2018 Regional Transportation Plan and Sustainable Communities Strategy for the Shasta Region

Final Supplemental Environmental Impact Report

SCH#2014022018

prepared by

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prepared with the assistance of

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August 2018

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Environmental Scientists Planners Engineers
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Executive Summary

Project Synopsis

Project Lead Agency

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Background

This Supplemental Environmental Impact Report (SEIR) augments the previously certified Programmatic Environmental Impact Report (EIR) for the 2015 RTP/SCS (State Clearinghouse # 2014022018). The SRTA Board of Supervisors certified the EIR on June 30, 2015. For purposes of this SEIR, the previously certified EIR is referred to herein as the 2015 EIR. The impacts of the current 2015 RTP/SCS were analyzed in the previously certified 2015 EIR, which was a Program EIR. The proposed 2018 RTP/SCS is an update of the current 2015 RTP/SCS. The analysis in this SEIR is also programmatic and is focused on the potential changes in environmental effects that could result from the updates to the 2015 RTP/SCS that are included in the proposed 2018 RTP/SCS, including updates or changes to policies, projects, and growth scenarios. Therefore, this SEIR is being prepared to analyze only the changes to the 2015 RTP/SCS or changes in circumstances under which the RTP/SCS projects would be implemented since certification of the 2015 EIR.

SRTA prepared an Initial Study for the 2018 RTP/SCS in February 2018. The Initial Study, included as Appendix A, served as the preliminary review of the environmental impacts analyzed in the 2015 EIR to determine what issue areas require further review in this SEIR. For any issue areas where impacts would be similar to or less than the impact level identified in the previous 2015 EIR, no further analysis beyond the Initial Study was warranted (see Appendix A). If previous mitigation measures from the 2015 EIR still apply and would reduce impacts to a less than significant level, those measures are listed in the Initial Study in the same manner as in the 2015 EIR, with minor clarification and revisions, as directed by SRTA.

Project Description

The underlying purpose of SRTA's 2018 Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS), which updates the current 2015 RTP/SCS, is to coordinate and facilitate the programming and budgeting of all transportation facilities and services within Shasta County through 2040 and demonstrate how the region will integrate transportation and land use planning to meet GHG reduction targets established by CARB under Senate Bill (SB) 375.

The 2018 RTP/SCS is also intended to show how SRTA will meet the transportation needs of the region through 2040, considering existing and projected future land use patterns, as well as forecasted population and job growth. The 2018 RTP/SCS plans for and programs approximately $2.18 billion in revenues expected to be available to SRTA from all transportation funding sources

over the course of the planning period. It identifies and prioritizes expenditures of anticipated funding for transportation projects that involve all transportation modes: highways, streets and roads, transit, rail, bicycle and pedestrian; aviation, as well as transportation demand management (TDM) and transportation system management (TSM).

The primary objective of updating the RTP/SCS is to comply with applicable regulatory requirements, including changes in legislative requirements that have occurred since the current 2015 RTP/SCS was adopted on June 30, 2015. The 2018 update is focused on continued implementation of the 2015 RTP/SCS, with minor updates to ensure consistency with federal, state and local planning requirements. The 2018 RTP/SCS transportation improvements project list will update the 2015 RTP/SCS project list by removing projects that have been completed since 2015, modifying some projects that continue to be on the list based on new information, and adding approximately 35 net new minor projects to the list. None of the modified or new projects on the 2018 RTP/SCS list would be substantially different in terms of geographical location, type of project, or size of project to those on the 2015 RTP/SCS list.

In addition, the land use scenario envisioned by the 2018 RTP/SCS is consistent to that contained in the 2015 RTP/SCS, concentrating forecasted growth in population and employment in the region in urban areas and corridors of the County while preserving the distinct identity of existing cities and towns.

Alternatives

This SEIR examines three alternatives to the proposed 2018 RTP/SCS:

Alternative 1, No Project Alternative, includes a land use pattern comprised of existing land use trends dictated by the current land use plans of the applicable jurisdictions within the region, such as the Shasta County General Plan (Shasta County 2004) and City of Redding General Plan (City of Redding 2000). In other words, it assumes that current regional growth trends would continue, but it updates the total growth to be consistent with the updated Regional Growth Forecast, as population growth in the region would occur regardless of the 2018 RTP/SCS. Rather than focusing on coordinating transportation projects that serve infill and transit oriented development, the transportation network would be comprised of committed transportation projects included in the Regional Transportation Improvement Program (RTIP) (SRTA 2017) and Federal Transportation Improvement Program (FTIP) (SRTA 2016).

Alternative 2, No Project 2015 RTP/SCS Alternative, represents the continued implementation of the current 2015 RTP/SCS, updated to reflect current conditions and forecasts. Because this alternative updates the 2015 RTP/SCS with current conditions and forecasts, the land use scenario under this alternative would be similar to the land use scenario envisioned by the 2018 RTP/SCS. Briefly, this land use scenario concentrates the forecasted growth in population and employment in the region in urban areas and corridors of the County while preserving the distinct identity of existing cities and towns. Transportation improvements included under this alternative also would be similar to the 2018 RTP/SCS. However, the 35 net new projects that would be added to the transportation project list under the 2018 RTP/SCS would not be added to the list or constructed under this alternative.

Alternative 3, Increased Infill Alternative, provides for more compact development, more infill development, and less city expansion than the proposed 2018 RTP/SCS. Alternative 3 would result in higher average residential density, a greater percentage of multi-family housing, and a greater percentage of housing within and near downtown areas and job centers relative to the proposed

2018 RTP/SCS. The transportation network in this alternative includes additional transit investments in alternative modes intended to serve shorter, local trips given the more concentrated growth pattern. Specifically, active transportation investments such as bicycle facilities, sidewalks, traffic calming measures and intersection safety improvements would be prioritized. Under Alternative 3, investment would be focused on closing transit gaps by enhancing local transit bus service rather than interregional or long distance services. In addition, active transportation projects such as bicycle facilities, trails and pedestrian improvements would be programmed throughout the region under this alternative.

Each alternative is described in greater detail and analyzed in Section 6.0, *Alternatives*, to determine whether environment impacts would be similar to, less than, or greater than those of the proposed 2018 RTP/SCS.

Areas of Known Controversy

Areas of controversy associated with the proposed 2018 RTP/SCS are made known through comments received during the Notice of Preparation (NOP) process, as well as input solicited during public scoping meetings and an understanding of the community issues in the region. The SEIR scoping process and comments received in response to the NOP did not identify areas of known controversy for the proposed 2018 RTP/SCS. Public comments received during the NOP scoping period are summarized in Section 1.0, *Introduction*.

Issues to Resolve

Section 15123(b)(3) of the *State CEQA Guidelines* requires that an EIR contain a discussion of issues to be resolved including the choice among the project and alternatives, and whether or how to mitigate significant effects. Issues to be resolved include:

- How to address impacts from the SCS land use scenario that must be mitigated by the local land use authority, given that SRTA does not have jurisdiction over land use regulations.
- How best to require mitigation measures that can be enacted by implementing agencies in a manner to ensure CEQA streamlining for qualifying projects, per SB 375 and other laws, can occur.
- Whether to approve the proposed 2018 RTP/SCS or an alternative.

Summary of Impacts and Mitigation Measures

Table ES-1 summarizes the environmental impacts, proposed mitigation measures, and level of significance after application of mitigation, as applicable, of the 2018 RTP/SCS for issue areas evaluated in the SEIR. Impacts are categorized as follows:

- **Significant and Unavoidable.** An impact that cannot be reduced to below the threshold level given reasonably available and feasible mitigation measures. Such an impact requires a Statement of Overriding Considerations to be issued if the project is approved per Section 15093 of the *State CEQA Guidelines*.
- **Less than Significant with Mitigation Incorporated.** An impact that can be reduced to below the threshold level given reasonably available and feasible mitigation measures. Such an impact requires findings under Section 15091 of the *State CEQA Guidelines*.

- **Less than Significant.** An impact that may be adverse, but does not exceed the threshold levels and does not require mitigation measures. However, mitigation measures that could further lessen the environmental effect may be suggested if readily available and easily achievable.
- **No Impact:** The proposed project would have no effect on environmental conditions or would reduce existing environmental problems or hazards.

Issues that were found to have potentially significant impacts in the Initial Study (Appendix A) that were either not evaluated in the 2015 EIR or would potentially change in severity beyond what was identified in the 2015 EIR and therefore required additional analysis in this SEIR include air quality, greenhouse gas (GHG) emissions, hazards and hazardous materials, transportation/traffic, and tribal cultural resources. Table ES-1 summarizes the impacts related to these issues as well as applicable mitigation measures to reduce impacts, as identified in this SEIR.

Table ES-1 Summary of Environmental Impacts

Impact	Mitigation Measure (s)	Significance After Mitigation
Air Quality		
Impact AQ-1. Construction of transportation improvement projects and the land use pattern envisioned by the 2018 RTP/SCS would generate short-term air pollutant emissions. Due to the inclusion of a larger number of projects, implementation of the 2018 RTP/SCS would potentially result in higher quantities of short-term air pollutant emissions than implementation of the 2015 RTP/SCS.	**AQ-1 Control Measures for Construction Air Pollutant Emissions.** The individual project lead agency shall ensure that all feasible and appropriate Shasta County AQMD Standard Mitigation Measures (SMMS) and Best Available Mitigation Measures (BAMMs) are implemented. The measures shall be noted on all construction plans and the lead agency shall perform periodic site inspections. Shasta County AQMD SMMs and BAMMs include, but are not limited to, the following: ▪ Fugitive dust emissions ▪ Implement all adequate dust control measures in a timely and effective manner during all phases of project development and construction; ▪ Water all excavated, stockpiled, or graded material to prevent fugitive dust from leaving property boundaries and causing a public nuisance or a violation of an ambient air standard. Watering shall occur at least twice daily with complete site coverage, preferably in the mid-morning and after work is completed each day; ▪ During initial grading, earth moving, or site preparation, construct a paved (or dust palliative treated) apron, at least 100 feet in length, onto the project site from the adjacent paved road(s); ▪ Sweep adjacent paved streets (recommend water sweeper with reclaimed water) at the end of each day if substantial volumes of soil materials have been carried onto adjacent public paved roads from the project site; ▪ Install sandbags or other erosion control measures to prevent silt runoff to roadways;	Less than significant.

Impact	Mitigation Measure (s)	Significance After Mitigation
	▪ Apply Department of Public Works approved non-toxic soil stabilizers in accordance with manufacturer's specifications to all inactive construction areas (i.e., previously graded areas which remain inactive for 96 hours); ▪ Replant vegetation in disturbed areas as quickly as possible; ▪ Cover all trucks hauling soil, sand, and other loose materials, or require all trucks to maintain at least two feet of freeboard; ▪ Use wheel washers or wash off tires of all trucks exiting the construction site; and ▪ Mitigate fugitive dust emissions from wind erosion in areas disturbed by construction activities (including storage piles) by application of either water or chemical dust suppressant. ▪ Exhaust emissions from diesel heavy equipment ▪ Shut down equipment when not in use to limit engine idling time. Idling time shall be limited to no more than 3 minutes. This idling limit does not apply to circumstances as stated in the California Environmental Protection Agency Air Resources Board Advisory Number 377 (2008); ▪ Provide regular equipment maintenance to prevent emission increases due to engine problems; ▪ Use low sulfur and low aromatic fuels meeting California standards for motor vehicle diesel fuel; and ▪ Use low-emitting gas and diesel engines meeting state and federal emissions standards (Tier II, III, IV) for construction equipment. ▪ Other emissions ▪ Use low VOC coatings for the architectural coating phase of construction. All coatings must meet the VOC limits per Shasta County AQMD Rule 3-31; ▪ Use asphalt mixtures appropriate for the time of year of application, while maintaining compliance with the lead agency's road design and construction standards; ▪ Use alternatives to open burning of vegetative material on the project site, unless otherwise deemed infeasible by the Shasta County AQMD. Suitable alternatives include chipping, mulching, or conversion to biomass fuel; ▪ Provide for temporary traffic control as appropriate during all phases of construction to improve traffic flow as deemed appropriate by the Department of Public Works and/or	

Impact	Mitigation Measure (s)	Significance After Mitigation
	Caltrans; and ▪ Schedule construction activities that redirect traffic flow during off-peak hours as much as practicable.	
Impact AQ-2. Implementation of the 2018 RTP/SCS would result in an overall reduction of on-road vehicle emissions when compared to baseline conditions and the 2040 No Project scenario. There would be no new impact.	None required.	Less than significant.
Impact AQ-3. The transportation improvement projects and the land use scenario envisioned by the 2018 RTP/SCS may facilitate increased exposure of sensitive receptors to hazardous air pollutants that may cause health risks and odors that may be a nuisance. However, implementation of the 2018 RTP/SCS would not result in a regional increase in toxic air emissions when compared to the baseline or 2040 No Project scenarios and would have similar localized impacts as those described in the 2015 RTP/SCS EIR.	**AQ-3 Air Toxics Health Risk Reduction Measures .** Consistent with the provisions contained in the *CARB Air Quality and Land Use Handbook* (June 2005), lead agencies shall identify appropriate and feasible measures to be incorporated into project building design for residential, school and other sensitive uses located within 500 feet of freeways, heavily travelled arterials, railways and other sources of DPM and other known carcinogens. The appropriate measures shall include one or more of the following methods as applicable: ▪ The lead agency shall retain a qualified air quality consultant to prepare a health risk assessment in accordance with CARB and the Office of Environmental Health and Hazard Assessment requirements to determine the exposure of project residents/occupants/users to stationary air quality polluters prior to issuance of a demolition, grading, or building permit. The health risk assessment shall be submitted to the lead agency for review and approval. The lead agency shall implement any approved health risk assessment recommendations to a level which would not result in exposure of sensitive receptors to substantial pollutant concentrations. Such measures may include: ▪ Do not locate sensitive receptors near the entry and exit points of a distribution center. ▪ Do not locate sensitive receptors in the same building as a perchloroethylene dry cleaning facility. ▪ Maintain a 50 foot buffer from a typical gas dispensing facility (under 3.6 million gallons of gas per year). ▪ Install, operate and maintain in good working order a central heating and ventilation system or other air take system in the building, or in each individual residential unit, that meets the efficiency standard of the minimum efficiency reporting value 13. The heating and ventilation system should include the following features:	Less than significant.

Impact	Mitigation Measure (s)	Significance After Mitigation
	Installation of a high efficiency filter and/or carbon filter-to-filter particulates and other chemical matter from entering the building. Either high efficiency particulate absorption filters or American Society of Heating, Refrigeration, and Air-Conditioning Engineers 85% supply filters should be used. ▪ Retain a qualified heating and ventilation consultant or high efficiency particulate absorption rate during the design phase of the project to locate the heating and ventilation system based on exposure modeling from the mobile and/or stationary pollutant sources. ▪ Maintain positive pressure within the building. ▪ Achieve a performance standard of at least one air exchange per hour of fresh outside filtered air. ▪ Achieve a performance standard of at least 4 air exchanges per hour of recirculation. ▪ Achieve a performance standard of 0.25 air exchanges per hour of in unfiltered infiltration if the building is not positively pressurized.	
Impact AQ-4. Re-entrained dust from transportation sources has the potential to increase airborne particulate matter levels in Shasta County. The 2018 RTP/SCS would increase VMT and vehicle speeds in Shasta County relative to both baseline and 2040 No Project conditions, which would contribute to greater levels of re-entrained dust from roadway activity.	There are no feasible mitigation measures to reduce re-entrained dust from roadway activity.	Significant and unavoidable.
Impact AQ-5. The 2018 RTP/SCS would reduce emissions of ozone precursors consistent with the goals of the 2015 Triennial Update of the NSVAB AQAP. It would not conflict with the 2015 AQAP Update. There would be no new impact relative to the 2015 RTP/SCS.	None required.	Less than significant.
Greenhouse Gas Emissions		
Impact GHG-1. Construction of transportation improvement projects and	**GHG-1 Control Measures for Construction GHG Emissions.** The individual project lead agency shall ensure that	Less than significant.

Impact	Mitigation Measure (s)	Significance After Mitigation
the land use pattern envisioned by the 2018 RTP/SCS would generate short-term GHG emissions. Due to the inclusion of a larger number of projects, implementation of the 2018 RTP/SCS would potentially result in higher quantities of short-term GHG emissions than implementation of the 2015 RTP/SCS.	applicable GHG-reducing emissions measures for off-road construction vehicles are implemented during construction. The measures shall be noted on all construction plans and the lead agency shall perform periodic site inspections. Applicable GHG-reducing measures include the following: ▪ Use of diesel construction equipment meeting CARB's Tier 2 standards or cleaner (i.e., Tier 3 or 4) off-road heavy-duty diesel engines, and comply with the State Off-Road Regulation; ▪ Use of on-road heavy-duty trucks that meet the CARB's 2007 or cleaner certification standard for on-road heavy-duty diesel engines, and comply with the State On-Road Regulation; ▪ All on and off-road diesel equipment shall not idle for more than 5 minutes. Signs shall be posted in the designated queuing areas and or job sites to remind drivers and operators of the 5 minute idling limit; ▪ Use of electric equipment in place of diesel-powered equipment, where feasible; ▪ Substitute gasoline-powered in place of diesel-powered equipment, where feasible; ▪ Use of alternatively fueled construction equipment on-site where feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane or biodiesel, in place of diesel powered equipment for 15 percent of the fleet; ▪ Use of materials sources from local suppliers; ▪ Recycling or reuse of at least 65 percent of construction waste materials.	
Impact GHG-2. Implementation of the 2018 RTP/SCS would not result in a significant increase in per capita GHG emissions from all sources compared to the 2040 No Project scenario and 2015 baseline.	None required.	Less than significant.
Hazards and Hazardous Materials (Wildland Fire Hazard)		
Impact HAZ-1. The 2018 RTP/SCS includes land development and transportation projects within areas of moderate, high, and very high fire hazard severity zones. Infill development emphasized in the 2018 RTP/SCS and existing regulations and programs would reduce the vulnerability of people and structures to wildland fires. However, a significant risk of loss, injury, or death from	**HAZ-1 Wildland Fire Risk Reduction.** If an individual transportation or land use project included in the 2018 RTP/SCS is located within the wildland-urban interface or areas favorable for wildland fires such that project-specific CEQA analysis finds a significant risk of loss, injury or death from fire, the implementing agency shall require appropriate mitigation to reduce the risk. Examples of mitigation to reduce risk of loss, injury or death from wildlife include, but are not limited to: ▪ Require adherence to the local hazards mitigation plan, as well as the local general plan policies and programs aimed at reducing the risk of wildland fires through land use compatibility, training, sustainable development, brush management, public outreach	Significant and unavoidable.

Impact	Mitigation Measure (s)	Significance After Mitigation
wildland fires would be possible given the fire hazard across Shasta County.	and service standards for fire departments. ▪ Encourage the use of fire-resistant vegetation native to the SRTA region and/or the local microclimate of the project site, and discourage the use of fire-prone species especially non-native, invasive species such as pampas grass or giant reed. ▪ Require a fire safety plan be submitted to and approved by the local fire protection agency. The fire safety plan shall include all of the fire safety features incorporated into the project and the schedule for implementation of the features. The local fire protection agency may require changes to the plan or may reject the plan if it does not adequately address fire hazards associated with the project as a whole or the individual phase of the project. ▪ Prohibit certain project construction activities with potential to ignite wildland fires during red-flag warnings issued by the National Weather Service for the project site location. Example activities that should be prohibited during red-flag warnings include welding and grinding outside of enclosed buildings. ▪ Require fire extinguishers to be onsite during construction of projects. Fire extinguishers shall be maintained to function according to manufacturer specifications. Construction personnel shall receive training on the proper methods of using a fire extinguisher.	
Transportation and Circulation		
Impact T-1. VMT, which is the metric used to evaluate the performance of the circulation system, would increase under implementation of the 2018 RTP/SCS compared to conditions in 2040 without its implementation. Therefore, the 2018 RTP/SCS could conflict with applicable plans, policies, and congestion management programs.	There are no feasible mitigation measures to reduce VMT.	Significant and unavoidable.
Tribal Cultural Resources		
Impact TCR-1. Implementation of proposed transportation improvements and future projects included in the land use scenario envisioned in the 2018 RTP/SCS has the	**TCR-1a. Identified Tribal Cultural Resources Impact Minimization.** Implementing agencies shall comply with AB 52, which may require formal tribal consultation. If the implementing agency determines that a project may cause a substantial adverse change to a tribal cultural resource, they shall implement mitigation measures identified in the consultation process required under PRC	Less than significant.

Impact	Mitigation Measure (s)	Significance After Mitigation
potential to impact tribal cultural resources.	Section 21080.3.2, or shall implement the following measures where feasible to avoid or minimize the project-specific significant adverse impacts: ▪ Avoidance and preservation of the resources in place, including, but not limited to: designing and building the project to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space to incorporate the resources with culturally appropriate protection and management criteria. ▪ Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following: o Protecting the cultural character and integrity of the resource o Protecting the traditional use of the resource o Protecting the confidentiality of the resource ▪ Establishment of permanent conservation easements or other culturally appropriate property management criteria for the purposes of preserving or utilizing the resources or places. ▪ Native American monitoring by the appropriate tribe during soil disturbance for all projects in areas identified as sensitive for potential tribal cultural resources and/or in the vicinity (within 100 feet) of known tribal cultural resources **TCR-1b. Unanticipated Tribal Cultural Resources Impact Minimization.** If potential tribal cultural resources are encountered during ground-disturbing activities, work in the immediate area must halt and the appropriate tribal representative(s), the implementing agency, and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service [NPS] 1983) shall be contacted immediately to evaluate the find. If, in consultation with the implementing agency, the archaeologist and/or tribal representative determines the discovery to be a tribal cultural resource and thus, significant under CEQA, a mitigation plan shall be prepared and implemented in accordance with state guidelines and in consultation with tribal representatives. If the resource cannot be avoided, a mitigation plan shall be developed to address tribal concerns.	

1 Introduction

This document is a Supplemental Environmental Impact Report (SEIR) for the 2018 Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS) proposed by the Shasta Regional Transportation Agency (SRTA). This SEIR augments the previously certified Environmental Impact Report (EIR) for the 2015 RTP/SCS (State Clearinghouse # 2014022018). The SRTA Board of Directors certified the EIR on June 30, 2015, at which time it also adopted the 2015 RTP/SCS. For purposes of this SEIR, the previously certified EIR is referred to herein as the 2015 EIR.

This Final SEIR includes Responses to Comments on the Draft SEIR (Appendix E) and the text of the Draft SEIR, revised based on responses to comments and other information. New text added or edited from the Draft SEIR is shown in underline format. In instances where changes to the document involve changed facts or information, the deleted text has been left in ~~strikethrough~~ format.

This section of the SEIR describes the following aspects of the 2018 RTP/SCS and SEIR: (1) project background; (2) purpose and legal authority; (3) SEIR background; (4) SEIR organization; (5) baseline and approach for impact analysis; and (6) environmental review process.

1.1 Project Background

The proposed 2018 RTP/SCS is an update of the current 2015 RTP/SCS. The 2015 RTP/SCS was adopted by the SRTA Board of Directors on June 30, 2015. The 2015 RTP/SCS programmed available transportation funding through the year 2035 and included lists of programmed and planned transportation projects to improve the transportation system during the 2015-2035 planning period. Among these listed projects were highway, road and street projects, aviation projects, and transit projects. The transportation improvement projects shown in Table 1-1 are 2015 RTP/SCS projects that have been completed since the certification of the 2015 EIR. Therefore, these projects have been removed from the project list and are not included in the 2018 RTP/SCS. The projects from the 2015 RTP/SCS yet to be completed remain in the 2018 RTP/SCS, in addition to new projects added to the 2018 RTP/SCS not included in the current 2015 RTP/SCS.

Table 1-1 2015 RTP/SCS EIR Completed Projects

Project Type and Number	Description	Jurisdiction
Regional - 3	Add capacity and fill a gap on Route 5, from Deschutes Road to south of North Street, and from Redding to Anderson – 6-Lane Phase 3	Caltrans - Regional
Capacity Increasing - 2	Widening of Placer Street, from Buenaventura Blvd to Boston Ave	City of Redding
Safety - 4	Shoulder widening on Churn Creek Road, from Bodenhammer to Boulder creek	City of Redding
Safety - 5	Shoulder widening on Buenaventura, from Placer to Lakeside	City of Redding
Safety - 6	Victor Avenue safety improvements from Enterprise Park to Churn Creek Bridge	City of Redding
Safety - 11	Intersection signal improvements at Victor Avenue and Galaxy Way	City of Redding

Project Type and Number	Description	Jurisdiction
Safety - 20	Intersection signal improvements at Victor Avenue and Marlene Avenue	City of Redding
Bridge Replacement (State Bridge #06C0078)– 7	Bridge replacement at Westside Road at ACID Canal	City of Redding
Capacity Increasing - 11	Widening of Emily Drive	City of Anderson

The above listed projects are now considered part of the existing environmental setting, since they have been completed and are now in operation. They have been evaluated as part of the updated setting throughout this SEIR. In addition, urban development has been ongoing in the region since certification of the 2015 EIR, primarily concentrated in existing urban or suburban areas.

1.2 Purpose and Legal Authority

Section 21000 of the California Public Resources Code, commonly referred to as the California Environmental Quality Act (CEQA), requires the evaluation of environmental impacts associated with all planning programs or development projects proposed. As such, this SEIR is an informational document for use by SRTA, other agencies, and the general public in their consideration and evaluation of the environmental consequences of implementing the proposed 2018 RTP/SCS.

In accordance with *State CEQA Guidelines* Section 15121(a), the purpose of this SEIR is to:

- Inform public agency decision makers and the pubic of any significant environmental effects that would result from the 2018 RTP/SCS;
- Identify possible ways to minimize significant effects; and,
- Identify reasonable alternatives to the 2018 RTP/SCS.

This SEIR has been prepared in accordance with relevant provisions of CEQA and *State CEQA Guidelines*, evaluates the additional projects listed in the 2018 RTP/SCS and updates the comparison to baseline conditions (for further discussion see Section 1.5, *Baseline, Scope, and Approach for Impact Analysis*). Consistency with *State CEQA Guidelines* sections pertaining to the applicability of SEIRs and program-level EIRs are provided below.

SEIRs are addressed in Section 15163 of the *State CEQA Guidelines*, which states that:

> The Lead Agency may choose to prepare a supplement to an EIR rather than a subsequent EIR if any of the conditions described in Section 15162 would require the preparation of a subsequent EIR, and only minor additions or changes would be necessary to make the previous EIR adequately apply to the project in the changed situation.
>
> The supplement to the EIR need contain only the information necessary to make the previous EIR adequate for the project as revised;
>
> A supplement to an EIR shall be given the same kind of notice and public review as is given to a draft EIR under Section 15087;
>
> A supplement to an EIR may be circulated by itself without the recirculating the previous draft or final EIR;

> When the agency decides whether to approve the project, the decision-making body shall consider the previous EIR as revised by the supplemental EIR. A finding under Section 15091 shall be made for each significant effect shown in the previous EIR as revised.

Pursuant to *State CEQA Guidelines* Section 15163, SRTA prepared this SEIR because only minor additions and changes would be necessary to make the previously certified 2015 EIR adequately apply to the 2018 RTP/SCS. An SEIR is the appropriate level of CEQA documentation for several reasons. First, the 2018 RTP/SCS would incorporate new requirements and regulations such as safety-related performance measures and targets under the FAST Act transportation bill and draft guidelines from the Governor's Office of Planning and Research for California's Senate Bill (SB) 743 (Steinberg 2013). While these new components are necessary, they are not anticipated to substantially increase the severity of impacts identified in the previously certified 2015 EIR. Second, new funding for transportation projects through California's recently approved Road Repair and Accountability Act of 2017 (SB 1) may help accelerate some regional/local projects over the next ten years. Lastly, the 2018 RTP/SCS includes new topics focused on freight, electric vehicles and autonomous vehicles. All of these components are anticipated to result in only minor updates to transportation projects and the land use scenario envisioned in the RTP/SCS (specifically focused on growth that has taken place since the last RTP/SCS).

The 2015 EIR was a Program EIR as defined in *State CEQA Guidelines* Section 15168 because it enabled SRTA, as the Lead Agency, to examine the overall effects of a series of actions that can be characterized as one large project. Consistent with the 2015 EIR, this SEIR is a program EIR under Section 15168(a) of the *State CEQA Guidelines*. Section 15168(a) states that:

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

Once a Program EIR has been prepared, subsequent activities under the program must be evaluated to determine what, if any, additional CEQA documentation needs to be prepared. If the Program EIR addresses the program's effects as specifically and comprehensively as possible, many subsequent activities could be found to be in the Program EIR scope and additional environmental documents may not be required (CEQA Guidelines § 15168(c)). When a Program EIR is relied upon for a subsequent activity, the Lead Agency must incorporate feasible mitigation measures and alternatives developed in the Program EIR into the subsequent activities (CEQA Guidelines § 15168(c)(3)). If a subsequent activity would have effects not addressed in the Program EIR, the Lead Agency must prepare a new Initial Study leading to a Negative Declaration, Mitigated Negative Declaration, or project-level EIR. In this case, the Program EIR still serves a valuable purpose as the first-tier environmental analysis.

1.3 SEIR Background

In compliance with the *State CEQA Guidelines* (§15063), SRTA solicited preliminary public agency comments on the project through distribution of a Notice of Preparation (NOP) and receipt of public comments during a scoping meeting held on Wednesday, February 28, 2018, at 3:30 PM in SRTA's Salmon Room, at 1255 East Street, Suite 202, in Redding, California.

The NOP was distributed to affected agencies and the public for the required 30-day period from February 8, 2018, to March 9, 2018. Table 1-2 summarizes the issues relevant to the SEIR that were identified in the NOP comments received and the SEIR sections where the issues are addressed. The NOP and NOP comments and letter received are included as Appendix A to this SEIR.

Table 1-2 NOP Comments and SEIR Response

Comment/Request	How and Where it was Addressed
California Department of Fish and Wildlife	
The California Department of Fish and Wildlife (CDFW) reviewed the NOP, as well as the certified 2015 EIR, and provided comments and recommendations to the mitigation measures contained in 2015 RTP/SCS, which would be carried through to the mitigation measures listed in the 2018 RTP/SCS SEIR.	Potential impacts to biological resources are evaluated in the Initial Study, which is included as Appendix A to the SEIR. Note, that the biological mitigation measures contained in the Initial Study incorporate the comments and recommendations provided by the CDFW on the 2015 EIR, as applicable.

Note: NOP and NOP comment letters are contained in Appendix A

1.4 SEIR Organization

This SEIR has been organized into seven sections. These include:

1) **Introduction.** Provides the project background, and information about the purpose and legal authority of an SEIR, and SEIR content and scope.
2) **Project Description.** Identifies the project applicant, presents and discusses the project objectives, project locations and specific project characteristics.
3) **Environmental Setting.** Provides a description of the existing physical setting of the project area and an overview of the progress in implementing the 2018 RTP/SCS.
4) **Analysis of Environmental Issues.** Describes existing conditions found in the project area and assesses potential environmental impacts that may be generated by implementing the proposed project and cumulative development in Shasta County. These potential project impacts are compared to "thresholds of significance" in order to determine the nature and severity of the direct and indirect impacts. Mitigation measures, intended to reduce adverse, significant impacts below threshold levels, are proposed where feasible. Impacts that cannot be eliminated or mitigated to less-than-significant levels are also identified.
5) **Other CEQA-Required Discussions.** Identifies the spatial, economic, or population growth impacts that may result from implementation of the proposed project, as well as long-term effects of the project and significant irreversible environmental changes.
6) **Alternatives.** Presents and assesses the potential environmental impacts of three alternatives (one no-build) analyzed in addition to implementation of the proposed 2018 RTP/SCS.
7) **References/Preparers.** Lists all published materials, federal, State, and local agencies, and other organizations and individuals consulted during the preparation of this SEIR. It also lists the SEIR preparers.

1.5 Baseline and Approach for Impact Analysis

The concept of a significant effect on the environment focuses on changes to the baseline physical conditions that will arise as a result of the project (*State CEQA Guidelines* Section 15002(g)). Potential new impacts associated with the 2018 MTP/SCS are determined through this process as mandated by CEQA. Buildout of the 2015 EIR is measured as the baseline, except in cases of changed circumstances or new impacts not evaluated in the 2015 EIR. In these cases, existing conditions at the time the NOP for this SEIR was published are measured as baseline, consistent with Section 15125 of the *State CEQA Guidelines*. As described above, the NOP for this SEIR was published on February 8, 2018.

As described above, the proposed 2018 RTP/SCS is an update of the current 2015 RTP/SCS. The impacts of the current 2015 RTP/SCS were analyzed in the previously certified 2015 EIR, which was a Program EIR. The analysis in this SEIR is also programmatic and is focused on the potential changes in environmental effects that could result from the updates to the 2015 RTP/SCS that are included in the proposed 2018 RTP/SCS, including updates or changes to policies, projects, and growth scenarios. Therefore, this SEIR is being prepared to analyze only the changes in the 2015 RTP/SCS or changes in circumstances under which the RTP/SCS projects would be implemented since certification of the previous 2015 EIR, which occurred on June 30, 2015.

This SEIR programmatically analyzes the effects of buildout of the 2018 RTP/SCS, and the 2018 RTP/SCS consists of the probable future projects and includes a range of specific land use and transportation projects designed to meet current and projected future needs of Shasta County. Therefore, the cumulative effects of 2018 RTP/SCS from the probable future transportation system improvements and land use projects in the region are included in the analysis of the proposed 2018 RTP/SCS impacts.

SRTA prepared an Initial Study for the 2018 RTP/SCS in February 2018. The Initial Study served as the preliminary review of the environmental impacts analyzed in the 2015 EIR to determine what issue areas require further review in the 2018 RTP/SCS SEIR. For any issue areas where impacts would be similar to or less than the impact level identified in the previous 2015 EIR, no further analysis beyond this Initial Study was warranted (see Appendix A). If previous mitigation measures from the 2015 EIR still apply and would reduce impacts to a less than significant level, those measures are listed in the Initial Study in the same manner as in the 2015 EIR. Revisions to the mitigation measures include the replacement of “2015 RTP” with “2018 RTP/SCS” along with minor clarification and revisions, as directed by SRTA. For environmental issue areas that may result in an increased level of impact or a potential change in impact level from the 2015 EIR, based on new information or changes to regulations or circumstance since the 2015 EIR certification, those issue areas are further reviewed in this SEIR. These issues have been determined to be:

- Air Quality
- Hazards
- Greenhouse Gas Emissions/Climate Change
- Transportation and Circulation
- Tribal Cultural Resources

1.6 Environmental Review Process

The environmental impact review process, as required under CEQA, is summarized below and illustrated in Figure 1-1. The steps are presented in sequential order. Please note that the process

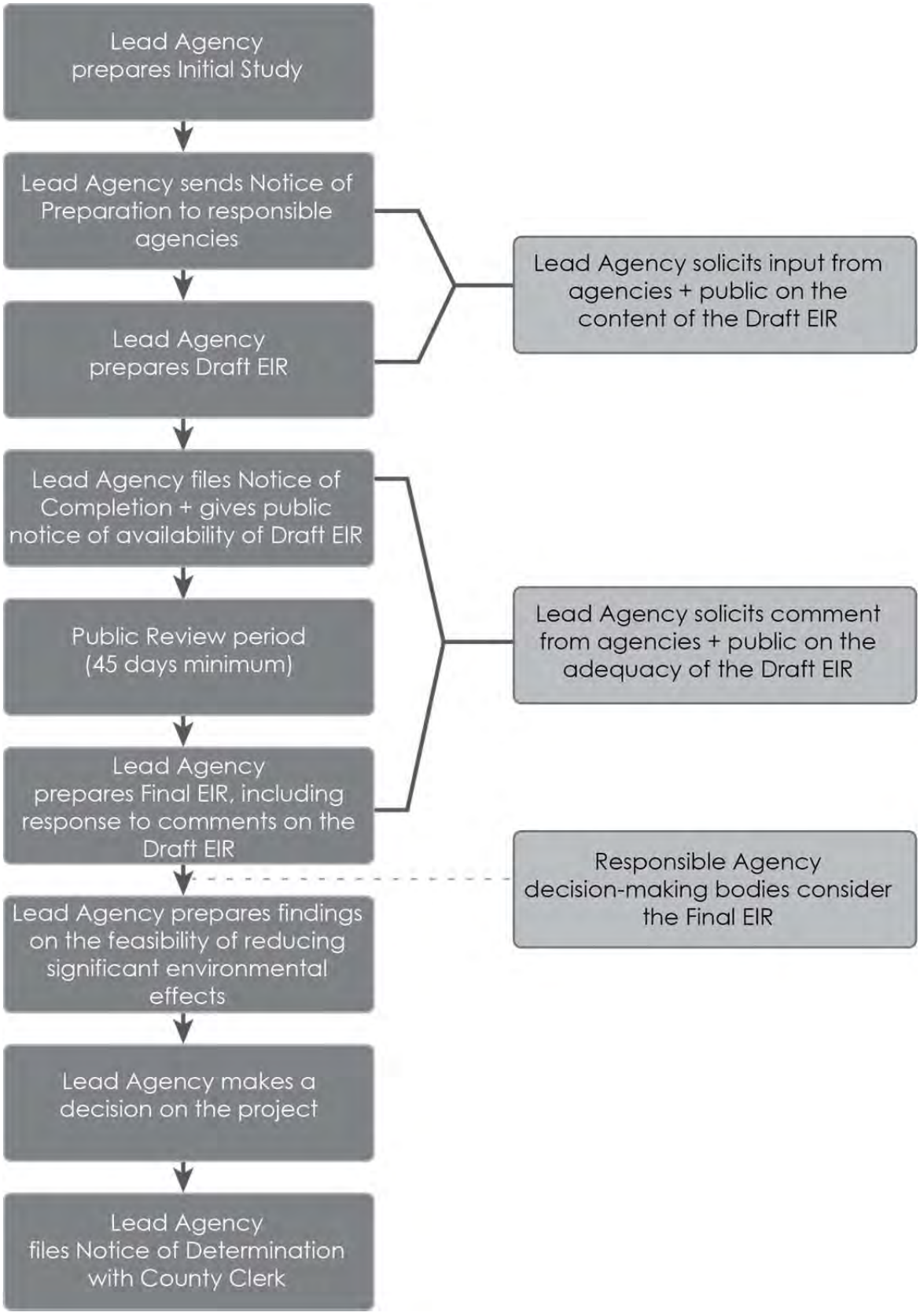
summarized below and shown in Figure 1-1 is for an EIR consistent with the referenced sections of the *State CEQA Guidelines*. However, Section 15163(e) of the *State CEQA Guidelines* requires the same kind of notice and public review for a SEIR as given to a Draft EIR. Therefore, the process summarized below is also applicable to this SEIR.

1. **Notice of Preparation (NOP) and Initial Study**. After deciding that an EIR (or SEIR) is required, the Lead Agency (SRTA) must file a NOP soliciting input on the EIR scope (or SEIR scope) to the State Clearinghouse, other concerned agencies, and parties previously requesting notice in writing (*State CEQA Guidelines* Section 15082; Public Resources Code Section 21092.2). The NOP must be posted in the County Clerk's office for 30 days. The NOP may be accompanied by an Initial Study that identifies the issue areas for which the project could create significant environmental impacts.
2. **Draft EIR Prepared.** The Draft EIR must contain: a) table of contents or index; b) summary; c) project description; d) environmental setting; e) discussion of significant impacts (direct, indirect, cumulative, growth-inducing and unavoidable impacts); f) a discussion of alternatives; g) mitigation measures; and h) discussion of irreversible changes. The contents of an SEIR, though not explicitly listed in the State CEQA Guidelines, are generally assumed to be the same as a Draft EIR.
3. **Notice of Completion (NOC).** The Lead Agency must file a NOC with the State Clearinghouse when it completes the Draft EIR (or Draft SEIR) and prepare a Public Notice of Availability of a Draft EIR (or Draft SEIR). The Lead Agency must post the NOC in the County Clerk's office for 30 days (Public Resources Code Section 21092) and send a copy of the NOC to anyone requesting it (*State CEQA Guidelines* Section 15087). Additionally, public notice of the Draft EIR (or Draft SEIR) availability must be given through at least one of the following procedures: a) publication in a newspaper of general circulation; b) posting on and off the project site; and c) direct mailing to owners and occupants of contiguous properties. The lead agency must solicit input from other agencies and the public, and respond in writing to all comments received (Public Resources Code Sections 21104 and 21253). The minimum public review period for a Draft EIR (or Draft SEIR) is 30 days. When a Draft EIR (or Draft SEIR) is sent to the State Clearinghouse for review, the public review period must be 45 days unless the State Clearinghouse approves a shorter period (Public Resources Code 21091). Pursuant to Section 15163(d) of the *State CEQA Guidelines*, a SEIR may be circulated by itself without recirculating the previous Draft EIR or Final EIR that it supplements.
4. **Final EIR.** A Final EIR (or Final SEIR) must include: a) the Draft EIR (or Draft SEIR); b) copies of comments received during public review; c) list of persons and entities commenting; and d) responses to comments.
5. **Certification of Final EIR.** Prior to making a decision on a proposed project, the Lead Agency must certify that: a) the Final EIR (or Final SEIR) has been completed in compliance with CEQA; b) the Final EIR (or Final SEIR) was presented to the decision-making body of the Lead Agency; and c) the decision making body reviewed and considered the information in the Final EIR (or Final SEIR) prior to approving a project (*State CEQA Guidelines* Section 15090).
6. **Findings/Statement of Overriding Considerations**. For each significant impact of the project identified in the EIR (or SEIR), the Lead Agency must find, based on substantial evidence, that either: a) the project has been changed to avoid or substantially reduce the magnitude of the impact; b) changes to the project are within another agency's

jurisdiction and such changes have or should be adopted; or c) specific economic, social, or other considerations make the mitigation measures or project alternatives infeasible (*State CEQA Guidelines* Section 15091). If an agency approves a project with unavoidable significant environmental effects, it must prepare a written Statement of Overriding Considerations that sets forth the specific social, economic, or other reasons supporting the agency's decision.

7. **Lead Agency Project Decision.** The Lead Agency may a) disapprove the project because of its significant environmental effects; b) require changes to the project to reduce or avoid significant environmental effects; or c) approve the project despite its significant environmental effects, if the proper findings and statement of overriding considerations are adopted (*State CEQA Guidelines* Sections 15042 and 15043). Pursuant to Section 15163(e) of the State CEQA Guidelines, when the Lead Agency decides whether to approve the project, the decision-making body shall consider the previous EIR as revised by the SEIR. A finding under Section 15091 of the State CEQA Guidelines shall be made for each significant effect shown in the previous EIR as revised.
8. **Mitigation Monitoring Reporting Program.** When the Lead Agency makes findings on significant effects identified in the EIR (or SEIR), it must adopt a reporting or monitoring program for mitigation measures that were adopted or made conditions of project approval to mitigate significant effects.
9. **Notice of Determination (NOD).** The Lead Agency must file a NOD after deciding to approve a project for which an EIR (or SEIR) is prepared (*CEQA Guidelines* Section 15094). A local agency must file the NOD with the County Clerk. The NOD must be posted for 30 days and sent to anyone previously requesting notice. Posting of the NOD starts a 30 day statute of limitations on CEQA legal challenges (Public Resources Code Section 21167[c]).

Figure 1-1 Environmental Review Process



2 Project Description

This section describes the 2018 RTP/SCS (proposed project), including the project applicant, the project site and surrounding land uses, major project characteristics, project objectives, and discretionary actions needed for approval.

2.1 Lead Agency Name and Address

Shasta Regional Transportation Agency (SRTA)
1255 East Street, Suite 202
Redding, California 96001

Contact: Sean Tiedgen, Senior Transportation Planner
(530) 262-6185

2.2 Project Location

The proposed 2018 RTP/SCS is an update of the current 2015 RTP/SCS and involves the entirety of Shasta County and its incorporated cities, which are located at the geographical center and transportation crossroads of northern California. As shown in the regional location map in Figure 2-1, the County is situated at the north end of the Sacramento Valley, approximately 150 miles north of Sacramento and approximately 110 miles south of the Oregon border. Interstate 5, one of the major north-south routes through California, traverses the western portion of Shasta County. Interstate 5 runs along the western side of the Sacramento River in the northern and southern portions of the County, crossing over the Sacramento River to run along its eastern side between the City of Anderson and the unincorporated community of Lakehead. State Route 273 provides north and south connectivity parallel to Interstate 5 on the western side of the Sacramento River between the cities of Anderson and Redding before merging back into Interstate 5 north of the river. State Routes 44 and 299 provide connectivity to the east and west. These major transportation corridors converge in the City of Redding, which is the County seat and the region's socio-economic center.

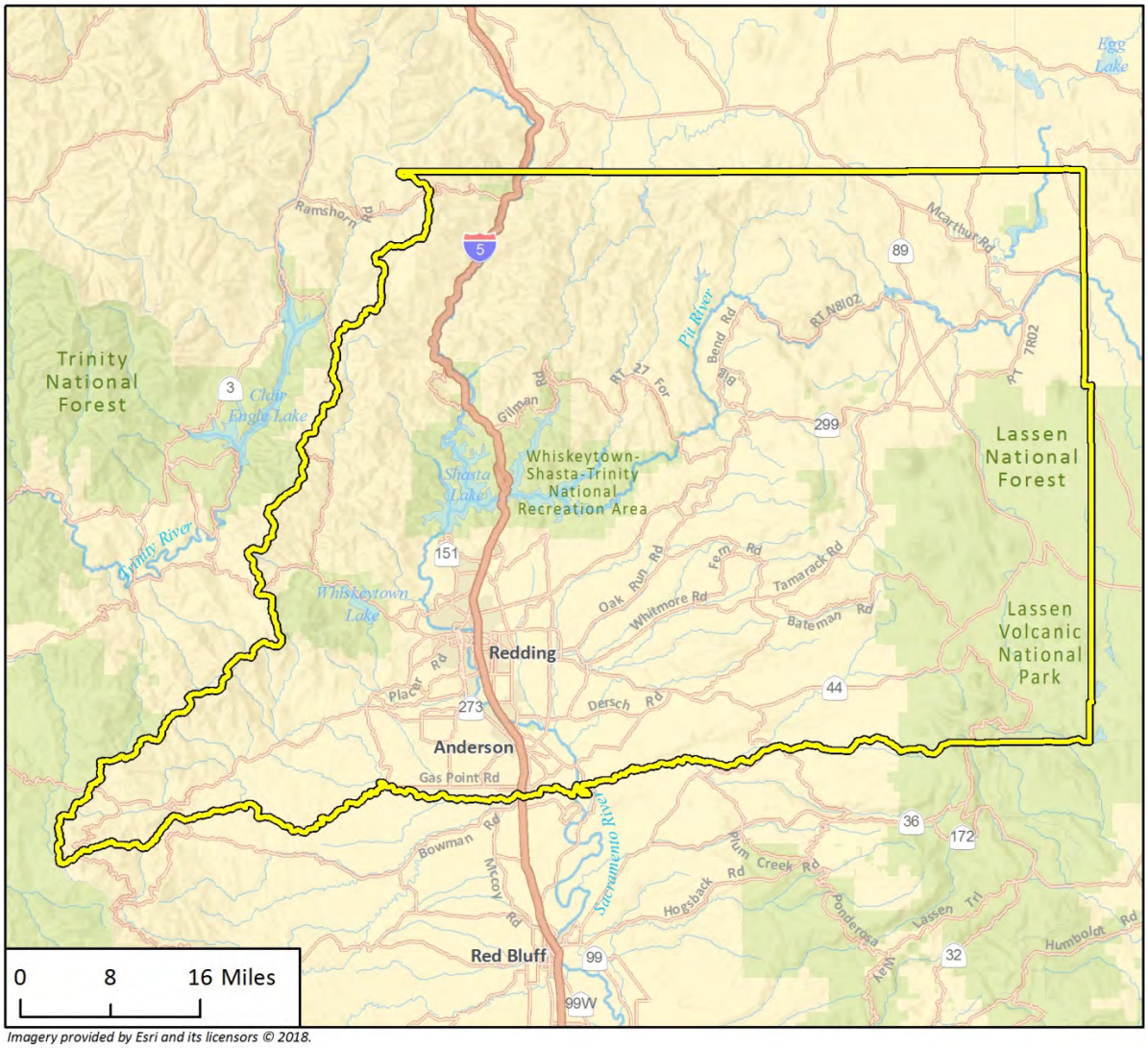
Shasta County is bordered by Trinity County to the west, Siskiyou County to the north, Modoc County to the northeast, Lassen County to the east, Plumas County to the southeast, and Tehama County to the south.

2.3 Project Objectives

General Legislative Requirements

SRTA, as both the federally-designated metropolitan planning organization (MPO) and the state-designated regional transportation planning agency (RTPA) for Shasta County, is required by federal and State law to prepare a long-range (at least 20 years) transportation planning document, known as a Regional Transportation Plan (RTP).

Figure 2-1 Regional Location



Imagery provided by Esri and its licensors © 2018.

Shasta County

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Fig 2-1 Regional Location

SRTA must update its Sustainable Communities Strategy (SCS) as part of the RTP update, pursuant to the requirements of California SB 375, as adopted in 2008. The SCS sets forth a forecasted development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, is intended to reduce greenhouse gas (GHG) emissions from passenger vehicles and light trucks to achieve the regional GHG reduction targets set by the California Air Resources Board (CARB).

The California Transportation Commission's (CTC's) document *2017 California Regional Transportation Plan Guidelines* serves as the guidance for RTP development. The CTC adopted the 2017 guidelines document on January 18, 2017. All RTP updates started after this adoption date must use the new RTP Guidelines. SRTA started their 2018 RTP/SCS update after this adoption. Under both federal and State law, the RTPAs and MPOs must update the RTPs and MTP every four years.[1] SRTA adopted its most recent RTP/SCS in June 2015. The 2015 RTP/SCS covered a 25 year period between 2010 and 2035.

Sustainable Communities & Climate Protection Act Requirements (SB 375)

The Sustainable Communities Strategy and Climate Protection Act, SB 375 (codified at CAL. GOVT CODE §§ 14522.1, 14522.2, 65080.01, 65080, 65400, 65583, 65584.01, 65584.02, 65584.04, 65587, 65588; CAL. PUB. RES. CODE §§2161.3, 21155, 21159.28), is a law passed in 2008 by the California legislature that requires each MPO to demonstrate, through the development of an SCS, how its region will integrate transportation, housing and land use planning to meet the greenhouse gas (GHG) reduction targets set by the State. In addition to creating requirements for MPOs, it also creates requirements for the CTC and CARB. Some of the requirements include the following:

- The CTC must maintain guidelines for the travel demand models that MPOs develop for use in the preparation of their RTPs or MTPs.
- The CARB must develop regional GHG emission reduction targets for automobiles and light trucks for 2020 and 2035 by September 30, 2010. These targets were approved on September 23, 2010.
- Each MPO must prepare an SCS as part of its RTP or MTP to demonstrate how it will meet the regional GHG targets.
- Each MPO must adopt a public participation plan for development of the SCS that includes informational meetings, workshops, public hearings, consultation and other outreach efforts.
- If an SCS cannot achieve the regional GHG target, the MPO must prepare an Alternative Planning Strategy (APS) showing how it would achieve the targets with alternative development patterns, infrastructure, or transportation measures and policies.
- Each MPO must prepare and circulate a draft SCS at least 55 days before it adopts a final RTP or MTP.
- After adoption, each MPO must submit its SCS to CARB for review.
- CARB must review each SCS to determine whether or not, if implemented, it would meet the GHG targets. CARB must complete its review within 60 days.

For the 2015 RTP, the CARB issued SRTA a regional GHG target of no increase in per capita GHG emissions for the planning years 2020 and 2035, as compared to baseline per capita emissions levels

[1] 23 C.F.R. §450.322(c); Gov. Code §65080(d).

in 2005. CARB recently adopted revised targets on March 22, 2018. However, these targets will apply to the next RTP/SCS update (due in 2022) and do not apply to plans that have been or will be adopted in 2018. Accordingly, the regional GHG reduction targets for the 2018 RTP/SCS are the same as the 2015 RTP targets.

SB 375 specifically states that nothing in the law changes local governments local land use authorities. The 2018 RTP/SCS provides a regional policy foundation that local governments may build upon, if they so choose. The 2018 RTP/SCS includes and accommodates the growth projections for the region. SB 375 also requires that forecasted development patterns for the region be consistent with the eight-year regional housing needs as allocated to member jurisdictions through the Regional Housing Needs Allocation (RHNA) process under State housing law.[2]

In addition, this 2018 RTP/SCS SEIR lays the groundwork for the streamlined review of qualifying development projects. Qualifying projects that meet statutory criteria and are consistent with the 2018 RTP/SCS are eligible for streamlined environmental review pursuant to CEQA under SB 375 and other laws.

Fixing America's Surface Transportation Act (FAST Act)

The most recent federal transportation legislation, Fixing America's Surface Transportation (FAST) Act builds on the changes made by MAP-21, and, was enacted in 2015. The Moving Ahead for Progress in the 21st Century Act (MAP-21), enacted in 2012, made a number of reforms to the metropolitan and statewide transportation planning processes, including incorporating performance goals, measures, and targets into the process of identifying needed transportation improvements and project selection. The FAST Act includes provisions to support and enhance these reforms. Public involvement remains a hallmark of the planning process.

The FAST Act continues requirements for a long-range plan and a short-term transportation improvement program (TIP), with the long-range statewide and metropolitan plans now required to include facilities that support intercity transportation, including intercity buses. The statewide and metropolitan long-range plans must describe the performance measures and targets that states and MPOs use in assessing system performance and progress in achieving the performance targets. Additionally, the FAST Act requires the planning process to consider projects/strategies to improve the resilience and reliability of the transportation system, address stormwater mitigation, and enhance travel and tourism.

Finally, in an effort to engage all sectors and users of the transportation network, the FAST Act requires that the planning process include public ports and private transportation providers, and further encourages MPOs to consult during this process with officials of other types of planning activities, including tourism and natural disaster risk reduction. MAP-21 and the FAST Act also change criteria for MPO officials to provide transit provider representatives with equal authority and allow the representative to also serve as the representative of a local municipality.

Through the RTP development process, the FAST Act encourages SRTA to:

- Consult with officials responsible for other types of planning activities that are affected by transportation in the area (including State and local planned growth, economic development, environmental protection, airport operations, and freight movements) or to

[2] Please note that following the 2018 RTP and SCS, the RHNA process will move from a five-year to an eight-year cycle.

coordinate its planning process, to the maximum extent practicable, with such planning activities.[3]

Specifically, the FAST Act requires that the RTP planning process:

- Provide for consideration of projects and strategies that will:
  a) Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;
  b) Increase the safety of the transportation system for motorized and non-motorized users;
  c) Increase the security of the transportation system for motorized and non-motorized users;
  d) Increase the accessibility and mobility of people and for freight;
  e) Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;
  f) Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
  g) Promote efficient system management and operation;
  h) Emphasize the preservation of the existing transportation system.
  i) Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation; and
  j) Enhance travel and tourism. [4]

Planning Final Rule – FAST Act

On May 27, 2016, the Statewide and Nonmetropolitan Transportation Planning and Metropolitan Transportation Planning Final Rule was issued, with an effective date of June 27, 2016, for Title 23 CFR Parts 450 and 771 and Title 49 CFR Part 613. This final rule states, "On or after May 27, 2018, an RTPA may not adopt an RTP that has not been developed according to the provisions of MAP-21/FAST Act as specified in the Planning Final Rule." This rule applies to the 2018 RTP/SCS as its adoption date, if adopted, would occur after May 2018.

Project Objectives

The underlying purpose of the 2018 RTP/SCS is to coordinate and facilitate the programming and budgeting of all transportation facilities and services within Shasta County through 2040 and demonstrate how the region will integrate transportation and land use planning to meet the GHG reduction targets established by CARB and in accordance with other State and federal regulations. The 2018 RTP/SCS is intended to also show how SRTA will meet the transportation needs of the region through 2040, considering existing and projected future land use patterns as well as forecasted population and job growth. The primary objective of the 2018 RTP/SCS is to comply with applicable regulatory requirements, including changes in legislative requirements that have occurred since the current 2015 RTP/SCS was adopted on June 30, 2015.

[3] 23 U.S.C. §134(g)(3)(A).
[4] 23 U.S.C. §134(h)(1).

2.4 Project Characteristics

As described above, the 2018 RTP/SCS is an update to the current 2015 RTP/SCS that was adopted in June 2015. The 2018 RTP/SCS reflects changes in legislative requirements, local land use policies, and resource constraints that have occurred since adoption of the current 2015 RTP/SCS. The 2018 update to the 2015 RTP/SCS is focused on continued implementation of the 2015 RTP/SCS, with minor updates to ensure consistency with federal, State and local planning requirements. The most notable changes to the 2015 RTP/SCS in this 2018 update include:

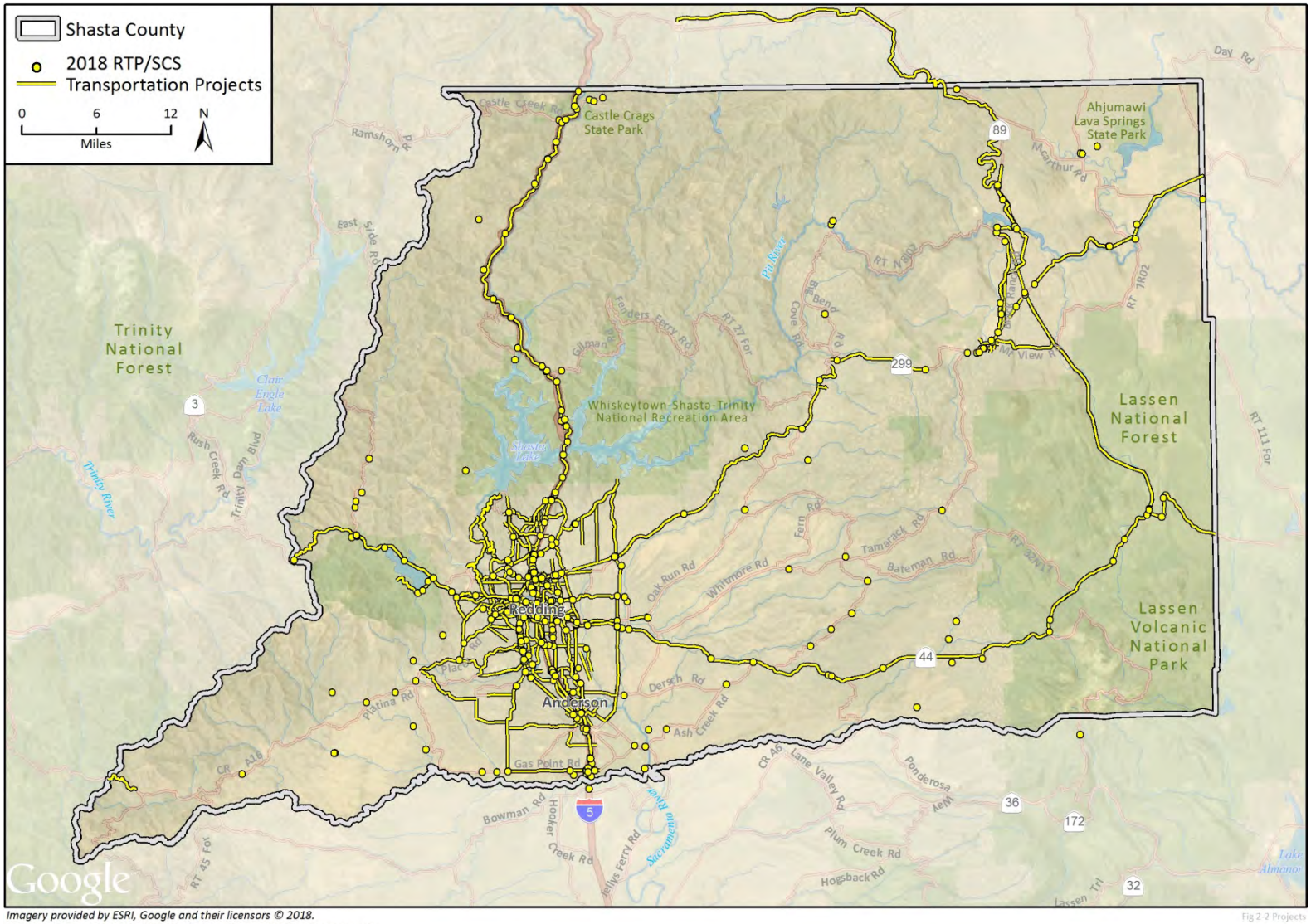
- California's adoption of safety-related performance measures and targets in July and August 2017 as required under the MAP-21 and FAST Act transportation bills. This also requires MPO targets to be adopted within 180 days after State targets and they must be incorporated into the RTP, RTIP and FTIP;
- Draft guidelines from the Governor's Office of Planning and Research for SB 743 (Steinberg, 2013), which is nearing adoption;
- New funding for transportation projects through California's recently approved Road Repair and Accountability Act of 2017 (SB 1) for the next ten years;
- Minor updates to transportation projects and land use development (specifically focused on growth that has taken place since the adoption of the current 2015 RTP/SCS); and
- Addition of components to the RTP/SCS to address freight and alternative fuel vehicles, including electric vehicles and autonomous vehicles.

As described above, the 2018 RTP/SCS shows how SRTA will meet the transportation needs of the region for the period from 2018 to 2040, considering existing and projected future land use patterns as well as forecasted population and job growth. The 2018 RTP/SCS plans for and programs approximately $2.18 billion in revenues expected to be available to SRTA from all transportation funding sources over the course of the planning period. It identifies and prioritizes expenditures of anticipated funding for transportation projects that involve all transportation modes: highways, streets and roads, transit, rail, bicycle and pedestrian; aviation, as well as transportation demand management (TDM) and transportation system management (TSM).

The 2018 RTP/SCS transportation improvements project list will update the 2015 RTP/SCS project list by removing projects that have been completed since 2015, modifying some projects that continue to be on the list based on new information, and adding approximately 35 net new minor projects to the list. None of the modified or new projects on the 2018 RTP/SCS list would be substantially different in terms of geographical location, type of project, or size of project to those on the 2015 RTP/SCS list. A list of transportation improvement projects included in the proposed 2018 RTP/SCS is provided in Appendix B and shown on Figure 2-2.

In addition, the land use scenario envisioned by the 2018 RTP/SCS is similar to that contained in the 2015 RTP/SCS. Briefly, this land use scenario, consistent with the 2015 RTP/SCS, concentrates the forecasted growth in population and employment in the region in urban areas and corridors of the County while preserving the distinct identity of existing cities and towns.

Figure 2-2 2018 RTP/SCS Transportation Projects Map



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Additional data provided by Shasta Regional Transportation Agency, 2018.

2018 RTP/SCS Organization

The 2018 RTP/SCS is organized into seven chapters:

1) **Introduction.** Provides background information on SRTA, the purpose of and planning process for an RTP/SCS, and new legislative requirements.
2) **RTP Planning Process.** Outlines the contributing components of this RTP/SCS and the general process whereby the community and affected stakeholders may participate in its development. A brief overview of how the RTP component of the RTP/SCS is implemented through shorter-term transportation improvement and work programs is also provided.
3) **State of the Region.** Provides an overview of the regional geography, demographics, disadvantaged communities, economy, and public health; of travel characteristics; of the performance and utilization of Shasta County's transportation network; and of accomplishments since the most recent 2015 RTP/SCS.
4) **Modal Assessment.** Provides a modal breakdown of the regional transportation system in detail, focusing on the current state of the system.
5) **Regional Transportation Policy and Action Plan.** Includes a regional vision; a summary of planning consistency and coordination; goals, objectives, strategies, and performance measures for the 2018 RTP/SCS, and performance targets to meet the transportation-related needs of Shasta County. These goals, objectives, and strategies are established to determine specific courses of action to guide Shasta County toward implementation of the 2018 RTP/SCS.
6) **Sustainable Communities Strategy.** Discusses regional targets for reducing GHG emissions, opportunities and challenges, the technical approach, public participation, tools and techniques, and travel demand and emissions modeling outputs. This chapter also sets forth a future land development pattern in coordination with transportation policies, programs, and investment strategies.
7) **Financial Element.** Provides projections of the cost and funds available from public and private sources to implement the transportation improvement projects included in the 2018 RTP/SCS. This element includes separate lists of candidate projects with available funding and projects which would depend on additional funding for implementation.

Of these chapters, Regional Transportation Policy and Action Plan, Sustainable Communities Strategy, and the Financial Element include provisions with the potential to create physical changes to the environment. Consequently, these three chapters are described in more detail below:

Regional Transportation Policy and Action Plan Chapter

The Regional Transportation Policy section of the 2018 RTP/SCS identifies transportation goals, objectives, strategies, and performance measures that will help meet the transportation related needs of Shasta County. The goals and objectives that were developed to guide the transportation system decision-making process have not changed since the 2015 RTP/SCS.

Sustainable Communities Strategy (SCS)

The SCS ultimately consists of the preferred land use and transportation scenario selected by SRTA as best capable of meeting RTP/SCS goals which are focused on a preferred growth scenario. As described above, the land use scenario envisioned by the 2018 RTP/SCS is similar to that contained in the 2015 RTP/SCS.

In order to meet the regulatory requirements of SB 375, the SCS component of the 2018 RTP/SCS:

- Identifies existing and future land use patterns;
- Establishes a future land use pattern to meet GHG emission reduction targets;
- Identifies transportation needs and the planned transportation network;
- Considers statutory housing goals and objectives;
- Identifies areas to accommodate long-term housing and 8-year housing needs;
- Considers resource areas and farmland; and
- Complies with State and federal law for developing an RTP.

These requirements, as outlined in California Government Code Section 65080(b)(2)(B), do not mean that the SCS creates a mandate for certain land use policies at the local level. In fact, SB 375 specifically states that the SCS cannot dictate local General Plan policies (see Government Code Section 65080(b)(2)(J)). Rather, the SCS is intended to provide a regional policy foundation that local governments may choose to build upon and generally includes quantitative growth projections.

Financial Element

The Financial Element delineates the current program of highway, streets and roadways, transit, rail, bikeway, pedestrian and aviation projects proposed by the various jurisdictions within the region including each city, Shasta County, and the California Department of Transportation (Caltrans). The 2018 RTP/SCS is financially constrained, which means that all projects listed (full list provided in Appendix B and shown on Figure 2-2) have been identified with a funding source(s) to complete the project during the scope of the plan (through 2040). Financially unconstrained projects (e.g., projects that have no funding identified) are provided for informational purposes (see Appendix B). The purpose of the Financial Element is to provide assumptions of the cost and revenues necessary to implement the 2018 RTP/SCS over its approximate 20-year planning horizon. The assumptions include revenue estimates for specific governmental funding programs and development fees.

The Financial Element identifies major federal, State, and local funding sources anticipated to be available during the life of the plan. Federal revenue is projected to come from sources including the Highway Safety Improvement Program, the Federal Lands Access Program, the Safe Routes to School program, the Tribal Transportation Program (formerly the Indian Reservation Roads Program), and Federal Transit Administration grants. State revenue sources include the State Highways Operation and Protection Program, State Transportation Improvement Program, Active Transportation Program, Highway Bridge Program, and the Proposition 1B Transportation Bond Program. Local revenue sources include the transportation impact fees, transportation development act, and developer fees. Total revenue is projected to be $2.18 billion.

Transportation projects delineated in the Financial Element include highway/roadway, transit, rail, and aviation projects, as discussed in each section below. The 2018 RTP/SCS does not provide project designs or a construction schedule, and adoption of the 2018 RTP/SCS would not represent an approval action for any of the individual transportation programs and projects. Detailed site-specific alignment, location, design, and scheduling of the improvement projects which are included in the 2018 RTP/SCS are not fixed. These individual projects may be modified substantially from their initial description at the time they are considered for implementation, which could happen at any time through 2040. Many of the programmed and planned transportation improvement projects carry over from the 2015 RTP/SCS. However, the 2018 RTP/SCS also includes a number of

new projects as described below. Appendix B lists the proposed projects grouped by type and jurisdiction.

- **Highway/Roadway Projects.** Continued operation and maintenance of the County's highway, arterial and local street system is a primary policy of the 2018 RTP/SCS. Caltrans, the County and local jurisdictions within the region have proposed projects for the roadway system that address current and future needs based on existing traffic conditions and projected traffic increases. These include a range of road widening and extension projects; interchange/ intersection improvements, and freeway overcrossings. In addition, projects that improve or rehabilitate existing roadway infrastructure are included in the 2018 RTP/SCS. These projects include resurfacing, restriping, signal modifications, and related improvements.

  New highway and roadway projects that were not previously included in the 2015 RTP/SCS include regional capacity improvements such as widening Interstate 5 from four to six lanes. Other projects include shoulder widening projects, such as the widening of Riverland Drive; bridge replacements projects, such as Ash Creek Road, Platina Road, Dersch Road;, and interchange improvements to on-and off-ramps at South Bonnyview and Interstate 5. Additionally, projects included in the 2015 RTP/SCS that have yet to be completed remain in the 2018 RTP/SCS.

- **Safety/Recreation Projects.** A number of new safety/recreation projects are provided in the 2018 RTP/SCS, including: Great Shasta Rail Trail Association projects aimed towards constructing railheads, culvert replacements, establishing bicycle and pedestrian access, rehabilitation and bridge/overpass replacements, and construction of bike lanes/routes. Projects not completed from the 2015 RTP/SCS remain in the 2018 RTP/SCS.

2.5 Other Public Agencies Whose Approval is Required

Approval of the 2018 RTP/SCS is at the discretion of the SRTA Board of Directors. Additional environmental review will be conducted by the responsible lead agency prior to implementation of individual projects contained within the RTP/SCS. Lead agencies would include the following:

- California Department of Fish and Wildlife;
- California Department of Transportation (Caltrans);
- California Transportation Commission (CTC);
- California Public Utilities Commission's Rail Crossings Engineering Section (RCES);
- Regional Water Quality Control Board;
- Cities of: Redding, Anderson, and Shasta Lake;
- County of Shasta;
- Federal Land Management Agencies (FLMA) - Bureau of Land Management (BLM), the Fish and Wildlife Service (FWS), the National Park Service (NPS) and the Forest Service;
- Federal Railroad Administration (FRA);
- U.S. Army Corps of Engineers;
- Redding Area Bus Authority (RABA); and
- Local transit providers and airport operators.

2.6 Relationship with Other Plans and Programs

The 2018 RTP/SCS provides a sound basis for the allocation of State and federal transportation funds for transportation projects over the subsequent 20 years. The 2018 RTP/SCS follows guidelines established by the CTC to:

- Describe the transportation issues and needs facing the county;
- Identify goals and policies for how SRTA will meet those needs;
- Identify the amount of money that will be available for identified projects; and
- Include a list of prioritized transportation projects to serve the region's long-term needs, consistent with the funds allocated, while considering environmental impacts and planning for future land use.

The 2018 RTP/SCS has been evaluated for consistency with the goals, policies and objectives currently being implemented by municipal and County planning agencies within the County.

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3 Environmental Setting

This section provides a general overview of the environmental setting for the proposed 2018 RTP/SCS. A similar discussion of the Environmental Setting was discussed in the previously-certified 2015 EIR, and included here for reference. More detailed descriptions of the environmental setting for each environmental issue area evaluated in this SEIR can be found in Section 4, *Environmental Impact Analysis*.

3.1 Regional Setting

The SRTA region consists of Shasta County, including incorporated cities and unincorporated areas. The regional setting of Shasta County has not changed substantially since the certification of the 2015 EIR, which occurred on June 30, 2015. The County covers more than 3,850 square miles and is located where the Central Valley of California meets the convergence of the Klamath and Coastal Mountain Ranges to the northwest and west, with the Cascade Mountain Range to the northeast and east. Elevations in the Central Valley area of Shasta County range between 400 and 700 feet above sea level. The Cascade Range divides the Central Valley, also known as the Sacramento Valley, region of the County from the Modoc Plateau, referred to in this SEIR as the Fall River Valley. The approximate elevation of the Fall River Valley is 3,300 feet. Burney Valley lies 20 miles south of Fall River Valley. Residential, commercial, and industrial development has occurred in the Sacramento, Fall River, and Burney Valleys. Shasta County is bordered by Lassen County to the east, Siskiyou County to the north, Tehama County to the south and Trinity County to the west (SRTA 2015).

There are three incorporated cities in Shasta County: Anderson, Redding, and Shasta Lake. There are also numerous unincorporated communities in the County, including but not limited to Burney, Cottonwood, Fall River Mills, French Gulch, Hat Creek, McArthur, Palo Cedro, Shasta, Shingletown, and Whiskeytown. According to the California Department of Finance (DOF), the 2017 population of Shasta County was 178,605 people (DOF 2017).

3.2 Regional Transportation System

The County's transportation network continues to be served by highway, rail, aviation, public transportation, and facilities that support bicycle and pedestrian circulation modes. The safe and efficient transport of people and goods within the County is of crucial importance to the well-being of residents and the economic viability of the County and thus, is the primary focus of the 2018 RTP/SCS.

Interstate 5, one of the major north-south routes through California, traverses the western portion of the County and is the only interstate in the County. Interstate 5 runs along the western side of the Sacramento River in the northern and southern portions of the County, crossing over the river to run along its eastern side between the City of Anderson and the unincorporated community of Lakehead. Shasta County has six state highways that serve as regional highways: State Routes 36, 44, 89, 151, 273, and 299. SR 273 provides north and south connectivity parallel to Interstate 5 on the western side of the Sacramento River between the cities of Anderson and Redding, before merging back into Interstate 5 north of the river. State Route 44 and State Route 299 provide

connectivity to the east and west. These major transportation corridors converge in the City of Redding, which is the County seat and the region's socioeconomic center.

The Redding Area Bus Authority (RABA) provides both a fixed-route and complimentary paratransit public transportation service within a service area that includes most of the cities of Anderson, Redding, and Shasta Lake. The City of Anderson is serviced primarily by Route 9, and operates mainly from a retail shopping center. The City of Redding is serviced by Routes 2, 3, 5, 6, 9 and 11, all of which are based out of the Downtown Transit center. The City of Shasta Lake is served by Routes 1 and 7, both of which provide service from the Masonic Avenue Transit Center (City of Redding 2018).

The complimentary paratransit system operated by RABA is designed for individuals who are permanently or temporarily mobility impaired. The service area for the complimentary paratransit system runs in a north-south direction from the City of Shasta Lake to the City of Anderson and in an east-west direction from Shasta College to the west end of the City of Redding. Additional demand-response services are provided for the elderly and disabled by public and private social service providers. Shasta County contracts with RABA to provide Burney Express, an express commuter bus service that provides round-trip express bus service from Redding to Burney twice a day. Connecting service providers linking to public transit providers within the County include: Trinity Transit, Sage Stage (Modoc), Susanville Indian Rancheria Pubic Transportation Program, Greyhound, and Amtrak (rail and bus service).

The Shasta Senior Nutrition Program (SSNP), a non-profit organization designated as a Consolidated Transportation Services Agency (CTSA) within Shasta County, provides transportation services to the senior and mobility impaired populations in the rural areas of the County. CTSA members meet monthly to prioritize transportation needs and coordinate service throughout the County (SRTA 2014).

The County is served by freight and passenger rail service. The Union Pacific Railroad (UPRR) parallels I-5 and carries both passengers and freight. The UPRR provides freight loading and unloading opportunities at the following rail locations: Cottonwood, Culp, Anderson, Girvan, Redding, Silverthorn, O'Brien, Mead, Lakehead, Delta, Lamoine, Gibson, Sims, Contant, Dirigo, and Castle Crags (SRTA 2015). A lack of freight rail service demand has led to rail track abandonment and removal (Caltrans 2014).

Amtrak motorcoaches connect Redding to the Capitol Corridor and San Joaquin train routes in the cities of Sacramento and Stockton, respectively. Amtrak's Coast Starlight Seattle/Portland/Los Angeles rail route services Redding with one northbound stop and one southbound stop daily. Greyhound offers north and southbound bus service four times a day in each direction from the Redding Greyhound Station. There is no east or westbound commercial bus connection. Sage Stage, operated by the Modoc County Transportation Commission, provides daily bus service between Alturas and Redding. Trinity County began service from Weaverville to Redding in January 2010.

According to the Federal Aviation Administration (FAA), there are three public use airports in Shasta County: Redding Municipal Airport, Benton Field Airport, and Fall River Mills Airport (FAA 2018). The City of Redding owns the Redding Municipal Airport and Benton Field Airport, and the County owns the Fall River Mills Airport. There are two other airports in the County, both of which are privately owned for private use. The five heliports in the County are also privately owned for private use (FAA 2018).

3.3 Cumulative Projects Setting

3.3.1 CEQA Requirements

According to the *State CEQA Guidelines* Section 15130(a)(1), "a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the environmental impact report (EIR) together with other projects causing related impacts." In addition, an EIR must discuss cumulative impacts if the incremental effect of a project, combined with the effects of other projects, is "cumulatively considerable" (Section 15130[a]). Such incremental effects are to be "viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects" (Section 15164[b][1]). Together, these projects comprise the cumulative scenario which forms the basis of the cumulative impact analysis. A cumulative impact analysis should highlight past actions that are closely related (either in time or location) to the project being considered, catalogue past projects, and discuss how past projects have harmed the environment, and discuss past actions, even if they were undertaken by another agency or another person.

Both the severity of impacts and the likelihood of their occurrence are to be reflected in the discussion, "but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion of cumulative impacts shall be guided by standards of practicality and reasonableness, and shall focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact" (Section 15130[b]). However, the analysis must be in sufficient detail to be useful to decision makers in deciding whether, or how, to alter the program to lessen cumulative impacts.

Section 15130 of the *State CEQA Guidelines* prescribes two methods for analyzing cumulative impacts: (1) use of a list of past, present, and reasonably anticipated future projects producing related or cumulative impacts; or (2) use of a summary of projections contained in an adopted general plan or related planning document. As described in Section 1.5, *Baseline and Approach for Impact Analysis*, this document is a Program SEIR that analyzes the effects of buildout of the 2018 RTP/SCS. The proposed 2018 RTP/SCS considers the past, present, and future projects described in method 1 above and proposed transportation projects designed to meet the 2018 RTP/SCS goals and current and projected future transportation infrastructure needs of the County. The project also constitutes the cumulative scenario described in method 2. Therefore, the cumulative effects of the 2018 RTP/SCS from future transportation system improvements and land use projects in the region are included in the analysis of the proposed 2018 RTP/SCS impacts. The analysis of project impacts contained in this SEIR will form the basis for the cumulative analysis contained in any subsequent environmental documentation for specific projects proposed under the 2018 RTP/SCS.

3.3.2 Growth Projections in the Region

The 2018 RTP/SCS is based on the preferred land use and transportation scenario defined in Shasta*Forward>>* Regional Blueprint, which SRTA published in March 2010 and used for the current 2015 RTP/SCS. Shasta*Forward>>* Regional Blueprint provides direction on regional growth within the County and the basis for the 2018 RTP/SCS evaluated herein. Growth projections for the entire County were prepared by SRTA in association with Shasta County and the cities of Anderson, Redding, and Shasta Lake. In addition to working with the County and three incorporated cities, the 2018 RTP/SCS growth projections through the year 2040 utilize data from the 2010 U.S. Census, the

DOF (2017), and Caltrans' Economic Forecast (Caltrans 2017). Population forecasts estimate future growth at a rate of 0.8 percent per year, with a population of 223,042 persons for the County in 2040 (SRTA 2018). The transportation projects identified in the 2018 RTP/SCS (as listed in Appendix B of this SEIR), provide the framework for growth within the region and the cumulative impact analysis approach discussed above.

4 Environmental Impact Analysis

This section discusses the possible environmental effects of the proposed project for the specific issue areas that were identified as having the potential to experience significant impacts. As a supplemental EIR, this report analyzes the same potentially significant impact areas as the certified Environmental Impact Report (2015) issued by SRTA for the 2015 RTP/SCS. In addition, this section analyzes the impacts identified through the Initial Study/NOP scoping process as having the potential to experience significant effects (see Appendix A). A "significant effect" is defined by the *CEQA Guidelines* §15382 as:

> "…a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment, but may be considered in determining whether the physical change is significant."

The following issue areas were identified as having potentially significant impacts in the 2015 RTP/SCS or 2018 RTP/SCS Initial Study and are evaluated in this section:

1. Air Quality
2. Greenhouse Gas Emissions
3. Hazards and Hazardous Materials
4. Transportation and Circulation
5. Tribal Cultural Resources

The following issue areas were determined in the Initial Study to have no impacts, less than significant impacts, or less than significant impacts with mitigation incorporated, or were determined to have the same impacts relative to the 2015 RTP/SCS and are not evaluated in the SEIR:

- Aesthetics
- Cultural Resources
- Energy
- Environmental Justice
- Geology and Soils
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Utilities and Service Systems

The assessment of each issue area begins with a discussion of the environmental setting related to the issue, which is followed by the impact analysis. In the impact analysis, the first subsection identifies the methodologies used and the "significance thresholds," which are those criteria adopted by SRTA and other agencies, universally recognized, or developed specifically for this

analysis to determine whether potential effects are significant. The next subsection describes each impact of the proposed project, mitigation measures for significant impacts, and the level of significance after mitigation. Each effect under consideration for an issue area is separately listed in bold text with the discussion of the effect and its significance. Each bolded impact statement also contains a statement of the significance determination for the environmental impact as follows:

Significant and Unavoidable. An impact that cannot be reduced to below the threshold level given reasonably available and feasible mitigation measures. Such an impact requires a Statement of Overriding Considerations to be issued if the project is approved per §15093 of the CEQA Guidelines.

Less than Significant with Mitigation Incorporated. An impact that can be reduced to below the threshold level given reasonably available and feasible mitigation measures. Such an impact requires findings under §15091 of the CEQA Guidelines.

Less than Significant. An impact that may be adverse, but does not exceed the threshold levels and does not require mitigation measures. However, mitigation measures that could further lessen the environmental effect may be suggested if readily available and easily achievable.

No Impact. The proposed project would have no effect on environmental conditions or would reduce existing environmental problems or hazards.

Following each environmental impact discussion is a list of mitigation measures (if required) and the residual effects or level of significance remaining after implementation of the measure(s). In cases where the mitigation measure for an impact could have a significant environmental impact in another issue area, this impact is discussed and evaluated as a secondary impact. The impact analysis concludes with a discussion of cumulative effects, which evaluates the impacts associated with the proposed project in conjunction with other planned and pending developments in the area listed in Section 3.0, *Environmental Setting*.

The Executive Summary of this EIR summarizes all impacts and mitigation measures that apply to the proposed project.

4.1 Air Quality

This section analyzes the additional impacts of the 2018 RTP, relative to the 2015 RTP, upon local and regional air quality. Both temporary impacts relating to construction activity and long-term impacts associated with population growth and associated growth in vehicle traffic and energy consumption are discussed.

4.1.1 Setting

a. Local Climate and Meteorology

Air quality is affected by the rate and location of pollutant emissions and by climatic conditions that influence the movement and dispersion of pollutants. Atmospheric conditions, such as wind speed, wind direction, and air temperature gradients, along with local and regional topography, mediate the relationship between air pollutant emissions and air quality.

The proposed 2018 RTP covers the entirety of Shasta County and its incorporated cities, which are located at the geographical center and transportation crossroads of northern California. As shown in the regional location map in Figure 2-1, the County is situated at the north end of the Sacramento Valley, 150 miles north of Sacramento and 110 miles south of the Oregon border. Shasta County's 3,788 square miles encompass a diverse topography, ranging from 425 feet above mean sea level (msl) in the Sacramento Valley to more than 10,000 feet above msl at Lassen Peak in Lassen Volcanic National Park.

Shasta County is located at the northernmost end of the Northern Sacramento Valley Air Basin (NSVAB). The NSVAB includes the following counties, which are located in the northern portion of the Sacramento Valley: Butte, Colusa, Glenn, Shasta, Sutter, Tehama, and Yuba. The NSVAB is bounded on the north and west by the Coastal Mountain Range and on the east by the southern portion of the Cascade Mountain Range and the northern portion of the Sierra Nevada Mountains. These mountain ranges reach heights in excess of 6,000 feet above (MSL), with individual peaks rising much higher. This provides a substantial barrier to locally created pollution and the pollution that has been transported northward on prevailing winds from the Sacramento Metropolitan area (Sacramento Valley Air Quality Engineering and Enforcement Professionals 2013).

The climate of the basin is dominated by the strength and location of a semi-permanent, subtropical, high-pressure cell over the northeastern Pacific Ocean, with terrain variations creating various microclimates. The existence of mountains and hills in the basin is responsible, in large part, for the wide variations of rainfall, temperatures, and localized winds that occur throughout the region. Airflow patterns in the basin are predominantly northwesterly in the spring and summer; however, seasonal variations do occur. Calm conditions dominate the winter months. Regional airflow patterns affect air quality by directing pollutants downwind of sources. Localized meteorological conditions, such as light winds and shallow vertical mixing, as well as topographical features, such as surrounding mountain ranges, create areas of high pollutant concentrations by hindering dispersal (Enplan 2010).

Precipitation is highly variable seasonally. Summer months are often dry, averaging less than one inch in total precipitation per month. Rainfall is most abundant during the winter months and increases with elevation. Annual rainfall is lowest in the valleys, higher in the foothills, and highest in the mountains (Shasta County 2010).

b. Air Pollutants of Primary Concern

The federal and state Clean Air Acts mandate the control and reduction of certain air pollutants. Under these laws, the United States Environmental Protection Agency (USEPA) and the California Air Resources Board (CARB) have established ambient air quality standards for certain "criteria" pollutants. Ambient air pollutant concentrations are affected by the rates and distributions of air pollutant emissions, as well as by the climate and topographic influences discussed above. The primary determinant of concentrations of non-reactive pollutants, such as carbon monoxide (CO) and suspended particulate matter, is proximity to major sources. Ambient CO levels usually closely follow the spatial and temporal distributions of vehicular traffic. A discussion of each primary criterion pollutant is provided below.

Ozone

Ozone (O_3) is a colorless gas with a pungent odor. While ozone in the stratosphere (layer of atmosphere extending seven to 31 miles above the earth) plays an important role in absorbing harmful solar ultraviolet (UV) radiation before it reaches the planet's surface, ozone in the troposphere (layer of atmosphere extending from the surface to seven miles above the surface) can be harmful to human health. Most ozone in the troposphere is formed as a result of the interaction of ultraviolet light with CO, reactive organic gases (ROG), or oxides of nitrogen (NO_x). ROG (the organic compound fraction relevant to ozone formation, and is sufficiently equivalent for the purposed of this analysis to volatile organic compounds [VOC]) is composed of non-methane hydrocarbons (with some specific exceptions), and NO_x is made of different chemical combinations of nitrogen and oxygen, mainly nitric oxide (NO) and nitrogen dioxide (NO_2). Tropospheric ozone formation relies on the presence of ozone precursors and sunlight and does not form when low levels of ROG, NO_x, CO, and sunlight are present. Because these reactions occur on a regional rather than local scale, O_3 is considered a regional pollutant.

Carbon Monoxide

CO is an odorless, colorless gas and causes a number of health problems including fatigue, headache, confusion, and dizziness. The incomplete combustion of petroleum fuels in on-road vehicles and at power plants is a major cause of CO. CO is also produced during the winter from wood stoves and fireplaces. CO tends to dissipate rapidly into the atmosphere; consequently, violations of the state CO standards are generally associated with major roadway intersections during peak-hour traffic conditions.

Localized CO "hotspots" can occur at intersections with heavy peak-hour traffic. Specifically, hotspots can be created at intersections where traffic levels are sufficiently high such that the local CO concentration exceeds the National Ambient Air Quality Standards (NAAQS) of 35.0 parts per million (ppm) or the California Ambient Air Quality Standards (CAAQS) of 20.0 ppm.

Nitrogen Dioxide

NO_2 is a by-product of fuel combustion, with the primary source being motor vehicles and industrial boilers and furnaces. The principal form of nitrogen oxide produced by combustion of NO, but NO reacts rapidly to form NO_2, creating the mixture of NO and NO_2 commonly referred to as NO_x. NO_2 is an acute irritant. A relationship between NO_2 and chronic pulmonary fibrosis may exist, and an increase in bronchitis in young children at concentrations below 0.3 ppm may occur. NO_2 absorbs blue light and causes a reddish brown cast to the atmosphere and reduced visibility. It can also

contribute to the formation of particulate matter no more than 10 microns in diameter (PM_{10}) and acid rain.

Suspended Particulates

PM_{10} is small particulate matter measuring no more than 10 microns in diameter, while $PM_{2.5}$ is fine particulate matter measuring no more than 2.5 microns in diameter. Suspended particulates are mostly dust particles, nitrates, and sulfates. They are a by-product of fuel combustion and wind erosion of soil and unpaved roads, and are directly emitted into the atmosphere through these processes. Suspended particulates are also created in the atmosphere through chemical reactions. The characteristics, sources, and potential health effects associated with the small particulates (those between 2.5 and 10 microns in diameter) and fine particulates ($PM_{2.5}$) can be very different. The small particulates generally come from windblown dust and dust kicked up from mobile sources. The fine particulates are generally associated with combustion processes as well as being formed in the atmosphere as a secondary pollutant through chemical reactions. Fine particulate matter is more likely to penetrate deep into the lungs and poses a serious health threat to all groups, but particularly to the elderly, children, and those with respiratory problems. More than half of the small and fine particulate matter that is inhaled into the lungs remains there, which can cause permanent lung damage. These materials can damage health by interfering with the body's mechanisms for clearing the respiratory tract or by acting as carriers of an absorbed toxic substance.

Lead

Lead (Pb) is a metal found naturally in the environment, as well as in manufacturing products. The major sources of Pb emissions historically have been mobile and industrial sources. In the early 1970s, the USEPA set national regulations to gradually reduce the lead content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. The USEPA completed the ban prohibiting the use of leaded gasoline in highway vehicles in December 1995. As a result of the USEPA's regulatory efforts to remove lead from gasoline, atmospheric lead concentrations have declined substantially over the past several decades. The most dramatic reductions in lead emissions occurred prior to 1990 due to the removal of lead from gasoline sold for most highway vehicles. Lead emissions were further reduced substantially between 1990 and 2008, with reductions occurring in the metals industries at least in part as a result of national emissions standards for hazardous air pollutants (USEPA 2013). As a result of phasing out leaded gasoline, metal processing currently is the primary source of lead emissions. The highest level of lead in the air is generally found near lead smelters. Other stationary sources include waste incinerators, utilities, and lead-acid battery manufacturers.

