

Butte County Association of Governments

2016 Regional Transportation Plan and Sustainable Communities Strategy for Butte County

Draft
**Environmental
Impact Report**
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DRAFT
ENVIRONMENTAL IMPACT REPORT

**2016 REGIONAL TRANSPORTATION PLAN AND
SUSTAINABLE COMMUNITIES STRATEGY
FOR BUTTE COUNTY**

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DRAFT
BUTTE COUNTY ASSOCIATION OF GOVERNMENTS
(BCAG)
2016 RTP-SCS EIR

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EXECUTIVE SUMMARY

This section summarizes the characteristics of the proposed project, as well as the project's environmental impacts and recommended mitigation measures.

PROJECT SYNOPSIS

Project Applicant

The project applicant is the Butte County Associate of Governments (BCAG).

Project Description

The Butte County Association of Governments (BCAG), as both the federally-designated metropolitan planning organization (MPO) and the State-designated regional transportation planning agency (RTPA) for Butte County, is required by both federal and State law to prepare a long-range (at least 20-year) 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 Regional Transportation Planning Agencies (RTPA) and Metropolitan Planning Organizations (MPO) 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 serve as the foundation for the short-range transportation planning documents: the Regional and Federal Transportation Improvement Programs (RTIP and FTIP).

BCAG has the responsibility to prepare a Sustainable Communities Strategy (SCS) as part of the RTP, pursuant to the requirements of California Senate Bill 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 (ARB).

Under both federal and State law, BCAG must update its RTP every four years. The 2016 RTP-SCS is the long-range planning, policy, action, and financial document for the Butte County Region. The RTP-SCS covers a 24-year period from 2016 to 2040 and is an update of the 2012 Metropolitan Transportation Plan (MTP) and Sustainable Communities Strategy (SCS) (please note for the 2016 cycle, the plan will be called "Regional Transportation Plan" instead of "Metropolitan Transportation Plan" as it was in 2012). The RTP-SCS identifies the region's transportation needs and issues and sets forth actions, programs, and projects to address those needs and issues. The RTP-SCS adopts policies, sets goals, and identifies financial resources to encourage and promote the safe and efficient management, operation, and development of a regional intermodal transportation system that would serve the mobility needs of goods and people. In addition, as the MPO for Butte County, BCAG is required to prepare a SCS that demonstrates how GHG reduction targets will be met through integrated land use, housing, and transportation planning. Thus the RTP-SCS will address both the transportation component



of the RTP, as well as the land use component of the SCS. It should be noted that BCAG does not propose any land use changes, but rather the land use patterns envisioned by the RTP-SCS are based on the General Plan land use designations of the local agencies (the five incorporated cities and the county). The RTP-SCS would be consistent with the land use and zoning designations in the incorporated and unincorporated areas.

In 2010, the California ARB set GHG reduction targets for the BCAG region from on-road light-duty trucks and passenger vehicles as a 1% increase from 2005 emissions levels by 2020 and a 1% increase from 2005 emissions levels by 2035 (California Air Resources Board). The reduction targets are currently proposed to be updated in 2016. These targets apply to the BCAG region as a whole for all on-road light-duty trucks and passenger vehicles emissions, and not to individual cities or sub-regions.

SB 375 specifically states that local governments retain their autonomy to plan local General Plan policies and land uses. The RTP-SCS rather is intended to provide a regional policy foundation that local governments may build upon, if they so choose. The forecasted allocations in the RTP are consistent with growth assumptions (e.g., location, density, and intensity of use) utilized in existing general plans or other local adopted plans, however, it does not utilize all available capacity in those plans. SB 375 also requires that the RTP-SCS's forecasted development pattern 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.

In addition, the RTP-SCS EIR will lay the groundwork for the streamlined review of qualifying development projects within Transit Priority Areas. Qualifying projects that meet statutory criteria and are consistent with the RTP-SCS are eligible for streamlined environmental review pursuant to CEQA.

ALTERNATIVES

As required by Section 15126(d) of the *State CEQA Guidelines*, this EIR examines a range of reasonable alternatives to the proposed project that could feasibly achieve similar objectives. A primary objective is to achieve a coordinated and balanced regional transportation system while reducing GHG emissions from passenger vehicles and light trucks to meet the regional GHG reduction targets set by CARB. The EIR includes the following alternatives to the proposed 2016 RTP-SCS:

Alternative 1: No Project: The No Project Alternative is comprised of a land use pattern that reflects land use trends according to the 2012 MTP/SCS and a transportation network comprised of transportation projects that are currently in construction or are funded in the 2012 MTP/SCS, updated to reflect current conditions.

Alternative 2: Financially Unconstrained: The Financially Unconstrained Alternative includes the implementation of the SCS and all projects envisioned under the 2016 RTP-SCS, without regard to whether or not they can be funded. This alternative would focus on decreasing traffic congestion through a combination of capacity and operational roadway improvements, and investments in the regional transit and bike and pedestrian facilities.



Alternative 3: Transit Investment: The Transit Investment Alternative focuses investment into development of public transit systems and alternative transportation modes, emphasizing bus, pedestrian, and bicycle modes of transportation, while reducing funding to roadway and congestion improvements.

Alternative 4: Transit Investment Plus Energy Efficiency: Similar to Alternative 3, the Transit Investment Plus Energy Efficiency Alternative focuses investment into development of public transit systems and alternative transportation modes, emphasizing bus, pedestrian, and bicycle modes of transportation. In addition, this alternative invests in measures such as solar panels, a plug-in electric (PEV) vehicle fleet, and natural gas and electric buses to further reduce project environmental effects through energy efficiency projects.

SUMMARY OF IMPACTS AND MITIGATION MEASURES

This document is a Program EIR. Section 15168(a) of the CEQA Guidelines 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.

As a programmatic document, this EIR presents a regional assessment of the impacts of the proposed 2016 RTP-SCS. Analysis of site-specific impacts of individual projects is not the intended use of a program EIR. Many specific projects are not currently defined to the level that would allow for such an analysis. Individual specific environmental analysis of each project will be undertaken as necessary by the appropriate implementing agency prior to each project being considered for approval. Because the act of adopting the 2016 RTP-SCS would not, in itself, result in the implementation of transportation system improvements projects or programs identified in this document, no environmental impacts would be directly associated with this action. This program EIR serves as a first-tier environmental document under CEQA supporting second-tier environmental documents for:

Transportation projects developed during the engineering design process; and
Residential or infill development projects consistent with the 2016 RTP's SCS chapter.

For the air quality, greenhouse gas, noise and traffic environmental impacts resulting from the Program, this EIR evaluates potential impacts against both (1) a forecast future baseline condition and (2) current, existing baseline conditions, controlling for impacts caused by population growth and other factors.

Class I impacts are defined as significant, unavoidable adverse impacts which require the adoption of a statement of overriding considerations per Section 15093 of the State CEQA Guidelines if the project is approved. Class II impacts are significant adverse impacts that can be feasibly mitigated to less than significant levels and which require findings to be made under Section 15091 of the State CEQA Guidelines. Class III are considered less than significant



impacts, and Class IV are beneficial effects. Table ES-1 summarizes the environmental impacts associated with the 2016 RTP. Where mitigation is called for by the “Project Sponsor,” “project sponsor” refers to the lead agency, such as Caltrans, Butte County, or the cities of Biggs, Chico, Gridley, Oroville or Paradise, in charge of approving a transportation or land development project in accordance with the 2016 RTP-SCS.

**Table ES-1 Summary of Environmental Impacts,
 Mitigation Measures, and Significance After Mitigation**

Impact	Mitigation Measures	Significance After Mitigation
AGRICULTURE		
<p>Impact AG-1 Implementation of proposed transportation improvements under the 2016 RTP-SCS could result in the conversion of agricultural lands including Prime Farmland and lands under Williamson Act contract to non-agricultural uses. This is considered a Class I, <i>significant and unavoidable</i> impact.</p>	<p>AG-1(a) When new roadway extensions or widenings are planned, the project sponsor shall assure that project-specific environmental reviews consider alternative alignments that reduce or avoid impacts to Prime Farmlands.</p> <p>AG-1(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 shall 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.</p> <p>AG-1(c) When new transportation facilities or land use projects implementing the RTP-SCS are planned in areas that contain Important Farmland, the transportation project sponsor or local jurisdiction in which the project is located shall assure that project-specific environmental reviews mitigate impacts, when feasible, through requiring use of agricultural conservation easements on land of at least equal quality and size as compensation for the loss of agricultural land. Agricultural conservation easements would be implemented by directly purchasing easements or donating mitigation fees to a local, regional, or statewide organization or agency whose purpose includes the acquisition and stewardship of agricultural conservation easements.</p> <p>AES-1(d) Farmland Conservation Easements. Prior to approval of 2016 RTP-SCS projects that may adversely impact prime farmland, the project sponsor shall, when the following mitigation measures are feasible, require that a farmland conservation easement, a farmland deed restriction, or other farmland conservation mechanism be granted in perpetuity to the municipality in which the project is proposed, or an authorized agent thereof. The easement shall provide conservation acreage at a minimum ratio of 1:1 for direct impacts. The conservation area shall be located within Butte County in reasonable proximity to the project area.</p>	<p><i>Significant and unavoidable.</i></p>
AIR QUALITY		
<p>Impact AQ-1 Construction activities associated with transportation projects under the 2016 RTP-SCS, as well as the land</p>	<p>AQ-1 BCAG shall and sponsor agencies can and should ensure that all feasible and appropriate mitigation measures set by BCAQMD are implemented. The measures shall be noted on all</p>	<p><i>Less than significant.</i></p>



**Table ES-1 Summary of Environmental Impacts,
Mitigation Measures, and Significance After Mitigation**

Impact	Mitigation Measures	Significance After Mitigation
<p>use patterns envisioned by the SCS, would have the potential to result in temporary adverse impacts on air quality in Butte County. Impacts would be Class II, <i>significant but mitigable</i>.</p>	<p>construction plans, and the lead agency shall perform periodic site inspections. BCAQMD rules and regulations on construction include, but are not limited to, the following:</p> <ul style="list-style-type: none"> • Mix backfill soil with water prior to moving; • Prevent generation of dust plumes by applying water in sufficient quantity; • Limit vehicular traffic and disturbances on soils where possible; • Grade each project phase separately, timed to coincide with construction phase; • Use tarps or other suitable enclosures on haul trucks; • Maintain effective cover over materials; • Stabilize sloping surfaces using soil binders until vegetation or ground cover can effectively stabilize the slopes; • Restrict vehicular access to established unpaved travel paths and limit number and size of staging area entrances and exits; • Add or remove material from the downwind portion of the storage pile; • Pre-water soils prior to trenching (18 inches for deep trenching activities); and • Haul waste material immediately off-site. 	
<p>Impact AQ-2 Implementation of the 2016 RTP-SCS would reduce on-road vehicle emissions when compared to existing conditions and the future “No Project” scenario. Therefore, long-term operational impacts would be Class III, <i>less than significant</i>.</p>	<p>None required.</p>	<p><i>Less than significant.</i></p>
<p>Impact AQ-3 The transportation improvement projects included under the 2016 RTP-SCS, along with the land use scenario envisioned by the SCS, may facilitate increased exposure of sensitive receptors to hazardous air pollutants that may cause health risks and odors that may be a nuisance. Implementation of the 2016 RTP-SCS would not result in a regional increase in toxic air emissions when compared to the future “No Project” scenario. However, localized increases may occur as a result of development facilitated by the land use scenario. Impacts would be Class II, <i>significant but mitigable</i>.</p>	<p>AQ-3 Consistent with the provisions contained in the CARB Air Quality and Land Use Handbook (June 2005), for the proposed building design for residential, school, and other sensitive use projects located within 500 feet of freeways, heavily travelled arterials, railways, and other sources of diesel particulate matter and other known carcinogens, the sponsor 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 pollutants prior to issuance of a demolition, grading, or building permit. The health risk assessment shall be submitted to the sponsor agency for review and approval. The sponsor agency shall implement any approved health risk assessment recommendations to a level that would not result in exposure of sensitive receptors to substantial pollutant concentrations. Such measures may include:</p>	<p><i>Less than significant.</i></p>



**Table ES-1 Summary of Environmental Impacts,
Mitigation Measures, and Significance After Mitigation**

Impact	Mitigation Measures	Significance After Mitigation
	<ul style="list-style-type: none"> • 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. 	
<p>Impact AQ-4 Re-entrained dust has the potential to increase airborne particulate matter levels in Butte County. The increase in growth expected through the year 2040 in Butte County would result in additional VMT compared to baseline conditions, which would add to the particulate emissions levels in the area. However, re-entrained dust levels would be lower with the 2016 RTP-SCS than the 'No Project' scenario and 2014 baseline. Impacts would be Class III, <i>less than significant</i>.</p>	<p>None required.</p>	<p><i>Less than significant.</i></p>



**Table ES-1 Summary of Environmental Impacts,
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Impact	Mitigation Measures	Significance After Mitigation
<p>Impact AQ-5 The 2016 RTP-SCS would reduce emissions of ozone precursors consistent with the goals of the 2012 Triennial Update of the NSVAB AQAP. Impacts would be Class III, <i>less than significant</i>.</p>	<p>None required.</p>	<p><i>Less than significant.</i></p>
<p>BIOLOGY</p>		
<p>Impact B-1 Implementation of transportation improvements proposed and the land use scenario envisioned by the 2016 RTP-SCS may result in impacts to special status plant and animal species including their Habitat or Movement Corridors. Impacts would be Class II, <i>significant but mitigable</i>.</p>	<p>B-1 Biological Resources Screening and Assessment. Prior to final design approval of individual projects, the implementing agency shall have a qualified biologist conduct a field reconnaissance of the environmental limits of the project in an effort to identify any biological constraints for the project, including special status plants, animals, and their habitats, as well as protected natural communities including wetland and terrestrial communities. If the biologist identifies protected biological resources within the limits of the project, the implementing agency shall first, prepare alternative designs that seek to avoid and/or minimize impacts to the biological resources. If the project cannot be designed without complete avoidance, the implementing agency shall coordinate with the appropriate regulatory agency (i.e. USFWS, NMFS, CDFW, USACE) to obtain regulatory permits and implement project - specific mitigation prior to any construction activities.</p> <p>For projects that are located within the BRCP plan area, and are constructed after adoption of the BRCP, the implementing agency shall coordinate with the BRCP administrator to verify whether construction within the study area would require a permit. The permit process will require a field reconnaissance of the project study area by an approved biologist in an effort to identify any biological constraints, including covered species or habitat. If the biologist identifies covered species or habitat within the limits of the study limits the implementing agency shall implement all minimization measures and pay the appropriate mitigation fees or provide land in lieu of fees as established by the BRCP.</p>	<p><i>Less than significant.</i></p>
<p>Impact B-2 Implementation of transportation improvements proposed and the land use scenario envisioned by the 2016 RTP-SCS may result in impacts to riparian habitat or sensitive habitats, including federally protected wetlands. This impact would be Class II, <i>significant but mitigable</i>.</p>	<p>B-2(a) Jurisdictional Delineation. Prior to approval of individual projects, the implementing agency shall retain a qualified biologist to perform an assessment of the project area to identify wetlands, riparian, and other sensitive aquatic environments. If wetlands are present the qualified biologist shall perform a wetland delineation following the 1987 Army Corps of Engineers Wetlands Delineation Manual and any applicable regional supplements to the Delineation Manual. The wetland delineation shall be submitted to the USACE for verification.</p> <p>B-2(b) Wetlands, Riparian, or Other Sensitive</p>	<p><i>Less than significant.</i></p>



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Impact	Mitigation Measures	Significance After Mitigation
	<p>Aquatic Environments. If wetlands, riparian, or other sensitive aquatic environments are found within the project limits, the implementing agency shall design or modify the project to avoid direct and indirect impacts on these habitats, if feasible. Additionally, the implementing agency shall minimize the loss of riparian vegetation by trimming rather than removal where feasible.</p> <p>Prior to construction, the implementing agency shall install orange construction barrier fencing to identify environmentally sensitive areas around the wetland (20 feet from edge), riparian area (100 feet from edge), and other aquatic habitats (250 feet from edge of vernal pool), or as defined by the agency with regulatory authority over the resource(s). The location of the fencing shall be marked in the field with stakes and flagging and shown on the construction drawings. The fencing will be installed before construction activities are initiated and will be maintained throughout the construction period. The following paragraph will be included in the construction specifications:</p> <p>The Contractor's attention is directed to the areas designated as "environmentally sensitive areas." These areas are protected, and no entry by the Contractor for any purpose will be allowed unless specifically authorized in writing by lead agency overseeing the transportation improvement project. The Contractor will take measures to ensure that Contractor's forces do not enter or disturb these areas, including giving written notice to employees and subcontractors.</p> <p>Temporary fences around the environmentally sensitive areas will be installed as the first order of work. Temporary fences will be furnished, constructed, maintained, and removed as shown on the plans, as specified in the special provisions, and as directed by the project engineer. The fencing will be commercial-quality woven polypropylene, orange in color, and at least 4 feet high (Tensor Polygrid or equivalent). The fencing will be tightly strung on posts with maximum 10-foot spacing.</p> <p>Immediately upon completion of construction activities the contractor shall stabilize exposed soil/slopes. On highly erodible soils/slopes, use a non-vegetative material that binds the soil initially and breaks down within a few years. If more aggressive erosion control treatments are needed, geotextile mats, excelsior blankets, or other soil stabilization products will be used. All stabilization efforts should include habitat restoration efforts.</p> <p>B-2(c) If wetlands or riparian habitat are disturbed as part of an individual project, the implementing agency</p>	



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	<p>shall compensate for the disturbance to ensure no net loss of habitat functions and values. Compensation ratios shall be based on site -specific information and determined through coordination with state, federal, and local agencies as part of the permitting process for the project. Unless determined otherwise by the regulatory/permitting agency, the compensation shall be at a minimum ratio of 3 acres restored, created, and/or preserved for every 1 acre disturbed. Compensation may comprise onsite restoration/creation, off -site restoration, preservation, or mitigation credits (or a combination of these elements). The implementing agency shall develop and implement a restoration and monitoring plan that describes how the habitat shall be created and monitored over a minimum period of time.</p>	
<p>Impact B-3 Implementation of transportation improvements proposed and the land use scenario envisioned by the 2016 RTP-SCS may impact wildlife movement, including fish migration, and/or impede the use of a native wildlife nursery. This impact would be Class II, <i>significant but mitigable</i>.</p>	<p>B-3 Design Measures. Prior to design approval of individual projects that contain movement habitat, the implementing agency shall incorporate economically viable design measures, as applicable and necessary, to allow wildlife or fish to move through the transportation corridor, both during construction activities and post construction. Such measures may include appropriately spaced breaks in a center barrier, or other measures that are designed to allow wildlife to move through the transportation corridor. If the project cannot be designed with these design measures (i.e. due to traffic safety, etc.) the implementing agency shall coordinate with the appropriate regulatory agency (i.e. USFWS, NMFS, CDFW) to obtain regulatory permits and implement alternative project-specific mitigation prior to any construction activities.</p>	<p><i>Less than significant.</i></p>
<p>Impact B-4 Construction activities associated with the implementation of transportation improvements proposed and the land use scenario envisioned by the 2016 RTP-SCS result in the introduction and spread of noxious weeds. This impact would be Class II, <i>significant but mitigable</i></p>	<p>B-4 Noxious Weed Survey. Prior to approval of individual projects, the implementing agency shall retain a qualified biologist determine whether noxious weeds are an issue for the project. If the biologist determines that noxious weeds are an issue, the implementing agency shall review the noxious weed list from the County Agricultural Commission, California Department of Food and Agriculture, and the California Exotic Pest Plant Council to identify target weed species for a field survey. Noxious weed infestations shall be mapped and documented. The implementing agency shall incorporate the following measures into project plans and specifications:</p> <ul style="list-style-type: none"> • Certified, weed-free, imported erosion-control materials (or rice straw in upland areas) will be used. • The project sponsor will coordinate with the county agricultural commissioner and land management agencies to ensure that the appropriate BMPs are implemented. • Construction supervisors and managers will be educated about noxious weed identification and the importance of controlling and preventing their spread. 	<p><i>Less than significant.</i></p>



