suitable habitat for this species within the project site.
<i>Rana draytonii</i>	California red-legged frog	FT/CSC/--	Found mainly near ponds in humid forests, woodlands, grasslands, coastal scrub, and streamsides with plant cover. Most common in lowlands or foothills. Frequently found in woods adjacent to streams. Breeding habitat is in permanent or ephemeral water sources; lakes, ponds, reservoirs, slow streams, marshes, bogs, and swamps. Ephemeral wetland habitats require animal burrows or other moist refuges for estivation when the wetlands are dry.	Unlikely. No suitable habitat for this species within the project site.
<i>Spea hammondi</i>	Western spadefoot	--/CSC/--	Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands. Vernal pools are essential for breeding and egg-laying.	Unlikely. No suitable habitat for this species within the project site.
Fish				
<i>Archoplites interruptus</i>	Sacramento perch	--/CSC/--	Historically found in the sloughs, slow-moving rivers, and lakes of the central valley. Prefers warm water. Aquatic vegetation is essential for young. Tolerates wide range of Physio-chemical water conditions.	Unlikely. No suitable habitat for this species within the project site. There are no fish-supporting aquatic habitats on the site.
<i>Hypomesus transpacificus</i>	Delta smelt	FT/SE/-	Occurs in Sacramento-San Joaquin Delta most of the year. Spawns in tidally influenced freshwater wetlands and seasonally submerged uplands along the Sacramento River, downstream from its confluence with the American River.	Unlikely. No suitable habitat for this species within the project site. There are no fish-supporting aquatic habitats on the site.
<i>Oncorhynchus mykiss</i>	northern California DPS steelhead	FT/--/--	Requires cold, freshwater streams with suitable gravel for spawning; rears seasonally inundated floodplains, rivers, tributaries, and Delta.	Unlikely. No suitable habitat for this species within the project site. There are no fish-supporting aquatic habitats on the site.
<i>Oncorhynchus mykiss</i>	Central Valley DPS steelhead	FT/--/--	Requires cold, freshwater streams with suitable gravel for spawning; rears seasonally inundated floodplains, rivers, tributaries, and Delta.	Unlikely. No suitable habitat for this species within the project site. There are no fish-supporting aquatic habitats on the site.
<i>Oncorhynchus tshawytscha</i>	Central Valley spring-run Chinook salmon ESU	FT/ST/--	Requires cold, freshwater streams with suitable gravel for spawning; rears seasonally inundated floodplains, rivers, tributaries, and Delta.	Unlikely. No suitable habitat for this species within the project site. There are no fish-supporting aquatic habitats on the site.

**TABLE 3.3-1 (CONTINUED)
SPECIAL-STATUS SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE PROJECT SITE**

Scientific Name	Common Name	Listing Status: Federal/State/Other	Habitat Description	Potential for Occurrence within the Project Site ¹
Fish (cont.)				
<i>Oncorhynchus tshawytscha</i>	Sacramento River winter-run Chinook salmon ESU	FE/SE/--	Requires cold, freshwater streams with suitable gravel for spawning; rears seasonally inundated floodplains, rivers, tributaries, and Delta.	Unlikely. No suitable habitat for this species within the project site. There are no fish-supporting aquatic habitats on the site.
<i>Pogonichthys macrolepidotus</i>	Sacramento spittail	--/CSC/--	Spawning and juvenile rearing from winter to early summer in shallow weedy areas inundated during seasonal flooding in the lower reaches and flood bypasses of the Sacramento River including the Yolo Bypass.	Unlikely. No suitable habitat for this species within the project site. There are no fish-supporting aquatic habitats on the site.
<i>Spirinchus thaleichthys</i>	Longfin smelt	FC/ST/--	Euryhaline, nektonic & anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column. Prefer salinities of 15-30 parts per thousand, but can be found in completely freshwater to almost pure seawater.	Unlikely. No suitable habitat for this species within the project site. There are no fish-supporting aquatic habitats on the site.
Birds				
<i>Accipiter cooperi</i>	Cooper's hawk	--/WL--	Woodland, chiefly of open, interrupted or marginal type. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks.	Low. The site does not support relatively dense stands of mature trees typically used for nesting. This species was not observed during reconnaissance surveys.
<i>Agelaius tricolor</i>	Tricolored blackbird	--/CSC/--	Highly colonial species, most numerous in central valley & vicinity. Largely endemic to California. Requires open water, protected nesting substrate, & foraging area with insect prey within a few km of the colony.	Unlikely. No suitable habitat for this species within the project site. This species was not observed during reconnaissance surveys.
<i>Aquila chrysaetos</i>	Golden eagle	--/FP/--	Rolling foothills, mountain areas, sage-juniper flats, & desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	Unlikely. No suitable habitat for this species within the project site. Species not known to occur within five miles of the project site. This species was not observed during reconnaissance surveys.
<i>Ardea alba</i>	Great egret	--/--/--	Colonial nester in large trees. Rookery sites located near marshes, tide-flats, irrigated pastures, and margins of rivers And lakes.	Unlikely. No suitable nesting or foraging habitat for this species within the project site. This species was not observed during reconnaissance surveys.
<i>Ardea herodias</i>	Great blue heron	--/--/--	Colonial nester in tall trees, cliffsides, and sequestered spots on marshes. Rookery sites in close proximity to foraging areas: marshes, lake margins, tide-flats, rivers and streams, wet meadows.	Unlikely. No suitable nesting or foraging habitat for this species within the project site. This species was not observed during reconnaissance surveys.
<i>Athene cucularia</i>	burrowing owl	--/CSC/--	Forages in open plains, grasslands, and prairies; typically nests in abandoned small mammal burrows.	Unlikely. No suitable nesting or foraging habitat for this species within the project site. Species not known to occur within five miles of the project site. This species was not observed during reconnaissance surveys.

TABLE 3.3-1 (CONTINUED)
SPECIAL-STATUS SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE PROJECT SITE

Scientific Name	Common Name	Listing Status: Federal/State/Other	Habitat Description	Potential for Occurrence within the Project Site ¹
Birds (cont.)				
<i>Buteo regalis</i>	Ferruginous hawk	--/WL/--	Open grasslands, sagebrush flats, desert scrub, low foothills and fringes of pinyon and Juniper habitats. Eats mostly lagomorphs, ground squirrels, and mice. Population trends may follow lagomorph population cycles.	Unlikely. No suitable nesting or foraging habitat for this species within the project site. Species not known to occur within five miles of the project site. This species was not observed during reconnaissance surveys.
<i>Buteo swainsoni</i>	Swainson's hawk	--/ST/--	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	Unlikely. No suitable nesting or foraging habitat for this species within the project site. Species not known to occur within five miles of the project site, specifically along the Sacramento and American Rivers. This species was not observed during reconnaissance surveys.
<i>Coccyzus americanus occidentalis</i>	Western yellow-billed cuckoo	FT/SE/--	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, w/ lower story of blackberry, nettles, or wild grape.	Unlikely. No suitable nesting or foraging habitat for this species within the project site. This species was not observed during reconnaissance surveys.
<i>Egretta thula</i>	Snowy egret	--/--/--	Colonial nester, with nest sites situated in protected beds of dense tules. Rookery sites situated close to foraging areas: marshes, tidal-flats, streams, wet meadows, and borders of lakes.	Unlikely. No suitable nesting or foraging habitat for this species within the project site. This species was not observed during reconnaissance surveys.
<i>Elanus leucurus</i>	white-tailed kite	--/FP/--	Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	Unlikely. No suitable nesting or foraging habitat for this species within the project site. This species was not observed during reconnaissance surveys.
<i>Falco columbarius</i>	Merlin	--/WL/--	Nest in forested openings, edges, and along rivers. May also nest in towns and cities (using crow nests in conifers planted in residential areas, schoolyards, parks, and cemeteries). During migration and winter, this species can be seen using open forest, grassland, and coastal areas.	Unlikely. No suitable nesting or foraging habitat for this species within the project site. This species was not observed during reconnaissance surveys.
<i>Melospiza melodia</i>	Song sparrow ("Modesto" population)	--/CSC/--	Prefers open habitat, including marsh edges, overgrown fields, backyards, desert washes, and forest edges. Commonly visit bird feeders and build nests in residential areas.	Unlikely. No suitable nesting or foraging habitat for this species within the project site. This species was not observed during reconnaissance surveys.
<i>Nycticorax nycticorax</i>	Black-crowned night heron	--/--/--	Colonial nester, usually in trees, occasionally in tule patches. Rookery sites located adjacent to foraging areas: lake margins, mud-bordered bays, marshy spots.	Unlikely. No suitable nesting or foraging habitat for this species within the project site. This species was not observed during reconnaissance surveys.
<i>Phalacrocorax auritus</i>	Double-crested cormorant	--/WL/--	Colonial nester on coastal cliffs, offshore islands, & along lake margins in the interior of The state. Nests along coast on sequestered islets, usually on ground with sloping surface, or in tall trees along lake margins.	Unlikely. No suitable nesting or foraging habitat for this species within the project site. This species was not observed during reconnaissance surveys.

TABLE 3.3-1 (CONTINUED)
SPECIAL-STATUS SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE PROJECT SITE

Scientific Name	Common Name	Listing Status: Federal/State/Other	Habitat Description	Potential for Occurrence within the Project Site ¹
Birds (cont.)				
<i>Progne subis</i>	purple martin	--/CSC/--	Inhabits woodlands, low elevation coniferous forest of Douglas-fir (<i>Pseudotsuga menziesii</i>), ponderosa pine (<i>Pinus ponderosa</i>), and Monterey pine (<i>Pinus radiata</i>). Nests primarily in old woodpecker cavities, also in human-made structures. Nest often located in tall, isolated tree/snag.	Unlikely. No suitable nesting or foraging habitat for this species within the project site. This species was not observed during reconnaissance surveys.
<i>Riparia riparia</i>	Bank swallow	--/ST/--	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.	Unlikely. No suitable nesting or foraging habitat for this species within the project site. This species was not observed during reconnaissance surveys.
<i>Vireo bellii pusillus</i>	Least Bell's vireo	FE/SE/--	Inhabits dense, low, scrub habitat, generally early successional stages in riparian areas, brushy fields, young second-growth forest or woodland, scrub oak, coastal chaparral, and mesquite brushlands, often near water in arid regions. Species is a summer resident of southern California in low riparian in vicinity of water or in dry river bottoms.	Unlikely. No suitable nesting or foraging habitat for this species within the project site. This species was not observed during reconnaissance surveys.
<i>Xanthocephalus xanthocephalus</i>	Yellow-headed blackbird	--/CSC/--	Nests in freshwater emergent wetlands with dense vegetation & deep water. Often along Borders of lakes or ponds. Nests only where large insects such as <i>Odonata</i> are abundant, nesting timed with maximum emergence of aquatic insects.	Unlikely. No suitable nesting or foraging habitat for this species within the project site. This species was not observed during reconnaissance surveys.
Mammals				
<i>Lasiurus cinereus</i>	hoary bat	--/--/--	Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths.	Unlikely. No suitable denning or foraging habitat for this species within the project site.
<i>Taxidea taxus</i>	American badger	--/CSC/--	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with Friable soils. Needs sufficient food, friable soils & open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	Unlikely. No suitable denning or foraging habitat for this species within the project site. This species was not observed during reconnaissance surveys.
Plants				
<i>Astragalus tener</i> var. <i>ferrisiae</i>	Ferris' milk-vetch	--/--/1B.1	Meadows, valley and foothill grassland, subalkaline flats on overflow land in the central valley; usually seen in dry, adobe soil. 5-75m.	Unlikely. No suitable habitat for this species within the project site. This species was not observed during reconnaissance surveys.
<i>Carex comosa</i>	Bristly sedge	--/--/2B.1	Marshes and swamps. Lake margins, wet places; site below sea level is on a Delta island. -5-1005m.	Unlikely. No suitable habitat for this species within the project site. This species was not observed during reconnaissance surveys.