Toxic Air Contaminants

Public exposure to toxic air contaminants (TAC) is a significant environmental health issue in California. The California Health and Safety Code defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines. According to CARB, diesel engine emissions are believed to be responsible for about 70 percent of California's estimated known cancer risk attributable to toxic air contaminants and comprise about eight percent of outdoor $PM_{2.5}$ (CARB 2016).

Sulfur Dioxide

Sulfur dioxide (SO_2) is a colorless, pungent, irritating gas formed primarily by the combustion of sulfur-containing fossil fuels. In humid atmospheres, SO_2 can form sulfur trioxide and sulfuric acid mist, with some of the latter eventually reacting to produce sulfate particulates, which can inhibit visibility. Fuel combustion is the major source of SO_2, while chemical plants, sulfur recovery plants, and metal processing are minor contributors. At sufficiently high concentrations, SO_2irritates the upper respiratory tract. At lower concentrations, when in conjunction with particulates, SO_2 appears to do still greater harm by injuring lung tissues. SO_2, in combination with moisture and oxygen, can yellow leaves on plants, dissolve marble, and eat away iron and steel.

c. Current Air Quality

As mentioned above, CARB and the USEPA have established ambient air quality standards for major pollutants, including O_3, CO, NO_2, SO_2, Pb, PM_{10}, and $PM_{2.5}$. Standards have been set at levels intended to be protective of public health. California standards are typically more restrictive than federal standards.

Local air districts and CARB monitor ambient air quality to ensure that air quality standards are met and, if they are not met, are required to develop strategies to meet the standards. Air quality monitoring stations measure pollutant ground-level concentrations (typically, ten feet above ground level). Depending on whether the standards are met or exceeded, the local air basin is classified as in “attainment” or “non-attainment.” Some areas are unclassified, which means no monitoring data are available but are considered to be in attainment. Table 4.1-1 summarizes the CAAQS and the NAAQS for each of these pollutants as well as the attainment status of Shasta County. As shown in the table, Shasta County is in non-attainment for the state standard for ozone (Shasta County 2015).

Table 4.1-1 Ambient Air Quality Standards and Basin Attainment Status

Pollutant	Averaging Time	California Standards		Federal Standards	
		Concentration	Attainment Status	Concentration	Attainment Status
Ozone	1-Hour	0.09 ppm	N	–	–
	8-Hour	0.070 ppm	N	0.070 ppm	N
Carbon Monoxide	8-Hour	9.0 ppm	–	9.0 ppm	–
	1-Hour	20.0 ppm	–	35.0 ppm	–
Nitrogen Dioxide	Annual	0.030 ppm	A	0.053 ppm	A
	1-Hour	0.18 ppm	A	0.100 ppm	A
Sulfur Dioxide	Annual	–	–	–	–
	24-Hour	0.04 ppm	–	–	–
	1-Hour	0.25 ppm	–	0.075 ppm	–
PM_{10}	Annual	20 µg/m^3	–	---	–
	24-Hour	50 µg/m^3	N	150 µg/m^3	A
PM_{25}	Annual	12 µg/m^3	–	12 µg/m^3	–
	24-Hour	–	A	35 µg/m^3	A
Lead	30-Day Average	1.5 µg/m^3	–	–	–
	3-Month Average	–	–	0.15 µg/m^3	–

Notes:
ppm = parts per million;
µg/m^3 = micrograms per cubic meter;
Source: California Air Resources Board website. 2018. iADAM: Air Quality Data Statistics. Retrieved from: https://www.arb.ca.gov/adam/topfour/topfour1.php
A = Attainment;
N = Non-attainment; and
U/A = Unclassified/ Attainment

There are 30 air quality monitoring stations in the NSVAB. Four of these monitoring stations are operated by the Shasta County Air Quality Management District (Shasta County AQMD) and are located in the SRTA planning area: Lassen Volcanic National Park – Manzanita Lake, Redding – Health Department, Anderson – North Street, Shasta Lake- La Mesa, and Shasta Lake- Lake Blvd. Table 4.1-2 summarizes the maximum concentration of each criteria pollutants measured in the NSVAB in 2014, 2015, and 2016.

Table 4.1-2 Ambient Air Quality Data

Pollutant	2014	2015	2016
Ozone (ppm), Worst 1-Hour	0.116	0.122	0.115
Number of days of state exceedances (>0.09 ppm)	7	4	6
Ozone (ppm), 8-Hour Average	0.088	0.100	0.100
Number of days of state exceedances (>0.07 ppm)	35	19	42
Number of days of federal exceedances (>0.07 ppm)	34	16	42
Nitrogen Dioxide (ppb) – Worst Hour	*	*	*
Number of days of above state standard (>180 ppb)	*	*	*
Particulate Matter <10 microns, μg/m^3, Worst 24 Hours	106.4	118.0	88.9
Number of days above state standard (>50 μg/m^3)	13.2	25.2	12.2
Number of days above federal standard (>150 μg/m^3)	0	0	*
Particulate Matter <2.5 microns, μg/m^3, Worst 24 Hours	190.2	109.8	46.8
Number of days above federal standard (>35 μg/m^3)	4.0	8.7	3.3

Notes: ppm = parts per million; ppb = parts per billion; μg/m^3 = micrograms per cubic meter

* This data is not available, as NOx is a pollutant that is not currently monitored at any of the air quality monitoring stations within Shasta County. Source: CARB 2018a

d. Regulatory Setting

The federal CAA governs air quality in the United States. In addition to being subject to federal requirements, air quality in California is also governed by more stringent regulations under the California CAA. The U.S. EPA administers the CAA At the federal level. Both CAAs are administered by CARB at the state level and by the AQMDs at the regional and local levels. Shasta County AQMD regulates air quality at the regional level for Shasta County.

Federal

The U.S. EPA is responsible for enforcing the federal CAA. The U.S. EPA is also responsible for establishing the National Ambient Air Quality Standards (NAAQS), which are a requirement under the 1977 CAA and subsequent amendments. The EPA regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain types of locomotives. The agency has jurisdiction over emission sources outside state waters (e.g. beyond the outer continental shelf) and establishes various emission standards, including for passenger cars; however, passenger cars sold in California must meet the stricter emission standards established by CARB.

State

In California, CARB is responsible for meeting the state requirements of the federal CAA, administering the California CAA, and establishing the California Ambient Air Quality Standards (CAAQS). The California CAA, as amended in 1992, requires all air districts in the state to endeavor to achieve and maintain the CAAQS. The CAAQS are generally more stringent than the corresponding federal standards and incorporate additional standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles. CARB regulates mobile air pollution sources, such as motor vehicles. The agency is responsible for setting emission standards for vehicles sold in California and for other emission sources, such as consumer products and certain off-road

equipment. CARB established passenger vehicle fuel specifications, which became effective on March 1996. CARB oversees the functions of local air pollution control districts and air quality management districts, which in turn administer air quality activities at the regional and county level.

Local

Shasta County AQMD is responsible for assuring that the federal and state ambient air quality standards are attained and maintained in the NSVAB. The agency is also responsible for adopting and enforcing rules and regulations concerning air pollutant sources, issuing permits for stationary sources, inspecting stationary sources, evaluating potential health risks from air pollutants, and adopting air pollution control measures.

e. Air Quality Management

The federal Clean Air Act Amendments (FCAAA) of 1990 set a schedule for the attainment of the NAAQS. States are required to prepare a State Implementation Plan (SIP) to develop strategies to bring about attainment of the standards. In addition, the California CAA of 1988 requires areas that exceed the CAAQS to plan for the eventual attainment of the state standards. Shasta County AQMD details the County's progress towards attainment in its Air Quality Attainment Plan (AQAP). The Shasta County AQMD, along with other air districts in the NSVAB, have committed to jointly prepare and adopt a uniform AQAP for the purpose of achieving and maintaining healthful air quality throughout the air basin. In April 2015, Shasta County AQMD adopted the 2015 Triennial Plan Update (2015 AQAP Update), which assesses the progress made in implementing the previous triennial update and proposes modifications to the strategies necessary to attain the CAAQS by the earliest practicable date (Sacramento Valley Air Quality Engineering and Enforcement Professionals [SVAQEEP] 2015). The 2015 AQAP Revision only addresses attainment of the state ozone standard and does not address attainment of the PM_{10} standard. Table 4.1-3 presents a summary of the most current emissions inventory for the NSVAB taken from the 2015 AQAP Update.

Table 4.1-3 Ozone Emissions Inventory Projections for NSVAB (tons/day)

	NO_X		ROG	
	2015	2020	2015	2020
On-Road Motor Vehicles	30.52	19.88	8.14	5.87

Source: SVAQEEP 2015

4.1.2 Impact Analysis

a. Significance Thresholds

This analysis follows the guidance and methodologies recommended in the air quality emissions thresholds established by the Shasta County AQMD and the CEQA Appendix G thresholds.

Pursuant to the State *CEQA Guidelines*, air quality impacts related to the proposed project would be significant if the project would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;

- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative guidelines for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations; and/or
- Create objectionable odors affecting a substantial number of people.

For the purposes of environmental review, Shasta County has defined a "substantial contribution" to an existing or projected air quality violation as generation of air pollutants in excess of the thresholds shown in Table 4.1-4. These thresholds are consistent with the New Source Review Rule 2:1 adopted by the Shasta County Air Pollution Control Board in 1993, which establishes pre-construction review requirements for new and modified stationary sources for use of Best Available Control Technology (BACT), analysis of air quality impacts, and to ensure that the operation of such sources does not interfere with the attainment or maintenance of ambient air quality standards. As applied to CEQA project emissions, these thresholds apply to all land use project operational emissions, including mobile source emissions. Because the 2018 RTP/SCS itself does not directly generate project-level emissions, Shasta County thresholds do not apply. However, they are provided here for informational purposes to illustrate the thresholds that would apply to individual projects developed within the planning area of the 2018 RTP/SCS.

Table 4.1-4 Shasta County AQMD Air Quality Emission Significance Thresholds (lbs/day)

Level	NOx	ROG	PM_{10}
A	25	25	80
B	137	137	137

Notes (taken from source document):

Apply Standard Mitigation Measures (SMM) to all projects based on potential air quality impacts. This effort will help contribute to reducing cumulative impacts.

Apply SMM and appropriate Best Available Mitigation Measures (BAMM) when a project exceeds Level "A" thresholds. The BAMM will be applied to any project which exceeds Level "A" thresholds. The appropriate type and number of BAMM applied to a project will be based on the unique characteristics of the project. BAMM will be selected from a list of measures kept updated by the SCPD and the Shasta County AQMD.

Apply SMM, BAMM, and special BAMM (when project exceeds Level "B" thresholds) based on their emission reduction potential to lower project emissions below Level "B" thresholds. The Shasta County AQMD will advise the SCPD of the efficiency of proposed emission measures as part of the effort to reduce project emissions below Level "B" thresholds.

If application of the above procedures results in reducing project emissions below Level "B" thresholds, the project can proceed with an environmental determination of a Mitigated Negative Declaration assuming other project impacts do not require more extensive environmental review.

If project emissions cannot be reduced to below Level "B" thresholds, emission offsets will be required. The SCPD may seek the assistance of the Shasta County AQMD regarding other efforts and measures that could be used to reduce unmitigated emissions exceeding the 137 lbs. per day. If, after applying the emissions offsets, the project emissions still exceed the Level "B" threshold, an EIR will be required before the project can be considered for action by the reviewing authority.

Source: Shasta County 2004

State and federal clean air laws require that emissions of pollutants for which federal or state ambient air quality standards are violated be reduced from current levels. In addition, as an SEIR, this analysis is intended to identify any additional impacts to air quality resulting from updates to the 2015 RTP/SCS that have not been previously addressed in the 2015 RTP/SCS EIR. Therefore, the following thresholds have been adopted by SRTA for the purpose of this analysis. The 2018 RTP/SCS would result in significant air quality impacts if it would:

- Increase short-term emissions relative to 2015 RTP/SCS short-term emissions
- Increase long-term emissions relative to 2040 No Project emissions and baseline emissions
- Increase emissions of diesel toxics ($PM_{2.5}$ and NO_X) relative to 2040 No Project emissions and baseline emissions
- Increase re-entrained dust emissions relative to 2040 No Project emissions and baseline emissions
- Conflict with the 2015 AQAP Update

b. Methodology

Short-term Emissions

Emissions from construction activities represent temporary impacts that are typically short in duration, and depend on the size, phasing, and type of project. Air quality impacts can nevertheless be acute during construction periods, resulting in significant localized impacts to air quality. To date, the Shasta County AQMD, Shasta County, and the three cities within the county have not adopted significance thresholds for construction-related emissions. Construction-related emissions are speculative at the RTP/SCS level because such emissions are dependent on the characteristics of individual development projects. However, because construction of the 2018 RTP/SCS would generate temporary criteria pollutant emissions, primarily due to the operation of construction equipment and truck trips, a qualitative analysis is provided below.

Long-term Emissions

Projected air emissions from mobile sources were calculated using the EMission FACtors (EMFAC) 2014 emissions model and vehicle miles traveled (VMT) estimated using the Shasta SIM SRTA's Regional Activity-based Travel Demand Model (ShastaSIM). Essentially, EMFAC 2014 takes activity data, in this case, VMT, and multiplies it by the appropriate emissions factor (e.g., tons of NO_X per VMT), to determine pollutant emissions. This general calculation is customized to take into consideration region-specific fleet mixes and vehicle speeds.

Emissions were modeled in EMFAC 2014 for three scenarios: 2015 baseline conditions, 2040 growth and development with the 2018 RTP/SCS road network and land use scenario (i.e., 2040 Project), and 2040 growth and development with the road network and land use scenario envisioned in the 2015 RTP/SCS for its planning horizon (i.e., 2040 No Project). EMFAC 2014 was run using default EMFAC data for the Shasta region customized to match the total average VMT and total average daily VMT per speed bin for each scenario; VMT for all scenarios included pass-through trips. 2015 baseline emissions are different than those presented in the 2015 RTP/SCS EIR because EMFAC 2011, rather than EMFAC 2014, was previously used for modeling emissions.

c. Project Impacts and Mitigation Measures

Implementation of the 2018 RTP/SCS could create both short-term and long-term impacts to air quality. Short-term air quality impacts would be generated during construction of the capital improvements listed in the RTP/SCS as well as future development facilitated by the RTP/SCS. Long-term emissions would be generated indirectly by the on-road vehicles that would utilize the capital improvements and proposed land uses.

Threshold:	Increase short-term emissions relative to 2015 RTP/SCS short-term emissions.

Impact AQ-1 CONSTRUCTION OF TRANSPORTATION IMPROVEMENT PROJECTS AND THE LAND USE PATTERN ENVISIONED BY THE 2018 RTP/SCS WOULD GENERATE SHORT-TERM AIR POLLUTANT EMISSIONS. DUE TO THE INCLUSION OF A LARGER NUMBER OF PROJECTS, IMPLEMENTATION OF THE 2018 RTP/SCS WOULD POTENTIALLY RESULT IN HIGHER QUANTITIES OF SHORT-TERM AIR POLLUTANT EMISSIONS THAN IMPLEMENTATION OF THE 2015 RTP/SCS. HOWEVER, WITH MITIGATION, IMPACTS WOULD REMAIN LESS THAN SIGNIFICANT.

As discussed in the 2015 RTP/SCS EIR, implementation of the RTP/SCS would result in short-term emissions from construction of transportation projects and future development envisioned under the RTP/SCS. The 2018 RTP/SCS would add 35 net new minor projects relative to the 2015 RTP/SCS. None of the modified or new projects on the 2018 RTP/SCS list would be substantially different from those on the 2015 RTP/SCS list in terms of geographical location, type of project, or size of project and would be constructed at various points within a span of 20 years. In addition, the land use scenario envisioned by the 2018 RTP/SCS is similar to that contained in the 2015 RTP/SCS and concentrates the forecasted growth in population and employment in the region in urban areas and corridors of the County. Nevertheless, because the 2018 RTP/SCS includes more projects, it would potentially result in a greater amount of short-term air pollutant emissions. However, with incorporation of mitigation measures included in the 2015 RTP/SCS (restated below), impacts would remain less than significant.

Mitigation Measures

The following mitigation measure is taken from the 2015 RTP/SCS, with minor typographical revisions and updates to reflect regulatory changes.

SRTA recommends that individual project lead agencies implement the following mitigation measures for applicable transportation projects, including but not limited to projects listed in in Appendix B. These measures can and should be implemented for future land development pursuant to the 2018 RTP/SCS that would involve construction activities.

AQ-1 Control Measures for Construction Air Pollutant Emissions

The individual project lead agency shall ensure that all feasible and appropriate Shasta County AQMD Standard Mitigation Measures (SMMS) and Best Available Mitigation Measures (BAMMs) are implemented. The measures shall be noted on all construction plans and the lead agency shall perform periodic site inspections. Shasta County AQMD SMMs and BAMMs include, but are not limited to, the following:

- Fugitive dust emissions
  - Implement all adequate dust control measures in a timely and effective manner during all phases of project development and construction;
  - Water all excavated, stockpiled, or graded material to prevent fugitive dust from leaving property boundaries and causing a public nuisance or a violation of an ambient air standard. Watering shall occur at least twice daily with complete site coverage, preferably in the mid-morning and after work is completed each day;
  - During initial grading, earth moving, or site preparation, construct a paved (or dust palliative treated) apron, at least 100 feet in length, onto the project site from the adjacent paved road(s);

- Sweep adjacent paved streets (recommend water sweeper with reclaimed water) at the end of each day if substantial volumes of soil materials have been carried onto adjacent public paved roads from the project site;
- Install sandbags or other erosion control measures to prevent silt runoff to roadways;
- Apply Department of Public Works approved non-toxic soil stabilizers in accordance with manufacturer's specifications to all inactive construction areas (i.e., previously graded areas which remain inactive for 96 hours);
- Replant vegetation in disturbed areas as quickly as possible;
- Cover all trucks hauling soil, sand, and other loose materials, or require all trucks to maintain at least two feet of freeboard;
- Use wheel washers or wash off tires of all trucks exiting the construction site; and
- Mitigate fugitive dust emissions from wind erosion in areas disturbed by construction activities (including storage piles) by application of either water or chemical dust suppressant.

- Exhaust emissions from diesel heavy equipment
  - Shut down equipment when not in use to limit engine idling time. Idling time shall be limited to no more than 3 minutes. This idling limit does not apply to circumstances as stated in the California Environmental Protection Agency Air Resources Board Advisory Number 377 (2008);
  - Provide regular equipment maintenance to prevent emission increases due to engine problems;
  - Use low sulfur and low aromatic fuels meeting California standards for motor vehicle diesel fuel; and
  - Use low-emitting gas and diesel engines meeting state and federal emissions standards (Tier II, III, IV) for construction equipment.
- Other emissions
  - Use low VOC coatings for the architectural coating phase of construction. All coatings must meet the VOC limits per Shasta County AQMD Rule 3-31;
  - Use asphalt mixtures appropriate for the time of year of application, while maintaining compliance with the lead agency's road design and construction standards;
  - Use alternatives to open burning of vegetative material on the project site, unless otherwise deemed infeasible by the Shasta County AQMD. Suitable alternatives include chipping, mulching, or conversion to biomass fuel;
  - Provide for temporary traffic control as appropriate during all phases of construction to improve traffic flow as deemed appropriate by the Department of Public Works and/or Caltrans; and
  - Schedule construction activities that redirect traffic flow during off-peak hours as much as practicable.

Significance After Mitigation

With the implementation of the above mitigation, impacts related to short-term construction emissions would be less than significant.

Threshold:	Increase long-term emissions relative to 2040 No Project emissions and baseline emissions.

Impact AQ-2 IMPLEMENTATION OF THE 2018 RTP/SCS WOULD RESULT IN AN OVERALL REDUCTION OF ON-ROAD VEHICLE EMISSIONS WHEN COMPARED TO BASELINE CONDITIONS AND THE 2040 NO PROJECT SCENARIO. THIS IMPACT WOULD REMAIN LESS THAN SIGNIFICANT AND ADDITIONAL MITIGATION IS NOT REQUIRED.

As previously noted, Shasta County is currently classified as being a non-attainment area for state ozone and PM_{10} standards. Therefore, an increase in ozone precursors (NO_X and ROGs) or PM_{10} would potentially contribute to, or exacerbate the County's nonattainment of ambient air quality standards. Table 4.1-5 summarizes projected on-road vehicle emissions for baseline, 2040 Project, and 2040 No Project conditions. Transportation improvements and land use patterns identified in the 2018 RTP/SCS would result in an overall reduction of on-road vehicle emissions when compared to baseline conditions and would not result in an increase in emissions as compared to the 2040 No Project scenario. The projected reduction in air pollutant emissions is largely the result of currently adopted policies and regulations that would decrease mobile source emissions over time, such as the Advanced Clean Cars Program, which includes emission standards for passenger cars and other vehicles, as well as incentives for adoption of low-emission and zero-emission vehicles. Therefore, impacts related to criteria pollutants remain less than significant and mitigation is not required.

Table 4.1-5 Regional Air Pollutant Emissions (tons/day)

Scenario	PM_{10} (tons/day)	NOx (tons/day)	ROG (tons/day)
2015 Baseline	0.38	6.99	2.86
2040 Project	0.38	1.42	0.76
2040 No Project	0.47	1.87	0.91

Notes: PM_{10} and NOx emissions are presented above using winter values and VOC emissions are presented above using summer values to provide a worst case estimate based on the seasons in which individual criteria pollutant emissions are highest. PM_{10} emissions modeled in EMFAC 2014 include emissions from exhaust and tire and brake wear, but do not include emissions from roadway dust.

Source: See Appendix C for EMFAC 2014 modeling results

Threshold:	Increase emissions of diesel toxics ($PM_{2.5}$ and NO_X) relative to 2040 No Project emissions and baseline emissions.

Impact AQ-3 THE TRANSPORTATION IMPROVEMENT PROJECTS AND THE LAND USE SCENARIO ENVISIONED BY THE 2018 RTP/SCS MAY FACILITATE INCREASED EXPOSURE OF SENSITIVE RECEPTORS TO HAZARDOUS AIR POLLUTANTS THAT MAY CAUSE HEALTH RISKS AND ODORS THAT MAY BE A NUISANCE. HOWEVER, IMPLEMENTATION OF THE 2018 RTP/SCS WOULD NOT RESULT IN A REGIONAL INCREASE IN TOXIC AIR EMISSIONS WHEN COMPARED TO THE BASELINE OR 2040 NO PROJECT SCENARIOS AND WOULD HAVE SIMILAR LOCALIZED IMPACTS AS THOSE DESCRIBED IN THE 2015 RTP/SCS EIR. THIS IMPACT WOULD REMAIN SIGNIFICANT, BUT MITIGABLE.

Diesel particular matter (DPM) is classified as the primary airborne carcinogen in the state. The ARB reports that DPM represents about 70 percent of the potential cancer risk from vehicle travel on a typical urban freeway. More than 90 percent of DPM is less than one micron in size and thus is a subset of $PM_{2.5}$ (CARB 2018b); thus, diesel $PM_{2.5}$ emission levels can serve as a proxy of DPM emission levels. In addition, diesel vehicles are the primary contributor of mobile source NO_X

emissions, which have both short-term and long-term health effects (Union of Concerned Scientists 2018; U.S. EPA. 2018). Table 4.1-6 summarizes projected diesel $PM_{2.5}$ and diesel NO_X emissions for baseline, 2040 Project, and 2040 No Project conditions. Regional diesel toxics emissions under the 2040 Project scenario would be below the 'No Project' scenario and below baseline levels. Therefore, impacts related to diesel toxics exposure would be less than significant at the regional level.

Table 4.1-6 Diesel Toxics Emissions (tons/day)

Scenario	$PM_{2.5}$ (tons/day)	NOx (tons/day)
2015 Baseline	0.10	6.99
2040 Project	0.04	1.42
2040 No Project	0.05	1.87

Notes: PM_{10} and NOx emissions are presented above using winter values to provide a worst case estimate based on the seasons in which individual criteria pollutant emissions are highest.

Source: See Appendix C for EMFAC 2014 modeling results

As discussed in the 2015 RTP/SCS EIR, while toxic air contaminant concentration and health risks within any given distance of mobile sources in the region would decrease (see Table 4.1-6), exposure is primarily based on local parameters (e.g., average daily traffic (ADT) on local roadway segment, wind direction in relation to source and receptor) and as such, the health risks adjacent to high volume roadways and transportation facilities would remain higher than regional averages. The 2018 RTP/SCS would add 35 net new minor projects relative to the 2015 RTP/SCS. None of the modified or new projects on the 2018 RTP/SCS list would be substantially different from those on the 2015 RTP/SCS list in terms of geographical location, type of project, or size of project. In addition, the land use scenario envisioned by the 2018 RTP/SCS is similar to that contained in the 2015 RTP/SCS and concentrates the forecasted growth in population and employment in the region in urban areas and corridors of the County. Therefore, the 2018 RTP/SCS would have similar impacts related to localized diesel toxics emissions as described in the 2015 RTP/SCS, as well as odors. With incorporation of mitigation measures included in the 2015 RTP/SCS (restated below), impacts would be less than significant.

Mitigation Measures

SRTA recommends that individual project lead agencies implement the following mitigation measures for future land development pursuant to the 2018 RTP/SCS that would be located in proximity to major transportation corridors. The following mitigation measures are taken from the 2015 RTP/SCS EIR, with minor typographical revisions.

AQ-3 Air Toxics Health Risk Reduction Measures

Consistent with the provisions contained in the *CARB Air Quality and Land Use Handbook* (June 2005), lead agencies shall identify appropriate and feasible measures to be incorporated into project building design for residential, school and other sensitive uses located within 500 feet of freeways, heavily travelled arterials, railways and other sources of DPM and other known carcinogens. The appropriate measures shall include one or more of the following methods as applicable:

- The lead agency shall retain a qualified air quality consultant to prepare a health risk assessment in accordance with CARB and the Office of Environmental Health and Hazard Assessment requirements to determine the exposure of project residents/occupants/users to stationary air quality polluters prior to issuance of a demolition, grading, or building permit. The health risk assessment shall be submitted to the lead agency for review and approval. The lead agency shall implement any approved health risk assessment recommendations to a level which would not result in exposure of sensitive receptors to substantial pollutant concentrations. Such measures may include:
  - Do not locate sensitive receptors near the entry and exit points of a distribution center.
  - Do not locate sensitive receptors in the same building as a perchloroethylene dry cleaning facility.
  - Maintain a 50 foot buffer from a typical gas dispensing facility (under 3.6 million gallons of gas per year).
  - Install, operate and maintain in good working order a central heating and ventilation system or other air take system in the building, or in each individual residential unit, that meets the efficiency standard of the minimum efficiency reporting value 13. The heating and ventilation system should include the following features: Installation of a high efficiency filter and/or carbon filter-to-filter particulates and other chemical matter from entering the building. Either high efficiency particulate absorption filters or American Society of Heating, Refrigeration, and Air-Conditioning Engineers 85% supply filters should be used.
  - Retain a qualified heating and ventilation consultant or high efficiency particulate absorption rate during the design phase of the project to locate the heating and ventilation system based on exposure modeling from the mobile and/or stationary pollutant sources.
  - Maintain positive pressure within the building.
  - Achieve a performance standard of at least one air exchange per hour of fresh outside filtered air.
  - Achieve a performance standard of at least 4 air exchanges per hour of recirculation.
  - Achieve a performance standard of 0.25 air exchanges per hour of in unfiltered infiltration if the building is not positively pressurized.

Significance After Mitigation

With the implementation of the above mitigation, impacts related to localized toxic air contaminant emissions would be less than significant.

Threshold:	Increase re-entrained dust emissions relative to 2040 No Project emissions and baseline emissions.

Impact AQ-4 RE-ENTRAINED DUST FROM TRANSPORTATION SOURCES HAS THE POTENTIAL TO INCREASE AIRBORNE PARTICULATE MATTER LEVELS IN SHASTA COUNTY. THE 2018 RTP/SCS WOULD INCREASE VMT AND VEHICLE SPEEDS IN SHASTA COUNTY RELATIVE TO BOTH BASELINE AND 2040 NO PROJECT CONDITIONS, WHICH WOULD CONTRIBUTE TO GREATER LEVELS OF RE-ENTRAINED DUST FROM ROADWAY ACTIVITY. THIS IMPACT WOULD BE SIGNIFICANT AND UNAVOIDABLE.

Re-entrained dust is generated by roadway activity (i.e., roadway dust kicked up by moving vehicles on paved and unpaved roadways). The synergistic effects of road dust (typically measured as PM_{10}) with ozone and the hazardous constituents of re-entrained road dust itself (carcinogens, irritants,

pathogens) may affect human heath by contributing to respiratory illnesses such as asthma and allergies. Although advances in motor vehicle emission control technology have decreased the pollutants emitted in vehicle tailpipe exhaust, as mentioned above, PM_{10} is generated by roadway activity and thus, typically increases with VMT, as well as increasing vehicle speeds (Pirjola et al. 2010).

As discussed in Impact AQ-4, regional PM_{10} emissions from exhaust and brake and tire wear would decrease with implementation of the 2018 RTP/SCS relative to 2040 No Project and baseline conditions. This is because PM_{10} exhaust emissions are projected to decrease with implementation of currently adopted policies and regulations. However, as indicated in Table 4.1-7, implementation of the 2018 RTP/SCS would increase VMT and vehicle speeds relative to 2040 No Project and baseline conditions. This would increase dust from roadway activity, which is currently unregulated at the state level, and typically only regulated for construction-related activities at the local AQMD level.

Table 4.1-7 Roadway Activity Summary

Scenario	Total Daily VMT	Percent of Daily VMT at 50 mph or Higher	Average Speed per VMT (mph)
2015 Baseline	5,955,776	63	50.18
2040 Project	7,806,135	65	50.80
2040 No Project	7,791,888	64	50.57

Notes: PM_{10} and NOx emissions are presented above using winter values to provide a worst case estimate based on the seasons in which individual criteria pollutant emissions are highest.

Source: ShastaSIM modeling results

Shasta County is designated as a non-attainment area for PM_{10}. Therefore, an increase in re-entrained dust from vehicle activity would potentially exacerbate the existing PM_{10} standard violation and may result in a cumulatively considerable net increase of PM_{10}. Mitigation Measure AQ-1 would reduce re-entrained dust generated by off-road construction activities to a less than significant level by requiring the implementation of dust control measures. Nonetheless, impacts related to re-entrained dust from other vehicle activity would remain significant and unavoidable.

Mitigation Measures

The 2018 RTP/SCS includes policies, alternative transportation projects, and transportation demand management projects that would encourage the use of transportation modes other than passenger vehicles. The 2018 RTP/SCS would also incorporate Mitigation Measure AQ-1, which would reduce re-entrained dust generated by off-road construction activities. Nonetheless, implementation of the 2018 RTP/SCS would result in greater total VMT and higher vehicle speeds when compared to baseline or 2040 conditions without the 2018 RTP/SCS. There are no feasible mitigation measures to substantially reduce re-entrained dust from on-road vehicle activity, and, as discussed in Section 4.4, *Transportation and Circulation*, there are no feasible mitigation measures to reduce VMT.

Significance After Mitigation

This impact would remain significant and unavoidable.

Threshold:	Conflict with the 2015 AQAP Update.

Impact AQ-5 THE 2018 RTP/SCS WOULD REDUCE EMISSIONS OF OZONE PRECURSORS CONSISTENT WITH THE GOALS OF THE 2015 TRIENNIAL UPDATE OF THE NSVAB AQAP. IT WOULD NOT CONFLICT WITH THE 2015 AQAP UPDATE. THERE WOULD BE NO NEW IMPACT RELATIVE TO THE 2015 RTP/SCS AND THIS IMPACT WOULD REMAIN LESS THAN SIGNIFICANT.

Policies and land use patterns facilitated by the 2018 RTP/SCS are projected to reduce emissions of ozone precursors below the 2015 baseline and 2040 No Project scenario, consistent with the goals of the 2015 AQAP Update. This decrease in emissions is due to the proposed transportation improvements and land use patterns envisioned by the 2018 RTP/SCS, which, among other strategies, would encourage infill development and reduce congestion. This strategy selectively increases residential and commercial land use capacity within existing developed corridors (Strategic Growth Areas), shifting a greater share of future growth to these corridors, ultimately increasing density, and improving circulation and multi-modal connections. Reduced congestion would result in reduced regional criteria air pollutant emissions and toxic air contaminant emissions from mobile sources. Therefore, the 2018 RTP/SCS would not introduce a new impact relative to the 2015 RTP/SCS. This impact would remain less than significant and mitigation is not required.

d. Cumulative Impacts

As explained in Section 3.3, *Cumulative Projects Setting*, the cumulative effects of the 2018 RTP/SCS are included in the analysis of the 2018 RTP/SCS impacts. As discussed above, transportation projects included in the 2018 RTP/SCS and future development envisioned in the 2018 RTP/SCS would result in short-term and long-term air pollutant emissions. While the 2018 RTP/SCS is expected to have a less than significant impact related to short-term construction emissions with mitigation incorporated, and decrease regional emissions of ozone precursors, the 2018 RTP/SCS would potentially increase PM_{10} emissions from roadway activity relative to 2015 baseline and 2040 No Project conditions. As the region is currently in non-attainment of PM_{10} standards, this impact would be cumulatively significant.

4.2 Greenhouse Gas Emissions

This section discusses potential impacts related to greenhouse gas emissions and climate change. Air quality impacts are discussed in Section 4.2, *Air Quality.*

4.2.1 Setting

a. Climate Change and Greenhouse Gases

Gases that absorb and re-emit infrared radiation in the atmosphere are called greenhouse gases (GHGs). The GHGs that are widely seen as the principal contributors to human-induced climate change include carbon dioxide (CO_2), methane (CH_4), nitrous oxides (N_2O), fluorinated gases such as hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Water vapor is excluded from the list of GHGs because it is short-lived in the atmosphere and its atmospheric concentrations are primarily determined by natural processes, such as oceanic evaporation.

GHGs are emitted by both natural processes and human activities. Of these gases, CO_2, CH_4, and N_2O are emitted in the greatest quantities from human activities. Emissions of CO_2 are largely by-products of fossil fuel combustion, whereas CH_4 results from off-gassing associated with agricultural practices and landfills. N_2O is produced by microbial processes in soil and water, including those reactions that occur in fertilizers that contain nitrogen, fossil fuel combustion, and other chemical processes.

Man-made GHGs, many of which have greater heat-absorption potential than CO_2, include fluorinated gases and SF_6 (California Environmental Protection Agency [CalEPA] 2006). Different types of GHGs have varying global warming potentials (GWPs). The GWP of a GHG is the potential of a gas or aerosol to trap heat in the atmosphere over a specified timescale (generally, 100 years). Because GHGs absorb different amounts of heat, a common reference gas,CO_2, is used to relate the amount of heat absorbed to the amount of the gas emissions, referred to as "carbon dioxide equivalent" (CO_2e), and is the amount of a GHG emitted multiplied by its GWP. Carbon dioxide has a 100-year GWP of one. By contrast, methane has a GWP of 25, meaning its global warming effect is 25 times greater than carbon dioxide on a molecule-per-molecule basis (Intergovernmental Panel on Climate Change [IPCC] 2007).

b. Greenhouse Gas Emissions Inventories

Federal Emissions Inventory

Total U.S. GHG emissions were 6,586.7 million metric tons (MMT or gigatonne) CO_2e in 2015 (U.S. EPA 2017). Total U.S. emissions have increased by 3.5 percent since 1990. However, emissions decreased by 2.3 percent from 2014 to 2015 (U.S. EPA 2017). The decrease from 2014 to 2015 was a result of multiple factors, including: (1) substitution from coal to natural gas consumption in the electric power sector, (2) warmer winter conditions in 2015 resulting in a decreased demand for heating fuel in the residential and commercial sectors, and (3) a slight decrease in electricity demand (U.S. EPA 2017). Since 1990, U.S. emissions have increased at an average annual rate of 0.2 percent. In 2015, the industrial and transportation end-use sectors accounted for 29 percent and 27 percent of CO_2 emissions (with electricity-related emissions distributed), respectively. Meanwhile, the residential and commercial end-use sectors accounted for 16 percent and 17 percent of CO_2 emissions, respectively (U.S. EPA 2017).

California Emissions Inventory

Based on the California Air Resources Board (CARB) California Greenhouse Gas Inventory for 2000-2014, California produced 440.4 MMT CO_2e in 2015 (CARB 2017a). The largest single source of GHG in California is transportation, contributing 39 percent of the State's total GHG emissions. Industrial sources are the second-largest source of the state's GHG emissions, contributing 23 percent of the State's GHG emissions (CARB 2017a). California emissions are due in part to its large size and large population compared to other states. However, the State's mild climate reduces California's per capita fuel use and GHG emissions as compared to other states. CARB has projected statewide unregulated GHG emissions for the year 2020 will be 509.4 MMT CO_2e (CARB 2017b). These projections represent the emissions that would be expected to occur in the absence of any GHG reduction actions.

c. Potential Effects of Climate Change

Globally, climate change has the potential to affect numerous environmental resources through potential impacts related to future air temperatures and precipitation patterns. Scientific modeling predicts that continued GHG emissions at or above current rates would induce more extreme climate changes during the 21st century than were observed during the 20th century. Long-term trends have found that each of the past three decades has been warmer than all the previous decades in the instrumental record, and the decade from 2000 through 2010 has been the warmest. The global combined land and ocean temperature data show an increase of about 0.89°C (0.69°C to 1.08°C) over the period 1901 to 2012, and about 0.72°C (0.49°C to 0.89°C) over the period 1951 to 2012 when described by a linear trend. Several independently analyzed data records of global and regional Land-Surface Air Temperature (LSAT) obtained from station observations are in agreement that LSAT as well as sea surface temperatures have increased. In addition to these findings, there are identifiable signs that global warming is currently taking place, including substantial ice loss in the Arctic over the past two decades (IPCC 2014).

Potential impacts of climate change in California may include 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 (CalEPA 2010). Below is a summary of some of the potential effects that could be experienced in California as a result of climate change.

Air Quality

Higher temperatures, which are conducive to air pollution formation, could worsen air quality in California. Climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore its indirect effects, are uncertain. If higher temperatures are accompanied by drier conditions, the potential for large wildfires could increase, which, in turn, would further worsen air quality. However, if higher temperatures are accompanied by wetter rather than drier conditions, the rains would tend to temporarily clear the air of particulate pollution and reduce the incidence of large wildfires, thereby ameliorating the pollution associated with wildfires. Additionally, severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the state (CCCC 2009b).

Water Supply

Analysis of paleoclimatic data, such as tree-ring reconstructions of stream flow and precipitation, indicates a history of naturally and widely varying hydrologic conditions in California and the west, including a pattern of recurring and extended droughts. Uncertainty remains with respect to the overall impact of climate change on future water supplies in California. However, the average early spring snowpack in the Sierra Nevada decreased by about 10 percent during the last century, a loss of 1.5 million acre-feet of snowpack storage. During the same period, sea level rose eight inches along California's coast. California's temperature has risen 1°F, mostly at night and during the winter, with higher elevations experiencing the highest increase. Many Southern California cities have experienced their lowest recorded annual precipitation twice within the past decade. In a span of two years, Los Angeles experienced both its driest and wettest years on record (California Department of Water Resources [DWR] 2008, California Climate Change Center [CCCC] 2009).

This uncertainty complicates the analysis of future water demand, especially where the relationship between climate change and its potential effect on water demand is not well understood. The Sierra snowpack provides the majority of California's water supply by accumulating snow during the state's wet winters and releasing it slowly during the state's dry springs and summers. Based on historical data and modeling, the DWR projects that the Sierra snowpack will experience a 25 to 40 percent reduction from its historic average by 2050. Climate change is also anticipated to bring warmer storms that result in less snowfall at lower elevations, reducing the total snowpack (DWR 2008). As described in Section 4.10, *Hydrology and Water Quality*, the primary source of water for most users in the AMBAG region is groundwater. Climate change may reduce groundwater recharge, putting further strain on an already limited water supply in the region.

Hydrology and Sea Level Rise

Global warming can affect the distribution and amount of snowfall, rainfall, and snow pack experienced by a city or region; the intensity and frequency of storms; flood hydrographs (flash floods, rain or snow events, coincidental high tide and high runoff events); sea level rise and coastal flooding; coastal erosion; and the potential for saltwater intrusion. According to *The Impacts of Sea-Level Rise on the California Coast* (CCCC 2009a), climate change has the potential to induce substantial sea level rise in the coming century. The most recent IPCC report (2013) predicts a mean global sea level rise of 11 to 38 inches by 2100. In its report, *Rising Seas in California*, the Ocean Protection Council (OPC) predicts that sea levels along the California coast will likely (67% probability) rise by 0.2 to 1.1 feet by 2050 and 0.7 to 3.6 feet by 2100 (Griggs et al. 2017), varying by location and future conditions. A rise in sea levels could result in coastal flooding and erosion, and could jeopardize California's water supply due to saltwater intrusion. Increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events.
Ocean Acidification

The ocean covers over 70 percent of the earth's surface and acts as a major carbon sink in the global carbon cycle. As the concentration of CO_2 in the atmosphere increases, so does the concentration of carbon in the ocean. The reaction of dissolved CO_2 with seawater results in the creation of carbonic acid (H_2CO_3), carbonate, bicarbonate, and hydrogen ions, which lowers pH causing higher seawater acidity. Higher acidity in seawater affects many aquatic animals ability to fix calcium for body structure, which could have significant negative effects across the entire food chain.

Agriculture

California has a $30 billion annual agricultural industry that produces approximately half of the country's fruits and vegetables. Higher CO_2 levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, water demand could increase, crop-yield could be threatened by a less reliable water supply, and greater air pollution could render plants more susceptible to pest and disease outbreaks. In addition, temperature increases could change the time of year certain crops, such as wine grapes, bloom or ripen, and thereby affect their quality (CCCC 2006). Agriculture may face challenges due to extreme heat and water stress associated with climate change.

Ecosystems and Wildlife

Climate change and the potential resulting changes in weather patterns could have ecological effects on a global, regional, and local scale. Increasing concentrations of GHGs are likely to accelerate the rate of climate change. Scientists project that the average global surface temperature could rise by 1.0 to 4.5°F (0.6 to 2.5°C) in the next 50 years, and 2.2 to 10°F (1.4 to 5.8°C) in the next century, with substantial regional variation. Soil moisture is likely to decline in many regions, and intense rainstorms are likely to become more frequent. Rising temperatures could have four major impacts on plants and animals:

1. Timing of ecological events;
2. Geographic range;
3. Species' composition within communities; and
4. Ecosystem processes, such as carbon cycling and storage (Parmesan 2006).

d. Regulatory Setting

Federal

In M*assachusetts et al. v. Environmental Protection Agency et al.* ([2007] 549 U.S. 05-1120), the U.S. Supreme Court held that the U.S. EPA has the authority to regulate motor-vehicle GHG emissions under the federal Clean Air Act. The U.S. EPA issued a Final Rule for mandatory reporting of GHG emissions in October 2009. This Final Rule applies to fossil fuel suppliers, industrial gas suppliers, direct GHG emitters, and manufacturers of heavy-duty and off-road vehicles and vehicle engines, and requires annual reporting of emissions. In 2012, the U.S. EPA issued a Final Rule that establishes the GHG permitting thresholds that determine when Clean Air Act (CAA) permits under the New Source Review Prevention of Significant Deterioration (PSD) and Title V Operating Permit programs are required for new and existing industrial facilities.

In 2014, the U.S. Supreme Court held that U.S. EPA may not treat GHGs as an air pollutant for purposes of determining whether a source is a major source required to obtain a PSD or Title V permit (*Utility Air Regulatory Group v. EPA* [134 S. Ct. 2427]). The Court also held that PSD permits that are otherwise required (based on emissions of other pollutants) may continue to require limitations on GHG emissions based on the application of Best Available Control Technology (BACT)

State

CARB is responsible for the coordination and oversight of State and local air pollution control programs in California. California has numerous regulations aimed at reducing the State's GHG emissions. These initiatives are summarized below.

California Advanced Clean Car Standards

Assembly Bill (AB) 1493 (2002), California's Advanced Clean Cars (referred to as "Pavley"), requires CARB to develop and adopt regulations to achieve "the maximum feasible and cost-effective reduction of GHG emissions from motor vehicles" (ARB 2017c). On June 30, 2009, the U.S. EPA granted the waiver of Clean Air Act preemption to California for its greenhouse gas emission standards for motor vehicles beginning with the 2009 model year. Pavley I regulates model years from 2009 to 2016 and Pavley II, which is now referred to as "LEV (Low Emission Vehicle) III GHG" regulates model years from 2017 to 2025. The clean car standards are now grouped under the CARB's Advanced Clean Cars program, which was adopted by CARB in 2012 (CARB 2017c). The program, developed in coordination with the U.S. EPA and National Highway Traffic Safety Administration (NHTSA), establishes emission requirements for passenger vehicles, model years 2015 through 2025, and manufacturer requirements to provide Zero Emissions Vehicles (ZEV).

Executive Order S-3-05

In 2005, the Governor issued Executive Order (EO) S-3-05, which identifies Statewide GHG emission reduction targets to achieve long-term climate stabilization as follows:

- Reduce GHG emissions to 1990 levels by 2020; and
- Reduce GHG emissions to 80 percent below 1990 levels by 2050.

In response to EO S-3-05, the CalEPA created the Climate Action Team (CAT), which in March 2006 published the Climate Action Team Report (the "2006 CAT Report") (CalEPA 2006). The 2006 CAT Report identified a recommended list of strategies that the State could pursue to reduce GHG emissions. These are strategies that could be implemented by various State agencies to ensure that the emission reduction targets in EO S-3-05 are met and can be met with existing authority of the State agencies. The strategies include the reduction of passenger and light duty truck emissions, the reduction of idling times for diesel trucks, an overhaul of shipping technology/infrastructure, increased use of alternative fuels, increased recycling, and landfill methane capture, etc.

Assembly Bill 32

California's major initiative for reducing GHG emissions is outlined in Assembly Bill 32 (AB 32), the "California Global Warming Solutions Act of 2006," signed into law in 2006. AB 32 codifies the statewide goal of reducing GHG emissions to 1990 levels by 2020, and requires CARB to prepare a Scoping Plan that outlines the main State strategies for reducing GHGs to meet the 2020 deadline. In addition, AB 32 requires CARB to adopt regulations that require reporting and verification of statewide GHG emissions. The Scoping Plan was approved by CARB on December 11, 2008, and included GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste. Many of the GHG reduction measures included in the Scoping Plan (e.g., Low Carbon Fuel Standard, Advanced Clean Car standards, and Cap-and-Trade) have been adopted since approval of the Scoping Plan.

In May 2014, CARB approved the first update to the AB 32 Scoping Plan. The 2013 Scoping Plan update defines CARB's climate change priorities for the next five years and sets the groundwork to reach post-2020 statewide goals. The update highlights California's progress toward meeting the "near-term" 2020 GHG emission reduction goals defined in the original Scoping Plan. It also evaluates how to align the State's longer-term GHG reduction strategies with other State policy priorities, such as water, waste, natural resources, clean energy and transportation, and land use (CARB 2014).

Senate Bill 32

Senate Bill 32 (SB 32) became effective on January 1, 2017 and requires CARB to develop technologically feasible and cost effective regulations to achieve the targeted 40 percent GHG emission reduction by 2030 set in EO B-30-15. On December 14, 2017, CARB adopted the 2017 Scoping Plan, which provides a framework for achieving the 2030 target. To meet reduction targets, the 2017 Scoping Plan relies on the continuation and expansion of existing policies and regulations, such as the Cap-and-Trade Program, as well as implementation of recently adopted policies and policies, such as SB 350 and SB 1383 (see below). The 2017 Scoping Plan also puts an increased emphasis on innovation, adoption of existing technology, and strategic investment to support its strategies. As with the 2013 Scoping Plan Update, the 2017 Scoping Plan does not provide project-level thresholds for land use development. Instead, it recommends that local governments adopt policies and locally-appropriate quantitative thresholds consistent with a statewide per capita goal of six metric tons (MT) CO_2e by 2030 and two MT CO_2e by 2050 (CARB 2017d). As stated in the 2017 Scoping Plan, these goals are appropriate for plan-level analyses (city, county, subrCegional, or regional level), but not for specific individual projects because they include all emissions sectors in the State.

Senate Bill X1 2 and Senate Bill 350

In April 2011, the governor signed SB 2X requiring California to generate 33 percent of its electricity from renewable energy by 2020. SB 350, the Clean Energy and Pollution Reduction Act of 2015, builds on the target set in 2020 and was approved in October 2015. SB 350 has two objectives: to increase the procurement of electricity from renewable sources from 33 percent to 50 percent by 2030 and to double the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation.

Senate Bill 97

Senate Bill (SB) 97, signed in August 2007, acknowledges that climate change is an environmental issue that requires analysis in CEQA documents. In March 2010, the California Resources Agency (Resources Agency) adopted amendments to the State CEQA Guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions. The adopted guidelines give lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHG and climate change impacts.

Senate Bill 375

Senate Bill (SB) 375, signed in August 2008, enhances the State's ability to reach AB 32 goals by directing CARB to develop regional GHG emission reduction targets to be achieved from passenger vehicles for 2020 and 2035. In addition, SB 375 directs each of the state's 18 major Metropolitan Planning Organizations (MPO) to prepare a "sustainable communities strategy" (SCS) that contains a

growth strategy to meet these emission targets for inclusion in the Regional Transportation Plan (RTP). On September 23, 2010, CARB adopted final regional targets for reducing GHG emissions from 2005 levels by 2020 and 2035.

Senate Bill 1383

Adopted in September 2016, SB 1383 requires CARB to approve and begin implementing a comprehensive strategy to reduce emissions of short-lived climate pollutants. The bill requires the strategy to achieve the following reduction targets by 2030:

- Methane – 40% below 2013 levels
- Hydrofluorocarbons – 40% below 2013 levels
- Anthropogenic black carbon – 50% below 2013 levels

The bill also requires CalRecycle, in consultation with the State board, to adopt regulations that achieve specified targets for reducing organic waste in landfills.

California Environmental Quality Act

Pursuant to the requirements of SB 97, the Resources Agency has adopted amendments to the *CEQA Guidelines* for the feasible mitigation of GHG emissions or the effects of GHG emissions. The adopted CEQA Guidelines provide general regulatory guidance on the analysis and mitigation of GHG emissions in CEQA documents, while giving lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHGs and climate change impacts. To date, a variety of air districts have adopted quantitative significance thresholds for GHGs.

Regional and Local

Shasta Regional Climate Action Plan

A draft Regional Climate Action Plan (CAP) was created in 2010 for the Shasta County region. This plan outlines goals and policies for the region to achieve GHG reduction targets (County of Shasta 2018). However, this plan was never adopted. At the time of this report, there are no other CAPs adopted by individual cities within Shasta County.

Other Local Plans

GHG reduction policies can also be found in other local plans, particularly general plans. Many of the general plans prepared by member jurisdictions include policies that support GHG emissions reductions, such as policies that promote waste diversion, development of pedestrian and bicycle infrastructure, and infill development.

4.2.2 Impact Analysis

a. Methodology and Significance Thresholds

In March 2010, pursuant to the requirements of SB 97, the Natural Resources Agency adopted amendments to the State CEQA Guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions. These guidelines are used in evaluating the cumulative significance of GHG emissions from the proposed project.

According to the adopted CEQA Guidelines, impacts related to GHG emissions from the proposed project would be significant if the project would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; and/or
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

The vast majority of individual projects do not generate sufficient GHG emissions to create a project-specific impact through a direct influence to climate change; therefore, the issue of climate change typically involves an analysis of whether a project's contribution towards an impact is cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects (CEQA Guidelines, Section 15355).

For future projects, the significance of GHG emissions may be evaluated based on locally adopted quantitative thresholds, or consistency with a regional GHG reduction plan (such as a Climate Action Plan). To date, neither the Shasta County AQMD nor County of Shasta has formally adopted GHG CEQA thresholds. As a result, this section uses three thresholds of significance. The 2018 RTP/SCS would result in significant impacts related to GHG emissions if it would:

- Substantially increase construction GHG emissions relative to No Project conditions
- Increase 2040 per capita GHG emissions compared to 2040 No Project and baseline (2015) conditions
- Conflict with SB 375 emission reduction targets
- Conflict with AB 32, SB 32, and applicable local GHG reduction plans

For the GHG emissions impacts resulting from the proposed plan, this analysis evaluates potential impacts against both (1) a forecasted future baseline condition without the project (i.e., 2040 No Project) and (2) baseline (2015) conditions. The year 2015 is used as the baseline for this analysis (as well as the air quality analysis) as it is the most recent year for which regional VMT has been modeled.

The SB 375-based threshold is also included as it demonstrates SRTA's achievement of CARB-specified targets and consistency toward achieving statewide GHG reduction targets encoded in AB 32 and SB 32. For the Shasta County region, the targets set by CARB are not to exceed 2005 baseline levels by 2020 and 2035. In 2005, annual GHG emissions from passenger vehicles in the SRTA region were approximately 7,380 pounds of CO_2 per capita. Therefore, SRTA must maintain or reduce these levels in order to meet the target. If county-wide GHG emissions associated with the 2015 RTP do not exceed 7,380 pounds CO_2 per capita in 2020 or 2035, the plan would meet the mandate of SB 375 and be consistent with the 2020 and 2030 emission reduction targets of AB 32 and SB 32, respectively.

The Executive Order S-3-05 2050 emissions reduction target was not used as a threshold of significance because the Executive Order is stated as a "goal" rather than an adopted GHG reduction plan within the meaning of CEQA Guidelines Section 15064.4(b)(2), and the 2050 target lies beyond the horizon year (2040) of the 2018 RTP/SCS. Although the Attorney General has advised that the Executive Order 2050 target can inform CEQA analysis, there is no requirement to use it as a threshold of significance. Furthermore, the proposed plan, in meeting its SB 375 target, is in line with the goals of the Executive Order, which builds on the emission reduction trajectory established

by AB 32 (short-term goal for 2020) and SB 32 (mid-term goal for 2030), providing a long-term goal for 2050. In addition, total per capita regional GHG emissions for 2040 Project and No Project conditions are estimated and compared to per capita emission targets recommended in the 2017 Scoping Plan, which incorporate both the 2030 goal encoded in SB 32 and 2050 goal established in EO S-3-05. Thus, project consistency with EO S-3-05 is also addressed in the evaluation of project consistency with SB 32 targets.

Short-term Emissions

The California Air Pollution Control Officer Association (CAPCOA) does not discuss whether any of the suggested threshold approaches adequately address impacts from temporary construction activity. As stated in the CEQA and Climate Change white paper, “more study is needed to make this assessment or to develop separate thresholds for construction activity.” (CAPCOA, 2008). In addition, the municipalities in Shasta County have not identified any construction-related GHG emissions thresholds.

Construction-related emissions are speculative at the RTP/SCS level because such emissions are dependent on the characteristics of individual development projects. However, because construction associated with the transportation projects and land use scenario envisioned by the 2018 RTP/SCS would generate temporary GHG emissions (primarily due to the operation of construction equipment and truck trips), a qualitative analysis is provided below.

Long-term Emissions

GHG emissions from transportation sources in Shasta County were estimated using EMFAC 2014 based on regional VMT data generated using ShastaSIM. The EMFAC 2014 model generates an output of carbon CO_2 emissions, which were used as the overall indicator of greenhouse gas emissions, per the recommendations of the CARB SB 375 Regional Targets Advisory Committee. Essentially, EMFAC 2014 takes activity data, in this case, VMT, and multiplies it by the appropriate emissions factor (e.g., tons of CO_2 per VMT), to determine total CO_2 emissions. This general calculation is then customized to take into consideration region-specific fleet mixes and vehicle speeds.

Transportation CO_2 emissions for all vehicle classes were modeled in EMFAC 2014 for three scenarios: 2015 baseline conditions, 2040 growth and development with the 2018 RTP/SCS road network and land use scenario (i.e., 2040 Project), and 2040 growth and development with the road network and land use scenario envisioned in the 2015 RTP/SCS for its planning horizon (i.e., 2040 No Project). Two additional scenarios were modeled in EMFAC 2014 to evaluate the project’s conformity with SB 375 targets: 2020 Project and 2035 Project. For these two scenarios, EMFAC 2014 was run with SB 375 mode activated, which turns off emission benefits from the Advanced Clean Cars program and Low Carbon Fuel Standards and includes only emissions from passenger vehicle classes. VMT generated by pass-through trips was excluded for SB 375 conformity modeling scenarios, but was included for the other scenarios.

CO_2 emissions results for the SB 375 conformity analysis were converted from short (a.k.a., U.S.) tons to pounds and divided by the projected population to determine the daily per capita CO_2 emission rate in pounds (lbs/person/day). Per capita CO_2 was adjusted to reflect a more aggressive EV adoption rate than is assumed in EMFAC 2014. An off-model analysis was conducted to support this analysis and the results are summarized in the memo, "2018 Regional Transportation Plan/Sustainable Communities Strategy Off-model Greenhouse Gas Reduction Strategies," included in Appendix C. The analysis determined that 2035 emissions would be reduced by 1.8 percent

relative to what is modeled by EMFAC 2014. Thus, per capita CO_2 rates for 2035 estimated by EMFAC 2014 were decreased by 1.8 percent.

The percent reduction relative to the 2005 baseline was calculated by subtracting 2005 baseline per capita daily emissions from the 2020 and 2035 Project per capita daily emissions and then dividing the difference by 2005 baseline per capita daily emissions. The 2005 baseline used is the same baseline as was used for the 2015 RTP/SCS (modeled in EMFAC 2011), in accordance with CARB guidance. The percent reductions determined for 2020 and 2035 were adjusted to take into account differences between EMFAC 2011 and EMFAC 2014, as instructed in the CARB memo, "Methodology to Calculate CO_2 Adjustment to EMFAC Output for SB 375 Target Demonstrations."

Total operational GHG emissions were estimated for baseline, 2040 Project, and 2040 No Project conditions by calculating emissions associated with the land use development and transportation network envisioned under the 2018 RTP/SCS from the following sources: mobile sources, electricity use, natural gas use, waste disposal, and water treatment, distribution, and conveyance, and wastewater treatment. Mobile source GHG emissions were modeled using ShastaSIM and EMFAC 2014 as described above for all vehicle classes. Population, employment, and residential unit (divided into single-family, multi-family, and mobile homes/other) numbers were estimated using ShastaSIM.

Electricity and natural gas emissions were estimated using the number of residential units and square feet of commercial space (derived from employment numbers), statewide average consumption rates for different housing types and commercial uses, and emission factors for electricity and natural gas. Waste emissions were estimated using population numbers, the statewide average waste disposal rate, and an emission factor for solid waste. Water emissions were estimated using total population, energy intensity for water treatment, conveyance, distribution, and wastewater treatment, and the emission factor for electricity. Emission factors and consumption rates were not adjusted for 2040 to reflect adopted policies that would reduce the carbon intensity of energy and improve energy efficiency (e.g., SB 350), or statewide initiatives to enhance water conservation and water efficiency and reduce waste disposal, and thus provide a conservative estimate of future GHG emissions from these sources. To calculate project per-capita emissions, emissions were totaled for all sectors and divided by the service population (employment + residential population). Calculations for total GHG emissions, along with data sources, are provided in Appendix D.

b. Project Impacts and Mitigation Measures

Threshold:	Substantially increase construction GHG emissions relative to No Project conditions.

GHG-1 CONSTRUCTION OF TRANSPORTATION IMPROVEMENT PROJECTS AND THE LAND USE PATTERN ENVISIONED BY THE 2018 RTP/SCS WOULD GENERATE SHORT-TERM GHG EMISSIONS. DUE TO THE INCLUSION OF A LARGER NUMBER OF PROJECTS, IMPLEMENTATION OF THE 2018 RTP/SCS WOULD POTENTIALLY RESULT IN HIGHER QUANTITIES OF SHORT-TERM GHG EMISSIONS THAN IMPLEMENTATION OF THE 2015 RTP/SCS. HOWEVER, WITH MITIGATION, IMPACTS WOULD REMAIN LESS THAN SIGNIFICANT.

Construction activities associated with transportation improvement projects and future land use patterns envisioned by the proposed plan would generate temporary short-term GHG emissions primarily due to the operation of construction equipment and truck trips. Construction-related emissions are speculative at the plan level because such emissions are dependent on the characteristics of individual development projects.

The 2018 RTP/SCS would add 35 net new minor projects relative to the 2015 RTP/SCS. None of the modified or new projects on the 2018 RTP/SCS list would be substantially different from those on the 2015 RTP/SCS list in terms of geographical location, type of project, or size of project. In addition, the land use scenario envisioned by the 2018 RTP/SCS is similar to that contained in the 2015 RTP/SCS and concentrates the forecasted growth in population and employment in the region in urban areas and corridors of the County. Nevertheless, because the 2018 RTP/SCS includes more projects, it would potentially result in a greater amount of short-term GHG emissions associated with their construction. With incorporation of Mitigation Measure GHG-1, however, this impact would remain less than significant.

Mitigation Measures

SRTA recommends that individual project lead agencies implement the following mitigation measures for applicable transportation projects, including but not limited to projects listed in in Appendix B. These measures can and should be implemented for future land development pursuant to the 2018 RTP/SCS that would involve construction activities. The following mitigation measures are taken from the 2015 RTP/SCS EIR, with minor typographical revisions and updates to reflect regulatory changes.

GHG-1 Control Measures for Construction GHG Emissions

The individual project lead agency shall ensure that applicable GHG-reducing emissions measures for off-road construction vehicles are implemented during construction. The measures shall be noted on all construction plans and the lead agency shall perform periodic site inspections. Applicable GHG-reducing measures include the following:

- Use of diesel construction equipment meeting CARB's Tier 2 standards or cleaner (i.e., Tier 3 or 4) off-road heavy-duty diesel engines, and comply with the State Off-Road Regulation;
- Use of on-road heavy-duty trucks that meet the CARB's 2007 or cleaner certification standard for on-road heavy-duty diesel engines, and comply with the State On-Road Regulation;
- All on and off-road diesel equipment shall not idle for more than 5 minutes. Signs shall be posted in the designated queuing areas and or job sites to remind drivers and operators of the 5 minute idling limit;
- Use of electric equipment in place of diesel-powered equipment, where feasible;
- Substitute gasoline-powered in place of diesel-powered equipment, where feasible;
- Use of alternatively fueled construction equipment on-site where feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane or biodiesel, in place of diesel powered equipment for 15 percent of the fleet;
- Use of materials sources from local suppliers;
- Recycling or reuse of at least 65 percent of construction waste materials.

Significance After Mitigation

With the implementation of the above mitigation, impacts related to short-term GHG emissions would be less than significant.

Threshold:	Increase 2040 per capita GHG emissions compared to 2040 No Project and baseline (2015) conditions.

GHG-2 IMPLEMENTATION OF THE 2018 RTP/SCS WOULD NOT RESULT IN A SIGNIFICANT INCREASE IN PER CAPITA GHG EMISSIONS FROM ALL SOURCES COMPARED TO THE 2040 NO PROJECT SCENARIO AND 2015 BASELINE. THIS IMPACT WOULD REMAIN LESS THAN SIGNIFICANT.

Table 4.2-1 summarizes total per capita GHG emissions (MT CO_2e/year) for baseline, 2040 Project, and 2040 No Project conditions, which includes GHG emissions from mobile sources (all vehicle classes), and residential and commercial electricity, natural gas, waste disposal, and water treatment, distribution, and conveyance. As indicated in the table, the 2018 RTP/SCS would reduce per capita emissions in 2040 relative to No Project conditions and baseline conditions. Therefore, this impact would remain less than significant and no mitigation is required.

Table 4.2-1 Total per Capita GHG Emissions (MT CO_2e/ year)

Scenario	Per Capita GHG Emissions (MT CO_2e/person/year)	Change Relative to Baseline
2015 Baseline	4.8	
2040 Project	3.2	-1.6
2040 No Project	3.9	-1.0

Note: Numbers may not add up due to rounding.

Source: See Appendix D for calculations of total GHG emissions for Shasta County.

Threshold:	Conflict with SB 375 GHG emission reduction targets. Conflict with applicable local GHG reduction plans.

GHG-3 IMPLEMENTATION OF THE 2018 RTP/SCS WOULD REDUCE PER CAPITA GHG EMISSIONS FROM PASSENGER VEHICLES CONSISTENT WITH SRTA'S SB 375 TARGETS FOR 2020 AND 2035 OF NO INCREASE RELATIVE TO 2005. THEREFORE, THE 2018 RTP/SCS WOULD NOT CONFLICT WITH SB 375. THIS IMPACT WOULD REMAIN LESS THAN SIGNIFICANT.

As indicated in the 2017 Scoping Plan, SB 375 comprises one of California's key strategies to reduce GHG emissions from transportation sources, which generate the majority of California's GHG emissions. SB 375 requires that local MPOs develop integrated land use and transportation plans to meet GHG reduction targets for cars and light trucks established by CARB. CARB is required to review and revise reduction targets every eight years, allowing for increasingly stringent reduction targets over time and updated time horizons. According to the Scoping Plan, with implementation of SB 375 and other strategies outlined in the Scoping Plan, California will be able to meet statewide targets set forth in AB 32 and SB 32.

For SRTA, the current per capita emission reduction targets set by CARB for 2020 and 2035 is no increase relative to 2005 levels. Table 4.2-2 shows SB 375 regional emissions and targets for 2020 and 2035 with implementation of the 2018 RTP/SCS, as well as for the 2005 baseline. The 2018 RTP/SCS would meet the adopted SB 375 reduction targets, providing a reduction of approximately four percent in 2020 and one percent in 2035. Therefore, the project would be consistent with SB 375 emission reduction targets. This impact would remain less than significant.

Table 4.2-2 SRTA SB 375 Emissions and Targets

Scenario	Per Capita CO_2 Emissions (lbs CO_2/ person/day)	Per Capita CO_2 Emissions with Off-Model Adjustment (lbs CO_2/ person/day)	Preliminary % Change Relative to Baseline, Prior to EMFAC Adjustment	EMFAC Adjustment to % Change	% Change Relative to Baseline with EMFAC Adjustment	Target
2005 Baseline[1]	21.31	–	–		–	–
2020 Project	20.68	20.68	-2.95	-1.02	-3.97	0% increase from 2005
2035 Project	22.03	21.64	1.55	-2.71	-1.16	0% increase from 2005

[1] Per CARB guidance, the 2005 baseline is based on EMFAC2011 modeling conducted for the 2015 RTP/SCS. However, as presented in the 2015 RTP/SCS EIR, EMFAC results for the 2015 RTP/SCS had been converted to lbs using the conversion factor for metric tons, rather than short tons. The 2005 per capita rate provided in this table has been corrected to use the conversion factor for short tons. Use of the incorrect conversion factor does not affect the percent reduction calculations; therefore, the finding in the previous RTP/SCS remains correct (that SRTA meets its SB 375 targets).

Source: See Appendix C for SB 375 conformity analysis data and calculations.

Threshold: Conflict with AB 32, SB 32, and applicable local GHG reduction plans.

GHG-4 THE 2018 RTP/SCS SUPPORTS HIGHER-DENSITY AND INFILL DEVELOPMENT RELATIVE TO EXISTING TRENDS AND INCLUDES TRANSIT AND ACTIVE TRANSPORTATION PROJECTS THAT WOULD REDUCE VMT AND ASSOCIATED GHG EMISSIONS. IN ADDITION, THE PROJECT WOULD BE CONSISTENT WITH STATEWIDE REDUCTION TARGETS IDENTIFIED IN AB 32 AND SB 32. THEREFORE, THE PROJECT WOULD NOT CONFLICT WITH OTHER STATEWIDE AND LOCAL GHG REDUCTION PLANS AND POLICIES. THIS IMPACT WOULD REMAIN LESS THAN SIGNIFICANT.

The 2017 Scoping Plan outlines the state's roadmap for achieving GHG emission targets encoded in AB 32 and SB 32. As discussed above under "Significance Thresholds," SB 375 comprises one of the key strategies included in the 2017 Scoping Plan to reduce GHG emissions from transportation sources, which generate the majority of California's GHG emissions. SB 375 requires that local MPOs develop integrated land use and transportation plans to meet GHG reduction targets for cars and light trucks established by CARB; importantly, CARB is required to review and revise reduction targets every eight years, allowing for increasingly stringent reduction targets over time and updated time horizons. According to the Scoping Plan, with implementation of SB 375, and other strategies outlined in the Scoping Plan, California will be able to meet statewide targets set forth in AB 32 and SB 32. As discussed under Impact GHG-3, the 2018 RTP/SCS would meet SB 375 targets.

The 2017 Scoping Plan also includes a number of State goals for reducing VMT and GHG emissions relevant to the 2018 RTP/SCS, including the following:

- Promote all feasible policies to reduce VMT, including:
  - Land use and community design that reduce VMT,
  - Transit oriented development,
  - Complete street design policies that prioritize transit, biking, and walking, and
  - Increasing low carbon mobility choices, including improved access to viable and affordable public transportation and active transportation opportunities.
- Promote transportation fuel system infrastructure for electric, fuel-cell, and other emerging clean technologies that is accessible to the public where possible, and especially in underserved communities, including environmental justice communities.
- Increase the number, safety, connectivity, and attractiveness of biking and walking facilities to increase use.
- Promote shared-use mobility, such as bike sharing, car sharing and ride-sourcing services to bridge the "first mile, last mile" gap between commuters' transit stops and their destinations.
- Quadruple the proportion of trips taken by foot by 2030
- Strive for a nine-fold increase in the proportion of trips taken by bicycle by 2030 (from a baseline of the 2010–2012 California Household Travel Survey).
- Strive, in passenger rail hubs, for a transit mode share of between 10 percent and 50 percent, and for a walk and bike mode share of between 10 percent and 15 percent

The 2018 RTP/SCS would promote compact and infill development and includes active transportation and transit projects that would support reductions in GHG emissions from passenger vehicles. Therefore, the 2018 RTP/SCS would support applicable goals included in the 2017 Scoping Plan to reduce GHG emissions from transportation sources.

The 2017 Scoping Plan also recommends plan-level GHG emission reduction goals of six MT CO_2e per capita by 2030 and two MT CO_2e per capita by 2050 for consistency with SB 32's 2030 target and EO S-3-05's 2050 target. Assuming a linear trajectory, these targets would require an emission reduction of 0.2 MT CO_2e per capita per year, or per capita emissions of 4.0 MT CO_2e by 2040. As indicated in Table 4.1-2, with implementation of the 2018 RTP/SCS, per capita emissions in Shasta County would be approximately 3.2 MT CO_2e, which is below the per capita targets established in the 2017 Scoping Plan. Therefore, the 2018 RTP/SCS would be consistent with SB 32 and EO S-3-05 GHG reduction targets.

The 2018 RTP/SCS alone is not intended to meet the AB 32 and SB 32 emissions reduction targets. Given that the primary statutory responsibility of the 2018 RTP/SCS is to achieve SB 375 targets, which it does, and support applicable goals included in the 2017 Scoping Plan, the 2018 RTP/SCS has successfully contributed its share to meeting AB 32 and SB 32 targets.

The land use scenario envisioned by the 2018 RTP/SCS supports higher-density and infill development relative to existing trends, and the RTP includes active transportation projects. These project features would be consistent with local policies to reduce GHG emissions contained in member jurisdictions' General Plans, as described above. Therefore, the project would not conflict with any applicable GHG reduction plans and policies. This impact would remain less than significant.

c. Cumulative Impacts

As discussed above, climate change is inherently a cumulative impact and, therefore, the issue of climate change typically involves an analysis of whether a project's contribution towards an impact is cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects (CEQA Guidelines, Section 15355). The project would be consistent with statewide emission reduction targets as well as local plans and policies to reduce GHG emissions. Therefore, the 2018 RTP/SCS would not result in a cumulatively considerable contribution to climate change and would have a less than significant cumulative impact.

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4.3 Hazards and Hazardous Materials

This section analyzes impacts related to wildland fires in the SRTA region. All other hazards and hazardous materials issue areas were analyzed in the Initial Study for the 2018 RTP/SCS and were found to be less than significant (see Appendix A). Therefore, wildland fires are the only hazard discussed herein.

4.3.1 Setting

a. Physical Setting

Wildland Fires

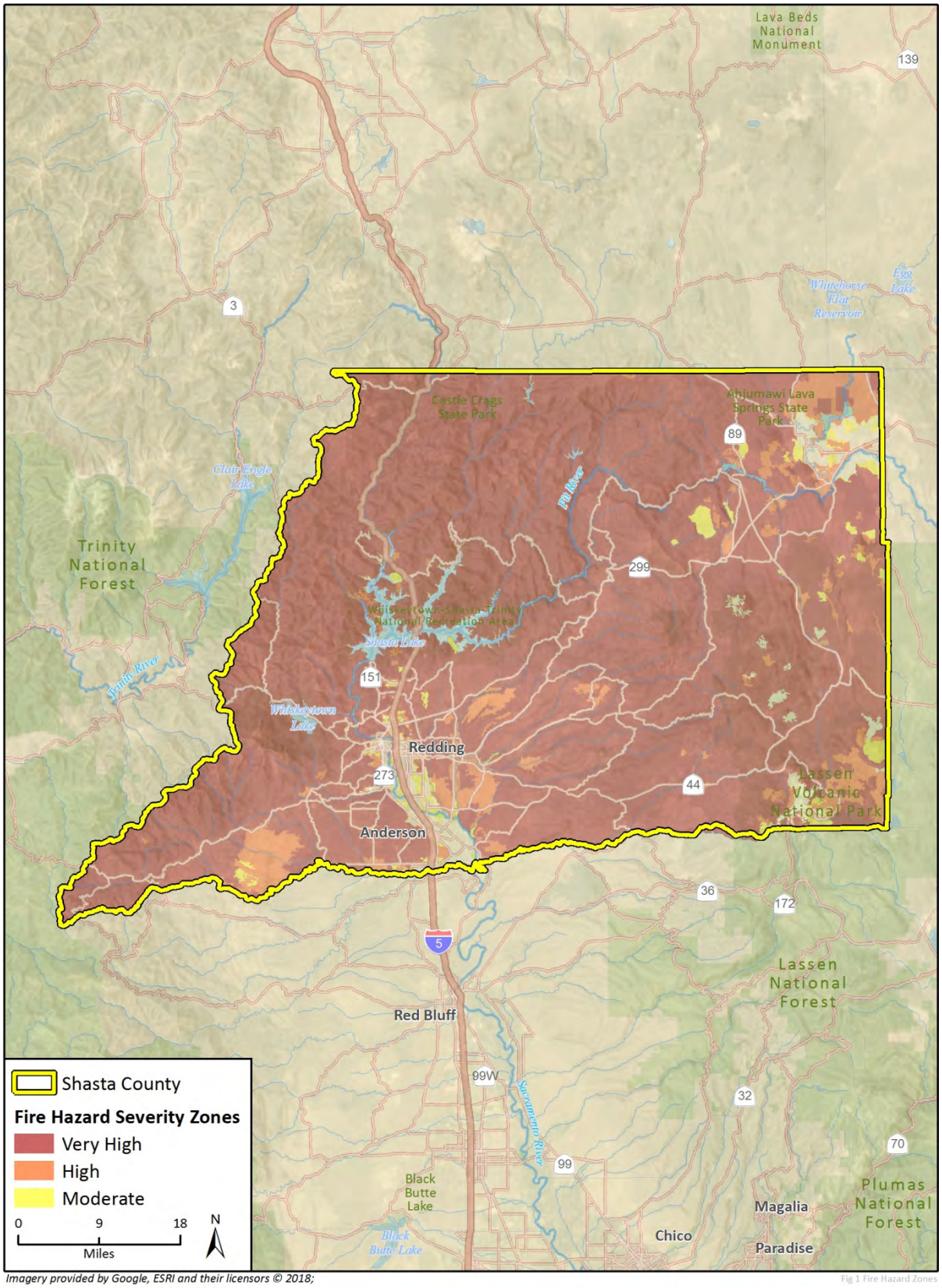
In California, responsibility for wildfire prevention and suppression is shared by federal, state and local agencies. Federal agencies are responsible for federal lands in Federal Responsibility Areas. The State of California has determined that some non-federal lands in unincorporated areas with watershed value are of statewide interest and have classified those lands as State Responsibility Areas (SRA), which are managed by the California Department of Forestry and Fire Protection (CAL FIRE). All incorporated areas and other unincorporated lands are classified as Local Responsibility Areas (LRA).

While all of California is subject to some degree of wildfire hazard, there are specific features that make certain areas more hazardous. CAL FIRE is required by law to map areas of significant fire hazards based on fuels, terrain, weather and other relevant factors (Public Resources Code [PRC] 4201-4204 and California Government Code 51175-89). Factors that increase an area's susceptibility to fire hazards include slope, vegetation type and condition and atmospheric conditions. CAL FIRE has identified two types of wildland fire risk areas: 1) Wildland Areas That May Contain Substantial Forest Fire Risks and Hazards and 2) Very High Fire Hazard Severity Zones. Each risk area carries with it code requirements to reduce the potential risk of wildland fires. Under state regulations, areas within very high fire hazard risk zones must comply with specific building and vegetation management requirements intended to reduce property damage and loss of life within these areas.

Throughout the SRTA region, there is a full range of conditions and fire hazards as indicated in the applicable Fire Hazard Severity Zone Maps for the region. According to the Shasta County Fire Hazard Severity Zones in SRA (CAL FIRE 2007), nearly the entire county within CAL FIRE responsibility is mapped as either high or very high fire hazard.

Development that has spread into less densely populated, often hilly areas has increased the number of people living in heavily-vegetated areas that are prone to wildfire. This area where wildlands meet urban development is referred to as the wildland-urban interface and is subject to urban wildfire. An example of a wildland-urban interface in the SRTA region would be the Burney and Fall River Mills communities. The 1999 Jones Fire around the community of Sherman, which is still ranked as California's ninth most destructive wildfire, destroyed 954 structures (CAL FIRE 2018) and is an example of the major losses of property that can result from a fire within the wildlife-urban interface. **Figure 4.3-**1 displays the fire hazard severity zones for Shasta County.

Figure 4.3-1 Shasta County Fire Hazard Severity Zones



Imagery provided by Google, ESRI and their licensors © 2018;
Additional data provided by CALFIRE, 2007.

Fig 1 Fire Hazard Zones

b. Regulatory Setting

Federal

Federal Disaster Mitigation Act

The Disaster Mitigation Act of 2000 provided a new set of mitigation plan requirements that encourage state and local jurisdictions to coordinate disaster mitigation planning and implementation. States are encouraged to complete a "Standard" or an "Enhanced" Natural Mitigation Plan. "Enhanced" plans demonstrate increased coordination of mitigation activities at the state level and, if completed and approved, increase the amount of funding through the Hazard Mitigation Grant Program.

State

California Fire Code

The California Fire Code is Chapter 9 of CCR Title 24. It is the primary means for authorizing and enforcing procedures and mechanisms to ensure the safe handling and storage of any substance that may pose a threat to public health and safety. The California Fire Code regulates the use, handling and storage requirements for hazardous materials at fixed facilities. The California Fire Code and the California Building Code use a hazard classification system to determine what protective measures are required to protect fire and life safety. These measures may include construction standards, separations from property lines and specialized equipment. To ensure that these safety measures are met, the California Fire Code employs a permit system based on hazard classification.

California Unified Program Administration

The Unified Program consolidates, coordinates and makes consistent the administrative requirements, permits, inspections and enforcement activities of six environmental and emergency response programs, as listed below:

- Hazardous Materials Release Response Plans and Inventories (Business Plans);
- California Accidental Release Prevention (CalARP) Program;
- Underground Storage Tank Program;
- Aboveground Petroleum Storage Act Program;
- Hazardous Waste Generator and Onsite Hazardous Waste Treatment (tiered permitting) Programs; and
- California Uniform Fire Code: Hazardous Material Management Plans and Hazardous Material Inventory Statements.

The state agency partners involved in the Unified Program have the responsibility of setting program element standards, working with the California Environmental Protection Agency (CalEPA) on ensuring program consistency and providing technical assistance to the Certified Unified Program Agencies (CUPA). The following state agencies are involved with the Unified Program:

- CalEPA is directly responsible for coordinating the administration of the Unified Program. The Secretary of the CalEPA certifies CUPAs.

- California Department of Toxic Substances Control (DTSC) provides technical assistance and evaluation for the hazardous waste generator program including onsite treatment (tiered permitting).
- California Office of Emergency Services (CalOES) is responsible for providing technical assistance and evaluation of the Hazardous Material Release Response Plan (Business Plan) Program and the CalARP Programs.
- The Office of the State Fire Marshal is responsible for ensuring the implementation of the Hazardous Material Management Plans and the Hazardous Material Inventory Statement Programs. These programs tie in closely with the Business Plan Program.
- The State Water Resources Control Board (SWRCB) provides technical assistance and evaluation for the underground storage tank program in addition to handling the oversight and enforcement for the aboveground storage tank program.

The Shasta County Environmental Health Division (EHD) is the designated CUPA for Shasta County. The EHD is responsible for implementing the federal and state laws and regulations for all jurisdictions within Shasta County.

Regional

City and County General Plans

Local planning policies related to wildland fire hazards are established in each jurisdiction's general plan, generally in the Safety Element or equivalent chapter. For emergency services, some of the relevant policies include coordinating with other agencies that are responsible for planning medical facilities to meet the health care needs of residents in the region, retaining hospitals, evaluating medical facility proposals, providing emergency response services and participating in mutual-aid agreements.

The Shasta County General Plan Fire Safety and Sheriff Protection Element contains objectives and policies with the specific intention of enforcing compliance with applicable fire safety regulations. For instance, Policy FS-a stipulates that "[a]ll new land use projects shall conform to the County Fire Safety Standards," and Policy FS-b states that "[k]nown fire hazard information should be reported as part of every General Plan amendment, zone change, use permit, variance, building site approval, and all other land development applications subject to the requirements of the California Environmental Quality Act (CEQA)" (Shasta County 2004). Similarly, the Anderson General Plan Health and Safety Element contains policies aimed at incorporating fire safety measures when considering development, such as Policy FP-3 which specifically mentions the consideration of fire safety when undertaking capital improvements (City of Anderson 2007). The Shasta Lake General Plan also contains objectives, policies, and implementation measures intending to incorporate applicable fire safety standards into new development, such as Policy FS-c, which is identical to Policy FS-3 contained in the Anderson General Plan Health and Safety Element (City of Shasta Lake 1999). Finally, the Redding General Plan Health and Safety Element contains policies that call for compliance with applicable fire safety requirements as well as more specific measures such as requiring setbacks, promoting fire prevention through education, and necessitating adequate emergency access (City of Redding 2000).

Furthermore, as of January 1, 2014, Senate Bill 1241 (SB 1241) requires that, upon the next revision of the housing element, jurisdictions review and update the Safety Element as necessary to address the risk of fire in SRAs and very-high fire hazard severity zones. These revisions must take into

account specified considerations, including the provisions outlined in "Fire Hazard Planning" by the Governor's Office of Planning and Research.

Multi-Jurisdictional Hazard Mitigation Plan

Local jurisdictions develop, adopt and update hazard mitigation plans to establish guiding principles for reducing hazard risk, as well as specific mitigation actions to eliminate or reduce identified vulnerabilities. The Shasta County and City of Anderson Multi-Jurisdictional Hazard Mitigation Plan (2011) serves to reduce or eliminate long-term risk to people and property from natural hazards and their effects in the SRTA region.

4.3.2 Impact Analysis

a. Methodology and Significance Thresholds

As mentioned at the beginning of this analysis, wildland fires are the hazard analyzed herein while other significance thresholds identified in Appendix G of the State CEQA Guideline were determined to be less than significant in the Initial Study to the 2018 RTP/SCS. Therefore, the following criterion is applied in determining whether the 2018 RTP/SCS would have a significant impact:

- Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

The methodology used for the following evaluation is based on a review of documents and publicly available information about hazardous and potentially hazardous conditions in the SRTA region to determine the potential for implementation of the 2018 RTP/SCS to result in an increased health or safety hazard to people or the environment. This includes city, county, and state planning documents. This program-level analysis is based on hazards typically associated with certain land uses and an overall understanding of the key safety concerns that could result from implementation of the 2018 RTP/SCS.

The evaluation of wildland fire impacts reasonably assumes that the construction and development under the 2018 RTP/SCS would adhere to the latest federal, state and local regulations, and conform to the latest required standards in the industry, as appropriate for individual projects.

b. Project Impacts and Mitigation Measures

This section describes generalized impacts associated with the 2018 RTP/SCS. Due to the programmatic nature of the 2018 RTP/SCS, a precise, project-level analysis of the specific impacts associated with individual transportation and land use projects is not possible. In general, however, implementation of proposed transportation improvements and future projects under the land use scenario envisioned by the 2018 RTP/SCS would result in wildland fire impacts as described in the following section.

Threshold:	Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

Impact HAZ-1 THE 2018 RTP/SCS INCLUDES LAND DEVELOPMENT AND TRANSPORTATION PROJECTS WITHIN AREAS OF MODERATE, HIGH, AND VERY HIGH FIRE HAZARD SEVERITY ZONES. INFILL DEVELOPMENT EMPHASIZED IN THE 2018 RTP/SCS AND EXISTING REGULATIONS AND PROGRAMS WOULD REDUCE THE VULNERABILITY OF PEOPLE AND STRUCTURES TO WILDLAND FIRES. HOWEVER, A SIGNIFICANT RISK OF LOSS, INJURY, OR DEATH FROM WILDLAND FIRES WOULD BE POSSIBLE GIVEN THE FIRE HAZARD ACROSS SHASTA COUNTY. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

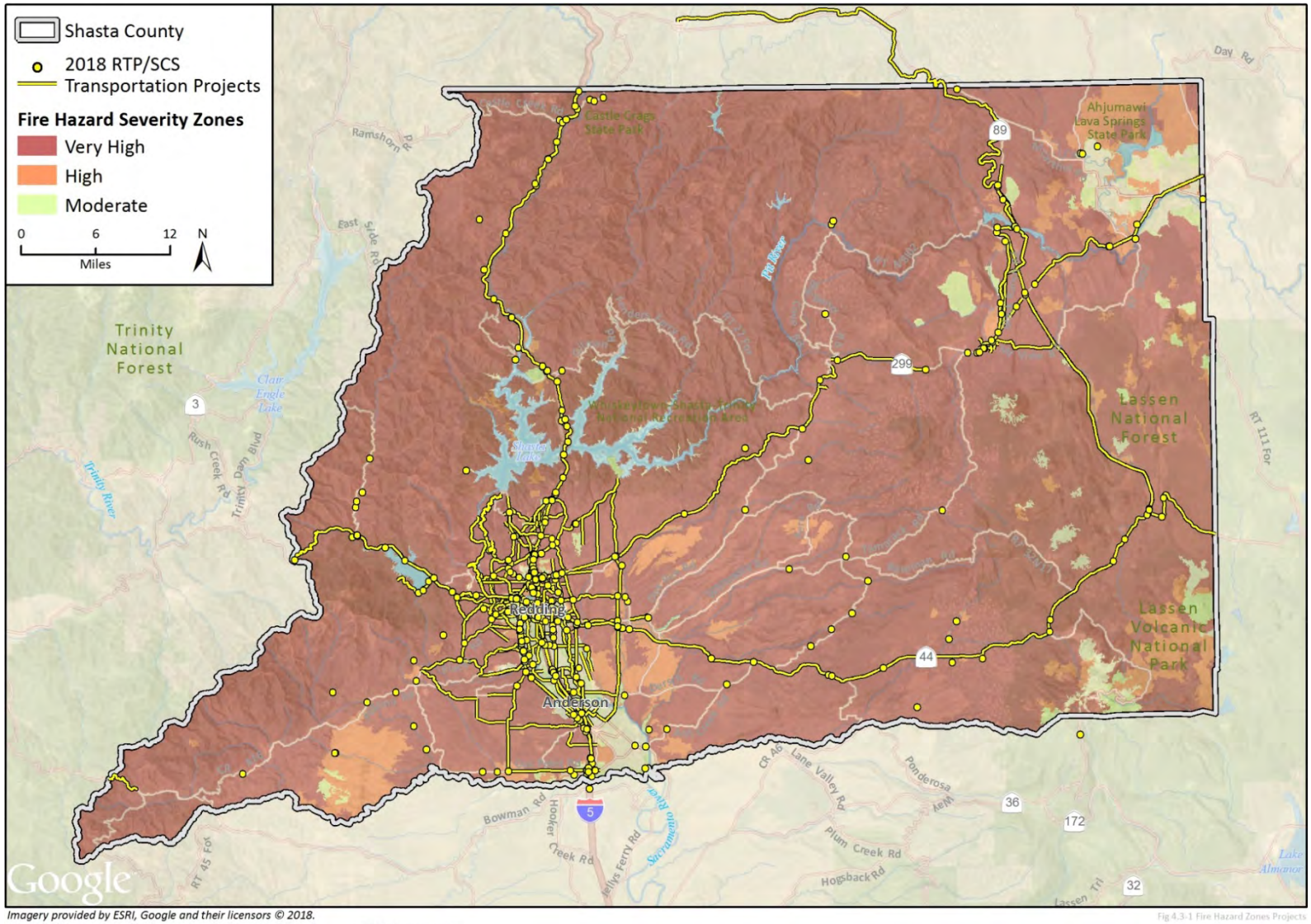
As shown in **Figure 4.3-**1, CAL FIRE has mapped much of the SRTA region as having high or very high fire hazard. The land use scenario envisioned by the 2018 RTP/SCS focuses on infill development that would concentrate people and structures in existing urbanized areas where the risk of wildland fire is less than in more rural areas where fuels are more abundant. This land use scenario is nearly identical to that contained in the 2015 RTP/SCS, which concentrates the forecasted growth in population and employment in the region in urban areas and corridors of the County while preserving the distinct identify of existing cities and towns. However, not all projects and development included in the 2018 RTP/SCS would be infill projects in urbanized areas, and some projects would inevitably be located in areas at risk of wildland fires. Additionally, CAL FIRE has mapped areas with the region's urbanized and incorporated cities as moderate, high, or very high fire hazard severity zones (CAL FIRE 2007).

New construction would be subject to the California Fire Code, which includes safety measures to minimize the threat of fire, including ignition-resistant construction with exterior walls of noncombustible or ignition resistant material from the surface of the ground to the roof system and sealing any gaps around doors, windows, eaves and vents to prevent intrusion by flame or embers. Title 14 of the California Code of Regulations sets forth the minimum development standards for emergency access, fuel modification, setback, signage and water supply, which help prevent loss of structures or life by reducing wildfire hazards. The codes and regulations would reduce the risk of loss, injury or death from wildland fire, but not entirely. Thus, because some land use development projects would be located in areas of high or very high fire hazards, and existing codes and regulations cannot fully prevent wildland fires from damaging structures or populations, impacts related to land use included in the 2018 RTP/SCS would be potentially significant.