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Impact	Mitigation Measures	Significance After Mitigation
	<ul style="list-style-type: none"> Equipment will be cleaned at designated wash stations after leaving noxious weed infestation areas. 	
<p>Impact B-5 Implementation of transportation improvements proposed and the land use scenario envisioned by the 2016 RTP-SCS may impact the Butte Regional Conservation Plan (BRCP). This impact would be Class II, <i>significant but mitigable</i>.</p>	<p>B-5 Coordinate with BCAG. Prior to design approval of individual projects, the implementing agency shall coordinate with BCAG to determine the appropriate coverage, permits, compensatory mitigation or fees, and project specific avoidance, minimization, and mitigation measures.</p>	<p><i>Less than significant.</i></p>
<p>CULTURAL RESOURCES</p>		
<p>Impact CR-1 Implementation of proposed transportation improvements and the land use scenario envisioned by the 2016 RTP-SCS could disturb known and unknown cultural resources. Impacts to archaeological and paleontological resources would be Class II, <i>significant but mitigable</i> and impacts to historical resources would be Class I, <i>significant and unavoidable</i>.</p>	<p>CR-1(a) The project sponsor of a 2016 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:</p> <ol style="list-style-type: none"> 1. Prior to construction, a map defining the Area of Potential Effects (APE) shall be prepared on a project by project basis for 2016 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. 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 	<p><i>Significant and unavoidable.</i></p>



**Table ES-1 Summary of Environmental Impacts,
Mitigation Measures, and Significance After Mitigation**

Impact	Mitigation Measures	Significance After Mitigation
	<p>local representatives of the Native American population shall be contacted and permitted to respond to the testing/mitigation programs.</p> <p>CR-1(b) If development of the proposed improvement requires the presence of an archaeological, Native American, or paleontological monitor, the project sponsor 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.</p> <p>CR-1(c) The project sponsor 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.</p> <p>CR-1(d) The project sponsor shall ensure that mitigation for potential impacts to significant cultural resources includes one or more of the following:</p> <ul style="list-style-type: none"> • Realignment of the project right-of-way (avoidance; the most preferable method); • Capping of the site and leaving it undisturbed; • Addressing structural remains with respect to NRHP guidelines (Phase III studies); • Relocating structures per NRHP guidelines; • Creation of interpretative facilities; and/or • Development of measures to prevent vandalism. <p>This can be accomplished through placement of conditions on the project by the local jurisdiction during individual environmental review.</p>	
<p>Impact CR-2 Implementation of proposed transportation improvements and the land use scenario envisioned by the 2016 RTP-SCS could disturb unknown human remains during construction activity. Impacts would be Class II, <i>significant but mitigable</i>.</p>	<p>CR-1 Implement Stop-Work and Consultation Procedures Mandated by Public Resources Code 5097. In the event of discovery or recognition of any human remains during construction or excavation activities, the implementing agency shall cease further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the following steps are taken:</p> <ul style="list-style-type: none"> • The Butte County Coroner has been informed and has determined that no investigation of the cause of death is required. • If the remains are of Native American origin, either of the following steps will be taken: 	<p><i>Less than significant.</i></p>



**Table ES-1 Summary of Environmental Impacts,
Mitigation Measures, and Significance After Mitigation**

Impact	Mitigation Measures	Significance After Mitigation
	<ul style="list-style-type: none"> • The coroner will contact the Native American Heritage Commission in order to ascertain the proper descendants from the deceased individual. The coroner will make a recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods, which may include obtaining a qualified archaeologist or team of archaeologists to properly excavate the human remains. • The implementing agency or its authorized representative will retain a Native American monitor, and an archaeologist, if recommended by the Native American monitor, and rebury the Native American human remains and any associated grave goods, with appropriate dignity, on the property and in a location that is not subject to further subsurface disturbance when any of the following conditions occurs: <ul style="list-style-type: none"> • The Native American Heritage Commission is unable to identify a descendent. • The descendant identified fails to make a recommendation. • The implementing agency or its authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner. 	
GREENHOUSE GASES		
<p>Impact GHG-1 Construction of the transportation improvement projects and future land use patterns envisioned by the 2016 RTP-SCS would generate temporary short-term GHG emissions. Impacts would be Class II, <i>significant but mitigable</i>.</p>	<p>GHG-1 BCAG shall and sponsor agencies can and should ensure that diesel particulate exhaust from construction equipment apply the following applicable GHG-reducing measures recommended by the Butte County Air Quality Management District (BCAQMD):</p> <ul style="list-style-type: none"> • Fuel all off-road and portable diesel powered equipment with CARB certified motor vehicle diesel fuel; • Use diesel construction equipment meeting CARB's Tier 2 certified engines or cleaner 	<p><i>Less than significant.</i></p>



**Table ES-1 Summary of Environmental Impacts,
Mitigation Measures, and Significance After Mitigation**

Impact	Mitigation Measures	Significance After Mitigation
	<p>off-road heavy-duty diesel engines, and comply with State On-Road Regulation;</p> <ul style="list-style-type: none"> • Use on-road heavy-duty trucks that meet CARB's 2007 or cleaner certification standard for on-road heavy-duty diesel engines, and comply with the State On-Road Regulation; • Construction or trucking companies with fleets that do not have engines in their fleet that meet the engine standards identified in the above two measures may be eligible by proving alternative compliance; • Electrify equipment when feasible; • Substitute gasoline-powered in place of diesel-powered equipment, where feasible; and • Use alternatively fueled construction equipment on site where feasible, such as compressed natural gas, liquefied natural gas, propane, or biodiesel. 	
<p>Impact GHG-2 Implementation of the 2016 RTP-SCS would decrease per capita GHG emissions compared to the 2014 baseline and 2040 "No Project" scenario. Impacts would be Class III, <i>less than significant</i>.</p>	<p>None required.</p>	<p><i>Less than significant.</i></p>
<p>Impact GHG-3 Implementation of the 2016 RTP-SCS would not interfere with the GHG emissions goals of AB 32 or SB 375. Impacts would be Class III, <i>less than significant</i>.</p>	<p>None required.</p>	<p><i>Less than significant.</i></p>
<p>Impact GHG-4 Implementation of the 2016 RTP-SCS would not interfere with the goals of applicable GHG reduction plans and policies, as well as AB 32 and SB 375. Impacts would be Class III, <i>less than significant</i>.</p>	<p>None required.</p>	<p><i>Less than significant.</i></p>
<p>NOISE</p>		
<p>Impact N-1 Construction activity associated with transportation improvement projects and development envisioned by the 2016 RTP-SCS would create temporary noise level increases in discrete locations throughout the County. Impacts would be Class II, <i>significant but mitigable</i>.</p>	<p>N-1(a) Sponsor agencies of 2016 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.</p> <p>N-1(b) If a particular project within 800 feet of sensitive receptors requires pile driving, the sponsor agency in which this project is located shall require the use of pile drilling techniques instead, where feasible. This shall be accomplished through the</p>	<p><i>Less than significant.</i></p>



**Table ES-1 Summary of Environmental Impacts,
Mitigation Measures, and Significance After Mitigation**

Impact	Mitigation Measures	Significance After Mitigation
	<p>placement of conditions on the project during its individual environmental review.</p> <p>N-1 (c) Sponsor 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).</p> <p>N-1(d) Sponsor agencies shall ensure that impact equipment (e.g., jack hammers, pavement breakers, and rock drills) used for project construction be hydraulically or electrical powered wherever feasible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatically powered tools is unavoidable, use of an exhaust muffler on the compressed air exhaust can lower noise levels from the exhaust by up to about 10 dBA. When feasible, external jackets on the impact equipment can achieve a reduction of 5 dBA. Whenever feasible, use quieter procedures, such as drilling rather than impact equipment operation.</p> <p>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.</p>	
<p>Impact N-2 Implementation of the 2016 RTP-SCS would increase traffic-generated noise levels on highways and roadways which could expose existing sensitive receptors to noise in excess of normally acceptable levels. This is a Class II, <i>significant but mitigable</i>, impact.</p>	<p>N-2(a) Sponsor agencies of RTP-SCS projects shall complete detailed noise assessments using applicable guidelines (e.g., Federal Transit Administration Transit Noise and Vibration Impact Assessment for rail and bus projects and the California Department of Transportation Traffic Noise Analysis Protocol for roadway projects). The project sponsor 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.</p> <p>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</p>	<p><i>Less than significant.</i></p>



**Table ES-1 Summary of Environmental Impacts,
Mitigation Measures, and Significance After Mitigation**

Impact	Mitigation Measures	Significance After Mitigation
	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 lead agency.	
<p>Impact N-3 The proposed 2016 RTP-SCS land use scenario would encourage infill development, which may place sensitive receptors in areas with unacceptable noise levels. This is a Class II, <i>significant but mitigable</i>, impact.</p>	<p>N-3 If a 2016 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 individual 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 with perimeter weather stripping, air condition system so that windows and doors may remain closed, and situating exterior doors away from roads. This shall be accomplished during the project's individual environmental review.</p>	<p><i>Less than significant.</i></p>
TRANSPORTATION AND CIRCULATION		
<p>Impact T-1 Total vehicle miles traveled on freeways and roadways in 2040 would increase when compared to existing (2014) baseline conditions. However, implementation of the 2016 RTP-SCS would reduce overall VMT in 2040 when compared to 2040 baseline conditions without the 2016 RTP-SCS and would also reduce per capita VMT compared to existing (2014) baseline conditions. Impacts related to total and per capita freeway and roadway vehicle miles traveled would be Class III, <i>less than significant</i>.</p>	<p>No mitigation measures are required for overall freeway and roadway VMT impacts.</p>	<p><i>Less than significant.</i></p>
<p>Impact T-2 Implementation of the 2016 RTP-SCS would reduce overall CVMT in 2040 when compared to 2040 baseline conditions without the 2016 RTP-SCS and would also reduce per capita CVMT compared to existing (2014) baseline conditions. Impacts related to CVMT would be Class III, <i>less than significant</i>.</p>	<p>No mitigation measures are required.</p>	<p><i>Less than significant.</i></p>



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1.0 INTRODUCTION

1.1 STATEMENT OF PURPOSE

This Environmental Impact Report (EIR) identifies and describes potential environmental impacts associated with implementation of the 2016 Regional Transportation Plan and Sustainable Communities Strategy (2016 RTP-SCS) proposed by the Butte County Association of Governments (BCAG).

Section 21000 of the California Government Code, commonly referred to as the California Environmental Quality Act of 1970 (CEQA), requires the evaluation of environmental impacts associated with all planning programs or development projects proposed. As such, this EIR is an informational document for use by BCAG, other agencies, and the general public in their consideration and evaluation of the environmental consequences of implementing the proposed 2016 RTP-SCS.

1.2 PROJECT BACKGROUND

As both the federally-designated metropolitan planning organization (MPO) and the State-designated regional transportation planning agency (RTPA) for Butte County, BCAG is required by both federal and State law to prepare an RTP to serve as a long-range (at least 20-year) transportation planning document. State and federal law also requires that the RTP be updated every four years. The proposed 'project' is the 2016 RTP-SCS. BCAG has prepared an RTP-SCS as required by Section 65080 et seq, of Chapter 2.5 of the California Government Code, Title 23 United States Code (USC) §134, and federal guidelines pursuant to the federal surface transportation reauthorization, "Moving Ahead for Progress in the 21st Century" (MAP-21), the Transportation Conformity for the Air Quality Attainment Plan per 40 CFR Part 51 and 40 CFR Part 93, and requirements set forth in Assembly Bill 32, The Global Warming Solutions Act of 2006, and Senate Bill 375, The Sustainable Communities and Climate Protection Act of 2008. The RTP-SCS covers a 24-year period from 2016 to 2040 and is an update of the 2012 Metropolitan Transportation Plan (MTP) and Sustainable Communities Strategy (SCS) (please note for the 2016 cycle, the plan will be called "Regional Transportation Plan" instead of "Metropolitan Transportation Plan" as it was in 2012).

The 2012 MTP-SCS update programmed available transportation funding to 2035 and included lists of programmed transportation projects to improve the transportation system during the 2012-2030 planning period. Among these listed projects were highway, road and street projects; pedestrian and bikeway projects; aviation, rail and transit projects. Although a number of projects from the 2012 MTP-SCS have been completed, many have not. Additionally, new projects have been incorporated into the 2016 RTP-SCS.

The 2016 RTP-SCS is the culmination of a multi-year effort that aims to maintain or enhance the efficient and effective movement of goods, services, and persons. Further, the SCS, as part of the RTP, seeks to coordinate local land use and transportation systems within the region to reduce emissions from cars and light trucks. BCAG 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 and state funding for regional transportation projects.



RTP Framework

The 2016 RTP-SCS unified strategy includes the following key elements:

- A regional vision and goals, supported by a program of short and long-range objectives and course of action;
- An evaluation of regional mobility needs in light of population, housing, and job forecasts; and,
- A list of specific transportation improvements, anticipated construction timeline, and a funding plan.

Sustainable Communities Strategy

Pursuant to the requirements of Senate Bill 375 (SB 375) the SCS is included in the RTP. Under SB 375, the California Air Resources Board (ARB) has established targets for the reduction of greenhouse gas (GHG) emissions from cars and light trucks for the years 2020 and 2035, for each region covered by one of the state's metropolitan planning organizations (MPOs). In 2010, the California ARB set GHG reduction targets for the BCAG region from on-road light-duty trucks and passenger vehicles as a 1% increase from 2005 emissions levels by 2020 and a 1% increase from 2005 emissions levels by 2035 (California Air Resources Board). These targets apply to the BCAG region as a whole for all on-road light-duty trucks and passenger vehicles emissions, and not to individual cities or sub-regions. As the MPO for Butte County, BCAG is required to prepare a SCS that demonstrates how GHG reduction targets will be met through integrated land use, housing, and transportation planning. The reduction targets are currently proposed to be updated in 2016. The updated targets would apply to RTP-SCSs that are adopted by MPOs after January 1, 2018, and therefore would not apply to the BCAG 2016 RTP-SCS.

If BCAG's targets for reducing greenhouse gas emissions cannot be feasibly met, an Alternative Planning Strategy (APS) will be prepared by BCAG 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. BCAG's intent is to achieve these targets with the 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). SB 375 specifically states that local governments retain their autonomy to plan local General Plan policies and land uses. The 2016 RTP-SCS is intended to provide a regional policy foundation that local governments may build upon, if they so choose.

Specifically, the SCS does the following:



- Identifies the general location of uses, residential densities, and building intensities within the region;
- Identifies areas within the region sufficient to house the forecast population over the course of the planning period of the RTP;
- Identifies areas within the region sufficient to house an eight-year projection of the regional housing need for the region;
- Identifies a transportation network to service the transportation needs of the region;
- Gathers and considers resource areas and farmland in the region;
- Sets forth a forecasted development pattern for the region, which, when integrated with the transportation network, will reduce GHG emissions from automobiles and light trucks; and
- Quantifies the reduction in GHG emissions projected to be achieved by the SCS and, if the SCS does not achieve the targeted reductions, sets forth the difference between the amount that the SCS would reduce GHG emissions and the target for the region.

In compliance with the CEQA Guidelines (Section 15063), BCAG, as the Lead Agency responsible for the 2016 RTP-SCS, solicited preliminary public agency comments on the project through distribution of an Initial Study, distribution of a Notice of Preparation and receipt of public comments during scoping meetings held on September 29, 2015, in the Butte County Association of Governments Conference Room located at 2580 Sierra Sunrise Terrace, Suite 100, Chico, CA 95928 and September 30, 2015, in the Oroville City Hall Conference Room located at 1735 Montgomery Street, Oroville, CA 95965 (See Appendix A). BCAG received two comment letters during the NOP comment period. Comments received were related to hydrological conditions and regulations related to water quality, transportation facilities, and construction impacts. These comment letters are contained in full in Appendix A, and the environmental impacts associated with each are addressed in this EIR in section 4.7, *Transportation and Circulation* and in the Initial Study in Appendix A.

1.3 TYPE OF ENVIRONMENTAL DOCUMENT

This document is a Program EIR. Section 15168(a) of the CEQA Guidelines 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.

As a programmatic document, this EIR presents a region-wide assessment of the impacts of the proposed 2016 RTP-SCS. Analysis of site-specific impacts of individual projects is not the intended use of a Program EIR. Many specific projects are not currently defined to the level that would allow for such an analysis. Individual specific environmental analysis of each project will be undertaken as necessary by the appropriate implementing agency prior to each project being considered for approval. This Program EIR serves as a first-tier environmental document under CEQA supporting second-tier environmental documents for:



Transportation projects developed during the engineering design process; and Residential, mixed use projects, infill, and redevelopment projects consistent with the SCS.

Lead agencies implementing subsequent projects would undertake future environmental review for projects in the proposed 2016 RTP-SCS. These agencies would include the cities within Butte County (Chico, Oroville, Briggs, Gridley and Paradise) as well as Butte County, Caltrans, and Butte County Regional Transit. These lead agencies would be able to prepare subsequent environmental documents that incorporate by reference the appropriate information from this Program EIR regarding secondary effects, cumulative impacts, broad alternatives, and other relevant factors. If the lead agency finds that implementation of a later activity would have no new effects and that no new mitigation measures would be required, that activity would require no additional CEQA review. Where subsequent environmental review is required, such review would focus on project-specific significant effects specific to the project, or its site, that have not been considered in this Program EIR.

Section 15151 of the CEQA Guidelines provides the following standards related to the adequacy of an Environmental Impact Report:

An Environmental Impact Report should be prepared with a sufficient degree of analysis to provide decision-makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among experts. The courts have looked not for perfection; but for adequacy, completeness, and a good faith effort at full disclosure.

1.4 EIR CONTENT AND FORMAT

This document includes discussions of environmental impacts related to several issue areas. The analysis of environmental impacts identifies impacts by category: significant and unavoidable (Class I), significant but mitigable (Class II), adverse but less than significant (Class III), and beneficial (Class IV). It proposes mitigation measures, where feasible, for identified significant environmental impacts.

This EIR has been organized into the following seven sections:

- 1.0 Introduction - Provides the Statement of Purpose, project background, and information about the EIR content and format.
- 2.0 Project Description - Identifies the project applicant, presents and discusses the project objectives, project location and specific project characteristics.
- 3.0 Environmental Setting - Provides a description of the existing physical setting of the project area and an overview of the progress in implementing the 2016 RTP-SCS.
- 4.0 Environmental Impact Analysis - 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 Butte County. These potential project impacts are compared to “thresholds of significance” 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.