TABLE 3.3-1 (CONTINUED)
SPECIAL-STATUS SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE PROJECT SITE

Scientific Name	Common Name	Listing Status: Federal/State/Other	Habitat Description	Potential for Occurrence within the Project Site ¹
Plants (cont.)				
<i>Centromadia parryi</i> spp. <i>rudis</i>	Perry's rough tarplant	--/--/4.2	Alkaline, vernal mesic, seeps, sometimes roadsides. Valley and foothill grassland, vernal pools	Unlikely. No suitable habitat for this species within the project site. This species was not observed during reconnaissance surveys.
<i>Cuscuta obtusiflora</i> var. <i>glandulosa</i>	Peruvian dodder	--/--/2B.2	Marshes and swamps (freshwater). 15-280 m.	Unlikely. No suitable habitat for this species within the project site. This species was not observed during reconnaissance surveys.
<i>Downingia pusilla</i>	Dwarf downingia	--/--/2B.2	Valley and foothill grassland (mesic sites), vernal pools. Vernal lake and pool margins with a variety of associates in several types of vernal pools. 1-445 m.	Unlikely. No suitable habitat for this species within the project site. This species was not observed during reconnaissance surveys.
<i>Fritillaria agrestis</i>	Stinkbells	--/--/4.2	Cismontane woodland, chaparral, valley and foothill grassland. Sometimes on serpentine; mostly found in nonnative grassland or in grassy openings in clay soil. 10-1555 m.	Unlikely. No suitable habitat for this species within the project site. This species was not observed during reconnaissance surveys.
<i>Gratiola heterosepala</i>	Boggs Lake hedge-hyssop	FE/--/1B.2	Marshes and swamps (freshwater), vernal pools. Clay soils; usually in vernal pools, sometimes on lake margins. 10-2375 m.	Unlikely. No suitable habitat for this species within the project site. This species was not observed during reconnaissance surveys.
<i>Hesperexax caulescens</i>	Hogwallow starfish	--/--/1.B2	Valley and foothill grassland (mesic, clay), vernal pools. 0-505 meters.	Unlikely. No suitable habitat for this species within the project site. This species was not observed during reconnaissance surveys.
<i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i>	Wooly rose-mallow	--/--/1B.2	Marshes and swamps (freshwater). Moist, freshwater-soaked river banks & low peat islands in sloughs; can also occur on riprap and levees. In California, known from the Delta watershed. 0-120 m.	Unlikely. No suitable habitat for this species within the project site. This species was not observed during reconnaissance surveys.
<i>Juglans hindsii</i>	Northern California black walnut	--/--/1B.1	Riparian forest, riparian woodland. Few extant native stands remain; widely naturalized. Deep alluvial soil associated with a creek or stream. 0-440 m.	Unlikely. No suitable habitat for this species within the project site. This species was not observed during reconnaissance surveys.
<i>Juncus leiocarpus</i> var. <i>ahartii</i>	Ahart's dwarf rush	--/--/1B.2	Vernal pools, valley and foothill grassland. Restricted to the edges of vernal pools. 30-229 m.	Unlikely. No suitable habitat for this species within the project site. This species was not observed during reconnaissance surveys.
<i>Legenere limosa</i>	Legenere	--/--/1B.1	Vernal pools. In beds of vernal pools. 1-880 m.	Unlikely. No suitable habitat for this species within the project site. This species was not observed during reconnaissance surveys.
<i>Lepidium latipes</i> var. <i>heckardii</i>	Heckard's pepper-grass	--/--/1B.2	Valley and foothill grassland. Grassland, and sometimes vernal pool edges. Alkaline soils. 2-200 m.	Unlikely. No suitable habitat for this species within the project site. This species was not observed during reconnaissance surveys.

TABLE 3.3-1 (CONTINUED)
SPECIAL-STATUS SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE PROJECT SITE

Scientific Name	Common Name	Listing Status: Federal/State/Other	Habitat Description	Potential for Occurrence within the Project Site ¹
Plants (cont.)				
<i>Lilaeopsis masonii</i>	Mason's lilaeopsis	--/--/1B.1	Freshwater and brackish marshes, riparian scrub. Tidal zones, in muddy or silty soil formed through river deposition or river bank erosion. 0-10 m.	Unlikely. No suitable habitat for this species within the project site. This species was not observed during reconnaissance surveys.
<i>Orcuttia tenuis</i>	Slender Orcutt grass	FT/CE/1B.1	Vernal pools. Often in gravelly pools. 35-1760 m.	Unlikely. No suitable habitat for this species within the project site. This species was not observed during reconnaissance surveys.
<i>Orcuttia viscida</i>	Sacramento Orcutt grass	FE/CE/1B.1	Vernal pools. 30-100 m.	Unlikely. No suitable habitat for this species within the project site. This species was not observed during reconnaissance surveys.
<i>Sagittaria sandfordii</i>	Sandford's arrowhead	--/--/1B.2	Marshes and swamps. In standing or slow-moving freshwater ponds, marshes, and ditches. 0-650 m.	Unlikely. No suitable habitat for this species within the project site. This species was not observed during reconnaissance surveys.
<i>Symphotrichum lentum</i>	Suisun Marsh aster	--/--/1B.2	Marshes and swamps (brackish and freshwater). most often seen along sloughs with <i>Phragmites</i> , <i>Scirpus</i> , blackberry, <i>Typha</i> , etc. 0-3 m.	Unlikely. No suitable habitat for this species within the project site. This species was not observed during reconnaissance surveys.
<i>Trifolium hydrophilum</i>	Saline clover	--/--/1B.2	Marshes and swamps, valley and foothill grassland, vernal pools. Mesic, alkaline sites. 0-300 m.	Unlikely. No suitable habitat for this species within the project site. This species was not observed during reconnaissance surveys.
Sensitive Vegetation Communities				
Elderberry savanna	--	--	Open to moderately closed stands characterized by <i>Sambucus Mexicana</i> . Understory typically dominated by grasses. Occurs in association with remnant riparian forest vegetation.	Unlikely. Habitat not present within or directly adjacent to the project site.
Great Valley Cottonwood Riparian Forest	--	--	A dense, broadleaved, winter deciduous riparian forest dominated by Fremont cottonwood (<i>Populus fremontii</i>) and Goodding's black willow (<i>Salix gooddingii</i>). The understory is usually dense, with abundant vegetative reproduction of canopy dominants and California wild grape is the most conspicuous vine. Habitat experiences frequent flooding.	Unlikely. Habitat not present within or directly adjacent to the project site.
Great Valley Valley Oak Riparian Forest	--	--	Medium to tall (rarely to 100 feet) broadleaved, winter deciduous, closed-canopy riparian forest dominated by Valley oak (<i>Quercus lobata</i>). Understories include scattered Oregon ash, Northern California black walnut, and western sycamore as well as young valley oaks. Vines are relatively scattered throughout the shady understory but quickly become conspicuous occupying gaps where light is available.	Unlikely. Habitat not present within or directly adjacent to the project site.

TABLE 3.3-1 (CONTINUED)
SPECIAL-STATUS SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE PROJECT SITE

Scientific Name	Common Name	Listing Status: Federal/State/Other	Habitat Description	Potential for Occurrence within the Project Site ¹
Sensitive Vegetation Communities (cont.)				
Northern Claypan Vernal Pool	--	--	Similar to Northern Hardpan Vernal Pools, but with less topographical relief, and usually lower overall cover. Pools range in size from the small (a few square meters) to quite large (covering several hectares).	Unlikely. Habitat not present within or directly adjacent to the project site.
Northern Hardpan Vernal Pool	--	--	Community is dominated by annual grasses and herbs that grow in and out of the water. Germination and growth begin with winter rains, often continuing even when inundated. These pools gradually evaporate during spring, leaving concentric bands of vegetation that colorfully encircle the drying pools.	Unlikely. Habitat not present within or directly adjacent to the project site.
Northern Volcanic Mudflow Vernal Pool	--	--	Pools occur on Tertiary volcanic mudflows called lahars. Pools form after winter rains in settings of impeded water over rock-bound depressions. The pools are small, forming in irregular depressions in gently sloping surfaces. Habitat is seasonally flooded and seasonally saturated.	Unlikely. Habitat not present within or directly adjacent to the project site.

NOTES:

¹ The "Potential for Occurrence" category is defined as follows:

- **Unlikely:** The project site and/or surrounding area do not support suitable habitat for a particular species, or the project site is outside of the species known range.
- **Low Potential:** The project site and/or immediate area only provide limited amounts and low quality habitat for a particular species. In addition, the known range for a particular species may be outside of the immediate project site.
- **Medium Potential:** The project site and/or immediate area provide suitable habitat for a particular species.
- **High Potential:** The project site and/or immediate area provide ideal habitat conditions for a particular species and/or known populations occur in immediate area and/or within the project site.

ABBREVIATION KEY:

Federal: (USFWS)

FE = Listed as Endangered by the Federal Government
 FT = Listed as Threatened by the Federal Government
 FC = Candidate for listing by the Federal Government

State: (CDFW)

SE = Listed as Endangered by the State of California
 ST = Listed as Threatened by the State of California
 SR = Listed as Rare by the State of California (plants only)
 FP = Species fully protected by CDFW
 CSC = California Species of Special Concern
 WL = Species on the CDFW Watch List

CNPS: (California Native Plant Society)

Rank 1A = Plants presumed extinct in California
 Rank 1B = Plants rare, threatened, or endangered in California and elsewhere
 Rank 2 = Plants rare, threatened, or endangered in California but more common elsewhere
 Rank 3 = Need more information
 Rank 4 = Limited distribution – a watch list
 0.1 = Seriously endangered in California
 0.2 = Fairly endangered in California
 0.3 = Not very endangered in California
 -- = No Listing

SOURCES: CDFW, 2016, CNPS, 2016; USFWS, 2016a.

Based on examination of the shrubs, it is apparent that many of the elderberry shrubs onsite have been cut back multiple times. Some of the shrubs have large stumps with smaller stems shooting out of the stump. It appears that the various landowners on the Expansion Area property have routinely cut all vegetation on their properties, including elderberry shrubs, to increase visibility in the area due to safety concerns, primarily from homeless individuals camping and loitering in the area.

Critical Habitat/Habitat Conservation Plans

Critical habitat is defined in Section 3(5)A of the federal Endangered Species Act as the specific portions of the geographic area occupied by the species in which physical or biological features essential to the conservation of the species are found and that may require special management considerations or protection. Specific areas outside of the geographic area occupied by the species may also be included in critical habitat designations upon a determination that such areas are essential for the conservation of the species. Critical habitat has been designated for valley elderberry longhorn beetle. However, the project area is not located within the designated area. The closest critical habitat for the species is located along the American River, approximately 0.5 miles northeast of the project area, along the north side of the American River floodplain.

No Habitat Conservation Plans, Natural Community Conservation Plans, or local, regional, or state conservation plans are in effect for the project site.

Wetlands and Jurisdictional Waters

The project site was surveyed for the presence of wetlands and other federal and state jurisdictional waters. There are no potentially jurisdictional wetlands or other waters of the U.S. or waters of the State on the site.

Nesting Bird Habitat

During site visits on August 11, 2014 and January 25, 2016, project biologists conducted focused searches for active nests and inactive nest structures. No active bird nests were observed within or adjacent to the proposed project site; however, trees on the project site have the potential to support nesting birds, including raptors. Four special-status bird species occurrences are recorded within 0.25 miles of the project site, including Swainson's hawk (*Buteo swainsonii*), white-tailed kite (*Elanus leucurus*), blue heron (*Ardea herodias*), and song sparrow "Modesto population" (*Melospiza melodia*) (CNDDDB, 2016). These occurrences are all associated with the American River floodplain and the adjoining riparian areas, which are separated from the project site by flood control levees and urban development.

City Trees and Private Protected Trees

The Twin Rivers Community Housing Complex is landscaped with turf and ornamental trees and shrubs. A tree inventory conducted in 2017 logged 130 trees of 26 species (Tree Associates, 2017a). Nearly half of the trees (48 percent) were Modesto ash and London plane. Coast redwood (12 percent of total) and crepe myrtle (8 percent of total) were the next most common species. No

other individual species represented more than 4 percent of the total population. Ninety-six trees or 74 percent of the population was in fair-good or good health. Only seven percent (9 trees) were in poor-fair or poor health.

On the Expansion Area property east of North 12th Street, tree of heaven is the dominant tree species. These trees generally occur in noncontiguous multiple-stem groupings around the perimeter of the site.

3.3.3 Applicable Policies and Regulations

Federal Regulations

Federal Endangered Species Act

The Federal Endangered Species Act (FESA) of 1973, (16 U.S.C. 1531-1543) provides a means to conserve the ecosystems upon which endangered species and threatened species depend. It also provides a program for the conservation of such endangered and threatened species. Section 7 of the Act requires each federal agency, in consultation with and with the assistance of the USFWS, to ensure that actions authorized, funded, or carried out by the agency do not jeopardize the continued existence of any endangered or threatened species, or result in the destruction or adverse modification of habitat of such species, unless the agency has been granted an exemption for the proposed action. In situations where listed species have the potential to be impacted, or where USFWS-designated critical habitat for a listed species is present, formal consultation with the USFWS is usually carried out via the preparation of a Biological Opinion (BO) by the USFWS, wherein the USFWS discloses likely impacts to listed species or their habitats, and prescribes mitigation to offset those impacts.

Executive Order 11990 (Protection of Wetlands)

Executive Order 11990 requires that federal agencies implement the following procedures for any federal action that involves wetlands: 1) provide an opportunity for early public involvement; 2) consider alternatives that would avoid wetlands, and if avoidance is not possible, measures to minimize harm to wetlands must be included in the action; and 3) prepare a “Wetlands Only Practicable Alternative Finding” for actions that require an EIS.