Figure 4.3-2 illustrates the location of the transportation improvement projects contained in the 2018 RTP/SCS in the context of existing wildland fire hazard within Shasta County.

As shown in **Figure 4.3-2**, many of the transportation projects included in the 2018 RTP/SCS, such as the proposed improvements along Interstate 5 and highways 44 and 299, would be within areas that CAL FIRE has mapped as moderate, high, or very high fire hazard severity zones. However, transportation improvement projects included in the 2018 RTP/SCS update the 2015 RTP/SCS project list by removing projects that have been completed since 2015, modifying some projects that continue to be in the list based on new information, and adding approximately 35 net new minor projects, most of which are located in the City of Redding. Nonetheless, some new or modified transportation improvement projects would be located within areas designated as high or very high fire hazard severity zones. Additionally, as described above, CAL FIRE has mapped areas of high and very high fire hazard severity zones within the region's incorporated cities, including the City of Redding. These projects would increase the exposure of transportation infrastructure to risk of loss or damage from wildland fire. Thus, the impacts of transportation projects included in the 2018 RTP/SCS would be significant and unavoidable.

Figure 4.3-2 2018 RTP/SCS Transportation Projects and Fire Hazard Severity Zones



Imagery provided by ESRI, Google and their licensors © 2018.
Additional data provided by Shasta Regional Transportation Agency, 2018; CALFIRE, 2007.

Fig 4.3-1 Fire Hazard Zones Projects

Mitigation Measures

SRTA shall implement the following mitigation measure developed for the 2018 RTP/SCS where applicable for transportation projects that result in impacts related to wildland fire. Cities and counties in the SRTA region can and should implement these measures, where relevant to land use projects implementing the 2018 RTP/SCS. Project-specific environmental documents may adjust these mitigation measures as necessary to respond to site-specific conditions.

HAZ-1 Wildland Fire Risk Reduction

If an individual transportation or land use project included in the 2018 RTP/SCS is located within the wildland-urban interface or areas favorable for wildland fires such that project-specific CEQA analysis finds a significant risk of loss, injury or death from fire, the implementing agency shall require appropriate mitigation to reduce the risk. Examples of mitigation to reduce risk of loss, injury or death from wildlife include, but are not limited to:

- Require adherence to the local hazards mitigation plan, as well as the local general plan policies and programs aimed at reducing the risk of wildland fires through land use compatibility, training, sustainable development, brush management, public outreach and service standards for fire departments.
- Encourage the use of fire-resistant vegetation native to the SRTA region and/or the local microclimate of the project site, and discourage the use of fire-prone species especially non-native, invasive species such as pampas grass or giant reed.
- Require a fire safety plan be submitted to and approved by the local fire protection agency. The fire safety plan shall include all of the fire safety features incorporated into the project and the schedule for implementation of the features. The local fire protection agency may require changes to the plan or may reject the plan if it does not adequately address fire hazards associated with the project as a whole or the individual phase of the project.
- Prohibit certain project construction activities with potential to ignite wildland fires during red-flag warnings issued by the National Weather Service for the project site location. Example activities that should be prohibited during red-flag warnings include welding and grinding outside of enclosed buildings.
- Require fire extinguishers to be onsite during construction of projects. Fire extinguishers shall be maintained to function according to manufacturer specifications. Construction personnel shall receive training on the proper methods of using a fire extinguisher.

Significance After Mitigation

With implementation of this mitigation, the risk of loss of structures and transportation infrastructure and the risk of injury or death due to wildland fire would be reduced. These measures would make structures more fire resistant and less vulnerable to loss in the event of a wildland fire. These measures would also reduce the potential for construction of the 2018 RTP/SCS projects to inadvertently ignite a wildland fire. However, it is not possible to prevent a significant risk of wildland fires or fully protect people and structures from the risks of wildland fires, despite implementation of mitigation. Thus, this impact would remain significant and unavoidable. No additional mitigation measures to reduce this impact to less-than-significant levels are feasible.

c. Specific 2018 RTP/SCS Projects That May Result in Impacts

As mentioned under Section 2.4, *Project Characteristics*, the 2018 RTP/SCS transportation improvement project list updates the 2015 RTP/SCS project list by removing projects that have been completed since 2015, modifying some projects that continue to be on the list based on new information, and adding approximately 35 net new minor projects to the list. None of the modified or new projects on the 2018 RTP/SCS list would be substantially different in terms of geographical location on a regional basis, type of project, or size of project to those on the 2015 RTP/SCS list. Although a majority of new or modified transportation improvement projects would occur within areas of the City of Redding that have not been designated by CAL FIRE as moderate, high, or very high fire hazard severity zones, some new and modified transportation improvement projects contained in the 2018 RTP/SCS would still occur in areas designated as high or very high fire hazard severity zones. These projects would increase exposure of transportation infrastructure, the public that would use that infrastructure, and the maintenance personnel that would service that infrastructure to risk of loss or damage due to wildfire. Furthermore, the 2018 RTP/SCS would allow for future land use development in areas designated as having high or very high fire hazard severity zones. All land use development projects occurring in these areas would be susceptible to wildland fire impacts.

d. Cumulative Impact Discussion

Transportation improvement projects and the land use pattern included in the 2018 RTP/SCS would locate structures and people within areas mapped as moderate, high, or very high fire hazard severity zones. There are numerous structures located, and people currently residing, within areas of the SRTA region and surrounding counties that have also been mapped as fire hazard zones. The risk of loss from existing development and the anticipated growth within the SRTA, combined with similar risk from growth in surrounding counties, would result in cumulative impacts related to wildland fire hazards. Although Mitigation Measure HAZ-1 would make structures and construction activities implemented under the 2018 RTP/SCS more fire resistant and reduce the potential for wildland fire ignition, the risk of wildland fires would not be eliminated entirely. Thus, the impacts of the 2018 RTP/SCS with regard to wildlife fire hazards would be cumulatively considerable.

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4.4 Transportation and Circulation

This section describes the County's existing transportation facilities and circulation system, outlines thresholds and performance standards used to assess potential impacts, and identifies impacts and measures to mitigate impacts of the 2018 RTP/SCS. The 2018 RTP/SCS focuses on transportation projects of regional significance; therefore, the setting discussion and impact analysis provided in this section focuses on components of the regional transportation network (i.e., state highways, major arterials, transit services, etc.). The 2018 RTP/SCS is intended to improve transportation conditions within Shasta County. Traffic volumes were forecasted utilizing the SRTA's Regional Activity-based Travel Demand Model (ShastaSIM).

4.4.1 Setting

a. Roadway Network

The Shasta County regional road network is a network of highways and roads connecting cities and unincorporated communities providing rapid and efficient goods movement throughout the County. The regional road network also provides access to adjacent counties, Lassen Volcanic National Park, the Shasta-Trinity National Forest, Lava Beds National Monument in Siskiyou County, numerous Native American reservations, and other destinations. The County's regional road network is illustrated on Figures 2-1 and 2-2 in Section 2.0, *Project Description*.

The regional road network consists of approximately 513 miles of two and four-lane streets/roadways within the incorporated cities of Redding, Anderson and Shasta Lake (SRTA 2015a). There are approximately 1,191 miles of roadway classified as County roads and 313 miles of State highway (SRTA 2015a). The remaining 622 miles are under the jurisdiction of various federal agencies (SRTA 2015a). The regional roads which connect cities, or provide access through cities in the County include:

- Interstate 5 from the Tehama County line to Siskiyou County line through Shasta County;
- State Route 299 from the Lassen County line through Redding to the Trinity County line;
- State Route 273 Cottonwood near the south County line to Interstate 5 near Shasta Lake City;
- State Route 151 from Interstate 5 west through the Shasta Lake City;
- State Route 44 from Interstate 5 in Redding east to the Lassen County line;
- State Route 89 from the Siskiyou County line to the intersection with State Route 44 near Old Station. A segment of State Route 89 is the access route to Lassen National Park in southeast Shasta County; and
- State Route 36 from the Tehama County line through the community of Platina in southwest Shasta County to the Trinity County line.

Operations

A variety of performance measures can be used to assess transportation systems. Depending on the type of performance evaluation required, performance measures may be very specific and focus on specific intersections or roadway segments, or performance measures may be aggregated to evaluate the overall operation of a regional transportation system. A regional travel model typically only contains information on the number of lanes and link capacity on roadway segments and lacks information detailed enough to calculate accurate intersection information. Because of the

programmatic nature of the proposed 2018 RTP/SCS, the performance measures discussed herein focuses on vehicles miles traveled (VMT) as the metric to assess and quantify the transportation system.

VMT is a measurement of miles traveled by vehicles in a specified region for a specified time period. For this SEIR, VMT defines the number of miles traveled within Shasta County under baseline conditions and how those numbers would change during future year conditions with and without implementation of the 2018 RTP/SCS. VMT for this SEIR does not include trips that pass through (pass through trips) Shasta County or external trips. The 2018 RTP/SCS transportation improvement projects do not include new roadways, bypasses, or other improvements that would reduce pass through VMT. Further, pass through trips are not made by Shasta County residents, as residents trips either start or end, or both, within the County. Therefore, for the purpose of this discussion, VMT focuses on those trips that originate and/or terminate within Shasta County. Increased VMT is anticipated with regional growth that would occur with or without the project. An increase in VMT does not necessarily reflect deficient traffic operations. Rather, it shows how many miles would be traveled County-wide under varying scenarios.

Because this SEIR augments the previously certified 2015 EIR for the 2015 RTP/SCS, the baseline year for the transportation conditions and analysis remains 2015. The annual VMT under 2015 baseline conditions was 1,631,787,301.

b. Transit Service

Existing mass transportation services in Shasta County consist of both public transit and Amtrak rail passenger service. Transit services include inter-city, fixed-route, and demand-responsive operations. Common carriers within Shasta County include Amtrak, Greyhound, Sage Stage, and others. Redding Area Bus Authority (RABA) operates fixed route and demand-response service within the City of Redding and some unincorporated areas within Shasta County. Under a contract with Shasta County, RABA operates an express route service, Burney Express, between the community of Burney and City of Redding. The service operates Monday through Friday, with three round-trips each day (RABA 2018).

Shasta Senior Nutrition Programs (SSNP). SSNP is a transportation provider for older-adults living within the Redding area. The SSNP is the Consolidated Transportation Services Agency (CTSA) for Shasta County. The CTSA provides specialized services to those who cannot use conventional transit services, such as older-adults and persons with disabilities (SRTA 2018). Hours of operation are Monday through Friday from 8:00 a.m. to 4:30 p.m. The 44 Express provides transit service between 9:00 a.m. and 2:30 p.m. between Shingletown, Millville and Redding (SRTA 2015a).

Lifeline Service. The County contracts with SSNP to provide County Lifeline transit service to persons with disabilities living outside of the RABA service area (SRTA 2016). The areas served are Redding, Burney, Johnson Park, Cottonwood, Bella Vista, Palo Cedro, Happy Valley and Lakehead.

Intercity Bus and Rail Transportation Providers. Intercity service is defined as service that connects two or more communities located within a distance greater than 15 miles apart of each other. Amtrak motorcoaches connect Redding to the Capitol Corridor (Sacramento) and San Joaquin (Stockton) train routes (Amtrak 2014).

Amtrak. Amtrak's Coast Starlight Seattle/Portland/Los Angeles rail route services Redding with four north and southbound stops daily (Amtrak 2014). Greyhound offers north and southbound bus service four times daily in each direction from the Redding Greyhound Station. There is no east or westbound commercial bus connection (Greyhound 2017). Sage Stage, operated by the Modoc

County Transportation Commission, provides daily bus service between Alturas and Redding (SRTA 2015b).

Susanville Indian Rancheria. In July 2009, the Susanville Indian Rancheria started a public transportation program that provides roundtrip service from Susanville to Redding, via Westwood, Chester, and Red Bluff. The service operates on weekdays (excluding holidays), and includes three round-trips daily from Red Bluff to Redding. Paratransit vans that seat eight passengers and one wheelchair are used for the service (SRTA 2015b).

c. Rail Transportation

Passenger rail service in the County is provided by Amtrak as noted above. Interregional freight rail operations in Shasta County are conducted by the Union Pacific Transportation Company. Freight loading/unloading opportunities on the Union Pacific Railroad mainline are available at the following rail siding locations: Cottonwood, Culp, Anderson, Girvan, Redding, Silverthorn, O'Brien, Mead, Lakehead, Delta, Lamoine, Gibson, Sims, Conant, Dirigo, and Castle Crags. Amtrak's Coast Starlight Seattle/Portland/Los Angeles rail route services Redding with four north and southbound stops daily. The station is located at 1620 Yuba Street in downtown Redding (SRTA 2015a).

d. Air Transportation

There are three public use airports in Shasta County: Redding Municipal Airport; Benton Airport; and Fall River Mills Airport. The Redding Municipal Airport and the Benton Airport are operated by the City of Redding, and the Fall River Mills Airport is operated by Shasta County (Federal Aviation Administration [FAA] 2017).

The Redding Municipal Airport is the only commercial airport in the County (FAA 2017), and it also serves the seven surrounding counties (Shasta County 2004). It is the only airport in the County served by scheduled airlines (Shasta County 2004). It was originally built by the U.S. Army as a military airfield in 1942 and dedicated to the City of Redding in 1947. Today, it is the largest civilian facility in California, north of Sacramento. The airport has 84 tie-down spaces and the City of Redding owns hangars that will accommodate 102 aircraft. Scheduled air service is provided by United Express which provides two to three round trips each day to San Francisco (SRTA 2015a).

Charter service is provided by Redding Aero Enterprises and Air Shasta. These fixed base operators also provide aircraft sales, maintenance service, aircraft fuels, and accessories. Helicopter charter is provided by Redding Air Service and Air Shasta. The mix of aircraft based at Redding Municipal Airport is as follows: 169 single engine airplanes; 23 multi-engine airplanes; 6 jets; and 20 helicopters. There are a total of 270 daily operations and approximately 98,550 annual operations. Approximately 45 percent of all operations are general aviation (SRTA 2015b).

Benton Airport is uniquely situated within the city limits slightly more than one mile from the mid-town business area and the center of Redding. Benton Airport is a small, single runway, Visual Flight Rules (VFR) airport for single and small twin engine general aviation aircraft (Redding 2014). It is classified as a General Aviation Facility within the United States Department of Transportation (DOT)/FAA National Plan of Integrated Airport Systems. It is located on 158 acres surrounded by developable commercial land focused on aviation related services. Growth potential beyond the current airport boundary is constrained both by topography and residential encroachment (SRTA 2015a). There are approximately 97 private aircraft based at Benton Airport, in addition to both the California Highway Patrol air operations and the Mercy Medical Center air ambulance operations

(Redding 2014). Hillside Aviation provides charter air service, sales, fuel, and maintenance (SRTA 2015a).

Fall River Mills Airport is located in the northeast corner of the County, 70 miles from Redding. The airport was originally built in the 1940's with a gravel runway. Hangars, runway lights, tie-downs and security fencing have been added since 1965. This is a designated remote access airport. In 2006 and 2007, Shasta County overlaid the runway and taxiway. Fall River Mills Airport is currently a general aviation facility with a 5,000 foot runway, 10 based aircraft, and serves both piston- and turbine-powered general aviation transient aircraft. Services are limited to aviation fuel sales and limited airframe and power plant repair. There are currently no other services and no fixed base operators at the airport (Shasta County 2018).

e. Bicycle/Pedestrian Facilities

Bicycle facilities in Shasta County generally fall into three distinct categories. Class I facilities are dedicated lanes physically separated from traffic lanes. Class I lanes provide a safe and reliable means of transportation for those wishing to bicycle or walk to their destinations. Class II lanes are separate from adjacent traffic by striped lanes with optional striping scenarios to allow on-street parking. Bicycles travel in the same direction as adjacent traffic. The County has a Class III variation that provides a four foot delineated shoulder but no striped lane. Bicycle route signs are provided in rural areas (Shasta County 2010).

The City of Redding Sacramento River Trail includes approximately eleven miles of paved trail on both sides of the river. The trail system primarily serves recreational uses. The City of Redding's Blue Gravel Mine Trail and Canyon Creek Trail total 2.5 miles of trails. The City of Redding has designated Class III bike routes on many streets, and has existing and proposed Class II bike lanes on approximately 20 streets (Redding 2010).

The City of Shasta Lake has 0.3 mile of Class I bike paths, 6.8 miles of Class II bike lanes, and no Class III bike routes. Shasta Lake adopted a new Bicycle Transportation Plan in 2009 (Shasta Lake 2009). The City of Anderson adopted a Bicycle Transportation Plan in 2007. The City of Anderson has 0.3 miles of existing Class I Bikeways, 3.5 miles of Class II Bikeways and 1.0 mile of Class III Bikeways in the City limits. In addition, the City of Anderson has 2.5 miles of bike path (Class I) in the Anderson River Park (Anderson 2007). There are also several miles of trails for off-road cyclists in and adjacent to the park near the Sacramento River. Unincorporated Shasta County has three existing Class II bikeways on Lake Boulevard, Deschutes Road and Ashby Road. Existing bike routes in the County include portions of the State and federal highways. The State highways provide vital links from the rural areas of Shasta County to the cities of Redding, Anderson and Shasta Lake (SRTA 2015a).

f. Regulatory Setting

Federal

MAP-21

The Moving Ahead for Progress in the 21st Century Act (MAP-21), was enacted in 2012. Through the RTP development process, MAP-21 encourages SRTA to:

> Consult with officials responsible for other types of planning activities that are affected by transportation in the area (including State and local planned growth, economic development, environmental protection, airport operations, and freight movements) or to coordinate its

planning process, to the maximum extent practicable, with such planning activities (23 United States Code [U.S.C.] §134(g)(3)(A)).

Specifically, MAP-21 requires that the RTP planning process:

Provide for consideration of projects and strategies that will:

(A) Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;

(B) Increase the safety of the transportation system for motorized and non-motorized users;

(C) Increase the security of the transportation system for motorized and non-motorized users;

(D) Increase the accessibility and mobility of people and for freight;

(E) Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;

(F) Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;

(G) Promote efficient system management and operation; and

(H) Emphasize the preservation of the existing transportation system (23 U.S.C. §134(h)(1)).

Fixing America's Surface Transportation Act (FAST Act)

The most recent federal transportation legislation, Fixing America's Surface Transportation (FAST) Act builds on the changes made by MAP-21, and, was enacted in 2015. The Moving Ahead for Progress in the 21st Century Act (MAP-21), enacted in 2012, made a number of reforms to the metropolitan and statewide transportation planning processes, including incorporating performance goals, measures, and targets into the process of identifying needed transportation improvements and project selection. The FAST Act includes provisions to support and enhance these reforms. Public involvement remains a hallmark of the planning process.

The FAST Act continues requirements for a long-range plan and a short-term transportation improvement program (TIP), with the long-range statewide and metropolitan plans now required to include facilities that support intercity transportation, including intercity buses. The statewide and metropolitan long-range plans must describe the performance measures and targets that states and MPOs use in assessing system performance and progress in achieving the performance targets. Additionally, the FAST Act requires the planning process to consider projects/strategies to improve the resilience and reliability of the transportation system, address stormwater mitigation, and enhance travel and tourism.

Finally, in an effort to engage all sectors and users of the transportation network, the FAST Act requires that the planning process include public ports and private transportation providers, and further encourages MPOs to consult during this process with officials of other types of planning activities, including tourism and natural disaster risk reduction. MAP-21 and the FAST Act also change criteria for MPO officials to provide transit provider representatives with equal authority and allow the representative to also serve as the representative of a local municipality.

Through the RTP development process, the FAST Act encourages SRTA to:

- Consult with officials responsible for other types of planning activities that are affected by transportation in the area (including State and local planned growth, economic development, environmental protection, airport operations, and freight movements) or to coordinate its planning process, to the maximum extent practicable, with such planning activities.[1]

Specifically, the FAST Act requires that the RTP planning process:

- Provide for consideration of projects and strategies that will:
  a) Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;
  b) Increase the safety of the transportation system for motorized and non-motorized users;
  c) Increase the security of the transportation system for motorized and non-motorized users;
  d) Increase the accessibility and mobility of people and for freight;
  e) Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;
  f) Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
  g) Promote efficient system management and operation;
  h) Emphasize the preservation of the existing transportation system.
  i) Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation; and
  j) Enhance travel and tourism. [2]

Planning Final Rule – FAST Act

On May 27, 2016, the Statewide and Nonmetropolitan Transportation Planning and Metropolitan Transportation Planning Final Rule was issued, with an effective date of June 27, 2016, for Title 23 CFR Parts 450 and 771 and Title 49 CFR Part 613. This final rule states, "On or after May 27, 2018, an RTPA may not adopt an RTP that has not been developed according to the provisions of MAP-21/FAST Act as specified in the Planning Final Rule." This rule applies to the 2018 RTP/SCS as its adoption date, if adopted, would occur after May 2018.

National Environmental Policy Act (NEPA)

The National Environment Policy Act (NEPA) of 1969 (42 U.S.C. § 4321 et seq.) requires federal agencies to assess the possible environmental consequences of projects which they propose to undertake, fund, or approve. While adoption of the 2018 RTP/SCS is not subject to NEPA, individual federally-funded programs or projects requiring federal approval will be subject to a NEPA evaluation at the time of project implementation.

[1] 23 U.S.C. §134(g)(3)(A).
[2] 23 U.S.C. §134(h)(1).

State

State requirements for long-range transportation plans are similar to the federal regulations. However, key additional requirements described in Government Code Section 65080 include:

- Compliance with CEQA;
- Consistency with State Transportation Improvement Program;
- Use of program level performance measures that include goals and objectives; and
- RTPs must include a policy element, an action element, and a financial element.

Plans must also include a Sustainable Communities Strategy (SCS) (see SB 375 discussion below).

California Transportation Commission Regional Transportation Plan Guideline

The California Transportation Commission (CTC) publishes and periodically updates guidelines for the development of long range transportation plans, such as SRTA's RTP/SCS. Pursuant to Government Code Section 65080(d), each regional transportation planning agency (RTPA) is required to adopt and submit an updated RTP to the CTC and the Department of Transportation (Caltrans) every four years. SRTA is the designated RTPA for Shasta County.

Under Government Code Section 14522, the CTC is authorized to prepare guidelines to assist in the preparation of RTPs. The CTC's RTP guidelines suggest that projections used in the development of an RTP should be based upon available data (such as from the U.S. Census Bureau), use acceptable forecasting methodologies, and be consistent with the Department of Finance baseline projections for the region. The guidelines further state that the RTP should identify and discuss any differences between the agency projections and those of the Department of Finance. The most recent update to the RTP guidelines was published in 2017, and includes new provisions for complying with SB 375 (see below), as well as new guidelines for regional travel demand modeling. The regional travel demand model guidelines are "scaled" to different size groupings of metropolitan planning organizations (MPO). The groupings range from A through E with A being the least complex and E being the most complex. SRTA is included in the "D" grouping of all MPOs.

Senate Bill 375

The Sustainable Communities Strategy and Climate Protection Act, SB 375 (codified at CAL.GOVT CODE §§ 14522.1, 14522.2, 65080.01, 65080, 65400, 65583, 65584.01, 65584.02, 65584.04, 65587, 65588; CAL. PUB. RES. CODE §§2161.3, 21155, 21159.28), is a law passed in 2008 by the California legislature that requires each MPO to demonstrate, through the development of an SCS, how its region will integrate transportation, housing, and land use planning to meet the greenhouse gas (GHG) reduction targets set by the State. In addition to creating requirements for MPOs, it also creates requirements for the California Transportation Commission and ARB. A complete description of SB 375 including GHG reduction target is provided in Section 2.0, *Project Description*.

Regional

2015 Regional Transportation Plan

The SRTA RTP/SCS was updated in 2004, 2010, and most recently in 2015. Updates prior to 2015 did not contain a SCS, as this was a new requirement pursuant to SB 375. The 2015 EIR was prepared for the 2015 RTP/SCS update to satisfy CEQA requirements. The 2015 RTP/SCS update lists roadway projects to improve the transportation system and included a SCS component. Although a number

of projects from the 2015 RTP/SCS have been completed, many have not and have been incorporated into the 2018 RTP/SCS.

Bicycle and Pedestrian Facilities Standards

The following bicycle plans direct bicycle planning within Shasta County:

- Shasta County 2010 Bicycle Transportation Plan;
- 2007 City of Anderson Bicycle Transportation Plan;
- City of Redding Bikeway Action Plan 2010-2015; and
- City of Shasta Lake 2009 Bicycle Transportation Plan.

The primary goals of the bicycle plans are to update the bikeway network, create uniformity in policies and design, identify funding opportunities, and evaluate programs. The recommended bikeway networks identify attractors (i.e., destinations that residents would want to reach such as parks and schools) and both existing and proposed future bikeways.

4.4.2 Impact Analysis

a. Methodology and Significance Thresholds

The following thresholds are based on Appendix G of the *State CEQA Guidelines*. Impacts would be significant if the 2018 RTP/SCS would result in any of the following:

- Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways pedestrian and bicycle paths, and mass transit;
- Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways;
- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks;
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- Result in inadequate emergency access; and/or
- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

The last four thresholds listed above were evaluated in the Initial Study (Appendix A). As described in the Initial Study, impacts related to these thresholds were found to be less than significant and further evaluation in this EIR is not required. Therefore, the analysis below pertains to the first two thresholds listed above.

The 2018 RTP/SCS establishes performance measures for the overall regional transportation system based on model outputs of ShastaSIM, SRTA's Regional Activity-based Travel Demand Model. For this analysis, VMT is the performance measure used to determine potential impacts to the transportation system in relation to the two thresholds analyzed below.

The analysis below describes operational VMT changes relative to both a current (2015) baseline and a year 2040 baseline scenario without implementation of the 2018 RTP/SCS (i.e., No Project). The 2040 baseline scenario effectively demonstrates the impacts that would occur as a result of continued implementation of the 2015 RTP/SCS without the additional impacts resulting from implementation of the 2018 RTP/SCS. Comparison of the 2040 VMT with the 2018 RTP/SCS and the 2040 No Project VMT allows for the additional VMT attributed to 2018 RTP/SCS to be identified and evaluated. An increase in VMT relative to 2040 No Project conditions would be considered a significant impact.

It is important to emphasize that population growth, urbanization, and volume of average daily traffic generated in Shasta County will increase by 2040 with or without implementation of the 2018 RTP/SCS. This increase is expected to occur as a result of a range of demographic and economic factors independent of policy and land use decisions by SRTA and its member agencies. The VMT shown below for 2040 conditions, with and without the 2018 RTP/SCS, accounts for this growth.

Traffic Methodology

Traffic projections for the 2018 RTP/SCS were generated by ShastaSIM, SRTA's Regional Activity-based Travel Demand Model. Regional travel demand models typically do not have sufficient network and zone detail to allow prediction of intersection turning volumes and delays when estimating travel time and transportation system performance. A regional travel model typically only contains information on the number of lanes and link capacity on roadway segments. However, it lacks information detailed enough to calculate accurate intersection information. As such, the analysis is primarily based on VMT for the region, as described above.

The travel demand model allows SRTA to obtain an understanding of the transportation network's performance characteristics (e.g., vehicle speeds, volume to capacity relationships, travel time, vehicle miles of travel, fuel consumption, and vehicle emissions) and estimate how socio-economic changes (e.g., population increases, land use development) will impact travel demand in the County. Furthermore, consequences of future changes, or absence of change, to the transportation system itself (e.g., building new facilities, improving existing facilities, or doing nothing at all) can be analyzed.

b. Project Impacts and Mitigation Measures

The following section presents a programmatic-level discussion of impacts to transportation and circulation from implementation of the 2018 RTP/SCS. Due to the programmatic nature of the 2018 RTP/SCS, a precise, project-level analysis of the specific impacts associated with individual transportation and land use projects is not possible. In general, however, implementation of proposed transportation improvements and future projects under the land use scenario envisioned by the 2018 RTP/SCS could result in the impacts as described in the following section.

Threshold 1:	Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit;
Threshold 2:	Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways;

Impact T-1 VMT, WHICH IS THE METRIC USED TO EVALUATE THE PERFORMANCE OF THE CIRCULATION SYSTEM, WOULD INCREASE UNDER IMPLEMENTATION OF THE 2018 RTP/SCS COMPARED TO CONDITIONS IN 2040 WITHOUT ITS IMPLEMENTATION. THEREFORE, THE 2018 RTP/SCS COULD CONFLICT WITH APPLICABLE PLANS, POLICIES, AND CONGESTION MANAGEMENT PROGRAMS. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

As shown in Table 4.4-1, compared to 2015 baseline conditions, the annual VMT in Shasta County will increase in 2040 regardless of the potential implementation of the 2018 RTP/SCS. This increase is due to regional population growth that would occur in the County independent of policy and land use decisions by SRTA and its member agencies.

The VMT shown in Table 4.4-1 for the 2040 No Project scenario is the annual VMT in the region that would result from continued implementation of the current 2015 RTP/SCS. As shown in the table, the 2018 RTP/SCS would increase the annual VMT in the region compared to the 2040 No Project conditions. Therefore, implementation of the 2018 RTP/SCS would increase VMT compared to the current 2015 RTP/SCS. The annual increase would be 4,958,086 VMT, or a 0.2 percent increase.

Table 4.4-1 Projected Annual Vehicle Miles Traveled

2015 Annual VMT[1]	2040 No Project VMT[1]	2040 with Project VMT[2]
1,631,787,301	2,234,429,646	2,239,387,732

Notes: VMT = Vehicle Miles Traveled
Sources: 1. SRTA 2015, 2.SRTA 2018

Because VMT would increase compared to the 2015 RTP/SCS, the 2018 RTP/SCS could potentially conflict with an applicable plan, ordinance, or policy pertaining to the performance of the circulation system. An increase in VMT does not necessarily correlate to more traffic congestion. Transportation improvement projects included in the 2018 RTP/SCS are designed to reduce traffic congestion. Therefore, the additional VMT resulting from the 2018 RTP/SCS may occur in uncongested conditions. However, for purposes of this analysis, VMT is the performance measure used for evaluating potential conflicts with applicable congestion management plans. Because VMT would increase compared to the 2015 RTP/SCS, impacts would be significant and unavoidable.

Mitigation Measures

The 2018 RTP/SCS includes policies, alternative transportation projects, and transportation demand management projects that would encourage the use of transportation modes other than passenger vehicles. Nonetheless, implementation of the 2018 RTP/SCS would result in greater total VMT when

compared to 2040 conditions without the 2018 RTP/SCS. No feasible additional mitigation measures have been identified that would further reduce total VMT. Refer to Section 6, *Alternatives*, for a discussion of 2018 RTP/SCS alternatives that examine land use and transportation scenarios that incorporate different assumptions regarding the combinations of future land uses and transportation system improvements.

Significance After Mitigation

This impact would remain significant and unavoidable.

c. Induced Travel

It should be noted that this is a program-level analysis and is not project-specific; however, some of the 2018 RTP/SCS projects include expanding the capacity of highways in the region. Numerous studies and research suggest that an expansion of highway capacity may induce travel (Governor's Office of Planning and Research [OPR] 2016; Handy 2015; Duranton & Turner 2011). According to the OPR (2016), the initial reduction in traffic congestion and travel times from increased capacity is attractive to travelers, resulting in more trips on the facility and increasing the total VMT. These types of projects may result in the following trip-making changes, which have implications for total VMT, according to OPR:

- **Longer Trips.** The ability to travel a long distance in a shorter time increases the attractiveness of destinations that are further away, increasing trip length and VMT.
- **Changes in Mode Choice.** When transportation investments are devoted to reducing automobile travel time, travelers tend to shift toward automobile use from other modes, which increases VMT.
- **Route Changes.** Faster travel times on a route attract more drivers to that route from other routes, which can increase or decrease VMT depending on whether it shortens or lengthens trips.
- **Newly Generated Trips.** Increasing travel speeds can induce additional trips, which increases VMT. For example, an individual who previously telecommuted or purchased goods on the internet might choose to accomplish those ends via automobile trips as a result of increased speeds.
- **Land Use Changes.** Faster travel times along a corridor lead to land development further along that corridor; that development generates and attracts longer trips, which increases VMT. Over several years, this component of induced VMT can be substantial, e.g. approximately half of the total effect on VMT."

The 2018 RTP/SCS coordinates land use and transportation projects through the 2040 horizon year. The SCS is intended to identify a land use strategy that supports the objectives of SB 375 to achieve, among other things: increased roadway optimization, increased modes of travel other than single-occupancy automobiles, increased access to jobs and amenities, minimized increases in VMT and reduced GHG emissions. Among the strategies to meet these goals is a mix of land uses balanced to minimize VMT and maximize the ability for residents and visitors of the region to conduct everyday activities without the need to travel by car. As a consequence, the SRTA Regional Activity-based Travel Demand Model, ShastaSIM, and associated transportation system performance results discussed in this analysis capture the effects of land use changes on overall travel demand in the region. Although the SRTA ShastaSIM does not specifically evaluate induced travel from the

perspective of longer trips, changes in mode choice, route changes or newly generated induced trips, at the regional level these effects may be negligible compared to the overall amount of travel. As discussed in the Federal Highway Administration's "HERS-ST Highway Economic Requirements System - State Version: Technical Report - Appendix B: Induced Traffic and Induced Demand" (August 2005), "[i]f the demand is for a single facility, then induced traffic will appear large relative to previous volumes, because most of the change in trips will be from diverted trips. At the regional level, induced traffic would be a smaller share of total traffic growth, because only trips diverted from other regions, plus substitutions between transportation and other goods, make up the induced share." Therefore, any additional VMT resulting specifically from induced travel demand would not substantially change the impact analysis or conclusions.

Moreover, according to Milam et al. (2017, p. 16), "at a minimum, induced vehicle travel effects should be acknowledged and discussed for capacity expansion projects that will reduce travel times. Acknowledgment should disclose any limitations related to the forecasting that may have not been sensitive to induced vehicle travel effects and how those effects could influence the analysis results. This effort could include a qualitative discussion or even simple elasticity-based estimates of VMT levels derived from the project's lane-mile changes...This recommendation applies to regional and project scale analysis." Although this analysis and SRTA's ShastaSIM do not specifically use approaches provided in the Milam et al. study (2017), this analysis generally adheres to the minimum recommendations of the Milam et al. study described above. As described above, this analysis acknowledges that the 2018 RTP/SCS contains projects that may induce travel. This analysis further discloses limitations to the modeling and forecasting that are not sensitive to induced vehicle travel. Finally, provided above is a qualitative discussion of how, at a regional level, induced VMT would be minimal, based on documentation published by the Federal Highway Administration.

Conclusion

Travel demand in the SRTA region may increase in the future, but local data indicate demand will be driven primarily by socioeconomic growth. If any induced travel does occur, it would likely be insignificant. Although an induced effect can occur if certain conditions are present, it is typically one to three percent of new traffic growth and not significant. Improvements in the 2018 RTP/SCS make it speculative to quantify exact induced travel increases. However, based on the preceding analysis, there would not be a significant impact on infrastructure, services or congestion relating to induced travel.

d. Specific RTP Projects that May Result in Impacts

The analysis within this section discusses the potential transportation and circulation related impacts associated with the transportation improvement projects and the land use scenario envisioned by the 2018 RTP/SCS. The projects within the 2018 RTP/SCS are evaluated herein in their entirety and all are intended to improve traffic circulation rather than cause adverse impacts. However, as described above, the 2018 RTP/SCS would increase existing annual VMT by approximately 0.2 percent in 2040 compared to conditions without its implementation. The increased VMT was found to be a significant and unavoidable impact related to performance of the circulation system and congestion management, as described above. The RTDM data does not have the capability to distinguish which project or projects would specifically result in increased VMT. However, any number of the 2018 RTP/SCS projects that expand roadway capacity or improve traffic flow and circulation could presumably increase VMT, and any increase in VMT could

potentially increase traffic congestion. Thus, there are no specific projects that can be listed in this section related to the adverse impacts of increased VMT in the region.

e. Cumulative Analysis

The cumulative analysis impact area for transportation and traffic consists of the SRTA region and the six counties adjoining the SRTA region: Siskiyou, Modoc, Lassen, Plumas, Tehama, and Trinity. Movement within, through, and beyond the SRTA region is necessary for commuters, personal travel, and goods movement. Thus, it is important to consider both the SRTA region as well as the connection with the adjoining counties.

Within the cumulative analysis impact area, implementation of the 2018 RTP/SCS combined with cumulative development outside the region has the potential to result in congestion and delay occurring outside the SRTA region, which would be considered a significant cumulative impact. The 2018 RTP/SCS is designed to maintain and foster the balance between jobs and housing within the SRTA region and provides a strategy to allocate growth in such a way as to achieve a more balanced jobs/housing ratio and to optimize transportation investments that support those land uses.

As discussed above, the 2018 RTP/SCS would have significant and unavoidable impacts related to an increase in daily VMT in the region in 2040. The 2018 RTP/SCS is designed to promote economic growth and employment in Shasta County, while also providing the proper balance between jobs and housing within the County. With more employment in the County, fewer residents may commute to adjoining counties for employment. Thus, the increased daily VMT in 2040 resulting from the 2018 RTP/SCS may not necessarily increase daily VMT on roadways in adjoining counties.

Nonetheless, as shown in Table 4.4-1, the 2018 RTP/SCS would increase the baseline 2015 conditions for annual VMT by 607,600,431 in 2040. While the majority of the VMT would be expected to remain within Shasta County, some portion of the VMT would inevitably extend to areas within adjoining counties to the region. When disseminated equally across Shasta County and the six counties that adjoin the region, this would be approximately 87 million VMT per year in each county in the cumulative analysis impact area. Regardless, the potential increased VMT in adjoining areas would be inconsequential to traffic delays and congestion given that increases would be distributed across hundreds to thousands of miles of roadways in the adjoining counties in the cumulative area. Thus, the 2018 RTP/SCS contribution to congestion and traffic in adjoining areas would not be cumulatively considerable.

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4.5 Tribal Cultural Resources

This section evaluates effects on tribal cultural resources in the Shasta County region that would result from implementation of the 2018 RTP/SCS.

4.5.1 Setting

a. Tribal Resources

Shasta County is located in the northern Sacramento Valley with the mountains of the North Coast Range to the west, the Klamath Mountains to the north, and the volcanic deposits of the Cascade Range grading into the Sierra Nevada in the east. Canyons of the Sacramento River and its tributaries are also prevalent, as are intermountain valleys, especially in the northeast portion of the county. At the time of Euroamerican contact less than 200 years ago, five tribal groups resided in the county, each in its own territory, with territories shifting periodically. They were the Achomawi (a group of the Pit River Indians), the Atsugewi (a group of the Hat Creek Indians and also Pit River Tribe), the Okwanuchu (a group of the Shasta Nation), the Wintu, and the Yana. The Yana and Okwanuchu spoke Hokan, while the Achomawi, Atsugewi and Wintu spoke Penutian (Kroeber 1925).

All of these tribes were hunter-gatherers, subsisting on acorns, salmon and other fish, game animals, bulbs, tubers, berries, nuts, waterfowl, bird eggs, and other locally available foods. Salmon was so crucial a food resource to the Wintu and other groups of Northern California natives that the availability of this food source has been used as an important variable in assessing prehistoric population levels and is considered a major determinant of site distribution among various other California Indian groups. Deer also constituted a major dietary staple as a source of protein that was both abundant and available year-round. Acorns constituted the third major staple as it was seasonally abundant and storable year-round (Kroeber 1925).

Today, two federally recognized tribes have territories within Shasta County: Pit River Tribe and Redding Rancheria. The Pit River Tribe is comprised of eleven autonomous bands: Achomawi (also transliterated as Ahumawi or Ajumawi), Atsugewi, Atwamsini, Ilmawi, Astarawi, Hammawi, Hewisedawi, Itsatawi, Aporige, Kosalektawi, and Madesi (Pit River Tribe 2018).

b. Regulatory Setting

Assembly Bill 52

California Assembly Bill 52 of 2014 (AB 52) was enacted on July 1, 2015 and expands CEQA by defining a new resource category, “tribal cultural resources.” AB 52 establishes that “A project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment.” (PRC Section 21084.2) It further requires that the lead agency avoid impacts that would alter the significant characteristics of a tribal cultural resource, when feasible (PRC Section 21084.3). PRC Section 21074 (a)(1)(A) and (B) defines tribal cultural resources:

1. “Sites, features, places, cultural landscapes, sacred places and objects with cultural value to a California Native American tribe” and meets either of the following criteria: Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k); or

2. A cultural resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

AB 52 also establishes a formal consultation process with California tribes regarding those resources. The consultation process must be completed before a CEQA document can be certified. AB 52 requires that lead agencies "begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project." Native American tribes to be included in the formal consultation process are those that have requested notice of projects proposed within the jurisdiction of the lead agency.

Senate Bill 18

SB 18 of 2004 (California Government Code §65352.3) requires local governments to contact and consult with tribal organizations prior to making a decision to adopt or amend a general or specific plan. The tribal organizations eligible to consult have traditional lands in a local government's jurisdiction and are identified, upon request, by the Native American Heritage Commission (NAHC). As noted in the California Office of Planning and Research's Tribal Consultation Guidelines (2005), "The intent of SB 18 is to provide California Native American tribes an opportunity to participate in local land use decisions at an early planning stage, for the purpose of protecting, or mitigating impacts to, cultural places."

c. Existing Conditions

SRTA initiated AB 52 consultation on January 12, 2018 by mailing letters to the Pit River Tribe and the Redding Rancheria Tribal Council. SRTA followed up with each tribe via email on February 20, 2018. Neither tribe responded to the request for consultation within the 30-day window afforded by AB 52, or after the 30-day window as of May 2018, as of the time when this SEIR was drafted.

4.5.2 Impact Analysis

a. Methodology and Significance Thresholds

Appendix G of the State CEQA Guidelines identifies the following criteria for determining whether a project's impacts would have a significant impact to tribal cultural resources:

1. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:
    a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or
    b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Threshold:	Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe

IMPACT TCR-1 IMPLEMENTATION OF PROPOSED TRANSPORTATION IMPROVEMENTS AND FUTURE PROJECTS INCLUDED IN THE LAND USE SCENARIO ENVISIONED IN THE 2018 RTP/SCS HAS THE POTENTIAL TO IMPACT TRIBAL CULTURAL RESOURCES. IMPACTS WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.

Although consultation has not occurred for this project because no tribes responded to the AB 52 notification, tribal cultural resources are very likely present throughout Shasta County. These may include, but are not limited to, Native American burial sites, village or occupation sites, traditional resource gathering locations and natural landforms. Therefore, tribal cultural resources could be encountered during implementation of the transportation improvement projects included in the 2018 RTP/SCS and the land use scenario envisioned by the 2018 RTP/SCS. Effects on tribal cultural resources are highly dependent on the individual project site conditions and the characteristics of the proposed project. Impacts to tribal cultural resources may include damage or destruction of the resources. Adherence to the requirements of AB 52 encourages tribal consultation with local Native Americans, and requires the identification of project-specific substantial adverse effects on tribal cultural resources and appropriate project-specific mitigation measures. If the implementing agency determines that a specific transportation or land use project could cause a substantial adverse change in the significance of a tribal cultural resource, the impact would be significant.

Mitigation Measures

SRTA recommends that individual project lead agencies implement the following mitigation measures for applicable transportation projects, including but not limited to projects included in Appendix B. These measures can and should be implemented for future land development pursuant to the 2018 RTP/SCS that would result in impacts to tribal cultural resources.

TCR-1(a) Identified Tribal Cultural Resources Impact Minimization

Implementing agencies shall comply with AB 52, which may require formal tribal consultation. If the implementing agency determines that a project may cause a substantial adverse change to a tribal cultural resource, they shall implement mitigation measures identified in the consultation process required under PRC Section 21080.3.2, or shall implement the following measures where feasible to avoid or minimize the project-specific significant adverse impacts:

- Avoidance and preservation of the resources in place, including, but not limited to: designing and building the project to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space to incorporate the resources with culturally appropriate protection and management criteria.
- Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
  - Protecting the cultural character and integrity of the resource
  - Protecting the traditional use of the resource
  - Protecting the confidentiality of the resource

- Establishment of permanent conservation easements or other culturally appropriate property management criteria for the purposes of preserving or utilizing the resources or places.
- Native American monitoring by the appropriate tribe during soil disturbance for all projects in areas identified as sensitive for potential tribal cultural resources and/or in the vicinity (within 100 feet) of known tribal cultural resources

TCR-1(b) Unanticipated Tribal Cultural Resources Impact Minimization

If potential tribal cultural resources are encountered during ground-disturbing activities, work in the immediate area must halt and the appropriate tribal representative(s), the implementing agency, and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service [NPS] 1983) shall be contacted immediately to evaluate the find. If, in consultation with the implementing agency, the archaeologist and/or tribal representative determines the discovery to be a tribal cultural resource and thus, significant under CEQA, a mitigation plan shall be prepared and implemented in accordance with state guidelines and in consultation with tribal representatives. If the resource cannot be avoided, a mitigation plan shall be developed to address tribal concerns.

Significance After Mitigation

Mitigation Measure TCR-1(a) would require implementation of mitigation identified through tribal consultation or other feasible mitigation to avoid impacts to identified tribal cultural resources. These measures would protect the resource's character, traditional use, and confidentiality. Mitigation Measure TCR-1(b) would ensure that impacts to unanticipated tribal cultural resources activities would be mitigated in consultation with tribal representatives. Implementation of the above measures would reduce impacts to tribal cultural resources to a less than significant level.

b. Specific RTP/SCS Projects that May Result in Impacts

All 2018 RTP/SCS projects that require construction may result in impacts as discussed above and, therefore, are not specifically identified in table format below. All 2018 RTP/SCS transportation projects are referenced in Appendix B. Additional analyses and AB 52 consultation with local tribes would be needed as the individual projects are implemented to determine the project-specific impact. The mitigation measures discussed above would apply to these specific projects.

c. Cumulative Impacts

As explained in Section 3.3, *Cumulative Projects Setting*, the cumulative effects of the 2018 RTP/SCS are included in the analysis of the 2018 RTP/SCS impacts. As discussed above, transportation projects included in the 2018 RTP/SCS and future development envisioned in the 2018 RTP/SCS would result in disturbance of sites that may hold identified or unanticipated tribal cultural resources. However, with incorporation of Mitigation Measures TCR-1(a) and TCR-1(b), impacts to tribal resources would be mitigated to a less than significant level and would not result in a significant cumulative impact.

5 Other CEQA Required Discussions

This section analyzes the impacts of the 2018 RTP/SCS on growth inducing and long-term effects. A similar analysis was provided in the 2015 EIR prepared for the 2015 RTP/SCS; however, minor updates to transportation projects and land use development are included in the 2018 RTP/SCS, which requires an updated analysis.

5.1 Growth Inducement

Section 15126.2(d) of the *State CEQA Guidelines* requires a discussion of a proposed project's potential to induce growth. Specifically, an EIR must discuss the ways in which the proposed project could foster economic or population growth. Included in this are projects which would remove obstacles to population growth. In addition, the EIR must discuss how the project may encourage and/or facilitate other activities that could significantly affect the environment. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment. Economic and population growth do not necessarily create significant physical changes to the environment. However, depending upon the type, magnitude, and location of growth, it can result in significant environmental effects. A project's growth-inducing potential is therefore considered significant if growth generated by the project could result in significant effects in one or more environmental issue areas.

5.1.1 Economic Growth

The 35 net new transportation improvement projects included in the 2018 RTP/SCS would generate additional employment opportunities for transportation construction, maintenance, and operation. However, the additional employment opportunities would be minimal and not subsequently increase the demand for support services and utilities, which could otherwise generate secondary employment opportunities. In addition, the 2018 RTP/SCS contains projects designed to further improve the efficient movement of goods and services for industries that are reliant upon the transportation network.

Although such growth may incrementally increase economic activity in the Shasta Region, significant physical effects beyond those impacts discussed in this SEIR are not expected to result from economic growth generated by the 2018 RTP/SCS. Impacts associated with such growth are discussed in Sections 4.1 through 4.5 of this SEIR.

5.1.2 Employment, Household, and Population Growth

Based on modeling performed using the Shasta County Activity Based Model, population in the Shasta Region is projected to grow from 182,261 in 2015 to 223,042 by 2040, an increase of approximately 22 percent. Employment within the region is projected to grow by approximately 14,702 jobs over the same period, an increase of approximately 21 percent. As mentioned above, proposed projects under the 2018 RTP/SCS are designed and intended to accommodate projected growth up to the year 2040. The projects under the 2018 RTP/SCS would be phased to respond to growth as it occurs under adopted local general plans. As a result, the 2018 RTP/SCS would not directly induce growth beyond that projected by 2040; rather, it is intended to accommodate

growth in a way that will help meet objectives described in the SCS component of the 2018 RTP/SCS. Employment, population and household growth would occur within the Shasta region regardless of whether the 2018 RTP/SCS is implemented. The land use scenario envisioned by the 2018 RTP/SCS is effectively the same as the land use scenario envisioned by the 2015 RTP/SCS. This scenario would emphasize the development of infill within existing urbanized areas, and therefore, may redistribute growth patterns. The location of infill development would generally be on properties that have been identified as vacant or underutilized within applicable local jurisdictions. Infill development would not necessarily result in significant new population growth within these jurisdictions; rather the 2018 RTP/SCS would accommodate anticipated growth and concentrate it within existing urban cores instead of on the periphery of urban areas or within rural or semi-rural areas. Therefore, direct growth-inducing population growth impacts would be less than significant.

5.1.3 Removal of an Impediment to Growth

Similar to the 2015 RTP/SCS, the majority of 2018 RTP/SCS transportation improvements would take place in existing urbanized areas, such as the cities of Anderson, Redding, and the City of Shasta Lake. The remaining bulk of transportation improvements would take place throughout the unincorporated area and communities of Shasta County. Such transportation improvements can be perceived as removing an obstacle to growth by either creating additional traffic capacity (in the case of roadway widening) or improving access to undeveloped areas (in the case of road extensions). New infrastructure may also serve to accelerate or shift planned growth or encourage and intensify unplanned growth. These transportation network improvements would remove obstacles to growth in some areas of the region, which would support additional housing, population and economic growth, and therefore could be considered growth inducing.

However, these improvements are primarily intended to support the transportation needs of the growing population while implementing the infill development SGAs approach outlined in the SCS. The SCS is designed to accommodate growth by encouraging development in already urbanized areas and located near key transportation corridors rather than suburban and rural development on greenfields/undeveloped areas of the region. The 2018 RTP/SCS transportation improvement projects are intended and designed to support the land use patterns established in the SCS. Therefore, the 2018 RTP/SCS is consistent with projected and planned growth. Furthermore, all transportation improvement projects and land uses envisioned by the 2018 RTP/SCS are anticipated by the general plans of the applicable local jurisdictions, as all improvements have been coordinated with the applicable local jurisdictions.

5.2 Irreversible Environmental Effects

Section 15126.2(c) of the *State CEQA Guidelines* requires a discussion of significant irreversible environmental changes that would occur as a result of a proposed project. As described in Section 2, *Project Description*, the 2018 RTP/SCS modifies the 2015 RTP/SCS by removing completed projects, modifying some projects that continue to be on the list based on new information, and adding approximately 35 net new minor projects to the list. In addition, the land use scenario envisioned by the 2018 RTP/SCS is similar to that contained in the 2015 RTP/SCS.

Construction of these new and modified projects would have an incremental increase in the use of non-renewable energy sources, potable water and building materials above what was analyzed in the 2015 EIR for the 2015 RTP/SCS. The use and consumption of non-renewable resources would be irreversible.

Long-term irreversible environmental changes are associated with increased asphalt or concrete paving from new and modified transportation projects and related direct and cumulative impacts to aesthetics, biological resources, geology and soils, and hydrology and water quality. These types of environmental changes were evaluated in the 2015 EIR, and the effects of the 2018 RTP/SCS would not be substantially different or more severe that previously identified in the 2015 EIR. Additionally, the mitigation measures prescribed to minimize these effects in the 2015 EIR would be applicable to the 2018 RTP/SCS.

5.3 List of Significant and Unavoidable Impacts

The proposed 2018 RTP/SCS would result in the significant and unavoidable impacts listed below. These impacts are in addition to those identified as significant and unavoidable in the 2015 EIR for the 2015 RTP/SCS.

- **Impact AQ-4.** Re-entrained dust from transportation sources
- **Impact HAZ-1.** Risk of loss, injury or death from wildland fire
- **Impact T-1.** Increased annual VMT

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6 Alternatives

In accordance with Section 15126.6 of the *State CEQA Guidelines*, this SEIR contains a comparative impact assessment of alternatives that would lessen significant impacts of the proposed 2018 RTP/SCS. Section 15126.6 of the State CEQA Guidelines states:

> "an EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives which are infeasible."

The primary purpose of this section of the SEIR is to provide decision makers and the general public a reasonable number of feasible alternatives that could attain most of the basic objectives of the 2018 RTP/SCS, while avoiding or reducing any of the significant adverse environmental effects of the 2018 RTP/SCS. As required by CEQA, this section also includes a discussion of the "environmentally superior alternative" among those studied.

6.1 Methodology

As described in Section 4, *Environmental Impact Analysis*, this SEIR analyzes the same potentially significant impact areas as the certified 2015 EIR prepared for the 2015 RTP/SCS. It also evaluates the 2018 RTP/SCS for potentially new significant impacts not previously identified in the 2015 EIR.

The analysis in this SEIR determined that the 2018 RTP/SCS would result in three new significant and unavoidable impacts not previously identified in the 2015 EIR for the 2015 RTP/SCS.

- Re-entrained dust from transportation sources, as described in Section 4.1, *Air Quality*;
- Risk of wildland fire hazards, as described in Section 4.3, *Hazards and Hazardous Materials*;
- Increased VMT in the region, as described in Section 4.4, *Transportation and Circulation*;

Additionally, the analysis in this SEIR determined that the 2018 RTP would have potentially significant impacts to tribal cultural resources that would be reduced to less than significant with implementation of mitigation measures (see Section 4.5, *Tribal Cultural Resources*). Impacts to tribal cultural resources were not identified in the 2015 EIR. Therefore, the alternatives analysis below considers impacts related to air quality, focusing on re-entrained dust; hazards and hazardous materials, focusing on wildland fire hazards; transportation and circulation, focusing on VMT; and on tribal cultural resources in comparison to the proposed 2018 RTP/SCS.

Each alternative is described and analyzed below to determine whether environmental impacts would be similar to, less than, or greater than those of the 2018 RTP/SCS for each of the impact issue areas described above. It should be noted that because the alternatives analysis is focused on the potentially significant impacts specific to the 2018 RTP/SCS, the alternatives to the 2015 RTP/SCS evaluated in the 2015 EIR were not used in this SEIR. However, the analysis below

considers whether significant and unavoidable impacts of the 2015 RTP/SCS, as identified in the 2015 EIR, would be reduced or more severe under each of the alternatives evaluated in this SEIR because these impacts would also occur under the 2018 RTP/SCS. Significant and unavoidable impacts identified in the 2015 EIR are associated with impacts to historical resources and impacts to wildlife movement. Additionally, because achieving GHG emissions reduction targets pursuant to SB 375 is a fundamental purpose and objective an RTP/SCS, the analysis below also compares GHG impacts.

6.2 Alternatives Considered and Rejected

Section 15126.6(c) of the *State CEQA Guidelines* states that an EIR should identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process. The EIR should briefly explain the reasons underlying the lead agency's determination. Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts (*State CEQA Guidelines* Section 15126.6(a)(c).

For this SEIR, an alternative location to Shasta County for implementing the 2018 RTP/SCS was rejected as an infeasible alternative. The 2018 RTP/SCS is developed specifically for Shasta County, and cannot be implemented in another location and would not be applicable to another location.

6.3 Alternative 1: No Project Alternative

6.3.1 Description

Section 15126.6 of the *State CEQA Guidelines* requires analysis of the No Project Alternative. Consistent with Section 15126.6(e)(a), Alternative 1, No Project Alternative, includes a land use pattern comprised of existing land use trends dictated by the current land use plans of the applicable jurisdictions within the region, such as the Shasta County General Plan (Shasta County 2004) and City of Redding General Plan (City of Redding 2000). In other words, it assumes that current regional growth trends would continue, but it updates the total growth to be consistent with the updated Regional Growth Forecast, as population growth in the region would occur regardless of the 2018 RTP/SCS. Rather than focusing on coordinating transportation projects that serve infill and transit oriented development, the transportation network would be comprised of committed transportation projects included in the Regional Transportation Improvement Program (RTIP) (SRTA 2017) and Federal Transportation Improvement Program (FTIP) (SRTA 2016).

6.3.2 Impact Analysis

a. Air Quality

Implementation of Alternative 1 would result in less construction related air quality impacts because fewer transportation improvement projects would be constructed compared to the 2018 RTP/SCS. However, operational emissions in 2040 for PM_{10}, ROG, and NO_x would likely be greater than those shown for the 2018 RTP/SCS in Table 4.1-5 in Section 4.1, *Air Quality.* Operational emissions would be greater because this alternative would include fewer transit projects and active transportation projects, both of which reduce overall VMT. Further, fewer transportation improvement projects designed to reduce traffic congestion would be constructed. Traffic congestion leads to longer period of engine idling, and consequently, more mobile-source emissions. Additionally, Alternative 1

would allow for more development outside of the urbanized areas of the region, which would require more vehicle trips to reach employment and commercial shopping centers in urbanized areas. As described in Section 4.1, *Air Quality*, re-entrained dust, specifically PM_{10}, is generated from roadway activity and increases as VMT increases. Because implementation of Alternative 1 would result in increased VMT relative to the 2018 RTP/SCS, this alternative would result in higher levels of re-entrained dust in the region.

If this alternative were selected, infill development projects and many improvements in the transportation infrastructure anticipated under the 2018 RTP/SCS would not occur. Since these developments would not occur, sensitive receptors would not be exposed to health risks from TACs during construction or operation.

Overall, air quality impacts would be greater under this alternative when compared to the 2018 RTP/SCS due to increase air pollutant emissions and increase re-entrained dust. Increased re-entrained dust impacts would be significant and unavoidable, and all mitigation measures identified in 2015 EIR for air quality impacts would be required.

b. Biological Resources

As described in the Initial Study (Appendix A), both the 2015 RTP/SCS and the proposed 2018 RTP/SCS would have significant and unavoidable impacts related to wildlife movement in the region. Because Alternative 1 would include fewer transportation projects, less wildlife habitat would be fragmented or isolated by roadways. However, impacts would be potentially significant because some roadway projects would occur and would fragment habitat and affect wildlife movement. The mitigation measures included in the Initial Study to reduce this impact would not be implemented because mitigation would not apply to this alternative. Therefore, impacts would remain significant and unavoidable. Despite less habitat fragmentation compared to the 2018 RTP/SCS, without applicable mitigation to reduce impacts, Alternative 1 would have slightly greater impacts on wildlife movement when compared to the 2018 RTP/SCS.

c. Cultural Resources

As described in the 2015 EIR, implementation of the 2015 RTP/SCS would include transportation projects and a land use scenario that could have significant and unavoidable impacts on historical resources. Because the 2018 RTP/SCS includes the same land use scenario as the 2015 RTP/SCS, plus 35 net new transportation projects, it would also have the same potentially significant and unavoidable impacts on historical resources, as described in the Initial Study (Appendix A).

Alternative 1 would include fewer transportation projects than the 2018 RTP/SCS, and would also include less urban infill development. Less infill development would result in fewer development projects within proximity to existing structures in urbanized areas of the region, where historical structures could be more prominent. Fewer transportation projects also would reduce the potential for impacts to historical resources. However, because this alternative would include some infill development and transportation projects, and because these projects could disturb historical resources, impacts would be potentially significant and unavoidable. The mitigation measures included in the Initial Study to reduce this impact would not be implemented because mitigation would not apply to this alternative. Despite fewer projects and less development likely to be within proximity to historical resources, without applicable mitigation to reduce impacts, this alternative would have slightly greater impacts on historical resources when compared to the 2018 RTP/SCS.

d. Greenhouse Gas Emissions

Implementation of Alternative 1 would result in fewer impacts associated with GHG emissions during construction activities as fewer projects would be constructed under this alternative compared to the 2018 RTP/SCS. However, this alternative would not include the SCS component of the 2018 RTP/SCS, and land development would occur consistent with current land use plans applicable to region. Therefore, this alternative would not reduce GHG emissions as required by SB 375. The GHG emissions under Alternative 1 would be higher when compared to GHG emissions with the 2018 RTP/SCS. This is primarily a result of the transportation efficiency benefits associated with the improvement projects that would not occur under Alternative 1, and a continuation of current land use trends. As long-term GHG emissions would be higher under this alternative, the overall impact of this alternative would be greater than what would occur under the 2018 RTP/SCS.

e. Hazards and Hazardous Materials

This alternative would result in fewer infrastructure projects being constructed, thereby reducing hazardous material use, storage and transportation resulting from construction of those projects. However, the amount of hazardous materials being transported to support land use development in the region would remain the same. Because Alternative 1 would be subject to existing regulations and programs, impacts relating to routine transport, use, or disposal of hazardous materials; risk of upset and accident conditions; emissions within one-quarter mile of a school; airport hazards; and interference with emergency response and evacuation plans would be less than significant, similar to 2018 RTP/SCS, as described in the Initial Study (Appendix A).

Land development would continue in accordance with current land use plans of the applicable jurisdictions in the region under Alternative 1. Therefore, compared to the 2018 RTP/SCS, this alternative could allow for more land use development outside of existing urbanized areas. Because CAL FIRE has mapped much of the SRTA region as having high or very high fire hazard (2007), especially outside of urbanized areas, this alternative would therefore place more structures next to or intermixed with wildlands. This would expose more people and structures to a significant risk of loss, injury or death involving wildland fires compared to the 2018 RTP/SCS. This impact, which is significant and unavoidable for the 2018 RTP/SCS, would be greater under Alternative 1 and would remain significant and unavoidable. Due to the increased severity of wildland fire impacts, overall hazards and hazardous materials impacts would be greater under this alternative than under the 2018 RTP/SCS.

f. Transportation and Circulation

Alternative 1 would not include many of the projects envisioned under the proposed 2018 RTP/SCS, including new highway and intersection projects, new bikeway and pedestrian projects (active transportation), and new transit projects. Many of these projects are intended to address traffic congestion, and in many cases would serve as mitigation measures to reduce potential impacts associated with planned long-term development and population growth that would occur regardless of the 2018 RTP/SCS.

Overall, VMT within the region would increase as a result of regional population growth, as discussed in Section 4.4 *Transportation and Circulation*. However, overall VMT would be greater under Alternative 1 compared to the proposed 2018 RTP/SCS in 2040, regardless of population growth. This would result from transit and active transportation projects included in the 2018 RTP/SCS, as well as infill, mixed use, and other land development projects that would reduce

demand for vehicle trips. Infill development results in shorter travel distances and better access to transit services and other alternative modes of transportation. The increased traffic congestion and VMT under Alternative 1 would be a potentially significant and avoidable impact, and the impacts would be greater than the impacts of the proposed 2018 RTP/SCS.

g. Tribal Cultural Resources

Implementation of Alternative 1 would involve less ground disturbance associated with transportation improvements than would occur under the proposed 2018 RTP/SCS. However, because more land use development could occur outside of existing urbanized areas, more ground disturbance would be expected to occur in previously undeveloped or open space areas. As such, the potential to disturb tribal cultural resources, including ancestral remains and sacred sites, would increase under Alternative 1. Although mitigation would not apply to this alternative, future projects would be required to comply with AB 52, which may require formal tribal consultation. Compliance with this requirement would reduce impacts to a less than significant level, similar to the 2018 RTP/SCS. However, because of the increased potential to disturb tribal cultural resources from more development outside of urbanized areas and no mitigation applicable to this alternative, the overall impact of Alternative 1 would be greater than under the 2018 RTP/SCS.

6.4 Alternative 2: No Project 2015 RTP/SCS Alternative

6.4.1 Description

Alternative 2, No Project 2015 RTP/SCS Alternative, represents the continued implementation of the current 2015 RTP/SCS, updated to reflect current conditions and forecasts. Because this alternative updates the 2015 RTP/SCS with current conditions and forecasts, the land use scenario under this alternative would be similar to the land use scenario envisioned by the 2018 RTP/SCS. Briefly, this land use scenario concentrates the forecasted growth in population and employment in the region in urban areas and corridors of the County while preserving the distinct identity of existing cities and towns. Transportation improvements included under this alternative also would be similar to the 2018 RTP/SCS. However, the 35 net new projects that would be added to the transportation project list under the 2018 RTP/SCS would not be added to the list or constructed under this alternative.

6.4.2 Impact Analysis

a. Air Quality

Implementation of Alternative 2 would result in less construction related air quality impacts because 35 fewer transportation improvement projects would be constructed compared to the 2018 RTP/SCS. Table 4.1-5 in Section 4.1, *Air Quality*, shows the estimated operational emissions of criteria pollutants for baseline 2015 conditions, conditions in 2040 with implementation of the 2018 RTP/SCS, and conditions in 2040 without implementation of the 2018 RTP/SCS (2040 No Project). The emissions shown in Table 4.1-5 for 2040 No Project are the emissions that would result from continued implementation of 2015 RTP/SCS, or Alternative 2. As shown in the table, operational emissions of criteria pollutants would be greater under this alternative compared to the 2018 RTP/SCS.

As described in Section 4.4, *Transportation and Circulation*, annual VMT in the region in 2040 would be 2,234,429,646 if implementation of the 2015 RTP/SCS continued and the 2018 RTP/SCS was not

implemented. This would be approximately 4,958,086 less VMT, or 0.2 percent less, than would occur in 2040 under implementation of the 2018 RTP/SCS. Therefore, re-entrained dust levels, which are correlated to roadway activity and VMT, would be less under this alternative compared with the 2018 RTP/SCS.

Alternative 2 includes the same land development scenario as envisioned in the 2018 RTP/SCS. Therefore, the same number of sensitive receptors would be exposed to health risks from TACS during construction and operation under this alternative as would be under the 2018 RTP/SCS.

Overall air quality impacts under this alternative would be both better and worse when compared to the 2018 RTP/SCS because criteria pollutant emissions would be higher but re-entrained dust levels would be less. Similar to the 2018 RTP/SCS, all mitigation measures identified in 2015 EIR for air quality impacts would be required. However, impacts related to re-entrained dust would remain significant and unavoidable.

b. Biological Resources

As described in the 2015 EIR, implementation of the 2015 RTP/SCS would have significant and unavoidable impacts related to wildlife movement in the region. These impacts are primarily related to the fragmentation and isolation of habitat from roadway projects and from increased human activity near habitat during the construction of transportation improvement projects. Because Alternative 2 includes the same land use scenario as the 2018 RTP/SCS, but 35 fewer transportation projects, less habitat would be fragmented and impacts on wildlife movement would be slightly reduced under this alternative. Impacts would be slightly reduced compared to the 2018 RTP/SCS. However, because Alternative 2 consists of the continued implementation of the 2015 RTP/SCS, this alternative would continue to have significant and unavoidable impacts on wildlife movement. Similar to the 2018 RTP/SCS, mitigation measure included in the 2015 EIR would be required for this alternative.

c. Cultural Resources

As described in the 2015 EIR, implementation of the 2015 RTP/SCS would include transportation projects and a land use scenario that could have significant and unavoidable impacts on historical resources. Because Alternative 2 includes the same land use scenario as the 2018 RTP/SCS, land development envisioned by this alternative would result in the same potential impacts on historical resources. The 2018 RTP/SCS includes 35 net new projects, which cannot be fully evaluated for historical resources impacts at this point because the precise characteristics of future improvements are not known. Therefore, impacts on historical resources would be approximately the same under this alternative and the 2018 RTP/SCS. Similar to the 2018 RTP/SCS, impacts would be significant and unavoidable, and mitigation measures included in the 2015 EIR would be required.

d. Greenhouse Gas Emissions

Implementation of Alternative 2 would result in fewer impacts associated with GHG emissions during construction activities as 35 fewer transportation projects would be constructed under this alternative compared to the 2018 RTP/SCS. Table 4.2-1 in Section 4.2, *Greenhouse Gas Emissions*, shows the estimated per capita GHG emissions from all sources for baseline 2015 conditions, conditions in 2040 with implementation of the 2018 RTP/SCS, and conditions in 2040 without implementation of the 2018 RTP/SCS (2040 No Project). The GHG emissions shown in Table 4.2-1 for 2040 No Project are the per capita GHG emissions that would result from continued implementation of 2015 RTP/SCS, or Alternative 2. As shown in the table, per capita GHG emissions would be greater

under this alternative compared to the 2018 RTP/SCS. Specially, Alternative 2 would result in an additional 0.7 MT CO2e/year per person when compared to the 2018 RTP/SCS. This is primarily a result of the transportation efficiency benefits associated with the improvement projects in the 2018 RTP/SCS that would not occur under Alternative 2. As long-term per capita GHG emissions would be higher under this alternative, the overall impact of this alternative would be slightly greater than what would occur under the 2018 RTP/SCS. However, the per capita GHG emissions under this alternative would be below the 2015 baseline GHG emissions. Therefore, impacts would be less than significant without mitigation.

e. Hazards and Hazardous Materials

Because the proposed 2018 RTP/SCS is a minor update to the 2015 RTP/SCS, and does not include land uses or development not included in the 2018 RTP/SCS, Alternative 2 would not substantially alter the amount of hazardous materials that are used, stored, or transported in the region. Overall, the amount of hazardous materials being transported in the region would remain the same. Because Alternative 2 would be subject to existing regulations and programs, impacts relating to routine transport, use, or disposal of hazardous materials; risk of upset and accident conditions; emissions within one-quarter mile of a school; airport hazards; and interference with emergency response and evacuation plans would be less than significant, similar to 2018 RTP/SCS, as described in the Initial Study (Appendix A).

The 2015 EIR analysis determined that wildland fire hazard impacts would be less than significant because development would be focused on urban areas, as opposed to intermixed with wildlands. However, several catastrophic fires in California since the 2015 EIR was certified, such as the 2017 Tubbs Fire in Santa Rosa, have demonstrated that wildland fires are capable of burning not only wildland areas and areas intermixed with wildlands, but also urban areas. As described above, the land use scenario envisioned under Alternative 2 is the same as the land use envisioned by the 2018 RTP/SCS. Therefore the potential risks of exposure of people or structures to wildland fire would be the same as the 2018 RTP/SCS, and would be significant and unavoidable.

Overall, because Alternative 2 would not result in any differences in the use, transport or storage of hazardous materials or risk of wildland fire hazards compared to the 2018 RTP/SCS, impacts would the same as described for the 2018 RTP/SCS.

f. Transportation and Circulation

As described in Section 4.4, *Transportation and Circulation*, annual VMT in the region in 2040 would be 2,234,429,646 if implementation of the 2015 RTP/SCS continued and the 2018 RTP/SCS was not implemented. This would be approximately 4,958,086 less VMT, or 0.2 percent less, than would occur in 2040 under implementation of the 2018 RTP/SCS. However, VMT under this alternative would increase compared to baseline 2015 conditions, and impacts would be significant and unavoidable.

This alternative would not include the 35 net new transportation improvement projects included in the 2018 RTP/SCS. These projects have been added to the project list to improve traffic circulation and reduce congestion. Without these projects, this alternative would result in slightly greater traffic congestion projects compared to the 2018 RTP/SCS.

As described in the 2015 EIR, the 2015 RTP/SCS is generally consistent with applicable alternative transportation plans. Because Alternative 2 is a continuation of the 2015 RTP/SCS, impacts related to consistency with such plans would be less than significant, similar to the 2018 RTP/SCS. Overall,

transportation and circulation impacts would be similar to the 2018 RTP/SCS because this alternative would result in less VMT but increased traffic congestion.

g. Tribal Cultural Resources

Implementation of Alternative 2 would involve less ground disturbance associated with transportation improvements than would occur under the proposed 2018 RTP/SCS. The land development envisioned under this alternative would be the same as the 2018 RTP/SCS, and result in no additional ground disturbance compared to the 2018 RTP/SCS. As such, the potential to disturb tribal cultural resources, including ancestral remains and sacred sites, would slightly decrease under Alternative 2. Although mitigation would not apply to this alternative, future projects would be required to comply with AB 52, which may require formal tribal consultation. Compliance with this requirement would reduce impacts to a less than significant level, similar to the 2018 RTP/SCS. However, because of the slightly decreased potential to disturb tribal cultural resources from fewer transportation projects, the overall impact of Alternative 1 would be slightly less than under the 2018 RTP/SCS.

6.5 Alternative 3: Increased Infill Alternative

6.5.1 Description

Alternative 3, Increased Infill Alternative, provides for more compact development, more infill development, and less city expansion than the proposed 2018 RTP/SCS. Alternative 3 would result in higher average residential density, a greater percentage of multi-family housing, and a greater percentage of housing within and near downtown areas and job centers relative to the proposed 2018 RTP/SCS. The transportation network in this alternative includes additional transit investments in alternative modes intended to serve shorter, local trips given the more concentrated growth pattern. Specifically, active transportation investments such as bicycle facilities, sidewalks, traffic calming measures and intersection safety improvements would be prioritized. Under Alternative 3, investment would be focused on closing transit gaps by enhancing local transit bus service rather than interregional or long distance services. In addition, active transportation projects such as bicycle facilities, trails and pedestrian improvements would be programmed throughout the region under this alternative.

6.5.2 Impact Analysis

a. Air Quality

Implementation of Alternative 3 would result in higher short-term air quality impacts compared to the proposed 2018 RTP/SCS because urban construction activities would expose higher numbers of people to construction-related air emissions. The overall VMT would be slightly less in Alternative 3 than the 2018 RTP/SCS because there would be shorter distance trips between residential and commercial areas and those trips would likely be made using enhanced local transit services or by walking and bicycling rather than the single occupant vehicle. Reduced VMT would also result in a less re-entrained dust when compared to the 2018 RTP/SCS.

Although VMT and overall regional emissions would remain the same or slightly decrease depending on the pollutant, sensitive receptors would be exposed to greater concentrations of TACs based on the land use pattern. Therefore, compared to the proposed project, some air quality-related

impacts would be greater while other impacts would be less. All mitigation measures identified in 2015 EIR for air quality impacts would be required. Overall, air quality and health risk impacts of Alternative 3 would be similar to impacts under the 2018 RTP/SCS, and less than significant with implementation of mitigation measures.

b. Biological Resources

Alternative 3 would further concentrate land use development within existing urbanized areas and would construct fewer transportation infrastructure projects such as roadway widening. As such, less overall ground disturbance outside of already-developed areas would occur. Because of the reduced ground disturbance, less habitat would be fragmented and less human activity would occur within proximity to habitat. Therefore, implementation of Alternative 3 would have reduced impacts on wildlife movement compared to the 2018 RTP/SCS. However, mitigation measures identified in the Initial Study to reduce the impacts of the 2018 RTP/SCS on wildlife movement would still be required and impacts would remain significant and unavoidable.

c. Cultural Resources

As described in the 2015 EIR, implementation of the 2015 RTP/SCS would include transportation projects and a land use scenario that could have significant and unavoidable impacts on historical resources. Because the 2018 RTP/SCS includes the same land use scenario as the 2015 RTP/SCS, plus 35 net new transportation projects, it would also have the same potentially significant and unavoidable impacts on historical resources, as described in the Initial Study (Appendix A).

Compared to the 2018 RTP/SCS, impacts to historical resources may increase under Alternative 3. This is because more development would occur within existing urban areas, where historical buildings and structures are more likely to be located. Redevelopment or demolition that may be required to implement transportation improvements and/or infill development under this alternative may result in the permanent loss of more historic structures than the 2018 RTP/SCS. While implementation of mitigation measures included in the Initial Study would reduce impacts to the extent feasible, some project-specific impacts may be unavoidable. Overall, impacts to historical resources would be greater than the 2018 RTP/SCS, and impacts would remain significant and unavoidable.

d. Greenhouse Gas Emissions

Construction-related GHG emissions under Alternative 3 would be similar to the proposed 2018 RTP/SCS because the number and types of projects constructed would be similar. As described above, it is reasonable to assume that overall VMT under Alternative 3 would be slightly less as compared to the 2018 RTP/SCS because this alternative would include more compact and infill development, resulting in shorter distance trips and increased use of transit and active transportation. Because GHG emissions are largely associated with VMT and mobile sources, and Alternative 3 would result in slightly less VMT, this alternative would result in slightly lower long-term operational GHG emissions than the 2018 RTP/SCS. Because long-term emissions of GHGs would be lower under this alternative, the overall impact would be less than under the 2018 RTP/SCS. This alternative is expected to meet the GHG emission reduction requirements associated with SB 375 due to lower VMT, increased transit, and other measures. Impacts would be less than significant.

e. Hazards and Hazardous Materials

This alternative would concentrate land use development in infill areas and would focus transportation investments on transit and active transportation modes, rather than new or expanded roadway capacity. These changes in the type and location of transportation and land use development projects would not substantially alter the amount of hazardous materials that are used, stored, or transported in the region. Overall, the amount of hazardous materials being transported in the region would remain the same. Because Alternative 3 would be subject to existing regulations and programs, impacts relating to routine transport, use, or disposal of hazardous materials; risk of upset and accident conditions; emissions within one-quarter mile of a school; airport hazards; and interference with emergency response and evacuation plans would be less than significant, similar to 2018 RTP/SCS, as described in the Initial Study (Appendix A).

Alternative 3 would intensity infill development within the urbanized areas of the region and reduce city expansion compared to the 2018 RTP/SCS. Therefore, this alternative would reduce the amount of housing and other development near wildlands. Accordingly, the risk of exposure of people and structures to wildland fire would be decreased under this alternative compared to the 2018 RTP/SCS. However, this impact would remain significant and unavoidable given the fire hazard across much of Shasta County. Additionally, as described in Section 4.3, Hazards and Hazardous Materials, CAL FIRE has mapped areas of high and very high fire hazard severity zones within the region's incorporated cities (CAL FIRE 2007). Compared to the 2018 RTP/SCS, the overall impact of Alternative 3 would be less than the 2018 RTP/SCS. All mitigation measures included in Section 4.3, *Hazards and Hazardous Materials*, would be required.

f. Transportation and Circulation

Alternative 3 would include a similar range of transportation improvement projects as identified for the proposed 2018 RTP/SCS, with greater priority given to bicycle, pedestrian and local transit connections. Many of these projects are intended to address traffic congestion identified by local agencies, and in many cases would mitigate potential impacts associated with planned long-term development projects. However, others are intended to support improvements along commercial corridors to facilitate access to alternative transportation modes. Overall, this alternative would decrease annual VMT in the region compared to the 2018 RTP/SCS because more emphasis would be placed on transit and active transportation projects. Additionally, future growth would be further concentrated in urbanized areas of the region, facilitating the ability to use alternative transportation modes instead of single-occupancy vehicles. Because Alternative 3 prioritizes alternative transportation projects, it would be generally consistent with applicable alternative transportation plans. Overall, transportation and circulation impacts would be less compared to the 2018 RTP/SCS because this alternative would result in less VMT and less traffic congestion.

g. Tribal Cultural Resources

As discussed previously, Alternative 3 would result in less overall ground disturbance outside of existing urbanized (disturbed) areas in the region. As such, there would be less potential to disturb tribal cultural resources, including ancestral remains and sacred sites outside the urbanized areas. It should be noted, however, that such resources could be located within urbanized areas, and may be disturbed with relatively minor amounts of ground disturbance. As such, mitigation identified in Section 4.5, *Tribal Cultural Resources*, would continue to apply and the impact would be significant but mitigable. Overall impacts to tribal cultural resources under Alternative 3 would be less than impacts under the 2018 RTP/SCS.

6.6 Environmentally Superior Alternative

Section 15126.6 of the *State CEQA Guidelines* requires that an EIR identify the environmentally superior alternative among the alternatives analyzed. *State CEQA Guidelines* Section 15126.6(d)(2) states that if the No Project Alternative is identified as the environmentally superior alternative, the EIR shall also identify an environmentally superior alternative from among the other alternatives analyzed. This section compares the impacts of the three alternatives under consideration to those of the 2018 RTP/SCS, in compliance with the *State CEQA Guidelines*.

Table 6-1 shows whether each alternative would have impacts that are less than, similar to, or greater than the 2018 RTP/SCS for each of the issue areas and impacts studied.

Table 6-1 Impact Comparison of Alternatives

Issue	Alternative 1: No Project Alternative	Alternative 2: No Project 2015 RTP/SCS Alternative	Alternative 3: Increased Infill Alternative
Air Quality	+	=	=
Biological Resources	+	-	-
Cultural Resources	+	=	+
Greenhouse Gas Emissions	+	+	-
Hazards and Hazardous Materials	+	=	-
Transportation and Circulation	+	=	-
Tribal Cultural Resources	+	-	-
Total	**+**	**=**	**-**

- impacts would be less than the 2018 RTP/SCS

= impacts would be similar to the 2018 RTP/SCS

+ Impacts would be greater than the 2018 RTP/SCS

In conducting the alternatives analysis, consideration must be given as to how, and to what extent, an alternative can meet the project's basic objectives. As discussed in Section 2.0, *Project Description,* the primary objective of the 2018 RTP/SCS is to comply with applicable regulatory requirements, including CTC RTP Guidelines and SB 375, including SB 375's regional GHG emissions reduction targets. The underlying purpose of the 2018 RTP/SCS is to coordinate and facilitate the programming and budgeting of all transportation facilities and services within Shasta County through 2040 and demonstrate how the region will integrate transportation and land use planning to meet the GHG emissions reduction targets established by CARB and in accordance with other State and federal regulations. The 2018 RTP/SCS is intended to also show how SRTA will meet the transportation needs of the region through 2040, considering existing and projected future land use patterns as well as forecasted population and job growth.

Based on the above analysis and summary in Table 6-1, Alternative 3 is the environmentally superior alternative, assuming all environmental issue areas are weighted equally. Under Alternative 3, land use patterns would further concentrate forecasted population and employment growth in urban areas with a focus on infill in and around commercial corridors. Alternative 3 could be considered environmentally superior to the 2018 RTP/SCS primarily because, as shown in Table 6-1, it would result in less overall impacts to the each issue area that the 2018 RTP/SCS would have potentially significant impacts, with the exception of air quality and cultural resources. Air quality impacts

would be similar to the 2018 RTP/SCS, but this alternative would result in less re-entrained dust and criteria pollutant emissions. As described above, potentially significant cultural resource impacts are associated with historical resources, which are typically located in urbanized areas.

Because Alternative 3 would include regionally identified transportation projects and an SCS component that would further concentrate development in urban areas, it would continue to meet the objectives of the project, including: complying with applicable regulatory requirements; serving regional goals, objectives, policies and plans; and responding to community and regional transportation needs. In addition, because Alternative 3 would increase investments in alternative and active transportation modes, it would promote energy efficient, environmentally sound modes of travel to a greater extent than the 2018 RTP/SCS. However, Alternative 3 may not be feasible in that SRTA does not have land use authority and cannot require local agencies to change their land use designations that are required for Alternative 3 to be considered environmentally superior. Also, the proposed land use changes required to implement Alternative 3 may not be acceptable to the local jurisdictions as to their development goals and objectives.

Alternative 1 would result in a less dense development pattern compared to the 2018 RTP/SCS, with Alternative 1 continuing existing land use trends. Because of the increased land development outside of existing urbanized areas, Alternative 1 would result in more ground disturbance than the 2018 RTP/SCS. Consequently, compared to the 2018 RTP/SCS, the potentially significant impacts of the 2018 RTP/SCS would be even greater under Alternative 1. This alternative would also result in higher GHG emissions compared to the 2018 RTP/SCS.

Alternative 1 would implement committed transportation projects in the RTIP and FTIP, but would not include other transportation infrastructure projects identified in the 2018 RTP/SCS. This alternative would not meet the SB 375 requirement for preparation of an SCS, or other applicable regulations pertaining to RTPs. Therefore, this alternative would not meet the basic objectives of the 2018 RTP/SCS.

Alternative 2, which is a continuation of the current 2015 RTP/SCS updated to reflect current conditions and forecasts, would result in slightly less impacts on biological resources (i.e., wildlife movement) and tribal cultural resources as compared to the 2018 RTP/SCS. This is because Alternative 2 would result in the construction of 35 fewer transportation projects than the 2018 RTP/SCS. As shown in Table 6-1, impacts of Alternative 2 would be similar to the 2018 RTP/SCS for the other issues and impacts studied, with the exception of GHG emissions. The GHG emissions under this alternative would be slightly higher than GHG emissions under the 2018 RTP/SCS.

As described in Section 2.3, *Project Objectives*, under both federal and State law, the RTPAs and MPOs must update the RTPs and MTP every four years.[1] The 2015 RTP/SCS was adopted in June 2015. Therefore, continued implementation of the 2015 RTP/SCS beyond 2019 would not comply with federal or State laws. As stated in Section 2.3, *Project Objectives*, the primary objective of the 2018 RTP/SCS is to comply with applicable regulatory requirements. Because this alternative would not comply with regulatory requirements, it would not achieve the primary objective of the project. It may also not be a feasible alternative due to inconsistencies with federal and State regulatory requirements requiring period updates of RTPs.

[1] 23 C.F.R. §450.322(c); Gov. Code §65080(d).

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7.2 List of Preparers

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Appendix A

IS-NOP and Comments

2018 Regional Transportation Plan and Sustainable Communities Strategy for the Shasta Region

Initial Study

prepared by:

Shasta Regional Transportation Agency
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Redding, California, 96001
Contact: Sean Tiedgen, Senior Transportation Planner
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prepared with the assistance of:

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February 2018

Rincon Consultants, Inc.
Environmental Scientists Planners Engineers
www.rinconconsultants.com

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Initial Study

1. Project Title

2018 Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS) for the Shasta Region

2. Lead Agency Name and Address

Shasta Regional Transportation Agency
1255 East Street, Suite 202
Redding, California 96001

3. Contact Person and Phone Number

Sean Tiedgen, Senior Transportation Planner
530-262-6185

4. Project Location

The proposed 2018 Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS) update involves the entirety of Shasta County and its incorporated cities, which are located at the geographical center and transportation crossroads of northern California. As shown in the regional location map in Figure 1, the County is situated at the north end of the Sacramento Valley, approximately 150 miles north of Sacramento and approximately 110 miles south of the Oregon border. Interstate 5 (I-5), one of California's major north-south routes, traverses the western portion of Shasta County. I-5 runs along the western side of the Sacramento River in the northern and southern portions of the county, crossing over the River to run along its eastern side between the City of Anderson and the unincorporated community of Lakehead. State Route 273 provides north and south connectivity parallel to I-5 on the western side of the Sacramento River between the Cities of Anderson and Redding before merging back into I-5 north of the River. State Routes 44 and 299 provide connectivity to the east and west. These major transportation corridors converge in the City of Redding, the county seat and the region's socio-economic center.

5. Project Sponsor's Name and Address

Shasta Regional Transportation Agency
1255 East Street, Suite 202
Redding, California 96001

6. Description of Project

The Shasta Regional Transportation Agency (SRTA), as both the federally-designated metropolitan planning organization (MPO) and the state-designated regional transportation planning agency (RTPA) for Shasta County, is required by federal and state law to prepare a long-range (at least 20 years) transportation planning document, known as a Regional Transportation Plan (RTP). The RTP is an action-oriented document used to achieve a coordinated and balanced regional transportation system. California Government Code §65080 et seq. and Title 23 United States Code (USC) §134 require RTPAs and MPOs to prepare long-range transportation plans to: 1) establish regional goals; 2) identify present and future needs, deficiencies, and constraints; 3) analyze potential solutions; 4) estimate available funding; and 5) propose investments. State statutes require that the RTP also serve as the foundation for the short-range transportation programming documents, known as the Regional and Federal Transportation Improvement Programs (RTIP and FTIP).

SRTA must update its Sustainable Communities Strategy (SCS) as part of the RTP update, pursuant to the requirements of California Senate Bill 375 (SB 375), as adopted in 2008. The SCS sets forth a forecasted development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, is intended to reduce greenhouse gas (GHG) emissions from passenger vehicles and light trucks to achieve the regional GHG reduction targets set by the California Air Resources Board (CARB). For the 2015 RTP, the CARB issued SRTA a regional GHG target of no increase in per capita GHG emissions for the planning years 2020 and 2035, as compared to baseline per capita emissions levels in 2005. The regional GHG reduction targets for the 2018 RTP/SCS will remain the same as the 2015 RTP due to no new targets being adopted by CARB at this time. SRTA recognizes that CARB is working on an update to the targets, has proposed new targets for years 2020 and 2035 and is anticipating presenting targets for adoption in March or April 2018. It is SRTA's understanding that the new targets, when adopted, may be in effect for SRTA's third RTP/SCS, which will be due in 2022.

Nonetheless, SB 375 specifically states that local governments retain their autonomy to plan local land use development and General Plan policies. The SCS, as a chapter within the RTP, is intended to provide a regional policy foundation that local governments may build upon, if they so choose. The RTP/SCS does not propose to change any land use and zoning designations; rather, the land use scenario envisioned by the RTP/SCS is based on and would be consistent with the existing local General Plan policies and land use designations as specified by the local agencies. As such, the RTP/SCS includes and accommodates the quantitative growth projections for the region based on the land use capacity of the local General Plans. SB 375 also requires that the RTP/SCS's forecasted development pattern for the region be consistent with the state-developed, five-year[1] regional housing needs as allocated to member jurisdictions through the Regional Housing Needs Allocation (RHNA) process under State housing law.

The 2018 RTP/SCS reflects changes in legislative requirements, local land use policies, and resource constraints since the most recent RTP was adopted on June 30, 2015. The 2018 update to the RTP/SCS is focused on implementation of the 2015 RTP, with minor updates to ensure consistency

[1] Please note that following the 2018 RTP and SCS, the RHNA process will move from a five-year to an eight-year cycle.

with federal, state and local planning requirements. The most notable changes that impact this RTP update include:

- California's adoption of safety-related performance measures and targets in July and August 2017 as required under the MAP-21 and FAST Act transportation bills. This also requires MPO targets to be adopted within 180 days after State targets and they must be incorporated into the RTP, RTIP and FTIP;
- Draft guidelines from the Governor's Office of Planning and Research for SB 743 (Steinberg, 2013), which is nearing adoption;
- New funding for transportation projects through California's recently approved Road Repair and Accountability Act of 2017 (SB 1) for the next ten years;
- Minor updates to transportation projects and land use development (specifically focused on growth that has taken place since the last RTP); and
- Addition of components to the RTP to address freight and alternative fuel vehicles, including electric vehicles and autonomous vehicles.