- 5.0 Long-Term Effects - 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.
- 6.0 Alternatives - Presents and assesses the potential environmental impacts of three alternatives analyzed in addition to implementation of the proposed 2016 RTP-SCS.
- 7.0 References/Preparers - Lists all published materials, federal, state, and local agencies, and other organizations and individuals consulted during the preparation of this EIR. It also lists the EIR preparers.

1.5 EIR BASELINE AND APPROACH FOR IMPACT ANALYSIS

Section 15125 of the CEQA Guidelines states that an EIR “must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation [NOP] is published”. Section 15125 states that this approach “normally constitute[s] the baseline physical conditions by which a lead agency determines whether an impact is significant.” In certain instances, it is necessary to use a baseline other than existing conditions at the time of the release of the NOP based on the information available at the time the analysis is being performed.

This EIR evaluates impacts against existing conditions at the time of the release of the NOP (September 2015) for issue areas that would not be substantially influenced by future regional growth that would occur with or without implementation of the 2016 RTP-SCS. It was determined that for these issues a comparison to existing baseline conditions would provide the most relevant information for the public, responsible agencies, and BCAG decision-makers. These issue areas include:

- Agricultural Resources
- Air Quality
- Biological Resources
- Cultural and Historic Resources
- Climate Change and Greenhouse Gases
- Noise
- Traffic and Circulation

For the air quality, climate change and greenhouse gases, noise, and traffic environmental impacts resulting from the 2016 RTP-SCS implementation, this EIR evaluates potential impacts against both (1) a forecast future baseline condition and (2) current, existing baseline conditions, controlling for impacts caused by population growth and other factors that would occur



regardless of whether the 2016 RTP-SCS is adopted. The 2016 RTP-SCS is a long-term, 24-year plan that proposes transportation projects and land use patterns to the year 2040. It is important to emphasize that population growth, urbanization, and volume of average daily traffic generated in Butte County will increase by 2040, with or without implementation of the 2016 RTP-SCS, as a result of a range of demographic and economic factors independent of policy and land use decisions by BCAG and its member agencies.

An analysis that attributed physical environmental impacts solely to the 2016 RTP-SCS that are in fact the result of future regional growth that would occur in the absence of the 2016 RTP-SCS would overstate the impacts caused by the 2016 RTP-SCS. For this reason, certain environmental issues analyzed in the EIR compare future conditions including the 2016 RTP-SCS with the expected future conditions without the 2016 RTP-SCS (the “future baseline” or the “No Project Scenario”) as well as to the current baseline, controlling for future regional growth that would occur independently of the 2016 RTP-SCS. These comparisons isolate environmental effects potentially resulting from the 2016 RTP-SCS from those caused by future growth that would occur regardless of the 2016 RTP-SCS, as compared to existing 2015 baseline conditions.

Thus, the identification of potential impacts and mitigation measures for these environmental issue areas are based on the increment of physical change resulting from the 2016 RTP-SCS, rather than the future regional growth that would occur regardless of whether the plan is adopted and implemented. The environmental issue areas for which this approach is used include the following:

- Air Quality
- Climate Change and Greenhouse Gases
- Noise
- Traffic and Circulation

Interim Timeframes

The year 2040 is considered to be the horizon year of the proposed 2016 RTP-SCS. While the plan will be implemented gradually over the planning period, this EIR does not analyze interim time frames because the update cycle of the RTP already requires short-term adjustments to the plan (the RTP will be updated every four years). The one exception to this approach is in Section 4.8, *Greenhouse Gas Emissions/Climate Change*, which also examines impacts for the year 2020 as well as 2035, and in comparison to a baseline of 2005 to satisfy statutory requirements and state goals related to GHG emissions (Health & Safety Code, § 38551(b)).

2.0 PROJECT DESCRIPTION

2.1 PROJECT APPLICANT

Butte County Association of Governments
326 Huss Drive, Suite 150
Chico, CA 95928

2.2 PROJECT OBJECTIVES

The Butte County Association of Governments (BCAG), as both the federally-designated metropolitan planning organization (MPO) and the state-designated regional transportation planning agency (RTPA) for Butte County, is required by both federal and state law to prepare a long-range (at least 20-year) 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. This section summarizes the RTP's objectives and responsibilities, as informed by relevant legislation.

BCAG also has the responsibility to prepare a Sustainable Communities Strategy (SCS) as part of the RTP, pursuant to the requirements of California Senate Bill 375 as adopted in 2008 (discussed further below). 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) document *2010 California Regional Transportation Plan Guidelines* serves as the guidance for RTP development. Under both federal and state law, BCAG must update its RTP every four years.¹ For the 2016 cycle the plan will be called the "Regional Transportation Plan" and not the "Metropolitan Transportation Plan" as it was in 2012.

SB 375 Requirements

The Sustainable Communities Strategy and Climate Protection Act, SB 375 (codified at CAL.GOV'T 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 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;

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



- CARB must develop regional GHG emission reduction targets for automobiles and light trucks for 2020 and 2035 by September 30, 2010 (completed);
- Each MPO must prepare an SCS as part of its RTP 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 (completed);
- 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;
- After adoption, each MPO must submit its SCS to the CARB for review; and
- CARB must review each SCS to determine whether, if implemented, it would meet the GHG targets. CARB must complete its review within 60 days.

For Butte County, CARB has set a regional target to allow a one percent increase in per capita GHG emissions for the planning year 2020 and a one percent increase in per capita GHG emissions in planning year 2035, as compared to baseline per capita emissions levels in 2005. These targets apply to the BCAG region as a whole for all on-road light-duty trucks and passenger vehicles emissions, and not to individual cities or sub-regions. The reduction targets are currently proposed to be updated in 2016, but the 2016 targets update will apply to RTP-SCSs adopted by MPOs after January 2, 2018 and therefore would not apply to the BCAG 2016 RTP-SCS.

SB 375 specifically states that local governments retain their autonomy to plan local General Plan policies and land uses. The 2016 RTP-SCS provides a regional policy foundation that local governments may build upon, if they so choose. The 2016 RTP-SCS includes and accommodates the quantitative growth projections for the region. SB 375 also requires that the RTP's forecasted development pattern 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.

In addition, this EIR lays the groundwork for the streamlined review of qualifying development projects within Transit Priority Areas.² Qualifying projects that meet statutory criteria and are consistent with the 2016 RTP-SCS are eligible for streamlined environmental review pursuant to CEQA.

MAP-21

The most recent federal transportation legislation, the Moving Ahead for Progress in the 21st Century Act (MAP-21), was enacted in 2012. Through the RTP development process, MAP-21 encourages BCAG to:

² A Transit Priority Area is an area within ½-mile of high quality transit. High Quality Transit is a rail stop or a bus corridor that provides or will provide at least 15-minute frequency service during peak hours by the year 2035.



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.³

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

Provide for consideration of projects and strategies that will:

- *support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;*
- *increase the safety of the transportation system for motorized and non-motorized users;*
- *increase the security of the transportation system for motorized and non-motorized users;*
- *increase the accessibility and mobility of people and freight;*
- *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;*
- *enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;*
- *promote efficient system management and operation; and*
- *emphasize the preservation of the existing transportation system.⁴*

The 2016 RTP-SCS discusses in detail how these requirements are met.

Environmental Justice

BCAG is required to address social equity and environmental justice in the RTP. The legal basis for environmental justice stems from the Civil Rights Act of 1964, along with Executive Order 12898 (February 1994), which states that “each federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.” BCAG must evaluate how the 2016 RTP-SCS might impact minority and low-income populations, and must ensure that the 2016 RTP-SCS does not have a disproportionate adverse impact on such populations.

In addition, per 23 C.F.R. Section 450.316(a)(1)(vii), the participation plan that BCAG must develop and use must describe explicit procedures, strategies, and desired outcomes for “[s]eeking out and considering the needs of those traditionally underserved by existing transportation systems, such as low-income and minority households, who may face challenges

³ 23 U.S.C. §134(g)(3)(A).

⁴ 23 U.S.C. §134(h)(1).



accessing employment and other services.” BCAG’s public participation plan is available online at: <http://www.bcag.org/Planning/-Public-Participation-Plan-PPP/index.html>.

Regional Transportation Plans

As noted, the procedures for developing RTPs are provided in the CTC’s Regional Transportation Plan Guidelines (2010). The guidelines identify the purpose of an RTP to be as follows:

- Provide an assessment of current modes of transportation and the potential of new travel options within the region;
- Project/estimate the future needs for travel and goods movement;
- Identify and document specific actions necessary to address the region’s mobility and accessibility needs;
- Guide and document public policy decisions by local, regional, state and federal officials regarding transportation expenditures and financing;
- Identify needed transportation improvements in sufficient detail to serve as a foundation for:
 - Development of the Federal Transportation Improvement Program (FTIP) and the Interregional Transportation Improvement Program (ITIP);
 - Facilitation of the National Environmental Protection Act (NEPA)/404 integration process; and
 - Identification of project purpose and need;
- Employ performance measures that demonstrate the effectiveness of the transportation improvement projects in meeting the intended goals;
- Promote consistency between the California Transportation Plan, the regional transportation plan and other transportation plans developed by cities, counties, districts, Native American Tribal Governments and state and federal agencies in responding to statewide and interregional transportation issues and needs;
- Provide a forum for 1) participation and cooperation, and 2) facilitating partnerships that reconcile transportation issues which transcend regional boundaries; and
- Involve community-based organizations as part of the public, federal, state and local agencies, Native American Tribal Governments, as well as local elected officials, early in the transportation planning process so as to include them in discussions and decisions on the social, economic, air quality, and environmental issues related to transportation.

RTPs must include long-term horizons (at least 20 years) that reflect regional needs, identify regional transportation issues/problems, and develop and evaluate solutions that incorporate all modes of travel. RTPs must also recommend a comprehensive approach that provides direction for programming decisions to meet the identified regional transportation needs. RTPs must also be fully consistent with the requirements of MAP-21 and other federal regulations, including conformity with the 1990 Clean Air Act Amendments and consistency with the Federal Transportation Improvement Program (FTIP). The objective of the 2016 RTP-SCS is to comply with the current CTC Regional Transportation Plan Guidelines (2010), pursuant to Government Code Section 14522, to prepare a regional transportation plan, a long-range transportation planning document which will provide policy guidelines regarding the planning and programming of transportation projects within Butte County through 2040.



In addition, Government Code Sections 65050, 65400, 65584.01-04, 65587, 65588 and Public Resources Code Section 21155 were amended in January 2009 when Senate Bill (SB) 375 became law, requiring coordinated planning between regional land use and transportation plans to increase efficiency and reduce GHG emissions.

Project Goals and Objectives

The purpose of the 2016 RTP-SCS is to provide a clear vision of the regional transportation goals, objectives, and policies in Butte County. The RTP provides short-term and long-term transportation strategies for implementation, which includes realistic and fiscally constrained alternatives. The purpose of the SCS is to demonstrate the integration of land use, housing, and transportation for the purpose of reducing greenhouse gas (GHG) emissions from passenger vehicles. The following goals and objectives have been identified for the 2016 RTP-SCS:

Highways, Streets and Roads

Goals

A safe and efficient regional road system that accommodates the demand for movement of people and goods.

Objectives

- 1.1 Strive to improve safety and operations of local and state highway system
- 1.2 Identify and prioritize improvements to the regional road system.

Transit

Goal

Provide an efficient, effective, coordinated regional transit system that increases mobility for urban and rural populations, including those located in disadvantaged areas of the region.

Objectives

- 2.1 Meet all transit needs that are “reasonable to meet.”
- 2.2 Increase transit ridership that exceeds annual population growth rate for Butte County.
- 2.3 Promote citizen participation and education in transit planning and operations.
- 2.4 Maintain a reliable transit system.

Rail

Goal

A rail system that provides safe and reliable service for people and goods.

Objectives

- 3.1 Maintain and expand passenger service through Butte County.

Goods Movement

Goal

Provide a transportation system that enables safe movement of goods in and through Butte County.



Objectives

- 4.1 Provide an adequate regional road system for goods movement.

Aviation

Goal

A fully functional and integrated air service and airport system complementary to the countywide transportation system.

Objectives

- 5.1 Maintain daily commercial airline service to the Bay Area.
- 5.2 Work with local agencies to ensure compatible land uses around existing airports to reduce noise conflicts.
- 5.3 Ensure Airport Master Plans are updated and revised as necessary and required.

Non-Motorized Transportation

Goal

A regional transportation system for bicyclists and pedestrians.

Objectives

- 6.1 Work with local agencies to develop and construct bicycle and pedestrian facilities including access to transit.
- 6.2 Assist local jurisdictions in pursuing grant funding.

Intelligent Transportation Systems

Goal

Promote the use of ITS technologies in the planning and programming process.

Objectives

- 7.1 Maintain the North State ITS System Deployment Plan.
- 7.2 Apply Transportation Systems Management (TSM) strategies to projects where appropriate.

Energy

Goal

Reduce usage of nonrenewable energy resources for transportation purposes.

Objectives

- 8.1 Increase public transit and carpooling/vanpooling and bicycling/walking.

Air Quality

Goal

Achieve air quality standards set by the Environmental Protection Agency (EPA) and the State Air Resources Board.

Objectives

- 9.1 Coordinate transportation planning with air quality planning at the technical and policy level.
- 9.2 Implement transportation requirements established by Assembly Bill (AB) 32.



Land Use Strategies

Goal

Provide economical, long-term solutions to transportation problems by encouraging community designs which encourage walking, transit, and bicycling.

Objectives

- 10.1 Innovative land use and transportation planning.
- 10.2 Plan future roads to accommodate land uses at a regional level.
- 10.3 Roads that are pedestrian friendly encourage bicycle trips and the use of the mass transportation system (complete streets).
- 10.4 Preserve productive farmland and land that provides habitat for rare, endangered or threatened species.
- 10.5 Ensure Goals and Policies are consistent at both the regional and local levels.

Transportation Financing

Goal

Develop and support financing strategies that provide for continuous implementation of the Regional Transportation Plan projects and strategies.

Objectives

- 11.1 Develop and adopt policies that will provide adequate funding resources for all transportation modes and strategies.
- 11.2 Work with Cities and County on development of a regional road network fee program.

Outreach and Coordination

Goal

Provide a forum for participation and cooperation in transportation planning and facilitate relationships for transportation issues that transcend jurisdictional boundaries.

Objectives

- 12.1 Assist jurisdictions in local transportation planning.
- 12.2 Promote consistency among all levels of local transportation planning.
- 12.3 Promote citizen participation and education in transportation planning.

Quality of Travel and Livability

Mobility Goal

The transportation system should provide for convenient travel options for people and goods and maximize its productivity. The system should reduce both the time it takes to travel as well as the total costs of travel.

Reliability Goal

The transportation system should be reliable so that travelers can expect relatively consistent travel times from day-to-day for the same trip by mode(s).



System Preservation and Safety Goal

The public's investment in transportation should be protected by maintaining the transportation system. It is critical to preserve and ensure a safe regional transportation system.

Objectives

- 13.1. Assist in efforts which enhance mobility for the region. The system should provide for convenient travel options for people and goods and maximize its productivity. The system should reduce both the time it takes to travel as well as the total costs of travel.
- 13.2. Assist in efforts which enhance reliability for the region. The system should be reliable so travelers can expect relatively consistent travel times from day-to-day for the same trip by mode(s).
- 13.3. Assist in preserving the transportation system and safety. The public's investment in transportation should be protected by maintaining the system to preserve it and ensure a safe system.

Sustainability

Goal

Incorporate Sustainable Community Strategies into the regional transportation planning process which works towards social equity, a healthy environment and a prosperous economy.

Objectives

- 14.1. Work towards a transportation system that is designed to provide an equitable level of transportation services for all populations.
- 14.2. Work towards a transportation system that leads to environmental sustainability and fosters efficient development patterns that optimizes travel, housing, and employment choices and encourages future growth away from rural areas and closer to existing and planned development.
- 14.3. Work towards a prosperous economy in making transportation decisions. The transportation system should play a significant role in raising the region's standard of living.

2.3 PROJECT LOCATION

The proposed 2016 RTP-SCS covers the entirety of Butte County including the unincorporated areas of the county and its incorporated cities, which are located at the geographical center and transportation crossroads of northern California. As shown in the project area map in Figure 2-1, the County is situated at the northeastern end of the Sacramento Valley, bordered by Glenn County and Colusa County to the southwest, Tehama County to the north, Plumas County to the east, Yuba County to the southeast, and Sutter County to the south. State Route (SR) 99, one of California's major north-south routes, traverses the western and central portion of Butte County, while SR 70 provides north and south connectivity parallel to SR 99 in the southern portion of the County before heading northeast toward Plumas County between the cities of Oroville and Chico. SR 32 provides connectivity to the east and west along the northern portion of the County and SR 191 and 162 provide connectivity within the central portion of the County.

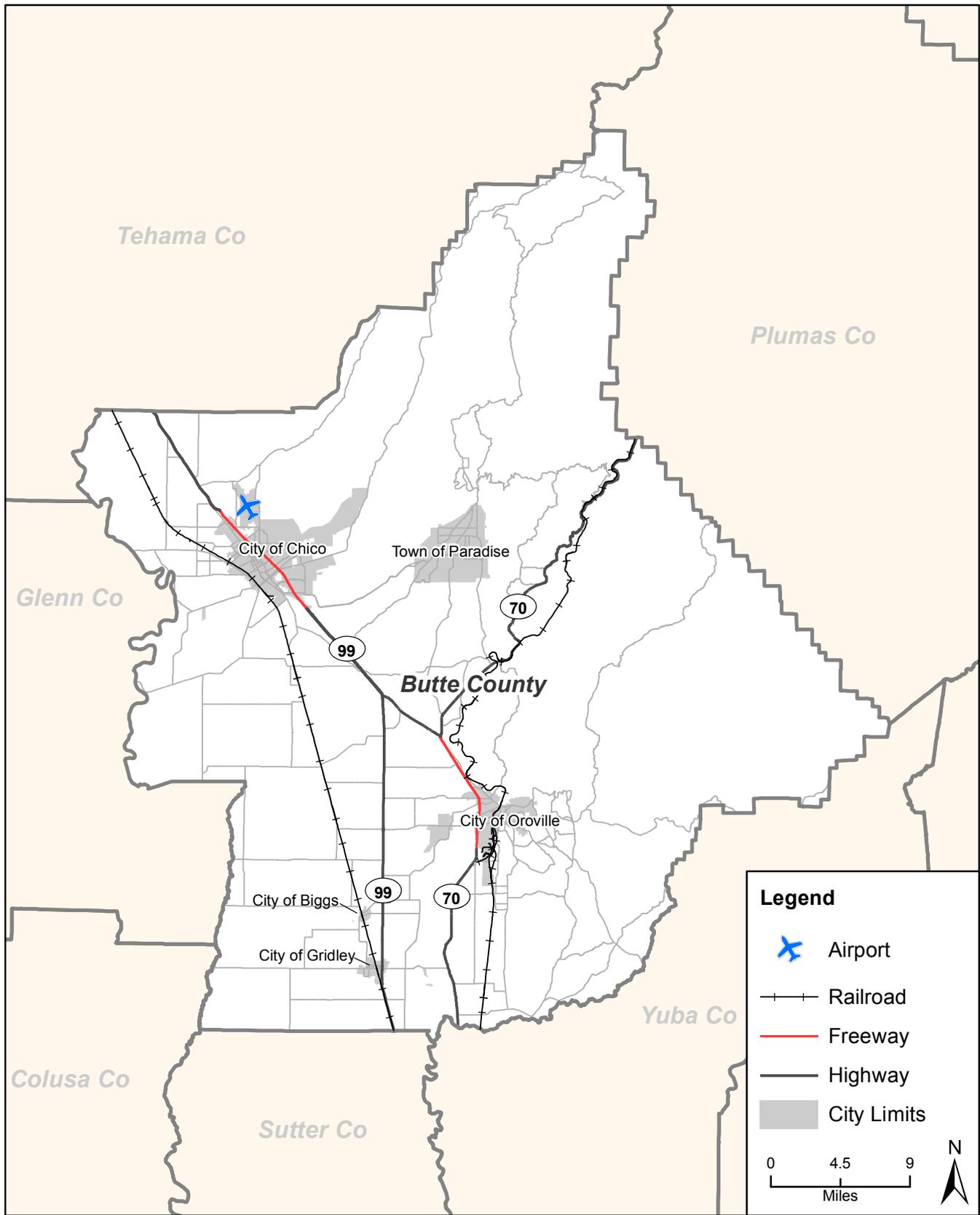


Butte County's 1,677 square miles encompass a diverse topography, ranging from approximately 60 feet above mean sea level (msl) in the Sacramento Valley at the County's western border, to 7,120 feet above msl at the Butte County High Point in the Plumas National Forest in the northeastern portion of the County.