Section 404 of the Clean Water Act

The U.S. Army Corps of Engineers (USACE) has jurisdiction over wetlands and other waters of the United States, through Section 404 of the Clean Water Act. Hydrophytic vegetation, wetland hydrology and hydric soils all must be present to qualify a site as a jurisdictional wetland as defined in Section 404. The USACE requires that: 1) impacts to wetlands be avoided; 2) unavoidable impacts be minimized to the maximum extent practicable; and 3) when unavoidable, impacts be mitigated to achieve no-net-loss of wetland functions and values.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (16 USC, Section 703 Supp. I 1989) establishes a federal prohibition, unless permitted by regulations, to "pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird, included in the terms of this Convention . . . for the protection of migratory birds . . . or any part, nest, or egg of any such bird."

State Regulations

California Endangered Species Act

The California Endangered Species Act (CESA) (Fish and Game Code, Section 2050, et seq.) declares that it is the policy of the state to conserve, protect, restore, and enhance any endangered species or any threatened species and its habitat. It requires state lead agencies to adopt reasonable and prudent alternatives or modifications to a project when CDFW finds that the project would jeopardize the continued existence of such species or result in the destruction or adverse modification of habitat essential to the continued existence of such species.

California Fully Protected Species

The Fish and Game Code provides protections from take for a variety of species. Certain species are considered fully protected. Fully protected species or parts thereof may not be taken or possessed at any time, except as provided in Section 2081.7 of the Fish and Game Code. No provision of the Fish and Game Code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected species, and no permits or licenses heretofore issued shall have any force or effect for that purpose. However, the department may authorize the taking of those species for necessary scientific research, including efforts to recover fully protected, threatened, or endangered species. Lists of the fully protected species are provided in Sections 3511 (birds), 4700 (mammals), 5050 (amphibians and reptiles), and 5515 (fishes) of the Fish and Game Code.

California Species of Special Concern

California Species of Special Concern (CSC) status applies to animals not listed under the FESA or CESA, but which nonetheless are declining at a rate that could result in listing, or historically occurred in low numbers and known threats to their persistence currently exist. CSC species share one or more of the following criteria:

- Occur in small, isolated populations or in fragmented habitat, and are threatened by further isolation and population reduction;
- Show marked population declines. Species that show a marked population decline, yet are still abundant, do not meet the CSC definition, whereas marked population decline in uncommon or rare species is an inclusion criterion;

- Depend on a habitat that has shown substantial historical or recent declines in size. This criterion infers the population viability of a species based on trends in the habitats upon which it specializes. Species that specialize in these habitats generally meet the criteria for Threatened or Endangered status or CSC status;
- Occur only in or adjacent to an area where habitat is being converted to land uses incompatible with the animal's survival;
- Have few California records, or which historically occurred here but for which there are no recent records; and
- Occur largely on public lands, but where current management practices are inconsistent with the animal's persistence.

The CSC designation is intended to result in special consideration for these species by CDFW, land managers, and others, and is intended to focus attention on the species to help avert the need for listing under federal and State endangered species laws and recovery efforts that might ultimately be required. The CSC designation does not provide specific legal protection, but signifies that these species are recognized as vulnerable by CDFW.

California Native Plant Society Rare Plant Inventory

The California Native Plant Society (CNPS) is a statewide resource conservation organization that has developed an inventory of California's special-status plant species. This inventory is a summary of information on the distribution, rarity, and endangerment of California's vascular plants. This rare plant inventory consists of four lists. CNPS presumes that List 1A plant species are extinct in California because they have not been seen in the wild for many years. CNPS considers List 1B plants as rare, threatened, or endangered throughout their range. List 2 plant species are considered rare, threatened, or endangered in California, but more common in other states. Plant species for which CNPS requires additional information in order to properly evaluate their status are included on List 3. List 4 plant species are those of limited distribution in California whose susceptibility to threat is considered low at the current time. Plant species on lists 1A, 1B, and 2 meet CDFW criteria for endangered, threatened, or rare listing.

The CNPS listing is a guideline for lead agencies to assist in identification of plant species that are rare in California. The goal is to establish awareness of native plants and to take action to avoid or reduce impacts to plants on the list.

California Native Plant Protection Act

The California Native Plant Protection Act, (Fish and Game Code 1900-1913) requires all state agencies to utilize their authority to carry out programs to conserve endangered and rare native plants.

Local Regulations

City of Sacramento Tree Ordinance

Sacramento City Code 12.56 was amended and adopted by the Sacramento City Council on August 4, 2016. The new tree ordinance amends section 2.62.030 and 8.04.100 and deletes chapter 12.60 and 12.64 of the Sacramento City Code, related to trees.

The City of Sacramento Tree Ordinance (City Code 12.56) specifies that a permit is required to perform regulated work on “City Trees” or “Private Protected Trees” (which includes trees formerly referred to as “Heritage Trees”).

City trees are characterized as trees partially or completely located in a City park, on City-owned property, or on a public right-of-way, including any street, road, sidewalk, park strip, mow strip or alley. Private protected trees are defined as trees designated to have special historical value, special environmental value, or significant community benefit, and that are located on private property.

Private protected trees are:

- All native trees at 12-inch diameter standard height (DSH). Native trees include Coast, Interior, Valley and Blue Oaks, CA Sycamore and Buckeye.
- All trees at 32-inch DSH with an existing single-family or duplex dwelling.
- All trees at 24-inch DSH on undeveloped land or any other type of property such as commercial, industrial, and apartments.

“Regulated work” means planting a city tree or any act that could adversely impact the health of a city tree or private protected tree such as:

- Removing a city tree or private protected tree;
- Pruning the branches or roots from a city tree or private protected tree;
- Affixing any signs, lights, or hardware to a city tree;
- Grading, clearing, excavating, adding fill soil, trenching, boring, compacting, or paving within the tree protection zone of a city tree or private protected tree;
- Placing or storing construction equipment or construction material within the tree protection zone of a city tree or private protected tree;
- Application of any harmful substance within the tree protection zone of a city tree or private protected tree; or
- Topping a city tree or private protected tree.

Regulated work does not include routine maintenance.

Sacramento City Code 12.56.040 identifies the requirements for removal of City Trees for public projects.

- A. Whenever feasible, the city shall modify the design of public projects to avoid the removal or damage to city trees.
- B. If the city proposes to remove city trees that have a DSH of four inches or more as part of a public project that otherwise requires city council approval, the city project manager shall provide written justification to the director¹ of the need to remove city trees for the public project. The director shall review the written justification and if the director agrees with the written justification the director shall make a recommendation to the city council to approve the request to remove the city trees. The request for approval from city council may take place at any stage of the public project but the city shall obtain council approval prior to removing the city trees. City trees proposed to be removed as part of a public project that either does not require city council approval or has a DSH less than four inches shall be removed as provided in section 12.56.030.C.
- C. The director shall provide written notice of the proposal to remove city trees as part of a public project by posting a notice of the time, date, and location of the city council meeting during which the city council is to decide whether or not to remove city trees in a conspicuous place on or in proximity to the trees at least 15 days prior to the city council meeting.

As specified in Sacramento City Code 12.56.050 (Tree Permits), no person shall perform regulated work without a tree permit. Applications for a tree permit shall be in writing and shall be filed with the Director upon forms provided by the city. The application shall include a statement detailing the nature and necessity for the proposed regulated work, the location of the proposed work, and signature of the applicant. The application shall be accompanied by an application fee in an amount established by resolution of the city council.

The Director may require that the application be accompanied by:

- 1. An arborist report;
- 2. A site map indicating existing and proposed elevations, property lines, streets, easements, driveways, buildings and structures, building and structure setbacks, parking areas, existing and proposed land uses, and locations of all trees with identification numbers;
- 3. A landscape or tree planting plan;
- 4. A tree protection plan;
- 5. Proof of compliance with any applicable California Contractors State License Board licensing requirements;
- 6. Authorization of the property owner;

¹ "Director" means the following. For city trees located in city parks, the director of the department of parks or the director's designee. For all other city trees, the director of the department of public works or the director's designee.

7. A tree replacement plan if the applicant proposes to remove a city tree or private protected tree; and
8. Any other information the Director determines to be necessary.

In general, the intent of the Tree Ordinance is to maintain and protect City and Private Protected Trees to the maximum extent feasible. When qualifying trees must be removed, they are to be replaced at an approved ratio based on the requirements of the ordinance. If the required amount of tree replacements is not feasible, payment of in-lieu fees may be substituted.

3.3.4 Summary of Analysis under the 2035 General Plan Master EIR and River District Specific Plan EIR

2035 General Plan Master EIR

The 2035 General Plan Master EIR (City of Sacramento, 2014) described existing conditions with respect to biological resources in the City of Sacramento, and the potential changes to those conditions that could result from development consistent with the 2035 General Plan. See Master EIR, Chapter 4.3, *Biological Resources*.

The Master EIR identified potential impacts to special-status plant and animal species, riparian habitats, wetlands, sensitive natural communities, and tree resources (Impacts 4.3-1 through 4.3-12) and concluded that adopted General Plan policies would reduce the potential impacts to less-than-significant levels. The following General Plan policies are applicable to the proposed project:

Policy ER 2.1.10: Habitat Assessments and Impact Compensation. The City shall consider the potential impact on sensitive plants and wildlife for each project requiring discretionary approval. If site conditions are such that potential habitat for sensitive plant and/or wildlife species may be present, the City shall require habitat assessments, prepared by a qualified biologist, for sensitive plant and wildlife species. If the habitat assessment determines that suitable habitat for sensitive plant and/or wildlife species is present, then either: 1) protocol-level surveys shall be conducted (where survey protocol has been established by a resource agency), or, in the absence of established survey protocol, a focused survey shall be conducted consistent with industry-recognized best practices; or 2) suitable habitat and presence of the species shall be assumed to occur within all potential habitat locations identified on the project site. Survey Reports shall be prepared and submitted to the City and the California Department of Fish and Wildlife (CDFW) or the U.S. Fish and Wildlife Service (USFWS) (depending on the species) for further consultation and development of avoidance and/or mitigation measures consistent with state and federal law.

The Master EIR evaluated impacts to biological resources throughout the City. Some areas of the City, such as the river corridors, are rich in biological resources, whereas highly urbanized areas like the project site are not. As discussed in the Environmental Setting discussion of this section, the sensitive biological resources that are present in other portions of the City, such as sensitive riparian habitats, are not present on the project site. This is due to the highly urbanized nature of the site and the surrounding area. As such, adopted policies in the 2035 General Plan directed towards protection of specific types of biological resources (such as sensitive riparian habitats) are not applicable to the proposed project.

River District Specific Plan EIR

The River District Specific Plan EIR (City of Sacramento, 2010) evaluated effects of development within the Specific Plan area. See EIR Chapter 5.2, *Biological Resources*. The EIR identified potential impacts to special-status plant and animal species, riparian habitats, wetlands, sensitive natural communities, and tree resources (Impacts 5.2-1 through 5.2-5), and concluded that adopted mitigation measures and General Plan policies would reduce the potential impacts to less-than-significant levels.

As with the 2035 General Plan Master EIR, the RDSP EIR assessed impacts over a very large area (the 748-acre Specific Plan area). Most of the RDSP area is highly urbanized, and sensitive biological resources are largely absent from those areas. There are, however, pockets within the plan area where sensitive resources are present. As discussed in the Environmental Setting discussion of this section, the sensitive biological resources that are present in other portions of the RDSP area, such as sensitive habitat areas, for example, are not present on the project site. This is due to the highly urbanized nature of the site and the surrounding area. As such, the mitigations and General Plan policies related to sensitive species and habitats that are referred to in the EIR are not directly applicable to the proposed project.

3.3.5 Impact Assessment and Mitigation Measures

City of Sacramento Standards of Significance

The significance criteria used to evaluate the project impacts to biological resources under CEQA are based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines, and thresholds of significance adopted by the City in applicable general plans and previous environmental documents, including the 2035 General Plan Master EIR (City of Sacramento, 2014). The project alternatives would have a significant adverse effect if they would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, etc.) through direct removal, filling, hydrological interruption, or other means;
- 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; or
- Create a potential health hazard, or use, production or disposal of materials that would pose a hazard to plant or animal populations in the area affected.

For the purposes of this document, “special-status” has been defined to include species that are:

- Listed as endangered or threatened under the federal Endangered Species Act (or formally proposed for, or candidates for, listing);
- Listed as endangered or threatened under the California Endangered Species Act (or proposed for listing);
- Designated as endangered or rare, pursuant to California Fish and Game Code (Fish and Game Code) (Section 1901);
- Designated as fully protected, pursuant to Fish and Game Code (Section 3511, 4700, or 5050);
- Designated as species of concern by USFWS, or as species of special concern to California Department of Fish and Wildlife (CDFW);
- Plants or animals that meet the definition of rare or endangered under CEQA; and
- Nesting birds as defined under the Migratory Bird Treaty Act.

Department of Housing and Urban Development Evaluation Criteria

The online HUD Exchange provides guidance documents for considering context and intensity impacts associated with biological resources (HUD, 2013). Specific factors to consider include the project’s impacts to unique natural features, water resources, and vegetation and wildlife.