The 2018 RTP/SCS shows how SRTA will meet the transportation needs of the region for the period from 2018 to 2040, considering existing and projected future land use patterns as well as forecasted population and job growth. The 2018 RTP/SCS plans for and programs revenues expected to be available to SRTA from all transportation funding sources over the course of the planning period. It identifies and prioritizes expenditures of anticipated funding for transportation projects that involve all transportation modes: highways; streets and roads; transit; rail; active transportation (bicycle and pedestrian); aviation; as well as transportation demand management (TDM) and transportation system management (TSM). The 2018 RTP project list will update the 2015 RTP project list by removing projects that have been completed since 2015, modifying some projects that continue to be on the list based on new information, and adding approximately 35 net new minor projects to the list. None of the modified or new projects on the 2018 RTP/SCS list would be substantially different in terms of geographical location, type of project, or size of project to those on the 2015 RTP list. In addition, the land use scenario envisioned by the 2018 RTP/SCS is similar to that contained in the 2015 RTP. Therefore, it is anticipated that the 2018 RTP/SCS would result in similar impacts to those projects contained in the 2015 RTP.

7. Surrounding Land Uses and Setting

Shasta County is bordered by Trinity County to the west, Siskiyou County to the north, Modoc County to the northeast, Lassen County to the east, Plumas County to the southeast, and Tehama County to the south.

8. Other Public Agencies Whose Approval is Required

Approval of the RTP/SCS is at the discretion of the SRTA Board of Directors. Additional environmental review will be conducted by the responsible lead agency prior to implementation of individual projects contained within the RTP/SCS. Lead agencies would include the following:

- California Department of Transportation (Caltrans);
- California Transportation Commission (CTC);
- California Public Utilities Commission's Rail Crossings Engineering Section (RCES);
- Cities of: Redding, Anderson, and Shasta Lake;

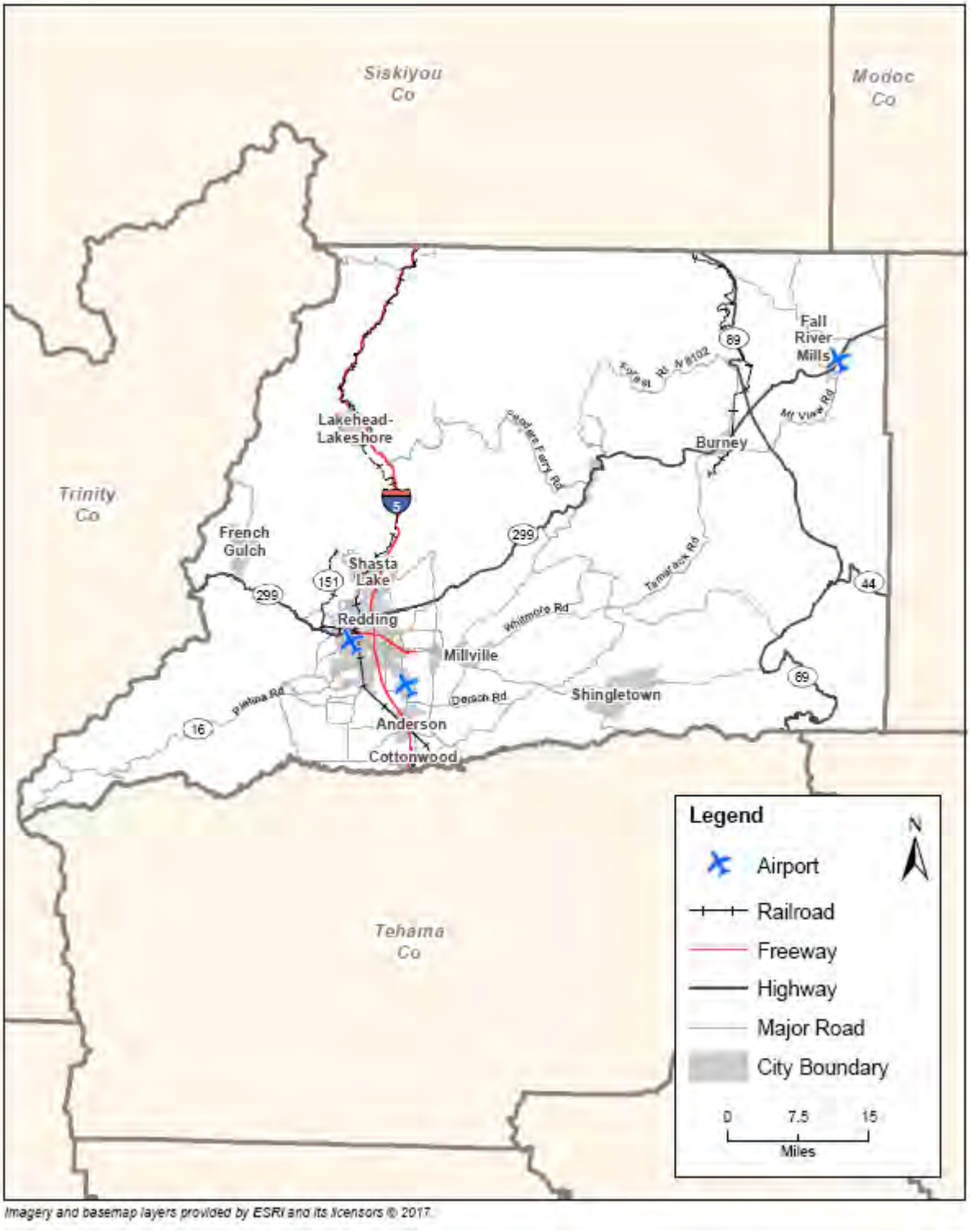
- County of Shasta;
- Federal Land Management Agencies (FLMA) - Bureau of Land Management (BLM), the Fish and Wildlife Service (FWS), the National Park Service (NPS) and the Forest Service;
- Federal Railroad Administration (FRA);
- Redding Area Bus Authority (RABA); and
- Local transit providers and airport operators.

9. Type of Environmental Document

Pursuant to CEQA Statute §21166, the appropriate CEQA documentation for the 2018 RTP/SCS will be a Supplement to the 2015 RTP EIR. The analysis that follows in this document will serve as an Initial Study for a Supplemental EIR (SEIR) that evaluates the potential impacts associated with the minor additions or changes to the previous 2015 RTP. An SEIR is the appropriate level of CEQA documentation for several reasons. First, the 2018 RTP/SCS would incorporate new requirements and regulations such as safety-related performance measures and targets under the FAST Act transportation bill and draft guidelines from the Governor's Office of Planning and Research for California's SB 743 (Steinberg 2013). While these new components are necessary, they are not anticipated to substantially increase the severity of impacts identified in the previous 2015 RTP EIR. Second, new funding for transportation projects through California's recently approved Road Repair and Accountability Act of 2017 (Senate Bill [SB] 1) may help accelerate some regional/local projects over the next ten years. Lastly, the RTP will include new topics focused on freight, electric vehicles and autonomous vehicles. All of these components are anticipated to result in only minor updates to transportation projects and land use development in the RTP and SCS (specifically focused on growth that has taken place since the last RTP).

Accordingly, this Initial Study and the SEIR will focus on the physical effects of the incremental changes to RTP/SCS policies, projects, or growth scenarios, and will address any new or more severe impacts that would occur due to the updated baseline physical and regulatory conditions, since certification of the 2015 RTP EIR. This Initial Study serves as a preliminary review of the environmental impacts analyzed in the 2015 RTP EIR to determine what issue areas require further review in the 2018 RTP/SCS SEIR. For any issue areas where impacts would be similar to or less than the impact level identified in the previous EIR, no further analysis beyond this Initial Study is warranted (and is noted as such in this Initial Study). If previous mitigation measures from the 2015 RTP still apply and would reduce impacts to a less than significant level, those measures are listed in this Initial Study in the same manner as in the 2015 RTP EIR. Revisions to the mitigation measures include the replacement of "2015 RTP" with "2018 RTP/SCS" along with minor clarification and revisions, as directed by SRTA. For those environmental issue areas that may result in an increased level of impact or a potential change in impact level from the 2015 RTP EIR, based on new information or changes to regulations since the 2015 RTP EIR, those issue areas are identified in this Initial Study as requiring further review in the forthcoming SEIR.

Figure 1 Regional Location



Environmental Factors Potentially Affected

This project would potentially affect the environmental factors checked below, involving at least one impact that is "Potentially Significant" or "Potentially Significant Unless Mitigation Incorporated" as indicated by the checklist on the following pages.

■ Aesthetics	■ Agriculture and Forestry Resources	■ Air Quality
■ Biological Resources	■ Cultural Resources	■ Geology and Soils
■ Greenhouse Gas Emissions	■ Hazards and Hazardous Materials	■ Hydrology and Water Quality
■ Land Use and Planning	□ Mineral Resources	■ Noise
□ Population and Housing	□ Public Services	□ Recreation
■ Transportation/Traffic	■ Tribal Cultural Resources	□ Utilities and Service Systems
■ Mandatory Findings of Significance	■ Energy	□ Environmental Justice

Determination

Based on this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions to the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

■ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potential significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature	Date
Sean Tiedgen	**Senior Transportation Planner**
Printed Name	Title

Environmental Checklist

1 Aesthetics

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Have a substantial adverse effect on a scenic vista?	☐	■	☐	☐
b. Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	■	☐	☐
c. Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	■	☐	☐
d. Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?	☐	■	☐	☐

a. Would the project have a substantial adverse effect on a scenic vista?

b. Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

c. Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

d. Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Shasta County has not identified any new scenic highways or scenic view corridors since adoption of the 2015 RTP (Shasta County 2004 and Caltrans 2011). Transportation improvement projects contained in the 2018 RTP/SCS consist of projects included in the 2015 RTP with the addition of approximately 35 net new minor projects. These new projects included in the 2018 RTP/SCS would not be substantially different in terms of geographical location, type of project, or size of project to those on the 2015 RTP project list. In addition, the land use scenario envisioned by the 2018 RTP/SCS is mostly the same as that contained in the 2015 RTP with the exception of minor updates to land use information provided by local jurisdictions. As a result, no new or substantially more severe effects would occur related to scenic vistas, scenic resources, or scenic highways compared

to the 2015 RTP. Transportation projects in the 2018 RTP and the 2018 SCS land use scenario would not result in any lighting impacts beyond those discussed in the 2015 RTP EIR. The following mitigation measures identified in the 2015 RTP EIR would minimize long-term visual impacts generated by proposed transportation improvements and land use patterns near scenic corridors and lighting impacts near sensitive receptors. No new or revised mitigation measures are required and further analysis in an EIR is not warranted.

AES-1(a) Where a particular 2018 RTP transportation improvement project affects adjacent landforms, the project sponsor shall ensure that recontouring provides a smooth and gradual transition between modified landforms and existing grade.

AES-1(b) The project sponsor shall ensure that landscaping is installed to restore natural features along corridors after widening, interchange modifications, realignment, or construction of ancillary facilities. Associated landscape materials and design shall enhance landform variation, provide erosion control, and blend with the natural setting. To ensure compliance with approved landscape plans, the implementing agency shall provide a performance security equal to the value of the landscaping/ irrigation installation.

AES-1(c) The project sponsor shall ensure that a project in a scenic view corridor will have the minimum possible impact upon foliage, existing landscape architecture and natural scenic views, consistent with project goals.

AES-1(d) Potential noise impacts arising from increased traffic volumes associated with adjacent land development shall be preferentially mitigated through the use of setbacks and the acoustical design of adjacent proposed structures. The use of sound walls, or any other architectural features that could block views from the scenic highways or other view corridors, shall be discouraged to the extent possible. Where use of sound walls is found to be necessary, walls shall incorporate offsets, accents, and landscaping to prevent monotony. In addition, sound walls should be complementary in color and texture to surrounding natural features.

AES-2(a) Roadway extensions and widenings shall avoid the removal of existing mature trees to the extent possible. The loss of trees that are protected by local agencies shall be replaced at a minimum 2:1 basis and incorporated into the landscaping design for the roadway. The project sponsor of a particular 2018 RTP/SCS project shall ensure the continued vitality of replaced trees through periodic maintenance (see Mitigation Measure **B-1(j)** prescribed under Biological Resources.)

AES-2(b) Roadway lighting shall be minimized to the extent possible, and shall not exceed the minimum height requirements of the local jurisdiction in which the project is proposed. This may be accomplished through the use of hoods, low intensity lighting, and using as few lights as necessary to achieve the goals of the project.

AES-2(c) Bus shelters and other ancillary facilities constructed as part of roadway improvements under the 2018 RTP/SCS shall be designed in accordance with the architectural review requirements of the local jurisdiction in which the project is proposed.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

2 Agriculture and Forestry Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Convert Prime Farmland, Unique Farmland, Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	■	□	□	□
b. Conflict with existing zoning for agricultural use or a Williamson Act contract?	■	□	□	□
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)); timberland (as defined by Public Resources Code Section 4526); or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	□	□	■	□
d. Result in the loss of forest land or conversion of forest land to non-forest use?	□	□	■	□
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	■	□	□	□

According to the Shasta County *2016 Crop and Livestock Report* (2016), the 2016 value of agricultural products produced in Shasta County increased slightly from 2015 to a total value of $81,133,000 USD. The county experienced a drop in livestock value; however, this drop in value was offset by an increase in the value of nursery stock (Shasta County 2016). The nursery stock saw a 118 percent increase in overall value from the previous year due to an increase in both acreage and value of strawberry nursery plants, resulting in an overall value of more than $14 million USD (Shasta County 2016). The California Department of Conservation's (DOC) Farmland Mapping and Monitoring Program (FMMP) 2016 Field Report for Shasta County also reports changes in farmland conversion from 2014 through 2016. According to the FMMP 2016 Field Report, no significant conversions from irrigated farmland to urban land took place between 2014 and 2016 (DOC 2016).

In addition, no areas of concern for future FMMP updates have been identified in the 2016 Field Report (DOC 2016).

a. Would the project convert Prime Farmland, Unique Farmland, Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

b. Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

e. Would the project involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?

Transportation improvement projects contained in the 2018 RTP/SCS consist of projects included in the 2015 RTP, which were analyzed by the 2015 RTP EIR, with the addition of approximately 35 net new minor projects. These new projects included in the 2018 RTP/SCS would not be substantially different in terms of geographical location, type of project, or size of project to those on the 2015 RTP project list. None of these projects would be located on lands that are mapped as Farmland and thus would not result in additional conversion of Farmland beyond what was analyzed in the 2015 RTP EIR. In addition, the land use scenario envisioned by the 2018 RTP/SCS is mostly the same as that contained in the 2015 RTP with the exception of minor updates to land use information provided by local jurisdictions. As a result, the 2018 RTP/SCS would not introduce any new or substantially more severe impacts related to agricultural resources.

Nonetheless, implementation of the 2015 RTP had the potential to result in the conversion of agricultural lands including Prime Farmland and lands under Williamson Act contract to non-agricultural uses, resulting in the need for the mitigation measures listed below. The SRTA recommends that individual project lead agencies implement the following mitigation measures, from the Land Use Section of the 2015 RTP EIR, for applicable transportation projects that may result in impacts to agricultural lands. Project-specific environmental impact analyses conducted by a lead agency for an applicable transportation project may require these mitigation measures be revised or expanded in response to site-specific conditions. Because impacts to individual Prime Farmland and lands under Williamson Act contract cannot be determined at this time and would be identified by individual project environmental reviews, impacts to agricultural resources would remain potentially significant. However, as described above, impacts from the 2018 RTP/SCS would not result in new significant effects or result in a substantial increase to the impacts previously identified in the 2015 RTP EIR.

LU-5(a) When new roadway extensions or widenings are planned, the project lead agency should assure that project-specific environmental reviews consider alternative alignments that reduce or avoid impacts to Prime Farmlands.

LU-5(b) Rural roadway alignments shall follow property lines to the extent feasible, to minimize impacts to the agricultural production value of any specific property. Farmers should be compensated for the loss of agricultural production at the margins of lost property, based on the amount of land deeded as road right-of-way, as a function of the total amount of production on the property.

LU-5(c) Individual project lead agencies should consider corridor realignment, buffer zones, setbacks, and fencing to reduce conflict between agricultural lands and neighboring uses.

LU-5(d) Quantify potential for direct conversion of Important Farmland using the Land Evaluation and Site Assessment (LESA) model or a similar quantitative tool.

LU-5(e) Compensate for conversion impacts to Prime Farmland by purchasing agricultural conservation easements (ACE) or funding the acquisition of agricultural mitigation lands through an appropriate land trust.

LU-5(f) Individual project lead agencies should conduct an analysis of potential conflicts with Williamson Act contracts at the project level, consistent with the State CEQA Guidelines. If the impacts of the proposed roadway projects on Williamson Act contract lands are determined to be significant, implement the following measures to reduce the impacts to a less than significant level:

- Design the proposed roadway projects to avoid or minimize the displacement of current and reasonably foreseeable agricultural operations from affected Williamson act contract lands.
- Where it has been determined that cancellation of a Williamson Act contract for a parcel, or a portion of a parcel, may result in impacts to Prime or Important Farmland, Mitigation Measure **AQ-1** shall be implemented.

POTENTIALLY SIGNIFICANT IMPACT

c. Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

d. Would the project result in the loss of forest land or conversion of forest land to non-forest use?

The land use scenario envisioned by the 2018 RTP/SCS is mostly the same as that contained in the 2015 RTP, which does not propose to change any land use and zoning designations; rather, the land use scenario envisioned by the RTP is based on and would be consistent with the existing local General Plan policies and land use designations as specified by the local agencies. As such, transportation improvement projects and the land use scenario envisioned by the 2018 RTP/SCS would not conflict with existing zoning for, or cause rezoning of, forest land, timberland or timberland zoned Timberland Production; or result in the loss of forest land or conversion of forest land to non-forest use. Impacts from the 2018 RTP/SCS would be similar to the 2015 RTP and would not involve new or substantially more severe impacts related to agricultural or forestry resources. Impacts would be less than significant and further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

3 Air Quality

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Conflict with or obstruct implementation of the applicable air quality plan?	■	□	□	□
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	■	□	□	□
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	■	□	□	□
d. Expose sensitive receptors to substantial pollutant concentrations?	■	□	□	□
e. Create objectionable odors affecting a substantial number of people?	■	□	□	□

a. Would the project conflict with or obstruct implementation of the applicable air quality plan?

b. Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

c. Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?

d. Would the project expose sensitive receptors to substantial pollutant concentrations?

e. Would the project create objectionable odors affecting a substantial number of people?

In order to determine the magnitude of individual and cumulative emissions resulting from transportation improvement projects and the land use scenario envisioned by the 2018 RTP/SCS, and to discern whether these emissions exceed those identified in the previous RTP EIR, updated emissions analysis would be required. As such, SRTA will examine each of the air quality checklist questions in the Supplemental EIR. New modeling will be conducted to quantify emissions and determine whether the 2018 RTP/SCS would have a significant impact on air quality. At this point a definitive impact conclusion for each of these environmental topics will not be made, rather all are considered potentially significant until a detailed analysis is prepared in the Supplemental EIR.

POTENTIALLY SIGNIFICANT IMPACT

4 Biological Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. 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?	☐	■	☐	☐
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	■	☐	☐
c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	■	☐	☐
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	■	☐	☐	☐
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	■	☐	☐
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	■

For the purpose of this Initial Study, special status species are those plants and animals listed, proposed for listing, or candidates for listing as threatened or endangered by the U.S. Fish and Wildlife Service (USFWS) under the federal Endangered Species Act (FESA); those listed or proposed for listing as rare, threatened, or endangered by the CDFW under the California Endangered Species Act (CESA); animals designated as "Species of Special Concern," "Fully Protected," or "Watch List" by the CDFW; and plants with a California Rare Plant Rank (CRPR) of 1, 2, 3, and 4. New queries of the USFWS Environmental Conservation Online System (ECOS): Information, Planning and Conservation System (IPaC) (USFWS 2017a), USFWS Critical Habitat Portal (USFWS 2017b), California Natural Diversity Database (CNDDB) (California Department of Fish and Wildlife 2017), National Oceanic and Atmospheric Administration (NOAA) species map and data (NOAA 2013), and California Native Plant Society (CNPS) *Online Inventory of Rare, Threatened and Endangered Plants of California* (CNPS 2017) were conducted as part of this Initial Study analysis. The queries were conducted to obtain comprehensive information regarding state and federally listed species, sensitive communities and federally designated Critical Habitat known to or considered to have potential to occur within Shasta County as a comparison to the queries conducted for the 2015 RTP EIR.

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

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

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

Eight natural communities considered sensitive by the CDFW occur within Shasta County. Federally designated critical habitat for eight species also occurs in Shasta County. These sensitive communities and critical habitats are listed in Appendix A. The same eight sensitive natural communities and critical habitat for eight species were identified for Shasta County in the 2015 RTP EIR. The exact location of these communities and critical habitats may have changed somewhat since the 2015 EIR; however, the Biological Resources Screening and Assessment measures described below would identify the presence of sensitive natural communities and critical habitats within specific 2018 RTP/SCS projects.

Moreover, transportation improvement projects contained in the 2018 RTP/SCS consist of projects included in the 2015 RTP, which were analyzed in the 2015 RTP EIR, with the addition of approximately 35 net new minor projects. These new projects included in the 2018 RTP/SCS would not be substantially different in terms of geographical location, type of project, or size of project to those on the 2015 RTP project list. In addition, the land use scenario envisioned by the 2018 RTP/SCS is mostly the same as that contained in the 2015 RTP with the exception of minor updates to land use information provided by local jurisdictions. This land use scenario primarily encourages infill development within existing urbanized areas. Therefore, no new or substantially more severe effects would occur related to impacts to special status plant and animal species compared to the 2015 RTP, as evaluated in the 2015 EIR, and existing mitigation measures identified in the 2015 RTP EIR would sufficiently reduce potential impacts to biological resources to less than significant levels.

Shasta County is home to several species protected by federal and state agencies. Special-status animal species can be found in a variety of habitat types the county provides. The CNDDB (CDFW, 2017), CNPS (2017), NOAA (2013), and USFWS ECOS IPaC (2017) together list special status plant (193 species) and animal (111 species) that are known to or with potential to occur within Shasta County. These numbers have increased since the 2015 EIR by 89 plants and 38 animals. This increase is due to the change in status for some species as well as additional records submitted to the CNDDB since 2015. These new species are similar to those previously considered in the 2015 EIR, in that many have very specific habitat requirements, generally comprised of native vegetation communities and undisturbed habitats. Moreover, transportation improvement projects contained in the 2018 RTP/SCS would not substantially differ from those contained in the 2015 RTP regarding the projects' location, type, or magnitude as described above. Because of the programmatic nature of the 2015 RTP, the corresponding mitigation measures were designed to cover a wide variety of special status plants, animals, and sensitive communities. Therefore, impacts associated with transportation improvement projects contained in the 2018 RTP/SCS would not substantially differ from those analyzed for the 2015 RTP. Mitigation measures from the 2015 EIR, as shown below, would apply to applicable transportation projects. Therefore, impacts would be less than significant with mitigation and further analysis in an EIR is not warranted.

B-1(a) **Biological Resources Screening and Assessment.** Because of the programmatic nature of the 2018 RTP and specific impacts for a given project are unknown at this time, on a project-by-project basis upon completion of final design, a preliminary biological resource screening shall be performed as part of the environmental review process to determine whether the project has any potential to impact biological resources. If it is determined that the project has no potential to impact biological resources, no further action is required. If the project would have the potential to impact biological resources, prior to construction, a qualified biologist shall conduct a biological resources assessment (BRA) or similar type of study to document the existing biological resources within the project footprint plus a buffer and to determine the potential impacts to those resources. The BRA shall evaluate the potential for impacts to all biological resources including, but not limited to special status species, nesting birds, wildlife movement, corridors, potential for installation or retrofitting of existing structures for wildlife movement corridors, evaluation of culverts or other watercourse structures to remove barriers to fish passage, sensitive plant communities/critical habitat, and other resources judged to be sensitive by local, state, and/or federal agencies. Pending the results of the BRA, design alterations, further technical studies (i.e. protocol surveys) and/or consultations with the USFWS, CDFW, NMFS and/or other local, state, and federal agencies may be required. The following mitigation measures [**B-1(b)** through **B-1(i)**] shall be incorporated, only as applicable, into the BRA for projects where specific resources are present or may be present and impacted by the project. Note that specific surveys described in the mitigation measures below may be completed as part of the BRA where suitable habitat is present.

B-1(b) **Special-Status Plant Species Surveys.** If completion of the project-specific BRA determines that special status plant species may occur on-site, surveys for special status plants shall be completed prior to any vegetation removal, grubbing, or other construction activity of each segment (including staging and mobilization). The surveys shall be floristic in nature and shall be seasonally timed to coincide with the target species identified in the project-specific BRA. All plant surveys shall be

conducted by a qualified biologist approved by the implementing agency no more than two years before initial ground disturbance. All special status plant species identified on-site shall be mapped onto a site-specific aerial photograph and topographic map. Surveys shall be conducted in accordance with the most current protocols established by the CDFW, USFWS, and the local jurisdictions if said protocols exist. A report of the survey results shall be submitted to the implementing agency, and the CDFW and/or USFWS, as appropriate, for review and approval.

B-1(c) **Special-Status Plant Species Avoidance, Minimization, and Mitigation.** If state listed or California Rare Plant List 1B species are found during special status plant surveys [pursuant to mitigation measure BIO-2], then the project shall be re-designed to avoid impacting these plant species, if feasible. Rare plant occurrences that are not within the immediate disturbance footprint, but are located within 50 feet of disturbance limits shall have bright orange protective fencing installed at least 30 feet beyond their extent, or other distance as approved by a qualified biologist, to protect them from harm.

B-1(d) **Restoration and Monitoring.** If special status plants species cannot be avoided and will be impacted by a project implemented under the 2018 RTP, all impacts shall be mitigated at a minimum ratio of 2:1 (number of acres/individuals restored to number of acres/individuals impacted) for each species as a component of habitat restoration. A restoration plan shall be prepared and submitted to the jurisdiction overseeing the project for approval. (Note: if a state listed plant species will be impacted, the restoration plan shall be submitted to the CDFW for approval). The restoration plan shall include, at a minimum, the following components:

- Description of the project/impact site (i.e., location, responsible parties, areas to be impacted by habitat type).
- Goal(s) of the compensatory mitigation project [type(s) and area(s) of habitat to be established, restored, enhanced, and/or preserved; specific functions and values of habitat type(s) to be established, restored, enhanced, and/or preserved].
- Description of the proposed compensatory mitigation site (location and size, ownership status, existing functions and values).
- Implementation plan for the compensatory mitigation site (rationale for expecting implementation success, responsible parties, schedule, site preparation, planting plan).
- Maintenance activities during the monitoring period, including weed removal as appropriate (activities, responsible parties, schedule).
- Monitoring plan for the compensatory mitigation site, including no less than quarterly monitoring for the first year (performance standards, target functions and values, target acreages to be established, restored, enhanced, and/or preserved, annual monitoring reports).
- Success criteria based on the goals and measurable objectives; said criteria to be, at a minimum, at least 80 percent survival of container plants and 30 percent relative cover by vegetation type.
- An adaptive management program and remedial measures to address any shortcomings in meeting success criteria.

- Notification of completion of compensatory mitigation and agency confirmation.
- Contingency measures (initiating procedures, alternative locations for contingency compensatory mitigation, funding mechanism).

B-1(e) **Endangered/Threatened Species Habitat Assessment and Protocol Surveys.** Specific habitat assessment and survey protocol surveys are established for several federally and state endangered or threatened species. If the results of the BRA determine that suitable habitat may be present any such species, protocol habitat assessments/surveys shall be completed in accordance with CDFW and/or USFWS protocols prior to issuance of any construction permits. If through consultation with the CDFW and/or USFWS it is determined that protocol habitat assessments/surveys are not required, said consultation shall be documented prior to issuance of any construction permits. Each protocol has different survey and timing requirements. The applicants for each project shall be responsible for ensuring they understand the protocol requirements.

B-1(f) **Endangered/Threatened Species Avoidance and Minimization.** The habitat requirements of endangered and threatened species throughout Shasta County are highly variable. The potential impacts from any given project implemented under the 2018 RTP are likewise highly variable. However, there are several avoidance and minimization measures that can be applied for a variety of species to reduce the potential for impact, with the final goal of no net loss of the species. The following measures may be applied to aquatic and/or terrestrial species. Project lead agencies shall select from these measures as appropriate. Additionally, projects with the potential to affect endangered or threatened state and federal species may require take authorization from CDFW and/or USFWS.

- Ground disturbance shall be limited to the minimum necessary to complete the project. The project limits of disturbance shall be flagged. Areas of special biological concern within or adjacent to the limits of disturbance shall have highly visible orange construction fencing installed between said area and the limits of disturbance.
- All projects occurring within/adjacent to aquatic habitats (including riparian habitats and wetlands) shall be completed during the typical low flow period or when water is unlikely to be present (generally between April 1 and October 31), if feasible, to avoid impacts to sensitive aquatic species. Additional timing restrictions shall be incorporated into the project schedule on a species by species basis in coordination with the resource agencies (e.g. NMFS, CDFW, USFWS).
- All projects occurring within or adjacent to sensitive habitats that may support federally and/or state endangered/threatened species shall have a CDFW and/or USFWS-approved biologist present during all initial ground disturbing/vegetation-clearing activities. Once initial ground disturbing/vegetation clearing activities have been completed, said biologist shall conduct daily pre-activity clearance surveys for endangered/threatened species. Alternatively, and upon approval of the CDFW and/or USFWS, said biologist may conduct site inspections at a minimum of once per week to ensure

all prescribed avoidance and minimization measures are begin fully implemented.

- No endangered/threatened species shall be captured and relocated without expressed permission from the CDFW and/or USFWS.
- If at any time during construction of the project an endangered/threatened species enters the construction site or otherwise may be impacted by the project, all project activities shall cease. A CDFW/USFWS-approved biologist shall document the occurrence and consult with the CDFW and/or USFWS as appropriate.
- For all projects occurring in areas where endangered/ threatened species may be present and are at risk of entering the project site during construction, exclusion fencing shall be placed along the project boundaries prior to start of construction (including staging and mobilization). The placement of the fence shall be at the discretion of the CDFW/USFWS-approved biologist. This fence shall consist of solid silt fencing placed at a minimum of 3 feet above grade and 2 feet below grade and shall be attached to wooden stakes placed at intervals of not more than 5 feet. The fence shall be inspected daily and following rain events and high wind events and shall be maintained in good working condition until all construction activities are complete.
- All vehicle maintenance/fueling/staging shall occur not less than 100 feet from any riparian habitat or water body. Suitable containment procedures shall be implemented to prevent spills. A minimum of one spill kit shall be available at each work location near riparian habitat or water bodies.
- No equipment shall be permitted to enter wetted portions of any affected drainage channel.
- All equipment operating within streams shall be in good conditions and free of leaks. Spill containment shall be installed under all equipment staged within stream areas and extra spill containment and clean up materials shall be located in close proximity for easy access.
- If project activities could degrade water quality, water quality sampling shall be implemented to identify the pre-project baseline, and to monitor during construction for comparison to the baseline.
- If water is to be diverted around work sites, a diversion plan shall be submitted (depending upon the species that may be present) to the CDFW, Regional Water Quality Control Board (RWQCB), USFWS, and/or NMFS for their review and approval prior to the start of any construction activities (including staging and mobilization). If pumps are used, all intakes shall be completely screened with wire mesh not larger than five millimeters to prevent animals from entering the pump system.
- At the end of each workday, excavations shall be secured with cover or a ramp provided to prevent wildlife entrapment.
- All trenches, pipes, culverts or similar structures shall be inspected for animals prior to burying, capping, moving, or filling.
- The CDFW/USFWS-approved biologist shall remove invasive aquatic species such as bullfrogs and crayfish from suitable aquatic habitat whenever observed and shall dispatch them in a humane manner and dispose of properly.
- If any federally and/or state protected species are harmed, the CDFW/USFWS-approved biologist shall document the circumstances that led to harm and shall

determine if project activities should cease or be altered in an effort to avoid additional harm to these species. Dead or injured special status species shall be disposed of at the discretion of the CDFW and USFWS. All incidences of harm shall be reported to the CDFW and USFWS within 48 hours.

- Considering the potential for projects to impact federal and state listed species and their habitat, SRTA and lead agencies shall contact the CDFW and USFWS to identify mitigation banks within Shasta County during development of the RTP. Upon implementation of projects included in the RTP, but on a project-by-project basis, if the results of the BRA determines that impacts to federal and state threatened or endangered species habitat are expected, lead agencies shall explore species-appropriate mitigation bank(s) servicing the county for purchase of mitigation credits. If mitigation banks or credits are not available, mitigation options may include, but are not limited to, onsite or offsite habitat creation and restoration, land acquisitions, or conservation easements.

B-1(g) **Non-Listed Special Status Animal Species Avoidance and Minimization.** Several State Species of Special Concern may be impacted by projects implemented under the 2018 RTP. The ecological requirements and potential for impacts is highly variable among these species. Depending on the species identified in the BRA, several of the measures identified under BIO-6 shall be applicable to the project. In addition, measures shall be selected from among the following to reduce the potential for impacts to non-listed special status animal species:

- For non-listed special-status terrestrial amphibians and reptiles, ~~coverboard~~ surveys shall be completed within three months of the start of construction. Survey methods and guidelines are dependent on specific species. For coverboard surveys, ~~The~~ coverboards shall be at least four feet by four feet and constructed of untreated plywood placed flat on the ground. The coverboards shall be checked by a qualified biologist once per week for each week after placement up until the start of vegetation removal. All non-listed special status and common animals found ~~under the coverboards~~ during survey techniques shall be captured and placed in five-gallon buckets for transportation to relocation sites. All relocation sites shall be reviewed by the project lead agency and shall consist of suitable habitat. Relocation sites shall be as close to the capture site as possible but far enough away to ensure the animal(s) is not harmed by construction of the project. Relocation shall occur on the same day as capture. If a relocation site immediately adjacent to the project site is unavailable, the CDFW shall be consulted to determine an appropriate relocation site. CNDDB Field Survey Forms shall be submitted to the CFDW for all special-status animal species observed. Additional methods for surveying terrestrial amphibians and reptiles, as listed by CDFW, can be found on their website at: https://www.wildlife.ca.gov/Conservation/Survey-Protocols.

- Pre-construction clearance surveys shall be conducted within 14 days of the start of construction (including staging and mobilization). The surveys shall cover the entire disturbance footprint plus a minimum 200-foot buffer, if feasible, and shall identify all special status animal species that may occur on-site. All non-listed special-status species shall be relocated from the site either through direct capture or through passive exclusion (e.g., American badger). A

report of the pre-construction survey shall be submitted to the lead agency for their review and written approval prior to the start of construction.

- A qualified biologist shall be present during all initial ground disturbing activities, including vegetation removal to recover special status animal species unearthed by construction activities.
- Upon completion of the project, a qualified biologist shall prepare a Final Compliance report documenting all compliance activities implemented for the project, including the pre-construction survey results. The report shall be submitted within 30 days of completion of the project to the project lead agency and CDFW.
- If special-status bat species may be present and impacted by the project, a qualified bat biologist shall conduct within 30 days of the start of construction presence/absence surveys for special-status bats in consultation with the CDFW where suitable roosting habitat is present. Surveys shall be conducted using acoustic detectors and by searching tree cavities, crevices, and other areas where bats may roost. If active roosts are located, exclusion devices such as netting shall be installed to discourage bats from occupying the site. If a roost is determined by a qualified bat biologist to be used by a large number of bats (large hibernaculum), bat boxes shall be installed near the project site. The number of bat boxes installed will depend on the size of the hibernaculum and shall be determined through consultations with the CDFW. If a maternity colony has become established, all construction activities shall be postponed within a 500-foot buffer around the maternity colony until it is determined by a qualified bat biologist that the young have dispersed. If it is determined that a maternity colony would be removed, it would be done only if the roost is clear of bats. The decisions on whether or not the maternity roost would be removal shall be made in consultation with CDFW.

B-1(h) **Preconstruction Surveys for Nesting Birds for Construction Occurring within Nesting Season.** For projects that may result in tree felling or removal of trees or vegetation that may contain a nesting bird, if feasible, construction activities should occur generally between September 1~~6~~ to January 31 (thus outside of the nesting season). However, if construction activities must happen during the nesting season (generally February 1 to ~~September~~ August 31~~15~~), surveys for nesting birds covered by the California Fish and Game Code and the Migratory Bird Treaty Act shall be conducted by a qualified biologist no more than 7 days prior to vegetation removal. The surveys shall include the entire segment disturbance area plus a 200-foot buffer around the site. If active nests are located, all construction work shall be conducted outside a buffer zone from the nest to be determined by the qualified biologist. The buffer shall be a minimum of 50 feet for non-raptor bird species and at least 150 feet for raptor species or as determined in consultation with CDFW and/or USFWS. Larger buffers may be required depending upon the status of the nest and the construction activities occurring in the vicinity of the nest. The buffer area(s) shall be closed to all construction personnel and equipment until the adults and young are no longer reliant on the nest site. A qualified biologist shall confirm that breeding/nesting is completed and young have fledged the nest prior to removal of the buffer. A report of these preconstruction nesting bird surveys shall be submitted to the lead agency to document compliance and to the CDFW.

B-1(i) **Worker Environmental Awareness Program (WEAP).** Prior to initiation of construction activities for applicable projects (including staging and mobilization), all personnel associated with project construction shall attend WEAP training, conducted by a qualified biologist, to aid workers in recognizing special status resources that may occur in the project area. The specifics of this program shall include identification of the sensitive species and habitats, a description of the regulatory status and general ecological characteristics of sensitive resources, and review of the limits of construction and mitigation measures required to reduce impacts to biological resources within the work area. A fact sheet conveying this information shall also be prepared for distribution to all contractors, their employers, and other personnel involved with construction of the project. An acknowledgement form shall be signed by each employee indicating that they have attended the WEAP and understand the information presented to them. The form shall be submitted to the lead agency to document compliance.

B-1(j) **Tree Protection.** If it is determined that construction may impact trees protected by local agencies, the project lead agency shall procure all necessary tree removal permits. A certified arborist shall develop a tree protection and replacement plan as appropriate. The plan shall include, but would not be limited to, an inventory of trees to within the construction site, setbacks from trees and protective fencing, restrictions regarding grading and paving near trees, direction regarding pruning and digging within root zone of trees, and requirements for replacement and maintenance of trees. If protected trees will be removed, replacement tree plantings of like species in accordance with local agency standards, but at a minimum ratio of 2:1 (trees planted to trees impacted), shall be installed on-site or at an approved off-site location and a restoration and monitoring program shall be developed in accordance with BIO-4 and shall be implemented for a minimum of seven years or until stasis has been determined by certified arborist. If a protected tree shall be encroached upon but not removed, a certified arborist shall be present to oversee all trimming of roots and branches.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

c. 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, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Transportation improvement projects contained in the 2018 RTP consist of projects included in the 2015 RTP, which were analyzed in the 2015 RTP EIR, with the addition of approximately 35 net new minor projects. These new projects included in the 2018 RTP/SCS would not be substantially different in terms of geographical location, type of project, or size of project to those on the 2015 RTP project list. In addition, the land use scenario envisioned by the 2018 RTP/SCS is mostly the same as that contained in the 2015 RTP with the exception of minor updates to land use information provided by local jurisdictions, which encourages infill development within existing urbanized areas. As a result, no new or substantially more severe effects would occur related to impacts to sensitive habitats including wetlands, compared to the 2015 RTP, and no new mitigation measures are necessary. However, these transportation improvement projects could have both direct impacts associated with the disturbance of riparian flora and fauna and indirect impacts caused by increased erosion and sedimentation. Mitigation measures from the 2015 RTP EIR, as shown below, would apply to the applicable transportation projects to reduce associated impacts to

wetlands and would sufficiently address potential impacts associated with new projects included in the 2018 RTP/SCS. Impacts would be less than significant with mitigation and further analysis in an EIR is not warranted.

B-2(a) **Jurisdictional Delineation.** If projects implemented under the 2018 RTP/SCS occur within or adjacent to wetland, drainages, riparian habitats, or other areas that may fall under the jurisdiction of the CDFW, U.S. Army Corps of Engineers (USACE), and/or RWQCB, a qualified biologist shall complete a jurisdictional delineation. The jurisdictional delineation shall determine the extent of the jurisdiction for each of these agencies and shall be conducted in accordance with the requirement set forth by each agency. The result shall be a preliminary jurisdictional delineation report that shall be submitted to the implementing agency, USACE, RWQCB, and CDFW, as appropriate, for review and approval. If jurisdictional areas are expected to be impacted, then the RWQCB would require a Waste Discharge Requirements (WDR) permit and/or Section 401 Water Quality Certification (depending upon whether or not the feature falls under federal jurisdiction). If CDFW asserts its jurisdictional authority, then a Streambed Alteration Agreement pursuant to Section 1600 *et seq.* of the California Fish and Game Code would also be required prior to construction within the areas of CDFW jurisdiction. If the USACE asserts its authority, then a permit pursuant to Section 404 of the Clean Water Act would likely be required.

B-2(b) **Wetland and Riparian Habitat Restored.** Impacts to jurisdictional wetland and riparian habitat shall be mitigated at a minimum ratio of 2:1 (acres of habitat restored to acres impacted), and shall occur on-site or as close to the impacted habitat as possible. A mitigation and monitoring plan shall be developed by a qualified biologist in accordance with mitigation measure BIO-4 above and shall be implemented for no less than five years after construction of the segment, or until the lead agency and/or the permitting authority (e.g., CDFW or USACE) has determined that restoration has been successful. Alternately, mitigation may occur through the purchase of credits at a USACE approved mitigation bank or contribution to the USACE in-lieu fee program within the USACE Sacramento District. If mitigation is required through a Lake or Streambed Alteration Agreement, the mitigation bank or purchase of credits in an in-lieu fee program shall be approved by CDFW.

B-2(c) **Landscaping Plan.** If landscaping is proposed for projects occurring within or adjacent to sensitive habitats, a qualified biologist/landscape architect shall prepare a landscape plan for that project. This plan shall indicate the locations and species of plants to be installed. Drought tolerant, locally native plant species shall be used. Noxious, invasive, and/or non-native plant species that are recognized on the Federal Noxious Weed List, California Noxious Weeds List, and/or California Invasive Plant Council Lists 1, 2, and 4 shall not be permitted. Species selected for planting shall be similar to those species found in adjacent native habitats and if feasible, locally collected seeds and plants shall be used.

B-2(d) **Invasive Weed Prevention and Management Program.** Prior to start of construction for projects occurring within or adjacent to sensitive habitats, an Invasive Weed Prevention and Management Program shall be developed by a qualified biologist to prevent invasion of native habitat by non-native plant species. A list of target species shall be included, along with measures for early detection

and eradication. All disturbed areas shall be hydroseeded with a mix of locally native species upon completion of work in those areas. In areas where construction is ongoing, hydroseeding shall occur where no construction activities have occurred within six (6) weeks since ground disturbing activities ceased. If exotic species invade these areas prior to hydroseeding, weed removal shall occur in consultation with a qualified biologist and in accordance with the restoration plan.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

d. Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Similar to the 2015 RTP, the 2018 RTP/SCS would increase human activity in areas where sensitive biological resources could occur. In particular, new road construction projects not included on the 2015 RTP list could increase human activity in the vicinity of riparian areas, wildlife nurseries or corridors, and potentially sensitive habitats, if present. In addition, while the future land use scenario envisioned by the 2018 RTP/SCS would encourage infill development, the creation of new roadways could further isolate areas of native habitat occupied by both sensitive and common native wildlife species. Mitigation measures from the 2015 EIR, as shown below, would apply to the applicable transportation projects to reduce impacts to wildlife movement corridors. However, similar to the 2015 RTP, impacts would be potentially significant because disruption to wildlife movement is still anticipated. Additional specific analyses, as described in measure BIO-1: Resources Screening and Assessment will need to be conducted as the individual projects are implemented and final designs completed in order to determine the actual magnitude of impact, if any. However, because of the programmatic nature of the 2018 RTP/SCS, specific impacts to wildlife movement are not known at this time and impacts resulting from individual 2018 RTP/SCS transportation projects would remain potentially significant. Impacts from the 2018 RTP/SCS would be similar to the 2015 RTP and would not involve new or substantially more severe impacts. Thus, further analysis in an EIR is not warranted.

B-3(a) **Fence and Lighting Design.** All projects including long segments of fencing and lighting shall be designed to minimize impacts to wildlife. Fencing shall not block wildlife movement through riparian or other natural habitat. Where fencing is required for public safety concerns, the fence shall be designed in consultation with CDFW and to permit wildlife movement by incorporating design features such as:

- A minimum 16 inches between the ground and the bottom of the fence to provide clearance for small animals;
- A minimum 12 inches between the top two wires, or top the fence with a wooden rail, mesh, or chain link instead of wire to prevent animals from becoming entangled; and
- If privacy fencing is required near open space areas, openings at the bottom of the fence measure at least 16 inches in diameter shall be installed at reasonable intervals to allow wildlife movement

If fencing must be designed in such a manner that wildlife passage would not be permitted, wildlife crossing structures shall be incorporated into the project design as appropriate and in consultation with CDFW.

Similarly, lighting installed as part of any project shall be designed to be minimally disruptive to wildlife. This may be accomplished through the use of hoods to direct light away from natural habitat, using low intensity lighting, and using as few lights as necessary to achieve the goals of the project. Lighting for trails and bridges that would overspill onto rivers and/or streams that are known to support anadromous fish shall be approved in writing by CDFW.

B-3(b) **Construction Best Management Practices.** The following construction Best Management Practices (BMPs) shall be incorporated into all grading and construction plans:

- Designation of a 20 mile-per-hour speed limit in all construction areas.
- All vehicles and equipment shall be parked on pavement, existing roads, and previously disturbed areas, and clearing of vegetation for vehicle access shall be avoided to the greatest extent feasible.
- The number of access routes, number and size of staging areas, and the total area of the activity shall be limited to the minimum necessary to achieve the goal of the project.
- Designation of equipment washout and fueling areas to be located within the limits of grading at a minimum of 100 feet from waters, wetlands, or other sensitive resources as identified by a qualified biologist. Washout areas shall be designed to fully contain polluted water and materials for subsequent removal from the site.
- Daily construction work schedules should be limited to daylight hours only, to the extent feasible.
- Mufflers shall be used on all construction equipment and vehicles shall be in good operating condition.
- Drip pans shall be placed under all stationary vehicles and mechanical equipment.
- All trash shall be placed in sealed containers and shall be removed from the project site a minimum of once per week.
- No pets are permitted on project site during construction.

POTENTIALLY SIGNIFICANT IMPACT

f. 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?

Similar to the 2015 RTP, the 2018 RTP/SCS would not conflict with an adopted Habitat Conservation Plan, Natural Community Conservation Plan (HCP/NCCP), or other approved local, regional, or state habitat conservation plan, as there are no adopted habitat or natural community conservation plans in the region that cover activities proposed by the 2018 RTP/SCS. There would be no impact and further analysis in an EIR is not warranted.

NO IMPACT

5 Cultural Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	■	□	□	□
b. Cause a substantial adverse change in the significance of an archaeological resource as defined in §15064.5?	■	□	□	□
c. Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?	■	□	□	□
d. Disturb any human remains, including those interred outside of formal cemeteries?	□	□	■	□

a. Would the project cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

b. Would the project cause a substantial adverse change in the significance of an archaeological resource as defined in §15064.5?

c. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geological feature?

d. Disturb any human remains, including those interred outside of formal cemeteries?

No new federal, state, or county designated historical resources have been identified in Shasta County since the adoption of the 2015 RTP EIR (National Park Service 2017; California Office of Historic Preservation 2017; and Shasta County 2004). No bridges currently in service have been added to the Caltrans Bridge Inventory since adoption of the 2015 RTP that may have historical significance (Caltrans 2017a and 2017b). However, as discussed in the 2015 RTP EIR, future transportation improvements could directly or indirectly impact historic structures and impacts would be potentially significant.

Similar to the 2015 RTP, depending on the location and extent of the proposed improvement and ground disturbance of individual projects listed in the 2018 RTP/SCS, known and/or unknown cultural resources could be impacted. Transportation improvement projects contained in the 2018 RTP/SCS consist of projects included in the 2015 RTP, which were analyzed by the 2015 RTP EIR, with the addition of approximately 35 net new minor projects. These new projects included in the 2018 RTP/SCS would not be substantially different in terms of geographical location, type of project, or size of project to those on the 2015 RTP project list. In addition, the land use scenario envisioned

by the 2018 RTP/SCS is mostly the same as that contained in the 2015 RTP with the exception of minor updates to land use information provided by local jurisdictions. As a result, impacts to archaeological and paleontological resources would be similar to those discussed in the 2015 EIR and no new or substantially more severe impacts to archaeological and paleontological resources would occur.

In order to provide protection of historical and unique archeological resources, mitigation measures from the 2015 EIR, as shown below, would apply to any projects requiring ground disturbance or the alternation or demolition of any building or structure older than 50 years old. Implementation of the measures from the 2015 EIR would reduce potential impacts to archaeological and paleontological resources to a less than significant level. Impacts related to historic structures would remain significant and unavoidable because redevelopment or demolition that may be required to implement transportation improvements may result in the permanent loss of historic structures. However, impacts would be similar to the 2015 EIR and further analysis in an EIR is not warranted.

CR-1(a) The project lead agency of a 2018 RTP/SCS project involving earth disturbance, the installation of pole signage or lighting, or construction of permanent above ground structures or roadways shall ensure that the following elements are included in the project's individual environmental review:

- Prior to construction, a map defining the Area of Potential Effects (APE) shall be prepared on a project by project basis for 2018 RTP/SCS improvements which involve earth disturbance, the installation of pole signage or lighting, or construction of permanent above ground structures. This map will indicate the areas of primary and secondary disturbance associated with construction and operation of the facility and will help in determining whether known archaeological, paleontological or historical resources are located within the impact zone.
- A preliminary study of each project area, as defined in the APE, shall be completed to determine whether or not the project area has been studied under an earlier investigation, and to determine the impacts of the previous project.
- If the results of the preliminary studies indicate additional studies are necessary; development of field studies and/or other documentary research shall be developed and completed (Phase I studies). Negative results would result in no additional studies for the project area.
- Based on positive results of the Phase I studies, an evaluation of identified resources shall be completed to determine the potential eligibility/ significance of the resources (Phase II studies).
- Based on the evaluations of the Phase II studies, if necessary Phase II mitigation studies shall be coordinated with the Office of Historic Preservation, as the research design will require review and approval from the OHP. In the case of prehistoric or Native American related resources, the Native American Heritage Commission and/or local representatives of the Native American population shall be contacted and permitted to respond to the testing/mitigation programs.

CR-1(b) If development of the proposed improvement requires the presence of an archaeological, Native American, or paleontological monitor, the project lead agency shall ensure that a Native American monitor, certified archaeologist, and/or certified paleontologist, as applicable, monitors the grading and/or other initial ground altering activities. The schedule and extent of the monitoring will depend on the grading schedule and/or extent of the ground alterations. This requirement can be accomplished through placement of conditions on the project by the local jurisdiction during individual environmental review.

CR-1(c) The project lead agency shall ensure that materials recovered over the course of any given improvement are adequately cleaned, labeled, and curated at a recognized repository. This requirement can be accomplished through placement of conditions on the project by the local jurisdiction during individual environmental review.

CR-1(d) The project lead agency shall ensure that mitigation for potential impacts to significant cultural resources includes one or more of the following:

- Realign the project right-of-way (avoidance; the most preferable method).
- Cap the site and leave it undisturbed.
- Address structural remains with respect to NRHP guidelines (Phase III studies).
- Relocate structures per NRHP guidelines.
- Create interpretative facilities at the site.
- Develop measures to prevent vandalism.

These measures can be accomplished through placement of conditions on the project by the local jurisdiction during individual environmental review.

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d. Disturb any human remains, including those interred outside of formal cemeteries?

The discovery of human remains is always a possibility during ground disturbing activities. If human remains are found, the State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the county coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. In the event of an unanticipated discovery of human remains, the county coroner must be notified immediately. If the human remains are determined to be prehistoric, the coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a most likely descendant (MLD). The MLD shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials. In addition, transportation improvement projects contained in the 2018 RTP/SCS consist of projects included in the 2015 RTP, which were analyzed by the 2015 RTP EIR, with the addition of approximately 35 net new minor projects. These new projects included in the 2018 RTP/SCS would not be substantially different in terms of geographical location, type of project, or size of project to those on the 2015 RTP project list. In addition, the land use scenario envisioned by the 2018 RTP/SCS is mostly the same as that contained in the 2015 RTP with the exception of minor updates to land use provided by local jurisdictions. As a result, the 2018 RTP/SCS would not introduce any new or substantially more severe impacts related to the discovery of human remains. With

adherence to existing regulations, this impact would be less than significant, similar to the determination in the 2015 RTP EIR.

LESS THAN SIGNIFICANT IMPACT

6 Energy

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Would the project involve the inefficient, wasteful or unnecessary consumption of energy?	☐	■	☐	☐

a. Would the project involve the inefficient, wasteful or unnecessary consumption of energy?

Transportation improvement projects contained in the 2018 RTP/SCS consist of projects included in the 2015 RTP that are not yet constructed, which were analyzed by the 2015 RTP EIR, with the addition of approximately 35 net new minor projects. These new projects included in the 2018 RTP/SCS would not be substantially different in terms of geographical location, type of project, or size of project to those on the 2015 RTP project list. However, some transportation improvement projects contained in the 2018 RTP/SCS would increase capacity, allowing a greater number of vehicles to use regional facilities. Increasing capacity and improving roadways and intersections does not necessarily result in an increase in motor vehicle trips. Increases in motor vehicle trips are primarily a combined function of population and employment growth. Population growth and VMT growth would occur in the region regardless of whether the 2018 RTP/SCS is implemented. However, the 2018 RTP/SCS would help to minimize energy consumption by improving the overall efficiency of the transportation system. Moreover, many 2018 RTP/SCS projects (e.g., transit projects and bikeway and pedestrian projects) would improve the availability of alternative transportation modes and help reduce congestion, along with the resultant harmful air quality emissions in the region.

The land use scenario envisioned by the 2018 RTP/SCS is mostly the same as that of the 2015 RTP with the exception of minor updates to land use information provided by local jurisdictions, which promotes infill development in existing commercial corridors in combination with high-quality transit service in later years (e.g., Redding Area Bus Authority) and improved bicycle and pedestrian infrastructure. Infill projects would reduce VMT and energy use because they would locate people closer to existing goods, services, and transportation hubs, thereby resulting in fewer and shorter vehicle trips, promoting active transportation (walking or biking), and encouraging the use of alternative modes of transit (e.g., buses). Implementation of the land use scenario contained in the 2018 RTP/SCS would increase overall demand for energy beyond existing conditions. However, such development would not require unusual, unnecessary, or wasteful amounts of energy as future infill development projects would be subject to the California Green Building Standards Code and Title 24 of the California Energy Code, which set forth specific energy efficiency requirements related to design, construction methods and materials. This impact would be less than significant, similar to the finding in the 2015 RTP EIR, and further analysis in an EIR is not warranted.

Project lead agencies can and should implement the following mitigation measures for applicable 2018 RTP/SCS transportation projects. Shasta County and the cities of Anderson, Redding, and Shasta Lake should implement these measures, where applicable, to land use projects resulting from implementation of the 2018 RTP/SCS. The following mitigation measures recommended by the SRTA are not required to reduce energy impacts to less than significant. They are provided as

measures that could be implemented to reduce energy consumption. Project-specific environmental impacts may require these measures be revised or expanded in response to site-specific conditions.

E-1(a) New facilities should be designed with energy-efficient equipment and passive solar design (e.g., orientation of building to maximize natural heating and cooling, solar water heating, use of daylighting, and placement of trees to aid passive cooling, protection from prevailing winds, and maximum year-round solar access), provided that additional capital costs are offset by estimated energy savings during the first five years of operation. Additional improvements with longer payback periods, such as photovoltaic solar electric systems, should be considered where applicable.

E-1(b) All lighting should be energy efficient and designed to use the least amount of energy to serve the purpose of the lighting. Lighting should utilize solar energy wherever feasible.

E-1(c) New landscaping design and irrigation systems should be water efficient. To the extent possible, reclaimed water should be used for roadside landscape irrigation.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

7 Environmental Justice

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Would the project lead to disproportionately high and adverse human health or environmental impacts to the minority populations, low-income populations, and/or populations with low mobility in the region?	☐	☐	■	☐
b. Would the project cause the mobility benefits derived from the 2018 RTP/SCS in terms of travel times and accessibility by transit and/or single occupancy vehicle to be substantially less for minority populations, low-income populations, and/or populations with low mobility in the region?	☐	☐	■	☐

a. Would the project lead to disproportionately high and adverse human health or environmental impacts to the minority populations, low-income populations, and/or populations with low mobility in the region?

b. Would the project cause the mobility benefits derived from the 2018 RTP/SCS in terms of travel times and accessibility by transit and/or single occupancy vehicle to be substantially less for minority populations, low-income populations, and/or populations with low mobility in the region?

Some minority and/or low-income populations may be affected during construction of some transportation improvement projects and future infill development under the 2018 RTP/SCS. As discussed throughout this Initial Study and the 2015 RTP EIR, transportation improvement projects contained in the RTP may have temporary air quality, noise, and traffic impacts on surrounding communities. Specific air quality impacts could include exposure to dust resulting from operation of construction vehicles and equipment. Other air quality impacts could include temporary exposure to hazardous air emissions, including diesel emissions from construction vehicles and equipment. Construction noise impacts from clearing, grading, and laying asphalt could expose nearby receptors to high levels of noise depending on the type of equipment used. Temporary traffic impacts would include delays during road closures or other disturbances caused by construction activities. Although minority populations have the potential to be exposed to these impacts, the 2018 RTP/SCS transportation projects are located throughout the populated areas of the SRTA region and minority, low-income, and/or low-mobility populations are also spread throughout the SRTA region. As a result, minority, low-income, and/or low-mobility communities would not be disproportionately exposed to these potential impacts, and such impacts would be reduced to less

than significant levels through implementation of the mitigation measures contained in the applicable sections of this Initial Study and the 2018 RTP/SCS SEIR.

In addition, transportation improvement projects contained in the 2018 RTP/SCS consist of projects included in the 2015 RTP that are not yet constructed, which were analyzed by the 2015 RTP EIR, with the addition of approximately 35 net new minor projects. These new projects included in the 2018 RTP/SCS would not be substantially different in terms of geographical location, type of project, or size of project to those on the 2015 RTP project list. In addition, the land use scenario envisioned by the 2018 RTP/SCS is mostly the same as that contained in the 2015 RTP, with the exception of minor updates to land use information provided by local jurisdictions, and would not disproportionately affect minority, low-income, and/or low-mobility populations. As a result, transportation improvement projects included in and the land use scenario envisioned by the 2018 RTP/SCS would not introduce any new or substantially more severe impacts regarding environmental justice. This impact would be less than significant and impacts would be similar to those discussed in the 2015 EIR.

LESS THAN SIGNIFICANT IMPACT

8 Geology and Soils

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Expose people or structures to potentially substantial adverse effects, including the risk of loss, injury, or death involving:				
1. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	☐	■	☐	☐
2. Strong seismic ground shaking?	☐	■	☐	☐
3. Seismic-related ground failure, including liquefaction?	☐	■	☐	☐
4. Landslides?	☐	■	☐	☐
b. Result in substantial soil erosion or the loss of topsoil?	☐	■	☐	☐
c. Be located on a geologic unit or soil that is made unstable as a result of the project, and potentially result in on or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	■	☐	☐
d. Be located on expansive soil, as defined in Table 1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	■	☐	☐
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	■	☐

a.1. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most

recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?

a.2. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

a.3. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?

Implementation of transportation improvements and future projects under the land use scenario envisioned by the 2018 RTP/SCS could be exposed to fault rupture and groundshaking. However, as discussed throughout this Initial Study, transportation improvement projects contained in the 2018 RTP/SCS consist of projects included in the 2015 RTP that are not yet constructed, which were analyzed by the 2015 RTP EIR, with the addition of approximately 35 net new minor projects. These new projects included in the 2018 RTP/SCS would not be substantially different in terms of geographical location, type of project, or size of project to those on the 2015 RTP project list. In addition, the land use scenario envisioned by the 2018 RTP/SCS is mostly the same as that contained in the 2015 RTP with the exception of minor updates to land use information provided by local jurisdictions. As a result, no new or substantially more severe effects would occur related to seismic activity compared to the 2015 RTP as evaluated in the 2015 RTP EIR. Mitigation measures from the 2015 EIR, listed below, as well as adherence to existing regulations such as the California Building Code, should reduce impacts to a less than significant level. Impacts would be less than significant with mitigation and further analysis in an EIR is not warranted.

G-1 The lead agency in which a particular 2018 RTP/SCS project is located shall ensure that the structure is designed and constructed to the latest geotechnical standards. In most cases, this will necessitate site-specific geologic and soils engineering investigations to exceed the code for high groundshaking zones. This can be accomplished through the placement of conditions on the project by the lead agency during individual environmental review.

G-2 If a 2018 RTP/SCS project involves cut slopes over 15 feet in height, the lead agency in which the project is located shall ensure that specific slope stabilization studies are conducted. Possible stabilization methods include buttresses, retaining walls, and soldier piles.

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b. Would the project result in substantial soil erosion or the loss of topsoil?

d. Would the project be located on expansive soil, as defined in Table 1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

a.4. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

c. Would the project be located on a geologic unit or soil that is made unstable as a result of the project, and potentially result in on or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?

It is not expected that the transportation improvement projects included in the 2018 RTP/SCS would be susceptible to liquefaction because groundshaking is usually low to moderate in intensity in

Shasta County (Shasta County 2015). Expansive soils are considered a low or minor threat in Shasta County, according to the 2011 Shasta County Hazard Mitigation Plan (Shasta County 2011). In addition, transportation improvement projects contained in the 2018 RTP/SCS consist of projects included in the 2015 RTP that are not yet constructed, which were analyzed by the 2015 RTP EIR, with the addition of approximately 35 net new minor projects. These new projects included in the 2018 RTP/SCS would not be substantially different in terms of geographical location, type of project, or size of project to those on the 2015 RTP project list. In addition, the land use scenario envisioned by the 2018 RTP/SCS is mostly the same as that contained in the 2015 RTP with the exception of minor updates to land use information provided by local jurisdictions. As a result, no new or substantially more severe effects would occur related to projects located on potentially unstable soils, or in areas with high potential for impacts from landslides compared to the 2015 RTP as evaluated in the 2015 RTP EIR. Moreover, similar to the 2015 RTP, the 2018 RTP/SCS would not directly increase the potential for people to be subject to volcanic hazards as the proposed RTP projects are intended to enhance existing transportation facilities rather than increasing development potential in remote areas that are located in close proximity to the region's three volcanoes. Therefore, impacts related to volcano hazards would remain less than significant. Mitigation measures from the 2015 EIR, listed below, and compliance with existing California Building Code regulations would reduce impacts for the applicable transportation projects to the extent feasible. Impacts would be less than significant with mitigation and further analysis in an EIR is not warranted.

G-2 If an RTP project involves cut slopes over 15 feet in height, the lead agency in which the project is located shall ensure that specific slope stabilization studies are conducted. Possible stabilization methods include buttresses, retaining walls and soldier piles.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

e. Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No new projects included in the 2018 RTP would require the use of septic tanks or alternative waste water disposal systems. Future infill development is anticipated to connect to existing wastewater infrastructure. Therefore, impacts related to soils incapable of adequately supporting the use of septic tanks would be less than significant and further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

9 Greenhouse Gas Emissions

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	■	□	□	□
b. Conflict with any applicable plan, policy, or regulation adopted for the purposes of reducing the emissions of greenhouse gases?	■	□	□	□

a. Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

b. Would the project conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Similar to the preliminary determination under Air Quality, greenhouse gas (GHG) modeling would be required in order to determine the magnitude of individual and cumulative emissions resulting from transportation improvement projects and the land use scenario envisioned by the 2018 RTP/SCS. Based on the changes within the 2018 RTP/SCS relative to the 2015 RTP, potential impacts from GHG emissions facilitated by the 2018 RTP/SCS will require a detailed analysis in a supplemental EIR. As such, SRTA will examine both of the checklist questions above in the Supplemental EIR and will decide whether the 2018 RTP/SCS would have a significant impact related to GHG emissions. At this point a definitive impact conclusion for each of these environmental topics will not be made, rather both are considered potentially significant until a detailed analysis is prepared in the Supplemental EIR.

POTENTIALLY SIGNIFICANT IMPACT

10 Hazards and Hazardous Materials

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	■	☐
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	■	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?	☐	☐	■	☐
d. Be located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	■	☐
e. For a project located in an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	■	☐
f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	■	☐

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	■	☐
h. Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	■	☐	☐	☐

a. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

b. Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?

Transportation improvement projects contained in the 2018 RTP/SCS consist of projects included in the 2015 RTP that are not yet constructed, which were analyzed by the 2015 RTP EIR, with the addition of approximately 35 net new minor projects. These new projects included in the 2018 RTP/SCS would not be substantially different in terms of geographical location, type of project, or size of project to those on the 2015 RTP project list. In addition, the land use scenario envisioned by the 2018 RTP/SCS is mostly the same as that contained in the 2015 RTP with the exception of minor updates to land use information provided by local jurisdictions. However, similar to the 2015 RTP, transportation improvement projects under the 2018 RTP/SCS could facilitate the transport of hazardous materials on roadways or railways in Shasta County, but would not directly result in a transport-related hazard. Compliance with existing laws and regulations, such as the federal Resource Conservation and Recovery Act (RCRA) and the state Hazardous Waste Control Act and California Vehicle Code, would ensure that the transport of hazardous materials, the handling of acute hazardous substances within proximity to schools, and the release of hazardous materials would be adequately controlled. As a result, no new or substantially more severe impacts from transportation or release of hazardous materials would occur compared to the 2015 RTP as evaluated in the 2015 RTP EIR. Impacts would be less than significant and further analysis in a supplemental EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

d. Would the project be located on a site included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Similar to the 2015 RTP, the majority of transportation improvements contained in the 2018 RTP/SCS involve modification of existing facilities, rather than construction of new facilities, and would not occur on known hazardous sites. With regard to future projects that would develop new facilities, because of the programmatic nature of the RTP, it is not possible to determine with accuracy whether future projects located on previously undisturbed land would contain hazardous materials. However, the applicant(s) and/or lead agency for such projects would be required to address any on-site environmental issues, including any potential hazardous materials and mitigate such impacts accordingly. Because the transportation improvement projects included in the 2018 RTP/SCS are not substantially different from those included in the 2015 RTP, as discussed above, and the land use scenario envisioned by the 2018 RTP/SCS is mostly the same as that of the 2015 RTP with the exception of minor updates to land use information provided by local jurisdictions, no new or substantially more severe impacts would occur compared to the 2015 RTP as evaluated in the 2015 EIR. Impacts would be less than significant and further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

f. For a project near a private airstrip, would it result in a safety hazard for people residing or working in the project area?

g. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Some projects under the 2018 RTP/SCS may be located within an airport hazard zone; however, no new projects listed in the 2018 RTP/SCS compared to the 2015 RTP project list would directly expose people or create a new airport safety hazard. In addition, no new projects in the 2018 RTP/SCS would have adverse impacts on adopted emergency response plans or emergency evacuation plans; rather, by improving circulation in the County, the 2018 RTP/SCS could have beneficial impact on emergency response and evacuation. As described above, no new or substantially more severe impacts would occur compared to the 2015 RTP as evaluated in the 2015 EIR. Impacts would be less than significant and further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

h. Would the project expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

In light of the recent wildfire events in California, an updated analysis would be required to determine the magnitude of wildland fire risk exposure resulting from transportation improvement projects and the land use scenario envisioned by the 2018 RTP/SCS, and to discern whether this risk exposure exceeds that identified in the previous RTP EIR. As such, SRTA will examine this hazard checklist question in the Supplemental EIR. At this point a definitive impact conclusion for this environmental topic will not be made, but rather is considered potentially significant until a detailed analysis is prepared in the Supplemental EIR.

POTENTIALLY SIGNIFICANT IMPACT

11 Hydrology and Water Quality

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Violate any water quality standards or waste discharge requirements?	☐	■	☐	☐
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering or the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?	☐	■	☐	☐
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site?	☐	☐	■	☐
d. Substantially alter the existing drainage pattern of the site or area, including the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	☐	☐	■	☐
e. Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	■	☐	☐
f. Otherwise substantially degrade water quality?	☐	■	☐	☐

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
g. Place housing in a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary, Flood Insurance Rate Map, or other flood hazard delineation map?	☐	■	☐	☐
h. Place structures in a 100-year flood hazard area that would impede or redirect flood flows?	☐	■	☐	☐
i. Expose people or structures to a significant risk of loss, injury, or death involving flooding, including that occurring as a result of the failure of a levee or dam?	☐	■	☐	☐
j. Result in inundation by seiche, tsunami, or mudflow?	☐	☐	■	☐

a. Would the project violate any water quality standards or waste discharge requirements?

e. Would the project create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

f. Would the project otherwise substantially degrade water quality?

Similar to the 2015 RTP, implementation of transportation improvements and future land use development projects envisioned in the 2018 RTP/SCS could result in soil erosion and contaminants in runoff, which could degrade surface water and ground water quality. However, transportation improvement projects contained in the 2018 RTP/SCS consist of projects included in the 2015 RTP that are not yet constructed, which were analyzed by the 2015 RTP EIR, with the addition of approximately 35 net new minor projects. These new projects included in the 2018 RTP/SCS would not be substantially different in terms of geographical location, type of project, or size of project to those on the 2015 RTP project list. As such, transportation improvement projects included in the 2018 RTP/SCS would not introduce new or substantially more severe effects related to water quality compared to the 2015 RTP as evaluated in the 2015 RTP EIR. In addition, the land use scenario envisioned by the 2018 RTP/SCS is mostly the same as that contained in the 2015 RTP with the exception of minor updates to land use information provided by local jurisdictions. However, the same mitigation measures from the 2015 EIR, shown below, would be required to address potential impacts to water quality. Impacts would be less than significant with mitigation and further analysis in an EIR is not warranted.

W-2(a) The lead agency of a 2018 RTP/SCS project shall ensure that fertilizer/pesticide application plans for any new right-of-way landscaping are prepared to minimize

deep percolation of contaminants. The plans shall specify the use of products that are safe for use in and around aquatic environments.

W-2(b) The lead agency of a 2018 RTP/SCS widening or roadway extension project shall ensure that the improvement directs runoff into subsurface percolation basins and traps which would allow for the removal of urban pollutants, fertilizers, pesticides, and other chemicals.

W-2(c) For a 2018 RTP/SCS project that would disturb at least one acre, a SWPPP shall be developed prior to the initiation of grading and implemented for all construction activity on the project site. The SWPPP shall include specific BMPs to control the discharge of material from the site and into the creeks and local storm drains. BMP methods may include, but would not be limited to, the use of temporary retention basins, straw bales, sand bagging, mulching, erosion control blankets and soil stabilizers.

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b. Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering or the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?

During grading and general construction activities for transportation projects contained in the 2018 RTP/SCS, water would be needed to suppress fugitive dust generated by construction equipment. Water used during construction could be drawn from the Redding or Fall River Valley Groundwater Basins, supplies of which would potentially be in deficit during drought years. Similar to the 2015 RTP, major projects in the 2018 RTP/SCS, such as road widenings and expansions, as well as new sidewalks, throughout the RTP plan area could also affect groundwater supplies by incrementally reducing groundwater recharge potential. No new or substantially more severe effects would occur related to impacts to water supplies and demand compared to the 2015 RTP as evaluated in the 2015 EIR. Mitigation measures, shown below, from the 2015 EIR address potential impacts to water supply. Impacts would be less than significant with mitigation and further analysis in an EIR is not warranted.

W-1(a) The individual lead agency of a 2018 RTP/SCS project shall ensure that, where economically feasible, reclaimed water is used for dust suppression during construction activities. This measure shall be noted on construction plans and shall be spot checked by the lead agency.

W-1(b) The individual lead agency of a 2018 RTP/SCS project shall ensure that low water use landscaping (i.e., drought tolerant plants and drip irrigation) is installed. When feasible, native plant species shall be used.

W-1(c) The individual lead agency of a 2018 RTP/SCS project shall ensure that, if feasible, landscaping associated with proposed improvements is maintained using reclaimed water.

W-1(d) The individual lead agency of a 2018 RTP/SCS project shall ensure that porous pavement materials are utilized, where feasible, to allow for groundwater percolation.

W-1(e) The individual lead agency of a 2018 RTP/SCS project that requires potable water service should coordinate with water supply system operators to ensure that the existing water supply systems have the capacity to handle the increase. If the current infrastructure servicing the project site is found to be inadequate, infrastructure improvements for the appropriate public service or utility should be provided by the project sponsor. In addition, wherever feasible, reclaimed water should be used for landscaping purposes instead of potable water.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

c. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site??

d. Would the project substantially alter the existing drainage pattern of the site or area, including the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?

New projects added as part of the 2018 RTP/SCS could change the drainage pattern of an area or result in flooding due to the alteration of a stream or river. However, as the 2018 RTP/SCS consists mainly of transportation improvement projects analyzed in the 2015 RTP EIR with approximately 35 net new minor projects that would not substantially differ in geographical location, type of project, or size of the project, 2018 RTP/SCS transportation improvement projects would not result in new or substantially more severe impacts beyond those analyzed in the 2015 RTP EIR. Moreover, the majority of projects would occur within existing rights-of-way and would not generate significant new surface water runoff that could exceed the capacity of stormwater infrastructure. Impacts would be less than significant and further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

g. Would the project place housing in a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary, Flood Insurance Rate Map, or other flood hazard delineation map?

h. Would the project place structures in a 100-year flood hazard area that would impede or redirect flood flows?

i. Would the project expose people or structures to a significant risk of loss, injury, or death involving flooding, including that occurring as a result of the failure of a levee or dam?

The 2018 RTP/SCS consists of transportation improvement projects contained in the 2015 RTP that remain to be constructed with approximately 35 net new minor projects, which would not substantially differ in geographical location, type of project, or size of the project. Similar to the 2015 RTP, near- and long-term transportation improvements envisioned in the 2018 RTP/SCS may occur in low-lying areas and in proximity to waterways and/or dam inundation zones. As such, these projects may be subject to the hazard of flooding. Failures of Shasta Lake or Whiskeytown Reservoir Dams would subject the cities of Redding and Anderson to inundation, where many RTP projects occur. However, the transportation improvement projects contained in the 2018 RTP/SCS, including the additional transportation projects, are of similar geographic location, type, and size to those in the 2015 RTP. In addition, the land use scenario envisioned by the 2018 RTP/SCS is mostly the same as that of the 2015 RTP with the exception of minor updates to land use information provided by local jurisdictions. As a result, no new or substantially more severe impacts from flooding would

occur compared to the 2015 RTP as evaluated in the 2015 RTP EIR. Mitigation measures, shown below, from the 2015 RTP EIR would address potential impacts to flooding. Impacts would be less than significant with mitigation and further analysis in an EIR is not warranted.

W-3(a) If a 2018 RTP/SCS project is located in an area with high flooding potential due to a storm event or dam inundation, the project lead agency shall ensure that the structure is elevated at least one foot above the 100-year flood zone elevation and that bank stabilization and erosion control measures are implemented along creek crossings.

W-3(b) For 2018 RTP/SCS projects within a dam failure inundation hazard zone, the project's lead agency shall ensure that a comprehensive flood risk communication strategy is developed, which would include an evacuation plan and/or an Emergency Action Plan and promote dam failure risk awareness and safety.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

j. Would the project result in inundation by seiche, tsunami, or mudflow?

As an inland region separated from the Pacific Ocean by mountains, Shasta County is at no risk from tsunamis. Earthquake-induced seiches also do not pose a risk to Shasta County. No new or substantially more severe impacts related to seiche, tsunami, or mudflow would occur compared to the 2015 RTP as evaluated in the 2015 EIR. Impacts would be less than significant and further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

12 Land Use and Planning

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Physically divide an established community?	☐	☐	■	☐
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	■	☐
c. Conflict with an applicable habitat conservation plan or natural community conservation plan?	☐	☐	■	☐

a. Would the project physically divide an established community?

b. Would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

State and federal policies applicable to the 2018 RTP/SCS include Moving Ahead for Progress in the 21st Century Act (MAP-21), Fixing America's Surface Transportation (FAST) Act, Caltrans Smart Mobility 2010, Senate Bill (SB) 375, SB 32, and Assembly Bill (AB) 32. The goals of the 2018 RTP/SCS are based on and consistent with the planning factors stated in MAP-21 and the Caltrans Smart Mobility 2010 framework. The approach embraces MAP-21's emphasis on performance measurement and continues the transition in emphasis from mode development, an expanded transportation system, and the health and safety of Shasta County residents and visitors.

Similar to that of the 2015 RTP, the land use scenario envisioned by the 2018 RTP/SCS encourages infill development to minimize interregional trips and long-distance commuting, which would locate people closer to existing urbanized areas and transportation hubs. Construction and implementation of new transportation facilities or expansion of existing facilities could divide established communities in the short-term and long-term. However, the transportation improvement projects contained in the 2018 RTP/SCS, including added projects since adoption of the 2015 RTP, would not substantially differ from those included in the 2015 RTP in regard to geographic location, type, or size. As such, implementation of the 2018 RTP/SCS would not result in new or substantially more severe impacts regarding the division of an established community when compared with the 2015 RTP.

Similar to the 2015 RTP, the transportation improvement projects included in the 2018 RTP/SCS are intended to improve the multimodal transportation system with increased investments in transit and complete streets projects as well as more maintenance, rehabilitation, and operational improvements. In addition, the land use scenario envisioned by the 2018 RTP/SCS, which is similar to the 2015 RTP with the exception of minor updates to land use information provided by local jurisdictions, encourages infill development that is intended to help the region improve energy efficiency and reduce GHG emissions, consistent with SB 375, SB 32, and AB 32.

As a result, no new or substantially more severe impacts under the 2018 RTP/SCS related to dividing an established community or conflicting with applicable land use policies would occur compared to the 2015 RTP as evaluated in the 2015 EIR. SRTA recommends that project lead agencies implement the following mitigation measures for applicable transportation projects that may result in potential impacts related to temporary disturbance to and/or permanent displacement of residences and businesses. Impacts would be less than significant with mitigation and further analysis in an EIR is not warranted.

LU-2(a) The project lead agency of RTP projects with the potential to displace residences or businesses should ensure that project-specific environmental reviews consider alternative alignments and developments that avoid or minimize impacts to nearby residences and businesses.

LU-2(b) Where project-specific reviews identify displacement or relocation impacts that are unavoidable, the project lead agency should ensure that all applicable local, State, and federal relocation programs are used to assist eligible persons to relocate. In addition, the lead agency shall review the proposed construction schedules to ensure that adequate time is provided to allow affected businesses to find and relocate to other sites.

LU-2(c) For all RTP projects that could result in temporary lane closures or access blockage during construction, a temporary access plan should be implemented by the lead agency to ensure continued access to affected cyclists, businesses, and homes. Appropriate signs and safe access shall be guaranteed during project construction to ensure that businesses remain open.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

c. Would the project conflict with an applicable habitat conservation plan or natural community conservation plan?

The 2018 RTP/SCS would not conflict with an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan as there are no adopted habitat or natural community conservation plans in Shasta County that cover activities proposed by the 2018 RTP/SCS. No new or substantially more severe impacts would occur compared to the 2015 RTP as evaluated in the 2015 EIR. Impacts would be less than significant and further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

13 Mineral Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	■	☐
b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	■	☐

a. Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

b. Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

The 2018 RTP/SCS primarily involves modifications to existing roadways, including improvements related to intersections, safety, and widening, as well as alternative transportation projects. No new transportation projects that would affect mineral resources have been added to the 2018 RTP/SCS. In addition, the land use scenario envisioned by the 2018 RTP/SCS, which mostly the same as that of the 2015 RTP with the exception of minor updates to land use information provided by local jurisdictions, would encourage infill development located within existing urbanized areas. Although these projects may be located on a site with known mineral resources or locally important mineral resources, the 2018 RTP/SCS would not limit access to or availability of known or locally important mineral resources beyond levels identified in the 2015 RTP EIR. No new or substantially more severe impacts related to mineral resources would occur compared to the 2015 RTP as evaluated in the 2015 EIR. Impacts would be less than significant and further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

14 Noise

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project result in:				
a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	■	☐	☐
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	■	☐	☐
c. A substantial permanent increase in ambient noise levels above those existing prior to implementation of the project?	☐	■	☐	☐
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	■	☐	☐
e. For a project located in an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	■	☐
f. For a project near a private airstrip, would it expose people residing or working in the project area to excessive noise?	☐	☐	■	☐

a. Would the project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

b. Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

c. Would the project result in a substantial permanent increase in ambient noise levels above levels existing without the project?

d. Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Similar to the 2015 RTP, construction activities associated with the various transportation improvement projects identified in the 2018 RTP/SCS would result in temporary noise impacts in the immediate vicinity. These noise increases would be short-term. Construction activities in the vicinity of residences and other sensitive noise receptors would usually be limited to daytime hours. The transportation improvement projects contained in the 2018 RTP/SCS, including added projects since adoption of the 2015 RTP, would not substantially differ from those included in the 2015 RTP regarding geographic location, type, or size. As such, implementation of the 2018 RTP/SCS would not result in new or substantially more severe effects regarding noise impacts compared with the 2015 RTP. In addition, land uses associated with sensitive receptors are primarily concentrated in the three incorporated cities of Redding, Shasta Lake, and Anderson, and the land use scenario envisioned by the 2018 RTP/SCS is similar to the 2015 RTP with the exception of minor updates to land use information provided by local jurisdictions. Subsequent environmental review of project-specific impacts would be required prior to approval and implementation to determine the appropriate application of the following mitigation measures. This impact would be less than significant with mitigation incorporated and does not warrant further investigation in an EIR.

The following 2015 RTP noise mitigation measures would continue to apply to applicable transportation improvement projects included in the 2018 RTP/SCS. SRTA recommends that project lead agencies implement the mitigation measures identified below for applicable transportation projects. These measures should be implemented for all projects developed pursuant to the 2018 RTP/SCS that would result in temporary construction noise and/or vibration impacts. Project-specific environmental impacts may require these mitigations be revised or expanded in response to site-specific conditions:

N-1(a) Lead agencies of 2018 RTP/SCS projects shall ensure that, where residences or other noise sensitive uses are located within 800 feet of construction sites, appropriate measures shall be implemented to ensure consistency with local noise ordinance requirements relating to construction. Specific techniques may include, but are not limited to, restrictions on construction timing, use of sound blankets on construction equipment, and the use of temporary walls and noise barriers to block and deflect noise.

N-1(b) For any project that requires pilings and is located within 800 feet of sensitive receptors, the lead agencies shall require caisson drilling or sonic pile driving as opposed to impact pile driving, where feasible. This shall be accomplished through the placement of conditions on the project during its individual environmental review.

N-1(c) Lead agencies shall ensure that equipment and trucks used for project construction utilize the best available noise control techniques (including mufflers, use of intake silencers, ducts, engine enclosures and acoustically attenuating shields or shrouds).

N-1(d) Lead agencies shall ensure that impact equipment (e.g., jack hammers, pavement breakers, and rock drills) used for project construction be hydraulically or electrically powered, wherever feasible, to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where the use of pneumatically powered tools is unavoidable, use of an exhaust muffler (reduces noise by up to 10

dBA) or external jackets (reduces noise by up to 5 dBA.) is encouraged. Whenever feasible, use of quieter procedures, such as drilling is encouraged.

N-1(e) Locate stationary noise sources as far from sensitive receptors as possible. Stationary noise sources that must be located near sensitive receptors will be adequately muffled.

N-2(a) Lead agencies of 2018 RTP/SCS projects that would result in noise exceeding normally acceptable levels shall complete detailed noise assessments using applicable guidelines (e.g., FTA Transit Noise and Vibration Impact Assessment for rail and bus projects and the Caltrans Traffic Noise Analysis Protocol for roadway projects). The project lead agency shall ensure that a noise survey is conducted to determine potential alternate alignments which allow greater distance from, or greater buffering of, noise-sensitive areas. The noise survey shall be sufficient to indicate existing and projected noise levels, to determine the amount of attenuation needed to reduce potential noise impacts to applicable state and local standards. This shall be accomplished during the project's individual environmental review as necessary.

N-2(b) Where new or expanded roadways or transit are found to expose receptors to noise exceeding normally acceptable levels, the project lead agency shall consider various sound attenuation techniques. The preferred methods for mitigating noise impacts will be the use of appropriate setbacks and sound attenuating building materials where feasible. In instances where use of these techniques is not feasible, the use of sound barriers (earthen berms, sound walls, or some combination of the two) will be considered. Long expanses of walls or fences should be interrupted with offsets and provided with accents to prevent monotony. Landscape pockets and pedestrian access through walls should be provided. Whenever possible, a combination of elements should be used, including open grade paving, solid fences, walls, and landscaped berms. Determination of appropriate noise attenuation measures will be assessed on a case-by-case basis during a project's environmental review pursuant to the regulations of the applicable lead agency.

N-3 If a 2018 RTP/SCS project is located in an area with exterior ambient noise levels above local noise standards or in an area with potential cumulative noise levels above local noise standards (based on traffic volumes from regionally adopted travel demand model), the project lead agency shall ensure that a noise study is conducted to determine existing and projected noise levels and feasible attenuation measures needed to reduce potential noise impacts to such uses to an exterior and interior noise level below local standards. Such measures may include, but are not limited to: dual-paned windows, solid core exterior doors away from roads. This shall be accomplished during the project's individual environmental review.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

e. For a project located in an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise?

Any future infill or transportation improvement project under the 2018 RTP/SCS located within an airport land use plan zone and/or applicable noise contour would be subject to the policies of the Airport Land Use Commission pertaining to noise exposure. This ensures that noise attenuation features are implemented into the project as necessary. This impact would be less than significant, similar to the finding in the 2015 RTP EIR.

LESS THAN SIGNIFICANT IMPACT

15 Population and Housing

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	☐	☐	■	☐
b. Displace substantial amounts of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	■	☐
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	■	☐

Shasta County is a predominantly rural region. Approximately 38 percent of the County's estimated 2017 population of 178,605 people lives outside the County's three incorporated cities (California Department of Finance [DOF] 2017). Shasta County contains 25 unincorporated rural communities. Urban development primarily takes place in the area commonly called the South Central Urban Region (SCUR), which includes the three incorporated Cities of Redding, Anderson, and Shasta Lake and the unincorporated community of Cottonwood, and is generally concentrated in the Sacramento River Valley along the transportation corridor of I-5, State Route 273, and the Union Pacific Railroad. As shown in Figure 1, many of the County's unincorporated communities are located along this transportation corridor, as well as along the east/west corridors of Highway 299, Highway 44, and Highway 89.

a. Would the project induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

b. Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

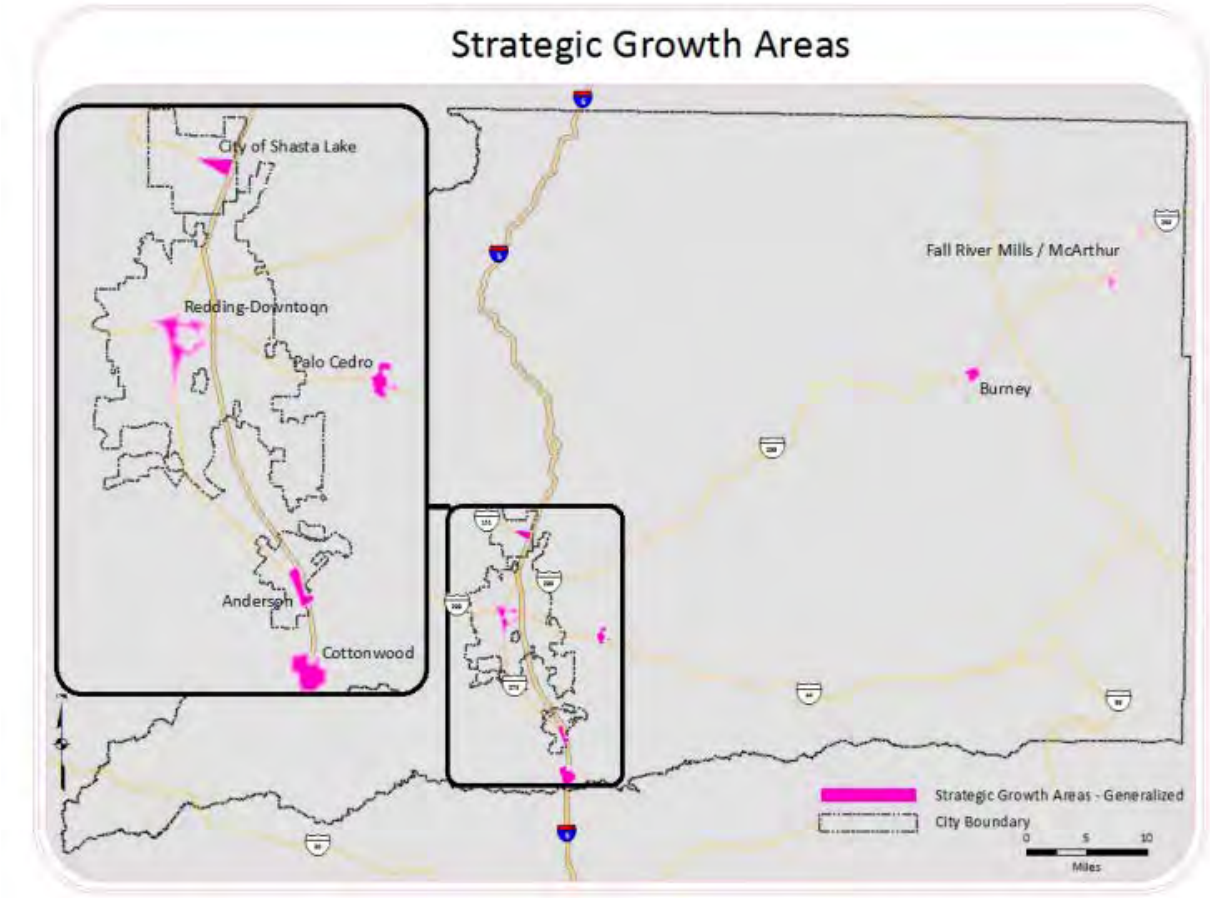
c. Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

Transportation improvement projects included in the 2018 RTP/SCS would not result in direct population growth beyond anticipated growth in the region. Instead, they are designed to fully support the transportation needs of the growing population while implementing the infill development outlined in the SCS. The SCS is designed to accommodate growth by primarily encouraging infill development in Strategic Growth Areas (SGA), as shown in Figure 2.