The region is largely rural in character, with urban areas concentrated in the west-central, non-mountainous portion of Butte County. Four of Butte County's five incorporated cities - Chico, Oroville, Briggs, and Gridley- are clustered into this area, as are unincorporated town centers such as Durham, Richvale and Bangor. The incorporated Town of Paradise is located in the central portion of the County in the foothills east of Chico. Other town centers such as Forest Ranch, Cohasset, Stirling City and Forbestown are located in the mountains throughout the eastern portion of Butte County.

Capital improvement projects identified in the RTP are located on state highways, county roads and locally owned streets, as well as on airport property, railroad corridors, transit district property, public lands (such as recreation areas or state/federal forests), and public utility lands (such as easement areas). A description of the study area is also provided in Section 3.0, *Environmental Setting*.





Imagery and basemap layers provided by ESRI and its licensors © 2015.
 Additional data provided by BCAG, 2015.

RTP-SCS Plan Area

Figure 2-1

2.4 PROJECT CHARACTERISTICS

The 2016 RTP-SCS reflects changes in legislative requirements, local land use policies, and resource constraints since the most recent MTP-SCS was adopted in 2012. The 2016 RTP-SCS demonstrates how BCAG plans to meet the transportation needs of the region for the period from 2016 to 2040, considering existing and projected future land use patterns as well as forecasted population and job growth. The 2016 RTP-SCS would identify and prioritize 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 list of proposed RTP-SCS projects are provided in Table 2-1 below and shown on Figure 2-2.

**Table 2-1
 Financially Constrained
 2016 RTP-SCS Projects**

Agency	Project Title	Description	Type
Biggs	City of Biggs SRTS - Aleut St - ATP	Constructs new sidewalks to close existing gaps along the main routes to school. Project includes sidewalk construction on Aleut Street, Bannock Street, 2nd Street and 3rd Street within the central portion of the City of Biggs.	Bike/ Pedestrian
Biggs	City of Biggs SRTS - B St - ATP	SRTS B Street & 2nd St Sidewalk Improvement Project. Construct sidewalk and curb ramps along B Street (1st St to 11th St) and 2nd Street (E St to I St) to close sidewalk gaps and provide a safe route to school.	Bike/ Pedestrian
Biggs	Safe Routes to Schools Project	Construct new bike and pedestrian facilities along 2nd & E Streets.	Bike/ Pedestrian
Butte County	Central House Rd Bridge Widening (at Wyman Ravine)	Widen Central House Rd Bridge from 1 to 2 lanes at Wyman Ravine	Capacity
Butte County	SR 70 Widening (Ophir Rd to Palermo Rd)	Widen SR 70 from 2 to 4 lanes from Ophir Rd to Palermo Rd	Capacity
Butte County	SR 70 Widening (Palermo Rd to Cox Ln)	Widen SR 70 from 2 to 4 lanes from Palermo Rd to Cox Ln	Capacity
Butte County	Kittyhark Dr Extension (SR 99 to Garner Ln)	Construct 2 lane roadway from SR 99 to Garner Ln	Capacity
Butte County	SR 70 Widening (E Gridley Rd to Yuba Co.)	Widen SR 70 from 2 to 4 lanes from E. Gridley Rd to Yuba County	Capacity
Butte County	Neal Road and Cohasset Road Bike Project	On Neal Rd. from Oro-Chico Hwy to the Skyway & unincorporated portion of Cohasset Rd from Chico Limits to the Cohasset School. Construct Class 2 bike lanes.	Bike/ Pedestrian
Butte County	Butte County Forest Motorized Trail Management Plan	Plumas National Forest and Feather River Ranger District. Develop a Trail Assessment Study Report for 19 OHV trails totaling 15.25 miles with the Feather River Ranger District.	Other



**Table 2-1
Financially Constrained
2016 RTP-SCS Projects**

Agency	Project Title	Description	Type
Butte County	Monte Vista & Lower Wyandotte Class II Bike Facilities	Construct Class II bike facilities along Monte Vista Ave and Lincoln Blvd to Lower Wyandotte Rd in locations that do not have existing curb, gutter and sidewalks, along with Class II bike facilities along Lower Wyandotte Rd from Las Plumas Ave/Oro Bangor Hwy to Monte Vista Ave.	Bike/ Pedestrian
Butte County	Autry Lane and Monte Vista Safe Routes to Schools Gap Closure Project	Preliminary engineering for curb, gutter, sidewalk, and crossing enhancements along Autry Lane and Monte Vista Ave.	Bike/ Pedestrian
Various	Butte County Highway Safety Improvement Program (HSIP) Grouped Projects	HSIP3-03-002. Lincoln Blvd from 50' north of Idora St to 100' south of Arnold Ave.	Safety
		HSIP5-03-001. County of Butte, Durham-Pentz Rd between SR 99 and SR 191.	Safety
		HSIP5-03-002. County of Butte, signal at East Gridley Rd and Larkin Rd.	Safety
		HSIP5-03-009. City of Oroville, signals at Oro Dam Blvd, Orange Ave, and Acacia Ave signal install.	Safety
		HSIP6-03-006. Town of Paradise, Clark Rd between Adams Rd and Kimberly Ln.	Safety
		HSIP6-03-008. Town of Paradise, Pearson Rd between Clark Rd and Pentz Rd.	Safety
		HSIP6-03-009. Town of Paradise, Clark Rd between Bille Rd and Wagstaff Rd.	Safety
		HSIP7-03-001. City of Chico, Nord Ave (SR 32) from 1st St to 4th St.	Safety
		HSIP7-03-002. City of Chico, Esplanade between Cohasset Rd and Memorial Way.	Safety
		HSIP7-03-003. City of Chico, intersection of Nord Ave and West Sacramento Ave.	Safety
		HSIP7-03-004. Town of Paradise, intersection of Skyway at Black Olive Dr.	Safety
Butte County	Las Plumas SRTS	Between Waler Rd and Autrey Ln. Walmer Rd between Lincoln Blvd and Rosedale Ave. Construct sidewalks, curb, gutter, ramps and AC tie-in; install speed humps and speed feedback signs; upgrade crosswalks	Bike/ Pedestrian
Butte County	South Oroville SRTS - ATP	South Oroville SRTS - Lincoln Blvd and Las Plumas Ave. Safe Routes to School project along Lincoln Blvd, Las Plumas Ave, Lower Wyandotte Rd, and Monte Vista Ave. Install bike lanes, sidewalks, pedestrian crossing safety enhancements, and driver feedback signs along the main corridors of the south Oroville area routes to school.	Bike/ Pedestrian
BCAG	FTA Sec. 5307 Program - B - Line	Butte Regional Transit. Chico UZA Area. Operations and Capital	Program



**Table 2-1
Financially Constrained
2016 RTP-SCS Projects**

Agency	Project Title	Description	Type
BCAG	FTA Sec. 5310 Program - Grouped Listing	Help Central - Mobility Management Project for Butte 211	Program
		Butte Regional Transit for Supplemental ADA Paratransit Operations	Program
BCAG	FTA Sec. 5311 Program	B - Line (Butte Regional Transit) Operations and Capital	Program
BCAG	FTA Sec. 5339 Program	Butte Regional Transit. Replace, rehabilitate and purchase bus related facilities and equipment.	Program
BCAG	Butte Regional Transit Bus Replacement Program	Butte Regional Transit - purchase six (6) new 40' low floor buses for fixed route system.	Program
BCAG	Butte Regional Transit Operations and Maintenance Facility	In Chico, construct new Butte Regional Transit Operations Center (326 Huss Dr).	Public Transit
BCAG	Planning, Programming and Monitoring	Planning, programming and monitoring	Program
Caltrans	Butte County SHOPP Minor Grouped Listing	SR 99 (Chico) - Install street lighting and construct crosswalks in the City of Chico at northbound off-ramps at Cohasset Rd. and Eaton Rd. to meet current standards for urban interchanges.	Bike/ Pedestrian
Caltrans	Butte County SHOPP Collision Reduction Grouped Listing	SR 99 Near Chico at the Rock Creek Bridge #12-27. Widen shoulder on structure	Safety
		SR 191 Near Town of Paradise. Safety improvement project to reduce the number and severity of collisions. SR 191 near Paradise from 2 miles south of Clear Creek Cemetery Rd to South Airport Rd.	Safety
Caltrans	Butte County SHOPP Mandates Grouped Listing	SHOPP Mandates - ADA pedestrian infrastructure project on SR 32 near Chico from Kennedy Avenue to the SR 99/32 separation. Construct sidewalks, curb-ramps and crosswalks.	Bike/ Pedestrian
Caltrans	Butte County SHOPP Bridge Preservation Grouped Listing	State Route 70 in Oroville at Flag Canyon Creek Bridge # 12-0140 and SR 99 near Chico from Estates Drive at 0.4 mile north of Butte Creek Bridge #12-0126R. Replace bridges.	Bridge
Caltrans	Butte County SHOPP Pavement Rehabilitation Grouped Listing	State Route 99 in Chico, from south of Skyway Overcrossing to south of Garner Lane. Rehabilitate pavement.	Resurfacing
Caltrans	Butte County SHOPP Highway Maintenance	State Route 32 in Chico, from La Castana Dr (PM 19) north to Nopel Ave (PM 23.9). Maintenance asphalt overlay.	Resurfacing
Chico	SR 99 Auxiliary Lanes (SR 32 to E. 1st Ave)	Add Auxiliary lanes on SR 99 from SR 32 to E. 1st Ave	Capacity
Chico	SR 32 Widening (SR 99 to El Monte Ave)	Widen SR 32 from 2 to 4 lanes from SR 99 to El Monte Ave	Capacity
Chico	Eaton Rd Extension (Ceanothus Ave to Floral Ave)	Construct 4 lane roadway for extension of Eaton Rd from Ceanothus Ave to Floral Ave	Capacity



**Table 2-1
 Financially Constrained
 2016 RTP-SCS Projects**

Agency	Project Title	Description	Type
Chico	Eaton Rd Extension (St Lawrence Ave to Wildwood Ave)	Construct 4 lane roadway for extension of Eaton Rd from St Lawrence Ave to Wildwood Ave	Capacity
Chico	Eaton Rd Widening (Ceanothus Ave to St Lawrence Ave)	Widen Eaton Rd from 2 to 4 lanes from Ceanothus Ave to St Lawrence Ave	Capacity
Chico	Forest Ave Widening (SR 32 to Humboldt Rd)	Widen Forest Ave from 2 to 4 lanes from SR 32 to Humboldt Rd	Capacity
Chico	Cohasset Rd Widening (Two Oaks Dr to Thorntree Dr)	Widen Cohasset Rd from 2 to 4 lanes from Two Oaks Dr to Thorntree Dr	Capacity
Chico	Cohasset Rd Widening (Airport Blvd to Eaton Rd)	Widen Cohasset Rd from 2 to 4 lanes from Airport Blvd to Eaton Rd	Capacity
Chico	Midway Widening (Hegan Ln to E. Park Ave)	Widen Midway from 2 to 4 lanes from Hegan Ln to E. Park Ave	Capacity
Chico	MLK Blvd Widening (E. Park Ave to 20th St)	Widen MLK Blvd from 2 to 4 lanes from E. Park Ave to 20th St	Capacity
Chico	Bruce Rd Widening (Skyway to SR 32)	Widen Bruce Rd from 2 to 4 lanes from Skyway to SR 32	Capacity
Chico	Notre Dame Extension (E. 20th St to Little Chico Creek)	Construct 2 lane roadway for extension of Notre Dame from E. 20th St to Little Chico Creek	Capacity
Chico	SR 32 Widening (El Monte Ave to Yosemite Dr)	Widen SR 32 from 2 to 4 lanes from El Monte Ave to Yosemite Dr	Capacity
Chico	E. 20th St Widening (Forest Ave to Bruce Rd)	Widen E. 20th St from 2 to 4 lanes from Forest Ave to Bruce Rd	Capacity
Chico	SR 32 Lane Reduction (W 1st St to W 4th St) - aka Nord Ave Complete Street	Reduce SR 32 from 4 to 2 lanes from W 1st St to W 4th St)	Capacity
Chico	SR 32 and Fir St Multi Modal	Change Fir St lanes from 2 lane bi-directional to 2 lane northbound travel between east and westbound travel lanes of SR 32 and add 30 spaces to park and ride. Includes bike, pedestrian and transit improvements and signal synchronization.	Capacity and Bike/Pedestrian
Chico	Guynn Rd Bridge Widening (at Lindo Channel)	Widen Guynn Rd Bridge from 1 to 2 lanes at Lindo Channel	Capacity
Chico	Eaton Rd Widening (at SR 99 interchange)	Widen Eaton Rd from 2 to 4 lanes at SR 99 interchange	Capacity
Chico	W. Eaton Rd Extension (SR 32 to W. Eaton Rd end)	Construct 2 lane roadway for extension of W. Eaton Rd from SR 32 to end	Capacity
Chico	SR 99 Auxiliary Lanes (Skyway to 20th St)	Add Auxiliary lanes on SR 99 from Skyway to 20th St	Capacity
Chico	SR 99 Auxiliary Lanes (20th St to SR 32)	Add Auxiliary lanes on SR 99 from 20th St to SR 32	Capacity
Chico	Esplanade Widening (Eaton Rd to Nord Hwy)	Widen Esplanade from 2 to 4 lanes from Eaton Rd to Nord Hwy	Capacity
Chico	Notre Dame Extension (Comanche Creek to Southgate Ave)	Construct 2 lane roadway for extension of Notre Dame from Comanche Creek to Southgate Ave	Capacity



**Table 2-1
Financially Constrained
2016 RTP-SCS Projects**

Agency	Project Title	Description	Type
Chico	Southgate Ave Interchange (at SR 99)	Replace intersection of Southgate Ln and SR 99 with new 2 lane overpass and interchange	Capacity
Chico	Southgate Extension (Midway to Skyway and Entler Ave to Player Ln)	Construct 2 lane roadway for extension of Southgate from Midway to Skyway and Entler Ave to Player Ln	Capacity
Chico	Fair St Extension (Fair St end to Entler Ave)	Construct 2 lane roadway for extension of Fair St from existing end to Entler Ave	Capacity
Chico	Silver Dollar Way Extension (Fair St to MLK Jr Parkway)	Construct 2 lane roadway for extension of Silver Dollar Way from Fair St to MLK Jr Parkway	Capacity
Chico	Manzanita Ave (Chico Canyon Rd to Wildwood Ave)	Widen Manzanita Ave from 2 to 4 lanes from Chico Canyon Rd to Wildwood Ave	Capacity
Chico	Chico Canyon Rd (E. 8th St to Manzanita Ave)	Widen Chico Canyon Rd from 2 to 4 lanes from E. 8th St to Manzanita Ave	Capacity
Chico	SR 99 Cohasset Rd Interchange Direct SB On Ramp	Reconfigure interchange to construct a new direct on-ramp from Eastbound Cohasset Rd to Southbound SR 99 in Chico at post mile 33.5/34.4. Scope of this project is to complete the technical studies through preliminary engineering.	Interchange
Chico	SR 99 Corridor Bikeway Phase 5 - 20th Street Crossing	SR 99 Corridor Bikeway Project Phase 5 completes the gap adjacent to SR 99 from Chico Mall across 20th Street to the north end of Business Lane. This project is to complete the technical studies only thru preliminary engineering.	Bike/ Pedestrian
Chico	SR 99 Corridor Bikeway Phase 4 - ATP	SR 99 Bikeway Phase 4 Improvements. Constructs Class 1 bikeway from Business Lane to Skyway.	Bike/ Pedestrian
Chico	Esplanade Corridor Safety and Accessibility Improvement Project	The scope of the project includes various non-motorized "complete streets improvements along the Esplanade Corridor from W. 11th Avenue to Memorial Avenue. Improvements are as follows: 1) ADA improvements (ramps, sidewalk gap closures); 2) Pedestrian refuge islands at all signalized and non-signalized intersections both at center islands and islands separating travel lanes from frontage roads; 3) Traffic signal equipment upgrades (pedestrian countdown signal heads with adequate time to cross Esplanade); 4) Consistent pavement markings and signage ("Keep Clear" pavement delineations with either green pavement and/or slightly raised colored concrete option); 5) Traffic signal timing plan with pedestrian push button and vehicle detection (use detection based system during peak times, use existing 28mph progression during non-peak times).	Bike/ Pedestrian
Oroville	Olive Highway Widening (Oro-Dam Blvd to Foothill Blvd)	Widen Olive Hwy from 2 to 3 lanes from Oro-Dam Blvd to Foothill Blvd. Additional lane will be added to eastbound travel.	Capacity
Oroville	Table Mountain Blvd Roundabout	In Oroville at Table Mountain Blvd., Nelson Ave and Cherokee Rd - Reconfigure intersection and construct a roundabout.	Interchange