HUD regulations provide a listing of federal laws, regulations, and executive orders against which all HUD-assisted projects must be evaluated. These authorities are listed at 24 CFR Sections 58.5 and 58.6. Those authorities that are relevant to the proposed project have been listed previously in the *Applicable Policies and Regulations* section.

Other Applicable Evaluation Criteria

There are no other criteria that would be applicable to the proposed project.

Environmental Analysis

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

Alternative 1 – No Project

The No Project alternative would result in the Twin Rivers Transit-Oriented Development and Light Rail Station Project not being constructed or operated. The project area would remain in its existing condition. Any existing activities in or around the project area would remain unchanged. Under NEPA, there would be **no effect**. Under CEQA, there would be **no impact** with respect to this criteria.

Alternative 2 – Twin Rivers Transit-Oriented Development and Light Rail Station Project Special Status Species

As discussed in the Environmental Setting discussion of this section, only one sensitive species was found to be likely to occur on the project site; the valley elderberry longhorn beetle. The general habitat assessment found that the Expansion Area site contains four elderberry shrubs with stems greater than 1-inch diameter which could serve as habitat for the beetle. Seven additional shrubs are located on the property that possess stems less than 1-inch in diameter. All of the shrubs would be removed as part of project construction.

Based on the presence of these shrubs, the City, acting in its role as the Responsible Entity for the project as specified in 24 CFR 58.5, prepared a Biological Assessment (BA) for the project area that considered the likelihood of occurrence for the beetle, and the potential effects that could occur from implementation of the proposed project. The BA was forwarded to USFWS on September 6, 2016 for its review, together with a request that USFWS concur with the BA’s finding that with implementation of applicable conservation measures, the project would be unlikely to adversely affect the beetle. The USFWS issued a Biological Opinion (BO) on December 28, 2016, in which it found that with implementation of specified conservation measures, the proposed project and its cumulative effects would not be likely to jeopardize the continued existence of the beetle, and there would be no adverse effect. The BA, the BO, and the full record of correspondence associated with the City’s USFWS consultation effort is included with is this IS/EA as Appendix A.

The USFWS’s finding is contingent upon implementation of specified conservation measures, as outlined in the BO. Accordingly, these measures have been included here as mitigation for potential effects to the valley elderberry longhorn beetle. The principal mechanism for mitigation will be compensatory in nature, whereby the City will purchase beetle conservation credits from a USFWS-approved conservation bank with a service area that covers the proposed project. The City will compensate for the four plants with stems greater than 1-inch in diameter that will be removed as part of the project. The compensation will include an increase in credits due to the fact that the plants will not be transplanted based on their poor condition and the low likelihood that transplantation efforts would be successful. Based on the direction contained in the BO, the purchase of credits would occur based on the following formula:

**TABLE 3.3-2
 VALLEY ELDERBERRY LONGHORN BEETLE MITIGATION REQUIREMENTS**

Riparian	Elderberry Stem Size	Exit Holes	Number of Stems	Seedling Ratio	Number of Replacement Elderberries	Associated Native Ratio	Number of Associated Seedlings
No	>1" and <3"	No	4	1:1	4	1:1	4
No	>3" and <5"	No	2	2:1	4	1:1	4
Total Stems Affected			6				
Total Replacement Plantings (x3)*					24		24
Conservation Credits Proposed for Plantings (total replacement plantings / 10)						4.8	

* Proposed increase in plantings due to the elderberry plants not being transplanted
 SOURCE: USFWS. 2016b.

Specific conditions associated with the compensatory mitigation are presented below as Mitigation Measure 3.3-1 in the listing of mitigation measures at the end of this section. With implementation of these measures, there would be **no adverse effect** to special-status species under NEPA. Under CEQA, the impact would be **less than significant**.

Nesting Birds

As discussed in the Environmental Setting discussion of this section, there are trees present within the project site that could support nesting birds. Development of the project would require removal of the majority of the trees in the project site, including those with potential to support nesting birds.

Nesting birds and raptors are protected under Section 3513 of the Migratory Bird Treaty Act. Vegetation removal could result in the loss of potential nest sites. Additionally, human disturbances and noise from construction activities have the potential to cause nest abandonment and death of young or loss of reproductive success at active nests located near project activities

Disturbance of active nest sites which results in nest abandonment, loss of young, or reduced health and vigor of eggs and/or nestlings (resulting in reduced survival rates), or the direct removal of vegetation that supports nesting birds which result in killing of nestlings or fledgling bird species would be considered a **potentially adverse effect** under NEPA. Under CEQA, this is considered a **potentially significant** impact. However, implementation of Mitigation Measure 3.3-2, below, would reduce this impact to **no adverse effect** under NEPA, and **less than significant with mitigation** under CEQA.

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

Alternative 1 – No Project

The No Project alternative would result in the Twin Rivers Transit-Oriented Development and Light Rail Station Project not being constructed or operated. The project area would remain in its existing condition. Any existing activities in or around the project area would remain unchanged. Under NEPA, there would be **no effect**. Under CEQA, there would be **no impact** with respect to this criteria.

Alternative 2 – Twin Rivers Transit-Oriented Development and Light Rail Station Project

As discussed in the Environmental Setting discussion of this section, there are no sensitive natural communities, habitats, or riparian areas on the project site. For these reasons, there would be **no adverse effect** under NEPA. Under CEQA, the impact would be **less than significant**.

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

Alternative 1 – No Project

The No Project alternative would result in the Twin Rivers Transit-Oriented Development and Light Rail Station Project not being constructed or operated. The project area would remain in its existing condition. Any existing activities in or around the project area would remain unchanged. Under NEPA, there would be **no effect**. Under CEQA, there would be **no impact** with respect to this criteria.

Alternative 2 – Twin Rivers Transit-Oriented Development and Light Rail Station Project

As discussed in the Environmental Setting discussion of this section, there are no waters of the U.S., waters of the State, or wetlands on the project site. For these reasons, there would be **no adverse effect** under NEPA and **no impact** under CEQA.

BIO-4. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Alternative 1 – No Project

The No Project alternative would result in the Twin Rivers Transit-Oriented Development and Light Rail Station Project not being constructed or operated. The project area would remain in its existing condition. Any existing activities in or around the project area would remain unchanged. Under NEPA, there would be **no effect**. Under CEQA, there would be **no impact** with respect to this criteria.

Alternative 2 – Twin Rivers Transit-Oriented Development and Light Rail Station Project

As discussed in the Environmental Setting discussion of this section, the Twin Rivers Community Housing Complex is landscaped with turf and ornamental trees and shrubs, including magnolia, cypress, and London plane. A tree inventory conducted in 2011 logged 130 trees of various species within the Complex. Approximately 100 of these trees would be removed as part of the project's development.

Per the requirements of the City's Tree Ordinance, any qualifying private protected tree removed as part of the project's implementation would have to be replaced based on the tree replacement ratios contained in the ordinance. As part of the project's final design, and prior to project implementation, a Tree Planting Plan would be required, within which the project applicant would demonstrate compliance with the requirements of the ordinance. Any required tree plantings that could not be accommodated on the site would be substituted for by in-lieu fees, as provided in the ordinance. The proposed project's required compliance with the City Tree Ordinance, which would include City review and approval of the required tree replacement plan

prior to project implementation, would ensure that there would be **no adverse effect** under NEPA, and the impact would be **less than significant** under CEQA.

BIO-5. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Alternative 1 – No Project

The No Project alternative would result in the Twin Rivers Transit-Oriented Development and Light Rail Station Project not being constructed or operated. The project area would remain in its existing condition. Any existing activities in or around the project area would remain unchanged. Under NEPA, there would be **no effect**. Under CEQA, there would be **no impact** with respect to this criteria.

Alternative 2 – Twin Rivers Transit-Oriented Development and Light Rail Station Project

As discussed in the Environmental Setting discussion of this section, there is no Critical Habitat designated on the project site, nor are there any Habitat Conservation Plans, Natural Community Conservation Plans, or local, regional, or state conservation plans in effect for the site. For these reasons, there would be **no adverse effect** under NEPA. Under CEQA, the impact would be **no impact**.

BIO-6. Would the project create a potential health hazard, or use, production or disposal of materials that would pose a hazard to plant or animal populations in the area affected?

Alternative 1 – No Project

The No Project alternative would result in the Twin Rivers Transit-Oriented Development and Light Rail Station Project not being constructed or operated. The project area would remain in its existing condition. Any existing activities in or around the project area would remain unchanged. Under NEPA, there would be **no effect**. Under CEQA, there would be **no impact** with respect to this criteria.

Alternative 2 – Twin Rivers Transit-Oriented Development and Light Rail Station Project

Development of the proposed project would result in increases in population. Increases in population could also result in increases in the use of potentially hazardous materials, such as fertilizers, herbicides, and pesticides used in lawn care. During irrigation or storm events these types of pollutants could be washed into street drains and eventually end up in detention basins, drainage swales, and natural waterways. Increased vehicle trips would result in increased air emissions, such as ozone precursors and particulate matter. Increases in air, water, and soil pollutants as a result of the increase in population could expose plant and wildlife populations to hazardous materials. State and federal laws require detailed planning to ensure that hazardous materials are properly handled, used, stored, and disposed of, and, in the event that such materials are accidentally released, to prevent or to mitigate injury to health or the environment.

As noted in Section 3.9, *Hazards and Hazardous Materials*, residual contamination from previous land uses has been detected on the Expansion Area parcel east of North 12th Street. Construction in this area could result in disturbance of contaminated soils and/or contact with contaminated groundwater. While no sensitive species are likely to occur on the site, plant and animals that are present on the site could be exposed on a temporary basis during the time the contaminants are exposed.

As discussed in Section 3.9, exposed soil and groundwater contaminants are highly regulated by both the federal and State governments, which would require and enforce the proper handling of the exposed contamination. In addition, General Plan Policy PHS 3.1.2 requires preparation of a Hazardous Materials Contamination Management Plan prior to development of contaminated parcels. Implementation of the Plan would manage such sites to prevent adverse environmental risks. This policy, as well as federal, State, and local regulations would require that project construction and operation on the site be carried out in such a manner as to not result in releases that would present environmental risks. For these reasons, there would be **no adverse effect** under NEPA. Under CEQA, the impact would be **less than significant**.

Mitigation Measures

Mitigation Measure 3.3-1: Prior to the issuance of any grading or building permit for the proposed project, the City or its designated cooperator shall purchase compensatory mitigation credits as specified in the project's Biological Opinion issued by the U.S. Fish and Wildlife Service dated December 28, 2016. Credits shall be purchased at the ratios prescribed therein. In addition, the following conditions shall apply, as prescribed in the Biological Opinion:

1. The City or its designated cooperator will include full implementation and adherence to the conservation measure as a condition of any permit or contract issued for the proposed project;
2. The City or its designated cooperator will provide a completed bill of sale and payment receipt to the U.S. Fish and Wildlife Service upon purchase of the beetle conservation credits;
3. In order to monitor whether the amount or extent of incidental take anticipated from implementation of the proposed project is approached or exceeded, the City will adhere to the following reporting requirements. Should this anticipated amount or extent of incidental take be exceeded, the City must immediately reinitiate formal consultation, as per 50 CFR 402.16.
 - a. For those components of the action that will result in habitat degradation or modification whereby incidental take in the form of harm is anticipated, the City will provide a precise accounting of the elderberry plants impacted to the U.S. Fish and Wildlife Service after completion of construction. This report will also include any information about changes in project implementation that result in habitat disturbance not described in the *Description of the Action* presented in the project Biological Opinion dated December 28, 2016 and not analyzed therein.

Mitigation Measure 3.3-2: The City or its designated cooperator shall require construction contractors to conduct tree removal activities outside of the migratory bird and raptor breeding season (defined here as February 1 through August 31), where feasible. For any construction activities that occur between February 1 and August 31, the City or its designated cooperator shall

conduct preconstruction surveys in suitable nesting habitat within 500 feet of the construction area for migratory birds and raptor species. In addition, all trees slated for removal during the nesting season shall be surveyed by a qualified biologist no more than 48 hours before removal to ensure that no nesting birds are occupying the tree.

If active nests are found during the survey, the construction contractor shall implement mitigation measures to ensure that the species will not be adversely affected, which will include establishing a no-work buffer zone, around the active nest. Avoidance measures will include:

1. Maintaining a 500-foot buffer around each active raptor nest. No construction activities shall be permitted within this buffer. For other migratory birds, a 250-foot no-work buffer zone shall be established, around the active nest. The no-work buffer may vary depending on species and site specific conditions. No project-related activity shall occur within the no-work buffer until a qualified wildlife biologist confirms that the nest is no longer active, or unless otherwise permitted by the California Department of Fish and Wildlife.
2. If an appropriate no-disturbance buffer is infeasible, a qualified biologist shall be present during construction activities for the entire duration of activities within the buffer to monitor the behavior of the potentially affected nesting bird. The biologist shall have the authority to stop-work within the buffer area if the bird(s) exhibit distress and/or abnormal nesting behavior (swooping/stooping, excessive vocalization [distress calls], agitation, failure to remain on nest, failure to deliver prey items for an extended time period, failure to maintain nest, etc.) which may cause reproductive failure (nest abandonment and loss of eggs or young). Work shall not resume in the buffer area until bird's behavior has normalized. Completion of the nesting cycle shall be determined by a qualified biologist.