The 2018 RTP/SCS transportation improvement projects are intended and designed to support the land use patterns established in the SCS. In addition, the transportation improvement projects contained in the 2018 RTP/SCS, including added projects since adoption of the 2015 RTP, would not substantially differ from those included in the 2015 RTP regarding geographic location, type, or size. As such, implementation of the 2018 RTP/SCS would not result in new or substantially more severe impacts regarding population growth compared with the 2015 RTP. In fact, the population growth forecast included in the 2018 RTP/SCS is the same as that of the 2015 RTP due to the nearly identical land use scenario envisioned by both the 2015 and 2018 RTP/SCSs and the close similarity in transportation improvement projects contained therein. Therefore, the 2018 RTP/SCS is consistent with projected and planned growth. Furthermore, all transportation improvement projects and the land use scenario envisioned by the 2018 RTP/SCS are anticipated by the general plans of the applicable local jurisdictions, as all improvements have been coordinated with the applicable local jurisdiction. This impact would be less than significant, similar to the 2015 RTP EIR.

LESS THAN SIGNIFICANT IMPACT

Figure 2 Strategic Growth Areas in Shasta County



Source: 2015 RTP, SRTA 2015.

16 Public Services

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a.	Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
	1 Fire protection?	☐	☐	■	☐
	2 Police protection?	☐	☐	■	☐
	3 Schools?	☐	☐	■	☐
	4 Parks?	☐	☐	■	☐
	5 Other public facilities?	☐	☐	■	☐

a.1. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

a.2. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered police protection facilities, or the need for new or physically altered police protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

a.3. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered schools, or the need for new or physically altered schools, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

a.4. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered parks, or the need for new or physically altered parks, the

construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?

a.5. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for other public facilities?

Similar to the 2015 RTP, transportation projects under the 2018 RTP/SCS would not generate demand for police or fire services, schools, parks, or other public facilities. Future infill projects would increase demand on public services such as fire and police protection, schools, parks, or other public facilities. However, the land use scenario envisioned by the 2018 RTP/SCS is mostly the same as that contained in the 2015 RTP, with the exception of minor updates to land use information provided by local jurisdictions, and none of the modified or new projects in the 2018 RTP/SCS would contribute to population growth. Therefore, the 2018 RTP/SCS is not expected to generate additional demand for public facilities beyond what was already analyzed in the 2015 RTP. In addition, local member agencies would address any public service demand issues as development is proposed, which may require the reallocation of resources and/or augmentation of service areas. Impacts would be less than significant. No new or substantially more severe impacts related to public services would occur compared to the 2015 RTP as evaluated in the 2015 EIR. Impacts would be less than significant and further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

17 Recreation

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	■	☐
c. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	■	☐

a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Transportation projects under the 2018 RTP/SCS would not generate demand for park land. Future infill projects may increase demand on park land. However, this demand would not exceed that already anticipated by the respective areas in which these projects would be located. This is primarily because similar to the 2018 RTP/SCS, like the 2015 RTP, would not result in new population growth; rather it would redistribute future populations to existing urban cores. In addition, lead agencies would address any park land demand issues as development is proposed. No new or substantially more severe impacts related to recreational resources would occur compared to the 2015 RTP as evaluated in the 2015 EIR. Impacts would be less than significant and further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

18 Transportation/Traffic

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways, and freeways, pedestrian and bicycle paths, and mass transit?	■	□	□	□
b. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	■	□	□	□
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	□	□	□	■
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?	□	□	□	■
e. Result in inadequate emergency access?	□	□	□	■
f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise substantially decrease the performance or safety of such facilities?	□	□	□	■

a. Would the project conflict with an applicable plan, ordinance or policy establishing a measure of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways, and freeways, pedestrian and bicycle paths, and mass transit?

b. Would the project conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

Shasta County is currently in attainment status for all federal AAQS (California Air Resources Board [CARB] 2017). As a result, Shasta County is not required to have a congestion management plan. However, travel demand models allow SRTA to obtain an understanding of the transportation network's performance characteristics (e.g., vehicle speeds, volume to capacity relationships, travel time, vehicle miles of travel, fuel consumption, and vehicle emissions) and estimate how socio-economic changes (e.g., population increases, land use development) will impact travel demand in the Shasta region. Traffic projections and related modeling for the 2018 RTP/SCS has been updated, as compared to the 2015 RTP, to ensure that the 2018 RTP/SCS complies with federal/state guidelines. Traffic conditions from buildout of the 2018 RTP/SCS differ from those in the 2015 RTP and new traffic modeling may result in changed EIR findings as compared to the 2015 RTP. New impacts related to traffic and circulation may occur and will be further analyzed in a Supplemental EIR.

POTENTIALLY SIGNIFICANT IMPACT

c. Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

d. Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?

e. Would the project result in inadequate emergency access?

The 2018 RTP/SCS would improve the overall efficiency of the transportation system. The 2018 RTP/SCS would not impact air traffic patterns, create a traffic hazard due to a design feature or result in inadequate emergency access. No projects in the 2018 RTP/SCS would increase air service nor would they impact traffic circulation around airports. No new or substantially more severe impacts related to traffic and circulation would occur compared to the 2015 RTP as evaluated in the 2015 EIR. Impacts would be less than significant and further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise substantially decrease the performance or safety of such facilities?

As described in the 2015 RTP, the Redding Area Bus Authority (RABA) has developed transit performance standards that focus on overall system operations, such as: 99 percent of all fixed route transit trips should be no more than five minutes late. No other transit agency in the region has developed publicly available performance standards. However, MAP-21 and the FAST Act require the development of more performance measures related to transit assets and performance.

Transit projects included in the 2018 RTP/SCS would be consistent with applicable plans and policies because the transit improvements are intended to improve access to transit services and other alternative modes of transportation. Transit improvements or service expansions in the 2018 RTP/SCS, similar to the 2015 RTP, may contribute to a growth in transit use and reductions in VMT across Shasta County. No new or substantially more severe impacts related to transit would occur compared to the 2015 RTP as evaluated in the 2015 EIR. Impacts would be less than significant and further analysis in an EIR is not warranted.

A number of bicycle facility planning documents have been prepared for the Shasta County region, including the GoShasta Active Transportation Plan, Shasta County 2010 Bicycle Transportation Plan (BTP), 2007 City of Anderson BTP, City of Redding Bikeway Action Plan 2010-2015, and City of Shasta Lake 2009 BTP. The 2018 RTP/SCS, similar to the 2015 RTP, contains numerous projects designed to improve bicycle and pedestrian facilities. Furthermore, the 2018 RTP/SCS includes goals and policies that support planning and building of bicycle and pedestrian facilities. No new or expanded facilities as compared to the 2015 RTP would result in significant adverse physical changes to existing bicycle facilities; thus, the 2018 RTP/SCS is consistent with applicable plans and policies, including bicycle and pedestrian plans. No new or substantially more severe impacts related to bicycle and pedestrian facilities would occur compared to the 2015 RTP as evaluated in the 2015 EIR. Impacts would be less than significant and further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

19 Tribal Cultural Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in a Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	■	□	□	□
b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 2024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significant of the resource to a California Native American tribe.	■	□	□	□

a. Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code 21074 that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?

b. Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code 21074 that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 2024.1?

California Assembly Bill 52 of 2014 (AB 52), enacted July 1, 2015, expands CEQA by defining a new resource category: "tribal cultural resources." AB 52 establishes that "A project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment" (PRC Section 21084.2). It further states that the lead agency shall establish measures to avoid impacts that would alter the significant characteristics of a tribal cultural resource, when feasible (PRC Section 21084.3).

PRC Section 21074 (a)(1)(A) and (B) defines tribal cultural resources as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe" and is:

1. *Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or*
2. *A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying these criteria, the lead agency shall consider the significance of the resource to a California Native American tribe.*

AB 52 also establishes a formal consultation process for California tribes regarding those resources. The consultation process must be completed before a CEQA document can be certified. Under AB 52, lead agencies are required to "begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project." Native American tribes to be included in the process are those that have requested notice of projects proposed within the jurisdiction of the lead agency.

Assessment of potential impacts to tribal cultural resources was not incorporated into CEQA requirements until its update in 2016. Accordingly, assessment of potential impacts to tribal cultural resources was not included in the environmental review for the 2015 RTP. As a result, further investigation would be required in a supplemental EIR for the 2018 RTP/SCS. The consultation process under AB 52 has been initiated by SRTA with the Pit River Tribe and the Redding Rancheria. A summary of the results of the consultation process will be summarized in the Tribal Cultural Resources issue area analysis in the Supplemental EIR.

POTENTIALLY SIGNIFICANT IMPACT

20 Utilities and Service Systems

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	■	☐
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	■	☐
c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	■	☐
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	■	☐
e. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	■	☐
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	■	☐
g. Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	■	☐

a. Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

b. Would the project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

c. Would the project require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects??

d. Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

e. Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

f. Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

g. Would the project comply with federal, state, and local statutes and regulations related to solid waste?

Similar to the 2015 RTP, transportation improvements included in the 2018 RTP/SCS would not exceed wastewater treatment requirements, exceed existing water supplies, require construction or expansion of wastewater treatment facilities, require a determination by a wastewater treatment provider, or conflict with regulations pertaining to solid waste. However, transportation improvement projects included in the 2018 RTP/SCS may require construction of or improvements to stormwater drainage facilities. Subsequent environmental review of project-specific impacts would be required prior to approval and implementation to determine potential impacts and the appropriate application of mitigation measures. Construction activities may generate temporary quantities of solid waste that would need to be disposed of at local landfills. However, impacts would be temporary in nature and reduced by compliance with the California Green Building Code, which requires that construction operations recycle a minimum of 50 percent of waste generated.

Land use development projects would need to connect to existing sewer and water services or storm water drainage facilities, which would increase demand for wastewater treatment, water supplies or the need for expansion of storm water drainage facilities. In addition, sewer connections may need to be upgraded and resized to accommodate additional flow. The necessary improvements would be determined by local member agencies at the time such projects are proposed. Improvements would generally occur within existing utility easements and would therefore not be anticipated to create new environmental impacts. Similarly, such projects would generate solid waste, which may require landfill capacity. The land use scenario envisioned by the 2018 RTP/SCS is mostly the same as the 2015 RTP, with the exception of minor updates to land use information provided by local jurisdictions, and none of the modified or new projects included in the 2018 RTP/SCS would contribute to population growth. Therefore, the 2018 RTP/SCS is not expected to generate additional demand for utility services than what was already analyzed in the 2015 RTP. Impacts would be less than significant and further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

21 Mandatory Findings of Significance

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Does the project:				
a. Have the potential to substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	■	☐	☐
b. Have impacts that are individually limited, but cumulatively considerable ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	■	☐	☐
c. Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	■	☐	☐

The above analysis has concluded that additional analysis relative to Air Quality, Greenhouse Gas Emissions, Transportation/Traffic, and Tribal Cultural Resources are warranted in a supplemental EIR. The discussion below relates to all other environmental topics included.

a. *Does the project have the potential to substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?*

b. *Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?*

c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

The 2018 RTP/SCS would not result in new adverse impacts to biological resources beyond what has already been addressed in the 2015 RTP EIR. With the implementation of the above mitigation measures, the 2018 RTP/SCS would not threaten a significant biological resource, nor would it eliminate important examples of California history or prehistory. The 2018 RTP/SCS would not result in any changes to General Plan land use designations or zoning districts, would not result in annexation of land, and would not allow development in areas that are not already planned for development in the General Plans and Zoning Ordinances for Shasta County and the incorporated cities therein. Thus, the 2018 RTP/SCS does not have impacts that are cumulatively considerable, nor would it have substantial adverse effects on human beings. With the implementation of standard practices and mitigation measures required by the applicable lead agency, impacts would be less than significant.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

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Appendix A

Special Status Species and Sensitive Habitats

Special-Status Animal Species Known to or with Potential to Occur within Shasta County

Scientific Name Common Name	Status	Habitat Requirements
Mammals		
Antrozous pallidus pallid bat	None/None G5 / S3 SSC	Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.
Aplodontia rufa californica Sierra Nevada mountain beaver	None/None G5T3T4 / S2S3 SSC	Dense growth of small deciduous trees & shrubs, wet soil, & abundance of forbs in the Sierra Nevada & east slope. Needs dense understory for food & cover. Burrows into soft soil. Needs abundant supply of water.
Bassariscus astutus ring-tail	None/None G4 / S3 FP	Riparian habitats and in brush stands of most forest and shrub habitats. Nests in rock recesses, hollow trees, logs, snags, abandoned burrows or woodrat nests.
Canis lupis gray wolf	Endangered/Endangered G4 / S1	Extremely wide-ranging across hardwood and coniferous forests, sagebrush, grasslands, and other habitats. Generally prefers areas with abundant prey and relatively low levels of human disturbance.
Corynorhinus townsendii Townsend's big-eared bat	None/None G3G4 / S2 SSC	Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.
Erethizon dorsatum North American porcupine	None/None G5 / S3	Forested habitats in the Sierra Nevada, Cascade, and Coast ranges, with scattered observations from forested areas in the Transverse Ranges. Wide variety of coniferous and mixed woodland habitat.
Euderma maculatum spotted bat	None/None G4 / S3 SSC	Occupies a wide variety of habitats from arid deserts and grasslands through mixed conifer forests. Feeds over water and along washes. Feeds almost entirely on moths. Needs rock crevices in cliffs or caves for roosting.

Scientific Name Common Name	Status	Habitat Requirements
Gulo gulo California wolverine	Proposed Threatened/Threatened G4 / S1 FP	Found in the north coast mountains and the Sierra Nevada. Found in a wide variety of high elevation habitats. Needs water source. Uses caves, logs, burrows for cover and den area. Hunts in more open areas. Can travel long distances.
Lasionycteris noctivagans silver-haired bat	None/None G5 / S3S4	Primarily a coastal and montane forest dweller, feeding over streams, ponds & open brushy areas. Roosts in hollow trees, beneath exfoliating bark, abandoned woodpecker holes, and rarely under rocks. Needs drinking water.
Lasiurus blossevillii western red bat	None/None G5 / S3 SSC	Roosts primarily in trees, 2-40 ft above ground, from sea level up through mixed conifer forests. Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging.
Lasiurus cinereus hoary bat	None/None G5 / S4	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. Requires water.
Lepus americanus klamathensis Oregon snowshoe hare	None/None G5T3T4Q / S2 SSC	Above the yellow pine zone in Canadian and Hudsonian provinces in Northern California. Alder and willow thickets in riparian zone, also thickets of young conifers.
Martes caurina sierrae Sierra marten	None/None G5T3 / S3	Mixed evergreen forests with more than 40% crown closure along Sierra Nevada and Cascade mountains. Needs variety of different-aged stands, particularly old-growth conifers and snags which provide cavities for dens/nests.
Myotis evotis long-eared myotis	None/None G5 / S3	Found in all brush, woodland and forest habitats from sea level to about 9000 ft. Prefers coniferous woodlands and forests. Nursery colonies in buildings, crevices, spaces under bark, and snags. Caves used primarily as night roosts.

Scientific Name Common Name	Status	Habitat Requirements
Myotis thysanodes fringed myotis	None/None G4 / S3	In a wide variety of habitats, optimal habitats are pinyon-juniper, valley foothill hardwood & hardwood-conifer. Uses caves, mines, buildings or crevices for maternity colonies and roosts.
Myotis volans long-legged myotis	None/None G5 / S3	Most common in woodland and forest habitats above 4000 ft. Trees are important day roosts; caves and mines are night roosts. Nursery colonies usually under bark or in hollow trees, but occasionally in crevices or buildings.
Myotis yumanensis Yuma myotis	None/None G5 / S4	Optimal habitats are open forests and woodlands with sources of water over which to feed. Distribution is closely tied to bodies of water. Maternity colonies in caves, mines, buildings or crevices.
Ochotona princeps schisticeps gray-headed pika	None/None G5T2T4 / S2S4	Mountainous areas, generally at higher elevations, often above the treeline up to the limit of vegetation. At lower elevations found in rocky areas within forests or near lakes. Talus slopes, occasionally on mine tailings. Prefers talus-meadow interface.
Pekania pennanti fisher - West Coast DPS	Proposed Threatened/Candidate Threatened G5T2T3Q / S2S3 SSC	Intermediate to large-tree stages of coniferous forests and deciduous-riparian areas with high percent canopy closure. Uses cavities, snags, logs and rocky areas for cover and denning. Needs large areas of mature, dense forest.
Taxidea taxus American badger	None/None G5 / S3 SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.
Vulpes vulpes necator Sierra Nevada red fox	Candidate/Threatened G5T1T2 / S1	Historically found from the Cascades down to the Sierra Nevada. Found in a variety of habitats from wet meadows to forested areas. Use dense vegetation and rocky areas for cover and den sites. Prefer forests interspersed with meadows or alpine fell-fields.
Birds		

Scientific Name Common Name	Status	Habitat Requirements
Accipiter cooperii Cooper's hawk	None/None G5 / S4 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.
Accipiter gentilis northern goshawk	None/None G5 / S3 SSC	Within, and in vicinity of, coniferous forest. Uses old nests, and maintains alternate sites. Usually nests on north slopes, near water. Red fir, lodgepole pine, Jeffrey pine, and aspens are typical nest trees.
Accipiter striatus sharp-shinned hawk	None/None G5 / S4 WL	Ponderosa pine, black oak, riparian deciduous, mixed conifer & Jeffrey pine habitats. Prefers riparian areas. North-facing slopes, with plucking perches are critical requirements. Usually nests within 275 feet of water.
Agelaius tricolor tricolored blackbird	None/Candidate Endangered G2G3 / S1S2 SSC	Highly colonial species, most numerous in Central Valley & vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony.
Ardea alba great egret	None/None G5 / S4	Colonial nester in large trees. Rookery sites located near marshes, tide-flats, irrigated pastures, and margins of rivers and lakes.
Ardea herodias great blue heron	None/None G5 / S4	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.
Aquila chrysaetos golden eagle	None/None G5 / S3 WL, FP	Coastal belt of Santa Cruz and Monterey counties; central & southern Sierra Nevada; San Bernardino & San Jacinto mountains. Breeds in small colonies on cliffs behind or adjacent to waterfalls in deep canyons and sea-bluffs above the surf; forages widely.

Scientific Name Common Name	Status	Habitat Requirements
Asio flammeus short-eared owl	None/None G5 / S3 SSC	Open, treeless areas with elevated sites for perches and dense vegetation for roosting and nesting.
Asio otus long-eared owl	None/None G5 / S3 ? SSC	Dense riparian and live oak thickets near meadow edges, and nearby woodland and forest habitats; also found in dense conifer stands at higher elevations.
Athene cunicularia western burrowing owl	None/None G4 / S3 SSC	Grasslands and ruderal habitats where ground squirrel burrows are available for nesting.
Buteo swainsoni Swainson's hawk	None/Threatened G5 / S3 SSC	Agricultural fields, annual grasslands, sage-juniper flats, & desert. The bird is attracted to haying, mowing, and plowing operations, which provide opportunistic foraging on small mammals and grasshoppers.
Chaetura vauxi vaux's swift	None/None G5 / S2S3 SSC	Prefers redwood and Douglas-fir habitats, nests in hollow trees and snags or, occasionally, in chimneys; forages aerially.
Circus cyaneu northern harrier	None/None G5 / S3 SSC	Forages in marshes, grasslands, and ruderal habitats; nests in extensive marshes and wet fields.
Coccyzus americanus occidentalis western yellow-billed cuckoo	Threatened/Endangered G5T2T3 / S1	Riparian forest nester along the broad, lower flood-bottoms of larger river systems. Nests in riparian forests of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.

Scientific Name Common Name	Status	Habitat Requirements
Cypseloides niger black swift	None/None G4 / S2 SSC	Coastal belt of Santa Cruz and Monterey counties; central & southern Sierra Nevada; San Bernardino & San Jacinto mountains. Breeds in small colonies on cliffs behind or adjacent to waterfalls in deep canyons and sea-bluffs above the surf; forages widely.
Empidonax traillii willow flycatcher	None/Endangered G5 / S1S2	Inhabits extensive thickets of low, dense willows on edge of wet meadows, ponds, or backwaters; 2000-8000 ft elevation. Requires dense willow thickets for nesting/roosting. Low, exposed branches are used for singing posts/hunting perches.
Falco peregrinus anatum American peregrine falcon	Delisted/Delisted G4T4 / S3S4 FP	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nest consists of a scrape or a depression or ledge in an open site.
Grus canadensis tabida greater sandhill crane	None/Threatened G5T4 / S2 FP	Nests in wetland habitats in northeastern California; winters in the Central Valley. Prefers grain fields within 4 miles of a shallow body of water used as a communal roost site; irrigated pasture used as loafing sites.
Haliaeetus leucocephalus bald eagle	Delisted/Endangered G5 / S3 FP	Ocean shore, lake margins, and rivers for both nesting and wintering. Most nests within 1 mile of water. Nests in large, old-growth, or dominant live tree with open branches, especially ponderosa pine. Roosts communally in winter.
Icteria virens yellow-breasted chat	None/None G5 / S3 SSC	Breeds in riparian habitats having dense understory vegetation, such as willow and blackberry.
Lanius ludovicianus Loggerhead shrike	None/None G4 / S4 SSC	Forages in open grassland habitats throughout the Central Valley of California. Nests in shrubs and trees.

Scientific Name Common Name	Status	Habitat Requirements
Laterallus jamaicensis coturniculus California black rail	None/Threatened G3G4T1 / S1 FP	Inhabits freshwater marshes, wet meadows and shallow margins of saltwater marshes bordering larger bays. Needs water depths of about 1 inch that do not fluctuate during the year and dense vegetation for nesting habitat.
Pandion haliaetus osprey	None/None G5 / S4 WL	Ocean shore, bays, freshwater lakes, and larger streams. Large nests built in tree-tops within 15 miles of a good fish-producing body of water.
Phalacrocorax auritus double-crested cormorant	None/None G4 / S4 SSC	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.
Picoides arcticus black-backed woodpecker	None/None G5 / S2	Coniferous forests in the Sierra Nevada and Cascades to the Siskiyou Mountains. Recently burned coniferous forest, areas with dense standing dead trees, and less commonly in unburned forests.
Progne subis purple martin	None/None G5 / S3 SSC	Inhabits woodlands, low elevation coniferous forest of Douglas-fir, ponderosa pine, and Monterey pine. Nests in old woodpecker cavities mostly; also in human-made structures. Nest often located in tall, isolated tree/snag.
Riparia riparia bank swallow	None/Threatened G5 / S2	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.
Setophaga petechia yellow warbler	None/None G5 / S3S4	Breeds in riparian woodlands, particularly those dominated by willows and cottonwoods.

Scientific Name Common Name	Status	Habitat Requirements
Strix occidentalis caurina northern spotted owl	Threatened/Threatened G3T3 / S2S3 SSC	Old-growth forests or mixed stands of old-growth and mature trees. Occasionally in younger forests with patches of big trees. High, multistory canopy dominated by big trees, many trees with cavities or broken tops, woody debris, and space under canopy.
Reptiles		
Emys marmorata western pond turtle	None/None G3G4 / S3 SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.
Amphibians		
Ambystoma macrodactylum sigillatum southern long-toed salamander	None/None G5T4 / S3 SSC	High elevation meadows and lakes in the Sierra Nevada, Cascade, and Klamath mountains. Aquatic larvae occur in ponds and lakes. Outside of breeding season adults are terrestrial and associated with underground burrows of mammals and moist areas under logs and rocks.
Ascaphus truei Pacific tailed frog	None/None G4 / S3S4 SSC	Occurs in montane hardwood-conifer, redwood, Douglas-fir & ponderosa pine habitats. Restricted to perennial montane streams. Tadpoles require water below 15 degrees C.
Hydromantes shastae Shasta salamander	None/Threatened G1G2 / S3	Cool, wet ravines and valleys; dominant vegetation is oak woodland or chaparral, also pine and fir; 100 to 2550 ft elevation. Seeks cover under surface objects such as logs, rocks, and limestone slabs or talus, near limestone fissures or caves.
Rana boylii foothill yellow-legged frog	None/Candidate Threatened G3 / S3 SSC	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Needs at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis.

Scientific Name Common Name	Status	Habitat Requirements
Rana draytonii California red-legged frog	Threatened/None G2G3 / S2S3 SSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.
Rana cascadae Cascades frog	None/None G3G4 / S3 SSC	Montane aquatic habitats such as mountain lakes, small streams, and ponds in meadows; open coniferous forests. Standing water required for reproduction. Hibernates in mud on the bottom of lakes and ponds during the winter.
Spea hammondii western spadefoot	None/None G3 / S3 SSC	Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands. Vernal pools are essential for breeding and egg-laying.
Fish		
Acipenser medirostris southern green sturgeon	Threatened/None G3 / S1S2 SSC	These are the most marine species of sturgeon. Abundance increases northward of Point Conception. Spawns in the Sacramento, Klamath, & Trinity Rivers. Spawns at temps between 8-14 C. Preferred spawning substrate is large cobble, but can range from clean sand to bedrock
Cottus asperrimus rough sculpin	None/Threatened G2 / S2 FP	Restricted to the Pit River above and below the falls at Burney, and the Hat Creek & Fall River subdrainages. Found mostly on the muddy bottoms of large streams.
Cottus klamathensis macrops bigeye marbled sculpin	None/None G4T3 / S2S3 SSC	Found in the Pit River system and 3 tributaries: Hat Creek, Burney Creek & the Fall River system. Large, clear, cool spring-fed streams, but sometimes found in reservoirs. Prefers abundant vegetation and coarse substrates.

Scientific Name Common Name	Status	Habitat Requirements
Entosphenus tridentatus Pacific lamprey	None/None G4 / S4 SSC	Found in Pacific Coast streams north of San Luis Obispo County, however regular runs in Santa Clara River. Size of runs is declining. Swift-current gravel-bottomed areas for spawning with water temps between 12-18 C. Ammocoetes need soft sand or mud.
Hypomesus transpacificus delte smelt	Threatened/Endangered G1 / S1	Sacramento-San Joaquin Delta. Seasonally in Suisun Bay, Carquinez Strait & San Pablo Bay. Seldom found at salinities > 10 ppt. Most often at salinities < 2ppt.
Lampetra ayresii river lamprey	None/None G4 / S3 SSC	Lower Sacramento River, San Joaquin River, and Russian River. May occur in coastal streams north of San Francisco Bay. Adults need clean, gravelly riffles, ammocoetes need sandy backwaters or stream edges, good water quality and temps < 25 C.
Lavinia symmetricus mitrulus Pit roach	None/None G4T2 / S2 SSC	Found in the upper Pit River and its tributaries, and tributaries to Goose Lake. Found in deep pools, but also in areas of low flows, moderate gradients, warm temperatures and mats of vegetation.
Mylopharodon conocephalus hardhead	None/None G3 / S3 SSC	Low to mid-elevation streams in the Sacramento-San Joaquin drainage. Also present in the Russian River. Clear, deep pools with sand-gravel-boulder bottoms and slow water velocity. Not found where exotic centrarchids predominate.
Oncorhynchus mykiss irideus Steelhead – Central Valley DPS	Threatened/None G5T2Q / S2	Spawn and rear in Sacramento River and its tributaries. Requires cool, swift, shallow water; clean, loose gravel for spawning; and runs and suitable large pools in which to rear and over-summer.
Oncorhynchus mykiss ssp. 2 McCloud River redband trout	None/None G5T1T2Q / S1S2 SSC	Lives in small spring-fed tributaries of the McCloud River. Water temperatures are cold (<15 C), flow is 1-40 CFS.

Scientific Name Common Name	Status	Habitat Requirements
Oncorhynchus tshawytscha Chinook salmon – Sacramento River winter-run ESU	Endangered/Endangered G5 / S1	Spawn and rear in main-stem Sacramento River. Require cool year-round water temperatures, since spawning occurs during the summer. Requires deep pools and riffles, and clean gravel and cobble substrate to spawn.
Oncorhynchus tshawytscha Chinook salmon – Central Valley spring-run ESU	Threatened/Threatened G5 / S1	Spawn and rear in main-stem Sacramento River and suitable perennial tributaries. Require cool year-round water temperatures and deep pools for over-summering habitat. Spawn in riffles with gravel and cobble substrate.
Oncorhynchus tshawytscha Chinook salmon – Central Valley fall/late fall-run ESU	None/None G5 / S2	Spawn and rear in main-stem Sacramento River and suitable perennial tributaries. Require cool year-round water temperatures and deep pools for over-summering habitat. Spawn in riffles with gravel and cobble substrate.
Pogonichthys macrolepidotus Sacramento splittail	None/None GNR / S3	Shallow, dead-end sloughs with submerged vegetation.
Salvelinus confluentus bull trout	Threatened/Endangered G4 / SX	In California, they were found only in the McCloud River in Shasta County. Bottom dwellers that require deep pools in cold water rivers. Need gravel riffles and large volumes of cold water to spawn.
Spirinchus thaleichthys longfin smelt	Candidate/Threatened G5 / S1 SSC	Euryhaline, nektonic & anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column. Prefer salinities of 15-30 ppt, but can be found in completely freshwater to almost pure seawater.
invertebrates		
Anthicus antiochensis Antioch Dunes anthicid beetle	None/None G1 / S1	Extirpated from Antioch Dunes but present in several localities along the Sacramento and Feather rivers.

Scientific Name Common Name	Status	Habitat Requirements
Anthicus sacramento Sacramento anthicid beetle	None/None G1 / S1	Restricted to sand dune areas. Inhabit sand slipfaces among bamboo and willow but may not depend on presence of these plant species.
Atractelmis wawona Wawona riffle beetle	None/None G1G3 / S1S2	Aquatic; found in riffles of rapid, small to medium clear mountain streams; 2000-5000 ft elev. Strong preference for inhabiting submerged aquatic mosses
Bombus caliginosus obscure bumble bee	None/None G4? / S1S2	Coastal areas from Santa Barbara county to north to Washington state. Food plant genera include Baccharis, Cirsium, Lupinus, Lotus, Grindelia and Phacelia.
Bombus morrisoni Morrison bumble bee	None/None G4G5 / S1S2	From the Sierra-Cascade ranges eastward across the intermountain west. Food plant genera include Cirsium, Cleome, Helianthus, Lupinus, Chrysothamnus, and Melilotus.
Bombus occidentalis western bumble bee	None/None G2G3 / S1	Once common & widespread, species has declined precipitously from central CA to southern B.C., perhaps from disease.
Branchinecta conservatio Conservancy Fairy Shrimp	Endangered/None G2 / S2	Endemic to the grasslands of the northern two-thirds of the Central Valley; found in large, turbid pools. Inhabit astatic pools located in swales formed by old, braided alluvium; filled by winter/spring rains, last until June.
Branchinecta lynchi vernal pool fairy shrimp	Threatened/None G3 / S3	Endemic to the grasslands of the Central Valley, Central Coast mountains, and South Coast mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.

Scientific Name Common Name	Status	Habitat Requirements
Colligyrus convexus canary duskysnail	None/None G1G2 / S1S2	Limnocrenes & hyporheic streams in the Pit River basin. Most abundant on the undersides of cobbles and boulders in shallow to moderate depths.
Cryptochia shasta confusion caddisfly	None/None G1G2 / S1S2	Creeks. Only found in Shasta Co., California, near Castle Crags State Park.
Desmocerus californicus dimorphus valley elderberry longhorn beetle	Threatened/None G3T2 / S2	Occurs only in the Central Valley of California, in association with blue elderberry (Sambucus mexicana). Prefers to lay eggs in elderberries 2-8 inches in diameter; some preference shown for "stressed" elderberries.
Ecclisomyia bilera Kings Creek ecclysomyian caddisfly	None/None G1G2 / S1S2	Narrowly distributed in springs in the Sierra Nevada & Cascades.
Fluminicola seminalis nugget pebblesnail	None/None G2 / S1S2	Originally from near mouth of the Sacramento River upstream into the Pit River. Now extirpated from the Sacramento River
Gonidea angulata western ridged mussel	None/None G3 / S1S2	Primarily creeks & rivers & less often lakes. Originally in most of state, now extirpated from Central & Southern Calif.
Helisoma newberryi Great Basin rams-horn	None/None G1 / S1S2	Larger lakes & slow rivers, including larger spring sources and spring-fed creeks. Snails burrow in soft mud.
Helminthoglypta hertleini Oregon shoulderband	None/None G1 / S1S2	Found on basaltic talus slopes; partial riparian associate. Found wherever permanent ground cover/moisture is available. Somewhat adapted to dry conditions during a portion of the year.

Scientific Name Common Name	Status	Habitat Requirements
Hesperarion plumbeus leaden slug	None/None G1 / S1	Castle Creek in Shasta County, California
Hydroporus leechi Leech's skyline diving beetle	None/None G1? / S1?	Shallow freshwater ponds.
Juga acutifilosa topaz juga	None/None G2 / S2	Cold, well-oxygenated, unpolluted water, generally with stable gravel substrate.
Juga occata scalloped juga	None/None G1 / S1	Occurs in large freshwater rivers. Current distribution includes the Pit River below the falls in Shasta Co, Shasta National Forest, and Lassen National Forest.
Lanx patelloides kneecap lanx	None/None G2 / S2	Endemic to upper Sacramento River system. Breathe entirely through mantle, and are very sensitive to polluted water. Prefers fast, cold, well-oxygenated water and cobble-boulder substrate.
Lepidurus packardi vernal pool tadpole shrimp	Endangered/None G4 / S3S4	Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water. Pools commonly found in grass-bottomed swales of unplowed grasslands. Some pools are mud-bottomed and highly turbid.
Linderiella occidentalis California linderiella	None/None G2G3 / S2S3	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.
Margaritifera falcata western pearlshell	None/None G4G5 / S1S2	Aquatic. Prefers lower velocity waters.

Scientific Name Common Name	Status	Habitat Requirements
Monadenia churchi Klamath sideband	None/None G2G3 / S2	Lives mostly in limestone outcrops, caves, talus slides, and lava rockslides, but also occurs under forest debris in heavy shade on wooded hillsides.
Monadenia troglodytes troglodytes Shasta sideband	None/None G1G2T1T2 / S1S2	Associated with limestone terrain in Shasta and Siskiyou counties. Associated with pine-oak woodlands.
Monadenia troglodytes wintu Wintu sideband	None/None G1G2T1T2 / S1S2	Occurs in Shasta County.
Pacifastacus fortis Shasta crayfish	Endangered/Endangered G1 / S1	Found only in the Fall and Hat creek sub-drainages of the Pit River system. Inhabits cool, clear water with low gradient and temperature variability; substrate is volcanic rubble on sand/gravel; little vegetation.
Parapsyche extensa King's Creek parapsyche caddisfly	None/None GH / SH	Known only from King's Creek Meadow, Mt Lassen National Park. Habitat in King's Creek is cobble, sand, small rubble substratum, and a grassy shoreline.
Pisidium ultramontanum montane peaclam	None/None G1 / S1	Found in spring-influenced streams, lakes, and pools in northeastern California. Strongly associated with sands or small clean gravels.
Pyrgulopsis archimedis Archimedes pyrg	None/None G1G2 / S1S2	Springs and streams in the Pit and Klamath basins. Snails typically found on mud substrate.
Pyrgulopsis rupinicola Sucker Springs pyrg	None/None G1 / S1	Endemic to a single site in the Pit River basin. Found in a large, cold spring outflow with slow to moderate current.

Scientific Name Common Name	Status	Habitat Requirements
Rhyacophila lineata Castle Crags rhyacophilan caddisfly	None/None G1G3 / S1S2	Creeks.
Rhyacophila mosana bilobed rhyacophilan caddisfly	None/None G1G2Q / S1S2	Known only from Castle Crags State Park, Shasta County.
Trilobopsis roperi Shasta chaparral	None/None G1 / S1	Occurs in open to dense chaparral, hardwood, hardwood-conifer, and riparian habitats with rocky, gravelly substrates, and within and in the vicinity of limestone outcrops.
Trilobopsis tehamana Tehama chaparral	None/None G1 / S1	Endemic to Butte, Tehama, and Siskiyou counties. Usually found in rocky talus, but has also been found under leaf litter or woody debris within 100 meters of limestone outcrops.
Vespericola shasta Shasta hesperian	None/None G1 / S1	Primarily found in the vicinity of Shasta Lake, up to 915 meters elevation. Moist bottom lands such as riparian areas, springs, seeps, marshes, and in the mouths of caves.

FE = Federally Endangered FT = Federally Threatened

SE = State Endangered ST = State Threatened SR = State Rare SSC = State Species of Special Concern WL = State Watch List

G-Rank/S-Rank = Global Rank and State Rank as per NatureServe and CDFW's CNDDB RareFind3.

Special-Status Animal Species Known to or with Potential to Occur within Shasta County

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CDFW	Habitat Requirements
Plants		
Adiantum shastense Shasta maidenhair fern	None/None G3 / S3 4.3	Lower montane coniferous forest. Sometimes carbonate. 330-1535 m.
Ageratina shastensis Shasta ageratina	None/None G3 / S3 1B.2	Chaparral, lower montane coniferous forest. Rocky, sometimes limestone. 365-1725 m.
Agrostis hendersonii Henderson's bent grass	None/None G2Q / S2 3.2	Valley and foothill grassland, vernal pools. Moist places in grassland or vernal pool habitat. 65-1030 m.
Allium hoffmanii Beegum onion	None/None G4 / S4 4.3	Lower montane coniferous forest. Serpentine substrates. 1100-1800 m.
Allium sanbornii var. sanbornii Sanborn's onion	None/None G3T4? / S4? 4.2	Chaparral, cismontane woodland, lower montane coniferous forest. Usually on serpentine outcrops. 260-1510 m.
Anisocarpus scabridus scabrid alpine tarplant	None/None G3 / S3 1B.3	Upper montane coniferous forest. Open stony ridges, metamorphic scree slopes of mountain peaks, and cliffs in or near red fir forest. 1550-2350 m.
Anomobryum julaceum slender silver moss	None/None G5? / S2 4.2	Broad-leafed upland forest, lower montane coniferous forest, north coast coniferous forest. Moss which grows on damp rocks and soil; acidic substrates. Usually seen on roadcuts. 100-1000 m.

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CDFW	Habitat Requirements
Anthoxanthum nitens ssp. nitens vanilla-grass	None/None G5 / S2 2B.3	Meadows and seeps. Wet sites. 3-1895 m.
Arctostaphylos klamathensis Klamath manzanita	None/None G3? / S3? 1B.2	Chaparral (montane), lower montane coniferous forest, upper montane coniferous forest, subalpine coniferous forest. Rocky outcrops and slopes, sometimes on serpentine. 1430-2250 m.
Arctostaphylos malloryi Mallory's manzanita	None/None G3 / S3 4.3	Chaparral, lower montane coniferous forest. Volcanic soils. 800-1275 m.
Arctostaphylos manzanita ssp. elegans Konocti manzanita	None/None G5T3 / S3 1B.3	Chaparral, cismontane woodland, lower montane coniferous forest. Volcanic soils. 225-1830 m.
Arnica venosa Shasta County arnica	None/None G3 / S3 4.2	Cismontane woodland, lower montane coniferous forest. Often in disturbed areas. 335-1490 m.
Asarum marmoratum marbled wild-ginger	None/None G4 / S2 2B.3	Lower montane coniferous forest. Understory of coniferous forests. 485-1630 m.
Asclepias solanoana serpentine milkweed	None/None G3 / S3 4.2	Chaparral, cismontane woodland, lower montane coniferous forest. Grows on serpentine soils; confined to clearings and gentle slopes with southern exposure. 230-1860 m.

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CDFW	Habitat Requirements
Asplenium septentrionale northern spleenwort	None/None G4G5 / S3 2B.3	Chaparral, lower montane coniferous forest, subalpine coniferous forest, upper montane coniferous forest. Forms grass-like tufts in granitic rock crevices. 1705-3355 m.
Astragalus inversus Susanville milk-vetch	None/None G4 / S4 4.3	Lower coniferous forest, Great Basin scrub, pinyon and juniper woodland. Plains and thinly wooded hills, in dry, stony basaltic or pumice soils, among sagebrush or xeric pine forest; often in disturbed sites. 950-1850 m.
Astragalus lemmonii Lemmon's milk-vetch	None/None G2 / S2 1B.2	Great Basin scrub, meadows and seeps, marshes and swamps. Lakeshores, meadows and seeps. 1007-2200 m.
Astragalus pauperculus depauperate milk-vetch	None/None G4 / S4 4.3	Chaparral, cismontane woodland, valley and foothill grassland. Stony flats and shallow depressions, thin soils of red sand or clay of volcanic origin; vernally mesic. 60-1215 m.
Astragalus pulsiferae var. suksdorfii Suksdorf's milk-vetch	None/None G4T2 / S2 1B.2	Great Basin scrub, lower montane coniferous forest, pinyon and juniper woodland. Volcanic or clay soil; often gravelly or rocky. 155-1985 m.
Balsamorhiza macrolepis big-scale balsamroot	None/None G2 / S2 1B.2	Chaparral, valley and foothill grassland, cismontane woodland. Sometimes on serpentine. 35-1465 m.
Boechera serpenticola serpentine rockcress	None/None G1 / S1 1B.2	Lower montane coniferous forest, upper montane coniferous forest. Serpentine ridges and talus. 1125-2090 m.

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CDFW	Habitat Requirements
Boechera shevockii Shevock's rockcress	None/None G1 / S1 1B.1	Upper montane coniferous forest. Rock outcrops and ledges. 2470-2500 m.
Botrychium ascendens upswept moonwort	None/None G3G4 / S2 2B.3	Lower montane coniferous forest, meadows and seeps. Grassy fields, coniferous woods near springs and creeks. 1115-3265 m.
Botrychium crenulatum scalloped moonwort	None/None G4 / S3 2B.2	Bogs and fens, meadows and seeps, upper montane coniferous forest, lower montane coniferous forest, marshes and swamps. Moist meadows, freshwater marsh, and near creeks. 1185-3110 m.
Botrychium minganense Mingan moonwort	None/None G4G5 / S3 2B.2	Lower montane coniferous forest, upper montane coniferous forest, bogs and fens, meadows and seeps. Creekbanks in mixed conifer forest. 1190-3295 m.
Botrychium montanum western goblin	None/None G3 / S2 2B.1	Lower montane coniferous forest, upper montane coniferous forest, meadows and seeps. Creekbanks in old-growth forest. 1430-2430 m.
Botrychium pinnatum northwestern moonwort	None/None G4? / S2 2B.3	Lower montane coniferous forest, meadows and seeps, upper montane coniferous forest. Creekbanks. 1645-2045 m.
Botrypus virginianus rattlesnake fern	None/None G5 / S2 2B.2	Bogs and fens, lower montane coniferous forest, meadows and seeps, riparian forest. 710-1405 m.

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CDFW	Habitat Requirements
Brasenia schreberi watershield	None/None G5 / S3 2B.3	Freshwater marshes and swamps. Aquatic from water bodies both natural and artificial in California. 30-2200 m.
Brodiaea matsonii Sulphur Creek brodiaea	None/None G1 / S1 1B.1	Cismontane woodland, meadows and seeps. Streambanks. In cracks and crevices of metamorphic amphibolite schist. 195-220 m.
Brodiaea rosea Indian Valley brodiaea	None/Endangered G2 / S2 1B.1	Closed-cone coniferous forest, chaparral, cismontane woodland, valley and foothill grassland. Serpentine gravelly creek bottoms, and in meadows and swales. 340-1130 m.
Bulbostylis capillaris thread-leaved beakseed	None/None G5 / S3 4.2	Lower montane coniferous forest, meadows and seeps, upper montane coniferous forest. 395-2075 m.
Calandrinia breweri Brewer's calandrinia	None/None G4 / S4 4.2	Chaparral, coastal scrub. Sandy or loamy soils. Disturbed sites, burns. 10-1200 m.
Calochortus longebarbatus var. longebarbatus long-haired star-tulip	None/None G4T3 / S3 1B.2	Meadows and seeps, lower montane coniferous forest, Great Basin scrub, vernal pools. In wet meadows or grassy areas along drainages within forest. Clay soils. 975-2865 m.
Calochortus syntrophus Callahan's mariposa-lily	None/None G1 / S1 1B.1	Cismontane woodland, valley and foothill grassland. In vernally mesic areas. 430-1220 m.

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CDFW	Habitat Requirements
Calystegia atriplicifolia ssp. buttensis Butte County morning-glory	None/None G5T3 / S3 4.2	Chaparral, lower montane coniferous forest. Dry, mostly open slopes. Rocky substrates. 565-1525 m.
Campanula scabrella rough harebell	None/None G4 / S4 4.3	Alpine boulder and rock field. Rocky sites on serpentine or volcanics. 2285-2800 m.
Campanula shetleri Castle Crags harebell	None/None G2 / S2 1B.3	Lower montane coniferous forest. In protected rock crevices in granite. 1215-1830 m.
Cardamine bellidifolia var. pachyphylla fleshy toothwort	None/None G5T4 / S3 4.3	Alpine boulder and rock field, subalpine coniferous forest, upper montane coniferous forest. Rocky sites; talus and scree. 900-2835m.
Carex buxbaumii Buxbaum's sedge	None/None G5 / S3 4.2	Bogs and fens, meadows and seeps, marshes and swamps. Mesic sites. 3-3300 m.
Carex comosa bristly sedge	None/None G5 / S2 2B.1	Marshes and swamps, coastal prairie, valley and foothill grassland. Lake margins, wet places; site below sea level is on a Delta island. -5-1620 m.
Carex lasiocarpa woolly-fruited sedge	None/None G5 / S2 2B.3	Bogs and fens, marshes and swamps. Sphagnum bogs, freshwater marsh, lake margins. 600-1950 m.

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CDFW	Habitat Requirements
Carex petasata Liddon's sedge	None/None G5 / S3 2B.3	Broad-leafed upland forest, lower montane coniferous forest, meadows and seeps, pinyon and juniper woodland. 835-3030 m.
Carex scoparia var. scoparia pointed broom sedge	None/None G5T5 / SX 2A	Great Basin scrub. Wet, open places. 1210 m.
Castilleja lassenensis Lassen paintbrush	None/None G3 / S3 1B.3	Subalpine coniferous forest, meadows and seeps. Volcanic. 955-3120 m.
Castilleja rubicundula var. rubicundula pink creamsacs	None/None G5T2 / S2 1B.2	Chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland. Openings in chaparral or grasslands. On serpentine. 20-915 m.
Ceanothus purpureus holly-leaved ceanothus	None/None G2 / S2 1B.2	Chaparral, cismontane woodland. Rocky, volcanic slopes. 145-780 m.
Clarkia borealis ssp. arida Shasta clarkia	None/None G3T2 / S2 1B.1	Cismontane woodland, lower montane coniferous forest. Openings. 425-595 m.
Clarkia borealis ssp. borealis northern clarkia	None/None G3T3 / S3 1B.3	Chaparral, cismontane woodland, lower montane coniferous forest. Often seen in roadcuts. 345-1540 m.

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CDFW	Habitat Requirements
Collomia diversifolia serpentine collomia	None/None G4 / S4 4.3	Chaparral, cismontane woodland. On ultramafic soils, rocky or gravelly sites. 300-600 m.
Collomia larsenii talus collomia	None/None G4 / S2 2B.2	Alpine boulder and rock field, closed-cone coniferous forest, subalpine coniferous forest, upper montane coniferous forest. In loose volcanic material on high volcanic peaks, red rhyolite scree slopes, talus, loose gravel. 2205-3050 m.
Cordylanthus tenuis ssp. pallescens pallid bird's-beak	None/None G4G5T1 / S1 1B.2	Lower montane coniferous forest. Gravelly openings in brush patches next to coniferous forest; on volcanic alluvium. 1070-1615 m.
Crataegus castlegarensis Calstlegar hawthorne	None/None G5 / S1S3 3	Riparian woodland. Moist rocky loam. 0-975 m.
Cryptantha crinita silky cryptantha	None/None G2 / S2 1B.2	Cismontane woodland, valley foothill grassland, lower montane coniferous forest, riparian forest, riparian woodland. In gravelly streambeds. 35-1220 m.
Cryptantha dissita serpentine cryptantha	None/None G2 / S2 1B.2	Chaparral. Serpentine outcrops. 135-735 m.
Cypripedium californicum California lady's-slipper	None/None G4 / S4 4.2	Lower montane coniferous forest, bogs and fens. In perennial seepages on serpentine substrate and in gravel along creek margins. 30-2750 m.

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CDFW	Habitat Requirements
Cypripedium fasciculatum clustered lady's-slipper	None/None G4 / S4 4.2	North Coast coniferous forest, lower montane coniferous forest. In serpentine seeps and moist streambanks. 100-2435 m.
Cypripedium montanum mountain lady's-slipper	None/None G4 / S4 4.2	Lower montane coniferous forest, broad-leafed upland forest, cismontane woodland, north coast coniferous forest. On dry, undisturbed slopes. 185-2225 m.
Darlingtonia californica California pitcherplant	None/None G4 / S4 4.2	Bogs and fens, meadows and seeps. On ultramafic soils.
Diplacus pygmaeus Egg Lake monkeyflower	None/None G4 / S3 4.2	Great Basin scrub, lower montane coniferous forest, meadows and seeps, pinyon-juniper woodland. Damp sites in meadows, along streams and on muddy soil of desiccating pools. Volcanic, clay soils. 500-1840 m.
Draba aureola golden alpine draba	None/None G4 / S2 1B.3	Alpine boulder and rock field, subalpine coniferous forest. On serpentine or volcanic outcrops. 2315-3050 m.
Draba howellii Howell's draba	None/None G4 / S4 4.3	Subalpine coniferous forest. Rocky habitats. 1370-3000 m.
Drosera anglica English sundew	None/None G5 / S2 2B.3	Bogs and fens, meadows and seeps. 600-2045 m.

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CDFW	Habitat Requirements
Epilobium oreganum Oregon fireweed	None/None G2 / S2 1B.2	Bogs and fens, meadows and seeps, lower montane coniferous forest, upper montane coniferous forest. In and near springs and bogs; at least sometimes on serpentine. 575-2075 m.
Epilobium siskiyouense Siskiyou fireweed	None/None G3 / S3 1B.3	Alpine boulder and rock field, subalpine coniferous forest, upper montane coniferous forest. On slopes in gravelly, serpentine soils. 1675-2440 m.
Eriastrum tracyi Tracy's eriastrum	None/Rare G3Q / S3 3.2	Chaparral, cismontane woodland, valley and foothill grassland. Gravelly shale or clay; often in open areas. 315-2400 m.
Ericameria ophitidis serpentine goldenbush	None/None G4 / S4 4.3	Lower montane coniferous forest, chaparral. Open areas on dry, rocky serpentine soil. 1180-1740 m.
Erigeron elegantulus volcanic daisy	None/None G4 / S4 4.3	Alpine boulder & rock field, Great Basin scrub, pinyon & juniper woodland, subalpine coniferous forest, upper montane coniferous forest. In sandy to gravelly loam, volcanic soils. 1000-2665 m.
Erigeron inornatus var. calidipetris hot rock daisy	None/None G5T4 / S4 4.3	Lower montane coniferous forest. Loose sand, lava beds, depression edges, to pine/fir woods. 1100-1935 m.
Erigeron nivalis snow fleabane daisy	None/None G4G5 / S3 2B.3	Alpine boulder and rock field, meadows and seeps, subalpine coniferous forest. On volcanic rock outcrops in cracks and crevices. 1735-2900 m.

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CDFW	Habitat Requirements
Erigeron petrophilus var. viscidulus Klamath rock daisy	None/None G4T4 / S4 4.3	Chaparral, lower montane coniferous forest, upper montane coniferous forest, meadows and seeps. Rocky foothills to montane forest, sometimes on serpentine. 1500-2700 m.
Eriogonum congdonii Congdon's buckwheat	None/None G4 / S4 4.3	Lower montane coniferous forest. Serpentine; exposed rocky slopes. 1000-2345 m.
Eriogonum libertini Dubakella Mountain buckwheat	None/None G4 / S4 4.2	Chaparral, lower montane coniferous forest. Dry serpentine slopes. 1120-1720 m.
Eriogonum pyrolifolium var. pyrolifolium pyrola-leaved buckwheat	None/None G4T4 / S3 2B.3	Alpine boulder and rock field. Sandy or gravelly sites; on pumice. 1675-3200 m.
Eriogonum umbellatum var. humistratum Mt. Eddy buckwheat	None/None G5T4 / S4 4.3	Upper montane coniferous forest, alpine boulder & rock field, chaparral, subalpine coniferous forest, meadows and seeps. On serpentine soils or outcrops. Occurs in meadows within forest. 1700-2800 m.
Eriogonum ursinum var. erubescens blushing wild buckwheat	None/None G3G4T3 / S3 1B.3	Lower montane coniferous forest, montane chaparral. Rocky sites including scree and talus. 790-2120 m.
Eriophorum gracile slender cottongrass	None/None G5 / S4 4.3	Bogs and fens, meadows and seeps, upper montane coniferous forest. Acidic soils. 1280-2900 m.

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CDFW	Habitat Requirements
Erythranthe glaucescens shield-bracted monkeyflower	None/None G3 / S3 4.3	Chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland. Wet places, often in rock crevices, and in serpentine seeps. 60-1240 m.
Erythranthe inflatula ephemeral monkeyflower	None/None G3 / S2 1B.2	Great Basin scrub, lower montane coniferous forest, pinyon and juniper woodland. Gravelly or rocky sites; vernally mesic. 1245-1770 m.
Erythranthe taylorii Shasta limestone monkeyflower	None/None G2 / S2 1B.1	Cismontane woodland, lower montane coniferous forest. Openings, carbonate crevices and rocky outcrops. 325-1040 m.
Erythronium citrinum var. roderickii Scott Mountains fawn lily	None/None G4T3 / S3 1B.3	Lower montane coniferous forest. Serpentine; rocky sites. 545-1435 m.
Erythronium klamathense Klamath fawn lily	None/None G4 / S2 2B.2	Upper montane coniferous forest, meadows and seeps. 1200-1850 m.
Erythronium shastense Shasta fawn lily	None/None G2 / S2 1B.2	Cismontane woodland, lower montane coniferous forest. Usually carbonate, rocky, north-facing or shaded slopes. 345-1020 m.
Fritillaria eastwoodiae Butte County fritillary	None/None G3Q / S3 3.2	Chaparral, cismontane woodland, lower montane coniferous forest. Usually on dry slopes but also found in wet places; soils can be serpentine, red clay, or sandy 4550-1475 m.

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Fritillaria glauca Siskiyou fritillaria	None/None G3G4 / S3 4.2	Upper montane coniferous forest, alpine boulder and rock field, subalpine coniferous forest. Serpentine; talus slopes. 1735-2440 m.
Galium serpenticum ssp. scotticum Scott Mountain bedstraw	None/None G4G5T2 / S2 1B.2	Lower montane coniferous forest. Generally on north-facing slopes on serpentine in mixed conifer forest. 950-2225 m.
Gratiola heterosepala Boggs Lake hedge-hyssop	None/Endangered G2 / S2 1B.2	Marshes and swamps (freshwater), vernal pools. Clay soils; usually in vernal pools, sometimes on lake margins. 4-2410 m.
Hackelia cusickii Cusick's stickseed	None/None G4 / S3 4.3	Subalpine coniferous forest, pinyon and juniper woodland, alpine boulder and rock field. In shelter of junipers; rocky loam soil. 1200-2000 m.
Haplodontium tehamense Lassen Peak copper moss	None/None G2 / S2 1B.3	Alpine boulder and rock field. Moss on volcanic Breccia rock walls; mesic sites. 2500-2800 m.
Harmonia doris-nilesiae Niles' harmonia	None/None G2G3 / S2S3 1B.1	Lower montane coniferous forest, chaparral, cismontane woodland. Serpentine barrens. 650-1660 m.
Harmonia stebbinsii Stebbins' harmonia	None/None G2 / S2 1B.2	Chaparral, lower montane coniferous forest. Serpentine soils; often along roads. 120-1585 m.

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Helianthus exilis serpentine sunflower	None/None G3Q / S3 4.2	Chaparral, cismontane woodland. Serpentine seeps. 150-1525 m.
Hesperocyparis bakeri Baker cypress	None/None G4 / S4 4.2	Lower montane coniferous forest, chaparral. Mixed-evergreen forests, open slopes, flats, on serpentine or volcanic substrates. 820-1995 m.
Heteranthera dubia water star-grass	None/None G5 / S2 2B.2	Marshes and swamps. Alkaline, still or slow-moving water. Requires a pH of 7 or higher, usually in slightly eutrophic waters. 15-1510 m.
Horkelia daucifolia var. indicta Jepson's horkelia	None/None G4T1 / S1 1B.1	Cismontane woodland. Quaternary pyroclastic flows, volcanic or clay soils. Vernally mesic, openings. 240-670 m.
Howellanthus dalesianus Scott Mountain howellanthus	None/None G3 / S3 4.3	Lower montane coniferous forest, meadows, upper montane coniferous forest, subalpine coniferous forest, meadows and seeps. Dry meadows or openings in coniferous forest community on serpentine soil. 1025-2105 m.
Hulsea nana little hulsea	None/None G4 / S3 2B.3	Alpine boulder and rock field, subalpine coniferous forest. Rocky or gravelly sites; on volcanic substrates. 1705-3170 m.
Iliamna bakeri Baker's globe mallow	None/None G4 / S3 4.2	Chaparral, Great Basin scrub, pinyon juniper woodland, lower montane coniferous forest. Rocky loam or volcanic soils. 1000-2500 m.

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Ivesia longibracteata Castle Crags ivesia	None/None G1 / S1 1B.3	Lower montane coniferous forest. Crevices in granitic cliffs. About 1200-1400 m.
Juncus digitatus finger rush	None/None G1 / S1 1B.1	Cismontane woodland (openings), lower montane coniferous forest (openings), vernal pools. In full sun, in the vernally damp ground of seeps, vernal pools and swales on gentle slopes over volcanic bedrock. 600-790 m.
Juncus hemiendytus var. abjectus Center Basin rush	None/None G5T5 / S4 4.3	Subalpine coniferous forest, meadows and seeps. Mesic sites. 1400-3400 m.
Juncus leiospermus var. leiospermus Red Bluff dwarf rush	None/None G2T2 / S2 1B.1	Chaparral, valley and foothill grassland, cismontane woodland, vernal pools, meadows and seeps. Vernally mesic sites. Sometimes on edges of vernal pools. 30-1025 m.
Juncus luciensis Santa Lucia dwarf rush	None/None G3 / S3 1B.2	Vernal pools, meadows and seeps, lower montane coniferous forest, chaparral, Great Basin scrub. Vernal pools, ephemeral drainages, wet meadow habitats and streamsides. 300-2040 m.
Lathyrus sulphureus var. argillaceus dubious pea	None/None G5T1T2 / S1S2 3	Cismontane woodland, lower montane coniferous forest, upper montane coniferous forest. 150-930 m.
Legenere limosa legenere	None/None G2 / S2 1B.1	Vernal pools. In beds of vernal pools. 1-880 m.

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Leptosiphon latisectus broad-lobed leptosiphon	None/None G4 / S4 4.3	Broad-leafed upland forest, cismontane woodland. 170-1500 m.
Lewisia cantelovii Cantelow's lewisia	None/None G3 / S3 1B.2	Broad-leafed upland forest, lower montane coniferous forest, cismontane woodland, chaparral. Mesic rock outcrops and wet cliffs, usually in moss or clubmoss; on granitics or sometimes on serpentine. 330-1370 m.
Lewisia cotyledon var. heckneri Heckner's lewisia	None/None G4T3 / S3 1B.2	Lower montane coniferous forest. Rocky places. 225-2100 m.
Lewisia cotyledon var. howellii Howell's lewisia	None/None G4T4Q / S2 3.2	Chaparral, cismontane woodland, lower montane coniferous forest, broad-leafed upland forest. Rocky sites; bare shale outcrops in shallow soils. 150-2010 m.
Lewisia kelloggii ssp. hutchisonii Hutchison's lewisia	None/None G3G4T3Q / S3 3.2	Upper montane coniferous forest. On slate; in openings. Sometimes on rhyolite tuff. 765-2365 m.
Lewisia kelloggii ssp. kelloggii Kellogg's lewisia	None/None G3G4T2T3Q / S2S3 3.2	Upper montane coniferous forest. Often on slate, sometimes rhyolite tuff. In openings, on ridgetops. 1465-2365 m.
Lilium rubescens redwood lily	None/None G3 / S3 4.2	Chaparral, lower montane coniferous forest, broad-leafed upland forest, upper montane coniferous forest, north coast coniferous forest. Sometimes on serpentine. 30-1910 m.

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Limnanthes floccosa ssp. bellingeriana Bellinger's meadowfoam	None/None G4T2T3 / S1 1B.2	Meadows and seeps, cismontane woodland. Vernally wet sites including wet edges of meadows, and damp, stony flats. 300-1100 m.
Limnanthes floccosa ssp. floccosa woolly meadowfoam	None/None G4T4 / S3 4.2	Chaparral, cismontane woodland, valley and foothill grassland, vernal pools. Vernally wet areas, ditches, and ponds. 60-1335 m.
Lomatium tracyi Tracy's lomatium	None/None G4 / S4 4.3	Lower montane coniferous forest, upper montane coniferous forest. On serpentine soils. Often on slopes, in Jeffrey pine woodland. 455-1950 m.
Lupinus croceus var. pilosellus saffron-flowered lupine	None/None G3T3 / S3 4.3	Lower montane coniferous forest. Slopes and hillsides. 835-1700 m.
Lycopus uniflorus northern bugleweed	None/None G5 / S4 4.3	Bogs and fens, marshes and swamps. Wet places. 5-2000 m.
Lysimachia thyrsiflora tufted loosestrife	None/None G5 / S1? 2B.3	Meadows and seeps, marshes and swamps, upper montane coniferous forest. Mesic sites; known from lake margins, along streams and in wet meadows. 975-1675 m.
Meesia triquetra three-ranked hump moss	None/None G5 / S4 4.2	Bogs and fens, meadows and seeps, upper montane coniferous forest, subalpine coniferous forest. Moss growing on mesic soil. Saturated bogs, fens, seeps and meadows in coniferous to subalpine forests. 1300-2955 m.

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Meesia uliginosa broad-nerved hump moss	None/None G5 / S3 2B.2	Meadows and seeps, bogs and fens, upper montane coniferous forest, subalpine coniferous forest. Moss on damp soil. Often found on the edge of fens or raised above the fen on hummocks/shrub bases. 1095-2805 m.
Mertensia longiflora long bluebells	None/None G4? / S2 2B.2	Great Basin scrub, lower montane coniferous forest. 1325-1830 m.
Muhlenbergia jonesii Jones' muhly	None/None G3 / S3 4.3	Lower montane coniferous forest, upper montane coniferous forest. 1130-2160 m.
Navarretia heterandra Tehama navarretia	None/None G4 / S4 4.3	Vernal pools, valley and foothill grassland. Mesic sites in grassland or vernal pools. 30-1010 m.
Navarretia subuligera awl-leaved navarretia	None/None G4 / S4 4.3	Cismontane woodland, lower montane coniferous forest, chaparral. Rocky plains and slopes; mesic sites. 150-1100 m.
Nemophila breviflora Great Basin nemophila	None/None G4G5 / S3 2B.3	Great Basin scrub, meadows and seeps, upper montane coniferous forest. Mesic sites. 880-2430 m.
Neviusia cliftonii Shasta snow-wreath	None/None G2 / S2 1B.2	Cismontane woodland, lower montane coniferous forest, riparian woodland. Shaded, north-facing, or sheltered canyons. Sometimes on limestone. Mesic areas. 330-540 m.

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Orcuttia tenuis slender Orcutt grass	Threatened/Endangered G2 / S2 1B.1	Vernal pools. Often in gravelly substrate. 25-1755 m.
Packera indecora rayless mountain ragwort	None/None G5 / S2? 2B.2	Meadows and seeps. Mesic sites. 1705-3050 m.
Panicum acuminatum var. thermale Geysers panicum	None/Endangered G5T2Q / S2 1B.2	Closed-cone coniferous forest, riparian forest, valley and foothill grassland. Usually around moist, warm soil in the vicinity of hot springs. 455-2470 m.
Parnassia cirrata var. cirrata San Bernardino grass-of-Parnassus	None/None G5T2 / S2 1B.3	Lower montane coniferous forest, upper montane coniferous forest, meadows and seeps. Mesic sites, streamsides, sometimes calcareous. 1245-2440 m.
Parnassia cirrata var. intermedia Cascade grass-of-Parnassus	None/None G5T4 / S3 2B.2	Meadows and seeps, bogs and fens. Rocky serpentine soil. 775-2000 m.
Paronychia ahartii Ahart's paronychia	None/None G3 / S3 1B.1	Valley and foothill grassland, vernal pools, cismontane woodland. Stony, nearly barren clay of swales and higher ground around vernal pools. 30-510 m.
Penstemon cinicola ashy-gray beardtongue	None/None G4 / S3 4.3	Lower montane coniferous forest, meadows and seeps, upper montane coniferous forest. Volcanic sands, forest edges, and pumice meadows and slopes. 730-2685 m.

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Penstemon filiformis thread-leaved beardtongue	None/None G3 / S3 1B.3	Cismontane woodland, lower montane coniferous forest. Dry stony sites, grassy openings, & meadows, often along trails & logging roads; sometimes on serpentine. 180-2135 m.
Penstemon heterodoxus var. shastensis Shasta beardtongue	None/None G5T3 / S3 4.3	Lower montane coniferous forest, upper montane coniferous forest, broad-leafed upland forest, chaparral, meadows and seeps. Gravelly volcanic substrates, sandy granite, moist grassy meadows. 1100-2400 m.
Phlox muscoides squarestem phlox	None/None G4G5 / S3 2B.3	Alpine boulder and rock field, subalpine coniferous forest, Great Basin scrub. Open rocky slopes. 1280-2700 m.
Picea engelmannii Engelmann spruce	None/None G5 / S2 2B.2	Upper montane coniferous forest. Slopes and hillsides, often on alluvial terrace. 1065-2135 m.
Piperia colemanii Coleman's rein orchid	None/None G4 / S4 4.3	Chaparral, lower montane coniferous forest. Often in sandy soils. 1200-2300 m.
Piperia leptopetala narrow-petaled rein orchid	None/None G4 / S4 4.3	Cismontane woodland, lower montane coniferous forest, upper montane coniferous forest. 380-2225 m.
Poa sierrae Sierra blue grass	None/None G3 / S3 1B.3	Lower montane coniferous forest. Shady, moist, rocky slopes. Often in canyons. 365-1500 m.

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Pogogyne floribunda profuse-flowered pogogyne	None/None G3G4 / S3 4.2	Vernal pools. Heavy clay soil; surrounding community often pine/juniper or sagebrush scrub. 945-1745 m.
Polemonium pulcherrimum var. shastense Mt. Shasta sky pilot	None/None G5T2 / S2 1B.2	Alpine boulder and rock fields, subalpine coniferous forest, upper montane coniferous forest. Sometimes volcanic. 2175-3900 m.
Polygonum bidwelliae Bidwell's knotweed	None/None G4 / S4 4.3	Chaparral, cismontane woodland, valley and foothill grassland. Bare open areas on flats and volcanic outcrops; often in clay soils. 60-1200 m.
Polygonum polygaloides ssp. esotericum Modoc County knotweed	None/None G4G5T3 / S3 1B.1	Great Basin scrub, vernal pools, lower montane coniferous forest, meadows and seeps. Edges of seasonal lakes and ponds with Deschampsia, Navarretia, etc. 880-2225 m.
Polystichum kruckebergii Kruckeberg's sword fern	None/None G4 / S4 4.3	Upper montane coniferous forest, subalpine coniferous forest. Rocky cliffs and crevices. 2100-3200 m.
Polystichum lonchitis northern holly fern	None/None G5 / S3 3	Subalpine coniferous forest, upper montane coniferous forest. Moist shady crevices in granite or carbonate cliffs. 1800-2600 m.
Potamogeton epihydrus Nuttall's ribbon-leaved pondweed	None/None G5 / S2S3 2B.2	Marshes and swamps. Shallow water, ponds, lakes, streams, irrigation ditches. 295-2640 m.

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Potamogeton praelongus white-stemmed pondweed	None/None G5 / S2 2B.3	Marshes and swamps. Deep water, lakes. 1800-3000 m.
Potamogeton zosteriformis eel-grass pondweed	None/None G5 / S3 2B.2	Marshes and swamps. Ponds, lakes, streams. 90-2135 m.
Potentilla newberryi Newberry's cinquefoil	None/None G3G4 / S2S3 2B.3	Marshes and swamps, vernal pools. Receding shorelines; drying wetland margins. 1285-1930 m.
Ptilidium californicum Pacific fuzzwort	None/None G4G5 / S3S4 4.3	Lower montane coniferous forest, upper montane coniferous forest. Epiphytic on fallen and decaying logs and stumps. Rarely on boulders over humus. 340-1860 m.
Puccinellia howellii Howell's alkali grass	None/None G1 / S1 1B.1	Meadows and seeps. Mineralized soils around mineral springs and seeps. One site known: 485 m.
Ribes roezlii var. amictum hoary gooseberry	None/None G5T4 / S4 4.3	Broad-leafed upland forest, cismontane woodland, lower montane coniferous forest, upper montane coniferous forest. 120-2300 m.
Sabulina rosei peanut sandwort	None/None G3 / S3 4.2	Lower montane coniferous forest. Gravelly serpentine slopes, sometimes with ponderosa pine, Jeffrey pine. 750-1525 m.

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Sagittaria sanfordii Sanford's arrowhead	None/None G3 / S3 1B.2	Marshes and swamps. In standing or slow-moving freshwater ponds, marshes, and ditches. 0-605 m.
Schoenoplectus subterminalis water bulrush	None/None G4G5 / S3 2B.3	Marshes and swamps, bogs and fens. Montane lake margins, in shallow water. 750-2250 m.
Scutellaria galericulata marsh skullcap	None/None G5 / S2 2B.2	Marshes and swamps, lower montane coniferous forest, meadows and seeps. Swamps and wet places. 0-1950 m.
Sedum laxum ssp. flavidum pale yellow stonecrop	None/None G5T4Q / S4 4.3	Broad-leafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, upper montane coniferous forest. Serpentine or basalt outcrops. 455-2000 m.
Sedum obtusatum ssp. paradisum Canyon Creek stonecrop	None/None G4G5T3 / S3 1B.3	Chaparral, lower montane coniferous forest, subalpine coniferous forest, broad-leafed upland forest. Rock faces, in crevices of exposed granite. 850-1890 m.
Sidalcea celata Redding checkerbloom	None/None G2G3 / S2S3 3	Cismontane woodland. Sometimes on serpentine. 135-1525 m.
Sidalcea gigantea giant checkerbloom	None/None G3 / S3 4.3	Lower montane coniferous forest, upper montane coniferous forest, meadows and seeps. Moist areas, such as in meadows or at the edges of wet meadows, along creeks, or at seeps and springs. 670-1950 m.

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Silene campanulata ssp. campanulata Red Mountain catchfly	None/Endangered G5T3Q / S3 4.2	Lower montane coniferous forest, chaparral. Rocky dry shallow serpentine soil. 425-1235 m.
Silene occidentalis ssp. longistipitata long-stiped campion	None/None G4T2Q / S2 1B.2	Chaparral, lower montane coniferous forest, upper montane coniferous forest. 1000-2000 m.
Silene occidentalis ssp. occidentalis western campion	None/None G4T3 / S3 4.3	Lower montane coniferous forest, upper montane coniferous forest, chaparral. Open, dry sites. 1230-2090 m.
Silene oregana Oregon campion	None/None G4 / S2 2B.2	Great Basin scrub, subalpine coniferous forest. 1675-2930 m.
Silene salmonacea Klamath Mountain catchfly	None/None G3 / S3 1B.2	Lower montane coniferous forest. Openings, usually serpentine. 775-1345 m.
Silene suksdorfii Cascade alpine campion	None/None G4 / S3 2B.3	Alpine boulder and rock field, subalpine coniferous forest, upper montane coniferous forest. Rocky, volcanic soils. 1745-3050 m.
Smelowskia ovalis alpine smelowskia	None/None G5 / S1 1B.2	Alpine boulder and rock field. Steep loose talus slopes. 2590-3050 m.

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Smilax jamesii English Peak greenbrier	None/None G3G4 / S3S4 4.2	North coast coniferous forest, broad-leafed upland forest, lower montane coniferous forest, upper montane coniferous forest, marshes and swamps. Along streams and lake margins, sometimes mesic depressions. 505-1975 m.
Sparganium natans small bur-reed	None/None G5 / S3S4 4.3	Marshes and swamps, bogs and fens. Lake and pond margins. 1645-2500 m.
Stachys pilosa hairy marsh hedge-nettle	None/None G5 / S3 2B.3	Great Basin scrub, meadows and seeps. Mesic sites. 785-2045 m.
Stellaria longifolia long-leaved starwort	None/None G5 / S2 2B.2	Bogs and fens, meadows and seeps, riparian woodland, upper montane coniferous forest. Moist areas. 900-1830 m.
Stellaria obtusa obtuse starwort	None/None G5 / S4 4.3	Upper montane coniferous forest, lower montane coniferous forest, riparian woodland. Streams or seeps in conifer forest. 150-2135 m.
Streptanthus drepanoides sickle-fruit jewelflower	None/None G4 / S4 4.3	Chaparral, lower montane coniferous forest, cismontane woodland. Open serpentine slopes and roadcuts. 275-1660 m.
Streptanthus longisiliquus long-fruit jewelflower	None/None G3 / S3 4.3	Lower montane coniferous forest, cismontane woodland. Openings. 715-1500 m.

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Stuckenia filiformis ssp. alpina slender-leaved pondweed	None/None G5T5 / S3 2B.2	Marshes and swamps. Shallow, clear water of lakes and drainage channels. 300-2150 m.
Subularia aquatica ssp. americana water awlwort	None/None G5T5 / S4 4.3	Upper montane coniferous forest. Lake margins, wet sites. 1900-3100 m.
Thelypodium brachycarpum short-podded thelypodium	None/None G3 / S3 4.2	Chaparral, lower montane coniferous forest, meadows and seeps. Serpentine gravel and alkaline soils. In Oregon, on the alluvial clays of river plains and lake basins. 670-2560 m.
Thelypodium howellii ssp. howellii Howell's thelypodium	None/None G2T2 / S1 1B.2	Great Basin scrub, meadows and seeps. Moist alkaline meadows. 1005-2045 m.
Thermopsis californica var. argentata silvery false lupine	None/None G4T4 / S4 4.3	Lower montane coniferous forest, pinyon-juniper woodland. 665-1595 m.
Thermopsis gracilis slender false lupine	None/None G4 / S4 4.3	Meadows and seeps, lower montane coniferous forest, north coast coniferous forest, chaparral, cismontane woodland. 100-1720 m.
Trichodon cylindricus cylindrical trichodon	None/None G4 / S2 2B.2	Broad-leafed upland forest, upper montane coniferous forest. Moss growing in openings on sandy or clay soils on roadsides, stream banks, trails or in fields. 50-1500 m.

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Trifolium andersonii ssp. andersonii Anderson's clover	None/None G5T5 / S4 4.3	Great Basin scrub, lower montane coniferous forest, meadows and seeps, pinyon-juniper woodland. 900-2440 m.
Trifolium siskiyouense Siskiyou clover	None/None GH / SH 1B.1	Meadows and seeps. Mesic sites. 880-1500 m.
Trillium ovatum ssp. oettingeri Salmon Mountains wakerobin	None/None G5T3 / S3 4.2	Lower montane coniferous forest, upper montane coniferous forest, riparian scrub. Moist shady spots along streams and near seeps, often in heavily forested areas. 855-2025 m.
Triteleia crocea var. crocea yellow triteleia	None/None G4T4 / S3S4 4.3	Lower montane coniferous forest. Decomposed granite and serpentine soils. 1200-2000 m.
Triteleia crocea var. modesta Trinity Mountains triteleia	None/None G4T3 / S3 4.3	Lower montane coniferous forest. Dry slopes; serpentine soils. 1200-2000 m.
Tuctoria greenei Greene's tuctoria	Endangered/Rare G1 / S1 1B.1	Vernal pools. Vernal pools in open grasslands. 25-1325 m.
Utricularia minor lesser bladderwort	None/None G5 / S3 4.2	Bogs and fens, shallow freshwater marshes. Calcium-rich water. 800-2900 m.

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CDFW	Habitat Requirements
Vaccinium shastense ssp. shastense Shasta huckleberry	None/None G4T3 / S3 1B.3	Chaparral, cismontane woodland, lower montane coniferous forest, riparian forest, subalpine coniferous forest. Acidic, mesic. Often on streambanks; sometimes on rocky outcrops, seeps, roadsides, and disturbed areas. 325-1220 m.
Veratrum insolitum Siskiyou false-hellebore	None/None G4 / S4 4.3	Lower montane coniferous forest, chaparral. Ridgetops, streamsides, and hillsides; often on serpentine, clay soils. 45-1635 m.
Viburnum ellipticum oval-leaved viburnum	None/None G4G5 / S3? 2B.3	Chaparral, cismontane woodland, lower montane coniferous forest. 215-1400 m.
Viola palustris alpine marsh violet	None/None G5 / S1S2 2B.2	Coastal scrub, bogs and fens. Swampy, shrubby places in coastal scrub or coastal bogs. 0-150 m.

FE = Federally Endangered FT = Federally Threatened

SE = State Endangered ST = State Threatened SR = State Rare

G-Rank/S-Rank = Global Rank and State Rank as per NatureServe and CDFW's CNDDB RareFind3.

CRPR (CNPS California Rare Plant Rank):

1A=Presumed Extinct in California

1B=Rare, Threatened, or Endangered in California and elsewhere

2A=Plants presumed extirpated in California, but more common elsewhere

2B=Plants Rare, Threatened, or Endangered in California, but more common elsewhere

3=Need more information (a Review List)

4=Plants of Limited Distribution (a Watch List)

CRPR Threat Code Extension:

.1=Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)

.2=Fairly endangered in California (20-80% occurrences threatened)

.3=Not very endangered in California (<20% of occurrences threatened)

Sensitive Communities and Critical Habitats Documented within Shasta County

Communities Considered Sensitive by the CDFW
Alkali Seep
Darlingtonia Seep
Great Valley Cottonwood Riparian Forest
Great Valley Mixed Riparian Forest
Great Valley Valley Oak Riparian Forest
Great Valley Willow Scrub
Northern Basalt Flow Vernal Pool
Northern Interior Cypress Forest
Critical Habitat
Northern spotted owl (*Strix occidentalis caurina*)
Central Valley spring-run Chinook (*Oncorhynchus tshawytscha*)
Central Valley winter-run Chinook (*Oncorhynchus tshawytscha*)
Central Valley steelhead (*Oncorhynchus mykiss*)
Vernal pool fairy shrimp (*Branchinecta lynchi*)
Vernal pool tadpole shrimp (*Lepidurus packardi*)
Slender Orcutt grass (*Orcuttia tenuis*)
Greene's tuctoria (*Tuctoria greenei*)

Sources: CNDDB (CDFW, 2017); USFWS, Critical Habitat Portal (2017)

Notice of Preparation for a Supplemental Environmental Impact Report

2018 Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS)
for the Shasta Region

Notice is hereby given that the Shasta Regional Transportation Agency (SRTA) will be the lead agency for the preparation of a Supplemental Environmental Impact Report (SEIR) for the 2018 Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS) for the Shasta Region. Pursuant to section 15082 of the California Environmental Quality Act (CEQA), SRTA is soliciting views from your agency as to the scope and content of the environmental information which is germane to your agency's statutory responsibilities relating to the proposed project. SRTA will also accept written comments concerning the scope and content of the EIR from interested persons of the public and organizations concerned with the project. The Final EIR for the 2015 RTP was certified in June 2015. The Final EIR can be found here at the following link http://www.srta.ca.gov/142/Regional-Transportation-Plan under the heading: Final 2015 Program Environmental Impact Report Documents for the 2015 RTP/SCS.

The SEIR for the 2018 RTP/SCS will be a supplement to the 2015 RTP Program EIR (State Clearinghouse # 2014022018). This is the appropriate level of environmental documentation for the 2018 RTP/SCS because changes to existing conditions (including regulatory updates), the transportation project list, and land use scenario evaluated in the 2018 RTP/SCS are expected to be minor relative to the 2015 RTP and would not substantially increase the severity of impacts previously identified. As stated in the State CEQA Guidelines, Section 15163(b), the supplement to the EIR need contain only the information necessary to make the previous EIR adequate for the project, as revised. In addition, a more detailed or project-level environmental review (if required) of the projects included in the RTP/SCS will be conducted by the responsible agencies, including Caltrans, Shasta County, and the cities within the County, before each project is approved for construction and implementation.

The project description, location, environmental review requirements, and probable environmental issues to be addressed in the SEIR are attached. An Initial Study has been prepared for the SEIR and is available for review online at http://www.srta.ca.gov/300/2018-RTP.

The 2018 RTP/SCS will address all transportation modes including motor vehicles, transit (commuter and local), rail, goods movement (rail freight and trucking), bicycle and pedestrian facilities, aviation systems, intelligent transportation systems (ITS), and transportation systems management (TSM) programs and projects within the horizon year of 2040. Specifically, the RTP component is intended to meet the region's transportation goals regarding current and future mobility needs through the identification of policies, actions, and a list of projects which will address these needs. The RTP will guide the development of the Regional and Federal Transportation Improvement

Programs (RTIP and FTIP) as well as other transportation programming documents and plans throughout Shasta County.

The 2018 RTP will include a Sustainable Communities Strategy (SCS) element, as required by California Senate Bill 375, the Sustainable Communities and Climate Protection Act of 2008 (SB 375). SB 375 mandates reductions in regional greenhouse gas (GHG) emissions from cars and light trucks in accordance with reduction targets established by the California Air Resources Board (CARB) for each of the State's metropolitan planning organizations (MPOs). As the MPO for Shasta County, SRTA will prepare an SCS that demonstrates how GHG reduction targets will be met through integrated land use, housing, and transportation planning. SRTA will develop several possible growth scenarios to evaluate the effects of various land use and transportation choices and recommend a scenario that meets SB 375 targets.

SRTA will host an EIR Scoping Meeting for the 2018 RTP/SCS. The purpose of the Scoping meeting is to solicit input on the scope and content of the environmental analysis that will be included in the Draft SEIR for the 2018 RTP/SCS.

The date, time and location of the meeting are as follows:

Wednesday, February 28, 2018 at 3:30 PM
Shasta Regional Transportation Agency
The Salmon Room
1255 East Street, Suite 202
Redding, CA 96001

Future public workshops will be held to discuss development of the draft 2018 Regional Transportation Plan and Sustainable Communities Strategy.

Because of the time-sensitive nature of the regional transportation planning process, we request your response at the earliest possible date. Please mail comments to Sean Tiedgen at **SRTA, 1255 East Street, Suite 202, Redding, CA 96001** or e-mail comments to stiedgen@srta.ca.gov no later than **5:00 PM on Friday, March 9, 2018.** Please identify the name, phone number, and email address of a contact person at your agency. Comments from the public must also include name, phone number, and email or postal address.

For more information, visit http://www.srta.ca.gov/ or call 530-262-6190.

PROJECT DESCRIPTION AND SCOPE OF ENVIRONMENTAL ANALYSIS

Project Title

Supplemental EIR for the 2018 Regional Transportation Plan and Sustainable Communities Strategy for the Shasta Region

Proposed Action

An update to the 2015 Regional Transportation Plan for Shasta County

Project Location

The geographical extent of the proposed 2018 RTP/SCS includes the area within the limits of Shasta County, California, including the incorporated cities of Anderson, Redding and Shasta Lake, and all unincorporated areas under the jurisdiction of the County of Shasta. Capital improvement projects identified in the 2018 RTP/SCS may be

located on Interstate 5 (I-5), State highways, county roads and local streets, as well as on airport property, transit district property, federal lands, State lands, and tribal lands.

Project Description

The proposed 'project' is the 2018 RTP/SCS for the Shasta Region, which updates SRTA's previous 2015 RTP, adopted in June 2015. SRTA is in the process of revising the RTP/SCS as required by California Government Code Section 65080 et seq., and federal guidelines pursuant to the federal transportation bills: Moving Ahead for Progress in the 21st Century Act (MAP-21) and Fixing America's Surface Transportation Act (FAST Act). The 2018 RTP/SCS consists of a compendium of projects, policies, and programs that aim to meet the transportation needs of the region while reducing congestion and improving air quality. SRTA is required by federal law to develop an RTP that determines the needs of the transportation system and prioritizes proposed transportation projects. The RTP is also necessary to obtain and allocate federal funding for regional transportation projects. The SCS component seeks to coordinate local land use and transportation systems within the region to reduce emissions from cars and light trucks.

The 2018 RTP/SCS reflects changes in legislative requirements, local land use policies, and resource constraints since the most recent RTP was adopted on June 30, 2015. The 2018 update to the RTP/ SCS is focused on implementation of the 2015 RTP, with minor updates to ensure consistency with federal, state and local planning requirements. The most notable changes that impact this RTP update include:

- California's adoption of safety-related performance measures and targets in July and August 2017 as required under the MAP-21 and FAST Act transportation bills. This also requires MPO targets to be adopted within 180 days after State targets and they must be incorporated into the RTP, RTIP and FTIP;
- Draft guidelines from the Governor's Office of Planning and Research for SB 743 (Steinberg, 2013), which is nearing adoption;
- New funding for transportation projects through California's recently approved Road Repair and Accountability Act of 2017 (SB 1) for the next ten years;
- Minor updates to transportation projects and land use development (specifically focused on growth that has taken place since the last RTP); and
- Addition of components to the RTP to address freight and alternative fuel vehicles, including electric vehicles and autonomous vehicles.

The 2018 RTP/SCS shows how SRTA will meet the transportation needs of the region for the period from 2018 to 2040, considering existing and projected future land use patterns as well as forecasted population and job growth. The 2018 RTP/SCS plans for and programs revenues expected to be available to SRTA from all transportation funding sources over the course of the planning period. It identifies and prioritizes expenditures of anticipated funding for transportation projects that involve all transportation modes: highways; streets and roads; transit; rail; active transportation (bicycle and pedestrian); aviation; as well as transportation demand management (TDM) and transportation system management (TSM). The 2018 RTP/SCS project list will update the 2015 RTP project list by removing projects that have been completed since 2015, modifying some projects that continue to be on the list based on new information, and adding approximately 35 net new minor projects to the list. None of the modified or new projects on the 2018 RTP/SCS list would be substantially different in terms of geographical location, type of project, or size of project from those on the 2015 RTP list. In addition, the land use scenario envisioned by the 2018 RTP/SCS is similar to that contained in the 2015 RTP. Therefore, it is anticipated that the 2018 RTP/SCS would result in similar impacts to those projects contained in the 2015 RTP.

RTP/ SCS Framework

The 2018 RTP/SCS will include the following key elements:

- A description of the region's current and future challenges in accommodating growth and meeting mobility needs.
- A fiscally-constrained transportation network that consists of US and State Highways, local roadways, bicycle and pedestrian facilities, public transit, airports and passenger and freight rail.
- An integrated transportation and land use strategy for accommodating the region's future employment and housing needs that protects sensitive habitat and resource areas.
- Intelligent Transportation System (ITS) and Transportation Demand Management (TDM) measures that improve system efficiency by influencing individual travel behavior.
- A financial plan that lays out the funding sources and mechanisms required to implement the strategies of the RTP/SCS. The financial plan will also consider additional innovative financing strategies that if implemented can carry out additional needed projects and programs.
- A transportation system performance evaluation that lays out the ability of the proposed strategies to address challenges.
- Additional strategies and "Planned Projects" that have little or no money programmed for funding. Funding sources have, however, been identified and the projects could be implemented within the timeframe of the RTP/SCS if they receive funding.

Sustainable Communities Strategy

The 2018 RTP will include a SCS component pursuant to the requirements of SB 375. Under SB 375, MPOs such as SRTA are required to develop an SCS as part of the RTP, showing how the region intends to reduce, to the extent feasible, GHG emissions from cars and light trucks to meet a specified target for 2020 and 2035. For the 2015 RTP, the CARB issued SRTA a regional GHG target of no increase in per capita GHG emissions for the planning years 2020 and 2035, as compared to baseline per capita emissions levels in 2005. The regional GHG reduction targets for the 2018 RTP/SCS will remain the same as the 2015 RTP due to no new targets being adopted by CARB at this time. SRTA recognizes that CARB is working on an update to the targets, has proposed new targets for years 2020 and 2035 and is anticipating presenting targets for adoption in March or April 2018. It is SRTA's understanding that the new targets, when adopted, may be in effect for SRTA's third RTP/SCS, which will be due in 2022.

If SB 375 GHG reduction targets cannot be feasibly met, an Alternative Planning Strategy (APS) will be prepared by SRTA to show how the targets could be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies without the limitations of fiscal or other constraints. SRTA's intent is to achieve these targets with the 2018 RTP/SCS. The GHG reductions are to be derived from fewer and/or shorter per capita automobile and light truck trips resulting from integrated transportation, land use, housing and environmental planning.

Furthermore, SB 375 requires that the SCS shall identify general land uses, residential densities, and building intensities, as well as areas to house future residents (see California Government Code Section 65080(b)(2)(B) for the full list of SB 375 requirements).

Issues to Be Addressed in the EIR

Based on the findings of the Initial Study (provided at http://www.srta.ca.gov/300/2018-RTP), the categories listed below have been identified for further analysis in the 2018 RTP/SCS SEIR.

- Air Quality
- Greenhouse Gas Emissions
- Hazards – Wildland Fires
- Transportation and Circulation
- Tribal Cultural Resources

In addition, the SEIR will address cumulative impacts, growth inducing impacts, alternatives, and other issues required by CEQA. Through the NOP, SRTA is seeking input on further categories of analysis or areas of focus within the specified categories above.