**Table 2-1
Financially Constrained
2016 RTP-SCS Projects**

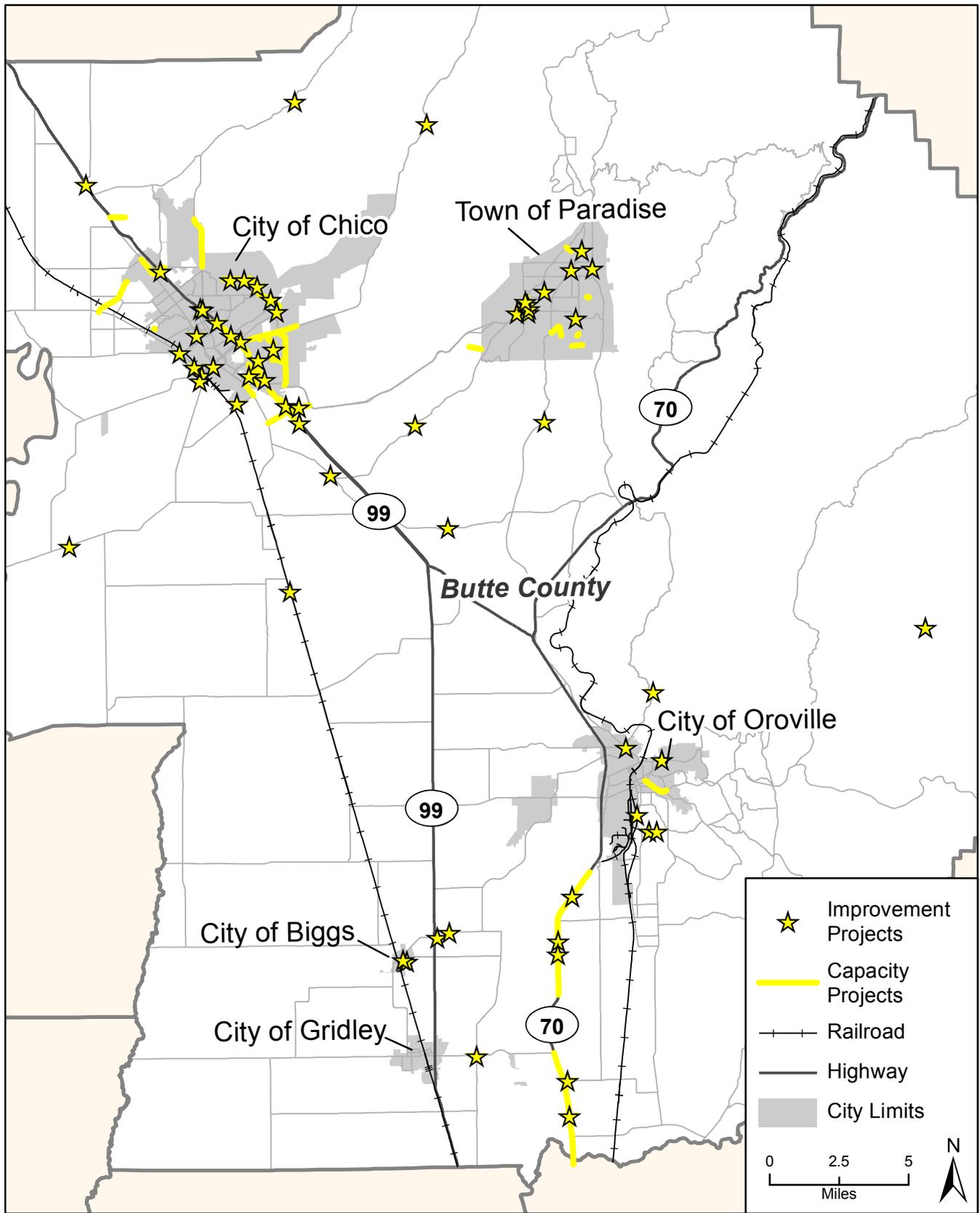
Agency	Project Title	Description	Type
Oroville	SR 162 Pedestrian/Bicycle and Disabled Mobility and Safety Improvements	State Route 162 in Oroville between Feather River Blvd and Foothill Blvd. Includes a comprehensive set of active transportation infrastructure connectivity and safety improvements. The project scope includes the following elements: new sidewalk, curb, and gutter; ADA ramps; street lighting; high-visibility crosswalk striping; buffered bicycle lanes; an RRFB crosswalk enhancement; a multi-use trail connection to SR 162; and an enhanced pedestrian crossing with a signal (H.A.W.K.) upgrade.	Bike/ Pedestrian
Paradise	Skyway Lane Reduction (Pearson Rd to Elliott Rd)	Reduce Skyway from 4 to 2 lanes from Pearson Rd to Elliott Rd	Capacity
Paradise	Anchor Way Construction (South Libby to Clark Rd)	Construct 2 lane roadway from S. Libby Rd to Clark Rd	Capacity
Paradise	Buschmann Rd Extension (Foster Rd to Skyway)	Construct 2 lane roadway extension from Foster Rd to Skyway	Capacity
Paradise	Forest Service Ln Extension (Moore Rd to Skyway)	Construct 2 lane roadway extension from Moore Rd to Skyway	Capacity
Paradise	Elliott Rd Extension (End to Kibler Rd)	Construct 2 lane roadway extension from Elliott to Kibler Rd	Capacity
Paradise	Grinding Rock Rd Extension (End to Skyway)	Construct 2 lane roadway extension from Grinding Rock Rd to Skyway	Capacity
Paradise	S. Libby Rd Extension (End to Edgewood Ln)	Construct 2 lane roadway extension from S. Libby Rd to Edgewood Ln	Capacity
Paradise	Sawmill Rd Extension (End to S. Libby Rd)	Construct 2 lane roadway extension from Sawmill Rd to S. Libby Rd	Capacity
Paradise	Maxwell Dr SR2S Project	Safe Routes to School project along Maxwell Dr between Skyway and Elliot Rd. Improvements include the construction of sidewalks, curb and gutter along Maxwell Dr. Shoulders will also be widened to facilitate Class 2 bike lanes.	Bike/ Pedestrian
Paradise	Pearson Rd SR2S Connectivity Project	Safe Routes to School project along Pearson Rd between Black Olive and Academy Drives. Improvements include the construction of sidewalks, curb and gutter on the north and south sides of Pearson Rd. The project will require minor drainage improvements and construction of appropriate retaining walls for hillside slopes.	Bike/ Pedestrian
Paradise	Almond St Multi-Modal - ATP	Almond Street Multi-Modal. The proposed project will add sidewalks, curbs and gutters to Almond Street between Pearson Rd and Elliot Rd.	Bike/ Pedestrian
Paradise	Paradise Memorial Trailway - ATP	Memorial Trailway Class 1 Enhancements (Neal Rd to Pentz Rd). Upgrade bike/ped facility, to current standard for width and minimum standard for shoulders. Project also includes crosswalk enhancements at 5 arterial intersections.	Bike/ Pedestrian



**Table 2-1
 Financially Constrained
 2016 RTP-SCS Projects**

Agency	Project Title	Description	Type
Paradise	Ponderosa Elementary SRTS - ATP	Ponderosa Elementary SRTS Project. Project will convert Pentz Road (between Bille Rd and 300' north of Wagstaff Rd) from a 2-lane, 20' wide roadway to a complete street solution supporting walking, bicycling and rolling to and from school and nearby destinations. No change in travel lanes.	Bike/ Pedestrian
Paradise	Downtown Paradise Equal Mobility - ATP	Downtown Paradise Equal Mobility Project. Improvements include the removal of barriers, gravel sidewalks, asphalt sidewalks, and driveways with construction of ADA-compliant facilities. On Skyway between Pearson Rd and Elliott Rd.	Bike/ Pedestrian
Paradise	ATP Gap Closure Project	Construct new sidewalks, curbs and gutters, and class II bicycle lanes in downtown Paradise along Fir Street (Skyway to Black Olive), Birch Street (Skyway to Black Olive), in addition to portions of Foster Road (Pearson to Birch), Black Olive Drive (Pearson to Fir) and Elliott Road (Skyway to Almond).	Bike/ Pedestrian
Various	Local Highway Bridge Projects (HBP) - Grouped Listing -Lump Sum	Midway Bridge Replacement across Butte Creek. On Midway (old SR 99) approximately 0.2 miles south of White Ave to approximately 0.7 miles south of White Ave. ,spanning Butte Creek and Butte Creek Overflow. Replace 2 bridge structures.	Bridge
		E Rio Bonito Rd over Hamilton Slough	Bridge
		E Rio Bonito Rd over Sutter Butte Canal	Bridge
		Oregon Gulch Rd over Morris Ravine	Bridge
		Ord Ferry Rd over Little Chico Creek	Bridge
		Pomona Rd over Little Chico Creek	Bridge
		Salem St over Little Chico Creek	Bridge





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2016 RTP-SCS Project Locations

Figure 2-2

2016 RTP-SCS Organization. BCAG adopted the previous 2012 MTP-SCS. This 2016 RTP-SCS reflects changes in legislative requirements, local land use policies, and resource constraints and is organized into three sections:

1. Policy Element – intends to identify legislative, planning, financial and institutional issues and requirements, as well as any areas of regional consensus. The Policy Element is meant to provide guidance to decision-makers of the implications, impacts, opportunities, and foreclosed options that will result from implementation of the RTP. California statutes state that each RTP shall include a Policy Element that: describes the transportation issues in the region, identifies and qualifies regional needs expressed within both short and long-range planning horizons and maintains internal consistency with the Financial Element and fund estimates.
2. Action Element– would consist of short-term and long-term activities that address regional transportation issues and needs for all transportation modes. The Action Element would establish assumptions which form the definition of what is acceptable based upon adopted goals, policies and objectives and are part of the projection equation. Further, the Action Element would be separated into two parts: a discussion of regional issues, mandated transportation services, air quality, forecasting, regionally significant roads, alternatives, social impacts and RTP analysis; and a concluding section discussing each mode of transportation.
3. Financial Element – would identify the current and anticipated revenue sources and financing techniques available to fund the planned transportation investments described in the Action Element. The intent of the Financial Element would be to define realistic transportation financial constraints and opportunities with current available data. Discussion would center of three main topics: current funding revenues, transportation expenditures, and potential funding sources for the future. The purpose of the Financial Element is to: identify financial forecasts for finding through BCAG, estimate the costs and revenues to implement the projects identified in the Action Element, identify funding shortfalls, and list the candidate projects if funding becomes available.
4. Sustainable Communities Strategy – demonstrates the ability of BCAG to meet the GHG targets that the California Air Resources Board (ARB) has set for the BCAG region from on-road light-duty trucks and passenger vehicles. The first section covers the planning efforts which provide the foundation for the update of the SCS. The second section describes the growth and land use forecasts which make up the SCS as well as some of the analysis and tools which were used to generate them. The third section discusses the regional transportation investments associated with the SCS and the final section describes the public outreach and local partnerships which help shape the development of the SCS.

All of the 2016 RTP-SCS elements include provisions with the potential to create physical changes to the environment.



2.5 PROJECT APPROVALS

Approval of the RTP is at the discretion of the BCAG 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 may include the following:

- California Department of Transportation (Caltrans);
- California Transportation Commission;
- California Public Utilities Commission's Rail Crossings Engineering Section (RCES);
- Cities of: Chico, Oroville, Briggs, Gridley and Paradise;
- County of Butte; and
- Butte Regional Transit and local transit providers and airport operators.

The relationship of this EIR to future environmental review of individual transportation projects is further discussed in Section 1.0, *Introduction*.

2.6 RELATIONSHIP WITH OTHER PLANS AND PROGRAMS

The 2016 RTP-SCS provides a sound basis for the allocation of state and federal transportation funds for transportation projects over the subsequent 20 years. The 2016 RTP-SCS follows guidelines established by the CTC to:

- describe the transportation issues and needs facing the county;
- identify goals and policies for how BCAG 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 2016 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. The 2016 RTP-SCS would be implemented with other existing BCAG programs designed to improve transit access, bicycle and pedestrian facilities and reduce overall vehicle trips.



3.0 ENVIRONMENTAL SETTING

3.1 REGIONAL SETTING

Butte County lies in north central California at the northeastern end of the Sacramento Valley, approximately 150 miles northeast of San Francisco and 70 miles north of Sacramento. State Highways 70 and 99, which extend in a north-south direction through the County, define the principal transportation corridors connecting the County to the region. State Routes 32 and 162 provide sub-regional connections to areas to the west of the County and to Interstate 5.

The County contains five incorporated cities: Chico, Oroville, Gridley, Biggs, and the Town of Paradise, and several unincorporated rural communities. The County is home to 5 Native American Tribes including the Mechoopda Maidu Tribe of the Chico Rancheria, Enterprise Rancheria, Berry Creek Rancheria, Mooretown Rancheria and the KonKow Valley Band of Maidu Indians. 70 members of the tribe live on the Chico Rancheria, which is located approximately 3.5 miles south of Chico. The U.S. Forest Service is a major landowner in Butte County with holdings in Plumas National Forest (81,972 acres) and Lassen National Forest (49,240 acres). The U.S. Bureau of Land Management owns 18,960 acres, consisting of scattered foothill lands. Combined, these two Federal agencies own and control 12.3 percent of the land area in Butte County.

Butte County covers an area of approximately 1,670 square miles and can be divided into three general topographical areas: a valley area, a foothill region east of the valley area, and a mountain region east of the foothills. These topographic areas comprise approximately 46 percent, 23 percent, and 31 percent, respectively, of the County's land. Butte County receives water via the Feather River and the Sacramento River. The County in general is drained by the Feather River, Butte Creek, and Chico Creek Watersheds. Part of the County's western border is formed by the Sacramento River.

Butte County has rich fertile valley soil, rolling hills, volcanic peaks and mesas and canyons carved by streams and rivers. Butte County is a diverse 1,068,000 acres. Its highest point is Humboldt Peak at 7,870 feet, while the lowest point is about 90 feet above sea level. Large areas of this rural area are preserved unaltered in the nearly 60,000 acres of parkland and wildlife preserves within the county. The valley remains a vital wintering site for 60% of the waterfowl that migrate through the Pacific Flyway. Ducks, geese, swans and other birds are present from November through March. From mid-February to mid-March, Butte County's countryside of almond, prune, kiwi, pear and apple orchards blossom, followed by a wildflower bloom that occurs throughout the area from March to June (Butte County Hazard Mitigation Plan).

3.2 REGIONAL TRANSPORTATION SYSTEM

Butte County's transportation network is 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 2016 RTP-SCS.



Butte County has six state highways that serve as regional highways, State Route 99, 70, 32, 149, 162, and 191. The highway system in the County also includes federal and state interchanges, County and City-maintained arterial and collector roadways, and local streets within each of the five incorporated cities and town and the unincorporated area.

The Butte County region transit service is primarily provided by Butte Regional Transit (B-Line). B-Line provides both fixed route and paratransit services to Chico, Oroville, Paradise, Gridley, Biggs, and the unincorporated County. B-Line operates three routes for inter-city transportation between Chico, Paradise, Oroville and the Gridley-Biggs area. One line runs between Paradise and Chico, a second between Oroville and Chico, and a third between Paradise, Oroville, and Gridley-Biggs. Overall, the B-Line system utilizes nine 40 ft. and four 30 ft. passenger buses that run on compressed natural gas, in addition to eleven 40 ft. and twelve 35 ft. passenger diesel vehicles. All buses are equipped with wheelchair lifts. Route 40/41 provides twelve round trips daily connecting Chico and Paradise; Route 20 provides eleven round trips daily connecting Chico and Oroville; and Route 30/31 provides three round trips daily connecting Paradise, Oroville, Gridley, and Biggs. Extended service is provided to Paradise Pines and Magalia. Transit service is operated between 5:50 a.m. and 7:30 p.m. Monday through Friday, with weekend service between 8:00 a.m. and 7:30 p.m. (Butte County General Plan Transportation and Circulation Element).

B-Line operates four routes in Oroville serving the City of Oroville, the County Administrative Complex, and the downtown transit center. While service is primarily within the Oroville City limits, a portion of Thermalito, Kelly Ridge, and South Oroville are also served. Operating hours are from 6:15 a.m. to 6:00 p.m. Monday through Friday, except for major holidays.

Neighboring Glenn County (Glenn Ride) provides seven trips per day between Willows and Chico on weekdays and three trips per day on Saturdays. There is no service on Sundays.

Railroad operations through Butte County consist of two north/south lines of the Union Pacific (UP) railroad which run through the County. The western leg of the UP railroad runs through the Cities of Gridley, Biggs, and Chico parallel to the west side of State Route (SR) 99 and is referred to as the "Valley Line." The eastern leg of the UP railroad runs generally parallel to the east and west sides of the Feather River, through the City of Oroville before heading through the Feather River Canyon (Butte County General Plan 2030 Settings and Trends).

The lines are used primarily for the movement of freight. In addition, the Coast Starlight passenger train operates twice per day on the west line. The Coast Starlight service provides passenger train runs between Seattle and Los Angeles and stops in Chico at 1:45 am (northbound) and 3:50 a.m. (southbound) daily.

There are two publicly owned public-use airports, Chico Municipal Airport and Oroville Municipal Airport; two privately owned public-use airports, Paradise Skypark Airport and Ranchoero Airport; three privately owned special-use airports, Butte Creek Hog Ranch Airport, Jones Airport, and Richvale Airport; one publicly owned seaplane landing site on Lake Oroville; two privately owned private-use heliports at Enloe Hospital and Oroville Hospital; and one publicly owned private-use airport for the Butte County Sheriff's Department. In addition, there are several agricultural and private-use airports in the county. These varieties of aviation facilities are located throughout Butte County (Butte County General Plan 2030 Settings and Trends).



3.3 BUTTE COUNTY BUILDOUT

The RTP-SCS covers a 24-year period from 2016 to 2040 and is an update of the 2012 Metropolitan Transportation Plan (MTP) and Sustainable Communities Strategy (SCS). BCAG does not propose any land use changes in the RTP-SCS, but rather the land use patterns envisioned by the RTP-SCS are based on the General Plan land use designations of the local agencies (the incorporated cities and the county). The forecasted allocations in the RTP are consistent with growth assumptions (e.g., location, density, and intensity of use) utilized in existing general plans or other local adopted plans, however, it does not utilize all available capacity in those plans.

In comparison to the regional forecasts prepared by BCAG in 2010 for the 2012 MTP-SCS, the 2014 forecasts present a similar growth trend with each of the first three projection periods (2020, 2025, and 2030) showing increased population growth over the previous. Between the years 2014 and 2030, the forecasts show a compound annual growth rate (CAGR) of 1.54% for the medium scenario. However, unlike the 2010 forecasts, the 2014 forecasts capture a greater return to the slower growth anticipated statewide for the 10 year period from 2030 to 2040. Between the years 2030 and 2040, the forecasts show a CAGR of 1.11% for the medium scenario. As previously observed in BCAG's 2006 and 2010 growth forecasts, jurisdictions in the southern portions of the region are projected to absorb a greater percentage of the regional growth than achieved in past growth trends. The Cities of Biggs and Gridley are forecasted to, at a minimum, double in population by the year 2040 and the City of Oroville is projected to see between 77% and 109% increases over the next 26 years. While the greatest amount of growth will continue to be occurring in the Chico area with a forecasted range of 13,507 - 19,099 new housing units by the year 2040. Employment is on track with forecasts prepared in 2010. The 2014 jobs to housing unit ratio met the forecasts of 0.76, an increase from 0.74 year 2010 levels. The rebound is projected to continue with a return to historic long term levels 0.78 jobs per housing unit in 2020 and into the horizon year of 2040 (Butte County Long-Term Regional Growth Forecasts 2014-2040, 2014).

The transportation projects identified in the 2016 RTP-SCS (as listed in Table 2-1 of this EIR), provide the framework for growth within the region and the cumulative impact analysis approach discussed above.

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4.0 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.

“Significant effect” is defined by the *State 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 assessment of each issue includes a discussion of the setting for that issue and an analysis of the project’s impact. Within the impact analysis, the first subsection identifies the methodologies used and the “significance thresholds”, which are those criteria adopted by BCAG, its member agencies, other agencies, universally recognized, or developed specifically for this analysis to determine whether potential effects are significant. The next subsections describe 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 following. Each bolded impact listing also contains a statement of the significance determination for the environmental impact as follows:

Class I. 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 State CEQA Guidelines.

Class II. Significant: An impact that can be reduced to below the threshold level given reasonably available and feasible mitigation measures. Such an impact requires findings to be made under §15091 of the State CEQA Guidelines.

Class III. Not 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.