References

- California Department of Fish and Wildlife (CDFW). 2016. California Natural Diversity Database (CNDDDB) RareFind 5 personal computer program. Available <https://map.dfg.ca.gov/rarefind/Login.aspx?ReturnUrl=%2frarefind%2fview%2fRareFind.aspx>. Accessed January 25, 2016.
- California Native Plant Society (CNPS). 2016. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society. Sacramento, CA. Available <http://www.rareplants.cnps.org/>. Accessed April 29, 2016.
- City of Sacramento. 2015. City of Sacramento 2035 General Plan Update Background Report. Available online at: <https://www.cityofsacramento.org/Community-Development/Planning/Online-Library/General%20Plan>. Accessed April 7, 2016.
- City of Sacramento. 2014. City of Sacramento 2035 General Plan Update Draft Environmental Impact Report. Available online at: <https://www.cityofsacramento.org/Community-Development/Planning/Environmental/Impact-Reports>. Accessed April 7, 2016.
- City of Sacramento. 2010. River District Specific Plan Draft Environmental Impact Report. Available online at: <https://www.cityofsacramento.org/Community-Development/Planning/Environmental/Impact-Reports>. Accessed April 7, 2016.

- Department of Housing and Urban Development (HUD). 2013. Environmental Assessment Factors Guidance. Available online at: <https://www.hudexchange.info/resource/3306/environmental-assessment-factors-guidance/>. Accessed April 7, 2016.
- Mayer, K. E., and W.F. Laudenslayer, Jr. 1988. A Guide to Wildlife Habitats of California. State of California Resources Agency, California Department of Fish and Game. Sacramento, CA. Available online at: http://www.dfg.ca.gov/whdab/html/wildlife_habitats.html. Accessed August 4, 2015.
- Sawyer, J.O, T. Keeler-Wolf, and J.M. Evans. 2009. A Manual of California Vegetation, Second Edition. California Native Plant Society. Sacramento, California.
- Tree Associates. 2017a. Arborist Report: Tree Evaluation and Preservation Guidelines, Twin Rivers, Sacramento. March 30, 2017.
- Tree Associates. 2017b. Development Impact Assessment and Tree Preservation Guidelines, Twin Rivers Project, Sacramento. June 6, 2017.
- U.S. Fish and Wildlife Service (USFWS). 2016a. List of Threatened and Endangered Species that May Occur in the Proposed Project Location, and/or May be Affected by the Proposed Project. (Consultation Code: 08ESMF00-2016-SLI-1398, Event Code: 08ESMF00-2016-E-03019). April 29, 2016.
- U.S. Fish and Wildlife Service (USFWS). 2016b. Formal Consultation on the Proposed Twin Rivers Transit Oriented Development Project. Sacramento County, California. Reference Code: 08ESMF00-2016-F-2198-1. December 28, 2016.

3.4 Cultural and Paleontological Resources

3.4.1 Introduction

This section discusses the potential for the proposed project to adversely affect cultural and paleontological resources. Cultural resources include built-environment architectural resources, prehistoric and historic-period archaeological resources, Native American cultural resources, and human remains. Paleontological resources include fossilized remains of vertebrate and invertebrate organisms, fossil tracks, and plant fossils. The cultural resources investigation documented in this section was conducted to meet the requirements of CEQA, NEPA, and Section 106 of the National Historic Preservation Act (NHPA).

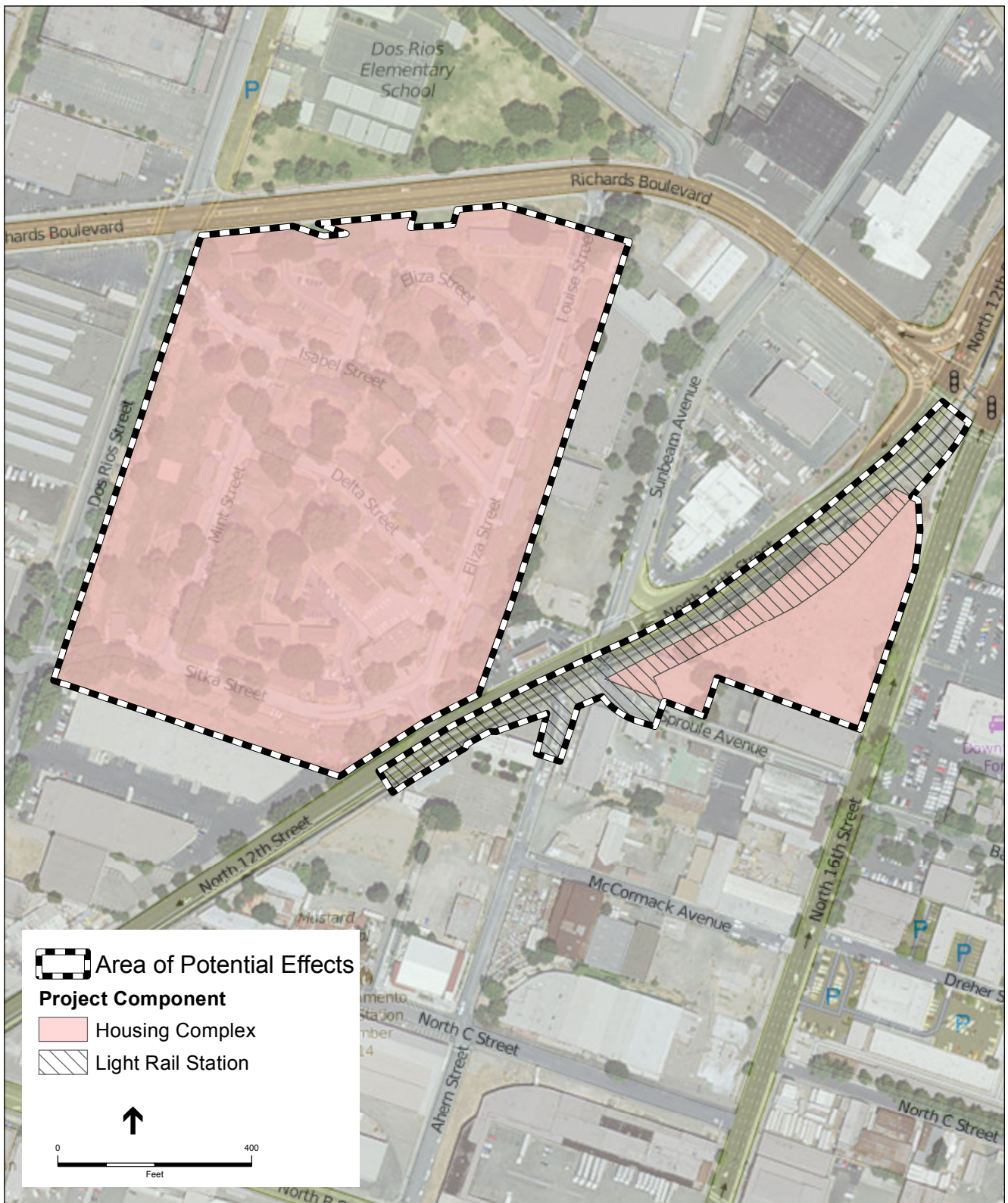
3.4.2 Environmental Setting

Study Methodology

ESA completed a Cultural Resources Survey and Inventory Report (CRSIR) for the proposed project in February 2017 (Grady and Hoffman, 2017). The CRSIR is currently in review by the California State Office of Historic Preservation and the State Historic Preservation Officer (SHPO). All significance evaluations (i.e., whether resources qualify as historic properties, for Section 106 purposes) and anticipated findings of effects for the proposed project provided in the CRSIR are provisional until receiving SHPO concurrence. The Final IS/EA will document the results of consultation with the SHPO.

The CRSIR documents the cultural resources investigation conducted for the proposed project. The effort consisted of the following: 1) background and archival research; 2) a records search of the California Historical Resources Information System (CHRIS); 3) research at the Sacramento Room at the Main Branch of the Sacramento Library and various online archives; 4) an intensive pedestrian survey of the project site by both an archaeologist and an architectural historian; 5) an archaeological subsurface survey using mechanical trenching; and 6) correspondence with relevant Native American representatives. ESA staff conducted additional research by reviewing files provided by SHRA. The background research, including the records search, focused on the portion of the 0.5-mile-radius search area south of the American River and north of the Union Pacific railroad tracks and associated levees to the south of the project site, an area referred to as the *customized search radius*.

The term Area of Potential Effects (APE) is used in this section as a unit of analysis for potential impacts to cultural resources and paleontological resources. The APE is the area within which the proposed project has potential to result in direct or indirect impacts to cultural resources and paleontological resources. **Figure 3.4-1** shows the APE for the proposed project. Due to the defined nature of the project and its minimal potential for indirect effects, the APE for archaeological and architectural resources is the same. The APE includes both the horizontal and vertical maximum extents of potential direct and indirect impacts from project implementation, and encompasses the entire physical proposed project footprint and associated staging and access areas. In all, the APE encompasses approximately 26.78 acres, which includes both the existing Twin Rivers Community



SOURCE: Bing, 2016; ESRI, 2016; ESA, 2016

Twin Rivers Transit-Oriented Development and Light Rail Station Project. 140202

Figure 3.4-1
Cultural Resources Area of Potential Effects

Housing Complex (Twin Rivers Complex), the Twin Rivers Community Housing Expansion Area east of North 12th Street, and project elements associated with development of the proposed Dos Rios Light Rail Station (Dos Rios Station). The APE extends vertically to the maximum depth of proposed construction, though exact depths have yet to be determined. However, based on similar projects in the region, estimated ground disturbance would most likely not exceed 10 feet below grade. This analysis uses those estimates to define the vertical extent of the APE. The proposed project site and APE are congruent in the horizontal extent, while the APE specifically encompasses a vertical dimension (i.e., depth of ground disturbance); the terms are used interchangeably in this section except when reference to a vertical dimension is made, where APE is used.

Physical and Cultural Setting

The APE is in the former floodplain of the American and Sacramento Rivers, with the American River lying approximately 1,000 feet north of the site and the Sacramento River lying approximately 1.2 miles to the west. The APE is virtually flat, with elevations ranging from 24 to 26 feet above mean sea level (USGS, 1980). The underlying geology of the APE consists of deep Holocene and historic-period/modern alluvium (stream channel deposits) (California Division of Mines and Geology, 1971; Meyer and Rosenthal, 2008: Fig. 47). Soils in the APE consist of Columbia series sandy loam (alluvium) mixed with historic-period and modern fill (USDA, 2016).

Prior to construction of the nearby levees, the APE would have consisted of a non-tidal marshland, flanked by broad gallery forests (Meyer and Rosenthal, 2008:34). The proposed project is within the lands occupied and used by the Nisenan, or Southern Maidu. Nisenan settlement locations depended primarily on elevation, exposure, and proximity to water and other resources. Permanent villages usually were located on low rises along major watercourses. Permanent non-native settlement in the Sacramento Valley began in the 1830s when Spanish and Mexican governors issued large land grants to individuals, often in return for military or other services rendered to the government.

Ethnographic accounts documented several Native American villages in the vicinity of the project site, the closest being the Nisenan villages of *Sek*, *Yama'nepu*, *Mo'mol*, *Sa'cum*, and *Puju'ne*. In interviews done from the mid- to late-1920s, Thomas Charles, a Nisenan, indicated that the Nisenan village *Sek* was located along the north side of the American River at the then “new highway bridge” (Kroeber, 1929:255-256); this refers to the current State Road 160 and corresponds to a location approximately 0.25 to 0.5 mile north-northeast of the project site. *Yama'nepu* was described by Charles as being located on the north bank of the American River 0.5 mile east of its confluence with the Sacramento River, corresponding to a location approximately 1.0 mile northwest of the project site. Also described by Charles, among others, was the large village of *Puju'ne* as being located along the north bank of the American River at its confluence with the Sacramento River, approximately 1.25 miles west-northwest of project site (Tatsch, 2006:64; Kroeber, 1929:256; Kroeber, 1925 [1976]; Heizer and Hester, 1970). Ethnographic accounts also describe the village *Mo'mol* along the south side of the American River (across from *Puju'ne*) just east of its confluence with the Sacramento River—this would

place the village 0.5 to 1 mile west of the project site. Finally, archaeological site CA-SAC-38, approximately 0.9 mile south-southwest of the project site at present-day Cesar Chavez Park, is thought to correspond to the ethnographically documented Nisenan village *Sa'cum* (Kroeber, 1925 [1976]; Wilson and Towne, 1978; Heizer, 1978; Casilear and Bainbridge, 1850; Farris and Tremaine, 2008).