CEQA Streamlining

SB 375 contains CEQA incentives, or streamlining provisions at the project level, to encourage the implementation of coordinated land use and transportation planning within the RTP/SCS. Certain types of development projects (i.e., transit priority projects or residential/mixed use residential projects, as defined by the statute) may qualify for CEQA streamlining if the requisite criteria are met. Generally, this means that the proposed project seeking to utilize the CEQA incentives is determined to be consistent with an approved SCS. Consistency will be determined by the local jurisdiction that is the lead agency for each project to be streamlined. SRTA's primary role is to include appropriate information in the SCS that will allow a jurisdiction to make a consistency determination with respect to appropriate streamlining options on a project by project basis. The programs and projects to be included in the 2018 RTP/SCS will be addressed programmatically in the SEIR. This will allow SRTA to analyze the regional or general impacts of the program and projects. A more detailed or project level environmental assessment, if required, will be provided by the various responsible agencies, including Caltrans, Shasta County, and the cities within the County, for the various projects included in the RTP, before the projects are approved for construction.

Figure 1 2018 RTP/SCS Plan Area

Imagery and basemap layers provided by ESRI and its licensors © 2017.

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Region 1 – Northern
601 Locust Street
Redding, CA 96001
www.wildlife.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

March 7, 2018

Sean Tiedgen
Senior Transportation Planner
Shasta Regional Transportation Agency
1255 East Street, Suite 202
Redding, CA 96001

Subject: Review of the Notice of Preparation for the 2018 Regional Transportation Plan (RTP) and Sustainable Communities Strategy (SCS) for the Shasta Region, State Clearinghouse Number 2014022018, Shasta County

Dear Mr. Tiedgen:

The California Department of Fish and Wildlife (Department) has reviewed the Notice of Preparation (NOP) dated February 2018, for the above-referenced project (Project). As a trustee for the State's fish and wildlife resources, the Department has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants and their habitat. As a responsible agency, the Department administers the California Endangered Species Act and other provisions of the Fish and Game Code that conserve the State's fish and wildlife public trust resources. The Department offers the following comments and recommendations on this Project in our role as a trustee and responsible agency pursuant to the California Environmental Quality Act, California Public Resources Code §21000 et seq.

Project Description

The Project as proposed is as follows:

> "*The Shasta Regional Transportation Agency (SRTA), as both the federally-designated metropolitan planning organization (MPO) and the state-designated regional transportation planning agency (RTPA) for Shasta County, is required by federal and state law to prepare a long-range (at least 20 years) transportation planning document, known as a Regional Transportation Plan (RTP). The RTP is an action-oriented document used to achieve a coordinated and balanced regional transportation system.*
>
> *The 2018 RTP/SCS reflects changes in legislative requirements, local land use policies, and resource constraints since the most*

recent RTP was adopted on June 30, 2015.

Comments and Recommendations

The Department provided comments to the 2015 RTP EIR on May 12, 2015. The Department appreciates that many of those comments were incorporated into this 2018 RTP/SCS Initial Study. The Department recognizes that the 2018 RTP/SCS EIR is programmatic and the mitigation measures were designed to cover a wide variety of special status plants, animals, and sensitive communities. The Department has the following comments on the mitigation measures related to biological resources:

Mitigation Measure B-1(g)

The first bullet point states that coverboard surveys will be completed within three months of the start of construction. The Department is concerned this is the only type of survey method to be used for reptiles and amphibians. In order to detect a number of different species, multiple methods may have to be employed. Also, the time of year when the coverboards are placed will affect detection success. For instance, it is highly unlikely that you will get reptiles or amphibians underneath a coverboard during elevated temperatures typical of summers in Redding. The Department recommends that the mitigation measure include other types of survey methodologies.

The second bullet point, last sentence should read as follows:

*A report of the pre-construction survey shall be submitted to the lead agency for their review and **written** approval prior to the start of construction.*

Mitigation Measure B-1(h)

Mitigation Measure B-1(h) lists the bird nesting season as February 1 through September 15. The Department typically uses February 1 through August 31.

Mitigation Measure B-3(a)

The last sentence of Mitigation Measure B-3(a) should be as follows:

*Lighting for trails and bridges that would overspill onto rivers and/or streams that are known to support anadromous fish shall be approved **in writing** by CDFW.*

If you have any questions, please contact Amy Henderson, Environmental Scientist, at (530) 225-2779, or by email at Amy.Henderson@wildlife.ca.gov.

Sincerely,

Michael R. Harris
Interior Conservation Planning Supervisor

ec: State Clearinghouse
state.clearinghouse@opr.ca.gov

Amy Henderson
California Department of Fish and Wildlife
Amy.Henderson@wildlife.ca.gov

Appendix B

2018 RTP/SCS Projects List

TABLE
Shasta Regional Transportation Agency
Summary of Projects - Bridge
SHASTA COUNTY

Project Number	REGIONAL TRANSPORTATION PROJECTS	SHORT TERM TOTAL EST COST OF PROJECT	LONG TERM TOTAL EST COST OF PROJECT	PROJECT BAND	PROJECT TYPE (PROJECT INTENT)	EXPECTED FUNDING SOURCES
1	Spring Creek Road @ Fall River - Replace Bridge	$ 2,122,000		(2018-2025)	Bridge Replacement	HBP/Local/Other
2	Cassel Fall River Road @ Pit River - Replace Bridge	$ 6,238,000		(2018-2025)	Bridge Replacement	HBP/Local/Other
3	Soda Creek Road @ Soda Creek - Replace Bridge	$ 1,255,000		(2018-2025)	Bridge Replacement	HBP/Local/Other
4	Gas Point Road at No Name Ditch - Replace Bridge	$ 1,500,000		(2018-2025)	Bridge Replacement	HBP/Local/Other
5	Lower Gas Pt Road @ NFk Cottonwood Creek - Replace Bridge	$ 2,344,000		(2018-2025)	Bridge Replacement	HBP/Local/Other
6	Ash Creek Road @ Sacramento River overflow - Replace Bridge	$ 1,399,000		(2018-2025)	Bridge Replacement	HBP/Local/Other
7	Parkville Road @ Ash Creek - Replace Bridge	$ 1,280,000		(2018-2025)	Bridge Replacement	HBP/Local/Other
8	Inwood Road @ South Fork Bear Creek - Replace Bridge	$ 1,066,000		(2018-2025)	Bridge Replacement	HBP/Local/Other
9	Ponderosa Way @ NFk Bear Creek - Replace Bridge	$ 860,000		(2018-2025)	Bridge Replacement	HBP/Local/Other
10	White House Road @ ACID Canal - Replace Bridge	$ 440,000		(2018-2025)	Bridge Replacement	HBP/Local/Other
11	Soda Creek Road @ SFk Soda Creek - Replace Bridge	$ 640,000		(2018-2025)	Bridge Replacement	HBP/Local/Other
12	Bear Mtn. Road @ Deep Hole Creek - Replace Bridge	$ 950,000		(2018-2025)	Bridge Replacement	HBP/Local/Other
13	Holiday Rd @ Spr. Branch Stillwater Crk - Replace Bridge	$ 640,000		(2018-2025)	Bridge Replacement	HBP/Local/Other
14	Adobe Road @ Anderson Creek - Replace Bridge	$ 2,460,000		(2018-2025)	Bridge Replacement	HBP/Local/Other
15	Oak Run Road @ Oak Run Crk - 6C-188 - Replace Bridge	$ 2,380,000		(2018-2025)	Bridge Replacement	HBP/Local/Other
16	Lakeshore Road @ Doney Crk - Replace Bridge	$ 7,830,000		(2018-2025)	Bridge Replacement	HBP/Local/Other
17	Lakeshore Road @ Charley Crk - Replace Bridge	$ 6,480,000		(2018-2025)	Bridge Replacement	HBP/Local/Other
18	Ponderosa Way @ Snow Creek - Replace Bridge	$ 830,000		(2018-2025)	Bridge Replacement	HBP/Local/Other
19	Ash Creek Road @ Anderson Creek - Replace Bridge	$ 1,930,000		(2018-2025)	Bridge Replacement	HBP/Local/Other
20	Dersch Road @ Cow Creek - Replace Bridge	$ 2,140,000		(2018-2025)	Bridge Replacement	HBP/Local/Other
21	Placer Road @ Dry Creek - Replace Bridge	$ 500,000		(2018-2025)	Bridge Replacement	HBP/Local/Other
22	Tamarack Road @ Old Cow Creek - Replace Bridge	$ 530,000		(2018-2025)	Bridge Replacement	HBP/Local/Other
23	Middle Creek Road at Middle Creek - Replace Bridge	$ 920,000		(2018-2025)	Bridge Replacement	HBP/Local/Other
	Total Short Term Needs =	**$ 46,734,000**				
24	Zogg Mine Road @ Andrews Creek - Replace Bridge		$ 704,000	(2026-2040)	Bridge Replacement	HBP/Local/Other
25	Main Street @ Castle Creek - Replace Bridge		$ 2,637,000	(2026-2040)	Bridge Replacement	HBP/Local/Other
26	Pittville Road @ Pit River - Replace Bridge		$ 4,660,000	(2026-2040)	Bridge Replacement	HBP/Local/Other
27	Riverside Road @ Sacramento River - Replace Bridge		$ 2,714,000	(2026-2040)	Bridge Replacement	HBP/Local/Other
28	Park Avenue at Burney Creek - Replace Bridge		$ 896,000	(2026-2040)	Bridge Replacement	HBP/Local/Other
29	La Moine Road @ Slate Creek - Replace Bridge		$ 3,008,000	(2026-2040)	Bridge Replacement	HBP/Local/Other
30	Platina Road @ Arbuckle Gulch - Replace Bridge		$ 1,216,000	(2026-2040)	Bridge Replacement	HBP/Local/Other
31	Gibson Road @ Boulder Creek - Replace Bridge		$ 3,328,000	(2026-2040)	Bridge Replacement	HBP/Local/Other
32	Jackrabbit Flat Rd @ Burney Creek - Replace Bridge		$ 1,446,000	(2026-2040)	Bridge Replacement	HBP/Local/Other
33	Churn Creek Rd @ Churn Creek 6C-86 - Replace Bridge		$ 4,839,000	(2026-2040)	Bridge Replacement	HBP/Local/Other
34	Bland Road @ NF Wilson Creek - Replace Bridge		$ 870,000	(2026-2040)	Bridge Replacement	HBP/Local/Other
35	Westside Road @ Squaw Creek - Replace Bridge		$ 1,946,000	(2026-2040)	Bridge Replacement	HBP/Local/Other
36	Platina Road @ Huling Creek - Replace Bridge		$ 691,000	(2026-2040)	Bridge Replacement	HBP/Local/Other
37	Bland Road @ SF Wilson Creek - Replace Bridge		$ 1,216,000	(2026-2040)	Bridge Replacement	HBP/Local/Other
38	Mineral Road @ Bailey Creek - Replace Bridge		$ 627,000	(2026-2040)	Bridge Replacement	HBP/Local/Other
39	Phillips Road @ Little Cow Crk - Replace Bridge		$ 1,549,000	(2026-2040)	Bridge Replacement	HBP/Local/Other
40	Rock Creek Road @ Bailey Creek - Replace Bridge		$ 1,165,000	(2026-2040)	Bridge Replacement	HBP/Local/Other
41	Sunny Hill Road @ Ducket Creek - Replace Bridge		$ 922,000	(2026-2040)	Bridge Replacement	HBP/Local/Other
42	Trinity Mountain Road @ French Gulch - Replace Bridge		$ 858,000	(2026-2040)	Bridge Replacement	HBP/Local/Other
43	Ponderosa Way @ SFk Cow Creek - Replace Bridge		$ 2,087,000	(2026-2040)	Bridge Replacement	HBP/Local/Other
44	Dersch Road @ Lack Creek - 6C-131 - Replace Bridge		$ 2,266,000	(2026-2040)	Bridge Replacement	HBP
45	Mountain Meadow Road @ Battle Creek - Replace Bridge		$ 947,000	(2026-2040)	Bridge Replacement	HBP
46	Clark Creek Road @ Burney Creek - Replace Bridge		$ 973,000	(2026-2040)	Bridge Replacement	HBP
47	Statton Road @ Salt Creek - Replace Bridge		$ 1,370,000	(2026-2040)	Bridge Replacement	HBP
48	Churn Creek Rd @ Churn Creek 6C-128 - Replace Bridge		$ 8,564,000	(2026-2040)	Bridge Replacement	HBP
49	Gas Point Road @ Antelope Creek - Replace Bridge		$ 2,419,000	(2026-2040)	Bridge Replacement	HBP
50	Tamarack Road @ Burney Creek - Replace Bridge		$ 2,010,000	(2026-2040)	Bridge Replacement	HBP
51	Mears Ridge Road @ Mears Creek - Replace Bridge		$ 3,187,000	(2026-2040)	Bridge Replacement	HBP
52	Nelson Creek Road @ Nelson Creek - Replace Bridge		$ 2,355,000	(2026-2040)	Bridge Replacement	HBP
53	Meyers Road @ Dry Creek - Replace Bridge		$ 1,895,000	(2026-2040)	Bridge Replacement	HBP
54	Soda Creek Road @ Soda Creek, 6C-139 - Replace Bridge		$ 1,510,000	(2026-2040)	Bridge Replacement	HBP
55	Platina Road @ NFk Cottonwood Creek - Replace Bridge		$ 2,035,000	(2026-2040)	Bridge Replacement	HBP
56	Gas Point Road @ Dry Creek - Replace Bridge		$ 2,202,000	(2026-2040)	Bridge Replacement	HBP
57	Soda Creek Road @ Sacramento River - Replace Bridge		$ 4,493,000	(2026-2040)	Bridge Replacement	HBP
58	Cline Gulch @ Clear Creek - Replace Bridge		$ 4,442,000	(2026-2040)	Bridge Replacement	HBP
59	Deer Flat Road @ NF Battle Creek - Replace Bridge		$ 973,000	(2026-2040)	Bridge Replacement	HBP
60	Big Bend Road @ Roaring Creek - Replace Bridge		$ 934,000	(2026-2040)	Bridge Replacement	HBP
61	Island Road @ Little Tule River - Replace Bridge		$ 678,000	(2026-2040)	Bridge Replacement	HBP/Local/Other
62	Ash Creek Road at Ash Creek Tributary - Replace Bridge		unknown	beyond 2040	Bridge Replacement	HBP
63	Fenders Ferry Road at Snow Creek - Replace Bridge		unknown	beyond 2040	Bridge Replacement	HBP
64	Rock Creek Road at Rock Creek - Replace Bridge		unknown	beyond 2040	Bridge Replacement	HBP
65	Highland Lakes Road at Boulder Creek - Replace Bridge		unknown	beyond 2040	Bridge Replacement	HBP
66	Cline Gulch Road at Cline Gulch - Replace Bridge		unknown	beyond 2040	Bridge Replacement	HBP
67	Tamarack Road at Old Cow Creek - Replace Bridge		unknown	beyond 2040	Bridge Replacement	HBP
	Total Long Term Fundable Needs =		**$ 37,379,000**			

DESCRIPTION	Short (2018-2025)	Long (2026-2040)	Total
Funding Needed By Short and Long Range Bands	**$ 46,734,000**	**$ 80,632,000**	**$ 127,366,000**
Recap of Expected/Estimated/Unknown Resources			
Highway Bridge Program (HBP) =	**$ 44,397,300**	**$ 35,510,050**	**$ 79,907,350**
Local/Other =	**$ 2,336,700**	**1,868,950**	**$ 4,205,650**
			$ -
			$ -
			$ -
Total Funding Reasonably Available =	**$ 46,734,000**	**$ 37,379,000**	**$ 84,113,000**
Total Unfunded Needs (or Short Term Carryover) =	**$ -**	**$ (43,253,000)**	**$ (43,253,000)**

Note 1 : Green highlighted projects above can be funded in the constrained funding analysis

Note 2 : Un-highlighted projects above cannot be funded. New funding sources will need to be identified or improvement will be developer funded.

Note 3 : Long term projects are escalated by 2.5%

TABLE
Shasta Regional Transportation Agency
Summary of Projects - ITS
CALTRANS

Project Number	REGIONAL TRANSPORTATION PROJECTS	SHORT TERM TOTAL EST COST OF PROJECT	LONG TERM TOTAL EST COST OF PROJECT	PROJECT BAND	PROJECT TYPE (PROJECT INTENT)	EXPECTED FUNDING SOURCES
1	I-5, Start/End PM 9.77, Knighton Road, 1 CCTV at Knighton Road on I-5	$ 554,000		(2018-2025)	ITS	SHOPP
2	I-5, Start/End PM 24.7, Mountain Gate, 1 CMS FNBT at Mountain Gate on I-5 W/ Sign Bridge structure	$ 1,040,000		(2018-2025)	ITS	SHOPP
3	SR 299, various locations, Hatchet Mountain, Microwave. TMS Wireless Backbone East Extension (Hatchet Mtn.)	$ 233,000		(2018-2025)	ITS	SHOPP
4	Various Locations in Shasta County, Microwave. TMS Wireless Backbone South/West Ext (Tuscan Butte; Hoadley)	$ 8,000,000		(2018-2025)	ITS	SHOPP
5	SR 273/299, Redding, Signal Upgrades and Synchronization on 299 between Lake Blvd and I-5	$ 210,000		(2018-2025)	ITS	SHOPP
6	SR 44/299, Shasta County, Connect I-5 Fiber Backbone to District Office	$ 4,482,000		(2018-2025)	ITS	SHOPP
7	SR 44/299, Redding, Redding Local TMS Fiber Spurs	$ 1,377,000		(2018-2025)	ITS	SHOPP
8	SR 44/I-5, Shasta County, Connect I-5 Fiber Backbone to District Office via Microwave and Hub House at CRI	$ 824,000		(2018-2025)	ITS	SHOPP
9	SR 44/89, Old Station, 1 CCTV,1 HAR, and 3 CMS signs at Old Station at Jct SR44-SR89	$ 27,000		(2018-2025)	ITS	SHOPP
10	I-5/SR 273, Redding, Northern Redding TMS Fiber	$ 345,000		(2018-2025)	ITS	SHOPP
11	I-5, Start/End PM 61.7, Sweetbrier Rd, 1 CCTV at Sweetbrier Road on I-5	$ 702,000		(2018-2025)	ITS	SHOPP
12	I-5, Various Locations, Bailey/Anderson/Walters HAR Simulcast and Upgrade Walters HAR	$ 709,000		(2018-2025)	ITS	SHOPP
13	I-5, Various Locations, Fawndale HAR Extender & Simulcast upgrade to Redding HAR	$ 210,000		(2018-2025)	ITS	SHOPP
14	I-5, various locations,Redding, Detection. Redding Area TMS System - A series of TMS sites along I-5	$ 635,000		(2018-2025)	ITS	SHOPP
15	SR 44, Start/End PM 1.24, Victor Avenue, 1 CCTV at Victor Avenue on SR44	$ 474,000		(2018-2025)	ITS	SHOPP
16	SR 273, Start/End PM 5.83, Briggs St, 1 CCTV at Briggs Street on SR273	$ 210,000		(2018-2025)	ITS	SHOPP
17	SR 273, Start/End PM 12.68, Bonnyview Road, 1 CCTV at S. Bonnyview Road on SR273	$ 237,000		(2018-2025)	ITS	SHOPP
18	SR 273, Redding, South Redding TMS Fiber Loop	$ 54,000		(2018-2025)	ITS	SHOPP
19	SR 273, Redding, Redding Rural TMC	$ 1,357,000		(2018-2025)	ITS	SHOPP
20	SR 273, Anderson/Redding, Complete Signalization and Synchronization plan of SR 273	$ 210,000		(2018-2025)	ITS	SHOPP
	Total Short Term Needs =	**$ 21,890,000**				
21	I-5, Start/End PM 24.7, 1 CMS FNBT at Mountain Gate on I-5 W/ Sign Bridge structure, CMS		$ 1,763,000	(2026-2040)	ITS	SHOPP
22	I-5, Various Locations, Upgrade and expand traffic data collection system		$ 4,992,000	(2026-2040)	ITS	SHOPP
23	SR 89, Start/End PM 0.4, Old Station, CMS FSBT - Model 510		$ 320,000	(2026-2040)	ITS	SHOPP
24	SR 299, Start/End PM 0.18, Buckhorn Summit, CCTV		$ 192,000	(2026-2040)	ITS	SHOPP
25	SR 299, Start/End PM 13.7, Whiskey Creek Bridge, CCTV EB Shldr at West end of Bridge		$ 192,000	(2026-2040)	ITS	SHOPP
26	SR 299, Start/End PM 26.5, Hawley Offramp, CMS FEBT - Model 500		$ 320,000	(2026-2040)	ITS	SHOPP
27	SR 299, Start/End PM 26.5, Old Oregon Trail, CCTV		$ 192,000	(2026-2040)	ITS	SHOPP
28	I-5, Start/End PM 1.1, Gas Point Road, CCTV SB Shldr		$ 192,000	(2026-2040)	ITS	SHOPP
29	I-5, Start/End PM 4.29, Deschutes Road UC (Anderson), CCTV To be relocated to ~ PM 4.30 BBS installed		$ 192,000	(2026-2040)	ITS	SHOPP
30	I-5, Start/End PM 9.33, Redding Area, TMS MVDS in median - Solar		$ 224,000	(2026-2040)	ITS	SHOPP
31	I-5, Start/End PM 14.44, Cypress Avenue, CCTV		$ 192,000	(2026-2040)	ITS	SHOPP
32	I-5, Start/End PM 21, Pine Grove OC (Shasta Lake City), HAR Flasher EMS FSBT - Upgrade to Flasher w/BBS or replace w/ CMS		$ 640,000	(2026-2040)	ITS	SHOPP
33	I-5, Start/End PM 24, Mountain Gate (Shasta Lake City), CCTV Fawndale Ops Truck Turnaround Site		$ 224,000	(2026-2040)	ITS	SHOPP
34	I-5, Start/End PM 30.5, Packers Bay S/B On Ramp, RWIS Packers Bay S/B Onramp at crest		$ 960,000	(2026-2040)	ITS	SHOPP
35	I-5, Start/End PM 32.3, O'Brien, RWIS O'Brien N/B Onramp at crest		$ 960,000	(2026-2040)	ITS	SHOPP
36	I-5, Start/End PM 36.1, Black Oak (South of Gilman Road OC), CMS #26 FNBT - Model 500 - Upgrade phone service		$ 64,000	(2026-2040)	ITS	SHOPP
37	I-5, Start/End PM 37.44, Salt Creek (Near Gillman Road), Curve Warning - Upgrade CCTV to Pan/Tilt/Zoom BBS installed		$ 64,000	(2026-2040)	ITS	SHOPP
38	I-5, Start/End PM 37.94, Antlers Summit OC, RWIS Upgrade w/BBS & connect comm to ITS Node LAN NB (1) Puck @ PM 37.93 SB (1) Puck @ PM 37.93 and (1) Subsurface Probe @ PM 37.93		$ 256,000	(2026-2040)	ITS	SHOPP
39	I-5, Start/End PM 45.8, Vollmers UC, RWIS Upgrade w/BBS & connect comm to ITS Node LAN NB (1)PUCK @ PM 45.85 and (1) Subsurface Probe @ PM 45.85 SB (1)PUCK @ PM 45.85		$ 256,000	(2026-2040)	ITS	SHOPP
40	I-5, Start/End PM 65.5, Castle Crags, CMS FNBT, for chain area		$ 960,000	(2026-2040)	ITS	SHOPP
41	SR 44, Start/End PM 1.3, Victor Avenue OC (Redding), CMS FWBT - Model 500		$ 960,000	(2026-2040)	ITS	SHOPP
42	SR 44, Start/End PM 1.56, Victor Avenue, HAR Flasher FEBT - Upgrade w/BBS		$ 128,000	(2026-2040)	ITS	SHOPP
43	SR 44, Start/End PM 2.77, Airport Road OC (Redding), CCTV Exist power/phone at nearby CMS		$ 256,000	(2026-2040)	ITS	SHOPP
44	SR 44, Start/End PM 7, Deschutes Road, CCTV NW Corner		$ 192,000	(2026-2040)	ITS	SHOPP
45	SR 44, Start/End PM 8, Silver Bridge Road, HAR Flasher FWBT - Upgrade w/BBS		$ 256,000	(2026-2040)	ITS	SHOPP
46	SR 44, Start/End PM 26, Shasta Forest Village, CCTV Southside of Hwy-44		$ 192,000	(2026-2040)	ITS	SHOPP
47	SR 44, Start/End PM 26.3, Shasta Forest Drive, RWIS WB lanes at top of luge for icy rds		$ 960,000	(2026-2040)	ITS	SHOPP
48	SR 44, Start/End PM 50.54, Eskimo Hill Summit, CCTV		$ 384,000	(2026-2040)	ITS	SHOPP
49	SR 44, Start/End PM 50.54, Eskimo Hill Summit, RWIS		$ 896,000	(2026-2040)	ITS	SHOPP
50	SR 44, Start/End PM 64, The Rim, RWIS		$ 384,000	(2026-2040)	ITS	SHOPP
51	SR 273, Start/End PM 4.44, Pinon Ave / Barney St., CCTV NE corner		$ 192,000	(2026-2040)	ITS	SHOPP
52	SR 273, Start PM 5/End PM 20.033, From Anderson to JCT I-5, Fiber Installation		$ 7,681,000	(2026-2040)	ITS	SHOPP
53	SR 273, Start/End PM 11.8, Clear Creek Road Intersection, CCTV		$ 192,000	(2026-2040)	ITS	SHOPP
54	SR 273, Start/End PM 12, South Bonnyview Rd., CMS FNBT		$ 1,024,000	(2026-2040)	ITS	SHOPP
55	SR 273, Start/End PM 13.5, South Bonnyview Rd., CMS FSBT		$ 1,024,000	(2026-2040)	ITS	SHOPP
56	SR 273, Start/End PM 14.47, Buenaventura Blvd., CCTV NW corner - Power lines check for clearance		$ 192,000	(2026-2040)	ITS	SHOPP
57	SR 273, Start/End PM 14.96, Wyndham Ln., CCTV NE corner		$ 192,000	(2026-2040)	ITS	SHOPP
58	SR 273, Start/End PM 17.03, Riverside Dr., CCTV Possible Microwave Installation. Install Northwest corner near existing Cabinet.		$ 384,000	(2026-2040)	ITS	SHOPP
59	SR 299, Start/End PM 0.18, Buckhorn Summit, RWIS		$ 1,024,000	(2026-2040)	ITS	SHOPP
60	SR 299, Start/End PM 8.65, French Gulch Road Area, CCTV EB Shldr		$ 384,000	(2026-2040)	ITS	SHOPP
61	SR 299, Start/End PM 25.3, Hawley Road, CMS FWBT - Model 500		$ 960,000	(2026-2040)	ITS	SHOPP
62	SR 299, Start/End PM 28.38, Stillwater Way, HAR Flasher FWBT - Upgrade w/ BBS		$ 128,000	(2026-2040)	ITS	SHOPP
63	SR 299, Start/End PM 75.47, Mountain View Road, CCTV Downtown Intersection		$ 192,000	(2026-2040)	ITS	SHOPP
64	SR 299, Start/End PM 78.85, West of SR299-SR89 Jct, CMS FEBT - Model 510		$ 960,000	(2026-2040)	ITS	SHOPP
65	SR 299, Start/End PM 81.2, East of SR299-SR89 Jct, CMS FWBT - Model 510		$ 960,000	(2026-2040)	ITS	SHOPP
66	SR 299, Start/End PM 89.4, Pit One Grade-Fall River Area, CCTV Limited roadside for cabinets		$ 448,000	(2026-2040)	ITS	SHOPP
	Total Long Term Fundable Needs =		**$ 33,700,000**			

DESCRIPTION	Short (2018-2025)	Long (2026-2040)	Total
Funding Needed By Short and Long Range Bands	**$ 21,890,000**	**$ 33,700,000**	**$ 55,590,000**
Recap of Expected/Estimated/Unknown Resources			
State Highway Operations and Protection Program (SHOPP) =	**$ 21,890,000**	**$ 33,700,000**	**$ 55,590,000**
			$ -
			$ -
			$ -
			$ -
Total Funding Reasonably Available =	**$ 21,890,000**	**$ 33,700,000**	**$ 55,590,000**
Total Unfunded Needs (or Short Term Carryover) =	**$ -**	**$ -**	**$ -**

Note 1 : Green highlighted projects above can be funded in the constrained funding analysis

Note 2 : Un-highlighted projects above cannot be funded. New funding sources will need to be identified or improvement will be developer funded.

Note 3 : Long term projects are escalated by 2.5%

TABLE
Shasta Regional Transportation Agency
Summary of Projects - Ramp Meters
CALTRANS

Project Number	REGIONAL TRANSPORTATION PROJECTS	SHORT TERM TOTAL EST COST OF PROJECT	LONG TERM TOTAL EST COST OF PROJECT	PROJECT BAND	PROJECT TYPE (PROJECT INTENT)	EXPECTED FUNDING SOURCES
1	I-5, Start/End PM 14.76, Cypress, Ramp Meter - Northbound	$ 750,000		(2018-2025)	Ramp meter	SHOPP/Local
2	I-5, Start/End PM 14.28, Cypress, Ramp Meter - Southbound	$ 750,000		(2018-2025)	Ramp meter	SHOPP/Local
3	I-5, Start/End PM 11.96, S. Bonnyview, Ramp Meter - Southbound	$ 800,000		(2018-2025)	Ramp meter	SHOPP/Local
4	SR 44, Start/End PM 1.57, Dana, Ramp Meter - Westbound	$ 150,000		(2018-2025)	Ramp meter	SHOPP/Local
	Total Short Term Needs =	**$ 2,450,000**				
5	I-5, Start/End PM 0.78, Gas Point Road, Ramp Meter - Southbound		$ 960,000	(2026-2040)	Ramp meter	SHOPP/Local
6	I-5, Start/End PM 1.1, Gas Point Road, Ramp Meter - Northbound		$ 960,000	(2026-2040)	Ramp meter	SHOPP/Local
7	I-5, Start/End PM 9.65, Knighton Road, Ramp Meter - Southbound		$ 960,000	(2026-2040)	Ramp meter	SHOPP/Local
8	I-5, Start/End PM 9.9, Knighton Road, Ramp Meter - Northbound		$ 960,000	(2026-2040)	Ramp meter	SHOPP/Local
9	I-5, Start/End PM 12.26, S. Bonnyview, Ramp Meter - Northbound		$ 1,024,000	(2026-2040)	Ramp meter	SHOPP/Local
10	I-5, Start/End PM 17.05, Lake Blvd., Ramp Meter - Southbound		$ 768,000	(2026-2040)	Ramp meter	SHOPP/Local
11	I-5, Start/End PM 17.57, Lake Blvd., Ramp Meter - Northbound		$ 960,000	(2026-2040)	Ramp meter	SHOPP/Local
12	I-5, Start/End PM 17.92, Twin View Boulevard, Ramp Meter - Southbound		$ 960,000	(2026-2040)	Ramp meter	SHOPP/Local
13	I-5, Start/End PM 18.22, Twin View Boulevard, Ramp Meter - Northbound		$ 960,000	(2026-2040)	Ramp meter	SHOPP/Local
	Total Long Term Fundable Needs =		**$ 8,512,000**			

DESCRIPTION	Short (2018-2025)	Long (2026-2040)	Total
Funding Needed By Short and Long Range Bands	**$ 2,450,000**	**$ 8,512,000**	**$ 10,962,000**
Recap of Expected/Estimated/Unknown Resources			
State Highway Operations and Protection Program (SHOPP) =	**$ 612,500**	**$ 2,128,000**	**$ 2,740,500**
Local/Other =	**$ 1,837,500**	**$ 6,384,000**	**$ 8,221,500**
			$ -
			$ -
			$ -
Total Funding Reasonably Available =	**$ 2,450,000**	**$ 8,512,000**	**$ 10,962,000**
Total Unfunded Needs =	**$ -**	**$ -**	**$ -**

Note 1 : Green highlighted projects above can be funded in the constrained funding analysis.
Note 2 : Un-highlighted projects above cannot be funded. New funding sources will need to be identified or improvement will be developer funded.
Note 3 : Long term projects are escalated by 2.5%

TABLE
Shasta Regional Transportation Agency
Summary of Projects - Bridges
CALTRANS

Project Number	REGIONAL TRANSPORTATION PROJECTS	SHORT TERM TOTAL EST COST OF PROJECT	LONG TERM TOTAL EST COST OF PROJECT	PROJECT BAND	PROJECT TYPE (PROJECT INTENT)	EXPECTED FUNDING SOURCES
1	Route 44, Begin PM 59.62, 06-0084 Hat Creek	$ 4,125,000		(2018-2025)	Replace Bridge	SHOPP
2	Route 5, Begin PM 66.8, 06-0095 Craig View Drive	$ 11,800,000		(2018-2025)	Replace Bridge	SHOPP
3	Route 5, Begin PM 57.41, 06-0111 Sims Road UC	$ 5,313,000		(2018-2025)	Replace Superstructure (or replace bridge)	SHOPP
4	SR 44, Start/End PM 7.4, 06-0152 Cow Creek	$ 3,841,000		(2018-2025)	Seismic Retrofit	SHOPP
5	SR 44, Start/End PM 4.55, 06-0151 Clough Creek	$ 2,650,000		(2018-2025)	Rehab	SHOPP
6	Route 5, Begin PM 28.14, Pit River Bridge	$ 20,000,000		(2018-2025)	Seismic and Paint	SHOPP
7	Route 89, Begin PM 25.3, End PM 31.7, Lake Britton, Replace Bridge and realign roadway	$ 80,000,000		(2018-2025)	Replace Bridge and realign roadway	SHOPP
8	SR 44, Start PM 0/ End PM 60, Bridges at various locations	$ 3,760,000		(2018-2025)	Deck rehab, paint, joints, etc	SHOPP
9	SR 299, various locations in Shasta County	$ 3,800,000		(2018-2025)	Deck rehab, paint and joint repair/replacement	SHOPP
	Total Short Term Needs =	**$ 135,289,000**				
10	Route 5, Begin PM 28.14, End PM 28.14, Pit River Bridge		$ 640,042,000	(2026-2040)	Replace Bridge	SHOPP
11	06-0015 UNION SCHOOL RD OC (FO, SR=58.2), Bridge Rehabilitation		$ 2,560,000	(2026-2040)	Bridge Rehabilitation	SHOPP
12	06-0035 REDDING OH (FO, SR=69), Bridge Rehabilitation		$ 2,560,000	(2026-2040)	Bridge Rehabilitation	SHOPP
13	06-0036 CLEAR CREEK (SD, SR=76), Bridge Rehabilitation		$ 2,560,000	(2026-2040)	Bridge Rehabilitation	SHOPP
14	06-0058 MONTGOMERY CK (SD, SR=76.1), Bridge Rehabilitation		$ 2,560,000	(2026-2040)	Bridge Rehabilitation	SHOPP
15	06-0113 CREEKSIDE UC (SD, SR=75), Bridge Rehabilitation		$ 2,560,000	(2026-2040)	Bridge Rehabilitation	SHOPP
16	06-0118 STATE PARK UC (FO, SR=73.5), Bridge Rehabilitation		$ 2,560,000	(2026-2040)	Bridge Rehabilitation	SHOPP
17	06-0126L E REDDING SEP (FO, SR=67.3), Bridge Rehabilitation		$ 2,560,000	(2026-2040)	Bridge Rehabilitation	SHOPP
18	06-0137G N273-N5 CONN OC (FO, SR=73.6), Bridge Rehabilitation		$ 2,560,000	(2026-2040)	Bridge Rehabilitation	SHOPP
19	06-0152 COW CREEK (SD, SR=72.2), Bridge Rehabilitation		$ 2,560,000	(2026-2040)	Bridge Rehabilitation	SHOPP
20	06-0154 MOUNTAIN GATE OC (FO, SR=56.3), Bridge Rehabilitation		$ 2,560,000	(2026-2040)	Bridge Rehabilitation	SHOPP
21	06-0155 OASIS ROAD OC (FO, SR=55), Bridge Rehabilitation		$ 2,560,000	(2026-2040)	Bridge Rehabilitation	SHOPP
22	06-0156 ROUTE 151/5 SEP (FO, SR=60.1), Bridge Rehabilitation		$ 2,560,000	(2026-2040)	Bridge Rehabilitation	SHOPP
23	Route 273, Begin PM 17.08, End PM 17.08, Sacramento River Bridge, Replace Bridge		$ 64,004,000	(2026-2040)	Replace Bridge	SHOPP
	Total Long Term Fundable Needs =		**$ -**			

DESCRIPTION	Short (2018-2025)	Long (2026-2040)	Total
Funding Needed By Short and Long Range Bands	**$ 135,289,000**	**$ 734,766,000**	**$ 870,055,000**
Recap of Expected/Estimated/Unknown Resources			
State Highway Operations and Protection Program (SHOPP) =	**135,289,000**	**$ -**	**$ 135,289,000**
			$ -
			$ -
			$ -
			$ -
Total Funding Reasonably Available =	**$ 135,289,000**	**$ -**	**$ 135,289,000**
Total Unfunded Needs (or Short Term Carryover) =	**$ -**	**$ (734,766,000)**	**$ (734,766,000)**

Note 1 : Green highlighted projects above can be funded in the constrained funding analysis
Note 2 : Un-highlighted projects above cannot be funded. New funding sources will need to be identified or improvement will be developer funded.
Note 3 : Long term projects are escalated by 2.5%

TABLE
Shasta Regional Transportation Agency
Summary of Projects - Active Transportation
CALTRANS

Project Number	REGIONAL TRANSPORTATION PROJECTS	SHORT TERM TOTAL EST COST OF PROJECT	LONG TERM TOTAL EST COST OF PROJECT	PROJECT BAND	PROJECT TYPE (PROJECT INTENT)	EXPECTED FUNDING SOURCES
1	151, Begin PM 5.4, End PM 5.9, Shasta Lake City from 0.5 mile west to 0.4 mile east of Poplar Lane	$ 2,000,000		(2018-2025)	Construct curb ramps, reconstruct sidewalks and possibly add sidewalks and adjust traffic signal pedestrian buttons.	SHOPP
2	Route 299, Begin PM 18.6, End 19.0, construct Class I facility	$ 2,385,000		(2018-2025)	Construct Class I facility	Other/ATP
	Total Short Term Needs =	**$ 2,000,000**				
3	Lake Blvd (SR 299), between SR 273 and Interstate 5, Begin PM 24.238, End PM 24.822, Complete Streets gap closure for multimodal use facilities and aesthetic treatments		$ 2,560,000	(2026-2040)	Bicycle and pedestrian, complete streets	SHOPP/ATP
4	Route 299, Begin PM 16.5, End PM 18.3, From Old Shasta to Whiskeytown NRA, Provide westbound truck climbing lane and bike lane.		$ 1,536,000	(2026-2040)	Bicycle and pedestrian, truck climbing lane	SHOPP/ATP
5	Entire length of SR 273, multi-modal facility		$ 15,361,000	(2026-2040)	construct bike lanes	SHOPP/ATP
6	Route 273, Begin PM 3.812, End PM 11.1, various locations in high pedestrian areas, Pedestrian Facilities - Consistent with ADA and Caltrans Design Standards		$ 8,961,000	(2026-2040)		SHOPP/ATP
	Total Long Term Fundable Needs =		**$ -**			

DESCRIPTION	Short (2018-2025)	Long (2026-2040)	Total
Funding Needed By Short and Long Range Bands	**$ 2,000,000**	**$ 28,418,000**	**$ 30,418,000**
Recap of Expected/Estimated/Unknown Resources			
Active Transportation Program (ATP) =	**200,000**	**$ -**	**$ 200,000**
State Highway Operations and Protection Program (SHOPP) =	**1,800,000**	**$ -**	**$ 1,800,000**
			$ -
			$ -
			$ -
Total Funding Reasonably Available =	**$ 2,000,000**	**$ -**	**$ 2,000,000**
Total Unfunded Needs (or Short Term Carryover) =	**$ -**	**$ (28,418,000)**	**$ (28,418,000)**

Note 1 : Green highlighted projects above can be funded in the constrained funding analysis

Note 2 : Un-highlighted projects above cannot be funded. New funding sources will need to be identified or improvement will be developer funded.

Note 3 : Long term projects are escalated by 2.5%

TABLE
Shasta Regional Transportation Agency
Summary of Projects - Operations and Rehabilitation
CALTRANS

Project Number	REGIONAL TRANSPORTATION PROJECTS	SHORT TERM TOTAL EST COST OF PROJECT	LONG TERM TOTAL EST COST OF PROJECT	PROJECT BAND	PROJECT TYPE (PROJECT INTENT)	EXPECTED FUNDING SOURCES
1	I-5, Start PM/End PM 15.43, 06-0126G N5-W44 Connector	$ 2,000,000		(2018-2025)	Increase VC	SHOPP
2	I-5, Start PM/End PM 15.43, 06-0126L East Redding Separation	$ 2,000,000		(2018-2025)	Increase VC	SHOPP
3	I-5, Start PM/End PM 15.43, 06-0126R East Redding Separation	$ 2,000,000		(2018-2025)	Increase VC	SHOPP
4	SR 44, At various locations	$ 2,000,000		(2018-2025)	Rumble strips	SHOPP
5	I-5, Start/End PM 31.1, North of Shasta Lake City - O'Brien SRRA	$ 3,100,000		(2018-2025)	Upgrade sewage system	SHOPP
6	Route 5, Begin PM Var, End PM Var, In Shasta County at various locations on Interstate 5	$ 2,300,000		(2018-2025)	Upgrade MBGR and possibly flatten some slopes	SHOPP
7	Route 299, Begin PM 7.6, End PM 18.3, 1.5 miles west of Crystal Creek Road to Buell Alley	$ 20,410,000		(2018-2025)	Rehabilitate Roadway	SHOPP
8	Route 299, Begin PM 77.8, End PM 79.6, Near Burney	$ 6,204,000		(2018-2025)	Rehabilitate Roadway	SHOPP
9	SR 299, Start PM 60/End PM 67.9, In Shasta County	$ 6,263,000		(2018-2025)	Hatchet Mtn CAP M	SHOPP
10	Route 273 GAPS - SR 273, Start PM 3.8/End PM7.1; Start PM 11.0/End PM12.7	$ 14,652,000		(2018-2025)	CAPM	SHOPP
11	Route 5, In Shasta County at various locations on Interstate 5, Relocate roadside facilities and install hardscaping in high exposure areas.	$ 2,600,000		(2018-2025)	Relocate roadside facilities and install hardscaping in high exposure areas.	SHOPP
12	Route 299, Begin PM 41.5, End PM 55.2, Safety Device Paving and Pullouts	$ 600,000		(2018-2025)	Safety Device Paving and Pullouts	SHOPP
13	SR 44, Start/End PM 34.7, Near the town of Shingletown - Shingletown SRRA	$ 1,800,000		(2018-2025)	Upgrade sewage system	SHOPP
14	SR 299, Start/End PM 60.6, Hillcrest	$ 4,200,000		(2018-2025)	Upgrade sewage system	SHOPP
15	I-5, Start/End PM 43.2, Lakehead	$ 4,200,000		(2018-2025)	Upgrade sewage system	SHOPP
16	SR 273, Start/End PM 14.77, RR U/P	$ 2,000,000		(2018-2025)	Vertical Clearance / Horizontal Clearance	SHOPP
17	I-5, Start/End PM 29.32, 06-0130R Turntable Bay Road OC	$ 766,000		(2018-2025)	Rail Upgrade	SHOPP
18	SR 44, Start PM 65.4/End PM 71.4, Plum Valley Rehab	$ 7,273,000		(2018-2025)	Plum Valley Rehab	SHOPP
19	Route 5, Begin PM R 5.1, End PM R 5.9, Anderson, Upgrade Landscaping - Highway Planting Restoration	$ 1,800,000		(2018-2025)	Upgrade Landscaping - Highway Planting Restoration	SHOPP
20	Route 5, Begin PM R 18, End PM R 22.5, North Redding/Shasta Lake City, Freeway Maintenance Access Roads and Pullouts	$ 600,000		(2018-2025)	Freeway Maintenance Access Roads and Pullouts	SHOPP
21	Route 5, Begin PM R 12.3, End PM R 12.6, I-5 in Redding, Extend NB South Bonneyview on ramp and SB off ramp	$ 3,600,000		(2018-2025)	Ramps	SHOPP
22	Routte 5, Begin PM R 16.1, End PM R 17.1, I-5 in Redding, Construct auxiliary lane on NB I-5 from Hilltop Drive OC to Lake Blvd.	$ 3,900,000		(2018-2025)	Auxiliary lane	SHOPP
23	Route 44, Begin PM 1.4, End PM 1.9, Redding, Construct ramp auxiliary lane from EB Victor on-ramp to EB Shasta View off-ramp	$ 2,000,000		(2018-2025)	Auxiliary lane	SHOPP
	Total Short Term Needs =	**$ 96,268,000**				
24	Route 5, Begin PM R 13.8, End PM R 16.1, Central Redding Interchange, Highway Planting Restoration		$ 1,280,000	(2026-2040)	Highway Planting Restoration	SHOPP
25	Route 44, Begin PM 15.43, End PM 15.43, Central Redding Interchange, Correct Vertical Clearance		$ 10,241,000	(2026-2040)	Correct Vertical Clearance	SHOPP
26	Route 5, Begin PM R 21.2, End PM R 22, Pine Grove to Shasta Lake City, Highway Planting Restoration		$ 1,280,000	(2026-2040)	Highway Planting Restoration	SHOPP
27	Route 5, Begin PM R 5.9, End PM R 11.9, North Anderson to South Redding, New Highway Planting		$ 2,048,000	(2026-2040)	New Highway Planting	SHOPP
28	Route 44, Begin PM 1.5, End PM 3.9, Victor to Old Oregon Trail, New Highway Planting		$ 1,920,000	(2026-2040)	New Highway Planting	SHOPP
29	Route 44, Begin PM 7, End PM 62, Drainage Restoration, Drainage Restoration		$ 2,048,000	(2026-2040)	Drainage Restoration	SHOPP
30	Route 299, Begin PM 24.8, End PM 27.2, 299/5 interchange to Stillwater Bridge, New Highway Planting		$ 2,048,000	(2026-2040)	New Highway Planting	SHOPP
31	Route 5, Begin PM VAR, End PM VAR, Various Locations, Rehabilitate Roadway		$ 128,008,000	(2026-2040)	Rehabilitate Roadway	SHOPP
32	Route 44, Begin PM VAR, End PM VAR, Various Locations, Rehabilitate Roadway		$ 89,606,000	(2026-2040)	Rehabilitate Roadway	SHOPP
33	Route 299, Begin PM VAR, End PM VAR, Various Locations, Rehabilitate Roadway		$ 89,606,000	(2026-2040)	Rehabilitate Roadway	SHOPP
34	Route I-5, Postmile R 7.45 - R 7.67, Direction Southbound, .75 mile north of Ox Yoke Road		$ 785,000	(2026-2040)	Sound wall for sound attenuation	SHOPP
35	Route I-5, Postmile R 8.06- R 8.99, Direction Southbound, 1.25 miles north of Ox Yoke Road		$ 6,080,000	(2026-2040)	Sound wall for sound attenuation	SHOPP
36	Route I-5, Postmile R 8.48 - R 8.9, Direction Northbound, 1.75 miles north of Ox Yoke Road		$ 941,000	(2026-2040)	Sound wall for sound attenuation	SHOPP
37	Route I-5, Postmile R 14.81- R 14.96, Direction Northbound, .5 mile south of Cypress Avenue interchange		$ 561,000	(2026-2040)	Sound wall for sound attenuation	SHOPP
38	Route I-5, Postmile R 15.8 - R 16.0, Direction Northbound, .25 mile south of Hilltop overcrossing		$ 768,000	(2026-2040)	Sound wall for sound attenuation	SHOPP
39	Route 5, Begin PM R 16.1, End PM R 18, Hilltop OC, New Highway Planting		$ 1,280,000	(2026-2040)	New Highway Planting	SHOPP
40	Route 89, Begin PM 29.337, End PM 29.337, Lake Britton R/R UP, Improve clearances		$ 3,840,000	(2026-2040)	Improve clearances	SHOPP
41	Route 89, Begin PM 42.8, End PM 42.8, Pondosa, Proposed Safety Roadside Rest Area from 2000 Master Plan		$ 10,241,000	(2026-2040)	Proposed Safety Roadside Rest Area from 2000 Master Plan	SHOPP
42	Route 89, Begin PM VAR, End PM VAR, Various Locations, Rehabilitate Roadway		$ 83,205,000	(2026-2040)	Rehabilitate Roadway	SHOPP
43	Route 273, Begin PM VAR, End PM VAR, Various Locations, Rehabilitate Roadway		$ 38,403,000	(2026-2040)	Rehabilitate Roadway	SHOPP
44	Route 151, Begin PM VAR, End PM VAR, Various Locations, Rehabilitate Roadway		$ 23,042,000	(2026-2040)	Rehabilitate Roadway	SHOPP
45	Route I-5, Postmile 1.43-1.69, Direction Northbound, .5 mile north of Gas Point interchange		$ 768,000	(2026-2040)	Sound wall for sound attenuation	SHOPP
46	Route I-5, Postmile R 12.1-R 14.5, Direction Northbound, Just north of Churn Creek interchange		$ 7,681,000	(2026-2040)	Sound wall for sound attenuation	SHOPP
47	Route I-5, Postmile R 13.95 - R 14.5, Direction Southbound, Near Hartnell Avenue overcrossing		$ 1,664,000	(2026-2040)	Sound wall for sound attenuation	SHOPP
48	Route 5, Begin PM 42, End PM 66.9, Sacramento River Canyon, Chain on Area Freeway Maintenance Access		$ 4,096,000	(2026-2040)		SHOPP
49	Route 5, various locations in Canyon, Curve improvements at Sidehill Viaduct		$ 25,602,000	(2026-2040)		SHOPP
50	Route 44, Begin PM L 0.8, End PM L 1.3, Redding, Extend #3 auxiliary lane through Sundial Bridge Drive		$ 6,784,000	(2026-2040)		SHOPP
51	Route 44, Begin PM R 10.0, End PM R 13, Millville Horizontal and Vertical Alignment Improvements		$ 11,265,000	(2026-2040)		SHOPP
52	Route 44, Begin PM R 21.4, End PM 32.1, Shingletown, Passing lanes		$ 5,120,000	(2026-2040)		SHOPP
53	Route 273, Begin PM 12.68, End PM 12.68, South Bonneyview Road at 273, Grade separation		$ 3,840,000	(2026-2040)		SHOPP
54	Route 5, Begin PM R 26.27, End PM R 27.46, Extend NB truck climbing lane		$ 3,840,000	(2026-2040)		SHOPP
55	Route 5, Begin PM R 28.9, End PM R 26, Add Southbound Truck Climbing Lane		$ 2,816,000	(2026-2040)		SHOPP
56	Route 5, Begin PM R 31.224, End PM R 32.48, Extend northbound truck climbing lane		$ 4,480,000	(2026-2040)		SHOPP
57	Route 5, Begin PM R 31.968, End PM R 30.606, Extend southbound truck climbing lane		$ 5,120,000	(2026-2040)		SHOPP
58	Route 5, Begin PM R 36.787, End PM R 34.202, Extend southbound truck climbing lane		$ 8,321,000	(2026-2040)		SHOPP
59	Route 5, Begin PM R 37.3, End PM R 38.7, Extend northbound truck climbing lane		$ 4,480,000	(2026-2040)		SHOPP
60	Route 5, Begin PM R 49.213, End PM R 49.754, Extend northbound truck climbing lane		$ 1,920,000	(2026-2040)		SHOPP
61	Route 36, Begin PM 0.0, End PM 3.5, at various locations, Shoulder widenings and curve improvements		$ 8,961,000	(2026-2040)	shoulder widening; curve improvements	SHOPP
62	Route 44, Begin PM 0.0, End PM 71.39, at various locations, Achieve concepts shoulders		$ 25,602,000	(2026-2040)		SHOPP
63	Route 44, Begin PM R 14.8, End PM R 15.9, Passing lanes		$ 4,480,000	(2026-2040)		SHOPP
64	Route 44, Begin PM 52.7, End PM 53.3, Passing lane		$ 1,920,000	(2026-2040)		SHOPP
65	Route 44, Begin PM 65.2, End PM 66.2, Passing lane		$ 3,840,000	(2026-2040)		SHOPP
66	Route 89 various locations along route, establish eight-foot (or greater) treated shoulders		$ 35,842,000	(2026-2040)		SHOPP
67	Route 89, Begin PM 21.719, End PM 21.719, SR 89/SR 299 Intersection, signalize intersection (conventional signal)		$ 1,920,000	(2026-2040)		SHOPP
68	Route 89, Begin PM 25.3, End PM 31.7, Near Britton Bridge - Locations TBD, Add northbound and southbound passing lanes		$ 4,480,000	(2026-2040)		SHOPP
69	Route 273, Begin PM 15.92, End PM 16.83, Cypress Avenue to Market Street/Eureka Way, open road linkages through the Promenade (TBD)		$ 9,601,000	(2026-2040)		SHOPP
70	Route 273, Begin PM 15.92, End PM 16.83, Cypress Avenue to Market Street/Eureka Way, Implement adaptive signal control technology		$ 3,200,000	(2026-2040)		SHOPP
71	Route 299, Route PM 0.0, End PM 24.09, various locations, Achieve concept shoulders		$ 6,400,000	(2026-2040)		SHOPP
72	Route 299, Begin PM 20.5, End PM 21.7, in Old Shasta, Construct two-way left turn lane		$ 1,536,000	(2026-2040)		SHOPP
73	Route 299, Begin PM 27.9, End PM 32, Bella Vista, Two-Way Left Turn Lane		$ 5,120,000	(2026-2040)		SHOPP
74	Route 299, Begin PM 37.5, End PM 38.5, West of Javelina Road, Eastbound and westbound passing lanes		$ 4,480,000	(2026-2040)		SHOPP
75	Route 299, Begin PM 41, End PM 57, Near Diddy Wells, Round Mountain and Montgomery Creek, Turnouts or Truck Climbing Lanes along steep grades		$ 3,840,000	(2026-2040)		SHOPP
76	Route 299, Begin PM R 51.51, End PM 57.219, Near Dubois Road and Woodhill Drive, Extend Passing Lanes		$ 1,920,000	(2026-2040)		SHOPP
77	Route 299, Begin PM 53, End PM 59, Round Mountain and Montgomery Creek, Traffic Calming		$ 3,200,000	(2026-2040)		SHOPP
78	Route 299, Begin PM 80.09, End PM 99.36, Pit 1 Grade and Rocky Ledge, Shoulder and Lane Widening		$ 21,761,000	(2026-2040)		SHOPP
79	Route 299, Begin PM 88.4, End PM 90.4, Pit 1 Grade, Turnouts or Truck Climbing Lanes		$ 6,400,000	(2026-2040)		SHOPP
80	Route 5, Begin PM R 14.5, End PM R 16.2, I-5/44 Interchange, Reconfigure Interchange: Direct Connector Flyover Ramp		$ 65,284,000	(2026-2040)	reconfigure interchange	SHOPP
	Total Long Term Fundable Needs =		**$ 328,085,000**			

DESCRIPTION	Short (2018-2025)	Long (2026-2040)	Total
Funding Needed By Short and Long Range Bands	**$ 96,268,000**	**$ 814,815,000**	**$ 911,083,000**
Recap of Expected/Estimated/Unknown Resources			
State Highway Operations and Protection Program (SHOPP) =	**$ 96,268,000**	**$ 360,985,000**	**$ 457,253,000**
Total Funding Reasonably Available =	**$ 96,268,000**	**$ 360,985,000**	**$ 457,253,000**
Total Unfunded Needs (or Short Term Carryover) =	**$ -**	**$ (453,830,000)**	**$ (453,830,000)**

Note 1 : Green highlighted projects above can be funded in the constrained funding analysis

Note 2 : Un-highlighted projects above cannot be funded. New funding sources will need to be identified or improvement will be developer funded.

Note 3 : Long term projects are escalated by 2.5%

TABLE
Shasta Regional Transportation Agency
Summary of Projects - Regional Capacity

Project Count	REGIONAL TRANSPORTATION PROJECTS	SHORT TERM TOTAL EST COST OF PROJECT	LONG TERM TOTAL EST COST OF PROJECT	PROJECT BAND	PROJECT TYPE (PROJECT INTENT)	EXPECTED FUNDING SOURCES
1	Route 5, Begin PM R 6.2, End PM, R 11.7, .6 mile south of Knighton Road Overcrossing to 0.4 mile south of Churn Creek Road Overcrossing. (Redding to Anderson 6-Lane Phase 1 "Little Easy")	$ 30,663,000		FY 2018/19 (construction)	add capacity, fills a gap	STIP/ SHOPP/ Local/ Other
2	Route 5, Begin PM R 3.8, End PM R 7.0, 0.2 mile south of North Street to Knighton Road Overcrossing. (Redding to Anderson 6-Lane Phase 2)	$ 113,595,000		2016 (project development) FY 17/18 (construction)	add capacity, fills a gap, ITS, Safety	STIP/ SHOPP/ TCEP/ Local/ Other
	Total Short Term Needs =	**$ 144,258,000**				
~~3~~	~~Route 5, Deschutes Road to south of North Street, Redding to Anderson 6-Lane Phase 3~~		~~$~~	~~(2026-2040)~~	~~add capacity, fills a gap~~	~~Local/ RIP/STIP~~
4	Route 5, Begin PM R 14.8, End PM R 20.0, In Shasta County in Redding from 0.3 mile north of Cypress Avenue Overcrossing to 0.6 mile north of Oasis Road Overcrossing: widen Interstate 5 from 4 lanes to 6 lanes. (Interstate 5 North Redding 6 Lane)		$ 43,894,000	2018-23 (project development) (2026-2040)	add capacity, fills a gap, safety	STIP/Other
5	Route 5, Begin PM R 22.1, End PM R 27.46, SR 151 to Mtn Gate Overcrossing, Expand freeway to six lanes		$ 29,263,000	(2026-2040)	add capacity	STIP
6	Route 44, Begin PM 2.6/, End PM 7, Highway 44 - Stillwater Project: Airport Road to Deschutes Road. Expand facility from 2E to 4F.		$ 81,925,000	(2026-2040)	add capacity	unknown
	Total Long Term Fundable Needs =		**$ -**			

DESCRIPTION	Short (2018-2025)	Long (2026-2040)	Total
Funding Needed By Short and Long Range Bands	**$ 144,258,000**	**$ 155,082,000**	**$ 299,340,000**
Recap of Expected/Estimated/Unknown Resources			
State Transportation Improvement Program (STIP) =	**144,258,000**	**$ -**	**$ 144,258,000**
			$ -
			$ -
			$ -
			$ -
Total Funding Reasonably Available =	**$ 144,258,000**	**$ -**	**$ 144,258,000**
Total Unfunded Needs (or Short Term Carryover) =	**$ -**	**$ (155,082,000)**	**$ (155,082,000)**
Note 1 : Green highlighted projects above can be funded in the constrained funding analysis			

Note 2 : Un-highlighted projects above cannot be funded. New funding sources will need to be identified or improvement will be developer funded.
Note 3 : Long term projects are escalated by 2.5%

TABLE
Shasta Regional Transportation Agency
Summary of Projects - Regional ITS

Project Count	REGIONAL TRANSPORTATION PROJECTS	SHORT TERM TOTAL EST COST OF PROJECT	LONG TERM TOTAL EST COST OF PROJECT	PROJECT BAND	PROJECT TYPE (PROJECT INTENT)	EXPECTED FUNDING SOURCES
1	I-5, south of Fawndale Road and north of Bowman Road; Bluetooth Pilot Test at urban area Gateways	$ 20,000		(2018-2025)	ITS	SHOPP
2	I-5, south of Fawndale Road and north of Bowman Road; Install O-D stations at I-5 Urban Gateways	$ 196,000		(2018-2025)	ITS	SHOPP
3	CA-299, west of French Gulch Rd and east of Dry Creek Rd.; CA-44, east of Deschutes Rd.; Install O-D stations at CA-299 and CA-44 Urban Gateways	$ 294,000		(2018-2025)	ITS	SHOPP
4	I-5 from CA-44 to Knighton Road, Install new permanent mainline station and new permanent on and off-ramp station along I-5. **(Detector Project 1)**	$ 567,000		(2018-2025)	ITS	SHOPP
5	CA-44/I-5 interchange, Install new permanent mainline station and new permanent on and off-ramp station along CA-44. **(Detector Project 1)**	$ 284,000		(2018-2025)	ITS	SHOPP
6	I-5, Ox Yoke Road to Gas Point Road (South Gateway), Install new permanent mainline station and new permanent on and off-ramp station along I-5 **(Detector Project 2)**	$ 496,000		(2018-2025)	ITS	SHOPP
	Total Short Term Needs =	**$ 1,857,000**				
7	I-5, Oasis Road to CA-299, Install new permanent mainline station and new permanent on and off-ramp station along I-5 **(Detector Project 3)**		$ 544,000	(2026-2040)	ITS	SHOPP
8	CA-299/Interstate 5 Interchange, Upgrade existing mainline station to a permanent station and install new permanent on and off-ramp station along CA-299 **(Detector Project 3)**		$ 84,000	(2026-2040)	ITS	SHOPP
9	CA-299/Interstate 5 Interchange, Install new permanent mainline station and new permanent on and off-ramp station along CA-299 **(Detector Project 3)**		$ 91,000	(2026-2040)	ITS	SHOPP
10	I-5, Fawndale Road (North Gateway) to Pine Grove Avenue, Install new permanent mainline station and new permanent on and off-ramp station along I-5 **(Detector Project 4)**		$ 635,000	(2026-2040)	ITS	SHOPP
11	I-5, Fawndale Road (North Gateway) to Pine Grove Avenue, Upgrade existing mainline station to a permanent station and install new permanent on and off-ramp station along I-5 **(Detector Project 4)**		$ 84,000	(2026-2040)	ITS	SHOPP
12	CA-44, Shasta View Drive to Airport Drive, Install new permanent mainline station and new permanent on and off-ramp station along CA-44 **(Detector Project 5)**		$ 364,000	(2026-2040)	ITS	SHOPP
13	CA-299, Churn Creek Road to Old Oregon Trail, Install new permanent mainline station and new permanent on and off-ramp station along CA-299 **(Detector Project 6)**		$ 182,000	(2026-2040)	ITS	SHOPP
14	CA-299 at Deschutes Road, Upgrade existing profile station to a permanent profile station **(Detector Project 7)**		$ 84,000	(2026-2040)	ITS	SHOPP
15	CA-44 at Deschutes Road, Upgrade existing mainline station to a permanent station and install new permanent on and off-ramp station along CA-44 **(Detector Project 7)**		$ 170,000	(2026-2040)	ITS	SHOPP
16	I-5: CA-44 to Knighton Road; CA-44: CA-44/I-5 Interchange, Convert stations to TMS		$ 101,000	(2026-2040)	ITS	SHOPP
17	I-5: Ox Yoke Road to Gas Point Road, Convert stations to TMS		$ 59,000	(2026-2040)	ITS	SHOPP
18	I-5: Oasis Road to CA-299, CA-299: CA-299/I-5 Interchange, Convert stations to TMS		$ 68,000	(2026-2040)	ITS	SHOPP
19	I-5: Fawndale Road to Pine Grove Avenue, Convert stations to TMS		$ 68,000	(2026-2040)	ITS	SHOPP
20	CA-44: Shasta View Drive to Airport Drive, Convert stations to TMS		$ 33,000	(2026-2040)	ITS	SHOPP
21	CA-299: Churn Creek Road to Old Oregon Trail, Convert stations to TMS		$ 17,000	(2026-2040)	ITS	SHOPP
22	CA-299 at Deschutes Road, CA-44 at Deschutes Road, Convert stations to TMS		$ 26,000	(2026-2040)	ITS	SHOPP
	Total Long Term Fundable Needs =		**$ 2,238,000**			

DESCRIPTION	Short (2018-2025)	Long (2026-2040)	Total
Funding Needed By Short and Long Range Bands	**$ 1,857,000**	**$ 2,610,000**	**$ 4,467,000**
Recap of Expected/Estimated/Unknown Resources			
State Highway Operations and Protection Program (SHOPP) =	**1,857,000**	**$ 2,238,000**	**$ 4,095,000**
			$ -
			$ -
			$ -
			$ -
Total Funding Reasonably Available =	**$ 1,857,000**	**$ 2,238,000**	**$ 4,095,000**
Total Unfunded Needs (or Short Term Carryover) =	**$ -**	**$ (372,000)**	**$ (372,000)**
Note 1 : Green highlighted projects above can be funded in the constrained funding analysis			

Note 2 : Un-highlighted projects above cannot be funded. New funding sources will need to be identified or improvement will be developer funded.

Note 3 : Long term projects are escalated by 2.5%

TABLE
Shasta Regional Transportation Agency
Summary of Projects - Interchanges
SHASTA COUNTY

Project Number	REGIONAL TRANSPORTATION PROJECTS	SHORT TERM TOTAL EST COST OF PROJECT	LONG TERM TOTAL EST COST OF PROJECT	FUNDABLE PROJECT BAND	PROJECT TYPE (PROJECT INTENT)	EXPECTED FUNDING SOURCES
1	Route 44, Postmile 5.8, Stillwater Road - New interchange	$ 22,000,000		(2018-2025)	Interchange	SHOPP/Local/Other
	Total Short Term Needs =	**$ 22,000,000**				
2	I-5 Main St Interchange Exit 665 - Connect to Rhonda, add roundabouts		$ 21,955,000	(2026-2040)	Interchange	SHOPP/Local/Other
3	Reconfigure Knighton Road Over-Crossing at Interchange Exit 673		$ 51,627,000	(2026-2040)	Interchange	Unfunded or Developer
4	I-5 Gas Point Interchange Improvements exit 664		$ 27,463,000	(2026-2040)	Interchange	Unfunded or Developer
5	Improve SR 299 Old Oregon Trail Interchange - Exit 143		$ 3,200,000	(2026-2040)	Interchange	Unfunded or Developer
	Total Long Term Fundable Needs =		**$ 21,955,000**			

DESCRIPTION	Short (2018-2025)	Long (2026-2040)	Total
Funding Needed By Short and Long Range Bands	**$ 22,000,000**	**$ 104,245,000**	**$ 126,245,000**
Recap of Expected/Estimated/Unknown Resources			
Local/Other =	**9,400,000**	**10,977,500**	**$ 20,377,500**
State Highway Operations and Protection Program (SHOPP) =	**9,400,000**	**10,977,500**	**$ 20,377,500**
High Priority Projects (HPP) =	**3,200,000**		**$ 3,200,000**
			$ -
			$ -
Total Funding Reasonably Available =	**$ 22,000,000**	**$ 21,955,000**	**$ 43,955,000**
Total Unfunded Needs (or Short Term Carryover) =	**$ -**	**$ (82,290,000)**	**$ (82,290,000)**

Note 1 : Green highlighted projects above can be funded in the constrained funding analysis
Note 2 : Un-highlighted projects above cannot be funded. New funding sources will need to be identified or improvement will be developer funded.
Note 3 : Long term projects are escalated by 2.5%

TABLE
Shasta Regional Transportation Agency
Summary of Projects - Capacity Increasing
SHASTA COUNTY

Project Number	REGIONAL TRANSPORTATION PROJECTS	SHORT TERM TOTAL EST COST OF PROJECT	LONG TERM TOTAL EST COST OF PROJECT	FUNDABLE PROJECT BAND	PROJECT TYPE (PROJECT INTENT)	EXPECTED FUNDING SOURCES
1	Gas Point Road from New N-S to Rhonda - Widen to 4 lanes	$ 4,789,000		(2021-2025)	Capacity Increase	Local/Other
	Total Short Term Needs =	$ 4,789,000.00				
2	Rhonda Road Gas Point - I-5 Main New realigned 3 lane road		$ 8,799,000	(2026-2040)	Capacity Increase	Local/Other
3	New N-S Road - First St to New E-W Construct to 3 lanes		$ 6,001,000	(2026-2040)	Capacity Increase	Local/Other
4	New E-W Road -New N-S to Rhonda Construct 3 lane road		$ 3,017,000	(2026-2040)	Capacity Increase	Local/Other
5	Churn Ck Rd, Hartmeyer to Huntington, Widen, Realign		$ 4,096,000	(2026-2040)	Capacity Increase	Local/Other
6	Deschutes Road Widen to 3-Lanes, Old 44 Drive to Boyle Road		$ 3,603,000	(2026-2040)	Capacity Increase	Local/Other
7	First Street Widen from 2 to 5 lanes, N/S Arterial to Overcrossing		$ 720,000	(2026-2040)	Capacity Increase	Local/Other
8	New N-S Road - New E-W to Rhonda		$ 16,330,000	(2026-2040)	Capacity Increase	Unfunded or Developer
9	Deschutes Road Widen to 3-Lanes, Palo Cedro to Dersch Road		$ 6,400,000	(2026-2040)	Capacity/Safety	Unfunded or Developer
10	Dry Creek Road Shoulder Widening, Deschutes Rd to Bear Mtn Rd		$ 5,440,000	(2026-2040)	Capacity Increase	Unfunded or Developer
11	Oasis Road Widen to 4-Lanes, Randolph to Old Oasis		$ 1,216,000	(2026-2040)	Capacity Increase	Unfunded or Developer
12	Black Ranch Road Extension		$ 3,008,000	(2026-2040)	New Facility	Unfunded or Developer
13	Cottonwood - Front, Magnolia, Pine and Chestnut St Roundabouts		$ 1,123,000	(2026-2040)	Capacity Increase	Unfunded or Developer
14	Knighton Road West		$ 37,122,000	(2026-2040)	New Facility	Unfunded or Developer
15	Intermountain Road, SR 299 to Bear Mtn Road		$ 9,076,000	(2026-2040)	New Facility	Unfunded or Developer
16	East Stillwater Way, Shoulder Widen and Extend to Bear Mtn Road		$ 6,477,000	(2026-2040)	New Facility	Unfunded or Developer
	Total Long Term Fundable Needs =		**$ 26,236,000**			

DESCRIPTION	Short (2018-2025)	Long (2026-2040)	Total
Funding Needed By Short and Long Range Bands	**$ 4,789,000**	**$ 112,428,000**	**$ 117,217,000**
Recap of Expected/Estimated/Unknown Resources			
Local/Other =	**4,789,000**	**26,236,000**	**$ 31,025,000**
			$ -
			$ -
			$ -
			$ -
Total Funding Reasonably Available =	**$ 4,789,000**	**$ 26,236,000**	**$ 31,025,000**
Total Unfunded Needs (or Short Term Carryover) =	**$ -**	**$ (86,192,000)**	**$ (86,192,000)**

Note 1 : Green highlighted projects above can be funded in the constrained funding analysis

Note 2 : Un-highlighted projects above cannot be funded. New funding sources will need to be identified or improvement will be developer funded.

Note 3 : Long term projects are escalated by 2.5%

TABLE
Shasta Regional Transportation Agency
Summary of Projects - Safety
SHASTA COUNTY

Project Number	REGIONAL TRANSPORTATION PROJECTS	SHORT TERM TOTAL EST COST OF PROJECT	LONG TERM TOTAL EST COST OF PROJECT	FUNDABLE PROJECT BAND	PROJECT TYPE (PROJECT INTENT)	EXPECTED FUNDING SOURCES
1	Olinda Road Shoulder Widening, Sammy Lane to Red Leaf Lane	$ 1,100,000		(2018-2025)	Safety	HSIP/Local/Other
2	Riverland Drive Shoulder Widening, Knighton Road to two miles south	$ 1,200,000		(2018-2025)	Safety	HSIP/Local/Other
3	Deschutes Road Shoulder Widening, Brundage Rd. to Balls Ferry Rd.	$ 2,000,000		(2018-2025)	Safety	HSIP/Local/Other
4	Canyon Road Bike Lanes, Valley View Rd to China Gulch	$ 600,000		(2018-2025)	Safety	HSIP/Local/Other/ATP
5	Canyon Road Bike Lanes, SR 273 to Valley View Rd	$ 650,000		(2018-2025)	Safety	HSIP/Local/Other/ATP
6	Lake Boulevard Roundabout/Signal at Pine Grove Avenue	$ 500,000		(2018-2025)	Intersection	HSIP/Local/Other
7	Happy Valley Road Shoulder Widening and Realign, Palm Avenue to Warwick St	$ 1,875,000		(2018-2025)	Safety	HSIP/Local/Other
8	Placer Road, Shoulder Widening and Realign, Muletown Rd to Leaning Pine Rd	$ 650,000		(2018-2025)	Safety	HSIP/Local/Other
9	Churn Creek Road, Shoulder Widening from Rancho to Knighton	$ 1,500,000		(2018-2025)	Safety	HSIP/Local/Other
10	4th Street Median Lane, Main Street to Balls Ferry Road	$ 1,500,000		(2018-2025)	Capacity/Safety	HSIP/Local/Other
11	Bear Mountain Road - Shoulder Widening and Improve Alignment	$ 1,500,000		(2018-2025)	Safety	HSIP/Local/Other
12	Old Alturas Road, Shoulder Widening and Realign, Old Oregon Tr to Stillwater Ck	$ 490,000		(2018-2025)	Safety	HSIP/Local/Other
13	Old Alturas/Boyle Roads, Shoulder Widening, Stillwater Ck to Deschutes Rd	$ 1,500,000		(2018-2025)	Safety	HSIP/Local/Other
14	Placer Road at Swasey Drive, Roundabout	$ 500,000		(2018-2025)	Safety	Unfunded or Developer
	Total Short Term Needs =	**$ 15,565,000**				
15	Canyon Road at China Gulch Drive Roundabout/Signal		$ 640,000	(2026-2040)	Intersection	HSIP/Local/Other
16	Old Oregon Trail at Old Alturas Roundabout/Signal		$ 640,000	(2026-2040)	Intersection	HSIP/Local/Other
17	Churn Creek Road, Shoulder Widening from Knighton to Airport		$ 1,920,000	(2026-2040)	Safety	HSIP/Local/Other
18	Clear Creek Road Shoulder Widening, 273 to Honey Bee		$ 1,920,000	(2026-2040)	Safety	HSIP/Local/Other
19	Old 44 Drive Shoulder Widening, COR to Deschutes Road		$ 1,920,000	(2026-2040)	Safety	HSIP/Local/Other
20	Old 44 Drive Shoulder Widening and Realignment, Silver Bridge Rd to Oak Run Rd		$ 1,920,000	(2026-2040)	Safety	HSIP/Local/Other
21	Swasey Drive Shoulder Widening, SH 299 to Placer		$ 3,955,000	(2026-2040)	Safety	HSIP/Local/Other
22	Lower Springs Road Shoulder Widening, SH 299 to Swasey Drive		$ 1,920,000	(2026-2040)	Safety	HSIP/Local/Other
23	Deschutes Road at Boyle and Old Deschutes Rd Roundabout/Signal		$ 640,000	(2026-2040)	Intersection	HSIP/Local/Other
24	Cottonwood - Fourth Street and Locust Street Roundabout/Signal		$ 640,000	(2026-2040)	Intersection	HSIP/Local/Other
25	Quartz Hill and Keswick Dam Roads, Roundabout/Signal		$ 640,000	(2026-2040)	Intersection	HSIP/Local/Other
26	Cottonwood - Happy Valley at Gas Point Road Roundabout/Signal		$ 640,000	(2026-2040)	Intersection	HSIP/Local/Other
27	Deschutes Rd @ SR 44 Ramps and Old 44 Dr, Roundabouts/Signals		$ 2,560,000	(2026-2040)	Intersection	HSIP/Local/Other
	Total Long Term Fundable Needs =		**$ 19,955,000**			

DESCRIPTION	Short (2018-2025)	Long (2026-2040)	Total
Funding Needed By Short and Long Range Bands	**$ 15,565,000**	**$ 19,955,000**	**$ 35,520,000**
Recap of Expected/Estimated/Unknown Resources			
Highway Safety Improvement Program (HSIP) =	**13,230,250**	**$ 16,961,750**	**$ 30,192,000**
Local/Other =	**1,556,500**	**2,993,250**	**$ 4,549,750**
Active Transportation Program (ATP) =	**778,250**	**$ -**	**$ 778,250**
			$ -
			$ -
			$ -
Total Funding Reasonably Available =	**$ 15,565,000**	**$ 19,955,000**	**$ 35,520,000**
Total Unfunded Needs (or Short Term Carryover) =	**$ -**	**$ -**	**$ -**

Note 1 : Green highlighted projects above can be funded in the constrained funding analysis
Note 2 : Un-highlighted projects above cannot be funded. New funding sources will need to be identified or improvement will be developer funded.
Note 3 : Long term projects are escalated by 2.5%

TABLE
Shasta Regional Transportation Agency
Summary of Projects - Active Transportation
SHASTA COUNTY

Project Number	REGIONAL TRANSPORTATION PROJECTS	SHORT TERM TOTAL EST COST OF PROJECT	LONG TERM TOTAL EST COST OF PROJECT	PROJECT BAND	PROJECT TYPE (PROJECT INTENT)	EXPECTED FUNDING SOURCES
1	Burney - Tamarack Ave. and Park Ave., class ii bike lane	$ 420,000		(2018-2025)	Safety/SRTS	2% LTF
2	Burney - Mountain View Drive, Quebec St., Sugar Pine, Safe Routes to School	$ 500,000		(2018-2025)	Safety	Local/Other
3	Burney - Park Avenue, between Tamarack Avenue and Burney Creek, Construct shoulders	$ 101,500		(2018-2025)	Safety	ATP/Local/Other
4	Burney - Erie Street, Construct sidewalks	$ 359,848		(2018-2025)	Safety	ATP/Local/Other
5	Burney - Quebec Street, Construct sidewalks	$ 359,848		(2018-2025)	Safety	ATP/Local/Other
6	Burney - Toronto Avenue, between Erie and Quebec Streets, Construct sidewalks	$ 359,848		(2018-2025)	Safety	ATP/Local/Other
7	Old Oregon Trail from College View to Collyer Drive, class ii bike lane and interchange improvements	$ 500,000		(2018-2025)	Safety	ATP/Local/Other
	Total Short Term Needs =	**$ 2,601,045**				
8	Road segment Gas Point Road, From I-5/Cottonwood, To Happy Valley Road, class ii bike lane		$ 4,990,000	(2026-2040)	Safety	ATP/Local/Other
9	Road segment Happy Valley Road, From Gas Point Road, To Hawthorne Avenue, class ii bike lane		$ 5,206,000	(2026-2040)	Safety	ATP/Local/Other
10	Road segment Canyon Road, From Hawthorne Avenue, To Highway 273, class ii bike lane		$ 1,618,000	(2026-2040)	Safety	ATP/Local/Other
11	Road segment Balls Ferry Road, From Anderson city limit, To Deschutes Road, class ii bike lane		$ 834,000	(2026-2040)	Safety	Unfunded or Developer
12	Road segment Deschutes Road, From Balls Ferry Road, To Highway 299 East, class ii bike lane		$ 10,860,000	(2026-2040)	Safety	Unfunded or Developer
13	Road segment Placer Road, From Redding city limit, To Cloverdale Road, class ii bike lane		$ 5,588,000	(2026-2040)	Safety	Unfunded or Developer
14	Road segment Texas Springs Road, From Placer Road, To Branstetter Road, class ii bike lane		$ 5,008,000	(2026-2040)	Safety	Unfunded or Developer
15	Road segment Oasis Road, From I-5/Redding, To Old Oregon Trail, class ii bike lane		$ 1,233,000	(2026-2040)	Safety	Unfunded or Developer
16	Road segment Old Oregon Trail, From I-5/Mountain Gate, To Highway 299 East, class ii bike lane		$ 5,381,000	(2026-2040)	Safety	Unfunded or Developer
17	Road segment Old Oregon Trail, From Highway 299 East, To Highway 44, class ii bike lane		$ 3,452,000	(2026-2040)	Safety	Unfunded or Developer
18	Road segment Cloverdale Road, From Placer Road, To Oak Street, class ii bike lane		$ 3,162,000	(2026-2040)	Safety	Unfunded or Developer
19	Road segment Dersch Road, From Airport Road, To Deschutes Road, class ii bike lane		$ 2,234,000	(2026-2040)	Safety	Unfunded or Developer
20	Road segment Swasey Drive , From Highway 299 West, To Placer Road, class ii bike lane		$ 3,077,000	(2026-2040)	Safety	Unfunded or Developer
21	Burney - Tamarack Avenue, between convenience store and Main Street, Construct sidewalks		$ 369,000	(2026-2040)	Safety	Unfunded or Developer
22	Burney - Main Street gap closures, at various locations, Construct sidewalks		$ 2,303,000	(2026-2040)	Safety/Gap closure	Unfunded or Developer
23	Road segment Airport Road, From Highway 44, To Anderson city limit, class ii bike lane		$ 5,069,000	(2026-2040)	Safety	Unfunded or Developer
24	Road segment Oak Street, From Cloverdale Road, To Palm Avenue, class ii bike lane		$ 1,270,000	(2026-2040)	Safety	Unfunded or Developer
25	Road segment Palm Avenue, From Oak Street , To Happy Valley Road, class ii bike lane		$ 2,023,000	(2026-2040)	Safety	Unfunded or Developer
26	Burney - Mountain View Road, between Main and Carberry Streets, Construct sidewalks		$ 2,948,000	(2026-2040)	Safety	Unfunded or Developer
27	Burney - Ash Avenue, between Hudson and Marquette Streets, Widen shoulders		$ 162,000	(2026-2040)	Safety	Unfunded or Developer
28	Burney - Park Avenue, between Burney Creek and Hudson Street, Widen shoulders		$ 425,000	(2026-2040)	Safety	Unfunded or Developer
29	Burney - Hudson Street, between Park Avenue and Main Street, Widen shoulders		$ 317,000	(2026-2040)	Safety	Unfunded or Developer
30	Burney - Huron Avenue, between Hudson and Erie Streets, Widen shoulders		$ 261,000	(2026-2040)	Safety	Unfunded or Developer
31	Burney - Marquette Street, between Cypress Avenue and Main Street, Widen shoulders		$ 398,000	(2026-2040)	Safety	Unfunded or Developer
32	Burney - Extension of Tall Timber Lane between schools, Construct 'Class I' bike path		$ 45,000	(2026-2040)	Safety/SRTS	Unfunded or Developer
33	Burney - From Elementary to Junior/Senior High Schools, Construct 'Class I' bike path		$ 56,000	(2026-2040)	Safety/SRTS	Unfunded or Developer
34	Burney - Formalize bike path from Junior/Senior High Schools to Main Street, Construct 'Class I' bike path		$ 41,000	(2026-2040)	Safety/SRTS	Unfunded or Developer
35	Burney - From Washburn Bue Park to Burney Creek Trail, Construct trail		$ 355,000	(2026-2040)	Safety	Unfunded or Developer
36	Burney - Burney Creek Trail, Construct trail		$ 192,000	(2026-2040)	Safety	Unfunded or Developer
37	Burney - Bailey Avenue, between Marquette Street and Tall Timber Lane, Construct 'Class II' bike lanes		$ 247,000	(2026-2040)	Safety	Unfunded or Developer
38	Burney - Hudson Street, Marquette Street, Ash Avenue, Park Avenue, Traffic calming measures		$ 67,000	(2026-2040)	Safety/Traffic calming	Unfunded or Developer
39	Burney - Main Street/City Limits, Gateway treatments		$ 50,000	(2026-2040)	Safety	Unfunded or Developer
	Total Long Term Fundable Needs =		**$ 11,814,000**			

DESCRIPTION	Short (2018-2025)	Long (2026-2040)	Total
Funding Needed By Short and Long Range Bands	**$ 2,601,045**	**$ 69,241,000**	**$ 71,842,045**
Recap of Expected/Estimated/Unknown Resources			
Active Transportation Program (ATP) =	**$ 962,387**	**$ 4,371,180**	**$ 5,333,567**
Local/Other =	**$ 130,052**	**$ 590,700**	**$ 720,752**
2% LTF =	**$ 130,052**	**$ 590,700**	**$ 720,752**
Highway Safety Improvement Program (HSIP) =	**$ 1,378,554**	**$ 6,261,420**	**$ 7,639,974**
			$ -
Total Funding Reasonably Available =	**$ 2,601,045**	**$ 11,814,000**	**$ 14,415,045**
Total Unfunded Needs (or Short Term Carryover) =	**$ -**	**$ (57,427,000)**	**$ (57,427,000)**

Note 1 : Green highlighted projects above can be funded in the constrained funding analysis

Note 2 : Un-highlighted projects above cannot be funded. New funding sources will need to be identified or improvement will be developer funded.