Class IV. Beneficial: An effect that would reduce existing environmental problems or hazards.

Following each environmental effect discussion are recommended mitigation measures (when required) and the residual effects or level of significance remaining after the implementation of the measures. While BCAG cannot mandate that sponsoring agencies implement the mitigation measures, ongoing interagency consultation during project specific environmental review process would ensure that mitigation contained herein is considered and implemented where applicable. Each section concludes with a screening-level discussion of specific RTP-SCS transportation projects that may result in identified impacts.



Information and data used to prepare the impact analyses in the 2016 RTP-SCS EIR were obtained from numerous sources as referenced in Section 7.0, References and Preparers. In addition, BCAG provided data used during development of the 2016 RTP-SCS for incorporation where applicable in the EIR and related technical documentation. Data were obtained from the following sources as well as supporting technical manuals and methodology reports:

- BCAG Regional Travel Demand Model
- EMFAC2014 Mobile Source Inventory Model
- 2016 RTP-SCS Performance Measures and Methodology
- Regional Growth Forecasts (2014-2040)
- Butte County Transit and Non-Motorized Plan
- Butte Regional Conservation Plan (BRCP) – Public Draft
- Geographic Information System data for the following resources
 - land use
 - topography
 - critical habitat
 - waterways
 - wetlands and jurisdiction boundaries
 - roadway network
 - transit/rail routes
 - bicycle/trail network
 - airports
 - farmland including Williamson Act Lands
 - housing units
 - land use typologies
 - dedicated open space
 - low income and minority communities

Cumulative Impact Analysis

The CEQA Guidelines require the analysis of the cumulative effects of a program or project in combination with other probable future actions. 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(s).

This document is a Program EIR that analyzes the effects of cumulative buildout of the 2016 RTP-SCS. The cumulative effects of all probable future circulation system improvements as documented in the 2016 RTP as well as those effects that may be associated with land development actions implemented as part of the SCS in Butte County are considered the scope of analysis for the purpose of cumulative effects review. In this chapter, thresholds of significance for cumulative impacts are the same as those for direct, program impacts, as authorized by CEQA case law. (See *Save Cuyama Valley v. County of Santa Barbara* (2013) 213 Cal.App.4th 1059.) When program impacts are judged to be potentially significant, they also by definition are considered “cumulatively considerable” incremental contributions to potentially significant cumulative impacts. (See CEQA Guidelines Section 15130(a).) Mitigation measures proposed to address potentially significant impacts associated with the 2016 RTP-SCS may also



be feasible options for mitigating the incremental contribution to significant cumulative impacts associated with 2016 RTP-SCS implementation. (See CEQA Guidelines Section 15130(b)(5).)

In addition, probable future projects outside the BCAG region in neighboring counties could generate vehicle trips that originate or terminate within Butte County. These trips could further contribute to significant cumulative impacts. The 2016 RTP-SCS and EIR traffic impact analysis accounted for impacts of trips originating and/or terminating outside the BCAG region. The impacts associated with what are referred to as “external trips”, are also reflected in the EIR air quality, GHG, and traffic impact analyses.

As discussed, the cumulative effects evaluation within this program EIR is based on method 2 which is the summary of projections approach. A method 2 evaluation is based, in part, on information contained in an adopted general plan or related planning document(s), and/or certified environmental document(s) that describes the project scope and potential effects. This information is used to evaluate how cumulative projects, when considered together, can cause or contribute to adverse environmental impacts. The 2016 RTP-SCS is a regional planning document; thus, as noted, cumulative impacts of the projects comprising the 2016 RTP and the development projects comprising the SCS are disclosed in the EIR’s analysis of the 2016 RTP-SCS impacts.



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4.1 AGRICULTURAL RESOURCES

4.1.1 Setting

a. Regional Setting. Butte County can be divided into three agricultural regions: the valley, the foothills and the timber lands. The most intensive agriculture is located in the valley region, which has rich alluvial soils. The foothill region consists primarily of grazing lands, with very limited crop production. Finally, the timber lands consist of timber production and recreation.

According to the 2014 Butte County Agricultural Crop Report, total plant crop acreage in 2014 was 442,524 acres. This farmland consists of 337,989 acres of field crops, 97,237 acres of fruit and nut crops, 6,590 acres of seed crops, and 708 acres of vegetable crops (Butte County Agricultural Commissioner, 2015).

Estimated gross value of agricultural production in Butte County for 2014 totaled \$811 million, which represented a decrease of approximately \$58 million from the 2013 gross value of \$869 million. However, 2014 production was 23% above the county 10 year average of \$620 million. Table 4.1-1 lists the top agricultural commodities in Butte County for 2014.

**Table 4.1-1
 2014 Butte County Crop Values**

Crop	2014 Value
Almonds	\$241,035,750
Walnuts	\$232,016,400
Rice	\$150,963,120
Prunes	\$40,955,000
Nursery Stock	\$17,819,000
Rice Seed	\$12,818,624
Peaches	\$12,450,130
Cattle and Calves	\$11,470,000
Apiary/Pollination	\$10,865,340
Harvested Timber	\$8,639,538
Fruit and Nuts (misc.)	\$7,400,000
Dryland Pasture and Range	\$5,875,000
Seed (misc.)	\$5,864,670
Kiwis	\$5,769,600
Almond Hulls	\$5,040,000
Field Crop (misc.)	\$4,900,000
Pistachios	\$4,871,496
Olives (oil)	\$3,664,318
Hay and Alfalfa	\$2,531,088
Citrus	\$1,946,550
Pasture, Irrigated	\$1,813,500
Beans, dry/edible	\$1,706,100
Vegetables	\$1,503,000
Olives (table)	\$1,499,784

Source: 2014 Butte County Agricultural Crop Report



Regional Conversion of Farmland. Conversion of farmland is the loss of farmland due to development or land use changes that do not support agricultural production. The California Department of Conservation (DOC) has developed a classification system to categorize the quality of agricultural land resources and has implemented a Farmland Mapping and Monitoring Program (FMMP). As part of the FMMP, maps are updated biennially to provide land use conversion information for decision-makers to use when planning for the present and future of California’s agricultural land resources.

Through the FMMP, the DOC identified that prime farmland accounted for approximately 18 percent of the County in 2012. Additionally, farmland of statewide importance accounted for approximately 2 percent, unique farmland accounted for another 2 percent, and grazing land accounted for roughly 37 percent of the County (California Department of Conservation, 2012). All together important farmlands and grazing land accounted for 638,049, or approximately 60 percent, of Butte County in 2014. The types and acreages of agricultural land uses as well as the changes in acreage between 2012 and 2014 are shown in Table 4.1-2.

**Table 4.1-2
 Butte County Farmlands Summary and Change by Land Use Category**

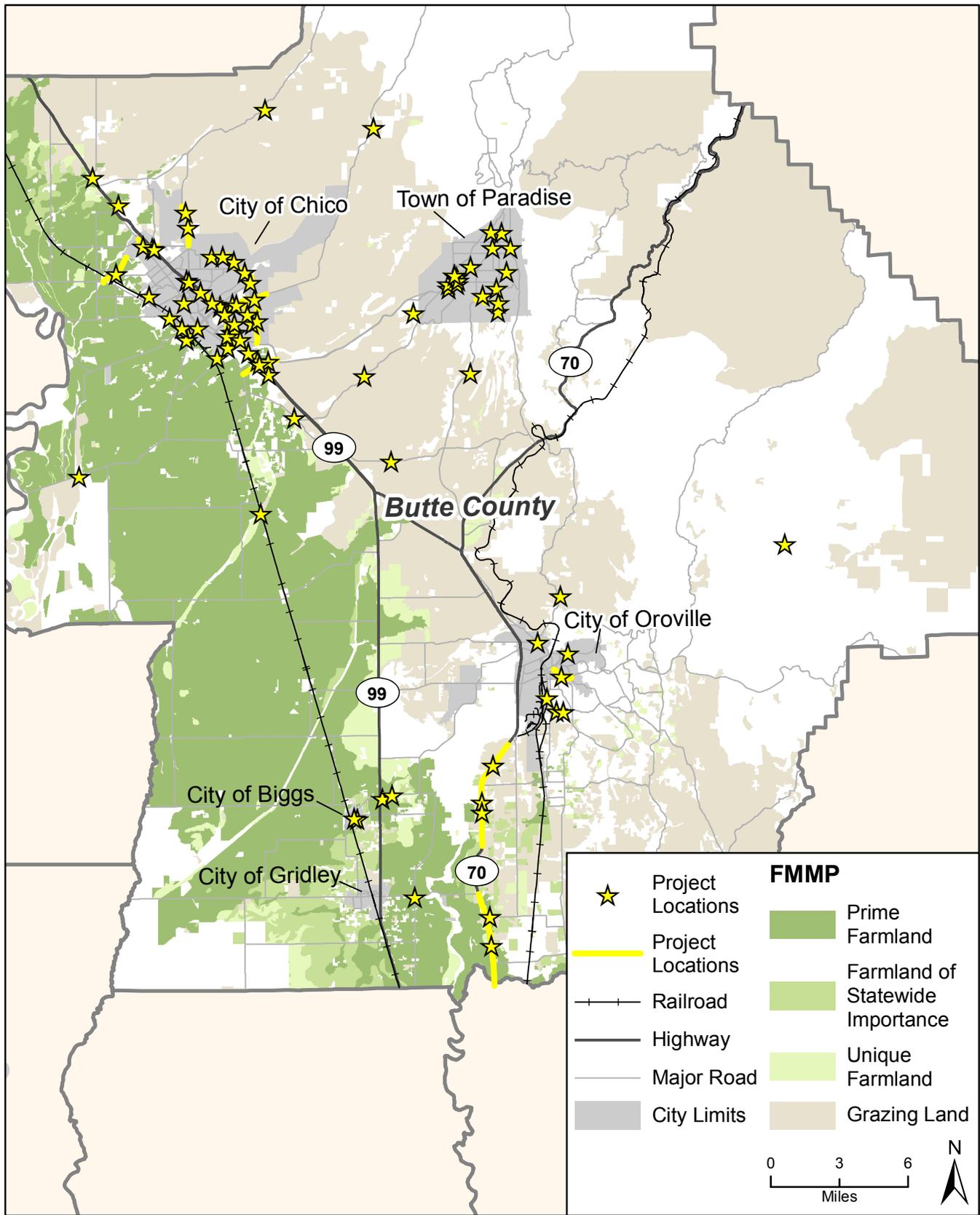
Land Use Category	Total Acreage Inventoried		2012-2014 Acreage Changes			
	2012	2014	Acres Lost	Acres Gained	Total Change	Net Change
Prime Farmland	192,641	192,293	1,176	828	2,004	-348
Farmland of Statewide Importance	21,700	21,575	496	371	867	-125
Unique Farmland	22,044	22,430	321	707	1,028	386
Farmland of Local Importance	0	0	0	0	0	0
Important Farmland Subtotal	236,385	236,298	1,993	1,906	3,899	-87
Grazing Land	403,747	401,751	3,750	1,754	5,504	-1,996
Urban and Built-up Land	46,030	46,329	146	445	591	299
Other Land	364,225	366,013	944	2,732	3,676	1,788
Water Area	22,877	22,873	122	118	240	-4
Total Area Inventoried	1,073,264	1,073,264	6,955	6,955	13,910	0

Source: California Department of Conservation, Butte County 2012-2014 Land Use Conversion

Important Farmlands. The U.S. Soil Conservation Service Important Farmlands Inventory (IFI) system is used to inventory lands with agricultural value. This system divides farmland into classes based on productive capability of the land (rather than the mere presence of ideal soil conditions). The important farmlands map identifies five agriculture-related categories including prime farmland, farmland of statewide importance, unique farmland, farmland of local importance, and grazing land. Figure 4.1-1 illustrates the locations of important farmlands in Butte County. A description of each of these categories is provided below.

Prime Farmland. Prime farmland is land with the best combination of physical and chemical features able to sustain long-term production of agricultural crops. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. The land must have been used for the production of irrigated crops at some time during the two update cycles prior to the most recent mapping date (the most recent map update for the region is 2008).





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 Additional data provided by BCAG, 2016 and California Department of Conservation, 2016.

FMMP Farmland

Figure 4.1-1



- *Farmland of Statewide Importance.* Farmland of statewide importance is land similar to prime farmland, but with minor shortcomings, such as greater slopes or with less ability to hold and store moisture. The land must have been used for the production of irrigated crops at some time during the two update cycles prior to the mapping date.
- *Unique Farmland.* Unique farmland is land of lesser quality soils used for the production of the State's leading agricultural crops (i.e., crops of high economic value, such as oranges, olives, avocados, rice, grapes, and cut flowers). This land is usually irrigated, but may include non-irrigated orchards or vineyards, as found in some climatic zones of California. The land must have been cultivated at some time during the two update cycles prior to the mapping of 2008.
- *Farmland of Local Importance.* Farmland of local importance to the local agricultural economy, as determined by each County's Board of Supervisors and a local advisory committee.
- *Grazing Land.* Grazing land is land on which the existing vegetation is suited to the grazing of livestock. The minimum mapping unit for this category is 40 acres.

Also shown on the survey are urban and built-up lands, other land and water. A description of each of these categories is included below:

- *Urban and Built-Up Land.* Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.
- *Other Land.* Land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines, borrow pits; and water bodies smaller than forty acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.
- *Water.* Water is considered perennial water bodies with an extent of at least 40 acres.

Williamson Act Contracts. The California Land Conservation Act of 1965, also known as the Williamson Act, enables local governments to enter into contracts with land owners for the purpose of restricting specific parcels of land to agricultural or open space use. In return, landowners receive a lower property tax rate based on agricultural production value rather than full market value. Williamson Act contracts may be non-renewed by landowners at any time, initiating a 9-year waiting period before the contract expires. Landowner's may alternatively initiate an Immediate Cancellation, which does not require the 9-year waiting period but requires meeting strict findings and the payment of penalties as set forth under the Williamson Act. Since 1967, the Williamson Act has been Butte County's primary tool for preserving agricultural land from development. The Butte County Board of Supervisors has codified regulations for administration of the County's Williamson Act program. As of 2013, 218,169 acres of land within Butte County are under a Williamson Act contract (DOC, 2015).



Many of these contracts are on lands in the western portion of the county, west of State Route (SR) 99 and SR 70 (Butte County, 2015).

b. Regulatory Setting.

Federal Regulations.

Farmland Protection Policy Act, subtitle I of Title XV, Section 1539-1549. The Farmland Protection Policy Act (FPPA) is intended to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses. It ensures that, to the extent practicable, federal programs are compatible with state and local units of government as well as private programs and policies to protect farmland. Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a federal agency or with assistance from a federal agency. For the purpose of the FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland subject to FPPA requirements does not have to be currently used for crop production. In fact, the land can be forest land, pastureland, cropland, or other land but does not include water bodies or land developed for urban land uses (i.e., residential, commercial, or industrial uses).

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

Farm Bill Conservation Programs. The Food, Conservation, and Energy Act of 2008 (the 2008 Farm Bill) designated funding for NRCS farmland conservation programs, including the Farm and Ranch Lands Protection Program, Wetland Reserve Program, Grassland Reserve Program, Conservation of Private Grazing Land Program, Conservation Reserve Program, Conservation Stewardship Program (CSP), Environmental Quality Incentives Program (EQIP), Agricultural Water Enhancement Program (AWEP), and Wildlife Habitat Incentives Program.

State Regulations.

Williamson Act. Preservation of agricultural, recreational and open space lands through agricultural preserve contracts between the County and property owners is a technique encouraged by the State for implementing the general plan and preserving agricultural resources. Agricultural preserve contracts are executed through procedures enabled by the California Land Conservation Act of 1965, also known as the Williamson Act (per California Government Code Sections 51200-51207). A contract may be entered into for property where the property owner agrees to restrict uses on the property to agricultural, recreational and open space uses in return for reduced property taxes. The County Agricultural Preserve Rules of



Procedure require certain minimum parcel sizes and land use restrictions applicable to agricultural preserve lands under their respective contracts. To be eligible for Williamson Act designation, a minimum 100 acres of non-prime land is typically required and that land must be used to produce an agricultural commodity that is plant or animal and is produced in California for commercial purposes.

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

Land Evaluation and Site Assessment Model. The California Department of Conservation has developed the California Agricultural Land Evaluation and Site Assessment (LESA) model to evaluate agricultural quality of specific sites to assist in determining the significance of agricultural lands. The LESA model considers six different factors. Two Land Evaluation factors are based upon measures of soil resource quality. Four Site Assessment factors provide measures of a given project's size, water resource availability, surrounding agricultural lands, and surrounding protected resource lands. For a given project, each of these factors is separately rated on a 100 point scale. The factors are then weighted relative to one another and combined, resulting in a single numeric score for a given project, with a maximum attainable score of 100 points. It is this project score that becomes the basis for making a determination of a project's potential significance, based upon a range of established scoring thresholds.

Local Regulations.

General Plans. The most comprehensive land use planning for the plan area is provided by city and county general plans, which local governments are required by state law to prepare as a guide for future development. The general plan for Butte County and for each of the cities in the county contains goals and policies concerning topics that are mandated by state law or which the jurisdiction has chosen to include. Required topics include land use, circulation, housing, conservation, open space, noise, and safety. The local agency general plans also include a wide variety of goals and policies aimed at protecting agricultural resources within the County. Such goals and policies include the implementation of a Right to Farm Ordinance, preservation of agricultural land, enforcement of agricultural land conversions, establishing minimum parcel size and buffers, and establishing Williamson Act contracts.

Specific and Community Plans. A city or county may also provide land use planning by developing community or specific plans for smaller, more specific areas within their jurisdiction. These more localized plans provide for focused guidance for developing a specific area, with development standards tailored to the area, as well as systematic implementation of the general plan. Specific and community plans are required to be consistent with the city's or county's general plan.



Butte County Administrative Procedures and Uniform Rules for Implementing the California Land Conservation (Williamson) Act. As amended by AB 1265 on October 25, 2011, Butte County implements the California Land Conservation (Williamson) Act of 1965 to promote agricultural productivity and the preservation of agricultural land and open space lands. The County's implementation of the Williamson Act provides a common set of rules and procedures that apply to the standards and categories of property eligibility, the permitted and compatible land uses and restriction on Williamson Act contract lands, procedures for creation and termination of Williamson Act contracts and procedures for compliance monitoring and enforcement.

4.1.2 Impact Analysis

a. Methodology and Significance Thresholds. Pursuant to the State CEQA guidelines, potentially significant impacts to agriculture would result if the project would:

1. *Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use;*
2. *Conflict with existing zoning for agricultural use, or a Williamson Act contract;*
3. *Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use;*

Impacts associated with forest land and timberlands were determined to be less than significant in the Initial Study prepare for this project (Appendix A). Therefore, the following thresholds will not be discussed further in this EIR document:

4. *Conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production;*
5. *Result in the loss of forest land or conversion of forest land to non-forest use.*

b. Project Impacts and Mitigation Measures. Implementation of the 2016 RTP-SCS could create impacts to agricultural resources within Butte County by the conversion of important farmland to non-agricultural resources.

Impact AG-1 Implementation of proposed transportation improvements under the 2016 RTP-SCS could result in the conversion of agricultural lands including Prime Farmland and lands under Williamson Act contract to non-agricultural uses. This is considered a Class I, significant and unavoidable impact.