Swiss immigrant John Augustus Sutter, Jr., upon receiving a land grant from Mexican Governor Juan Alvarado, first settled the Sacramento area in 1839. As with other California Native American groups, the Gold Rush of 1849 had a devastating effect on the Valley Nisenan. The new town was centered on the embarcadero, or Front Street, and continued inland to the east along J Street (Warner, 1969; Brienens et al., 1981:46-47). Downtown Sacramento developed rapidly after 1850. The blocks fronting on J Street were heavily developed, owing to the street's use as the main road leading east out of the city, with slightly less development on the parallel streets of I and K. By 1851, J Street was substantially occupied from Front Street eastward beyond 10th Street with stores, saloons, hotels, grocery stores, stables, and other concerns vying for the business of visitors and residents.

The proposed project lies north of the downtown business district in the River District Specific Plan (RDSP) area, which is roughly bound by Interstate 5 to the west, the American River to the north, and the railroad tracks to the east and south. As previously noted, prior to the rerouting of the American River in 1868 and the construction of the existing levee north of the project site, much of the project site and environs were swampland that were subject to seasonal flooding. Also, the construction of bridges in the late 19th and early 20th centuries that facilitated access to the area was key to its later development. Initial development of the area focused on industrial uses including the PG&E substation on Jibboom Street, trucking companies, produce distribution, and cannery related businesses. Transient housing also began to spring up in the form of auto camps, with parcels being rented out and tenants constructing whatever makeshift dwellings they could. Currently the RDSP area is a mix of light-industrial uses/building, retail, limited residential, and government buildings.

Archaeological Resources

The records search conducted at the North Central Information Center of the CHRIS indicated that 18 previously recorded resources are located in the customized search radius, one of which, a historic-period archaeological resource (P-34-001378—Dos Rios Trash Deposit), is located in the APE, within the existing Twin Rivers Community Housing Complex.

A pedestrian field survey and an Extended Phase 1 (XP1) subsurface investigation was conducted within the APE. The XP1 consisted of mechanical excavation of 13 trenches throughout the APE, including ten trenches on the Twin Rivers Community Housing Complex and three on the Twin Rivers Community Housing Expansion Area east of North 12th Street. No archaeological resources were identified in the APE during the pedestrian field survey or XP1 subsurface survey, including any associated with previously recorded historic-period archaeological resource P-34-001378 or the ethnographic village *Sek*. No traditional cultural properties, for Section 106

purposes, were identified during either the research portion of the CRSIR or through SHRA's contact with tribes during consultation.

P-34-001378

Historic-period archaeological resource P-34-001378 was originally recorded at the current location of the Twin Rivers Complex community center, though this original recordation was done from surface artifacts excavated from a trench, after the trench had been backfilled. The originally recorded material consisted of late-19th/early-20th century refuse (glass fragments, ceramic fragments, ferrous metal fragments, and non-ferrous metal fragments) excavated from 2 to 3 feet of sediment, including fill (Lewiston, 1998; PAR Environmental Services, 1998).

The archaeological subsurface survey conducted in February 2017 for the proposed project included excavation of three trenches in vicinity of the recorded location of P-34-001378. No archaeological material associated with the resource was identified during the subsurface survey. As such, P-34-001378 appears to represent an archaeological isolate of historic-period refuse. Therefore, ESA concluded in the CRSIR that the resource does not appear eligible for listing in the National Register of Historic Places (National Register), California Register of Historical Resources (California Register), or local register of historical resources.

Architectural Resources

Two historic-period architectural resources (the Twin Rivers Community Housing Complex and 401 North 12th Street—Loaves and Fishes) were identified during the CRSIR. These two resources were evaluated for significance in the CRSIR, which concluded that they did not qualify as historical resources for CEQA purposes or as historic properties under Section 106. A brief description of each is provided below as well as a brief summary of the eligibility finding from the CRSIR.

Twin Rivers Housing Project

The Twin Rivers Community Housing Complex is a multi-family residential complex that was originally built in 1948 and consisted of 52 one-bedroom units, 78 two-bedroom units, 30 three-bedroom units, and 8 four-bedroom duplexes. It currently consists of 92 residential buildings, with 83 single-story buildings and nine two-story buildings. Also on the site are a community building, three playgrounds (i.e., tot lots), a basketball court, and surface parking. Landscaping includes grass between buildings, small bushes around the buildings, and mature trees. There are nine floor plans that are repeated throughout the complex. Seven of the residential buildings are fourplex townhouses, 15 are single-story fourplexes, 60 are single-story duplexes, and 10 are single family. While the Twin Rivers Community Housing Complex is an early example of a public housing project in Sacramento, it is not the first to be built in the area and alterations/additions to the site and buildings have substantially reduced the integrity of the resource. Research conducted for this project did not reveal that the property is specifically associated with specific events or persons that have made a significant contribution to the broad patterns of our history. ESA recommended in the CRSIR that the housing complex does not

appear to be eligible for the National Register, California Register, or City of Sacramento Historical Resources Register.

401 North 12th Street

Loaves & Fishes (a.k.a. the Cervantes Building) is at the corner of North 12th Street and Ahern Street. Loaves & Fishes is a non-profit organization that currently occupies several buildings along the east side of North 12th Street north of North C Street, including the 401 North 12th Street building. The organization was founded in 1983 with the mission of feeding and sheltering the homeless (Loaves & Fishes, 2016). This building houses a portion of the organization's services. Earlier occupants of the building included Sunland Refining Corp (1934), Standley & Henry Auto Repair (1937), Standley & Michl Auto Repairs (1938), Nuccio Michl – owner of the Tamale Factory (1940), Cut Rate Wrecking Co. (1941), Faller LA Auto Repair (1947), National Van Lines (1952), National Transfer & Storage/National Van Lines (1956), Furniture City – warehouse (1963-64), and Cirsco Clutch & Brake (1968). The building appears to be generally representative of the growth of light industrial businesses in Sacramento's River District area in the mid-20th century, but research conducted for this project did not reveal that the property at 401 North 12th Street is associated with specific events or persons that have made a significant contribution to the broad patterns of our history. The building at 401 North 12th Street also does not possess distinctive architectural characteristics, features, or construction methods that distinguish it from other commercial buildings of the time period typical of the region. Research conducted for this project did not reveal the involvement of builders/designers that are considered master craftsmen. ESA recommended in the CRSIR that the property does not appear to be eligible for the National Register, California Register, or City of Sacramento Historical Resources Register.

Paleontological Resources

Per the City's 2035 General Plan Master EIR (Section 4.5, Geology, Soils, and Mineral Resources), the City of Sacramento is not highly sensitive for paleontological resources due to the absence of fossil-bearing soils and rock formations. Proposed project ground-disturbing activities would all occur in Holocene alluvium, which is not considered sensitive for paleontological resources.

Tribal Cultural Resources

Tribal cultural resources are: 1) sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are listed, or determined to be eligible for listing in the California Register, or local register of historical resources, as defined in Public Resources Code (PRC) 5020.1(k); or 2) a resource determined by the lead CEQA agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in PRC 5024.1(c). For a cultural landscape to be considered a tribal cultural resource, it must be geographically defined in terms of the size and scope of the landscape (PRC 21074[b]). Also, an historical resource, as defined in PRC 21084.1, unique archaeological resource, as defined in PRC 21083.2(g), or nonunique archaeological resource, as defined in PRC 21083.2(h), may also be a tribal cultural resource.

SHRA acted on behalf of the City for purposes of Section 106 and AB 52 consultation. In January 2016 the Native American Heritage Commission (NAHC) was contacted to conduct a search of the Sacred Lands File (SLF) and a list of Native American representatives who may have interest in the project. The NAHC reply indicated that the SLF has no record of any cultural resources in the APE, and also included a contact list of Native American representatives. In June 2016, SHRA sent letters with project information to Native American contacts provided by the NAHC to solicit comments and concerns regarding potential project impacts to cultural resources and invite the contacts to consultation for purposes of Section 106 and California Assembly Bill 52 (AB 52). In July 2016, SHRA made follow-up phone calls to the same contacts. From these initial outreach efforts, SHRA received replies from the Shingle Springs Band of Miwok Indians (Shingle Springs) and Wilton Rancheria (Wilton), both of whom asked for additional information on the project and copies of the records search and draft CRSIR conducted for the project. In preparation of the Extended Phase 1 (XPI) subsurface investigation, SHRA contacted Shingle Springs and Wilton to inform them of the proposed fieldwork and request if they had any concerns. Both tribes showed concern regarding cultural resources in the APE. On February 6, 2017, representatives from SHRA, ESA, Shingle Springs, and Wilton met on-site to discuss the XPI and the tribes' concerns. Both tribes stated that the Native American village *Sek*, recorded in ethnographic accounts, was present in the APE and vicinity and that the project has potential to impact the resource. All parties agreed that monitors from both tribes would participate in the XPI fieldwork, and Shingle Springs provided SHRA with background research regarding *Sek*. However, upon review by SHRA and ESA, the background research provided describes *Sek* as being located on the north bank of the American River, across the river from and outside the APE. Both tribes provided a monitor during the XPI fieldwork. Documentation of the project correspondence with the NAHC and other Native American representatives is included in **Appendix E** of this IS/EA.

3.4.3 Applicable Policies and Regulations

Federal Regulations

Federal regulations for cultural resources are primarily governed by Section 106 of the National Historic Preservation Act (NHPA) of 1966, which applies to actions taken by federal agencies. The goal of the Section 106 review process is to offer a measure of protection to sites that are listed or determined eligible for listing on the National Register of Historic Places (National Register). The criteria for determining National Register-eligibility are found in 36 *Code of Federal Regulations* (CFR) Part 60. Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on Historic Properties and affords the federal Advisory Council on Historic Preservation a reasonable opportunity to comment on such undertakings. The Council's implementing regulations, "Protection of Historic Properties," are found in 36 CFR Part 800. The National Register criteria (36 CFR 60.4) are used to evaluate resources when complying with Section 106 of the NHPA. Those criteria state that eligible resources comprise districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and any of the following:

1. Are associated with events that have made a significant contribution to the broad patterns of our history;
2. Are associated with the lives of persons significant in our past;
3. Embody the distinctive characteristics of a type, period, or method of construction, or that possess high artistic values, or that represent a significant distinguishable entity whose components may lack individual distinction; or
4. Have yielded or may be likely to yield, information important to history or prehistory.

Eligible properties must meet at least one of the criteria and exhibit integrity. Historical integrity is measured by the degree to which the resource retains its historical attributes and conveys its historical character, the degree to which the original fabric has been retained, and the reversibility of changes to the property.

Certain types of properties are usually excluded from consideration for listing in the National Register, but can be considered if they meet special requirements in addition to meeting Criteria A to D. The following seven Criteria Considerations deal with properties usually excluded from listing in the National Register: Religious properties, moved properties, birthplaces and graves, cemeteries, reconstructed properties, commemorative properties, and properties that have achieved significance within the past 50 years.

Archaeological site evaluation assesses the potential of each site to meet one or more of the criteria for National Register-eligibility based upon visual surface and subsurface evidence (if available) at each site location, information gathered during the literature and records searches, and the researcher's knowledge of and familiarity with the historic or prehistoric context associated with each site.

State Regulations

Under CEQA, public agencies must consider the impacts of their actions on *historical resources*, *unique archaeological resources*, and *tribal cultural resources*. Pursuant to PRC 21084.1, a "project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment." PRC 21083.2 requires agencies to determine whether proposed projects would have effects on unique archaeological resources, while PRC 21080.3.1, 21084.2, and 21084.3 require that a project's impacts on tribal cultural resources be considered as part of the overall analysis of project impacts.

Historical Resources

Historical resource is a term with a defined statutory meaning (refer to PRC 21084.1 and CEQA Guidelines 15064.5[a] and [b]). The term applies to any resource listed in or determined to be eligible for listing in the California Register. The California Register includes California resources listed in or formally determined eligible for listing in the National Register, as well as certain California State Historic Landmarks (CHLs) and California Point of Historical Interest (PHIs).

Properties of local significance that have been designated under a local preservation ordinance (local landmarks or landmark districts) or that have been identified in a local historical resources inventory may be eligible for listing in the California Register and are presumed to be historical resources for purposes of CEQA unless a preponderance of evidence indicates otherwise (PRC 5024.1 and California Code of Regulations Title 14 Section 4850). Unless a resource listed in a survey has been demolished, lost substantial integrity, or there is a preponderance of evidence indicating that it is otherwise not eligible for listing, a lead agency should consider the resource to be potentially eligible for the California Register.

In addition to assessing whether historical resources potentially impacted by a project are listed or have been identified in a survey process, lead agencies have a responsibility to evaluate them against the California Register criteria prior to making a finding as to a proposed project's impacts to historical resources (PRC 21084.1; CEQA Guidelines 15064.5[a][3]). In general, an historical resource, under this approach, is defined as any object, building, structure, site, area, place, record, or manuscript that:

1. Is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political or cultural annals of California; and
2. Meets any of the following criteria:
 - a. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
 - b. Is associated with the lives of persons important in our past;
 - c. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
 - d. Has yielded, or may be likely to yield, information important in prehistory or history.