Note 3 : Long term projects are escalated by 2.5%

TABLE
Shasta Regional Transportation Agency
Summary of Projects - Interchanges
CITY OF REDDING

Project Number	REGIONAL TRANSPORTATION PROJECTS	SHORT TERM TOTAL EST COST OF PROJECT	LONG TERM TOTAL EST COST OF PROJECT	PROJECT BAND	PROJECT TYPE (PROJECT INTENT)	EXPECTED FUNDING SOURCES
1	Signal: SR44 and Shasta View Dr (WB Ramp)	$ 500,000		(2018-2025)	Intersection	Developer
2	South Bonnyview & I-5 Interchange Exit 675 - NB On-ramp Improvements	$ 2,500,000		(2018-2025)	Interchange	TIF/Developer
3	South Bonnyview & I-5 Interchange Exit 675 - NB/SB Off-ramp Improvements	$ 5,000,000		(2018-2025)	Interchange	TIF/Developer
	Total Short Term Needs =	$ 500,000				
4	Hilltop Drive Overcrossing - over I-5, Build second structure to the north		$ 6,759,000	(2026-2040)	Capacity Increase	TIF
5	Oasis Road & I-5 Interchange Exit 682 - Reconstruction and Widening		$ 26,498,000	(2026-2040)	Interchange	NRTBD/Developer
6	Route 299, Postmile 25.35, Exit #141, Churn Creek Interchange		$ 3,840,000	(2026-2040)	Interchange	Future Need
7	Route I-5, Postmile 17.32, Exit #680, SR 299E Interchange		$ 3,840,000	(2026-2040)	Interchange	Future Need
8	Route I-5, Postmile 18.48, State Route 273/I-5 Interchange		$ 15,361,000	(2026-2040)	Interchange	Unfunded or Developer
9	South Bonnyview & I-5 Interchange Exit 675 - Diverging Diamond Improvements		$ 18,000,000	(2026-2040)	Interchange	Unfunded or Developer
10	Twin View Blvd & I-5 Interchange Exit 681 - Improvements		$ 5,120,000	(2026-2040)	Interchange	Unfunded or Developer
11	Airport Road & SR44 Interchange Exit 5 - Improvements		$ 19,201,000	(2026-2040)	Interchange	Unfunded or Developer
12	Cypress Ave and Bechelli Lane to Industrial Street & I-5 Interchange Exit 677 - Reconstruction		$ 16,677,000	(2026-2040)	Interchange	Unfunded or Developer
	Total Long Term Fundable Needs =		**$ 33,257,000**			

DESCRIPTION	Short (2018-2025)	Long (2026-2040)	Total
Funding Needed By Short and Long Range Bands	**$ 500,000**	**$ 115,296,000**	**$ 115,796,000**
Recap of Expected/Estimated/Unknown Resources			
Local/Other =	**250,000**	**$ 16,628,500**	**$ 16,878,500**
State Highway Operations and Protection Program (SHOPP) =	**250,000**	**16,628,500**	**$ 16,878,500**
			$ -
			$ -
			$ -
Total Funding Reasonably Available =	**$ 500,000**	**$ 33,257,000**	**$ 33,757,000**
Total Unfunded Needs (or Short Term Carryover) =	**$ -**	**$ (82,039,000)**	**$ (82,039,000)**
Note 1 : Green highlighted projects above can be funded in the constrained funding analysis			
Note 2 : Un-highlighted projects above cannot be funded. New funding sources will need to be identified or improvement will be developer funded.			
Note 3 : Long term projects are escalated by 2.5%			

TABLE
Shasta Regional Transportation Agency
Summary of Projects - Capacity Increasing
CITY OF REDDING

Project Number	REGIONAL TRANSPORTATION PROJECTS	SHORT TERM TOTAL EST COST OF PROJECT	LONG TERM TOTAL EST COST OF PROJECT	PROJECT BAND	PROJECT TYPE (PROJECT INTENT)	EXPECTED FUNDING SOURCES
1	Placer Street Widening - Airpark Drive to Buenaventura Blvd	$ 1,800,000		(2018-2025)	Capacity Increase	Local/Other
2	~~Placer Street Widening - Buenaventura Blvd to Boston Ave~~	~~$ 2,000,000~~		~~(2018-2025)~~	~~Capacity Increase~~	~~Local/Other~~
3	Quartz Hill Road Widening - Snow Lane to Top of the Hill	$ 3,700,000		(2018-2025)	Capacity Increase	Local/Other
	Bechelli Lane/South Bonnyview Roundabout	$ 3,500,000		(2018-2025)	Capacity Increase	Local/Developer
4	Hilltop Drive Widening - Lake Boulevard to I-5	$ 1,600,000		(2018-2025)	Capacity Increase	Local/Other
5	Churn Creek Road Widening - Browning St. to Boulder Creek	$ 3,468,000		(2018-2025)	Capacity Increase	Local/Other
6	Old Alturas Road Widening - Victor Avenue to Shasta View Drive	$ 5,500,000		(2018-2025)	Capacity Increase	Local/Other
7	Victor Avenue Widening - Hartnell Avenue to E. Cypress Avenue	$ 1,993,000		(2018-2025)	Capacity Increase	Local/Other
8	Oasis Road Widening - Northbound I-5 Ramps to Gold Hills Drive	$ 11,608,800		(2018-2025)	Interchange	Local/Other
9	Twin View Road Realignment - North and South of Oasis Road	$ 6,483,064		(2018-2025)	Capacity Increase	Local/Other
	Total Short Term Needs =	**$ 41,652,864**				
10	Railroad Avenue Widening (including class II bike lanes) - Sheridan Street to Grandview Avenue		$ 2,308,000	(2026-2040)	Capacity Increase	Local/Other
11	Victor Avenue Widening - E.Cypress Avenue to Mistletoe Lane		$ 5,472,000	(2026-2040)	Capacity Increase	Local/Other
12	Victor Avenue Widening - SR44 to Old Alturas Road		$ 3,584,000	(2026-2040)	Capacity Increase	Local/Other
13	Browning Street Reconfigure to 4 Lane - Hilltop Drive to Old Alturas		$ 5,120,000	(2026-2040)	Capacity Increase	Local/Other
14	Shasta View Drive Widening - Atrium Way to Old Alturas		$ 512,000	(2026-2040)	Capacity Increase	Local/Other
15	Victor Avenue Widening - Vega Street to Hartnell		$ 6,080,000	(2026-2040)	Capacity Increase	Unfunded or Developer
16	Bechelli Lane Widening- 3rd Street to Loma Vista		$ 2,061,000	(2026-2040)	Capacity Increase	Unfunded or Developer
17	Churn Creek Rd, Rancho Rd, and Victor Avenue Roundabout		$ 3,817,000	(2026-2040)	Capacity Increase	Unfunded or Developer
18	Hartnell Avenue Widening - Victor Avenue to Alta Mesa Drive		$ 6,966,000	(2026-2040)	Capacity Increase	Unfunded or Developer
19	Churn Creek Road Widening - Boulder Creek to SR 299E		$ 3,994,000	(2026-2040)	Capacity Increase	Unfunded or Developer
20	Hartnell Avenue Widening - Alta Mesa to Shasta View		$ 2,432,000	(2026-2040)	Widening	Unfunded or Developer
21	Oasis Road Widening - Randolph Road to Old Oasis Road		$ 4,480,000	(2026-2040)	Capacity Increase	Unfunded or Developer
22	Cascade Blvd Realignment- North and South of Oasis Road		$ 11,154,000	(2026-2040)	Capacity Increase	Unfunded or Developer
23	Caterpillar Road - George Drive to SR273 Widen Roadway and Signal		$ 2,176,000	(2026-2040)	Capacity Increase	Unfunded or Developer
24	Shasta View Drive Extension - 2 Lane Widening - Collyer Drive to Manzanoaks Drive		$ 7,681,000	(2026-2040)	New Facility	Unfunded or Developer
25	Quartz Hill Road Widening - Top of Hill to City Limits		$ 5,376,000	(2026-2040)	Capacity Increase	Unfunded or Developer
26	Shasta View Drive Widening - College View to Inspiration Place		$ 3,200,000	(2026-2040)	Capacity Increase	Unfunded or Developer
27	Airport Road Widening - SR 44 to Rancho Rd.		$ 7,835,000	(2026-2040)	Capacity Increase	Unfunded or Developer
28	Cypress Ave Connection - Victor Avenue to Shasta View Drive		$ 21,761,000	(2026-2040)	New Facility	Unfunded or Developer
29	Hilltop Drive Extension - Lake Boulevard to Twin View		$ 1,280,000	(2026-2040)	New Facility	Unfunded or Developer
30	Palacio Drive Connection - Churn Creek to Cornell Place		$ 10,881,000	(2026-2040)	New Facility	Unfunded or Developer
31	Shasta View Drive Widening - Hartnell Avenue to Goodwater Drive		$ 7,449,000	(2026-2040)	Capacity Increase	Unfunded or Developer
32	Airport Road Widening - Sacramento River to Rancho Road		$ 44,803,000	(2026-2040)	Capacity Increase	Unfunded or Developer
33	Buenaventura Blvd Reconfigure to 4 lane - Summit Drive to Railroad Avenue		$ 1,920,000	(2026-2040)	Capacity Increase	Unfunded or Developer
34	Buenaventura Blvd Widening - Starlight Boulevard to Placer Road		$ 1,920,000	(2026-2040)	Capacity Increase	Unfunded or Developer
35	Court Street Widening - 11th Street to Riverside Drive		$ 640,000	(2026-2040)	Capacity Increase	Unfunded or Developer
36	Hartnell Avenue at Airport Road Widening and Realignment		$ 10,145,000	(2026-2040)	Capacity Increase	Unfunded or Developer
37	Oak Mesa Lane Extension - Tarmac Road to Candlewood Drive		$ 1,441,000	(2026-2040)	New Facility	Unfunded or Developer
38	Oasis Road Widening - Gold Hills Drive to Shasta View Drive		$ 2,560,000	(2026-2040)	Capacity Increase	Unfunded or Developer
39	Old Alturas Road Widening - Shasta View Drive to City Limits		$ 5,869,000	(2026-2040)	Capacity Increase	Unfunded or Developer
40	Old Oregon Trail Widening - Old Highway 44 to Viking Way		$ 5,120,000	(2026-2040)	Capacity Increase	Unfunded or Developer
41	Parkview Ave Widening - ACID Canal to Park Marina		$ 1,184,000	(2026-2040)	Capacity Increase	Unfunded or Developer
42	Rancho Road Widening - Goodwater to Airport Road		$ 8,641,000	(2026-2040)	Capacity Increase	Unfunded or Developer
43	Shasta View Drive Extension - Manzanoaks Drive to Oasis Road		$ 5,120,000	(2026-2040)	New Facility	Unfunded or Developer
44	Shasta View Drive Extension - Rancho Road to Airport Road		$ 6,400,000	(2026-2040)	New Facility	Unfunded or Developer
45	Stillwater Business Park Improvements - Phase 3		$ 6,400,000	(2026-2040)	New Facility	Unfunded or Developer
46	Tarmac Road Extension to Old Oregon Trail		$ 7,647,000	(2026-2040)	New Facility	Unfunded or Developer
47	Westside Road Frontage Extension - Glengary Drive to Clear Creek Road		$ 1,669,000	(2026-2040)	New Facility	Unfunded or Developer
48	Beltline Road Extension - Oasis Rd to Ashby Rd		$ 6,048,000	(2026-2040)	New Facility	Unfunded or Developer
49	Buenaventura Blvd Extension - Eureka Way to Keswick Dam Road		$ 12,801,000	(2026-2040)	New Facility	Unfunded or Developer
50	Cedars Road Extension - El Reno Lane to Buenaventura Boulevard		$ 1,152,000	(2026-2040)	New Facility	Unfunded or Developer
51	Creekside Drive Extension - Sacramento Drive to South Bonnyview Road		$ 1,280,000	(2026-2040)	New Facility	Unfunded or Developer
52	Cypress Avenue Reliever Project - Industrial Street Extension Over crossing of I-5		$ 7,345,000	(2026-2040)	Capacity Increase	Unfunded or Developer
53	Eastside Road Extension - Girvan Road to Southern City Limits		$ 7,232,000	(2026-2040)	New Facility	Unfunded or Developer
54	George Drive Extension - North Terminus to Oasis Road		$ 1,280,000	(2026-2040)	New Facility	Unfunded or Developer
55	Kenyon Drive Extension - West Terminus to Placer Road		$ 12,801,000	(2026-2040)	New Facility	Unfunded or Developer
56	Loma Vista Drive Extension - Churn Creek Road to Victor Avenue		$ 7,681,000	(2026-2040)	New Facility	Unfunded or Developer
57	Palacio Drive Extension - Shasta View Drive to Old Oregon Trail		$ 4,480,000	(2026-2040)	New Facility	Unfunded or Developer
58	S. Bonnyview Road @ SR273 - Grade Separation		$ 38,403,000	(2026-2040)	Intersection	Unfunded or Developer
59	Santa Rosa Avenue Extension - Quartz Hill Road to Lake Boulevard		$ 2,560,000	(2026-2040)	New Facility	Unfunded or Developer
60	Shasta View Drive Extension - 4 Lane Widening - Collyer Drive to Manzanoaks Drive		$ 8,961,000	(2026-2040)	Capacity Increase	Unfunded or Developer
61	Shasta View Drive Extension - College View Drive to Collyer Drive - SR299 OC		$ 12,801,000	(2026-2040)	New Facility	Unfunded or Developer
62	Shasta View Drive Extension - Oasis Road to North City Limits		$ 5,120,000	(2026-2040)	New Facility	Unfunded or Developer
63	South Street Railroad Crossing- Grade Separation		$ 12,097,000	(2026-2040)	Intersection	Unfunded or Developer
	Total Long Term Fundable Needs =		**$ 16,996,000**			

DESCRIPTION	Short (2018-2025)	Long (2026-2040)	Total
Funding Needed By Short and Long Range Bands	**$ 41,652,864**	**$ 379,140,000**	**$ 420,792,864**
Recap of Expected/Estimated/Unknown Resources			
Local/Other =	**41,652,864**	**$ 16,996,000**	**$ 58,648,864**
			$ -
			$ -
			$ -
			$ -
Total Funding Reasonably Available =	$ 41,652,864	$ 16,996,000	$ 58,648,864
Total Unfunded Needs (or Short Term Carryover) =	$ -	$ (362,144,000)	$ (362,144,000)

Note 1 : Green highlighted projects above can be funded in the constrained funding analysis
Note 2 : Un-highlighted projects above cannot be funded. New funding sources will need to be identified or improvement will be developer funded.
Note 3 : Long term projects are escalated by 2.5%

TABLE
Shasta Regional Transportation Agency
Summary of Projects - Safety
CITY OF REDDING

Project Number	REGIONAL TRANSPORTATION PROJECTS	SHORT TERM TOTAL EST COST OF PROJECT	LONG TERM TOTAL EST COST OF PROJECT	PROJECT BAND	PROJECT TYPE (PROJECT INTENT)	EXPECTED FUNDING SOURCES
1	Roundabout: Victor Avenue - Old Alturas	$ 1,500,000		(2018-2025)	Intersection	HSIP/Local/Other
2	Restripe and improvements: Court Street - Schley Avenue	$ 400,000		(2018-2025)	Intersection	HSIP/Local/Other
3	2 lane Realignment and Widening: Old Oregon Trail - Midland Drive to Frontier Road	$ 1,800,000		(2018-2025)	Safety	HSIP/Local/Other
	Hartnell Avenue Improvements: Churn Creek to Victor	$ 1,900,000		(2018-2025)	Safety	HSIP/Local/Other
	Churn Creek Road and Maraglia Improvements: Hartnell to Cypress and Churn Creek to Hilltop	$ 1,400,000		(2018-2025)	Safety	HSIP/Local/Other
4	~~Shoulder widening: Churn Creek Road - Bodenhammer to Boulder Creek~~	~~$ -~~		~~(2018-2025)~~	~~Safety~~	~~HSIP/Local/Other~~
5	~~Shoulder widening: Buenaventura - Placer to Lakeside~~	~~$ -~~		~~(2018-2025)~~	~~Safety~~	~~HSIP/Local/Other~~
6	~~Victor Avenue Safety Improvements - Enterprise Park to Churn Creek Bridge~~	~~$ -~~		~~(2018-2025)~~	~~Safety~~	~~HSIP/Local/Other~~
7	Signal: West Street - Placer Street	$ 400,000		(2018-2025)	Intersection	HSIP/Local/Other
8	Signal: Lake Blvd - Keswick Dam Road	$ 350,000		(2018-2025)	Intersection	HSIP/Local/Other
9	Signal: Churn Creek - Maraglia Street	$ 400,000		(2018-2025)	Intersection	HSIP/Local/Other
10	Signal: Victor Avenue - Vega Street	$ 400,000		(2018-2025)	Intersection	HSIP/Local/Other
11	~~Signal: Victor Avenue - Galaxy Way~~	~~$ -~~		~~(2018-2025)~~	~~Intersection~~	~~HSIP/Local/Other~~
12	Signal: East Street - South Street	$ 400,000		(2018-2025)	Intersection	HSIP/Local/Other
13	Signal: Alta Mesa Drive - Hartnell Avenue	$ 400,000		(2018-2025)	Intersection	HSIP/Local/Other
14	Signal: Shasta View Drive - Simpson Blvd	$ 400,000		(2018-2025)	Intersection	HSIP/Local/Other
15	Signal: Placer Road - Cumberland	$ 400,000		(2018-2025)	Intersection	HSIP/Local/Other
16	Signal: Placer Road - Wisconsin Avenue	$ 400,000		(2018-2025)	Intersection	HSIP/Local/Other
17	Signal: Court Street - Riverside Drive	$ 400,000		(2018-2025)	Intersection	HSIP/Local/Other
18	Signal: Park Marina Drive - Locust Street	$ 400,000		(2018-2025)	Intersection	HSIP/Local/Other
19	Signal: Airport Road - Meadowview Drive	$ 400,000		(2018-2025)	Intersection	HSIP/Local/Other
	Total Short Term Needs =	**$ 11,750,000**				
20	~~Signal: Victor Avenue - Marlene Avenue~~		~~$ -~~	~~(2026-2040)~~	~~Intersection~~	~~HSIP/Local/Other~~
21	Signal: Lake Boulevard - Panorama Drive		$ 512,000	(2026-2040)	Intersection	HSIP/Local/Other
22	Signal: Placer - O'conner Avenue		$ 512,000	(2026-2040)	Intersection	HSIP/Local/Other
23	Signal: Twin View - Caterpillar		$ 512,000	(2026-2040)	Intersection	HSIP/Local/Other
24	Signal: Hilltop Drive - Sand Point Drive		$ 512,000	(2026-2040)	Intersection	HSIP/Local/Other
25	Signal: Churn Creek/Hawley Road - Collyer Drive		$ 512,000	(2026-2040)	Intersection	HSIP/Local/Other
26	Signal: Churn Creek Road - Palacio Drive		$ 512,000	(2026-2040)	Intersection	HSIP/Local/Other
27	Signal: Shasta View Drive - College View		$ 512,000	(2026-2040)	Intersection	HSIP/Local/Other
28	Signal: Victor Ave - El Vista Street		$ 512,000	(2026-2040)	Intersection	HSIP/Local/Other
29	Signal: Lake Boulevard - Santa Rosa Way		$ 512,000	(2026-2040)	Intersection	HSIP/Local/Other
30	Signal: Hartnell Avenue - Lawrence Road		$ 512,000	(2026-2040)	Intersection	HSIP/Local/Other
	Total Long Term Fundable Needs =		**$ 5,120,000**			

DESCRIPTION	Short (2018-2025)	Long (2026-2040)	Total
Funding Needed By Short and Long Range Bands	**$ 11,750,000**	**$ 5,120,000**	**$ 16,870,000**
Recap of Expected/Estimated/Unknown Resources			
Highway Safety Improvement Program (HSIP) =	**5,875,000**	**$ 2,560,000**	**$ 8,435,000**
Local/Other =	**5,875,000**	**2,560,000**	**$ 8,435,000**
			$ -
			$ -
			$ -
Total Funding Reasonably Available =	**$ 11,750,000**	**$ 5,120,000**	**$ 16,870,000**
Total Unfunded Needs (or Short Term Carryover) =	**$ -**	**$ -**	**$ -**

Note 1 : Green highlighted projects above can be funded in the constrained funding analysis
Note 2 : Un-highlighted projects above cannot be funded. New funding sources will need to be identified or improvement will be developer funded.
Note 3 : Long term projects are escalated by 2.5%

Shasta Regional Transportation Agency
Summary of Projects - Bridge
CITY OF REDDING

Project Number	REGIONAL TRANSPORTATION PROJECTS	SHORT TERM TOTAL EST COST OF PROJECT	LONG TERM TOTAL EST COST OF PROJECT	PROJECT BAND	PROJECT TYPE (PROJECT INTENT)	EXPECTED FUNDING SOURCES
1	State Bridge #06C0340, Sacramento Drive @ Olney Creek - Bridge Replacement	$ 4,613,000		(2018-2025)	Bridge Replacement	HBP/Local
2	State Bridge #06C0344, Sharon Ave over ACID Canal - Bridge Replacement	$ 1,056,006		(2018-2025)	Bridge Replacement	HBP/Local
3	State Bridge #06C0104, Old Alturas Road @ Churn Creek - Bridge Replacement	$ 3,226,000		(2018-2025)	Bridge Replacement	HBP/Local
4	State Bridge #06C0335, Eastside Road @ Olney Creek - Bridge Replacement	$ 2,053,850		(2018-2025)	Bridge Replacement	HBP/Local
5	State Bridge #06C0341, Girvan Road @ Olney Creek - Bridge Replacement	$ 3,014,039		(2018-2025)	Bridge Replacement	HBP/Local
6	State Bridge # 06C0071, Railroad Ave over Canyon Hollow - Bridge Rehabilitation	$ 2,985,612		(2018-2025)	Bridge Rehabilitation	HBP/Local
7	~~State Bridge # 06C0078, Westside Rd @ ACID Canal - Bridge Replacement~~	~~$ -~~		~~(2018-2025)~~	~~Bridge Replacement~~	~~HBP/Local~~
8	State Bridge # 06C0085, Eastside Rd @ Canyon Hollow - Bridge Replacement	$ 1,731,000		(2018-2025)	Bridge Replacement	HBP/Local
	State Bridge #06C0307, Canyon Road @ ACID Canal - Bridge Replacement	$ 2,542,339		(2018-2025)	Bridge Replacement	HBP/Local
	State Bridge # 06C0106, Hilltop Dr @ I-5 - Bridge Rehabilitation (South Replacement)	$ 5,280,000		(2018-2025)	Bridge Rehabilitation	HBP/Local
	Total Short Term Needs =	$ 26,501,846				
9	State Bridge # 06C0088, Old Oregon Trail @ W. Fork Stillwater Creek - Bridge Replacement		$ 6,893,000	(2026-2040)	Bridge Replacement	HBP/Local
11	State Bridge # 06C0033, Lake Blvd @ SPRR - Bridge Rehabilitation		$ 6,893,000	(2026-2040)	Bridge Rehabilitation	HBP/Local
12	State Bridge # 06C0047, Locust St @ ACID Canal - Bridge Rehabilitation		$ 1,379,000	(2026-2040)	Bridge Rehabilitation	HBP/Local
13	State Bridge # 06C0057, Twin View Blvd @ Boulder Creek - Bridge Rehabilitation		$ 6,893,000	(2026-2040)	Bridge Rehabilitation	HBP/Local
14	State Bridge # 06C0106, Hartnell Ave @ Churn Court - Bridge Rehabilitation		$ 6,893,000	(2026-2040)	Bridge Rehabilitation	HBP/Local
15	State Bridge # 06C0070, Westside Rd @ Oregon Gulch - Bridge Rehabilitation		$ 1,379,000	(2026-2040)	Bridge Rehabilitation	HBP/Local
	Total Long Term Fundable Needs =		$ 30,330,000			

DESCRIPTION	Short (2018-2025)	Long (2026-2040)	Total
Funding Needed By Short and Long Range Bands	**$ 26,501,846**	**$ 30,330,000**	**$ 56,831,846**
Recap of Expected/Estimated/Unknown Resources			
Highway Bridge Program (HBP) =	**25,176,754**	**$ 28,813,500**	**$ 53,990,254**
Local/Other =	**1,325,092**	**1,516,500**	**$ 2,841,592**
			$ -
			$ -
			$ -
Total Funding Reasonably Available =	**$ 26,501,846**	**$ 30,330,000**	**$ 56,831,846**
Total Unfunded Needs (or Short Term Carryover) =	**$ -**	**$ -**	**$ -**

Note 1 : Green highlighted projects above can be funded in the constrained funding analysis

Note 2 : Un-highlighted projects above cannot be funded. New funding sources will need to be identified or improvement will be developer funded.

Note 3 : Long term projects are escalated by 2.5%

TABLE
Shasta Regional Transportation Agency
Summary of Projects - Active Transportation
CITY OF REDDING

Project Number	REGIONAL TRANSPORTATION PROJECTS	SHORT TERM TOTAL EST COST OF PROJECT	LONG TERM TOTAL EST COST OF PROJECT	PROJECT BAND	PROJECT TYPE (PROJECT INTENT)	EXPECTED FUNDING SOURCES
1	Bechelli Lane and Loma Vista Drive ATP: buffered and separated bike lanes	$ 8,400,000		(2018-2025)	Safety	ATP/Other
2	Redding Downtown Loop & Affordable Housing Project: Separated bike lane, California St from Division St to Yuba St	$ 550,000		(2018-2025)	Safety	AHSC/Other
3	Churn Creek Road & Maraglia St HSIP: buffered bike lanes	$ 1,777,000		(2018-2025)	Safety	HSIP/Other
4	Diestelhorst to Downtown ATP	$ 2,600,000		(2018-2025)	Safety	ATP/Other
5	Hartnell Ave HSIP: buffered bike lane	$ 1,914,700		(2018-2025)	Safety	HSIP/Other
6	West St. ATP: buffered bike lanes	$ 3,196,000		(2018-2025)	Safety	ATP/Other
7	Quartz Hill Rd ATP: buffered bike lane	$ 3,500,000		(2018-2025)	Safety	ATP/Other
8	Butte St: buffered bike lane, Continental St to Sundial Bridge Dr	$ 500,000		(2018-2025)	Safety	unknown
9	Trinity St to Continential St ATP: separated bike lanes	$ 2,750,000		(2018-2025)	Safety	unknown
10	Park Marina Dr: shared use path, Sundial Bridge Dr to E. Cypress Ave	$ 850,000		(2018-2025)	Safety	unknown
11	Park Marina Dr: buffered bike lane: Sundial Bridge Dr to Parkview Ave	$ 1,700,000		(2018-2025)	Safety	unknown
12	Bike Boulevard: Shasta St; Willis St; Pleasant St; South St	$ 1,800,000		(2018-2025)	Safety	unknown
13	Shasta View Dr: buffered bike lane, Castlewood Dr to Hartnell Ave	$ 1,875,000		(2018-2025)	Safety	unknown
14	Shasta View Dr: shared use path, Castlewood Dr to Hartnell Ave	$ 800,000		(2018-2025)	Safety	unknown
15	South St: bike boulevard, East St to Park Marina Dr	$ 1,275,000		(2018-2025)	Safety	unknown
16	Off-Street (Turtle Bay to Downtown Trail): shared use path	$ 1,400,000		(2018-2025)	Safety	unknown
17	Victor Avenue: shared use path, Bramble PL to E Cypress Ave	$ 720,000		(2018-2025)	Safety	unknown
18	Victor Avenue: buffered bike lane, Bramble PL to Old Alturas Rd	$ 3,175,000		(2018-2025)	Safety	unknown
	Total Short Term Needs =	**$ 21,937,700**				
19	Multi-use trail: Candlewood Trail, From Highway 44, To Candlewood Dr		$ 256,000	(2026-2040)	Recreation/Safety	unknown
20	Multi-use trail: Kapusta		$ 160,000	(2026-2040)	Recreation/Safety	unknown
21	Multi-use trail: Clear Creek Trail, Lower Clear Creek Greenway, To Cascade Park		$ 832,000	(2026-2040)	Recreation/Safety	unknown
22	Multi-use trail: Jenny Creek Trail, From Eureka Way, To Mary Lake		$ 160,000	(2026-2040)	Recreation/Safety	unknown
23	Multi-use trail: Linden Creek Trail, From Placer St, To MLK, Jr. Park		$ 512,000	(2026-2040)	Recreation/Safety	unknown
24	Multi-use trail: Linden Creek Trail, From Placer St, To MLK, Jr. Park		$ 192,000	(2026-2040)	Recreation/Safety	unknown
25	Dirt trail: Salt Creek Trail, From Highway 299 West, To Sacramento River Trail		$ 448,000	(2026-2040)	Recreation/Safety	unknown
26	Crushed granite: Widen Buenaventura Trail, from Sunflower to Sacramento River Trail		$ 288,000	(2026-2040)	Recreation/Safety	unknown
27	class ii bike lane: Route N Market St, From Lake Blvd, To Quartz Hill Rd		$ 64,000	(2026-2040)	Safety	unknown
28	class ii bike lane: Route Tarmac Rd, From Shasta View Dr, To Abernathy Ln		$ 192,000	(2026-2040)	Safety	unknown
29	class ii bike lane: Route Buenaventura Blvd, From Buenaventura Trailhead, To Railroad Av		$ 96,000	(2026-2040)	Safety	unknown
30	class ii bike lane: Route Hilltop Dr, From State Route 299, To E Cypress Av		$ 1,536,000	(2026-2040)	Safety	unknown
31	class ii bike lane: Route Lake Blvd, From Pine Grove Av, To N Market St		$ 64,000	(2026-2040)	Safety	unknown
32	class ii bike lane: Route Old Alturas Rd, From Churn Creek Rd, To Old Oregon Trail		$ 448,000	(2026-2040)	Safety	unknown
33	class ii bike lane: Route Shasta View Dr, From College View Dr, To Rancho Rd		$ 6,400,000	(2026-2040)	Safety	unknown
34	class ii bike lane: Route Victor Av, From Old Alturas Rd, To Rancho Rd		$ 7,681,000	(2026-2040)	Safety	unknown
35	class ii bike lane: Route Bechelli Ln, From Bechelli River Access, To South Bonnyview Rd		$ 640,000	(2026-2040)	Safety	unknown
36	class ii bike lane: Route Browning St, From Hilltop Dr, To Old Alturas Rd		$ 576,000	(2026-2040)	Safety	unknown
37	class ii bike lane: Route Churn Creek Rd, From State Route 299, To Knighton Rd		$ 7,040,000	(2026-2040)	Safety	unknown
38	class ii bike lane: Route Hartnell Av, From Cypress Av, To Airport Rd		$ 2,560,000	(2026-2040)	Safety	unknown
39	class ii bike lane: Route Benton Dr, From Quartz Hill Rd, To Sacramento River		$ 64,000	(2026-2040)	Safety	unknown
40	class ii bike lane: Route Butte St, From Continental St, To Park Marina Dr		$ 51,000	(2026-2040)	Safety	unknown
41	class ii bike lane: Route Center St, From Riverside Dr, To Trinity St		$ 960,000	(2026-2040)	Safety	unknown
42	class ii bike lane: Route College View Dr, From Bodenhamer Blvd (Future), To Old Alturas Rd		$ 3,200,000	(2026-2040)	Safety	unknown
43	class ii bike lane: Route Continental St, From Trinity St, To Butte		$ 64,000	(2026-2040)	Safety	unknown
44	class ii bike lane: Route Court St, From Sacramento River, To Schley Av / Railroad Av		$ 1,280,000	(2026-2040)	Safety	unknown
45	class ii bike lane: Route Cypress Av, From Civic Center Dr, To Ishi Dr		$ 3,840,000	(2026-2040)	Safety	unknown
46	class ii bike lane: Route East St, From Trinity St, To South St		$ 192,000	(2026-2040)	Safety	unknown
47	class ii bike lane: Route Keswick Dam Rd, From Buenaventura Blvd, To Lake Blvd		$ 512,000	(2026-2040)	Safety	unknown
48	class ii bike lane: Route Oasis Rd, From Lake Blvd, To Old Oregon Trail		$ 3,200,000	(2026-2040)	Safety	unknown
49	class ii bike lane: Route Old Oregon Trail, From Oasis Rd, To State Route 44		$ 640,000	(2026-2040)	Safety	unknown
50	Multi-use Trail: SR 273: Girvan to Redding Rancheria		$ 832,000	(2026-2040)	Safety	unknown
51	class ii bike lane: Route Trinity St, From Center St, To Continental St		$ 960,000	(2026-2040)	Safety	unknown
52	class ii bike lane: Route Quartz Hill Rd, From Keswick Dam Rd, To N Market St		$ 4,480,000	(2026-2040)	Safety	unknown
53	class ii bike lane: Route Westside Rd, From Buenaventura Blvd, To Cedars Rd		$ 3,840,000	(2026-2040)	Safety	unknown
54	class ii bike lane: Route Boulder Dr, From State Route 299 Bikeway, To State Route 299 Bikeway		$ 2,560,000	(2026-2040)	Safety	unknown
55	class ii bike lane: Route Hawley St, From State Route 299, To Proposed Future Trailhead		$ 4,480,000	(2026-2040)	Safety	unknown
56	class ii bike lane: Route Rancho Rd, From Churn Creek Rd, To Venture		$ 6,400,000	(2026-2040)	Safety	unknown
57	class ii bike lane: Route Airport Rd, From Hartnell Av, To Sacramento River		$ 10,241,000	(2026-2040)	Safety	unknown
58	class ii bike lane: Route Future Rd, From Future Trailhead, To Tanglewood		$ 2,560,000	(2026-2040)	Safety	unknown
59	class ii bike lane: Route Palisades Av, From Hilltop Dr, To Dana-to-Downtown Bikeway		$ 448,000	(2026-2040)	Safety	unknown
60	class ii bike lane: Route Radio Ln / East Bonnyview Rd, From Eastside Rd, To South Bonnyview Rd		$ 3,840,000	(2026-2040)	Safety	unknown
61	class ii bike lane: Route South St, From Court St, To Park Marina Dr		$ 320,000	(2026-2040)	Safety	unknown
62	class ii bike lane: Route Venture St, From Rancho Rd, To Unforgettable Ln		$ 2,560,000	(2026-2040)	Safety	unknown
63	Multi-use trail: Boulder Creek Trail, From SR 299E Bikeway, To Churn Creek		$ 1,920,000	(2026-2040)	Recreation/Safety	unknown
64	Multi-use trail: Canyon Creek Trail Extension, From Placer St, To Blazingwood Dr		$ 1,920,000	(2026-2040)	Recreation/Safety	unknown
65	Multi-use trail: Churn Creek Trail, From Minder Park, To Churn Creek Rd		$ 1,920,000	(2026-2040)	Recreation/Safety	unknown
66	Multi-use trail: Clover Creek Trail, From Sports Park, To Sacramento River		$ 3,840,000	(2026-2040)	Recreation/Safety	unknown
67	Multi-use trail: Little Churn Creek Trail, From Hartnell Av, To Churn Creek		$ 3,200,000	(2026-2040)	Recreation/Safety	unknown
68	Existing gravel; to be paved in future: Old 99 Spur Trail*, From Lake Blvd, To North Market St		$ 1,920,000	(2026-2040)	Recreation/Safety	unknown
69	Multi-use trail: Sac. River Trail - Hatchcover Spur, From Hemstead Dr, To Cypress Av		$ 1,536,000	(2026-2040)	Recreation/Safety	unknown
70	Multi-use trail: Sulphur Creek Trail -South, From North Market St, To Arboretum Perimeter Trail		$ 1,536,000	(2026-2040)	Recreation/Safety	unknown
71	Dirt trail: Olney Creek Trail, From Texas Springs Rd, To Cascade Park		$ 2,560,000	(2026-2040)	Recreation/Safety	unknown
72	Dirt trail: Ridgeview Trail, From Ridgeview Park, To Blue Gravel Mine Trail		$ 1,920,000	(2026-2040)	Recreation/Safety	unknown
73	Dirt trail: Sulphur Creek Trail - North, From Quartz Hill Rd, To North Market St		$ 2,304,000	(2026-2040)	Recreation/Safety	unknown
74	Dirt trail: Greenwood Trail, From Almond/Airpark, To Sonoma St		$ 2,560,000	(2026-2040)	Recreation/Safety	unknown
75	Dirt trail: Avalon Trail, From future Shasta View Dr, To Old Oregon Trail		$ 3,840,000	(2026-2040)	Recreation/Safety	unknown
76	Multi-use trail: Lema - Nash Trail, From Shasta View Dr, To Old Oregon Trail		$ 1,920,000	(2026-2040)	Recreation/Safety	unknown
77	Multi-use trail: Sac. River Trail - Future Expansion, From Cypress Av, To Anderson River Park		$ 19,201,000	(2026-2040)	Recreation/Safety	unknown
78	Multi-use trail: Upper Churn Creek Trail, From Pine Grove Av, To Oasis Rd		$ 1,920,000	(2026-2040)	Recreation/Safety	unknown
79	Multi-use trail: Wentz Creek Trail, From Mistletoe School, To Cypress Av		$ 1,536,000	(2026-2040)	Recreation/Safety	unknown
80	Dirt trail: China Dam Trail, From Placer Rd, To Texas Springs Rd		$ 1,280,000	(2026-2040)	Recreation/Safety	unknown
81	Multi-use trail: Sac. River Trail - Park Marina Trail, From State Route 44, To Cypress Av		$ 3,840,000	(2026-2040)	Improve bike access, Recreation	unknown
82	Multi-use trail: Stillwater Creek Trail, From Old Oregon Trail, To Sacramento River		$ 2,560,000	(2026-2040)	Improve bike access, Recreation	unknown
83	Multi-use trail: Stillwater Plant Trail, From State Route 44, To Dersch Rd		$ 5,120,000	(2026-2040)	Improve bike access, Recreation	unknown
	Total Long Term Fundable Needs =		**$ 45,940,000**			

DESCRIPTION	Short (2018-2025)	Long (2026-2040)	Total
Funding Needed By Short and Long Range Bands	**$ 21,937,700**	**$ 156,022,000**	**$ 177,959,700**
Recap of Expected/Estimated/Unknown Resources			
State Transportation Improvement Program (STIP) =	**$ 675,000**	**$ -**	**$ 675,000**
Active Transportation Program (ATP) =	**$ 4,252,540**	**$ 9,188,000**	**$ 13,440,540**
Local/Other =	**$ 6,378,810**	**$ 13,782,000**	**$ 20,160,810**
2% LTF =	**$ 1,063,135**	**$ 2,297,000**	**$ 3,360,135**
Highway Safety Improvement Program (HSIP) =	**$ 9,568,215**	**$ 20,673,000**	**$ 21,736,135**
	$ 21,937,700	**$ 45,940,000**	**$ 67,877,700**
Total Unfunded Needs (or Short Term Carryover) =	**$ -**	**$ (110,082,000)**	**$ (110,082,000)**

Note 1 : Green highlighted projects above can be funded in the constrained funding analysis
Note 2 : Un-highlighted projects above cannot be funded. New funding sources will need to be identified or improvement will be developer funded.
Note 3 : Long term projects are escalated by 2.5%

TABLE
Shasta Regional Transportation Agency
Summary of Projects - Interchanges

CITY OF ANDERSON

Project Number	REGIONAL TRANSPORTATION PROJECTS	SHORT TERM TOTAL EST COST OF PROJECT	LONG TERM TOTAL EST COST OF PROJECT	PROJECT BAND	PROJECT TYPE (PROJECT INTENT)	EXPECTED FUNDING SOURCES
	NO SHORT RANGE PROJECTS					
	Total Short Term Fundable =	$ -				
1	Reconfigure I-5 Riverside Interchange, Postmile 6.74, Exit #670		$ 22,017,000	(2026-2040)	Interchange	Safety, TIF, SHOPP
2	Reconfigure I-5 Central Anderson Interchange (Balls Ferry/North Street) Postmile 5.64, Exit #668		$ 3,968,000	(2026-2040)	Interchange	Unfunded or Developer
3	Deschutes/I-5 Interchange phase 2		$ 13,441,000	(2026-2040)	Interchange	Unfunded or Developer
	Total Long Term Fundable Needs =		$ 22,017,000			

DESCRIPTION	Short (2018-2025)	Long (2026-2040)	Total
Funding Needed By Short and Long Range Bands	$ -	$ 39,426,000	$ 39,426,000
Recap of Expected/Estimated/Unknown Resources			
Local/Other =	-	$ 11,008,500	$ 11,008,500
State Highway Operations and Protection Program (SHOPP) =	-	11,008,500	$ 11,008,500
			$ -
			$ -
			$ -
Total Funding Reasonably Available =	$ -	$ 22,017,000	$ 22,017,000
Total Unfunded Needs (or Short Term Carryover) =	$ -	$ (17,409,000)	$ (17,409,000)
Note 1 : Green highlighted projects above can be funded in the constrained funding analysis			

Note 2 : Un-highlighted projects above cannot be funded. New funding sources will need to be identified or improvement will be developer funded.
Note 3 : Long term projects are escalated by 2.5%

TABLE
Shasta Regional Transportation Agency
Summary of Projects - Capacity Increasing

CITY OF ANDERSON

Project Number	REGIONAL TRANSPORTATION PROJECTS	SHORT TERM TOTAL EST COST OF PROJECT	LONG TERM TOTAL EST COST OF PROJECT	PROJECT BAND	PROJECT TYPE (PROJECT INTENT)	EXPECTED FUNDING SOURCES
1	Gateway Drive - Balls Ferry to Deschutes - construct 2 lane road	$ 6,500,000		(2018-2025)	New Facility	Local/Other
	Total Short Term Fundable =	**$ 6,500,000**				
2	Auto Mall - Extend to North Street - Extension		$ 4,864,000	(2026-2040)	Capacity Increase	Local/Other
3	McMurray Drive - North of Ganyon Drive - Widening		$ 640,000	(2026-2040)	Capacity Increase	Unfunded or Developer
4	Gateway Drive - From Balls Ferry South - Widening		$ 1,528,000	(2026-2040)	New Facility	Unfunded or Developer
5	East Street - North of Willow Glen Dr. - Extension		$ 2,128,000	(2026-2040)	New Facility	Unfunded or Developer
6	Pleasant Hills SR 273 Vineyards - construct 2 lane road extension		$ 4,255,000	(2026-2040)	New Facility	Unfunded or Developer
7	Rhonda Road - Factory Outlets Drive to Pleasant Hills - Intersection Reconstruction		$ 2,927,000	(2026-2040)	New Facility	Unfunded or Developer
8	Anderson Hills Parkway -W of Pleasant Hills - Construct 4 lane road		$ 6,375,000	(2026-2040)	New Facility	Unfunded or Developer
9	Anderson Hills Parkway Pleasant to Rhonda - Construct 4 lane road		$ 3,840,000	(2026-2040)	New Facility	Unfunded or Developer
10	Anderson Hills Parkway - Rhonda to Locust - Construct 4 lane road		$ 3,404,000	(2026-2040)	New Facility	Unfunded or Developer
~~11~~	~~Emily Drive - Widening~~		~~$ -~~	~~(2026-2040)~~	~~Capacity Increase~~	~~Unfunded or Developer~~
12	Ox Yoke Rd. - SR 273 to Riverside Av - Widening to 5 lanes		$ 2,560,000	(2026-2040)	Capacity Increase	Unfunded or Developer
13	Riverside Avenue - Ox Yoke to North St. - Widening to 5 lanes		$ 8,961,000	(2026-2040)	Capacity Increase	Unfunded or Developer
14	Balls Ferry Rd. - From Stingy Lane to the City Limits - Widening		$ 1,528,000	(2026-2040)	Capacity Increase	Unfunded or Developer
15	South Street - SR 273 west to City Limits - Widening		$ 4,800,000	(2026-2040)	Capacity Increase	Unfunded or Developer
16	Stingy Lane - North St. to Balls Ferry - Widening		$ 17,281,000	(2026-2040)	Capacity Increase	Unfunded or Developer
17	Gateway Drive - From Existing Improvements to Deschutes - Widen		$ 7,196,000	(2026-2040)	New Facility	Unfunded or Developer
18	Fairgrounds Drive - 1st St. to 3rd St. -Widening		$ 1,408,000	(2026-2040)	Capacity Increase	Unfunded or Developer
19	Third Street - SR 273 to Fairgrounds Dr. - Widening		$ 2,304,000	(2026-2040)	Capacity Increase	Unfunded or Developer
20	South County Extension - Ronda Rd to Anderson Hills - Extension		$ 7,040,000	(2026-2040)	New Facility	Unfunded or Developer
	Total Long Term Fundable Needs =		**$ 4,864,000**			

DESCRIPTION	Short (2018-2025)	Long (2026-2040)	Total
Funding Needed By Short and Long Range Bands	**$ 6,500,000**	**$ 83,039,000**	**$ 89,539,000**
Recap of Expected/Estimated/Unknown Resources			
Local/Other =	**6,500,000**	**$ 4,864,000**	**$ 11,364,000**
			$ -
			$ -
			$ -
			$ -
Total Funding Reasonably Available =	**$ 6,500,000**	**$ 4,864,000**	**$ 11,364,000**
Total Unfunded Needs (or Short Term Carryover) =	**$ -**	**$ (78,175,000)**	**$ (78,175,000)**

Note 1 : Green highlighted projects above can be funded in the constrained funding analysis

Note 2 : Un-highlighted projects above cannot be funded. New funding sources will need to be identified or improvement will be developer funded.

Note 3 : Long term projects are escalated by 2.5%

TABLE
Shasta Regional Transportation Agency
Summary of Projects - Safety
CITY OF ANDERSON

Project Number	REGIONAL TRANSPORTATION PROJECTS	SHORT TERM TOTAL EST COST OF PROJECT	LONG TERM TOTAL EST COST OF PROJECT	PROJECT BAND	PROJECT TYPE (PROJECT INTENT)	EXPECTED FUNDING SOURCES
1	SR 273 @ North Street - Intersection Improvements	$ 1,500,000		(2018-2025)	Safety	HSIP/Local/Other
	Total Short Term Needs =	**$ 1,500,000**				
2	SR 273 @ South Street - Intersection Improvements		$ 1,920,000	(2026-2040)	Safety	HSIP/Local/Other
3	Little Street - Realignment		$ 896,000	(2026-2040)	Safety	HSIP/Local/Other
4	Alexander St - Widening		$ 640,000	(2026-2040)	Safety	HSIP/Local/Other
	Total Long Term Fundable Needs =		**$ 3,456,000**			

DESCRIPTION	Short (2018-2025)	Long (2026-2040)	Total
Funding Needed By Short and Long Range Bands	**$ 1,500,000**	**$ 3,456,000**	**$ 4,956,000**
Recap of Expected/Estimated/Unknown Resources			
Highway Safety Improvement Program (HSIP) =	**$ 1,350,000**	**$ 3,110,400**	**$ 4,460,400**
Local/Other =	**$ 150,000**	**$ 345,600**	**$ 495,600**
Total Funding Reasonably Available =	**$ 1,500,000**	**$ 3,456,000**	**$ 4,956,000**
Total Unfunded Needs (or Short Term Carryover) =	**$ -**	**$ -**	**$ -**
Note 1 : Green highlighted projects above can be funded in the constrained funding analysis			

Note 2 : Un-highlighted projects above cannot be funded. New funding sources will need to be identified or improvement will be developer funded.
Note 3 : Long term projects are escalated by 2.5%

TABLE
Shasta Regional Transportation Agency
Summary of Projects - Active Transportation
CITY OF ANDERSON

Project Number	REGIONAL TRANSPORTATION PROJECTS	SHORT TERM TOTAL EST COST OF PROJECT	LONG TERM TOTAL EST COST OF PROJECT	PROJECT BAND	PROJECT TYPE (PROJECT INTENT)	EXPECTED FUNDING SOURCES
1	Route North Street, class ii bike lane	$ 250,000		(2018-2025)	Safety	unknown
2	Route Balls Ferry Road, From South Street, To SE city limit, class ii bike lane	$ 300,000		(2018-2025)	Safety	unknown
	Total Short Term Needs =	**$ 550,000.00**				
3	Route SR 273, From South Street, To South city limit, class i bike path		$ 640,000	(2026-2040)	Safety	unknown
4	Route South Street, From SW city limit, To SR 273, class ii bike lane		$ 576,000	(2026-2040)	Safety	unknown
5	Route East Street, From Alexander Ave., To Balls Ferry Road, class ii bike lane		$ 256,000	(2026-2040)	Safety	unknown
6	Route Dodson Lane, From Balls Ferry Road, To Rupert Road, class ii bike lane		$ 64,000	(2026-2040)	Safety	unknown
7	Route Stingy Lane, From North Street, To Balls Ferry Road, class ii bike lane		$ 1,536,000	(2026-2040)	Safety	unknown
8	Route Riverside Avenue, From North Street, To Ox Yoke Road, class ii bike lane		$ 576,000	(2026-2040)	Safety	unknown
9	Route McMurray Drive, From North Street, To Balls Ferry Road, class ii bike lane		$ 192,000	(2026-2040)	Safety	unknown
10	Route Ventura Street, From North Street, To Balls Ferry Road, class ii bike lane		$ 128,000	(2026-2040)	Safety	unknown
11	Route Freeman Street, From North Street, To South Street, class ii bike lane		$ 26,000	(2026-2040)	Safety	unknown
12	Route Fairgrounds Drive, From 1st Street, To 3rd Street, class ii bike lane		$ 64,000	(2026-2040)	Safety	unknown
13	Route 3rd Street, From Fairgrounds Drive, To SR 273, class ii bike lane		$ 256,000	(2026-2040)	Safety	unknown
14	Route Marx Way, From SR 273, To Barney Road, class ii bike lane		$ 26,000	(2026-2040)	Safety	unknown
15	Route Pinon Avenue, From SR 273, To the west, class ii bike lane		$ 1,600,000	(2026-2040)	Safety	unknown
16	Route Ferry Street, From ACID canal, To Ventura Atreet, class iii bike route		$ 13,000	(2026-2040)	Safety	unknown
17	Route Barney Road, From South Street, To SR 273, class iii bike route		$ 13,000	(2026-2040)	Safety	unknown
18	Route Alexander Avenue & Little Street, From SR 273, To Riverside Avenue, class iii bike route		$ 13,000	(2026-2040)	Safety	unknown
19	Route 1st Street & Briggs Street, From Fairgrounds Drive, To SR 273, class iii bike route		$ 13,000	(2026-2040)	Safety	unknown
	Total Long Term Fundable Needs =		**$ 640,000**			

DESCRIPTION	Short (2018-2025)	Long (2026-2040)	Total
Funding Needed By Short and Long Range Bands	**$ 550,000**	**$ 5,992,000**	**$ 6,542,000**
Recap of Expected/Estimated/Unknown Resources			
Active Transportation Program (ATP) =	**165,000**	**$ 192,000**	**$ 357,000**
Local/Other =	**165,000**	**192,000**	**$ 357,000**
2% LTF =	**27,500**	**$ 32,000**	**$ 59,500**
Highway Safety Improvement Program (HSIP) =	**$ 192,500**	**$ 224,000**	**$ 416,500**
			$ -
Total Funding Reasonably Available =	**$ 550,000**	**$ 640,000**	**$ 1,190,000**
Total Unfunded Needs (or Short Term Carryover) =	**$ -**	**$ (5,352,000)**	**$ (5,352,000)**
Note 1 : Green highlighted projects above can be funded in the constrained funding analysis			

Note 2 : Un-highlighted projects above cannot be funded. New funding sources will need to be identified or improvement will be developer funded.
Note 3 : Long term projects are escalated by 2.5%

TABLE
Shasta Regional Transportation Agency
Summary of Projects - Interchanges
CITY OF SHASTA LAKE

Project Number	REGIONAL TRANSPORTATION PROJECTS	SHORT TERM TOTAL EST COST OF PROJECT	LONG TERM TOTAL EST COST OF PROJECT	PROJECT BAND	PROJECT TYPE (PROJECT INTENT)	EXPECTED FUNDING SOURCES
	NO SHORT RANGE PROJECTS					
	Total Short Term Needs =	$ -				
1	Improve Mountain Gate Interchange Exit 687		$ 2,560,000	(2026-2040)	Interchange	Unfunded or Developer
2	Reconfigure Pine Grove Interchange East Exit 684		$ 4,960,000	(2026-2040)	Interchange	Unfunded or Developer
3	Improve Shasta Dam Blvd Interchange Exit 685		$ 5,120,000	(2026-2040)	Interchange	Unfunded or Developer
	Total Long Term Fundable Needs =		$ -			

DESCRIPTION	Short (2018-2025)	Long (2026-2040)	Total
Funding Needed By Short and Long Range Bands	**$ -**	**$ 12,640,000**	**$ 12,640,000**
Recap of Expected/Estimated/Unknown Resources			
Local/Other =	-	$ -	$ -
State Highway Operations and Protection Program (SHOPP) =	-	-	$ -
			$ -
			$ -
			$ -
Total Funding Reasonably Available =	$ -	$ -	$ -
Total Unfunded Needs (or Short Term Carryover) =	$ -	$ (12,640,000)	$ (12,640,000)
Note 1 : Green highlighted projects above can be funded in the constrained funding analysis			

Note 2 : Un-highlighted projects above cannot be funded. New funding sources will need to be identified or improvement will be developer funded.

Note 3 : Long term projects are escalated by 2.5%

TABLE
Shasta Regional Transportation Agency
Summary of Projects - Capacity and Safety
CITY OF SHASTA LAKE

Project Number	REGIONAL TRANSPORTATION PROJECTS	SHORT TERM TOTAL EST COST OF PROJECT	LONG TERM TOTAL EST COST OF PROJECT	PROJECT BAND	PROJECT TYPE (PROJECT INTENT)	EXPECTED FUNDING SOURCES
1	Cascade Boulevard Reconstruction including bike/ped	$ 6,400,000		(2016-2025)	Capacity and Safety	Unfunded
	Total Short Term Needs =	**$ 6,400,000**				
~~1~~	~~Cascade Boulevard Reconstruction including bike/ped~~			~~(2016-2025)~~	~~Capacity and Safety~~	~~Unfunded~~
2	North/South Road between Wonderland Boulevard and Cascade Boulevard		$ 5,120,000	(2026-2040)	New Facility	Unfunded or Developer
3	Ashby Rd. widening, sidewalks, separated bike(Class 1) - SR 151 to Pine Grove Ave.		$ 8,961,000	(2026-2040)	Capacity Increase and Safety	Unfunded or Developer
4	Pine Grove Reconstruction		$ 5,120,000	(2026-2040)	Capacity and Safety	Unfunded
5	Shasta Gateway Dr. Extension to Cascade Blvd.		$ 14,337,000	(2026-2040)	New Facility	Unfunded or Developer
6	Cabello Extension - Vallecito to Pine Grove Ave.		$ 2,592,000	(2026-2040)	New Facility	Unfunded or Developer
7	Pine Grove Avenue Extension to Akrich		$ 5,760,000	(2026-2040)	New Facility	Unfunded or Developer
8	Reconstruct Lake Blvd. N/O SR 151		$ 3,840,000	(2026-2040)	Capacity and Safety	Unfunded or Developer (see BOR,BLM,NFS)
9	Cascade Blvd Realignment, SR 151 N of Trinity to Arrowhead(South City Limit) D/N include Pine Grove to creek)		$ 3,392,000	(2026-2040)	Capacity Increase	Unfunded or Developer
	Total Long Term Fundable Needs =		**$ -**			

DESCRIPTION	Short (2018-2025)	Long (2026-2040)	Total
Funding Needed By Short and Long Range Bands	**$ 6,400,000**	**$ 49,122,000**	**$ 55,522,000**
Recap of Expected/Estimated/Unknown Resources			
Local/Other =	**$ 3,200,000**	**$ -**	**$ 3,200,000**
Highway Safety Improvement Program (HSIP) =	**3,200,000**	**-**	**$ 3,200,000**
			$ -
			$ -
			$ -
Total Funding Reasonably Available =	**$ 6,400,000**	**$ -**	**$ 6,400,000**
Total Unfunded Needs (or Short Term Carryover) =	**$ -**	**$ (49,122,000)**	**$ (49,122,000)**

Note 1 : Green highlighted projects above can be funded in the constrained funding analysis
Note 2 : Un-highlighted projects above cannot be funded. New funding sources will need to be identified or improvement will be developer funded.
Note 3 : Long term projects are escalated by 2.5%

TABLE
Shasta Regional Transportation Agency
Summary of Projects - Active Transportation
CITY OF SHASTA LAKE

Project Number	REGIONAL TRANSPORTATION PROJECTS	SHORT TERM TOTAL EST COST OF PROJECT	LONG TERM TOTAL EST COST OF PROJECT	PROJECT BAND	PROJECT TYPE (PROJECT INTENT)	EXPECTED FUNDING SOURCES
	NO SHORT RANGE PROJECTS					
	Total Short Term Needs =	$ -				
1	Class I Bikeway + Regional Trail - Churn Creek		$ 1,262,000	2026- 2040	Safety	ATP
2	Deer Creek Ave - SR151 to Vallecito - Safe Routes To School		$ 1,930,000	2026- 2040	Safety / Shoulder	ATP
3	Shasta Way - SR 151 to Grand Avenue - Safe Routes To School		$ 1,485,000	2026- 2040	Safety / Shoulder	ATP
4	Class II Bikeway - Cascade Blvd Bike Lanes (Union School to S. City Limit)		$ 1,485,000	2026- 2040	Safety / Shoulder	ATP
5	Class I Bikeway - Ashby Road Bike Path		$ 1,485,000	2026- 2040	Safety / Shoulder	ATP
6	Loop Trail North of Margaret Polf Park		$ 74,000	2026- 2040	Recreation	ATP
7	Class I Bikeway - Pine Grove Avenue Bike Path		$ 2,227,000	2026- 2040	Safety	ATP
8	Class II Bikeway - La Mesa Ave		$ 371,000	2026- 2040	Safety /School Access	ATP
9	Beltline Trail		$ 148,000	2026- 2040	Recreation	ATP
10	Class III Bikeway - Toyon Ave Bike Route (Lake Blvd to Margaret Polf Park)		$ 15,000	2026- 2040	Safety	ATP
11	Class II Bikeway - Shasta Gateway Drive Bike Lanes (Internal to Industrial Park)		$ 15,000	2026- 2040	Safety	ATP
12	Class II Bikeway - Shasta Street Bike Lanes (SR 151 to Grand Coulee)		$ 186,000	2026- 2040	Safety	ATP
13	Class II Bikeway - Grand Coulee Blvd Bike Lanes (SR151 to Cascade Blvd.)		$ 148,000	2026- 2040	Safety	ATP
14	Class III Bikeway - Twin View Blvd Bike Route (Pine Grove to S City Limit)		$ 119,000	2026- 2040	Safety	ATP
15	Class II Bikeway - Black Canyon Road Bike Lanes (Red Bluff to end on N)		$ 742,000	2026- 2040	Safety	ATP
16	Class I Bikeway - Cascade Blvd Extention to Mt. Gate Bike Path		$ 2,969,000	2026- 2040	Safety	ATP
17	Class I Bikeway - Black Canyon extension to Mt. Gate at Shasta Bike Path		$ 742,000	2026- 2040	Safety	ATP
18	Class III Bikeway - Lake Blvd Bike Route (N/O Hwy 151)		$ 134,000	2026- 2040	Recreation	ATP
19	Class III Bikeway - Hwy 151 Bike Route (W/O Lake Blvd)		$ 89,000	2026- 2040	Recreation	ATP
20	Northeast (Mountain Gate) Trail		$ 1,485,000	2026- 2040	Recreation	ATP
21	Churn Creek Regional Trail (Phase II)(Pine Grove N to SR 151)		$ 1,262,000	2026- 2040	Recreation	ATP
	Total Long Term Fundable Needs =		$ 1,262,000			

DESCRIPTION	Short (2018-2025)	Long (2026-2040)	Total
Funding Needed By Short and Long Range Bands	$ -	$ 18,373,000	$ 18,373,000
Recap of Expected/Estimated/Unknown Resources			
Active Transportation Program (ATP) =	$ -	$ 441,700	$ 441,700
Local/Other =	$ -	$ 189,300	$ 189,300
2% LTF =	-	$ 126,200	$ 126,200
Highway Safety Improvement Program (HSIP) =	$ -	$ 504,800	$ 504,800
			$ -
Total Funding Reasonably Available =	$ -	$ 1,262,000	$ 1,262,000
Total Unfunded Needs (or Short Term Carryover) =	$ -	$ (17,111,000)	$ (17,111,000)
Note 1 : Green highlighted projects above can be funded in the constrained funding analysis			

Note 2 : Un-highlighted projects above cannot be funded. New funding sources will need to be identified or improvement will be developer funded.
Note 3 : Long term projects are escalated by 2.5%

TABLE
Shasta Regional Transportation Agency
Summary of Projects
PIT RIVER TRIBE AND REDDING RANCHERIA (did not report)

Project Number	REGIONAL TRANSPORTATION PROJECTS	SHORT TERM TOTAL EST COST OF PROJECT	LONG TERM TOTAL EST COST OF PROJECT	PROJECT BAND	PROJECT TYPE / PROJECT INTENT	EXPECTED FUNDING SOURCES
1	Wamari Way, New road with two bridges (Burney Creek and Burney Creek Overflow)	unknown		(2016-2025)	New Facility	IRR
	Total Short Term Needs =	$ -				
	Total Long Term Fundable Needs =		$ -			

DESCRIPTION	Short (2018-2025)	Long (2026-2040)	Total
Funding Needed By Short and Long Range Bands	$ -	$ -	$ -
Recap of Expected/Estimated/Unknown Resources			
			$ -
			$ -
			$ -
			$ -
	$ -	$ -	$ -
Total Funding Reasonably Available =	$ -	$ -	$ -
Total Unfunded Needs =	$ -	$ -	$ -
Note 1 : Green highlighted projects above can be funded in the constrained funding analysis			

Note 2 : Un-highlighted projects above cannot be funded. New funding sources will need to be identified or improvement will be developer funded.

TABLE
Shasta Regional Transportation Agency
Summary of Projects
TRANSIT

Project Number	REGIONAL TRANSPORTATION PROJECTS	SHORT TERM TOTAL EST COST OF PROJECT	LONG TERM TOTAL EST COST OF PROJECT	PROJECT BAND	PROJECT TYPE (PROJECT INTENT)	EXPECTED FUNDING SOURCES
1	RABA - Replacemet Buses, purchase 7 replacemet buses	$ 5,484,000		(2018-2025)	Transit	FTA
2	RABA - Passenger Loading Improvements	$ 1,435,423		(2018-2025)	Transit	FTA
3	RABA - Replacement Vans, purchase 15 replacements vans	$ 1,351,941		(2018-2025)	Transit	FTA
4	RABA - Replacement Vans, purchase 2 replacements vans (Burney)	$ 200,000		(2018-2025)	Transit	FTA
5	RABA - Maintenance Facility/Equipment	$ 250,000		(2018-2025)	Transit	Prop 1B Funds
6	RABA - Radio/ITS Communication Equipment	$ 255,000		(2018-2025)	Transit	Prop 1B Funds
7	RABA - Fare Equipment, fare equipment	$ 450,000		(2018-2025)	Transit	FTA
8	RABA - Computer Equipment	$ 107,000		(2018-2025)	Transit	FTA
9	RABA - Security Upgrades	$ 200,000		(2018-2025)	Tranist/Safety	Prop 1B Safety Security
10	RABA - Transfer Facilities	$ 200,000		(2018-2025)	Transit	Prop 1B Funds
11	RABA - Support Vehicles	$ 76,000		(2018-2025)	Transit	FTA
12	RABA - Miscellaneous Capital Projects	$ 75,000		(2018-2025)	Transit	FTA
13	RABA - Grant Administration	$ 100,000		(2018-2025)	Transit	FTA
14	CTSA - Vehicle Replacement, Update Fleet/Passenger Safety	$ 140,000		(2018-2025)	Transit	FTA
15	CTSA - Dispatch System, Efficiency of routing/dispatching	$ 40,000		(2018-2025)	Transit	FTA
16	Private or Non-Profit - Grant Vans, Acquisition of 4 vans through grant	$ 280,000		(2018-2025)	Tranist/Fills a gap	FTA
	Total Short Term Needs =	**$ 10,644,364**				
17	Private or Non-Profit - Grant Vans, Acquisition of 2 vans through grant		$ 180,000	(2026-2040)	Tranist/Fills a gap	FTA
	Total Long Term Fundable Needs =		**$ 180,000**			

DESCRIPTION	Short (2018-2025)	Long (2026-2040)	Total
Funding Needed By Short and Long Range Bands	**$ 10,644,364**	**$ 180,000**	**$ 10,824,364**
Recap of Expected/Estimated/Unknown Resources			
Federal Transit Administratio (FTA) Grants =	**9,739,364**	**$ 180,000**	**$ 9,919,364**
Proposition 1B Funds =	**705,000**	**-**	**$ 705,000**
Proposition 1B Funds - Safety Security =	**200,000**		**$ 200,000**
			$ -
			$ -
Total Funding Reasonably Available =	**$ 10,644,364**	**$ 180,000**	**$ 10,824,364**
Total Unfunded Needs (or Short Term Carryover) =	**$ -**	**$ -**	**$ -**

Note 1 : Green highlighted projects above can be funded in the constrained funding analysis

Note 2 : Un-highlighted projects above cannot be funded. New funding sources will need to be identified or improvement will be developer funded.

Note 3 : Long term projects are escalated by 2.5%

TABLE
Shasta Regional Transportation Agency
Summary of Projects
AVIATION

Project Number	REGIONAL TRANSPORTATION PROJECTS	SHORT TERM TOTAL EST COST OF PROJECT	LONG TERM TOTAL EST COST OF PROJECT	PROJECT BAND	PROJECT TYPE (PROJECT INTENT)	EXPECTED FUNDING SOURCES
1	Fall River Mills Airport - Runway 2-20 Rehabilitation, Runway pavement maintenance	$ 680,000		(2018-2025)	pavement maintenance	FAA - AIP
2	Fall River Mills Airport - Taxiway Rehabilitation, Taxiway pavement maintenance	$ 325,000		(2018-2025)	pavement maintenance	FAA - AIP
3	Fall River Mills Airport - Apron Rehabilitation, Apron pavement maintenance	$ 325,000		(2018-2025)	pavement maintenance	FAA - AIP
4	Redding Municipal Airport - 16-1, Parallel runway (Environmental assessment)	$ 350,000		(2018-2025)		
5	Redding Municipal Airport - 16-2, Air Shasta west apron reconstruction (400'x200') (construction)	$ 1,600,000		(2018-2025)		
6	Redding Municipal Airport - 16-3, T-hangar taxilane reconstruction (construction)	$ 850,000		(2018-2025)		
7	Redding Municipal Airport - 17-1, Parallel runway/taxiway (design only)	$ 500,000		(2018-2025)		
8	Redding Municipal Airport - 18-1, Parallel runway, Environmental - Phase 2 (CEQA reimbursement)	$ 300,000		(2018-2025)		
9	Redding Municipal Airport - 18-2, Parallel runway/taxiway (construction)	$ 4,000,000		(2018-2025)		
10	Redding Municipal Airport - 19-1, Eastside cargo apron expansion (design only)	$ 120,000		(2018-2025)		
11	Redding Municipal Airport - 19-2, New aircraft parking apron (design only)	$ 120,000		(2018-2025)		
12	Redding Municipal Airport - 19-3, All-weather perimeter road - RSAP recommendation (design only)	$ 90,000		(2018-2025)		
13	Redding Municipal Airport - 19-4, Upgrade airfield electrical system (design only)	$ 150,000		(2018-2025)		
14	Redding Municipal Airport - 19-5, Security fencing (design only)	$ 55,000		(2018-2025)		
15	Redding Municipal Airport - 20-1, Eastside cargo apron expansion	$ 1,200,000		(2018-2025)		
16	Redding Municipal Airport - 20-2, New aircraft parking apron	$ 1,200,000		(2018-2025)		
17	Redding Municipal Airport - 20-3, All-weather perimeter road - RSAP recommendation	$ 600,000		(2018-2025)		
18	Redding Municipal Airport - 20-4, Upgrade airfield electrical system	$ 1,250,000		(2018-2025)		
19	Redding Municipal Airport - 20-5, Security fencing	$ 480,000		(2018-2025)		
20	Benton Airpark - 16-1, AWOS	$ 250,000		(2018-2025)		
21	Benton Airpark - 16-2, Rehabilitate parallel taxiway "B" (design only)	$ 55,000		(2018-2025)		
22	Benton Airpark - 17-1, Rehabilitate parallel taxiway "B"	$ 360,000		(2018-2025)		
23	Benton Airpark - 17-2, Eastside T-hangar taxilane reconstruction (design only)	$ 72,000		(2018-2025)		
24	Benton Airpark - 18-1, Eastside T-hangar taxilane reconstruction	$ 820,000		(2018-2025)		
25	Benton Airpark - 18-2, Security fencing - North RPZ (design only)	$ 14,000		(2018-2025)		
26	Benton Airpark - 19-1, Security fencing - North RPZ	$ 90,000		(2018-2025)		
27	Benton Airpark - 19-2, Rehabilitate parallel taxiway "A" (design only)	$ 55,000		(2018-2025)		
28	Benton Airpark - 20-1, Rehabilitate parallel taxiway "A"	$ 420,000		(2018-2025)		
29	Benton Airpark - 20-2, Westside T-hangar taxilane reconstruction (design only)	$ 80,000		(2018-2025)		
30	Redding Municipal Airport - 21-1, Pavement preservation (East apron) - Seal coat (design only)	$ 18,000		(2018-2025)		
31	Redding Municipal Airport - 21-2, Pavement preservation (Runway 12/30, apron, and taxiways) (design only)	$ 120,000		(2018-2025)		
32	Redding Municipal Airport - 21-3, Install MITL (Taxiway "M", "C", and "H") (design only)	$ 68,000		(2018-2025)		
33	Redding Municipal Airport - 21-4, Eastside apron expansion (300'x450') (design only)	$ 165,000		(2018-2025)		
34	Redding Municipal Airport - 22-1, Pavement preservation (East apron) - Seal coat	$ 120,000		(2018-2025)		
35	Redding Municipal Airport - 22-2, Pavement preservation (Runway 12/30, apron, and taxiways)	$ 800,000		(2018-2025)		
36	Redding Municipal Airport - 22-3, Install MITL (Taxiway "M", "C", and "H")	$ 450,000		(2018-2025)		
37	Redding Municipal Airport - 22-4, Eastside apron expansion (300'x450')	$ 1,100,000		(2018-2025)		
38	Benton Airpark - 21-1, Westside T-hangar taxilane reconstruction	$ 900,000		(2018-2025)		
39	Benton Airpark - 21-2, East apron pavement rehabilitation (design only)	$ 95,000		(2018-2025)		
40	Benton Airpark - 22-1, East apron pavement rehabilitation	$ 950,000		(2018-2025)		
41	Benton Airpark - 22-2, Construct T-hangar taxilane (design only)	$ 36,000		(2018-2025)		
42	Benton Airpark - 23-1, Construct T-hangar taxilane	$ 237,000		(2018-2025)		
43	Benton Airpark - 23-2, Construct 10 unit T-hangar (design only)	$ 135,000		(2018-2025)		
44	Benton Airpark - 24-1, Construct 10 unit T-hangar	$ 900,000		(2018-2025)		
	Total Short Term Needs =	**$ 22,505,000**				
45	Fall River Mills Airport - PAPI, Install Precision Approach Path Indicator (PAPI) system		$ 89,000	(2026-2040)	safety improvement	FAA - AIP
46	Fall River Mills Airport - IFR, Install Instrument Flight Approach (IFR) system		$ 22,000	(2026-2040)	safety improvement	FAA - AIP
	Total Long Term Fundable Needs =		**$ 111,000**			

DESCRIPTION	Short (2018-2025)	Long (2026-2040)	Total
Funding Needed By Short and Long Range Bands	**$ 22,505,000**	**$ 111,000**	**$ 22,616,000**
Recap of Expected/Estimated/Unknown Resources			
Federal Aviation Administration (FAA) - Airport Improvement Program (AIP) =	**$ 20,358,160**	**$ 99,900**	**$ 20,458,060**
CA State Division of Aeronautics =	**$ 305,955**	**$ 4,995**	**$ 310,950**
Local Share =	**$ 1,840,885**	**$ 6,105**	**$ 1,846,990**
			$ -
			$ -
Total Funding Reasonably Available =	**$ 22,505,000**	**$ 111,000**	**$ 22,616,000**
Total Unfunded Needs =	**$ -**	**$ -**	**$ -**
Note 1 : Green highlighted projects above can be funded in the constrained funding analysis			

Note 2 : Un-highlighted projects above cannot be funded. New funding sources will need to be identified or improvement will be developer funded.
Note 3 : Long term projects are escalated by 2.5%

TABLE
Shasta Regional Transportation Agency
Summary of Projects
RECREATION

Project Number	REGIONAL TRANSPORTATION PROJECTS	SHORT TERM TOTAL EST COST OF PROJECT	LONG TERM TOTAL EST COST OF PROJECT	PROJECT BAND	PROJECT TYPE (PROJECT INTENT)	EXPECTED FUNDING SOURCES
1	Great Shasta Rail Trail Association - off Black Ranch Road in Burney, construct primary trailhead (Burney Depot) in Burney at the southern terminus to Great Shasta Rail Trail	$ 125,000		(2018-2025)	Recreation, safety	EEMP, ATP, RTP, FLAP
2	Great Shasta Rail Trail Association - Clark Creek Road (north of Lake Britton), construct primary trailhead (Cayton) off Clark Creek Road	$ 125,000		(2018-2025)	Recreation, safety	EEMP, ATP, RTP, FLAP
3	Great Shasta Rail Trail Association - Rail banked right-of-way between Burney and McCloud, Tread improvement on Great Shasta Rail Trail	$ 225,000		(2018-2025)	Recreation	ATP, FLTP
4	Great Shasta Rail Trail Association - Highway 89 just north of intersection with Hwy 299, Improve Highway 89 crossing on Great Shasta Rail Trail	$ 30,000		(2018-2025)	Safety	ATP, FLTP
5	Great Shasta Rail Trail Association - North of Lake Britton on rail banked right-of-way. Culvert replacement along Great Shasta Rail Trail to Siskiyou County line (16 drainage features in Shasta County identified as having structural issue or need for culvert)	$ 178,000		(2018-2025)	Drainage, property safety	Sierra Nevada Conservancy, FLTP
6	Great Shasta Rail Trail Association - North of Lake Britton on rail banked right-of-way. Culvert replacement along Great Shasta Rail Trail to Siskiyou County line (36 culverts in Shasta County that failed due to lack of capacity in 2017 flood event)	$ 445,000		(2018-2025)	Drainage, property safety	Sierra Nevada Conservancy, FLTP
7	Great Shasta Rail Trail Association - Lake Britton Trestle rehabilitation (H-10 loading) and construction of a secondary trailhead near Dusty Campground at north end of trestle.	$ 1,270,000		(2018-2025)	Safety	RTP, FLTP, ATP
8	Great Shasta Rail Trail Association - Just south of Lake Britton. Establish bicycle access between Great Shasta Rail Trail and McArthur Burney Falls State Park	$ 125,000		(2018-2025)	Safety, recreation	RTP
9	Great Shasta Rail Trail Association - Black Ranch Road, just north of Burney, construct secondary trailhead (Sierra) at Berry Wye	$ 100,000		(2018-2025)	Recreation, safety	EEMP, RTP, FLAP
10	National Park Service - Whiskeytown Recreation Area, New entrance stations on Kennedy Memorial Drive near Whiskeytown Headquarters and on Oak Bottom Road near the campground store.	$ 10,000,000		(2018-2025)	Gateway	NPS
11	National Park Service - Whiskeytown Recreation Area, Up to four designated parking areas adjacent to the lake to allow for entrance and exit lanes to resolve safety concerns.	$ 200,000		(2018-2025)	Parking	unknown
12	California State Parks - Shasta State Historic Park, Construct parking lot for day use visitors and school busses. (This project will alleviate some of the parking that occurs on Highway 299.)	$ 200,000		(2018-2025)	Parking	unknown
13	Bureau of Land Management - Redding Field Office, Improve vehicle access to Chappie-Shasta Off-Highway Vehicle Area, Copley Mt. Staging Area to Chappie-Shasta OHVS Area.	$ 1,000,000		(2018-2025)	Recreation	unknown
14	Great Shasta Rail Trail Association - just north of Lake Britton. Rehabilitation or replace railroad overpass (H-10 loading) over Highway 89 to allow safe passage by pedestrians, equestrians, cyclists on the Great Shasta Rail Trail	$ 711,600		(2018-2025)	Safety	EEMP, ATP, RTP, FLAP
15	National Park Service - Whiskeytown Recreation Area, West Boundary entrance pull-out at Whiskeytown boundary on Hwy 299. Develop entrance pull-out similar to the one completed at the east boundary.	$ 250,000		(2018-2025)	Gateway	unknown
16	Great Shasta Rail Trail Association - replacement of Dry Creek Bridge along the Great Shasta Rail Trail (box culvert)	$ 125,000		(2018-2025)	Recreation, safety	EEMP, ATP, RTP, FLTP
17	Shasta County - SR 299 road segment from Burney east to Great Shasta Rail Trail at Black Ranch Road trailhead, Class II min. 5 ft. bike lane.	$ 250,000		(2018-2025)	Recreation	HSIP/ATP
	Total Short Term Needs =	**$ 15,359,600**				
18	National Park Service - Whiskeytown Recreation Area, Multiuse trail. Tower House Historic District to Lewiston Turnpike.		$ 5,000,000	(2026-2040)	Recreation	unknown
19	California State Parks - McArthur-Burney Falls Memorial State Park, New park entrance road, entrance kiosk and parking lot for day use vehicles and buses. Redesign of abandoned section of Highway 89 into park perimeter road.		$ 200,000	(2026-2040)		unknown
20	Adventure Cycle Association (ACA) Sierra-Cascades Bike Route - SR 89 from SR 299 Four Corners to SR 89/44 at Old Station, Class II min. 5 ft. bike lane on Volcanic Legacy Scenic Byway.		unknown	(2026-2040)	Safety, recreation	ATP
21	Adventure Cycle Association (ACA) Sierra-Cascades Bike Route - SR 89/44 from Old Station to SR 89 at north entrance to Lassen Volcanic National Park, Class II min. 5 ft. bike lane on Volcanic Legacy Scenic Byway.		unknown	(2026-2040)	Safety, recreation	ATP
22	Volcanic Legacy Scenic Byway - replacement of weathered scenic byway logo signs along the byway in Shasta County. Repair of rock pedestals and replacement of interpretive signs at Subway Cave, Old Station Visitor Center, Hat Creek Rim Vista, and Panoramic Point.		unknown	(2026-2040)	Recreation	ATP
	Total Long Term Fundable Needs =		**$ -**			

DESCRIPTION	Short (2018-2025)	Long (2026-2040)	Total
Funding Needed By Short and Long Range Bands	**$ 15,359,600**	**$ 5,200,000**	**$ 20,559,600**
Recap of Expected/Estimated/Unknown Resources			
Environmental Enhancement and Mitigation Program (EEMP) =	**$ -**	**$ -**	**$ -**
Active Transportation Program (ATP) =	**$ -**	**$ -**	**$ -**
Recreational Trails Program (RTP) =	**$ -**	**$ -**	**$ -**
National Park Service (NPS) =	**$ -**	**$ -**	**$ -**
SNC =	**$ -**	**$ -**	**$ -**
Total Funding Reasonably Available =	**$ -**	**$ -**	**$ -**
Total Unfunded Needs =	**$ (15,359,600)**	**$ (5,200,000)**	**$ (20,559,600)**
Note 1 : Green highlighted projects above can be funded in the constrained funding analysis			

Note 2 : Un-highlighted projects above cannot be funded. New funding sources will need to be identified or improvement will be developer funded.

TABLE

Shasta Regional Transportation Agency

Summary of Projects - Transit Operations

Regional

Entity	Annual Operating Cost	Short Term	Long Term
RABA	$ 6,091,870	$ 53,219,282	$ 83,155,444
County transit	$ 484,188	$ 4,229,922	$ 6,609,279
CTSA (SSNP)	$ 331,707	$ 2,897,831	$ 4,527,878
~~Shingletown Transit Service~~	~~$ -~~	~~$ -~~	~~$ -~~
SSNP Service Expansion	$ 10,506	$ 91,782	$ 143,409

TABLE

Shasta Regional Transportation Agency

Summary of Projects - Maintenance

Regional

Jurisdiction	Estimated Current Total Maintenance	Estimated Annual Available Funding for Maintenance	Estimated Deferred Maintenance
Anderson	$ 4,629,070	$ 498,000	$ 4,131,070
Redding	$ 35,000,000	$ 4,800,000	$ 30,200,000
Shasta Lake	$ 17,459,036	$ 470,000	$ 16,989,036
Shasta County	$ 168,458,532	$ 7,828,000	$ 160,630,532
	$ 225,546,638	$ 13,596,000	$ 211,950,638

Appendix C

Mobile Emissions Modeling (EMFAC)

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June 1, 2018
Project No: 17-04072

Sean Tiedgen
Shasta Regional Transportation Agency
1255 East Street, Suite 202
Redding, California, 96001
Via email: stiedgen@srta.ca.gov

Subject: **EMFAC 2014 Model Runs for SRTA 2018 RTP/SCS**
2018 Regional Transportation Plan and Sustainable Communities Strategy
Shasta County Regional Transportation Authority

Dear Mr. Tiedgen:

This memorandum provides a summary of the results of air quality and greenhouse (GHG) emissions modeling for the Shasta Regional Transportation Agency's (SRTA) 2018 Regional Transportation Plan/Sustainable Communities Strategy. Emissions were estimated using the Emission Factors 2014 (EMFAC 2014) model, version 1.0.7, which was developed and maintained by the California Air Resources Board (CARB); version 1.0.7 was released in March 15, 2015 and updated the model from its original version (1.0.1) to reflect CARB's understanding of motor vehicle activities and their associated emission levels at the time (CARB 2015). A summary of EMFAC results and calculations are attached separately in the Excel spreadsheet.

Methodology

Air pollutant and GHG emissions were modeled to evaluate overall 2018 RTP/SCS impacts on air quality and regional GHG emissions, and evaluate SRTA's attainment of SB 375 targets. To evaluate project impacts, emissions were modeled for the baseline year (2015), 2040 with 2018 RTP/SCS conditions (i.e., 2040 Project), and 2040 with 2015 RTP/SCS conditions (i.e., 2040 No Project). The 2040 No Project scenario utilized VMT estimated based on the same roadway network and development assumptions that were previously used to model 2015 RTP/SCS conditions in 2035, but adjusted for population and employee growth through 2040. To evaluate the region's conformance with SB 375 targets, emissions were modeled for 2020 Project and 2035 Project conditions.

Emissions were estimated using the EMission FACtors 2014 model (EMFAC 2014) using default EMFAC data for the Shasta region customized to match the total average daily vehicle miles traveled (VMT) and total average daily VMT per speed bin modeled for the region by SRTA's Regional Activity-based Travel Demand Model (ShastaSIM). For 2020 and 2035 modeling scenarios, EMFAC 2014 was run with SB 375 mode activated to produce results for evaluating the region's attainment of SB 375 targets. The SB 375 mode turns off emission benefits from the Advanced Clean Cars program and Low Carbon Fuel Standards and includes only emissions from passenger vehicle classes. VMT generated by pass-through trips was excluded for SB 375 runs, but was included for the other runs.

PM_{10}, NO_X, ROG, and $PM_{2.5}$ emissions results were used for analyzing air quality impacts, and CO_2 emissions were used for analyzing GHG emissions. Because CO_2 emissions comprise the vast majority of on-road vehicle emissions (nearly 99 percent in California's 2015 GHG inventory) and EMFAC 2014 does not provide emissions of GHGs other than CO_2, such as CH_4 and N_2O, CO_2 emissions were used as a proxy for the project's mobile source GHG emissions (CARB 2017a, 2017b, 2017c). Daily CO_2 emissions were converted to annual emissions by applying annual multipliers for each vehicle category and summing annual emissions across all vehicle categories.

CO_2 emissions results for the SB 375 conformity analysis were converted from short (a.k.a., U.S.) tons to pounds and divided by the projected population to determine the daily per capita CO_2 emission rate in pounds (lbs/person/day). In addition, the per capita CO_2 emission rate for 2035 was adjusted to reflect a more aggressive EV adoption rate than is assumed in EMFAC 2014. An off-model analysis was conducted by SRTA to determine the quantitative reduction provided by this strategy and the results are summarized in the memo, "2018 Regional Transportation Plan/Sustainable Communities Strategy Off-model Greenhouse Gas Reduction Strategies." The analysis determined that 2035 emissions would be reduced by 1.8 percent relative to what is modeled by EMFAC 2014. Thus, 2035 per capita CO_2 rates were reduced by 1.8 percent prior to further calculations.

The percent reduction relative to the 2005 baseline was calculated by subtracting 2005 per capita daily emissions from the 2020 Project and 2035 Project per capita daily emissions and then dividing the difference by 2005 baseline per capita daily emissions. The 2005 baseline was taken from EMFAC 2011 modeling results prepared for the 2015 RTP/SCS, in accordance with CARB guidance. The percent reductions were then adjusted to take into account differences between EMFAC 2011 and EMFAC 2014, as instructed in the CARB memo, "Methodology to Calculate CO_2 Adjustment to EMFAC Output for SB 375 Target Demonstrations." Thus, the final percent reductions evaluated for conformance with SB 375 targets incorporates both the off-model adjustment and EMFAC adjustment.

Results

Air Quality

Table 1 presents EMFAC 2014 emission results for PM_{10}, NO_X, and ROGs for all vehicle classes (including pass through trips), as well as NO_X and $PM_{2.5}$ emissions for diesel-powered vehicles. As indicated in Table 1, NO_X, ROG, and PM_{10} emissions are projected to stay the same or decline under future with project conditions for the 2018 RTP/SCS SEIR, which is consistent with the trends modeled for the 2015 RTP/SCS EIR, and 2040 Project emissions would be below 2040 No Project emissions for all criteria pollutants. In addition, diesel $PM_{2.5}$, which comprises the majority of diesel particulate matter (DPM) -- a toxic air contaminant--, and diesel NO_X emissions also decrease under future with project conditions relative to baseline conditions and 2040 No Project conditions.

Table 1 Regional Criteria Pollutant Emissions Analysis[1]

Scenario	NOx (tons/day)[1]	ROG (tons/day)[1]	PM_{10} (tons/day [1]	Diesel NO_X (tons/day)	Diesel $PM_{2.5}$ (tons/day)
2015 Baseline (2018 RTP/SCS SEIR)	6.99	2.86	0.38	4.59	0.10
2040 Project (2018 RTP/SCS SEIR)	1.42	0.76	0.38	1.14	0.04
2040 No Project (2015 RTP/SCS EIR)	1.87	0.91	0.47	1.53	0.05

[1] $PM_{2.5}$ and NOx emissions are presented above using winter values and ROG emissions are presented above using summer values to provide a worst case estimate based on the seasons in which individual criteria pollutant emissions are highest. PM_{10} results were the same across seasons. Note that EMFAC 2014 models PM_{10} emissions from vehicle exhaust and tire and brake wear, but does not include re-entrained dust.

Greenhouse Gases

Table 2 presents the total annual CO_2 emissions in metric tons (MT) for all vehicle classes (including pass through trips). The results in this table include emission benefits from the Advanced Clean Cars program and Low Carbon Fuel Standards. Compared to the 2015 baseline, CO_2 emissions are expected to decrease by 31% by 2040 with project implementation and by 14% without the 2018 RTP/SCS. The projected decrease in CO_2 emissions is largely a result of state regulations, including on-road diesel fleet rules, Advanced Clean Car Standards, and the Smartway/Phase I Heavy Duty Vehicle Greenhouse Gas Regulation, that are reflected in EMFAC 2014 (CARB 2014b).

Table 2 Total Annual Carbon Dioxide Emission Comparison All Vehicle Classes (Including Pass-Through Trips)[1]

Scenario	CO_2 Emissions (MT/year)	Percent Change from 2015
2015 Baseline	1,085,399	NA
2040 Project (2018 RTP/SCS SEIR)	746,204	-31%
2040 No Project (2015 RTP/SCS EIR)	936,108	-14%

Table 3 presents the SB 375 per capita CO_2 emissions, which include only emissions from passenger vehicles, and exclude pass through trips and the Advanced Clean Cars and Low Carbon Fuel Standards programs. In addition, the table shows per capita CO_2 emissions with the off-model adjustment applied and the percent change relative to baseline emission levels with the EMFAC adjustment applied. Per capita emissions in Shasta County are anticipated to decrease by 3.97% relative to 2005 levels by 2020 and by 1.16% relative to 2005 levels by 2035 with implementation of the 2018 RTP/SCS. SRTA would meet CARB's SB 375 target of a 0% increase for 2020 and 2035.

Table 3 SB 375 Emissions and Targets

Scenario	Per Capita CO_2 Emissions (lbs CO_2/ person/day)	Per Capita CO_2 Emissions with Off-Model Adjustment (lbs CO_2/ person/day)	% Change Relative to Baseline	EMFAC Adjustment to % Change	% Change Relative to Baseline with EMFAC Adjustment	Target
2005 Baseline[1]	21.31	–	–		–	–
2020 Project	20.68	20.68	-2.95	-1.02	-3.97	0% increase from 2005
2035 Project	22.03	21.64	1.55	-2.71	-1.16	0% increase from 2005

[1] Per CARB guidance, the 2005 baseline is based on EMFAC2011 modeling conducted for the 2015 RTP/SCS. However, as presented in the 2015 RTP/SCS EIR, EMFAC results for the 2015 RTP/SCS had been converted to lbs using the conversion factor for metric tons, rather than short tons. The 2005 per capita rate provided in this table has been corrected to use the conversion factor for short tons. Use of the incorrect conversion factor does not affect the percent reduction calculations; therefore, the finding in the previous RTP/SCS remains correct (that SRTA meets its SB 375 targets).

Conclusion

Based on emissions modeling in EMFAC 2014, criteria pollutant and diesel toxics emissions would decrease relative to baseline and 2040 No Project conditions and SRTA would meet its SB 375 targets with implementation of the 2018 RTP/SCS.

Sincerely,
Rincon Consultants, Inc.

Smadar Levy, MESM
Assistant Project Manager

Richard Daulton, MURP
Principal

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SRTA 2018 RTP/SCS

SB 375 Target Conformity

2018 RTP/SCS EMFAC 2014 Outputs	
Year	**Emissions (tons CO2/day)**
2020	1,984
2035	2,367

Population (2018 RTP/SCS Projections)	
2020	191,905
2035	214,830

Conversion Factor	
lbs per ton	2000

SB 375 Conformity Evaluation

Year	Per Capita Emissions (lbs CO2/person/day)	Off-model Adjustment (Percent Reduction)***	Per Capita Emissions with Off-model Adjustment	% Change from 2005	EMFAC Adjustment to % Change****	% Change from 2005 with Off-Model and EMFAC Adjustments	Target	Meets target
2005*	21.31							
2020**	20.68	0.00	20.68	-2.95	-1.02	-3.97	No increase relative to 2005	Yes
2035**	22.03	0.02	21.64	1.55	-2.71	-1.16	No increase relative to 2005	Yes

**Per ARB guidance, the 2005 baseline used is the same as used in the first RTP/SCS (2015), which was modeled using EMFAC 2011.*

***Emissions were modeled in EMFAC 2014 using VMT excluding pass-through trips and with SB 375 mode activated. The SB 375 mode includes only passenger vehicle emissions and turns off emission reductions from Advanced Clean Cars and the Low Carbon Fuel Standards.*

****Shasta County is expected to have a more aggressive EV adoption rate than is assumed in EMFAC 2014. An off-model analysis was conducted to determine the emissions reduction from a faster EV adoption rate in 2035, which is summarized in the memo, "2018 Regional Transportation Plan/Sustainable Communities Strategy Off-model Greenhouse Gas Reduction Strategies."The analysis determined that 2035 emissions would be reduced by 1.8 percent relative to what is modeled by EMFAC 2014.*

*****The EMFAC adjustment accounts for differences between EMFAC 2011, which was used to determine the 2005 baseline data, and EMFAC 2014, which was used to model 2020 and 2035 emissions. The adjustment was calculated in accordance with CARB's guidance document, "Methodology to Calculate CO2 Adjustment to EMFAC Output for SB 375 Target Demonstrations".*

2018 RTP/SCS EMFAC Adjustment Calculations for SB 375

Methodology based on "Methodology to Calculate CO2 Adjustment to EMFAC Output for SB 375 Target Demonstrations"

Conversion Factor	
lbs per U.S. ton	2000

Population (2015 RTP/SCS Projections)	
2005	173,029
2013	176,722
2020	190,192
2035	214,364

2015 RTP/SCS - EMFAC 2011 Results

Year	tons/day	lbs CO2/person/ day	% Change
2005	1,843	21.3074109	
2020	1,927.26	20.26646757	-4.89
2035	2,273.78	21.21419641	-0.44

2015 RTP/SCS - EMFAC 2014 Results

Year	tons/day	lbs CO2/person/ day	% Change
2005	1,843	21.3074109	
2020	1,947.90	20.4835114	-3.87
2035	2,335.60	21.79097236	2.27

EMFAC 2014 Adjustment

Year	**EMFAC2014 adjustment to % Change** (i.e. EMFAC 2011 results - EMFAC 2014 results**)**
2020	-1.02
2035	-2.71

Annual Mobile Source GHG Emissions*

Year	Annual Emissions (MT CO2/year)	Percent Change
2015 (Baseline)	1,085,398.92	
2040 Project	746,203.56	(0.31)
2040 No Project	936,108.37	(0.14)

Conversion	
lbs per MT	2204.62

Population (2018 RTP/SCS Projections)	
2015	182,261
2040	223,042

**Emissions were modeled in EMFAC 2014 using VMT data including pass-through trips; SB 375 mode was de-activated so emissions from all vehicle categories were included and emission reductions from adopted policies were applied to future emissions. Annual emissions in MT CO2 were derived by multiplying EMFAC 2014 daily outputs by annual multipliers for each vehicle category, summing annual emissions for all vehicle classes, and converting total annual emissions from short tons to metric tons.*

2018 RTP/SCS Criteria Pollutant Emissions

EMFAC 2014 Outputs

		Emissions (tons/day)		
Criteria Pollutant	**Season**	**Baseline (2015)**	**2040 Project**	**2040 No Project**
ROG	Winter	2.42	0.5859	0.7104
	Summer	2.86	0.7558	0.9121
NOx	Winter	6.99	1.42	1.87
	Summer	6.33	1.34	1.77
PM10	Winter	0.38	0.38	0.47
	Summer	0.38	0.38	0.47
Diesel PM2.5	Winter	0.10	0.04	0.05
	Summer	0.10	0.04	0.05
Diesel NOx	Winter	4.59	1.14	1.53
	Summer	4.23	1.11	1.48

**Criteria pollutant emissions were modeled in EMFAC 2014 using VMT data with through trips included. Highlighting indicates the season with the highest emission results. These are the results used in the project impact analysis. Note that PM10 EMFAC results include emissions from vehicle exhaust and tire and brake wear, but not from re-entrained dust.*

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Daniel S. Little, Executive Director

DATE: May 2018

TO: Dan Little, AICP, Executive Director
Dan Wayne, Senior Transportation Planner

FROM: Sean Tiedgen, AICP, Senior Transportation Planner

SUBJECT: 2018 Regional Transportation Plan/Sustainable Communities Strategy Off-model Greenhouse Gas Reduction Strategies

---

The 2018 Regional Transportation Plan (RTP) and Sustainable Community Strategy (SCS) contain a broad set of transportation and land use strategies to help provide for a safe, efficient and sustainable transportation system for the Shasta County region. To assist in evaluating the effectiveness of those strategies in reducing vehicle miles traveled (VMT), on-road air quality emissions and greenhouse gas (GHG) emissions, SRTA's regional activity-based travel demand model (ShastaSIM) and the EMFAC2014 air quality model developed by the California Air Resources Board (CARB) were utilized.

In development of the regional strategies for the SCS, it was recognized that ShastaSIM is not sensitive to certain groups of strategies. This is supported by extensive research conducted previously by the academic community, federal and state governments, metropolitan planning organizations, consulting firms and many others. The challenge is not in supporting that the strategies have a positive impact on the community (i.e. reducing congestion), which is realized in daily activity, but in quantifying the amount of benefit realized (e.g. reduction in VMT or GHG emissions). For the 2018 RTP/SCS SRTA focused research related to strategies that encourage adoption of plug-in electric vehicles (PEVs).