Due to the programmatic nature of the 2016 RTP-SCS, a precise, project-level analysis of the specific farmland conversions for each RTP project is not possible at this time. However, proposed transportation improvement projects under the 2016 RTP-SCS, such as roadway expansions and widening, could result in the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to nonagricultural uses. Prime farmland, farmland of statewide importance, and unique farmland, are located primarily west of SR 99 and SR 70 throughout the County as shown on Figure 4.1-1. These areas contain extensive high-quality agricultural soils, defined as prime soils (Class I or II soils). A number of roadway extensions



and widening projects throughout the county could encroach on prime agricultural soils, or soils that could support high quality agricultural production.

The SCS component of the RTP does not propose specific projects, rather it forecasts the development pattern for the region, and integrates the pattern into the transportation network. Individual development projects would be designed and engineered in accordance with the local General Plan where the individual project is located. The SCS provides the local land use agencies with land use patterns that are best integrated with the transportation system.

The proposed land use scenario includes a compact land pattern with an emphasis on infill development in existing urban areas. Since the land use scenario would place a greater emphasis on development in existing urban areas and limit expansion at community or city borders (where urban development interfaces with agricultural lands), impacts in the form of conversion of agricultural land would be minimal. However, impacts from individual development projects will need to be addressed on a case-by-case basis.

Local roadway projects and bike or pedestrian paths are less likely to impact Prime Farmland than roadway extension and widening projects, as these projects are more likely to be located within existing urban areas (either incorporated or unincorporated) and are less likely to require substantial amounts of additional right of way. Nevertheless, because the actual magnitude of impacts from individual projects cannot be determined at this time, the overall impact to Prime Farmland would be potentially significant. If an individual project has the potential to impact farmland the implementing agency will be required to perform a land evaluation and site assessment (LESA) to establish a farmland conversion impact rating score. This process is required by the NRCS for all federally funded and assisted projects, and is also used by the California DOC for state and locally funded projects.

The Williamson Act allows county and city governments to define compatible land uses for contract lands within their jurisdictions, as long as those uses are consistent with the compatibility principles set forth in Government Code, Section 51238.1. Public agencies acquiring contracted lands for a public use (such as transportation facilities) must comply with Government Code Section 51293. Two criteria must be met when acquiring contracted lands:

5. The location is not based primarily on a consideration of the lower cost of acquiring land in an agricultural preserve.
6. If the land for any public improvement is agricultural land covered under a Williamson Act contract and there is no other land within or outside the preserve on which it is reasonably feasible to locate the public improvement.

As described above, since the SCS land use scenario would place a greater emphasis of development in existing urban areas and limit expansion at community or city borders where urban development interfaces with agricultural lands, impacts in the form of conversion of Williamson Act lands would be minimal. However, impacts from individual development projects will need to be addressed on a case-by-case basis. Transportation improvement projects may result in the direct conversion of Williamson Act lands that are currently in renewal status (participating in the Williamson Act contract program) or are in the process of being released from the program (non-renewal). This impact would be potentially significant.



Mitigation Measures. BCAG shall and transportation project sponsor agencies can and should implement the following mitigation measures for applicable transportation projects identified in Tables 4.1-3. Butte County and cities in the County should implement these measures, where relevant to land use projects implementing the RTP-SCS.

- AG-1(a)** When new roadway extensions or widenings are planned, the project sponsor shall assure that project-specific environmental reviews consider alternative alignments that reduce or avoid impacts to Prime Farmlands.
- AG-1(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 shall 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.
- AG-1(c)** When new transportation facilities or land use projects implementing the RTP-SCS are planned in areas that contain Important Farmland, the transportation project sponsor or local jurisdiction in which the project is located shall assure that project-specific environmental reviews mitigate impacts, when feasible, through requiring use of agricultural conservation easements on land of at least equal quality and size as compensation for the loss of agricultural land. Agricultural conservation easements would be implemented by directly purchasing easements or donating mitigation fees to a local, regional, or statewide organization or agency whose purpose includes the acquisition and stewardship of agricultural conservation easements.
- AG-1(d)** Farmland Conservation Easements. Prior to approval of 2016 RTP-SCS projects that may adversely impact prime farmland, the project sponsor shall, when the following mitigation measures are feasible, require that a farmland conservation easement, a farmland deed restriction, or other farmland conservation mechanism be granted in perpetuity to the municipality in which the project is proposed, or an authorized agent thereof. The easement shall provide conservation acreage at a minimum ratio of 1:1 for direct impacts. The conservation area shall be located within Butte County in reasonable proximity to the project area.

Significance After Mitigation. Although the above measures would reduce impacts to Prime Farmland and lands under Williamson Act contract to the degree feasible, such impacts cannot be fully mitigated due to the potential conversion to non-agricultural use. Impacts from individual projects will need to be addressed on a case-by-case basis; however, because impacts to individual Prime Farmland and lands under Williamson Act contract cannot be assumed to be less than significant, agricultural impacts are considered *significant and unavoidable*.



c. Specific 2016 RTP-SCS Projects That May Result in Impacts. All RTP-SCS projects that require the extension or widening of a roadway in rural areas adjacent to agricultural land may result in impacts discussed in Impact AG-1. Individual projects could create significant impacts related to Agricultural Resources but would not necessarily do so. Additional specific analysis will need to be conducted as the individual projects are implemented in order to determine the actual magnitude of impact. Mitigation measures discussed above could apply to these specific projects for Agricultural Resources. RTP projects that require the addition of lanes or widening of lanes or a shoulder to an existing roadway or highway or that require construction of a new roadway, highway or bike lanes and are adjacent to agricultural lands have the potential to impact agricultural resources including Prime Farmlands and Williamson Act contract lands. All construction projects adjacent to agricultural lands have the potential to impact agricultural resources as described in Impact AG-1. Table 4.1-3 lists representative projects that have the potential to impact agricultural resources.

**Table 4.1-3
2016 RTP-SCS Projects That May Result in Agricultural Impacts**

Agency	Project Title	Description	Type
Chico	Midway Widening (Hegan Ln to E. Park Ave)	Widen Midway from 2 to 4 lanes from Hegan Ln to E. Park Ave	Capacity
Chico	W. Eaton Rd Extension (SR 32 to W. Eaton Rd end)	Construct 2 lane roadway for extension of W. Eaton Rd from SR 32 to end	Capacity
Chico	Esplanade Widening (Eaton Rd to Nord Hwy)	Widen Esplanade from 2 to 4 lanes from Eaton Rd to Nord Hwy	Capacity
Chico	Southgate Extension (Midway to Skyway and Entler Ave to Player Ln)	Construct 2 lane roadway for extension of Southgate from Midway to Skyway and Entler Ave to Player Ln	Capacity
Chico	Fair St Extension (Fair St end to Entler Ave)	Construct 2 lane roadway for extension of Fair St from existing end to Entler Ave	Capacity
Chico	Cohasset Rd Widening (Two Oaks Dr. to Thorntree Dr.)	Widen Cohasset Rd from 2 to 4 lanes from Two Oaks Dr. to Thorntree Dr.	Capacity
Chico	Cohasset Rd Widening (Airport Blvd to Eaton Rd)	Widen Cohasset Rd from 2 to 4 lanes from Airport Blvd to Eaton Rd	Capacity
Butte County	SR 70 Widening (Palermo Rd to Cox Ln)	Widen SR 70 from 2 to 4 lanes from Palermo Rd to Cox Ln	Capacity
Butte County	SR 70 Widening (E Gridley Rd to Yuba Co.)	Widen SR 70 from 2 to 4 lanes from E. Gridley Rd to Yuba County	Capacity
Butte County	SR 70 Widening (Ophir Rd to Palermo Rd)	Widen SR 70 from 2 to 4 lanes from Ophir Rd to Palermo Rd	Capacity
Butte County	Kittyhawk Dr Extension (SR 99 to Garner Ln)	Construct 2 lane roadway from SR 99 to Garner Ln	Capacity



4.2 AIR QUALITY

This section analyzes the impacts of the 2016 RTP-SCS upon local and regional air quality. Greenhouse gas emissions and climate change impacts are discussed in Section 4.5.

4.2.1 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, provide the links between air pollutant emissions and air quality.

Located within the Northern Sacramento Valley Air Basin (NSVAB), Butte County has a Mediterranean climate, which is characterized by hot, dry summers and cool, wet winters. Summer conditions in the NSVAB are typically characterized by high temperatures and low humidity, with temperatures averaging from approximately 90 degrees Fahrenheit during the day and 50 degrees Fahrenheit at night. During the summer months, the prevailing winds are typically from the south. Winter conditions are governed by cyclonic storms from the North Pacific and characterized by occasional rainstorms interspersed with stagnant and sometimes foggy weather. The daytime average temperature is in the low 50s, and the nighttime average temperature is in the upper 30s. During winter, winds predominate from the south, but north winds frequently occur. Rainfall occurs mainly from late October to early May, with an average of 17.2 inches per year, but this amount can vary significantly each year (Butte County General Plan 2030 EIR).

Dispersion of local pollutant emissions are predominantly affected by the prevailing wind patterns and inversions that often occur in the NSVAB. Within the NSVAB, two types of inversions can occur. During summer months, sinking air forms a “lid” over the region and confines pollution to a shallow layer near the ground, which can contribute to photochemical smog problems. During winter nights, air near the ground cools while the air aloft remains warm, which can cause localized air pollution “hot spots” near emission sources (Butte County General Plan 2030 EIR).

b. Pollutants. Primary criteria pollutants are emitted directly from a source (e.g., vehicle tailpipe, an exhaust stack of a factory, etc.) into the atmosphere. Primary criteria pollutants include carbon monoxide (CO), reactive organic gases (ROG)/volatile organic compounds (VOC), nitric oxide (NO), fine particulate matter (PM₁₀ and PM_{2.5}), sulfur dioxide (SO₂), and lead (Pb). Secondary criteria pollutants are created by atmospheric chemical and photochemical reactions; ROGs/VOCs together with nitrogen oxides form the building blocks for the creation of photochemical (secondary) pollutants. Secondary pollutants include oxidants, ozone (O₃), and sulfate and nitrate particulates (smog). The characteristics, sources, and effects of critical air contaminants are provided in Table 4.2-1.

**Table 4.2-1
 Description Of Selected Air Contaminants**

<p>PHOTOCHEMICAL OXIDANT (Ox)</p> <p>Characteristics - The term “photochemical oxidant” can include several different pollutants, but consists primarily of ozone (more than 90 percent) and a group of chemicals called organic peroxy nitrates. Photochemical oxidants are created in the atmosphere rather than emitted directly into the air. Reactive organic gases and oxides of nitrogen are the emitted contaminants that participate in the reaction. Ozone is a pungent, colorless, toxic gas that is produced by the photochemical process. Photochemical oxidants are a characteristic of southern California type smog and reaches highest concentrations during the summer and early fall.</p> <p>Sources - Ozone is caused by complex atmospheric reactions involving oxides of nitrogen and reactive organic gases with ultraviolet energy from sunlight. Motor vehicles are the major source of oxides of nitrogen and reactive organic gases in the basin.</p> <p>Effects - The common manifestations of ozone and other photochemical oxidants are damage to vegetation and cracking of untreated rubber. Ozone in high concentrations (ranging from 0.15 ppm to 0.50 ppm) can also directly affect the lungs, causing respiratory and coronary irritation and possible changes in lung functions. These health problems are particularly acute in children and elderly people exposed to these pollutants.</p>
<p>CARBON MONOXIDE (CO)</p> <p>Characteristics - CO is a colorless, odorless, toxic gas produced through the incomplete combustion of fossil fuels. Concentrations are higher in winter when more fuel is burned for heating purposes and weather conditions favor the build-up of directly emitted contaminants.</p> <p>Sources - The use of gasoline powered engines is the major source of this contaminant, with automobiles being the primary contributor. CO emissions from gasoline powered engines are higher during winter months due to poor engine efficiency in cold temperatures. Various industrial processes also produce CO emissions through incomplete combustion of fossil fuels.</p> <p>Effects - CO does not irritate the respiratory tract; however, it passes through the lungs directly into the blood stream and, by interfering with the transfer of oxygen, deprives sensitive tissues of oxygen.</p>
<p>NITROGEN OXIDES (NO_x)</p> <p>Characteristics - It primarily consists of nitric oxides (NO) (a colorless, odorless gas formed from atmospheric nitrogen and oxygen when petroleum combustion takes place under high temperatures and/or pressure) and nitrogen dioxide (NO₂) (a reddish-brown irritating gas formed by the combination of nitric oxide with oxygen).</p> <p>Sources - High combustion temperatures cause nitrogen and oxygen to combine and form nitric oxide. Further reaction produces additional oxides of nitrogen. Combustion in motor vehicle engines, power plants, refineries, and other industrial operations are the primary sources in the region. Ships, railroads, and aircraft are other significant emitters.</p> <p>Effects - Oxides of nitrogen are direct participants in photochemical smog reactions. The emitted compound, nitric oxide, combines with oxygen in the atmosphere in the presence of sunlight, to form nitrogen dioxide and ozone. Nitrogen dioxide (NO₂), the most significant of these pollutants, can color the atmosphere at concentrations as low as 0.5 ppm on days of 21 0-mile visibility. NO₂ is an important air pollutant in the region because it is a primary receptor of ultraviolet light. The latter initiates photochemical reactions, helping to form ozone and/or particulate nitrate. It will also react in the air to form nitrate particulates.</p>



**Table 4.2-1
Description Of Selected Air Contaminants**

<p>SULFUR DIOXIDE (SO₂)</p> <p>Characteristics - SO₂ is a colorless, pungent, irritating gas formed primarily by the combustion of sulfur-containing fossil fuels. In humid atmospheres, SO₂ can form sulfur trioxide and sulfuric acid mist, with some of the latter eventually reacting to produce sulfate particulates.</p> <p>Sources -This contaminant is the natural combustion product of sulfur or sulfur-containing fuels. Fuel combustion is the major source, while chemical plants, sulfur recovery plants, and metal processing are minor contributors.</p> <p>Effects - At sufficiently high concentrations, sulfur dioxide irritates the upper respiratory tract. At lower concentrations, when in conjunction with particulates, SO₂ appears able to do still greater harm by injuring lung tissues. Sulfur oxides, in combination with moisture and oxygen, can yellow the leaves of plants, dissolve marble, and eat away iron and steel. Sulfur oxides can also react to form sulfates, which reduce visibility.</p>
<p>PARTICULATES (Total Suspended Particles, PM_{2.5} and PM₁₀)</p> <p>Characteristics - Atmospheric particulates are made up of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. About 90 percent by weight of the emitted particles are larger than 10 microns in diameter, but about 10 percent by weight, or 90 percent of the total <i>number</i> of particulates, are less than 5 microns in diameter. The aerosols formed in the atmosphere, primarily sulfate and nitrate, are usually smaller than 1 micron. In areas close to major sources, particulate concentrations are generally higher in the winter, when more fuel is burned for heating, and meteorological conditions favor the build-up of directly-emitted contaminants. However, in areas remote from major sources and subject to photochemical smog (ozone), particulate concentrations can be higher during summer months because the presence of ozone increases the potential for SO₂ and NO₂ to convert to sulfate and nitrate particulates.</p> <p>Sources - Particulate matter consists of particles in the atmosphere resulting from many kinds of dust and fume-producing industrial and agricultural operations, from combustion, and from atmospheric photochemical reactions. Re-entrained road dust from vehicles is a significant source of particulates. Natural activities also put particulates into the atmosphere; wind-raised dust and ocean spray are two such sources of particulates.</p> <p>Effects - In the respiratory tract, very small particles of certain substances may produce injury by themselves, or may contain absorbed gases that are injurious. Suspended in the air, particulates less than 5 microns in diameter can both scatter and absorb sunlight, producing haze and reducing visibility. They can also cause a wide range of damage to materials.</p>
<p>DIESEL PARTICULATE MATTER (DPM)</p> <p>Characteristics - Diesel particulate matter is part of a complex mixture that makes up diesel exhaust. Diesel exhaust is commonly found throughout the environment. Diesel exhaust is composed of two phases, either gas or particle, and both phases contribute to the risk. The gas phase is composed of many of the urban hazardous air pollutants, such as acetaldehyde, acrolein, benzene, 1,3-butadiene, formaldehyde and polycyclic aromatic hydrocarbons. The particle phase also has many different types of particles that can be classified by size or composition. The size of diesel particulates that are of greatest health concern are those that are in the categories of fine, and ultra fine particles. The composition of these fine and ultra fine particles may be composed of elemental carbon with adsorbed compounds such as organic compounds, sulfate, nitrate, metals, and other trace elements.</p> <p>Sources - Diesel exhaust is emitted from a broad range of diesel engines. On-road diesel engines include trucks, buses, and cars, and the off-road diesel engines include locomotives, marine vessels, and heavy duty equipment.</p> <p>Effects - Acute exposure to diesel exhaust may cause irritation to the eyes, nose, throat, lungs, and some neurological effects such as lightheadedness. Acute exposure may also elicit a cough or nausea as well as exacerbate asthma. Chronic exposure in experimental animal inhalation studies has shown a range of dose-dependent lung inflammation and cellular changes in the lung as well as diesel exhaust immunological effects. Based upon human and laboratory studies,</p>



**Table 4.2-1
Description Of Selected Air Contaminants**

there is considerable evidence that diesel exhaust is a likely carcinogen. Human epidemiological studies demonstrate an association between diesel exhaust exposure and increased lung cancer rates in occupational settings.

HYDROCARBONS AND OTHER ORGANIC GASES (Total Hydrocarbons, CH₄ NMHC (non-methane), AHC, NHC)

Characteristics - Any of the vast family of compounds consisting of hydrogen and carbon in various combinations are known as hydrocarbons. Fossil fuels are included in this group. Many hydrocarbon compounds are major air pollutants, and those which can be classified as olefins or aromatics are highly photochemically reactive. Atmospheric hydrocarbon concentrations are generally higher in winter because the reactive hydrocarbons react more slowly in the winter and meteorological conditions are more favorable to their accumulating in the atmosphere to higher concentration before producing photochemical oxidants.

Sources - Motor vehicles are a major source of anthropogenic hydrocarbons (AHC) in the basin. Other sources include evaporation of organic solvents and petroleum refining and marketing operations. Trees are the principal emitters of biogenic or natural hydrocarbons (NHC).

Effects - Certain hydrocarbons can damage plants by inhibiting growth and causing flowers and leaves to fall. Levels of hydrocarbons currently measured in urban areas are not known to cause adverse effects in humans. However, certain members of this contaminant group are important components in the reactions, which produce photochemical oxidants.