For historic structures, CEQA Guidelines 15064.5(b)(3) indicate that a project that follows the Secretary of the Interior's Standards (SOIS) for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings, or the SOI Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings, shall mitigate impacts to a level of less than significant. Potential eligibility also rests upon the integrity of the resource. Integrity is defined as the retention of the resource's physical identity that existed during its period of significance. Integrity is determined through considering the setting, design, workmanship, materials, location, feeling, and association of the resource.

Archaeological resources can qualify as "historical resources" (CEQA Guidelines 15064.5[c][1]). In addition, PRC 5024 requires consultation with the Office of Historic Preservation when a project may impact historical resources located on state-owned land.

Unique Archaeological Resources

CEQA also requires lead agencies to consider whether projects will impact unique archaeological resources. PRC 21083.2(g) states that “unique archaeological resource means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information;
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type; or
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person”

Treatment options under PRC 21083.2 include activities that preserve such resources in place and in an undisturbed state. Other acceptable methods of mitigation under PRC 21083.2 include excavation and curation, or study in place without excavation and curation (if the study finds that the artifacts would not meet one or more of the criteria for defining a unique archaeological resource).

Advice on procedures to identify cultural resources, evaluate their importance, and estimate potential effects is given in several agency publications such as the series produced by the Governor’s Office of Planning and Research (OPR). The technical advice series produced by OPR strongly recommends that Native American concerns and the concerns of other interested persons and corporate entities, including, but not limited to, museums, historical commissions, associations, and societies, be solicited as part of the process of cultural resources inventory. In addition, California law protects Native American burials, skeletal remains, and associated grave goods regardless of their antiquity and provides for the sensitive treatment and disposition of those remains.

Paleontological Resources

CEQA affords protection to paleontological resources, as the CEQA Guidelines indicate that a project would have a significant environmental impact if it would disturb or destroy a unique paleontological resource or site or unique geologic feature. Although CEQA does not specifically define a unique paleontological resource or site, the definition of a unique archaeological resource (PRC 21083.2) can be applied to a unique paleontological resource or site and a paleontological resource could be considered a historical resource if it has yielded, or may be likely to yield, information important in prehistory or history under PRC 15064.5 (a)(3)(D).

Tribal Cultural Resources

Effective for projects for which a notice of preparation or notice of negative declaration/mitigated negative declaration was filed on or after July 1, 2015, CEQA requires that a project’s impacts on tribal cultural resources be considered as part of the overall analysis of project impacts

(PRC 21080.3.1, 21084.2, and 21084.3). The significance of a tribal cultural resource is assessed by evaluating its eligibility for listing on the California Register or a local register of historical resources. Additionally, a lead agency can independently determine a resource to be a tribal cultural resource. Because California Native American tribes are considered experts with respect to tribal cultural resources, the analysis of whether project impacts may result in a substantial adverse change to the significance of a tribal cultural resource is heavily dependent on consultation efforts conducted between the lead agency and relevant California Native American tribes during the CEQA process.

California Public Resources Code 5097.5

PRC 5097.5 provides protection for cultural and paleontological resources, where PRC 5097.5(a) states, in part, that:

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

California Health and Safety Code Sections 7050.5, 7051, and 7054

Section 7050.5(b) of the California Health and Safety code specifies protocol when human remains are discovered. The code states:

In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined, in accordance with Chapter 10 (commencing with Section 27460) of Part 3 of Division 2 of Title 3 of the Government Code, that the remains are not subject to the provisions of Section 27492 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of death, and the recommendations concerning treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in PRC 5097.98.

California Public Resources Code Section 15064.5 (e)

CEQA Guidelines 15064.5(e) requires that excavation activities be stopped whenever human remains are uncovered and that the county coroner be called in to assess the remains. If the county coroner determines that the remains are those of Native Americans, the NAHC must be contacted within 24 hours. At that time, the lead agency must consult with the appropriate Native Americans, if any, as timely identified by the NAHC. CEQA Guidelines 15064.5 directs the lead agency (or project proponent), under certain circumstances, to develop an agreement with the Native Americans for the treatment and disposition of the remains.

3.4.4 Summary of Analysis under the 2035 General Plan Master EIR and River District Specific Plan EIR

2035 General Plan Master EIR

The Master EIR evaluated the potential effects of development under the 2035 General Plan on prehistoric and historic-period resources. A number of General Plan policies were adopted as mitigation for impacts to cultural resources. Policies that are applicable to the project are listed below. Notwithstanding application of these policies, the Master EIR found implementation of the 2035 General Plan would have a significant and unavoidable effect on historic resources and archaeological resources.

Policy HCR 2.1.1: Identification. The City shall identify historic and cultural resources including individual properties, districts, and sites (e.g., archaeological sites) to ensure adequate protection of these resources.

Policy HCR 2.1.2: Applicable Laws and Regulations. The City shall ensure compliance with City, State, and Federal historic preservation laws, regulations, and codes to protect and assist in the preservation of historic and archaeological resources, including the use of the California Historical Building Code as applicable. Unless listed in the Sacramento, California, or National registers, the City shall require discretionary projects involving resources 50 years and older to evaluate their eligibility for inclusion on the California or Sacramento registers for compliance with the California Environmental Quality Act.

Policy HCR 2.1.3: Consultation. The City shall consult with appropriate organizations and individuals (e.g., [CHRIS] Information Centers, the [NAHC], the CA [OPR] “Tribal Consultation Guidelines,” etc.) and shall establish a public outreach policy to minimize potential impacts to historic and cultural resources.

Policy HCR 2.1.10: Early Project Consultation. The City shall minimize potential impacts to historic and cultural resources by consulting with property owners, land developers, and the building industry early in the development review process.

Policy HCR 2.1.11: Compatibility with Historic Context. The City shall review proposed new development, alterations, and rehabilitation/remodels for compatibility with the surrounding historic context. The City shall pay special attention to the scale, massing, and relationship of proposed new development to surrounding historic resources.

Policy HCR 2.1.16: Archaeological & Cultural Resources. The City shall develop or ensure compliance with protocols that protect or mitigate impacts to archaeological and cultural resources including prehistoric resources.

River District Specific Plan EIR

The River District Specific Plan EIR evaluated the potential for the buildout of the River District Specific Plan (RDSP) to affect cultural resources. A number of mitigation measures were adopted to address potentially significant effects. Measures that are applicable to the project are listed below. Notwithstanding application of the mitigations, impacts to cultural resources were found

to be significant and unavoidable, but only for a discrete portion of the RDSP planning area (demolition of the former State Printing Plant) that is not a part of the proposed project site.

Mitigation Measure 5.3-2:

- a) Prior to any excavation, grading or other construction on the project site, and in consultation with Native American Tribes and the City's Preservation Director: a qualified archaeologist will prepare a testing plan for testing areas proposed for excavation or any other ground-disturbing activities as part of future projects, which plan shall be approved by the City's Preservation Director. Testing in accordance with that plan will then ensue by the qualified archaeologist, who will prepare a report on findings, and an evaluation of those findings, from those tests and present that report to the City's Preservation Director. Should any findings be considered as potentially significant, further archaeological investigations shall ensue, by the qualified archaeologist, and the archaeologist shall prepare reports on those investigations and evaluations relative to eligibility of the findings to the Sacramento, California or National Registers of Historic & Cultural Resources/ Places and submit that report to the City's Preservation Director and SHPO with recommendations for treatment, disposition, or reburials of significant findings, as appropriate. Also, at the conclusion of the pre-construction testing, evaluation and reports and recommendations, a decision will be made by the City's Preservation Director as to whether on-site monitoring during any project-related excavation or ground-disturbing activities by a qualified archaeologist will be required.
- b) Discoveries during construction: For those projects where no on-site archaeological monitoring was required, in the event that any prehistoric subsurface archaeological features or deposits, including locally darkened soil ("midden"), that could conceal cultural deposits, animal bone, obsidian and/or mortars are discovered during construction-related earth-moving activities, all work within 50 meters of the resources shall be halted, and a qualified archaeologist will be consulted to assess the significance of the find. Archaeological test excavations shall be conducted by a qualified archaeologist to aid in determining the nature and integrity of the find. If the find is determined to be significant by the qualified archaeologist, representatives of the City and the qualified archaeologist shall coordinate to determine the appropriate course of action. All significant cultural materials recovered shall be subject to scientific analysis and professional museum curation. In addition, a report shall be prepared by the qualified archaeologist according to current professional standards.
- c) If a Native American site is discovered, the evaluation process shall include consultation with the appropriate Native American representatives.
- d) If Native American archaeological, ethnographic, or spiritual resources are involved, all identification and treatment shall be conducted by qualified archaeologists, who are certified by the Society of Professional Archaeologists (SOPA) and/or meet the federal standards as stated in the Code of Federal Regulations (36 CFR 61), and Native American representatives, who are approved by the local Native American community as scholars of the cultural traditions.
- e) In the event that no such Native American is available, persons who represent tribal governments and/or organizations in the locale in which resources could be affected shall be consulted. If historic archaeological sites are involved, all identified

treatment is to be carried out by qualified historical archaeologists, who shall meet either Register of Professional Archaeologists (RPA), or 36 CFR 61 requirements.

- f) If a human bone or bone of unknown origin is found during construction, all work shall stop in the vicinity of the find, and the County Coroner, and City's Preservation Director, shall be contacted immediately. If the remains are determined to be Native American, the Coroner shall notify the Native American Heritage Commission, who shall notify the person most likely believed to be a descendant. The most likely descendant shall work with the contractor to develop a program for re-interment of the human remains and any associated artifacts. No additional work is to take place within the immediate vicinity of the find until the identified appropriate actions have taken place. Work can continue on other parts of the project site while the unique archaeological resource mitigation takes place.

3.4.5 Impact Assessment and Mitigation Measures

City of Sacramento Standards of Significance

For purposes of CEQA, cultural resources impacts may be considered significant if construction and/or implementation of the proposed project would result in one or more of the following:

- Have the potential to affect historic properties pursuant to Section 106 of the NHPA, as amended, or cause a substantial change in the significance of a historical or archaeological resource as defined in CEQA Guidelines Section 15064.5; or
- Directly or indirectly destroy a unique paleontological resource; or,
- 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 PRC 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, or in a local register of historical resources as defined in PRC 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 PRC 5024.1(c). In applying the criteria set forth in PRC 5024.1(c), the lead agency shall consider the significance of the resource to a California Native American tribe.

HUD Evaluation Criteria

24 CFR 50.4 provides a listing of applicable environmental requirements, guidelines, and statutory obligations with which HUD or its applicants must comply. For cultural resources, these requirements include compliance with the NHPA and the Procedures for the Protection of Historic and Cultural properties (Advisory Council on Historic Properties), as codified in 36 CFR 800, which are the regulations that govern the Section 106 consultation process.

Other Applicable Evaluation Criteria

There are no other criteria that would be applicable to the proposed project.

Environmental Analysis

CR-1. Would the project have the potential to affect historic properties pursuant to Section 106 of the NHPA, as amended, or cause a substantial change in the significance of a historical or archaeological resource as defined in CEQA Guidelines Section 15064.5?

Alternative 1 – No Project

Under this alternative, existing activities in or around the project site would remain unchanged. Under NEPA, there would be **no effect**. Under CEQA, there would be **no impact** with respect to this criterion.

Alternative 2 – Twin Rivers Transit-Oriented Development and Light Rail Station Project

Through a records search, background research, pedestrian field survey, archaeological subsurface survey, and Native American consultation, three cultural resources were identified in the project area. The resources consist of one archaeological isolate (P-34-001378) and two architectural resources (Twin Rivers Housing Project and 401 North 12th Street [Loaves and Fishes]). All three resources were evaluated as not eligible for listing in the National Register and as not qualifying as historical resources, as defined in CEQA Guidelines 15064.5. Additionally, P-34-001378 does not qualify as a unique archaeological resource, as defined in CEQA Guidelines 15064.5. The California State Historic Preservation Office (SHPO) concurred with this determination on April 6, 2017 (see Appendix F of this IS/EA for the letter of concurrence from SHPO). Therefore, the proposed project is not anticipated to adversely affect an historic property, as defined by the NHPA, or impact any historical resources or archaeological resources, as defined in CEQA Guidelines 15064.5. However, if any previously unrecorded archaeological resource were identified during project implementation, particularly ground-disturbing construction activities, and were found to qualify as an historic property, as defined by the NHPA, or as an historical resource or unique archaeological resource, per CEQA Guidelines 15064.5, any impacts to the resource resulting from the proposed project could be **potentially significant**. Any such potential significant impacts would be reduced to a less than significant level by implementing **Mitigation Measure 5.3-2** from the River District Specific Plan EIR. Implementation of the measure would reduce this impact to **less than significant with mitigation** under CEQA and **no adverse effect** under NEPA.

CR-2. Would the project directly or indirectly destroy a unique paleontological resource?