SRTA reviewed the following sources to identify and develop a methodology for quantifying "off-model" assumptions for PEV strategies:

- CARB sponsored research on the impact of transportation and land use related policies (available online at: http://arb.ca.gov/cc/sb375/policies/policies.htm) via policy briefs developed by Susan Handy, Ph.D., of UC Davis and Marlon Boarnet of University of Southern California;
- Upstate Plug-in Electric Vehicle Readiness Project (2014) prepared by the Siskiyou County Economic Development Council, Schatz Energy Research Center and GHD;
- Metropolitan Transportation Plan/Sustainable Communities Strategy 2035, Sacramento Area Council of Governments (SACOG) (February 2012);
- Bay Area Plan, Strategy for a Sustainable Region, Metropolitan Transportation Commission (MTC) and ABAG (2013); and
- CARB's EMFAC 2014 vehicle fleet mix assumptions.

One challenge recognized in much of the academic literature is that the regions studied are typically large, urbanized areas with 400,000+ people, very dense urban cores and many non-automobile transportation options (i.e. extensive and frequent bus transit, light rail, bus rapid transit). Because the Shasta County region is classified as "small-urban", SRTA applied low-end assumptions from the literature as a conservative estimate for the impact of strategies on reducing GHG emissions.

Plug-in Electric Vehicles (PEVs)

Upstate PEV Readiness Plan

In 2011, the Siskiyou County Economic Development Council applied for and was awarded funds by the CEC to develop a Plug-in Electric Vehicle (PEV) Readiness Plan for the counties of Siskiyou, Shasta and Tehama; known as the Upstate Region. The PEV Readiness Plan is available online at http://www.siskiyoucounty.org/s/Readiness-Plan. The full technical report is available online at http://www.siskiyoucounty.org/s/Upstate-PEV-Readiness-Project-Final-Report.pdf. All references below in this section refer to the full technical report.

The Upstate Region PEV Readiness Plan had several objectives, including: identifying the number of charging stations necessary for supporting various levels of electric vehicles as a percentage of the regional vehicle fleet mix, and the potential GHG reductions. The study used a model, developed by the Schatz Energy Research Center (SERC) to estimate the number of charging stations necessary to support a 0.5%, 1% and 2% market penetration of electric vehicles.

Based on the study, it was estimated that for every 1% that electric vehicles made up the total vehicle fleet mix in Shasta County:

- Electric vehicles made up 2.3% of passenger/light-duty (SB 375) vehicle categories; and
- There was a flat reduction of 1.5% in GHG emissions (see Section 2.4 Greenhouse Gas Reduction Estimates, of the technical report) for passenger cars and light-duty trucks.

The study assumed that electric vehicles were made up of 99% light-duty cars and 1% light-duty trucks, for every 1% of market penetration. The definitions for light-duty cars and light-duty trucks was consistent with two of the four vehicle categories (LDA and LDT1) that MPOs use to calculate GHG reductions from in order to achieve SB 375 targets (see Section 2.4.1.3 – Estimating Emissions, of the Upstate Region PEV Readiness Plan).

Table 1 below shows the study assumptions for a 10% faster adoption rate than the estimate base rate. Because the Upstate Region PEV Readiness Plan only looked at the replacement of LDA and LDT1 vehicle categories by PEVs, greater GHG reduction emissions may be possible. For instance, significant reductions in emissions could be seen if commercial delivery vehicles converted to electric. However, this concept was not explored as part of the study.

Table 1 - 2018 RTP Long-term PEV Market Penetration[1]

Year[3]	Total Fleet		Passenger/Light-duty Vehicles	
	% of Market Pentration[2]	% GHG Reduction	% of Market Penetration	% GHG Reduction
2014	0.1%			
2016	0.5%			
2018	1.0%	0.3%	2.3%	1.5%
2021	2.0%	0.7%	4.6%	3.1%
2024	3.0%	1.0%	6.9%	4.5%
2027	4.0%	1.3%	9.2%	6.0%
2031	5.0%	1.7%	11.5%	7.5%
2034	6.0%	2.0%	13.8%	9.0%

[1]A 1% market penetration of PEVs into the total Shasta County vehicle fleet becomes a 2.3% vehicle fleet penetration when looking at passenger cars/light-duty trucks only.

[2]Assumes a 10% faster adoption rate (starting in 2018) of PEVs based on local government and private development pursuing early investment in PEV charging stations.

[3]Year 2014 shows the current PEV total fleet market penetration at the time of the study.

EMFAC 2014 Vehicle Fleet Mix

SRTA reviewed the vehicle fleet mix data available in CARB's EMFAC 2014 air quality model. Table 2 summarizes total estimated vehicles, total electric vehicles (EVs), total SB 375 category vehicles, and EVs as a percentage of total vehicles and SB 375 vehicles for years 2018, 2020, 2035 and 2040.

Table 2 - Electric Vehicles as % of Total Vehicles and SB 375 Vehicles per EMFAC 2014

Year	Total Vehicles	Total SB 375 Vehicles	Total EVs	EV as % of Total	EVs as % of SB 375
2018	156,945.0	133,163.3	672.6	0.4%	0.5%
2020	159,057.5	136,337.6	1,485.2	0.9%	1.1%
2035	197,664.7	179,813.6	15,553.7	7.9%	8.6%
2040	207,877.4	190,168.8	18,519.9	8.9%	9.7%
SB 375 vehicle classes include: LDA, LDT1, LDT2 and MDV					

Other Recent activities

SRTA reviewed other regional activities related to EVs and vehicle charging.

- In 2017, the Redding Electric Utility (REU) launched a EV vehicle and charging incentive program to encourage both residential and commercial investment in the city of Redding. The programs provide the following incentives:
  - Residential
    - New EV purchase rebate of $1,000 per vehicle (up to 2)
    - Rebate of $500 per home charger (up to 2)
  - Commercial
    - Purchase or lease of a new EV of $1,000 per vehicle (up to 10)
    - Rebate of $3,000 per Level II or Level III charger (up to 10)

Off-model estimations

Based on the above data and research, SRTA developed a methodology (similar to the estimations of the Upstate PEV Readiness Plan) for estimating potential benefits of encouraging EV adoption through local/regional EV incentives and encouraging more streamlined permitting processes. The methodology includes updated data available from CARB's EMFAC model regarding current EV market adoption and has a slightly less aggressive EV adoption rate that the Upstate Region PEV Readiness Plan. This is primarily due to existing data indicating that the Upstate Region PEV Readiness Plan is too aggressive in early years of the RTP plan (2018-2026). Table 3 summarizes the methodology and potential GHG reduction benefits.

SRTA estimates that the 2018 RTP/SCS would support a slightly faster EV adoption rate for the region when comparing the methodology in Table 3 to the EMFAC 2014 model estimates. The slightly faster adoption would result in an extra 1.3% of EVs as part of the SB 375 vehicle categories by 2035. This would result in a flat 1.8% reduction in GHG emissions for 2035.

Table 3 - Impact of EV Charging Strategies in Shasta County per 2018 RTP/SCS

Year	EV as % of SB 375 Vehicles	GHG Reductions
2018	0.9%	0.6%
2019	1.4%	0.9%
2020	1.8%	1.2%
2021	2.3%	1.5%
2022	2.8%	1.8%
2023	3.2%	2.1%
2024	3.7%	2.4%
2025	4.1%	2.7%
2026	4.7%	3.1%
2027	5.3%	3.4%
2028	5.9%	3.8%
2029	6.4%	4.2%
2030	7.0%	4.6%
2031	7.6%	4.9%
2032	8.2%	5.3%
2033	8.7%	5.7%
2034	9.3%	6.1%
2035	9.9%	6.4%
2036	10.5%	6.8%
2037	11.0%	7.2%
2038	11.6%	7.5%
2039	12.2%	7.9%
2040	12.8%	8.3%

Methodology to Calculate CO2 Adjustment to EMFAC Output for SB 375 Target Demonstrations

Background:

In 2010, ARB established regional SB 375 greenhouse gas (GHG) targets in the form of a percent reduction per capita from 2005 for passenger vehicles using the ARB Emission Factor model, EMFAC 2007. EMFAC is a California-specific computer model that calculates weekday emissions of air pollutants from all on-road motor vehicles including passenger cars, trucks, and buses. ARB updates the EMFAC model periodically to reflect the latest planning assumptions (such as vehicle fleet mix) and emissions estimation data and methods. Since the time when targets were set using EMFAC2007, ARB has released two subsequent versions, EMFAC2011[1] and EMFAC2014[2].

ARB has improved the carbon dioxide (CO2) emission rates in EMFAC2011 and EMFAC2014, based on recent emission testing data and updated energy consumption for air conditioning. In addition, vehicle fleet mix has been updated in EMFAC2011 and again in EMFAC2014 based on the latest available Department of Motor Vehicle data at the time of model development. These changes have lowered the overall CO2 emission rates in EMFAC2011 and EMFAC2014 compared to EMFAC2007.

Purpose:

Some metropolitan planning organizations (MPOs) used EMFAC 2007 to quantify GHG emissions reductions from their first Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS); others used EMFAC 2011. As MPOs estimate GHG emissions reductions from subsequent RTP/SCSs, they will use the latest approved version of EMFAC, but using a different model will influence their estimates and their ability to achieve SB 375 targets. The goal of this methodology is to hold each MPO to the same level of stringency in achieving their SB 375 targets regardless of the version of EMFAC used for its second RTP/SCS.

ARB staff has developed this methodology to allow MPOs to adjust the calculation of percent reduction in per capita CO2 emissions used to meet the established targets when using either EMFAC2011 or EMFAC2014 for their second RTP/SCS. This method will neutralize the changes in fleet average emission rates between the version used for the first RTP/SCS and the version used for the second RTP/SCS. The methodology adjusts for the small benefit or disbenefits resulting from the use of a different version of EMFAC by accounting for changes in emission rates, and applies an

[1] EMFAC2011 was approved by USEPA in March 2013.
[2] EMFAC2014 is under review for USEPA approval.

adjustment when quantifying the percent reduction in per capita CO2 emissions using EMFAC2011 or EMFAC2014.

Applicability:

The adjustment is applicable when the first RTP/SCS was developed using either EMFAC2007 or EMFAC2011 and the second RTP/SCS will be developed using a different version of the model (EMFAC2011 or EMFAC2014).

- Hold the 2005 baseline CO2 per capita estimated in the first RTP/SCS constant. Use both the human population and transportation activity data (VMT and speed distribution) from the first RTP/SCS to calculate the adjustment.
- Add the adjustment to the percent reduction in CO2 per capita calculated with EMFAC2011 or EMFAC2014 for the second RTP/SCS. This will allow equivalent comparison to the first RTP/SCS where emissions were established with EMFAC 2007 or EMFAC2011.

Example Adjustment Calculation (hypothetical for illustration purposes):

In this example, the first RTP/SCS was developed using EMFAC2007 and the second RTP/SCS using EMFAC2011 to calculate the CO2 per capita.

Step1: Compile the CO2 per capita numbers from the MPO's first adopted RTP/SCS using EMFAC 2007 without any off-model adjustments for calendar years (CY) 2005, 2020, and 2035 for passenger vehicles.

Calendar Year	EMFAC2007 CO2 Per capita (lbs/day)
2005	30.0
2020	28.8
2035	27.6

Step 2: Calculate the percent reductions in CO2 per capita from the 2005 base year for CY 2020 and 2035 from Step 1.

Calendar Year	EMFAC2007 Percent Reductions (%)
2020	4.0%
2035	8.0%

Step 3: Develop the input files for the EMFAC2011 model using the same activity data for CY 2020 and 2035 from the first adopted RTP/SCS (same activity data used in Step 1) and execute the model.

Step 4: Calculate the CO2 per capita for CY 2020 and 2035 using the EMFAC2011 output from Step 3; do not include Pavley I, LCFS, and ACC benefits for passenger vehicles.

Calendar Year	EMFAC2011 CO2 Per capita (lbs/day)
2020	28.2
2035	27.9

Step 5: Calculate the percent reductions in CO2 per capita for CY 2020 and 2035 calculated in Step 4 from base year 2005 established in Step 1.

Calendar Year	EMFAC2011 Percent Reductions (%)
2020	6.0%
2035	7.0%

Step 6: Calculate the difference in percent reductions between Step 5 and Step 2 (subtract Step 5 results from Step 2 results) for CY 2020 and 2035; this yields the adjustment for the respective CY.

Calendar Year	EMFAC2011 Adjustment (%)
2020	-2.0%
2035	+1.0%

Step 7: Develop the input files for the EMFAC2011 model using the activity data from the new/second RTP/SCS for CY 2020 and 2035 without any off-model adjustments and execute the model.

Step 8: Calculate the CO2 per capita for CY 2020 and 2035 using the EMFAC2011 output from Step 7; do not include Pavley I, LCFS, and ACC benefits for passenger vehicles.

Calendar Year	EMFAC2011 CO2 Per capita (lbs/day)
2020	26.4
2035	26.1

Step 9: Calculate the percent reductions in CO2 per capita for CY 2020 and 2035 calculated in Step 8 from base year 2005 established in Step 1.

Calendar Year	EMFAC2011 Percent Reductions (%)
2020	12.0%
2035	13.0%

Step 10: Add the adjustment factors from Step 6 to the percent reductions calculated for the new/second RTP/SCS (Step 9) using EMFAC 2011 for CY 2020 and 2035.

Calendar Year	Adjusted Percent Reductions (%)
2020	10.0%
2035	14.0%

Follow the same steps to adjust for use of EMFAC2007 or EMFAC2011 to EMFAC2014. Do not include any off-model adjustments during application of the EMFAC adjustment factor.

Appendix D

Total Annual GHG Emissions Calculations

SRTA Total GHG Emissions Calculations

Emission Factors	Units	Emission Factor	Source
Electricity	MT CO2e/kWh	0.000194	Pacific Gas & Electric. 2015. PG&E Cuts Carbon Emissions with Clean Energy. http://www.pgecurrents.com/2015/01/30/pge-cuts-carbon-emissions-with-clean-energy/ (accessed March 2018).
Natural gas	MT CO2e/Therm	0.00531	United States Environmental Protection Agency (US EPA). Emission Factors for Greenhouse Gas Inventories. https://www.epa.gov/sites/production/files/2015-07/documents/emission-factors_2014.pdf
Waste (MSW)	MT CO2e/Ton Waste	0.42	US EPA. Documentation for Greenhouse Gas Emission and Energy Factors Used in the Waste Reduction Model (WARM). 2018. https://www.epa.gov/sites/production/files/2016-03/documents/warm_v14_management_practices.pdf. (accessed March 2018).

Consumption Rates		Units	Parameter Value	Source
Average Statewide Household Electricity Consumption Rate				California Energy Commission. 2009 California Residential Appliance Saturation Study, Vol. 2, Table 2-5: Electric UECs by Residence Type. Prepared by KEMA, Inc. October 2010.
	Single-family	kWh/year/household	7,605	
	Multi-family	kWh/year/household	3,709	
Average Statewide Household Natural Gas Consumption Rate				California Energy Commission. 2009 California Residential Appliance Saturation Study, Vol. 2, Table 2-21: Gas UECs by Residence Type for All Households and for Households with Gas Account Data. Prepared by KEMA, Inc. October 2010.
	Single-family	therms/year/household	425	
	Multi-family	therms/year/household	149	
	Mobile homes	therms/year/household	339	
Average Statewide Commercial Electricity Consumption Rate		kwh/cu ft/ year	14	California Energy Commission. 2006. California Commercial End-Use Survey, Table 8-1: Overview of Energy Usage in the Statewide Service Area. Prepared by Itron, Inc. March 2006. http://www.energy.ca.gov/2006publications/CEC-400-2006-005/CEC-400-2006-005.PDF. (accessed
Average statewide commercial NG Consumption Rate		therms/sq ft/year	0.26	
		kBtu/sq ft/year	26	
Average statewide waste Disposal Rate		pounds/resident/day	5	CalRecycle. 2017. California's 2016 Per Capita Disposal Rate Estimate. http://www.calrecycle.ca.gov/LGCentral/goalmeasure/disposalrate/MostRecent/default.htm. (accessed March 2018).
Urban Per-Capita Water Consumption Rate (includes all sectors: residential, commercial, industrial)		gallons/resident/day	300	Pacific Institute. 2014. Urban Water Conservation and Efficiency Potential in California. June 2014. https://pacinst.org/wp-content/uploads/2014/06/ca-water-urban.pdf. (accessed March 2018)

Other Metrics	Units	Parameter Value	Source
Average rentable sq ft of commercial space per employee	sq ft/ employee	340	Miller, Norm. 2012. Estimating Office Space per Worker (Draft). University of San Diego, Burnham-Moores Center for Real Estate. https://www.sandiego.edu/pipeline/documents/EstimatingOfficeSpaceRequirementsMay12012.pdf
Energy intensity of water conveyance, treatment, distribution, and wastewater treatment	kWh/MG (million gallons)	3,950	California Energy Commission. 2005. California's Water-Energy Relationship. November 2005. http://www.energy.ca.gov/2005publications/CEC-700-2005-011/CEC-700-2005-011-SF.PDF. (accessed March 2018)

Project Data	2015	2040
Total Population	182,261	223,042
Jobs	69,524	84,226
Commercial space (sq ft)	23,638,160	28,636,840
Residential units		
Single-family units	56,439	71,080
Multi-family units	14,907	17,822
Mobile home and other units	9,226	9,226

Total Annual Emissions	2015 Emissions (MT CO2e)	2040 Emissions (MT CO2e)	2040 No Project (MTCO2e)	Source
Mobile	1,085,398.92	746,203.56	936,108.37	SRTA EMFAC 2014 Runs (all vehicle classes)
Residential Electricity	103,982	127,680	127,680	Calculations
Commercial Electricity	62,504	75,722	75,722	Calculations
Residential NG	5,691	6,982	6,982	Calculations
Commercial NG	32,635	39,536	39,536	Calculations
Waste	188	230	230	Calculations
Water	42	51	51	Calculations
Total	1,290,441	996,405	1,186,310	
Net Change		(294,035)		
Per Capita	4.84	3.24	3.86	
Change from Baseline		(1.60)	(0.98)	

Appendix E

Response to Comments on the Draft SEIR

1 SRTA 2018 RTP/SCS Final SEIR: Response to Comments

This Response to Comments (RTC) document provides a response to public and agency comments received by the Shasta Regional Transportation Authority (SRTA) on the Draft Supplemental Environmental Impact Report (SEIR) for the 2018 Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS).

In addition to providing responses to public and agency comments received on the Draft SEIR, this RTC document also identifies and describes revisions to the Draft SEIR, as necessary, to make clarifications to information presented in the Draft SEIR. Revisions to the Draft SEIR were not required in response to the comments received on the Draft SEIR.

1.1 Environmental Review Process

According to the California Environmental Quality Act (CEQA), lead agencies are required to consult with public agencies having jurisdiction over a proposed project and to provide the general public with an opportunity to comment on the Draft SEIR.

On February 8, 2018, SRTA circulated a Notice of Preparation (NOP) for a 30-day period to identify environmental issue areas potentially affected if the proposed 2018 RTP/SCS were to be implemented. The NOP was mailed to public agencies, the State Clearinghouse, organizations, and individuals considered likely to be interested in the proposed 2018 RTP/SCS and its potential impacts. The NOP was also posted at the Shasta County Clerk's office. SRTA also held a scoping meeting during the 30-day NOP comment period to solicit input on the scope and content of the environmental analysis included in the Draft SEIR. The meeting was held at 3:30 PM on February 28, 2018, at the SRTA offices in Redding. Comments received by SRTA on the NOP and at the scoping meeting are provided in Appendix A of the Draft SEIR and are summarized in Table 1-2 of the Draft SEIR. These comments were taken into account during the preparation of the Draft SEIR.

The Draft SEIR was made available for a 47-day public review period beginning on June 8, 2018, and ending on July 24, 2018. The Draft SEIR was distributed to local and State responsible and trustee agencies, as well as the State Clearinghouse. Copies of the Notice of Availability of the Draft SEIR were mailed to a list of interested parties, groups and public agencies, as well as published in the *Redding Record Searchlight* newspaper. The Draft SEIR was posted electronically on SRTA's website, and a paper copy was available for public review at SRTA's offices in Redding. The Notice of Availability of the Draft SEIR was also posted at the office of the Shasta County Clerk. SRTA also held a public hearing on the Draft SEIR to receive testimonial comments. The hearing was held at the SRTA Board Meeting on June 19, 2018 at 3:00 p.m., at the Shasta County Board of Supervisors Chambers, 1450 Court Street, Suite 263, Redding, California.

1.2 Organization of Comment Letters and Responses

This section presents a list of comment letters and other comments received during the public review period and describes the organization of the letters and comments that are provided in

Section 1.3, *Comments and Responses*, of this document. SRTA received two comment letters on the Draft SEIR. Each comment letter has been numbered sequentially and each separate issue raised by the commenter has been assigned a number. The responses to each comment identify first the number of the comment letter and then the number assigned to each issue. For example, Response 1.2 indicates that the response is for the second issue raised in comment Letter 1.

Letter Number and Commenter		Agency/ Group/ Organization	Page Number
1.	Amy Henderson, Environmental Scientist	California Department of Fish and Wildlife	E-3
2.	Kathy Grah, Chief, Office of Community and Regional Planning	California Department of Transportation	E-5

1.3 Comments and Responses

Written responses to each comment letter and public hearing comment received on the Draft SEIR are provided in this section. All letters received during the public review period on the Draft SEIR are provided in their entirety.

Please note that text within individual letters that has not been numbered does not specifically raise significant environmental issues and/or does not relate directly to the adequacy of the information or analysis within the Draft SEIR and therefore no response is required, per *State CEQA Guidelines* Section 15088.

As noted in the responses to individual comments below, the comments received by SRTA on the Draft SEIR do not require revisions to the text of the Draft SEIR.

Comment Letter 1

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Region 1- Northern
601 Locust Street, Redding, CA 96001
www.wildlife.ca.gov

EDMUND G. BROWN, Jr., Governor
CHARLTON H. BONHAM, Director

July 23, 2018

Sean Tiedgen, Senior Transportation Planner
Shasta Regional Transportation Agency
1255 East Street, Suite 202
Redding, CA 96001

Subject: **Review of the Supplemental Environmental Impact Report for the previously certified Programmatic Environmental Impact Report for the 2015 RTP/SCS, State Clearinghouse Number 2014022018, Shasta County**

Dear Mr. Tiedgen:

The California Department of Fish and Wildlife (Department) has reviewed the Supplemental Environmental Impact Report for the above-referenced project (Project). The Department's review of this Project is pursuant to our role as the State's trustee and responsible agency for fish and wildlife resources under the California Environmental Quality Act, California Public Resources Codes § 21000 et seq. The Department commented on the Notice of Preparation for this Project on March 7, 2018. The Department's comments were incorporated into the document; therefore, based on the information provided and Department review, we have no comments at this time. If the Project description changes in any way or additional biological resource information becomes available, the Department should be notified and provided an opportunity to offer comments regarding the updated information. 1.1

We appreciate the opportunity to review this Project. If you have any questions, please contact me at (530) 225-2779, or by email at Amy.Henderson@wildlife.ca.gov.

Sincerely,

Amy Henderson
Environmental Scientist

ec: Sean Tiedgen
Shasta Regional Transportation Agency
stiedgen@srta.ca.gov

State Clearinghouse
State.clearinghouse@opr.ca.gov

Letter 1

COMMENTER: Amy Henderson, Environmental Scientist, California Department of Fish and Wildlife

DATE: July 23, 2018

Response 1.1

The commenter states that they have reviewed the Draft SEIR and that their comments on the Notice of Preparation for the project in March 2018 have been incorporated into the Draft SEIR. The commenter requests notification if the project description changes or additional biological resources information becomes available. This comment is noted and does not require revisions to the Draft SEIR.

Comment Letter 2

STATE OF CALIFORNIA - CALIFORNIA STATE TRANSPORTATION AGENCY Edmund G. Brown Jr, Governor

DEPARTMENT OF TRANSPORTATION
OFFICE OF COMMUNITY PLANNING
1657 RIVERSIDE DRIVE
P. O. BOX 496073
REDDING, CA 96049-6073
PHONE (530) 229-0517
FAX (530) 225-3020

Flex your power!
Be energy efficient!

June 25, 2018

Dan Little, Executive Director
Shasta Regional Transportation Agency
1255 East Street, Suite 202
Redding, CA 96001

RE: 2018 Shasta Regional Transportation Agency Draft Regional Transportation Plan

Dear Mr. Little:

Thank you for the opportunity to review the Draft 2018 Regional Transportation Plan for Shasta Regional Transportation Agency (SRTA). The Draft was circulated to the various Department of Transportation (Department) functional units within the District and Sacramento. Based on our review, Caltrans offers the following comments, suggestions, and questions for your consideration in the attachment.

If you have any questions or comments regarding this matter, please contact your Regional Planning Liaison, Aaron Casas at (530) 225-4732.

Sincerely,

KATHY GRAH
Chief, Office of Community and Regional Planning

c: Jackie Karhs, Caltrans, Office of Regional Planning
Gilbert Valencia, Caltrans Office of Regional Planning
Aaron Casas, Regional Planner Caltrans District 2
Tom Balkow, Caltrans Distract 2 Planning and Local Assistance

General:

CHECKLIST #4 (j). Please add in page 117 as it refers directly to Section 176 of the federal Clean Air Act.

CHECKLIST #7 (m). The pages indicated do not include an evaluation of how the preferred scenario has improved conditions and performance. Please review and revise.

Title VI and Environmental Justice:

CHECKLIST #3. Please identify what pages or section of the SEIR addresses the Environmental Analysis that meets the legal requirements described in section 4.2

Programming/Operations:

CHECKLIST #1. Please remove page 79 as it does not address the question and include pages 159-171 as this is where ITS begins to be addressed. Please add any other pages in the RTP that refer to ITS. 2.1

CHECKIST #2. Page 79 does not identify the objective criteria used for measuring the performance of the transportation system. We believe this is on page 78. Please revise.

CHECKLIST#3 SRTA does a good job of listing projects, however it is hard to distinguish which projects are un-constrained in the broad page range listed. Please consider creating a list or find a way to label the un-constrained projects in the existing tables.

Environmental:

CHECKLIST #3. Please identify where in the SEIR there is a discussion of SIP conformity instead of listing the whole document.

Letter 2

COMMENTER: Kathy Grah, Chief, Office of Community and Regional Planning, California Department of Transportation

DATE: June 25, 2018

Response 2.1

The commenter provides a list comments that pertain to the Regional Transportation Plan Checklist, which is included as Appendix 3 to the 2018 RTP/SCS. This comment does not pertain to the Draft SEIR and does not raise environmental issues. This comment is noted and does not require further responses or revisions to the Draft SEIR. Please note that responses to comments pertaining to the 2018 RTP/SCS are provided as an appendix in the RTP/SCS.

1.4 Draft SEIR Text Revisions

As presented in Section 1.3, *Comments and Responses*, of this document, the comments received on the Draft SEIR do not require revisions to the Draft SEIR. However, SRTA has elected to make other revisions to the Draft SEIR text that merely clarify, amplify, or make insignificant modifications to the Draft SEIR. The revisions and corrections do not alter the conclusions of the Draft SEIR.

This section identifies these minor revisions to the Draft SEIR text. Where revisions to the main text are called for, the page and paragraph are set forth, followed by the appropriate revision. Added text is indicated with underlined text. Text deleted from the Draft SEIR is shown in ~~strikethrough~~. Revisions are compiled in this section in the order in which they would appear in the Draft SEIR (by page number). Page numbers correspond to the page numbers of the Draft SEIR.

The revisions to the Draft SEIR text do not result in substantive changes that would rise to the level of "significant new information" requiring recirculation pursuant to *State CEQA Guidelines* Section 15088.5. For example, the revisions do not disclose a new or substantially worsened significant environmental impact, or a new feasible mitigation measure or alternative not proposed for adoption. Rather, the revisions correct or clarify information presented.

-♦-

Table of Contents, on page iii of the Draft SEIR is revised to include the following changes:

Appendices

Appendix A Initial Study – Notice of Preparation and Comment Letters

Appendix B 2018 RTP Projects List

Appendix C Mobile Emissions Modeling (EMFAC)

Appendix D Total Annual GHG Emissions Calculations

Appendix E Response to Comments on the Draft SEIR

Appendix F Mitigation Monitoring and Reporting Program

Page 1-1 of the Draft SEIR is revised to include the following changes:

1 Introduction

This document is a Supplemental Environmental Impact Report (SEIR) for the 2018 Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS) proposed by the Shasta Regional Transportation Agency (SRTA). This SEIR augments the previously certified Environmental Impact Report (EIR) for the 2015 RTP/SCS (State Clearinghouse # 2014022018). The SRTA Board of Directors certified the EIR on June 30, 2015, at which time it also adopted the 2015 RTP/SCS. For purposes of this SEIR, the previously certified EIR is referred to herein as the 2015 EIR.

This Final SEIR includes Responses to Comments on the Draft SEIR (Appendix E) and the text of the Draft SEIR, revised based on responses to comments and other information. New text added or edited from the Draft SEIR is shown in underline format. In instances where changes to the document involve changed facts or information, the deleted text has been left in ~~strikethrough~~ format.

Appendix F

Mitigation Monitoring and Reporting Program

Mitigation Monitoring and Reporting Program

The California Environmental Quality Act (CEQA) requires that an agency adopt a Mitigation Monitoring or Reporting Program (MMRP) prior to approving a project that includes mitigation measures to reduce or avoid significant effects on the environment. This document is the MMRP for the 2018 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) which is an update to the current 2015 RTP/SCS. This MMRP has been prepared in compliance with the requirements of Section 21081.6 of the California Public Resources Code and Sections 15091(d) and 15097 of the CEQA Guidelines.

This MMRP lists in tabular format the mitigation measures for each issue area identified in the Supplemental EIR for the 2018 RTP/SCS (SCH #2014022018) previously certified in the Programmatic EIR for the 2015 RTP/SCS and proposed for adoption in the CEQA Findings of Fact. This MMRP is designed to ensure adopted mitigation measures are implemented. The MMRP also lists all mitigation measures originally applied to impacts evaluated in the 2015 Programmatic EIR that would continue to be implemented under the new 2018 Supplemental EIR. For each mitigation measure, specifications are made herein that identify the action required and the monitoring that must occur.

The Shasta Regional Transportation Agency (SRTA) has lead agency status, and therefore, is able to enforce mitigation measures for projects for which they have discretionary authority. However, SRTA does not have authority to require recommended mitigation measures be implemented by other implementing agencies (e.g., Caltrans, Shasta County, cities in Shasta County, transit agencies, etc.) that will be lead agencies for future transportation and land use development projects. Implementing agencies are also referred to interchangeably as project sponsors and lead agencies in the Supplemental EIR and this MMRP document.

Implementing agencies or project sponsors considering approval of future projects under the 2018 RTP/SCS would utilize the Supplemental EIR as a basis in determining mitigation measures for subsequent activities. Implementing agencies or project sponsors may be one of the following agencies:

- California Department of Transportation (Caltrans)
- Shasta Regional Transportation Agency (SRTA)
- Shasta County and its incorporated cities:
    - Anderson
    - Redding
    - Shasta Lake

The Supplemental EIR mitigation measures are programmatic first-tier mitigation that will be implemented by SRTA. Additionally, the mitigation measures can and should be implemented by other implementing and project sponsor agencies, listed above, during future project-specific design and second-tier environmental review. When SRTA is the direct source of funding for transportation network improvement projects, SRTA will require as a grant condition the implementation of those 2018 RTP/SCS mitigation measures that are applicable to, and feasible for, the project type being funded. The implementing agency or project sponsor agency for each future project will be

responsible for assuring the project-specific mitigation measures it adopts are enforceable and will be responsible for monitoring those mitigation measures

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
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Aesthetics							
AES-1(a)							
Where a particular 2018 RTP/SCS transportation improvement project affects adjacent landforms, the project sponsor shall ensure that recontouring provides a smooth and gradual transition between modified landforms and existing grade.	Place conditions of approval on the project to ensure that recontouring provides a smooth and gradual transition between modified landforms and existing grade.	During individual environmental review.	Once	The individual project lead agency			
AES-1(b)							
The project sponsor shall ensure that landscaping is installed to restore natural features along corridors after widening, interchange modifications, realignment, or construction of ancillary facilities. Associated landscape materials and design shall enhance landform variation, provide erosion control, and blend with the natural setting. To ensure compliance with approved landscape plans, the implementing agency shall provide a performance security equal to the value of the landscaping/irrigation installation.	Place conditions of approval on the project to ensure that associated landscape materials enhance landform variation, provide erosion control and blend with the natural setting; provide a performance security equal to the value of the landscaping/ irrigation installation	During individual environmental review	Once	The individual project lead agency			
AES-1(c)							
The project sponsor shall ensure that a project in a scenic view corridor will have the minimum possible impact upon foliage, existing landscape architecture and natural scenic views, consistent with project goals.	Place conditions of approval on the project to ensure that minimizes impact upon foliage, existing landscape architecture and natural scenic views, consistent with project goals.	During individual environmental review	Once	The individual project lead agency			
AES-1(d)							
Potential noise impacts arising from increased traffic volumes associated with adjacent land development shall be preferentially mitigated	Development plans shall avoid the removal of existing mature trees to the extent possible; replace lost trees at a	During individual environmental review for roadway	Once during plan review; periodically	The individual project lead agency			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
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through the use of setbacks and the acoustical design of adjacent proposed structures. The use of sound walls, or any other architectural features that could block views from the scenic highways or other view corridors, shall be discouraged to the extent possible. Where use of sound walls is found to be necessary, walls shall incorporate offsets, accents, and landscaping to prevent monotony. In addition, sound walls should be complementary in color and texture to surrounding natural features.	minimum 2:1 ratio; periodic maintenance shall occur to ensure vitality of replaced trees.	extensions and widening.	during construction				
AES-2(a)							
Roadway extensions and widenings shall avoid the removal of existing mature trees to the extent possible. The loss of trees that are protected by local agencies shall be replaced at a minimum 2:1 basis and incorporated into the landscaping design for the roadway. The project sponsor of a particular 2018 RTP/SCS project shall ensure the continued vitality of replaced trees through periodic maintenance (see Mitigation Measure B-1(j)).	Development plans shall avoid the removal of existing mature trees to the extent possible; replace lost trees at a minimum 2:1 ratio; periodic maintenance shall occur to ensure vitality of replaced trees.	During individual environmental review for roadway extensions and widening	Once during plan review; periodically during construction	The individual project lead agency			
AES-2(b)							
Roadway lighting shall be minimized to the extent possible, and shall not exceed the minimum height requirements of the local jurisdiction in which the project is proposed. This may be accomplished through the use of hoods, low intensity lighting, and using as few lights as necessary to achieve the goals of the project.	Development plans shall minimize lighting and not exceed local minimum height requirements.	During individual design Review	Once	The individual project lead agency			
AES-2(c)							
Bus shelters and other ancillary facilities	Develop plans for bus shelters and	During plan check	Once	The individual			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
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constructed as part of roadway improvements under the 2018 RTP/SCS shall be designed in accordance with the architectural review requirements of the local jurisdiction in which the project is proposed.	other ancillary facilities shall be consistent with architectural review requirements of the local jurisdiction.			project lead agency			
Air Quality							
AQ-1							
The individual project lead agency shall ensure that all feasible and appropriate SCAQMD Standard Mitigation Measures (SMMS) and Best Available Mitigation Measures (BAMMs) are implemented. The measures shall be noted on all construction plans and the lead agency shall perform periodic site inspections. SCAQMD SMMs and BAMMs include, but are not limited to, the following: Fugitive dust emissions: ▪ Implement all adequate dust control measures in a timely and effective manner during all phases of project development and construction; ▪ Water all excavated, stockpiled, or graded material to prevent fugitive dust from leaving property boundaries and causing a public nuisance or a violation of an ambient air standard. Watering shall occur at least twice daily with complete site coverage, preferably in the mid-morning and after work is completed each day; ▪ During initial grading, earth moving, or site preparation, construct a paved (or dust	Implement SCAQMD Standard Mitigation Measures and Best Available Mitigation Measures.	Prior to issuance of grading permits; periodically during construction	Once during plan review; periodically during construction	The individual project lead agency and on-site construction manager			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
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palliative treated) apron, at least 100 feet in length, onto the project site from the adjacent paved road(s); ▪ Sweep adjacent paved streets (recommend water sweeper with reclaimed water) at the end of each day if substantial volumes of soil materials have been carried onto adjacent public paved roads from the project site; ▪ Install sandbags or other erosion control measures to prevent silt runoff to roadways; ▪ Apply Department of Public Works approved non-toxic soil stabilizers (according to manufacturer's specifications) to all inactive construction areas (previously graded areas which remain inactive for 96 hours); ▪ Replant vegetation in disturbed areas as quickly as possible; ▪ Cover all trucks hauling soil, sand, and other loose materials, or require all trucks to maintain at least two feet of freeboard; ▪ Use wheel washers or wash off tires of all trucks exiting the construction site; and ▪ Mitigate fugitive dust emissions from wind erosion of areas disturbed from construction activities (including storage piles) by application of either water or chemical dust suppressant. Exhaust emissions from diesel heavy							

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equipment: ▪ Shut down equipment when not in use to limit engine idling time. Idling time shall be limited to no more than 3 minutes. This idling limit does not apply to circumstances as stated in the California Environmental Protection Agency Air Resources Board Advisory Number 377 (2008); ▪ Provide regular preventive equipment maintenance to prevent emission increases due to engine problems; ▪ Use low sulfur and low aromatic fuels meeting California standards for motor vehicle diesel fuel; and ▪ Use low-emitting gas and diesel engines meeting state and federal emissions standards (Tier I, II, III) for construction equipment. Other emissions: ▪ Use low VOC coatings for the architectural coating phase of construction. All coatings must meet the VOC limits per SCAQMD Rule 3-31; ▪ Use asphalt mixtures appropriate for the time of year of application, while maintaining compliance with the lead agency's road design and construction standards;							

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
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▪ Use alternatives to open b vegetative material on the site, unless otherwise dee infeasible by the SCAQMD suitable alternatives are cl mulching, or conversion tc fuel; ▪ Provide for temporary traffic control as appropriate during all phases of construction to improve traffic flow as deemed appropriate by the Department of Public Works and/or Caltrans; and ▪ Schedule construction activities that direct traffic flow to off-peak hours as much as practicable.							
AQ-3							
Consistent with the provisions contained in the CARB Air Quality and Land Use Handbook (June 2005), lead agencies shall identify appropriate and feasible measures to be incorporated into project building design for residential, school and other sensitive uses located within 500 feet of freeways, heavily travelled arterials, railways and other sources of DPM and other known carcinogens. The appropriate measures shall include one or more of the following methods as applicable: ▪ The lead agency shall retain a qualified air quality consultant to prepare a health risk assessment in	If applicable, incorporate CARB Air Quality and Land Use Handbook measures into project design for projects near sensitive receptors.	During individual environmental review	Once	The individual project lead agency			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
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accordance with CARB and the Office of Environmental Health and Hazard Assessment requirements to determine the exposure of project residents/occupants/users to stationary air quality polluters prior to issuance of a demolition, grading, or building permit. The health risk assessment shall be submitted to the Lead Agency for review and approval. The lead agency shall implement any approved health risk assessment recommendations to a level which would not result in exposure of sensitive receptors to substantial pollutant concentrations. Such measures may include" o Do not locate sensitive receptors near the entry and exit points of a distribution center. o Do not locate sensitive receptors in the same building as a perchloroethylene dry cleaning facility. o Maintain a 50 foot buffer from a typical gas dispensing facility (under 3.6 million gallons of gas per year). o Install, operate and maintain in good working order a central heating and ventilation system or other air take system in the building, or in each individual residential unit,							

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	that meets the efficiency standard of the minimum efficiency reporting value 13. The heating and ventilation system should include the following features: Installation of a high efficiency filter and/or carbon filter-to-filter particulates and other chemical matter from entering the building. Either high efficiency particulate absorption filters or American Society of Heating, Refrigeration, and Air-Conditioning Engineers 85% supply filters should be used. o Retain a qualified heating and ventilation consultant or high efficiency particulate absorption rate during the design phase of the project to locate the heating and ventilation system based on exposure modeling from the mobile and/or stationary pollutant sources. o Maintain positive pressure within the building. o Achieve a performance standard of at least one air exchange per hour of fresh outside filtered air. o Achieve a performance standard of at least 4 air						

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
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exchanges per hour of recirculation. o Achieve a performance standard of 0.25 air exchanges per hour of in unfiltered infiltration if the building is not positively pressurized							
Biological Resources							
B-1(a): Biological Screening and Assessment							
Because of the programmatic nature of the 2018 RTP/SCS and specific impacts for a given project are unknown at this time, on a project-by-project basis upon completion of final design, a preliminary biological resource screening shall be performed as part of the environmental review process to determine whether the project has any potential to impact biological resources. If it is determined that the project has no potential to impact biological resources, no further action is required. If the project would have the potential to impact biological resources, prior to construction, a qualified biologist shall conduct a biological resources assessment (BRA) or similar type of study to document the existing biological resources within the project footprint plus a buffer and to determine the potential impacts to those resources. The BRA shall evaluate the potential for impacts to all biological resources including, but not limited to special status species, nesting birds, wildlife movement corridors, potential for installation or retrofitting of existing structures for wildlife movement corridors, evaluation of culverts or other watercourse structures to remove barriers to fish passage, sensitive plant	Projects shall conduct a preliminary biological resource screening; if determined the project has potential to impact biological resources, a biological resources assessment or similar shall be conducted.	Prior to construction	Once	The individual project lead agency			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
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communities/critical habitat, and other resources judged to be sensitive by local, state, and/or federal agencies. Pending the results of the BRA, design alterations, further technical studies (i.e. protocol surveys) and/or consultations with the USFWS, CDFW and/or other local, state, and federal agencies may be required. The following mitigation measures [B-1(b) through B-1(k)] shall be incorporated, only as applicable, into the BRA for projects where specific resources are present or may be present and impacted by the project. Note that specific surveys described in the mitigation measures below may be completed as part of the BRA where suitable habitat is present.							
B-1(b): Special Status Plan Species Surveys							
If completion of the project-specific BRA determines that special status plant species may occur on-site, surveys for special status plants shall be completed prior to any vegetation removal, grubbing, or other construction activity of each segment (including staging and mobilization). The surveys shall be floristic in nature and shall be seasonally timed to coincide with the target species identified in the project-specific BRA. All plant surveys shall be conducted by a qualified biologist approved by the implementing agency no more than two years before initial ground disturbance. All special status plant species identified on-site shall be mapped onto a site-specific aerial photograph and topographic map. Surveys shall be conducted in accordance with the most current protocols established by the CDFW, USFWS, and the local jurisdictions if said protocols exist. A report of the survey results shall be submitted to the implementing agency,	If applicable, surveys for special status plants shall be completed.	During individual environmental review	Once	The individual project lead agency			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
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and the CDFW and/or USFWS, as appropriate, for review and approval.							
B-1(c): Special Status Plan Species Avoidance, Minimization, and Mitigation							
If state listed or California Rare Plant List 1B species are found during special status plant surveys [pursuant to mitigation measure B-1(b)], then the project shall be re-designed to avoid impacting these plant species, if feasible. Rare plant occurrences that are not within the immediate disturbance footprint, but are located within 50 feet of disturbance limits shall have bright orange protective fencing installed at least 30 feet beyond their extent, or other distance as approved by a qualified biologist, to protect them from harm.	If applicable, project shall be redesigned to avoid impacting rare plant species.	During individual environmental review	Once	The individual project lead agency			
B-1(d): Restoration Monitoring							
If special status plants species cannot be avoided and will be impacted by a project implemented under the 2018 RTP/SCS, all impacts shall be mitigated at a minimum ratio of 2:1 (number of acres/individuals restored to number of acres/individuals impacted) for each species as a component of habitat restoration. A restoration plan shall be prepared and submitted to the jurisdiction overseeing the project for approval. (Note: if a state listed plant species will be impacted, the restoration plan shall be submitted to the CDFW for approval). The restoration plan shall include, at a minimum, the following components: ▪ Description of the project/impact site (i.e., location, responsible parties, areas to be impacted by habitat type). ▪ Goal(s) of the compensatory mitigation project [type(s) and area(s)	If applicable, project plans shall include project-specific mitigation measures to mitigate impacts at a minimum ratio of 2:1 and a restoration plan shall be prepared meeting all requirements.	During individual environmental review	Once	The individual project lead agency			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
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of habitat to be established, restored, enhanced, and/or preserved; specific functions and values of habitat type(s) to be established, restored, enhanced, and/or preserved]. ▪ Description of the proposed compensatory mitigation site (location and size, ownership status, existing functions and values). ▪ Implementation plan for the compensatory mitigation site (rationale for expecting implementation success, responsible parties, schedule, site preparation, planting plan). ▪ Maintenance activities during the monitoring period, including weed removal as appropriate (activities, responsible parties, schedule). ▪ Monitoring plan for the compensatory mitigation site, including no less than quarterly monitoring for the first year (performance standards, target functions and values, target acreages to be established, restored, enhanced, and/or preserved, annual monitoring reports). ▪ Success criteria based on the goals and measurable objectives; said criteria to be, at a minimum, at least 80 percent survival of container plants and 30 percent relative cover by vegetation type. ▪ An adaptive management program and remedial measures to address any shortcomings in meeting success							

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criteria. ▪ Notification of completion of compensatory mitigation and agency confirmation. ▪ Contingency measures (initiating procedures, alternative locations for contingency compensatory mitigation, funding mechanism).							
B-1(e): Endangered/Threatened Species Habitat Assessment and Protocol Surveys							
Specific habitat assessment and survey protocol surveys are established for several federally and state endangered or threatened species. If the results of the BRA determine that suitable habitat may be present any such species, protocol habitat assessments/surveys shall be completed in accordance with CDFW and/or USFWS protocols prior to issuance of any construction permits. If through consultation with the CDFW and/or USFWS it is determined that protocol habitat assessments/surveys are not required, said consultation shall be documented prior to issuance of any construction permits. Each protocol has different survey and timing requirements. The applicants for each project shall be responsible for ensuring they understand the protocol requirements.	If applicable, protocol habitat assessments/ surveys shall be completed in accordance with protocols.	During individual environmental review	Once	The individual project lead agency			
B-1(f): Endangered/Threatened Species Avoidance and Minimization							
The habitat requirements of endangered and threatened species throughout Shasta County are highly variable. The potential impacts from any given project implemented under the 2018 RTP/SCS are likewise highly variable. However, there are several avoidance and minimization measures that can be applied for a variety of	If applicable, project plans shall include project-specific mitigation measures to avoid and minimize impacts to endangered or threatened species.	During individual environmental review	Once	The individual project lead agency			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
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species to reduce the potential for impact, with the final goal of no net loss of the species. The following measures may be applied to aquatic and/or terrestrial species. Project lead agencies shall select from these measures as appropriate. Additionally, projects with the potential to affect endangered or threatened state and federal species may require take authorization from CDFW and/or USFWS. ▪ Ground disturbance shall be limited to the minimum necessary to complete the project. The project limits of disturbance shall be flagged. Areas of special biological concern within or adjacent to the limits of disturbance shall have highly visible orange construction fencing installed between said area and the limits of disturbance. ▪ All projects occurring within/adjacent to aquatic habitats (including riparian habitats and wetlands) shall be completed during the typical low flow period or when water is unlikely to be present (generally between April 1 and October 31), if feasible, to avoid impacts to sensitive aquatic species. Additional timing restrictions shall be incorporated into the project schedule on a species by species basis in coordination with the resource agencies (e.g. National Marine Fisheries Service, CDFW, USFWS). ▪ All projects occurring within or adjacent to sensitive habitats that may support federally and/or state endangered/threatened species shall have a CDFW and/or USFWS-							

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
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approved biologist present during all initial ground disturbing/vegetation-clearing activities. Once initial ground disturbing/vegetation clearing activities have been completed, said biologist shall conduct daily pre-activity clearance surveys for endangered/threatened species. Alternatively, and upon approval of the CDFW and/or USFWS, said biologist may conduct site inspections at a minimum of once per week to ensure all prescribed avoidance and minimization measures are begin fully implemented. ▪ No endangered/threatened species shall be captured and relocated without expressed permission from the CDFW and/or USFWS. ▪ If at any time during construction of the project an endangered/threatened species enters the construction site or otherwise may be impacted by the project, all project activities shall cease. A CDFW/USFWS-approved biologist shall document the occurrence and consult with the CDFW and/or USFWS as appropriate. ▪ For all projects occurring in areas where endangered/ threatened species may be present and are at risk of entering the project site during construction, exclusion fencing shall be placed along the project boundaries prior to start of construction (including staging and mobilization). The placement of the							

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fence shall be at the discretion of the CDFW/USFWS-approved biologist. This fence shall consist of solid silt fencing placed at a minimum of 3 feet above grade and 2 feet below grade and shall be attached to wooden stakes placed at intervals of not more than 5 feet. The fence shall be inspected daily and following rain events and high wind events and shall be maintained in good working condition until all construction activities are complete. ▪ All vehicle maintenance/fueling/staging shall occur not less than 100 feet from any riparian habitat or water body. Suitable containment procedures shall be implemented to prevent spills. A minimum of one spill kit shall be available at each work location near riparian habitat or water bodies. ▪ No equipment shall be permitted to enter wetted portions of any affected drainage channel. ▪ All equipment operating within streams shall be in good conditions and free of leaks. Spill containment shall be installed under all equipment staged within stream areas and extra spill containment and clean up materials shall be located in close proximity for easy access. ▪ If project activities could degrade water quality, water quality sampling shall be implemented to identify the pre-project baseline, and to monitor during construction for comparison to							

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the baseline. ▪ If water is to be diverted around work sites, a diversion plan shall be submitted (depending upon the species that may be present) to the CDFW, RWQCB, USFWS, and/or NMFS for their review and approval prior to the start of any construction activities (including staging and mobilization). If pumps are used, all intakes shall be completely screened with wire mesh not larger than five millimeters to prevent animals from entering the pump system. ▪ At the end of each workday, excavations shall be secured with cover or a ramp provided to prevent wildlife entrapment. ▪ All trenches, pipes, culverts or similar structures shall be inspected for animals prior to burying, capping, moving, or filling. ▪ The CDFW/USFWS-approved biologist shall remove invasive aquatic species such as bullfrogs and crayfish from suitable aquatic habitat whenever observed and shall dispatch them in a humane manner and dispose of properly. ▪ If any federally and/or state protected species are harmed, the CDFW/USFWS-approved biologist shall document the circumstances that led to harm and shall determine if project activities should cease or be altered in an effort to avoid additional harm to these species. Dead or injured special status species shall be							

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disposed of at the discretion of the CDFW and USFWS. All incidences of harm shall be reported to the CDFW and USFWS within 48 hours. ▪ Considering the potential for projects to impact federal and state listed species and their habitat, SRTA and lead agencies shall contact the CDFW and USFWS to identify mitigation banks within Shasta County during development of the RTP. Upon implementation of projects included in the RTP, but on a project-by-project basis, if the results of the BRA determines that impacts to federal and state threatened or endangered species habitat are expected, lead agencies shall explore species-appropriate mitigation bank(s) servicing the county for purchase of mitigation credits. If mitigation banks or credits are not available, mitigation options may include, but are not limited to, onsite or offsite habitat creation and restoration, land acquisitions, and conservation easements.							
B-1(g): Non-listed Special Status Animal Species Avoidance and Minimization							
Several State Species of Special Concern may be impacted by projects implemented under the 2018 RTP/SCS. The ecological requirements and potential for impacts is highly variable among these species. Depending on the species identified in the BRA, several of the measures identified under B-1(f) shall be applicable to the project. In addition, measures shall be selected from among the following to reduce the	If applicable, project plans shall include project-specific mitigation measures to reduce impacts to non-listed special status species.	During individual environmental review	Once	The individual project lead agency			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
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potential for impacts to non-listed special status animal species: ▪ For non-listed special-status terrestrial amphibians and reptiles, coverboard surveys shall be completed within three months of the start of construction. The coverboards shall be at least four feet by four feet and constructed of untreated plywood placed flat on the ground. The coverboards shall be checked by a qualified biologist once per week for each week after placement up until the start of vegetation removal. All non-listed special status and common animals found under the coverboards shall be captured and placed in five-gallon buckets for transportation to relocation sites. All relocation sites shall be reviewed by the project lead agency and shall consist of suitable habitat. Relocation sites shall be as close to the capture site as possible but far enough away to ensure the animal(s) is not harmed by construction of the project. Relocation shall occur on the same day as capture. If a relocation site immediately adjacent to the project site is unavailable, the CDFW shall be consulted to determine an appropriate relocation site. CNDDB Field Survey Forms shall be submitted to the CFDW for all special-status animal species observed. ▪ Pre-construction clearance surveys shall be conducted within 14 days of the start of construction (including							

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staging and mobilization). The surveys shall cover the entire disturbance footprint plus a minimum 200-foot buffer, if feasible, and shall identify all special status animal species that may occur on-site. All non-listed special-status species shall be relocated from the site either through direct capture or through passive exclusion (e.g., American badger). A report of the pre-construction survey shall be submitted to the lead agency for their review and approval prior to the start of construction. ▪ A qualified biologist shall be present during all initial ground disturbing activities, including vegetation removal to recover special status animal species unearthed by construction activities. ▪ Upon completion of the project, a qualified biologist shall prepare a Final Compliance report documenting all compliance activities implemented for the project, including the pre-construction survey results. The report shall be submitted within 30 days of completion of the project to the project lead agency and CDFW. ▪ If special-status bat species may be present and impacted by the project, a qualified bat biologist shall conduct within 30 days of the start of construction presence/absence surveys for special-status bats in consultation with the CDFW where suitable roosting habitat is present. Surveys shall be conducted using							

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acoustic detectors and by searching tree cavities, crevices, and other areas where bats may roost. If active roosts are located, exclusion devices such as netting shall be installed to discourage bats from occupying the site. If a roost is determined by a qualified bat biologist to be used by a large number of bats (large hibernaculum), bat boxes shall be installed near the project site. The number of bat boxes installed will depend on the size of the hibernaculum and shall be determined through consultations with the CDFW. If a maternity colony has become established, all construction activities shall be postponed within a 500-foot buffer around the maternity colony until it is determined by a qualified bat biologist that the young have dispersed. If it is determined that a maternity colony would be removed, it would be done only if the roost is clear of bats. The decision on whether or not the maternity roost would be removed shall be made in consultation with CDFW.							
B-1(h): Preconstruction Surveys for Nesting Birds for Construction Occurring within Nesting Season							
For projects that may result in tree felling or removal of trees or vegetation that may contain a nesting bird, if feasible, construction activities should occur generally between September 16 to January 31 (thus outside of the nesting season). However, if construction activities must during the nesting season (generally February 1	If applicable, a survey for nesting birds shall be completed; if necessary, a buffer shall be created.	Prior to construction activities; during construction activities if required	Once prior to construction; as needed during construction activities	The individual project lead agency			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
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to September 15), surveys for nesting birds covered by the California Fish and Game Code and the Migratory Bird Treaty Act shall be conducted by a qualified biologist no more than 7 days prior to vegetation removal. The surveys shall include the entire segment disturbance area plus a 200-foot buffer around the site. If active nests are located, all construction work shall be conducted outside a buffer zone from the nest to be determined by the qualified biologist. The buffer shall be a minimum of 50 feet for non-raptor bird species and at least 150 feet for raptor species or as determined in consultation with CDFW and/or USFWS. Larger buffers may be required depending upon the status of the nest and the construction activities occurring in the vicinity of the nest. The buffer area(s) shall be closed to all construction personnel and equipment until the adults and young are no longer reliant on the nest site. A qualified biologist shall confirm that breeding/nesting is completed and young have fledged the nest prior to removal of the buffer. A report of these preconstruction nesting bird surveys shall be submitted to the lead agency to document compliance and to the CDFW							
B-1(h): Preconstruction Surveys for Nesting Birds for Construction Occurring within Nesting Season							
For projects that may result in tree felling or removal of trees or vegetation that may contain a nesting bird, if feasible, construction activities should occur generally between September 16 to January 31 (thus outside of the nesting season). However, if construction activities must during the nesting season (generally February 1 to September 15), surveys for nesting birds covered by the California Fish and Game Code and the Migratory Bird Treaty Act shall be	If applicable, a survey for nesting birds shall be completed; if necessary, a buffer shall be created.	Prior to construction activities; during construction activities if required	Once prior to construction; as needed during construction activities	The individual project lead agency			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
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conducted by a qualified biologist no more than 7 days prior to vegetation removal. The surveys shall include the entire segment disturbance area plus a 200-foot buffer around the site. If active nests are located, all construction work shall be conducted outside a buffer zone from the nest to be determined by the qualified biologist. The buffer shall be a minimum of 50 feet for non-raptor bird species and at least 150 feet for raptor species or as determined in consultation with CDFW and/or USFWS. Larger buffers may be required depending upon the status of the nest and the construction activities occurring in the vicinity of the nest. The buffer area(s) shall be closed to all construction personnel and equipment until the adults and young are no longer reliant on the nest site. A qualified biologist shall confirm that breeding/nesting is completed and young have fledged the nest prior to removal of the buffer. A report of these preconstruction nesting bird surveys shall be submitted to the lead agency to document compliance and to the CDFW.							
B-1(i): Worker Environmental Awareness Program (WEAP)							
Prior to initiation of construction activities for applicable projects (including staging and mobilization), all personnel associated with project construction shall attend WEAP training, conducted by a qualified biologist, to aid workers in recognizing special status resources that may occur in the project area. The specifics of this program shall include identification of the sensitive species and habitats, a description of the regulatory status and general ecological characteristics of sensitive resources, and review of the limits of construction and mitigation measures required to reduce impacts	If applicable, construction personnel shall attend WEAP training.	Prior to construction activities	Once	The individual project lead agency			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
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to biological resources within the work area. A fact sheet conveying this information shall also be prepared for distribution to all contractors, their employers, and other personnel involved with construction of the project. All employees shall sign a form documenting provided by the trainer indicating they have attended the WEAP and understand the information presented to them. The form shall be submitted to the lead agency to document compliance							
B-1(j): Tree Protection							
If it is determined that construction may impact trees protected by local agencies, the project lead agency shall procure all necessary tree removal permits. A certified arborist shall develop a tree protection and replacement plan as appropriate. The plan shall include, but would not be limited to, an inventory of trees to within the construction site, setbacks from trees and protective fencing, restrictions regarding grading and paving near trees, direction regarding pruning and digging within root zone of trees, and requirements for replacement and maintenance of trees. If protected trees will be removed, replacement tree plantings of like species in accordance with local agency standards, but at a minimum ratio of 2:1 (trees planted to trees impacted), shall be installed on-site or at an approved off-site location and a restoration and monitoring program shall be developed in accordance with B-1(d) and shall be implemented for a minimum of seven years or until stasis has been determined by certified arborist. If a protected tree shall be encroached upon but not removed, a certified arborist shall be present to oversee all trimming of roots and branches.	If applicable, tree removal permits shall be acquired and a tree protection and replacement plan shall be developed with requirements. Replacement planting/restoration shall be monitored until stasis is achieved.	Review plan prior to construction activities. Review restoration annually for minimum of seven years or until stasis is achieved	Once prior to construction; annually after restoration until stasis is achieved	The individual project lead agency			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
B-2(a): Jurisdictional Delineation							
If projects implemented under the 2018 RTP/SCS occur within or adjacent to wetland, drainages, riparian habitats, or other areas that may fall under the jurisdiction of the CDFW, USACE, and/or RWQCB, a qualified biologist shall complete a jurisdictional delineation. The jurisdictional delineation shall determine the extent of the jurisdiction for each of these agencies and shall be conducted in accordance with the requirement set forth by each agency. The result shall be a preliminary jurisdictional delineation report that shall be submitted to the implementing agency, USACE, RWQCB, and CDFW, as appropriate, for review and approval. If jurisdictional areas are expected to be impacted, then the RWQCB would require a Waste Discharge Requirements (WDR) permit and/or Section 401 Water Quality Certification (depending upon whether or not the feature falls under federal jurisdiction). If CDFW asserts its jurisdictional authority, then a Streambed Alteration Agreement pursuant to Section 1600 et seq. of the California Fish and Game Code would also be required prior to construction within the areas of CDFW jurisdiction. If the USACE asserts its authority, then a permit pursuant to Section 404 of the Clean Water Act would likely be required.	If applicable, a jurisdictional delineation shall be completed. Receipt of regulatory agency permits, if necessary, shall be verified.	During individual environmental review; verify permit acquisition prior to issuance of grading permits	Once during environmental review; once prior to issuance of grading permits; as needed, during and following construction	The individual project lead agency			
B-2(b): Wetland and Riparian Habitat Restored							
Impacts to jurisdictional wetland and riparian habitat shall be mitigated at a minimum ratio of 2:1 (acres of habitat restored to acres impacted), and shall occur on-site or as close to the impacted habitat as possible. A mitigation and monitoring plan shall be developed by a	If applicable, project plans shall mitigate impacts to jurisdictional wetlands and riparian habitats at a ratio of 2:1 and a MMRP shall be developed. Compliance with permit conditions shall be verified	During environmental review. Verify compliance with permit conditions as necessary during	Once during environmental review; as needed, during and following	The individual project lead agency			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
qualified biologist in accordance with mitigation measure B-1(d) above and shall be implemented for no less than five years after construction of the segment, or until the lead agency and/or the permitting authority (e.g., CDFW or USACE) has determined that restoration has been successful. Alternately, mitigation may occur through the purchase of credits at a USACE approved mitigation bank or contribution to the USACE in-lieu fee program within the USACE Sacramento District. If mitigation is required through a Lake or Streambed Alteration Agreement, the mitigation bank or purchase of credits in an in-lieu fee program shall be approved by CDFW.		following construction	construction				
B-2(c): Landscaping Plan							
If landscaping is proposed for projects occurring within or adjacent to sensitive habitats, a qualified biologist/landscape architect shall prepare a landscape plan for that project. This plan shall indicate the locations and species of plants to be installed. Drought tolerant, locally native plant species shall be used. Noxious, invasive, and/or non-native plant species that are recognized on the Federal Noxious Weed List, California Noxious Weeds List, and/or California Invasive Plant Council Lists 1, 2, and 4 shall not be permitted. Species selected for planting shall be similar to those species found in adjacent native habitats and if feasible, locally collected seeds and plants shall be used.	If applicable, a landscaping plan shall be prepared and include all requirements; species shall be similar to those in adjacent native habitats.	During environmental review	Once	The individual project lead agency			
B-2(d): invasive Weed Prevention and Management Program							
Prior to start of construction for projects occurring within or adjacent to sensitive habitats, an Invasive Weed Prevention and	Project plans for projects with fencing and lighting shall be designed to minimize impacts to wildlife	During environmental review	Once	The individual project lead agency			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
Management Program shall be developed by a qualified biologist to prevent invasion of native habitat by non-native plant species. A list of target species shall be included, along with measures for early detection and eradication. All disturbed areas shall be hydroseeded with a mix of locally native species upon completion of work in those areas. In areas where construction is ongoing, hydroseeding shall occur where no construction activities have occurred within six (6) weeks since ground disturbing activities ceased. If exotic species invade these areas prior to hydroseeding, weed removal shall occur in consultation with a qualified biologist and in accordance with the restoration plan. B-3(a) Fence and Lighting Design. All projects including long segments of fencing and lighting shall be designed to minimize impacts to wildlife. Fencing shall not block wildlife movement through riparian or other natural habitat. Where fencing is required for public safety concerns, the fence shall be designed in consultation with CDFW and to permit wildlife movement by incorporating design features such as: ▪ A minimum 16 inches between the ground and the bottom of the fence to provide clearance for small animals; ▪ A minimum 12 inches between the top two wires, or top the fence with a wooden rail, mesh, or chain link instead of wire to prevent animals from becoming entangled; and ▪ If privacy fencing is required near open space areas, openings at the bottom of the fence measure at least 16 inches in diameter shall be							

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
installed at reasonable intervals to allow wildlife movement. If fencing must be designed in such a manner that wildlife passage would not be permitted, wildlife crossing structures shall be incorporated into the project design as appropriate and in consultation with CDFW. Similarly, lighting installed as part of any project shall be designed to be minimally disruptive to wildlife. This may be accomplished through the use of hoods to direct light away from natural habitat, using low intensity lighting, and using a as few lights as necessary to achieve the goals of the project. Lighting for trails and bridges that would overspill onto rivers and/or streams that are known to support anadromous fish shall be approved by CDFW.							
B-3(a): Fence and Lighting Design							
All projects including long segments of fencing and lighting shall be designed to minimize impacts to wildlife. Fencing shall not block wildlife movement through riparian or other natural habitat. Where fencing is required for public safety concerns, the fence shall be designed in consultation with CDFW and to permit wildlife movement by incorporating design features such as: ▪ A minimum 16 inches between the ground and the bottom of the fence to provide clearance for small animals; ▪ A minimum 12 inches between the top two wires, or top the fence with a wooden rail, mesh, or chain link instead of wire to prevent animals from becoming entangled; and	Project plans for projects with fencing and lighting shall be designed to minimize impacts to wildlife.	During environmental review	Once	The individual project lead agency			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
▪ If privacy fencing is required near open space areas, openings at the bottom of the fence measure at least 16 inches in diameter shall be installed at reasonable intervals to allow wildlife movement. If fencing must be designed in such a manner that wildlife passage would not be permitted, wildlife crossing structures shall be incorporated into the project design as appropriate and in consultation with CDFW. Similarly, lighting installed as part of any project shall be designed to be minimally disruptive to wildlife. This may be accomplished through the use of hoods to direct light away from natural habitat, using low intensity lighting, and using a as few lights as necessary to achieve the goals of the project. Lighting for trails and bridges that would overspill onto rivers and/or streams that are known to support anadromous fish shall be approved by CDFW							
B-3(b) Construction Best Management Practices							
The following construction Best Management Practices (BMPs) shall be incorporated into all grading and construction plans: ▪ Designation of a 20-mile-per-hour speed limit in all construction areas. ▪ All vehicles and equipment shall be parked on pavement, existing roads, and previously disturbed areas, and clearing of vegetation for vehicle access shall be avoided to the greatest extent feasible. ▪ The number of access routes, number and size of staging areas, and the total area of the activity shall be	Construction plans shall incorporate best management practices to minimize impacts to biological resources.	Prior to issuance of grading permits	Once during plan review	The individual project lead agency and on-site construction manager			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
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limited to the minimum necessary to achieve the goal of the project. ▪ Designation of equipment washout and fueling areas to be located within the limits of grading at a minimum of 100 feet from waters, wetlands, or other sensitive resources as identified by a qualified biologist. Washout areas shall be designed to fully contain polluted water and materials for subsequent removal from the site. ▪ Daily construction work schedules should be limited to daylight hours only, to the extent feasible. ▪ Mufflers shall be used on all construction equipment and vehicles shall be in good operating condition. ▪ Drip pans shall be placed under all stationary vehicles and mechanical equipment. ▪ All trash shall be placed in sealed containers and shall be removed from the project site a minimum of once per week. ▪ No pets are permitted on project site during construction.							
Cultural Resources							
CR-1(a)							
The individual project lead agency of a 2018 RTP/SCS project involving earth disturbance, the installation of pole signage or lighting, or construction of permanent above ground structures or roadways shall ensure that the following elements are included in the project's individual environmental review:	Project plans shall include required components to limit impacts to cultural resources.	During individual environmental review	Once	The individual project lead agency			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
1. Prior to construction, a map defining the Area of Potential Effects (APE) shall be prepared on a project by project basis for 2018 RTP/SCS improvements which involve earth disturbance, the installation of pole signage or lighting, or construction of permanent above ground structures. This map will indicate the areas of primary and secondary disturbance associated with construction and operation of the facility and will help in determining whether known archaeological, paleontological or historical resources are located within the impact zone. 2. A preliminary study of each project area, as defined in the APE, shall be completed to determine whether or not the project area has been studied under an earlier investigation, and to determine the impacts of the previous project. 3. If the results of the preliminary studies indicate additional studies are necessary; development of field studies and/or other documentary research shall be developed and completed (Phase I studies). Negative results would result in no additional studies for the project area. 4. Based on positive results of the Phase I studies, an evaluation of identified resources shall be completed to determine the potential eligibility/ significance of the resources (Phase II studies). 5. Based on the evaluations of the Phase							

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
II studies, if necessary Phase III mitigation studies shall be coordinated with the Office of Historic Preservation, as the research design will require review and approval from the OHP. In the case of prehistoric or Native American related resources, the Native American Heritage Commission and/or local representatives of the Native American population shall be contacted and permitted to respond to the testing/mitigation programs.							
CR-1(b)							
If development of the proposed improvement requires the presence of an archaeological, Native American, or paleontological monitor, the individual project lead agency shall ensure that a Native American monitor, certified archaeologist, and/or certified paleontologist, as applicable, monitors the grading and/or other initial ground altering activities. The schedule and extent of the monitoring will depend on the grading schedule and/or extent of the ground alterations. This requirement can be accomplished through placement of conditions on the project by the local jurisdiction during individual environmental review.	Place conditions of approval on the project to ensure that a Native American monitor or certified archaeologist/ paleontologist monitors the grading and/or other ground altering activities if required	Apply conditions during individual project permitting; monitoring will depend on the schedule and extent of the monitoring will depend on the grading schedule and/or extent of the ground alterations	Once during individual environmental review; monitor as needed during construction	The individual project lead agency			
CR-1(c)							
The individual project lead agency shall ensure that materials recovered over the course of any given improvement are adequately cleaned, labeled, and curated at a recognized repository. This requirement can be accomplished through placement of conditions on the project by the	Place conditions of approval on project to ensure that materials recovered are adequately cleaned, labeled, and curated at a recognized repository.	During individual project permitting	Once	The individual project lead agency			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
local jurisdiction during individual environmental review.							
CR-1(d)							
The individual project lead agency shall ensure that mitigation for potential impacts to significant cultural resources includes one or more of the following: ▪ Realign the project right-of-way (avoidance; the most preferable method). ▪ Cap the site and leave it undisturbed. ▪ Address structural remains with respect to NRHP guidelines (Phase III studies). ▪ Relocate structures per NRHP guidelines. ▪ Create interpretative facilities at the site. ▪ Develop measures to prevent vandalism These measures can be accomplished through placement of conditions on the project by the local jurisdiction during individual environmental review.	Place applicable conditions of approval on project to ensure mitigation for potential impacts includes requirements.	During individual project permitting	Once	The individual project lead agency			
Energy							
E-1(a)							
New facilities should be designed with energy-efficient equipment and passive solar design (e.g., orientation of building to maximize natural heating and cooling, solar water heating, use of daylighting, and placement of trees to aid passive cooling, protection from prevailing winds, and maximum year-round solar access),	Development plans shall be designed with energy-efficient equipment provided that additional capital costs are offset by estimated energy savings during the first 5 years of operation.	Prior to issuance of a grading permit	Once	The individual project lead agency			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
provided that additional capital costs are offset by estimated energy savings during the first 5 years of operation. Additional improvements with longer payback periods, such as photovoltaic solar electric systems, should be considered where applicable							
E-1(b)							
All lighting should be energy efficient and designed to use the least amount of energy to serve the purpose of the lighting. Lighting should utilize solar energy wherever feasible.	Development plans shall be designed with energy-efficient lighting equipment and should utilize solar energy wherever feasible.	Prior to issuance of a grading permit	Once	The individual project lead agency			
E-1(c)							
New landscaping design and irrigation systems should be water efficient. To the extent possible, reclaimed water should be used for roadside landscape irrigation.	Development plans shall be designed with water efficient irrigation systems.	Prior to issuance of a grading permit	Once	The individual project lead agency			
Geology and Soils							
G-1							
The lead agency in which a particular 2018 RTP/SCS bridge project is located shall ensure that the structure is designed and constructed to the latest geotechnical standards. In most cases, this will necessitate site-specific geologic and soils engineering investigations to exceed the code for high groundshaking zones. This can be accomplished through the placement of conditions on the project by the lead agency during individual environmental review	Place conditions of approval on projects to ensure the structure is designed and constructed to the latest geotechnical standard	During individual environmental review	Once	The individual project lead agency			
G-2							
If a 2018 RTP/SCS project involves cut slopes over 15 feet in height, the lead agency in which	Place conditions of approval on the project, when applicable, to ensure	During individual environmental	Once	The individual project lead			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
the project is located shall ensure that specific slope stabilization studies are conducted. Possible stabilization methods include buttresses, retaining walls and soldier piles.	that a site-specific geotechnical investigation is conducted	review		agency			
Greenhouse Gas Emissions							
GHG-1							
The individual project lead agency shall ensure that applicable GHG-reducing diesel particulate and NO_X emissions measures for off-road construction vehicles are implemented during construction. The measures shall be noted on all construction plans and the lead agency shall perform periodic site inspections. Applicable GHG-reducing measures include the following: ▪ Use of diesel construction equipment meeting ARB's Tier 2 certified engines or cleaner off-road heavy-duty diesel engines, and comply with the State Off-Road Regulation; ▪ Use of on-road heavy-duty trucks that meet the ARB's 2007 or cleaner certification standard for on-road heavy-duty diesel engines, and comply with the State On-Road Regulation; ▪ All on and off-road diesel equipment shall not idle for more than 5 minutes. Signs shall be posted in the designated queuing areas and or job sites to remind drivers and operators of the 5 minute idling limit; ▪ Use of electric equipment in place of diesel-powered equipment, where feasible; ▪ Substitute gasoline-powered in place	Incorporate GHG-reducing diesel particulate and NO_X emission control measures on construction plans.	Prior to issuance of grading permits; periodically during construction	Once during plan review; periodically during construction	The individual project lead agency and on-site construction manager			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
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of diesel-powered equipment, where feasible; ▪ Use of alternatively fueled construction equipment on-site where feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane or biodiesel, in place of diesel powered equipment for 15 percent of the fleet; ▪ Use of materials sources from local suppliers; ▪ Recycling of at least 65 percent of construction waste materials.							
Hazards and Hazardous Materials							
HAZ-1							
If an individual transportation or land use project included in the 2018 RTP/SCS is located within the wildland-urban interface or areas favorable for wildland fires such that project-specific CEQA analysis finds a significant risk of loss, injury or death from fire, the implementing agency shall require appropriate mitigation to reduce the risk. Examples of mitigation to reduce risk of loss, injury or death from wildlife include, but are not limited to: ▪ Require adherence to the local hazards mitigation plan, as well as the local general plan policies and programs aimed at reducing the risk of wildland fires through land use compatibility, training, sustainable development, brush management, public outreach and service standards for fire departments. ▪ Encourage the use of fire-resistant	If applicable, apply measures reduce risk from wildfires on individual projects.	During individual project permitting	Once	The individual project lead agency			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
vegetation native to the SRTA region and/or the local microclimate of the project site, and discourage the use of fire-prone species especially non-native, invasive species such as pampas grass or giant reed. ▪ Require a fire safety plan be submitted to and approved by the local fire protection agency. The fire safety plan shall include all of the fire safety features incorporated into the project and the schedule for implementation of the features. The local fire protection agency may require changes to the plan or may reject the plan if it does not adequately address fire hazards associated with the project as a whole or the individual phase of the project. ▪ Prohibit certain project construction activities with potential to ignite wildland fires during red-flag warnings issued by the National Weather Service for the project site location. Example activities that should be prohibited during red-flag warnings include welding and grinding outside of enclosed buildings. ▪ Require fire extinguishers to be onsite during construction of projects. Fire extinguishers shall be maintained to function according to manufacturer specifications. Construction personnel shall receive training on the proper methods of using a fire extinguisher.							
Hydrology and Water Quality							

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
W-1(a)							
The individual lead agency of a 2018 RTP/SCS project shall ensure that, where economically feasible, reclaimed water is used for dust suppression during construction activities. This measure shall be noted on construction plans and shall be spot checked by the lead agency.	Where economically feasible, reclaimed shall be used for dust suppression during construction activities	Prior to issuance of grading permit	Once	The individual project lead agency			
W-1(b)							
The individual lead agency of a 2018 RTP/SCS project shall ensure that low water use landscaping (i.e., drought tolerant plants and drip irrigation) is installed. When feasible, native plant species shall be used.	Low water use landscaping (i.e., drought tolerant plants and drip irrigation) shall be installed	During individual environmental review	Once	The individual project lead agency			
W-1(c)							
The individual lead agency of a 2018 RTP/SCS project shall ensure that, if feasible, landscaping associated with proposed improvements is maintained using reclaimed water	If feasible, landscaping associated with proposed improvements is maintained using reclaimed water	During individual environmental review	Once	The individual project lead agency			
W-1(d)							
The individual lead agency of a 2018 RTP/SCS project shall ensure that porous pavement materials are utilized, where feasible, to allow for groundwater percolation	Use porous pavement materials where feasible	During individual environmental review	Once	The individual project lead agency			
W-1(e)							
The individual lead agency of a 2018 RTP/SCS project that requires potable water service should coordinate with water supply system operators to ensure that the existing water supply systems have the capacity to handle the increase. If the current infrastructure servicing the project site is found to be inadequate,	Provide infrastructure improvements for the appropriate public service or utility as needed.	During individual environmental review	Once	The individual project lead agency			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
infrastructure improvements for the appropriate public service or utility should be provided by the The individual project lead agency. In addition, wherever feasible, reclaimed water should be used for landscaping purposes instead of potable water.							
W-2(a)							
The individual lead agency of a 2018 RTP/SCS project shall ensure that fertilizer/pesticide application plans for any new right-of-way landscaping are prepared to minimize deep percolation of contaminants. The plans shall specify the use of products that are safe for use in and around aquatic environments	Fertilizer/pesticide application plans for any new right-of-way landscaping shall be prepared to minimize deep percolation of contaminants.	During individual environmental review	Once	The individual project lead agency			
W-2(b)							
The individual lead agency of a 2018 RTP/SCS widening or roadway extension project shall ensure that the improvement directs runoff into subsurface percolation basins and traps which would allow for the removal of urban pollutants, fertilizers, pesticides, and other chemicals.	Improvements shall direct runoff into subsurface percolation basins and traps.	During individual environmental review	Once	The individual project lead agency			
W-2(c)							
For a 2018 RTP/SCS project that would disturb at least one acre, a SWPPP shall be developed prior to the initiation of grading and implemented for all construction activity on the project site. The SWPPP shall include specific BMPs to control the discharge of material from the site and into the creeks and local storm drains. BMP methods may include, but would not be limited to, the use of temporary retention basins, straw bales, sand bagging, mulching, erosion control blankets and soil stabilizers	Construction plans shall include a Storm Water Pollution Prevention Plan (SWPPP) for roadway projects that would disturb at least one acre and shall implement it for all construction activity on the project site; SWPPP shall include specific BMPs to control the discharge of material from the site and into the creeks and local storm drains.	Prior to issuance of grading permit	Once	The individual project lead agency			

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W-3(a)							
If a 2018 RTP/SCS project is located in an area with high flooding potential due a storm event or dam inundation, the individual project lead agency shall ensure that the structure is elevated at least one foot above the 100-year flood zone elevation and that bank stabilization and erosion control measures are implemented along creek crossings	Project design shall ensure that all structures are located at least one foot above the 100-year floodzone elevation and that bank stabilization and erosion control measures are implemented.	During individual environmental review	Once	The individual project lead agency			
W-3(b)							
For 2018 RTP/SCS projects within a dam failure inundation hazard zone, the project's lead agency shall ensure that a comprehensive flood risk communication strategy is developed, which would include an evacuation plan and/or an Emergency Action Plan and promote dam failure risk awareness and safety.	Project design shall ensure that a flood risk communication strategy is developed including an evacuation plan and/or an Emergency Action Plan and promote dam failure risk awareness and safety prior to construction and during operation of the project.	During individual environmental review; periodically once the project is fully operational	Once prior to project construction and periodically once operational.	The individual project lead agency			
Land Use and Planning							
LU-2(a)							
The individual project lead agency of 2018 RTP/SCS projects with the potential to displace residences or businesses should assure that project-specific environmental reviews consider alternative alignments and developments that avoid or minimize impacts to nearby residences and businesses.	Assure that project-specific environmental reviews consider alternative alignments that avoid or minimize impacts to nearby residences and businesses.	During individual environmental review	Once	The individual project lead agency			
LU-2-(b)							
Where project-specific reviews identify displacement or relocation impacts that are unavoidable, the individual project lead agency should ensure that all applicable local, state, and	Ensure that all applicable local, state, and federal relocation programs are used to assist eligible persons to relocate; review the proposed	Prior to issuance of grading permits	Once	The individual project lead agency			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
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federal relocation programs are used to assist eligible persons to relocate. In addition, the lead agency shall review the proposed construction schedules to ensure that adequate time is provided to allow affected businesses to find and relocate to other sites.	construction schedules to ensure that adequate relocation time is provided.						
LU-2(c)							
For all 2018 RTP/SCS projects that could result in temporary lane closures or access blockage during construction, a temporary access plan should be implemented by the lead agency to ensure continued access to affected cyclists, businesses, and homes. Appropriate signs and safe access shall be guaranteed during project construction to ensure that businesses remain open.	Construction plans for projects that could result in temporary lane closures or access blockage during construction shall contain a temporary access plan that shall be implemented to ensure continued access to affected cyclists, businesses, and homes; construction plans shall guarantee appropriate signs and safe access during project construction.	Prior to issuance of grading permits; during construction	Once	The individual project lead agency			
LU-5(a)							
When new roadway extensions or widenings are planned, the individual project lead agency should assure that project-specific environmental reviews consider alternative alignments that reduce or avoid impacts to Prime Farmlands.	Ensure that environmental reviews consider alternative alignments that reduce or avoid impacts to Prime Farmlands.	During individual environmental review	Once	The individual project lead agency			
LU-5(b)							
Rural roadway alignments shall follow property lines to the extent feasible, to minimize impacts to the agricultural production value of any specific property. Farmers should be compensated for the loss of agricultural production at the margins of lost property, based on the amount of land deeded as road right-of-way, as a function of the total amount	Ensure that rural roadway alignments follow property lines. Compensate farmers for the loss of agricultural production at the margin of lost property.	Prior to issuance of grading permits	Once	The individual project lead agency			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
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of production on the property.							
LU-5(c)							
Individual project lead agencies should consider corridor realignment, buffer zones, setbacks, and fencing to reduce conflict between agricultural lands and neighboring uses.	Ensure that project-specific environmental reviews consider the use of agricultural conservation easements.	During individual environmental review	Once	The individual project lead agency			
LU-5-(d)							
Quantify potential for direct conversion of Important Farmland using the Land Evaluation and Site Assessment (LESA) model or a similar quantitative tool.	Ensure that the LESA model or a similar quantitative tool is run if conversion of Important Farmland would occur.	During individual environmental review	Once	The individual project lead agency			
LU-5(e)							
Individual project lead agencies should consider corridor realignment, buffer zones, setbacks, and fencing to reduce conflict between agricultural lands and neighboring uses.	Ensure that project-specific environmental reviews consider the use of agricultural conservation easements.	During individual environmental review	Once	The individual project lead agency			
LU-5(f)							
Individual project lead agencies should conduct an analysis of potential conflicts with Williamson Act contracts at the project level, consistent with the State CEQA Guidelines. If the impacts of the proposed roadway projects on Williamson Act contract lands are determined to be significant, implement the following measures to reduce the impacts to a less-than-significant level: ▪ Design the proposed roadway projects to avoid or minimize the displacement of current and reasonably foreseeable agricultural operations from affected Williamson	Ensure review of conflicts of the project with Williamson Act contracts is administered and if necessary project design shall avoid or minimize displacement of agricultural operations.	During individual environmental review	Once	The individual project lead agency			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
Act contract lands. ▪ Where it has been determined that cancellation of a Williamson Act contract for a parcel, or a portion of a parcel, may result in impacts to Prime or Important Farmland, Mitigation Measure LU-5(a) shall be implemented.							
Noise							
N-1(a)							
Lead agencies of 2018 RTP/SCS projects shall ensure that, where residences or other noise sensitive uses are located within 800 feet of construction sites, appropriate measures shall be implemented to ensure consistency with local noise ordinance requirements relating to construction. Specific techniques may include, but are not limited to, restrictions on construction timing, use of sound blankets on construction equipment, and the use of temporary walls and noise barriers to block and deflect noise.	Ensure consistency with local noise ordinance requirements relating to construction for sensitive uses.	Prior to issuance of grading permits	Once	The individual project lead agency			
N-1(b)							
For any project that requires pilings and is located within 800 feet of sensitive, lead agencies shall require caisson drilling or sonic pile driving as opposed to impact pile driving, where feasible. This shall be accomplished through the placement of conditions on the project during its individual environmental review	Place mitigation measures or conditions of approval on project to require the use of pile drilling techniques when applicable and feasible.	During individual environmental review	Once	The individual project lead agency			
N-1(c)							

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
Lead agencies shall ensure that equipment and trucks used for project construction utilize the best available noise control techniques (including mufflers, use of intake silencers, ducts, engine enclosures and acoustically attenuating shields or shrouds).	Ensure that equipment and trucks use best available noise control techniques.	During individual environmental review	Once	The individual project lead agency			
N-1(d)							
Lead agencies shall ensure that impact equipment (e.g., jack hammers, pavement breakers, and rock drills) used for project construction be hydraulically or electrically powered, wherever feasible, to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where the use of pneumatically powered tools is unavoidable, use of an exhaust muffler (reduces noise by up to 10 dBA) or external jackets (reduces noise by up to 5 dBA.) is encouraged. Whenever feasible, use of quieter procedures, such as drilling is encouraged.	Ensure that equipment is hydraulically or electrically powered; that an exhaust muffler is used; that external jackets on impact equipment is used; or quitter procedures are used, when feasible and applicable.	During individual environmental review	Once	The individual project lead agency			
N-1(e)							
Locate stationary noise sources as far from sensitive receptors as possible. Stationary noise sources that must be located near existing receptors will be adequately muffled	Ensure that stationary noise sources are located away from sensitive receptors or muffled.	During individual environmental review	Once	The individual project lead agency			
N-2(a)							
Lead agencies of 2018 RTP/SCS projects that would result in noise exceeding normally acceptable levels shall complete detailed noise assessments using applicable guidelines (e.g., FTA Transit Noise and Vibration Impact Assessment for rail and bus projects and the Caltrans Traffic Noise Analysis Protocol for	A noise survey shall be conducted to determine alternate alignments which allow greater distance from, or greater buffering of, noise-sensitive areas; noise survey shall be sufficient to indicate existing and projected noise levels, to determine the amount of	During individual environmental review	Once	The individual project lead agency			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
roadway projects). The project lead agency shall ensure that a noise survey is conducted to determine potential alternate alignments which allow greater distance from, or greater buffering of, noise-sensitive areas. The noise survey shall be sufficient to indicate existing and projected noise levels, to determine the amount of attenuation needed to reduce potential noise impacts to applicable state and local standards. This shall be accomplished during the project's individual environmental review as necessary	attenuation needed to reduce potential noise impacts to applicable State and local standards.						
N-2(b)							
Where new or expanded roadways or transit are found to expose receptors to noise exceeding normally acceptable levels, the individual project lead agency shall consider various sound attenuation techniques. The preferred methods for mitigating noise impacts will be the use of appropriate setbacks and sound attenuating building design, including retrofit of existing structures with sound attenuating building materials where feasible. In instances where use of these techniques is not feasible, the use of sound barriers (earthen berms, sound walls, or some combination of the two) will be considered. Long expanses of walls or fences should be interrupted with offsets and provided with accents to prevent monotony. Landscape pockets and pedestrian access through walls should be provided. Whenever possible, a combination of elements should be used, including open grade paving, solid fences, walls, and, landscaped berms. Determination of appropriate noise attenuation measures will be assessed on a case-by-case basis during a project's individual environmental review pursuant to the regulations of the applicable	Development plans shall consider various sound attenuation techniques where new or expanded roadways are found to expose receptors to noise exceeding normally acceptable levels; applicable agency shall assess and determine appropriate noise attenuation barriers on a case-by-case basis.	During individual environmental review	Once	The individual project lead agency			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
lead agency.							
N-3							
If a 2018 RTP/SCS project is located in an area with exterior ambient noise levels above local noise standards or in an area with potential cumulative noise levels above local noise standards (based on traffic volumes from regionally adopted travel demand model), the project lead agency shall ensure that a noise study is conducted to determine existing and projected noise levels and feasible attenuation measures needed to reduce potential noise impacts to such uses to an exterior and interior noise level below local standards. Such measures may include, but are not limited to: dual-paned windows, solid core exterior doors away from roads. This shall be accomplished during the project's individual environmental review.	A noise study shall be conducted to determine existing and projected noise levels and feasible attenuation measures needed to reduce potential noise impacts to such uses to an exterior and interior noise level below local standards.	During individual environmental review	Once	The individual project lead agency			
Tribal Cultural Resources							
TCR-1(a): Identified Tribal Cultural Resources Impact Minimization							
Implementing agencies shall comply with AB 52, which may require formal tribal consultation. If the implementing agency determines that a project may cause a substantial adverse change to a tribal cultural resource, they shall implement mitigation measures identified in the consultation process required under PRC Section 21080.3.2, or shall implement the following measures where feasible to avoid or minimize the project-specific significant adverse impacts: ▪ Avoidance and preservation of the resources in place, including, but not limited to: designing and building the	In the event that archaeological resources of Native American origin are identified during project construction the qualified archaeologist performing the cultural resources study will consult with the project proponent to begin or continue Native American consultation procedures.	During project construction	Once archaeological resources of Native American Origin are identified	The individual project lead agency			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
project to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space to incorporate the resources with culturally appropriate protection and management criteria. ▪ Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following: ▪ Protecting the cultural character and integrity of the resource ▪ Protecting the traditional use of the resource ▪ Protecting the confidentiality of the resource ▪ Establishment of permanent conservation easements or other culturally appropriate property management criteria for the purposes of preserving or utilizing the resources or places. ▪ Native American monitoring by the appropriate tribe during soil disturbance for all projects in areas identified as sensitive for potential tribal cultural resources and/or in the vicinity (within 100 feet) of known tribal cultural resources							
TCR-1(b): Unanticipated Tribal Cultural Resources Impact Minimization							
If potential tribal cultural resources are encountered during ground-disturbing activities, work in the immediate area must halt and the appropriate tribal representative(s), the	In the event that archaeological resources of Native American origin are identified during project construction the qualified archaeologist performing	During project construction	Once archaeological resources of Native	The individual project lead agency			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
implementing agency, and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service [NPS] 1983) shall be contacted immediately to evaluate the find. If, in consultation with the implementing agency, the archaeologist and/or tribal representative determines the discovery to be a tribal cultural resource and thus, significant under CEQA, a mitigation plan shall be prepared and implemented in accordance with state guidelines and in consultation with tribal representatives. If the resource cannot be avoided, a mitigation plan shall be developed to address tribal concerns.	the cultural resources study will consult with the project proponent to begin or continue Native American consultation procedures.		American Origin are identified				