Alternative 1 – No Project

Under this alternative, existing activities in or around the project site would remain unchanged. Under NEPA, there would be **no effect**. Under CEQA, there would be **no impact** with respect to this criterion.

Alternative 2 – Twin Rivers Transit-Oriented Development and Light Rail Station Project

The analysis of impacts related to paleontological resources is a requirement of CEQA; there is no comparable federal requirement. As such, the analysis for this topic relates to CEQA only.

The City of Sacramento is not highly sensitive for paleontological resources due to the absence of fossil-bearing soils and rock formations. Proposed project ground-disturbing activities would all occur in Holocene alluvium, which is not considered sensitive for paleontological resources. Therefore, with respect to this criterion, there would be **no impact** under CEQA.

CR-3. Would the project disturb any human remains, including those interred outside of formal cemeteries?

Alternative 1 – No Project

Under this alternative, existing activities in or around the project site would remain unchanged. Under NEPA, there would be **no effect**. Under CEQA, there would be **no impact** with respect to this criterion.

Alternative 2 – Twin Rivers Transit-Oriented Development and Light Rail Station Project

Through a records search, background research, pedestrian field survey, archaeological subsurface survey, and Native American consultation, no human remains are known to exist in the project area. Therefore, the proposed project is not anticipated to impact any human remains, including those interred outside of formal cemeteries. However, if any human remains were encountered during proposed project construction, any impacts to them resulting from the proposed project could be **potentially significant**. Any such potential significant impacts would be reduced to a less than significant level by implementing **Mitigation Measure 5.3-2** from the River District Specific Plan EIR. Implementation of the measure would reduce this impact to **less than significant with mitigation** under CEQA and **no adverse effect** under NEPA.

CR-4. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, as defined in PRC Section 21074?

Alternative 1 – No Project

Under this alternative, existing activities in or around the project site would remain unchanged. Under NEPA, there would be **no effect**. Under CEQA, there would be **no impact** with respect to this criterion.

Alternative 2 – Twin Rivers Transit-Oriented Development and Light Rail Station Project

Through a records search, background research, pedestrian field survey, archaeological subsurface survey, and Native American consultation, no tribal cultural resources, as defined in PRC 21074, were identified in the project area. Though Shingle Springs and Wilton showed concern that the Native American village *Sek*, recorded in ethnographic accounts, was present in

the project area and vicinity and that the proposed project has potential to impact the resource, ethnographic accounts clearly describe the village as being on the north bank of the American River, across the river from and outside the project area. Additionally, no evidence of the village was encountered during the archaeological subsurface survey. Therefore, the proposed project is not anticipated to impact tribal cultural resources, as defined in PRC 21074.

However, the archaeological sensitivity of the project site for buried deposits is high and several documented Native American villages are known to have been present in proximity to the project site. If any previously unrecorded archaeological resource that qualifies as a tribal cultural resource, as defined in PRC 21074, were encountered during proposed project implementation, any impacts to the resource resulting from the proposed project could be **potentially significant**. Any such potential significant impacts would be reduced to a less than significant level by implementing **Mitigation Measure 5.3-2** from the River District Specific Plan EIR. Implementation of the measure would reduce this impact to **less than significant with mitigation** under CEQA and **no adverse effect** under NEPA.

Mitigation Measures

No additional mitigation measures are necessary beyond **Mitigation Measure 5.3-2** from the River District Specific Plan EIR.

References

- Brienes, West, and Schultz, *Overview of Cultural Resources in the Central Business District, Sacramento, CA*, 1981.
- California Division of Mines and Geology, *Geologic Map of California: Sacramento Sheet*, Prepared by the State of California Department of Conservation, 1971.
- Casilear, George W., and Henry Bainbridge, *View of Sacramento City as it Appeared During the Great Inundation in January 1850*, Lithograph by Sarony, New York, NY, 1850.
- City of Sacramento, Sacramento Railyards Specific Plan, available, <http://www.cityofsacramento.org/~media/Corporate/Files/MISC-Uploads/SacRailyardsSPFinal.pdf>, December 2007.
- City of Sacramento, *City of Sacramento 2030 General Plan Master Environmental Impact Report*, pp. 6.4-8, 2009, Certified March 3, 2009.
- City of Sacramento, *Draft Master Environmental Impact Report for the City of Sacramento 2035 General Plan Update*, 2014.
- City of Sacramento, *Sacramento 2035 General Plan Background Report*, 2015.
- Farris, Glenn, and Kim J. Tremaine, *Draft Rediscovering a Legacy: Archaeological Monitoring Report for the Sacramento Regional Transit District Light Rail Extension Project*, prepared by Tremaine & Associates, Inc., West Sacramento, CA, prepared for Sacramento Regional Transit District, Sacramento, CA, October 2008.

Grady, Amber, and Robin Hoffman, *Twin Rivers Transit-Oriented Development and Light Rail Station Project Cultural Resources Survey and Inventory Report*, prepared by Environmental Science Associates, Sacramento, CA, prepared for Sacramento Housing and Redevelopment Agency, Sacramento, CA, February 2017.

Heizer, Robert F., volume editor, *California*, Handbook of North American Indians, Vol. 8, William C. Sturtevant, general editor, Smithsonian Institution, Washington, D.C., 1978.

Heizer, Robert F., and Thomas R. Hester, "Names and Locations of Some Ethnographic Patwin and Maidu Indian Villages", *University of California Archaeological Research Facility Contributions* 9(5):79-118, University of California Press, Berkeley, CA, 1970.

Kroeber, Alfred L., *Handbook of the Indians of California*, Bureau of American Ethnology Bulletin 78, Smithsonian Institution, Washington, D.C., 1976 reprinted ed., Dover Publications, Inc., New York, NY, 1925 [1976].

Kroeber, Alfred L., *Nisenan Geography*, University of California Publications in American Archaeology and Ethnology 24(4):253-290, 1929.

Lewiston, Pamela, "RE: DOS RIOS CONSTRUCTION PROJECT SITE REVIEW (PAR REF NO. 98-621), letter report, prepared by PAR Environmental Services, Inc., Sacramento, CA, prepared for William Enyeart, Sacramento Housing and Redevelopment Agency, Sacramento, CA, April 22, 1998.

Meyer, Jack, and Jeffery Rosenthal, *A Geoarchaeological Overview and Assessment of Caltrans District 3*, prepared by Far Western Anthropological Research Group, Inc., Davis, CA, prepared for Caltrans District 3, Sacramento, CA, 2008.

Moratto, Michael J., *California Archaeology*, 2004 reprinted ed., Coyote Press, Salinas, CA, 1984 [2004].

PAR Environmental Services, Inc., "DR-1: Dos Rios Trash Deposit, P-34-001378", State of California Department of Parks and Recreation 523 form set, April 17, 1998.

Tatsch, Sheri Jean, "The Nisenan: Dialects & Districts of a Speech Community", PhD dissertation, Office of Graduate Studies, University of California, Davis, CA, 2006.

USDA (U.S. Department of Agriculture), "Natural Resources Conservation Service Web Soil Survey", version 3.1, available, <http://websoilsurvey.sc.egov.usda.gov/app/WebSoilSurvey.aspx>, accessed June 26, 2016.

USGS (U.S. Geological Survey), *Sacramento East, California*, 7.5-minute series topographic map, 1980.

Warner, W.H., *Map of Sacramento, Plan of Sacramento City*, Historic Urban Plans, Ithaca, NY, 1969 reproduction, 1849 [1969].

Wilson, Norman L., and Arlean H. Towne, "Nisenan", In *California*, edited by Robert F. Heizer, pp. 387-397, Handbook of North American Indians, Vol. 8, William C. Sturtevant, general editor, Smithsonian Institution, Washington, DC, 1978.

3.5 Environmental Justice

3.5.1 Introduction

The purpose of the Environmental Justice analysis, as defined in Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*,¹ is to consider whether project-related significant impacts are disproportionately borne by minorities or low-income populations. Pursuant to this executive order, federal agencies must consider health and environmental effects on minorities and low-income populations living near a proposed project. Environmental Justice is a NEPA-only requirement. There is no CEQA equivalent. This section addresses Executive Order 12898 by first determining whether there are Environmental Justice communities (defined as predominantly minority or predominantly low-income per federal guidelines) within the project study area and, if so, whether effects of the proposed project would affect these communities disproportionately. Related issues associated with this analysis can be found in Section 3.9, Land Use, Population, Housing, and Socioeconomics.

To assist the reader in understanding the following analysis, the following terms are defined below:

Disproportionate Effect: A disproportionate effect is defined as an effect that is predominantly borne, more severe, or of a greater magnitude in areas with environmental justice populations than in other areas.

Low-Income Status or Person: A person whose median household income is at or below the U.S. Department of Health and Human Services (HHS) poverty guidelines (or “poverty level”).

Minority Status or Person: A person who identifies as one of the following demographic groups when responding to the U.S. Census: American Indian and Alaska Native, Asian, Black or African American, Native Hawaiian and Other Pacific Islander, or Hispanic or Latino.

3.5.2 Environmental Setting

For the affected study area, the demographic characteristics were identified based on data gathered from the 2010 Census. The demographic characteristics reviewed include:

1. Total population,
2. Percent of population of minority status in the affected study area,
3. Percent of population of low-income status in the affected study area,
4. Percent of population of minority status in the City of Sacramento, and
5. Percent of population of low-income status in the City of Sacramento.

¹ Executive Order 12898 was signed by President Bill Clinton on February 11, 1994.

The following criteria were used to determine if the affected area is an Environmental Justice community:²

1. At least one-half of the population is of minority status,
2. At least one-quarter the population is of low-income status,
3. The percentage of the population that is of minority status is at least 10 percentage points higher than for the City of Sacramento, and
4. The percentage of the population that is of low-income status is at least 10 percentage points higher than for the City of Sacramento.

Meeting any of the criteria listed above would qualify the community as an Environmental Justice community.

The U.S. Environmental Protection Agency's (EPA) EJSCREEN Environmental Justice Screening and Mapping Tool was used to compile the U.S. Census data used for this analysis. The mapping and screening tool provides a nationally consistent dataset and approach for synthesizing the environmental and demographic factors that are the basis of environmental justice analyses.

Population and Income Characteristics

General demographic information in the project area was obtained from U.S. Census data for the year 2010. The Census block groups directly within the Twin Rivers Community Housing Complex and within the Twin Rivers Community Housing Expansion Area were used as the study area for demographic characteristics. **Figure 3.5-1** shows the boundaries of the block groups.

Race and Ethnicity

Ethnic population data for the Census blocks within the study area are presented in **Table 3.5-1**. Based on the race and ethnicity data, the Census blocks would all be considered minority Environmental Justice communities.³ Each of these blocks contains minority persons making up more than 50 percent of the population of these areas.⁴ The percentage of minority persons in all but one of the blocks (Block 1046) is also more than 10 percentage points higher than the minority population of the larger City of Sacramento.

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- ² These criteria are based on guidance from relevant documents issued by federal agencies. These include:
- Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. February 11, 1994, 59 Federal Register 7630.
 - U.S. Environmental Protection Agency, *Interim Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analysis, Office of Federal Activities*. September 30, 1997.
 - Federal Highway Administration, *Interim Guidance: Addressing Environmental Justice in the Environmental Assessment (EA)/Environmental Impact Statement (EIS)*. March 2, 1999.
- ³ Note that Block 2008, the bulk of which is comprised of the Twin Rivers Community Housing Expansion Area parcels, is currently vacant and contains no residences, and thus has zero population.
- ⁴ The 50 percent threshold is based upon guidance provided in the Council on Environmental Quality's "Environmental Justice: Guidance Under the National Environmental Policy Act. December 10, 1997.



SOURCE: ESRI, 2012; City of Sacramento, 2016;
 U.S. Census Bureau, 2013; ESA, 2016

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Figure 3.5-1
 Census Tract Boundaries

**TABLE 3.5-1
RACE/ETHNICITY STATUS OF CENSUS BLOCK GROUPS IN THE PROJECT STUDY AREA**

Census Tract	Block	Total Population	White Only	Black Only	American Indian or Alaskan Native Only	Asian Only	Native Hawaiian or Pacific Islander Only	Other Race Only	Percent Minority	City of Sacramento Percent Minority	EJ Minority Community?
53.01	1042	45	10	30	1	0	0	0	77.7	55.0	Yes
53.01	1043	69	12	45	1	1	0	4	82.6	55.0	Yes
53.01	1044	113	3	71	1	3	0	17	97.3	55.0	Yes
53.01	1045	85	16	39	9	7	0	5	81.1	55.0	Yes
53.01	1046	72	28	25	1	0	3	0	61.1	55.0	Yes
53.01	1047	37	10	12	0	5	0	5	72.9	55.0	Yes
53.01	1050	140	20	63	1	6	1	21	85.7	55.0	Yes
53.01	2008	0	0	0	0	0	0	0	NA	55.0	NA

NOTE: NA = Not Applicable

SOURCE: U.S. Census Bureau, American Fact Finder. Race: 2010. Table P1. Accessed June 29, 2016.