In the NSVAB, the primary sources of emissions are from on-road motor vehicles and the urbanized portion of the basin, which includes Sacramento, Yolo, Solano, and Placer Counties. Butte County’s relatively low residential densities found in the County's rural residential and suburban residential designations are major contributors to perpetuating an auto-dependent lifestyle and associated air contaminants. Diminished air quality in Butte County is due to local air pollution sources, transport of pollutants into the area from the south, the NSVAB topography, prevailing wind patterns, and inversions (BCAQMD, 2014). The NSVAB is frequently subjected to inversions that, coupled with geographic barriers and high summer temperatures, create a high potential for air pollution problems. Sinking air forms a “lid” over the region, which confines pollution within a shallow layer near the ground and leads to photochemical smog and visibility issues. In the wintertime, air near the ground cools at night while the air above remains relatively warm, which results in little air movement and localized pollution “hot spots” (BCAQMD, 2014). Wintertime inversions involve little air movement, which elevates carbon monoxide, nitrogen oxides, particulate matters, and lead particulate concentrations. Thus, particulate matter and ground-level ozone are pollutants of most concern in Butte County.

c. Federal/State/Local Regulatory Framework. Air Quality regulations in Butte County are subject to both federal and state standards. The 1990 Clean Air Act mandated that the federal Environmental Protection Agency (EPA) manage and control air quality by establishing the National Ambient Air Quality Standards (NAAQS). In California, the task of air quality management and regulation has been legislatively granted to the California Air Resources Board (CARB). CARB is responsible for research activities, the establishment of California Ambient Air Quality Standards (CAAQS) guidelines for air quality management, and the regulation of both stationary and mobile emission sources (i.e., motor vehicles). The CAAQS are generally more stringent than corresponding federal standards. Table 4.2-2 illustrates both the federal and state current pollutant regulations.

**Table 4.2-2
 Current Federal and State Ambient Air Quality Standards**

Pollutant	Federal Standard	California Standard
Ozone	0.07 ppm (8-hr avg)	0.09 ppm (1-hr avg) 0.07 ppm (8-hr avg)
Carbon Monoxide	35.0 ppm (1-hr avg) 9.0 ppm (8-hr avg)	20.0 ppm (1-hr avg) 9.0 ppm (8-hr avg)
Nitrogen Dioxide	0.10 ppm (1-hr avg) 0.053 ppm (annual avg)	0.18 ppm (1-hr avg) 0.030 ppm (annual avg)
Sulfur Dioxide	0.075 ppm (1-hr avg) 0.14 ppm (24-hr avg)	0.25 ppm (1-hr avg) 0.04 ppm (24-hr avg)
Lead	1.5 µg/m ³ (calendar quarter)	0.15 µg/m ³ (3-month avg)
Particulate Matter (PM ₁₀)	150 µg/m ³ (24-hr avg)	50 µg/m ³ (24-hr avg) 20 µg/m ³ (annual avg)
Particulate Matter (PM _{2.5})	35 µg/m ³ (24-hr avg) 12 µg/m ³ (annual avg)	12 µg/m ³ (annual avg)

ppm= parts per million

µg/m³ = micrograms per cubic meter

Source: CARB, www.arb.ca.gov/research/aaqs/aaqs2.pdf, October 2015.



CARB established fifteen air basins and delegated local pollution control authority to Air Pollution Control Districts (APCD) or Air Quality Management Districts (AQMD). For Butte County, air pollution control authority is vested with the Butte County Air Quality Management District (BCAQMD).

The Butte County Association of Governments (BCAG) has established conformity tests for eight-hour ozone, carbon monoxide (CO), and fine particulate matter (PM_{2.5}) in their Air Quality Emissions Analysis and Conformity Determination document (BCAG, 2015). For eight-hour ozone, the conformity test is the “no-greater-than 2011” test, whereby future emissions must be less than or equal to the amount of emissions present in the year 2011. The conformity test for CO is the “budget test,” whereby CO emissions are not to exceed 80 tons per day budget. For PM_{2.5}, the conformity test is the “no-greater-than 2008” test, whereby future emissions must be less than or equal to the amount of emissions present in the year 2008. However, conformity analysis pertains only to NEPA projects and is not required for the CEQA analysis in this EIR.

Emission Regulations. Mobile emission sources are regulated through the establishment of federal and state vehicle emission requirements with which auto manufacturers must comply. Motor vehicle emissions are also regulated by the state’s vehicle inspection and maintenance program (the “Smog Check Program”). Indirectly, increases in motor vehicle emissions can be regulated by agencies other than CARB, through CEQA and determinations of consistency with the Clean Air Plan (CAP) and other city and county General Plans. For example, Butte County’s General Plan (2014) includes BCAQMD thresholds of significance for air pollutants, which are described in Section 4.2.2(a), Methodology and Significance Thresholds, below.

d. Current Air Quality. Depending on whether the standards are met or exceeded, the local air basin is classified as being in “attainment” or “non-attainment.” The NSVAB does not meet the state ambient air standards for ozone and PM₁₀. Butte County currently is designated as a non-attainment area with respect to state standards for three pollutants: ozone, PM₁₀, and PM_{2.5} (BCAQMD, 2014). The County meets the state standards for all other pollutants. Table 4.2-3 lists the 8-hour ozone emission violations days between 2002 and 2011, and Table 4.2-4 lists the percent of days exceeding federal standards between 2000 and 2014.

**Table 4.2-3
 Butte County Federal 8-hr Ozone Emission
 Violation Days 2001-2011**

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Federal 8-hr Ozone	43	22	14	15	33	12	17	13	4	6

Source: Almanac of Emissions and Air Quality, CARB, 2013

Note: The 2013 Almanac of Emissions and Air Quality does not include data regarding ozone violation days for the state standard and does not include PM₁₀ violation days for the state or federal standards.



**Table 4.2-4
Butte County Percent of Days
Exceeding Federal Standards 2000-2013**

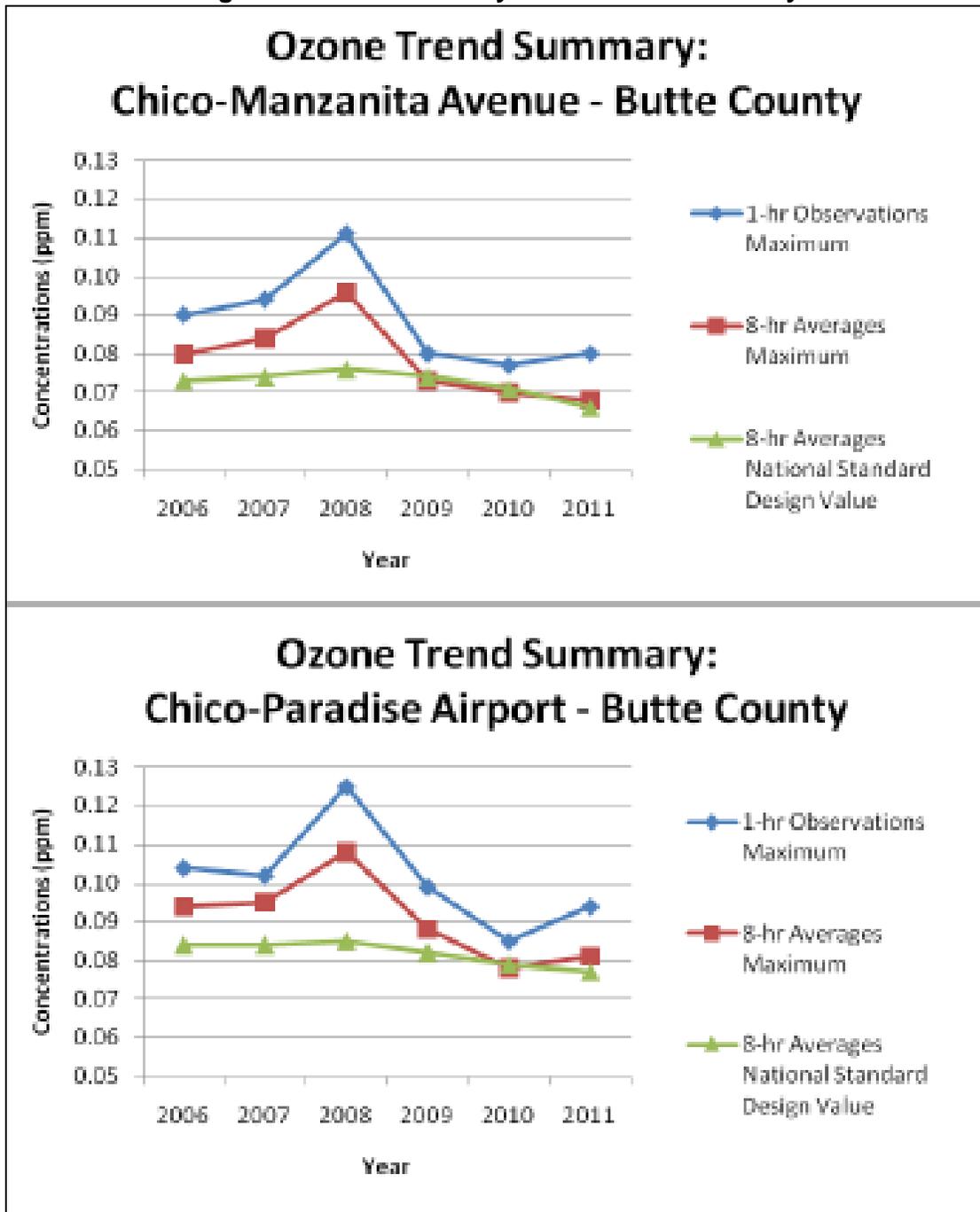
Year	8-hour Ozone	24-hour PM_{2.5}
2000-2012	8.3	8.3
2012-2014	0.8	0.4

Source: California Air Pollution Control Officers' Association (CAPCOA), 2015

Note: The 2015 CAPCOA report does not include data regarding violation days for the state emissions standards.

Monitoring of ambient air pollutant concentrations is conducted by CARB, the BCAQMD, and industry. CARB's four Butte County monitoring stations are in Chico (East Avenue), Paradise (4405 Airport Road and Paradise Theater), and Gridley (Cowee Avenue). Figure 4.2-1 shows the ozone emissions trends for the Chico-Manzanita Avenue and Chico-Paradise Airport Monitoring Stations during the period 2006 through 2011. As shown below, with the exception of a spike in 2008, ozone emissions in Butte County have decreased since 2006 and have been approaching the National Standard.

Figure 4.2-1 Butte County Ozone Trend Summary



Source: 2012 Triennial Update of the NSVAB AQAP, 2013



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 Clean Air Act of 1988 requires areas that exceed the California ambient air quality standards to plan for the eventual attainment of the state standards. The BCAQMD details the County’s progress towards attainment in its Air Quality Attainment Plan (AQAP). The BCAQMD, 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. The 2012 Triennial Update of the NSVAB AQAP addresses the progress made in implementing the 2009 AQAP and proposes modifications to the strategies necessary to attain the California ambient air quality standard for the 8-hour ozone at the earliest practicable date. The 2012 AQAP identifies those portions of the NSVAB designated as “non-attainment” for the state ambient air quality standards and discusses the health effects related to the various air pollutants. The plan identifies the air pollution problems that are to be cooperatively addressed on as many fronts as possible in order to make the region a healthier place to live now and in the future. Like the 2006 and 2009 plans, the 2012 AQAP focuses on the adoption and implementation of control measures for stationary sources, area wide sources, and indirect sources, and addresses public education and information programs. The 2012 AQAP also addresses the effect that pollutant transport has on the ability of the NSVAB to meet and attain the state standards. Table 4.2-5 presents a summary of the most current emissions inventory for the NSVAB.

**Table 4.2-5
Ozone Emissions Inventory Data for NSVAB (tons/day)**

Source Category	2006		2020 (Projected)	
	VOC	NO _x	VOC	NO _x
Diesel On-Road Motor Vehicles	3.313	51.854	1.626	19.732
Total On-Road Motor Vehicles	23.191	70.787	10.319	28.102

Source: NSVPA 2012 Triennial Air Quality Attainment Plan, 2013

4.2.2 Impact Analysis

a. Methodology and Significance Thresholds. This analysis follows the guidance and methodologies recommended in the air quality emissions thresholds established by the BCAQMD 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:

1. *Conflict with or obstruct implementation of the applicable air quality plan;*
2. *Violate any air quality standard or contribute substantially to an existing or projected air quality violation;*
3. *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 that exceed quantitative guidelines for ozone precursors);*
4. *Expose sensitive receptors to substantial pollutant concentrations; and/or*
 5. *Create objectionable odors affecting a substantial number of people*

The BCAQMD CEQA Air Quality Handbook (October 2014) Table ES-2 establishes thresholds for criteria air pollutants. Table 4.2-6 summarizes the pollutant thresholds, which are separated by construction and operation-related activities.

**Table 4.2-6
 BCAQMD Thresholds**

Pollutant	Construction	Operation
NO _x	137 lbs/day	25 lbs/day
ROG	137 lbs/day	25 lbs/day
PM ₁₀	80 lbs/day	80 lbs/day

Source: <http://bcaqmd.com/wp-content/uploads/CEQA-Handbook-Appendices-2014.pdf>

Short-Term Emissions Methodology. Emissions from construction activities represent temporary impacts that are typically short in duration, depending 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. Construction-related emissions are speculative at the RTP level because such emissions are dependent on the characteristics of individual development projects. However, because construction of the 2016 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 Methodology. For this EIR, the methodology for determining the significance of air quality impacts is by comparing 2014 existing conditions to the 2016 RTP-SCS conditions in the year 2040. The analysis of air quality also includes a comparison between the expected future conditions with the proposed 2016 RTP-SCS and the expected future conditions in 2040 if no plan were adopted (“No Project” scenario). 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. Therefore, the project’s long term impacts to air quality are considered significant if the project results in mobile source emissions that significantly exceed existing levels. In this case, the pollutants of concern are ozone precursors (NO_x and ROG) and fine particulate matter (PM₁₀), as these are the primary pollutants associated with vehicle transportation.

Projected air emissions from mobile sources were calculated using the Emission FACTors (EMFAC) 2014 model with data for vehicle miles traveled (VMT) from the RTP traffic analysis, which calculated the various scenarios using the County’s Traffic Demand Model (as further described in Section 4.7, *Transportation and Circulation*). Vehicle trips, VMT, and VMT by speed class distributions were provided for the 2014 existing conditions and 2040 projections with and without the project. The VMT by speed bin data was then entered into the EMFAC 2014 model for analysis. The EMFAC emissions factors are established by CARB and accommodate certain mobility assumptions (e.g., vehicle speed, delay times, average trip lengths, and total travel



time). Projected vehicle emissions for the year 2040 under the 2016 RTP-SCS were compared to 2014 existing conditions and with future conditions under the 2040 “No Project” scenario. If county-wide ROG (VOC), NO_x, or PM₁₀ emissions generated by the 2016 RTP-SCS do not exceed the 2014 baseline or the future year 2040 “No Project” scenario, impacts to long-term air quality will not be considered significant.

b. Project Impacts and Mitigation Measures. Implementation of the 2016 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 as well as future development facilitated by the SCS. Long term emissions would be generated indirectly by the on-road vehicles, which would utilize the capital improvements and land uses proposed.

Impact AQ-1 Construction activities associated with transportation projects under the 2016 RTP-SCS, as well as the land use patterns envisioned by the SCS, would have the potential to result in temporary adverse impacts on air quality in Butte County. Impacts would be Class II, significant but mitigable.

There are three primary sources of short term emissions that would be generated by construction of future transportation projects under the 2016 RTP-SCS, as well as future development envisioned by the land use scenario. These sources include: the operation of construction vehicles (i.e., scrapers, loaders, dump trucks); the creation of fugitive dust during clearing and grading; and the use of asphalt or other oil-based substances during the final construction phases. The significance of daily emissions, particularly ROG and NO_x emissions, generated by construction equipment utilized to build transportation improvements and future development would depend on the quantity of equipment used and the hours of operation. The significance of fugitive dust (PM_{2.5} and PM₁₀) emissions would depend upon the following factors: 1) the aerial extent of disturbed soils; 2) the length of disturbance time; 3) whether existing structures are demolished; 4) whether excavation is involved (including the potential removal of underground storage tanks); and 5) whether transport of excavated materials off-site is necessary. The amount of ROG emissions generated by oil-based substances such as asphalt is dependent upon the type and amount of asphalt utilized. Asbestos can also be of concern during demolition activity associated with construction; however, the demolition, renovation, or removal of asbestos-containing materials is subject to the limitations of the National Emissions Standards for Hazardous Air Pollutants (NESHAP) regulations as listed in the Code of Federal Regulations, requiring notification and inspection.

Intersection improvements such as signalization, re-striping, or signal coordination are not expected to generate significant short term emissions impacts. However, other transportation projects as well as future development under the 2016 RTP-SCS may involve grading and paving and/or the construction of permanent facilities. The precise quantity of emissions would need to be determined at the time of the proposed construction of a given transportation improvement or development project. Although an individual improvement or development project may not generate significant short-term emissions, it is probable that several projects would be under construction simultaneously, generating cumulative construction emissions that could impact air quality. However, as recommended by BCAQMD, implementation of



mitigation measures for individual projects would reduce resulting impacts. Impacts would be significant but mitigable.

Mitigation Measures. BCAG shall and transportation project sponsor agencies can and should implement the following mitigation measures for transportation projects identified in Tables 2-1 of Section 2.0, *Project Description*. Butte County and cities in the County can and should implement these measures, where relevant to land use projects implementing the RTP-SCS. Project-specific environmental impacts may require these mitigation measures be revised or expanded in response to site-specific conditions.

AQ-1 BCAG shall and sponsor agencies can and should ensure that all feasible and appropriate mitigation measures set by BCAQMD are implemented. The measures shall be noted on all construction plans, and the lead agency shall perform periodic site inspections. BCAQMD rules and regulations on construction include, but are not limited to, the following:

- Mix backfill soil with water prior to moving;
- Prevent generation of dust plumes by applying water in sufficient quantity;
- Limit vehicular traffic and disturbances on soils where possible;
- Grade each project phase separately, timed to coincide with construction phase;
- Use tarps or other suitable enclosures on haul trucks;
- Maintain effective cover over materials;
- Stabilize sloping surfaces using soil binders until vegetation or ground cover can effectively stabilize the slopes;
- Restrict vehicular access to established unpaved travel paths and limit number and size of staging area entrances and exits;
- Add or remove material from the downwind portion of the storage pile;
- Pre-water soils prior to trenching (18 inches for deep trenching activities); and
- Haul waste material immediately off-site.

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



Impact AQ-2 Implementation of the 2016 RTP-SCS would reduce on-road vehicle emissions when compared to existing conditions and the future “No Project” scenario. Therefore, long-term operational impacts would be Class III, less than significant.

Projected on-road vehicle emissions for the year 2040 under the 2016 RTP-SCS were compared to 2014 baseline conditions and to a future 2040 “No Project” scenario. The “No Project” scenario accounts for future growth, but the transportation improvements identified in the 2016 RTP-SCS would not be implemented; however, it is assumed that the projects as proposed in the 2012 MTP/SCS would be implemented. The on-road vehicle source emissions estimates for the 2016 RTP-SCS were produced with the EPA approved EMFAC2014 emission inventory model developed by CARB for use in California. Table 4.2-7 shows the results of the long-term emissions analysis based on annual VMT for each scenario.

**Table 4.2-7
Regional Emissions Analysis¹**

Scenario	VMT	PM ₁₀ (tons/day)	NO _x (tons/day)	ROG (tons/day)
2014 EIR Baseline	4,901,009	0.43	8.58	3.58
2040 No Project Scenario	7,381,051	0.44	2.03	0.77
2040 Project (2016 RTP-SCS)	6,865,050	0.41	1.89	0.72

¹ The on-road mobile source criteria pollutant emissions estimates for the 2016 RTP-SCS were calculated using CARB’s EMFAC2014 emission inventory model. VMT data were extracted from Fehr and Peers who utilized the BCAG’s Traffic Demand Model (as further described in Section 4.7, Transportation and Circulation) and include pass-through trips from vehicles travelling through Butte County that do not have an origin or destination within the county. PM₁₀ and NO_x emissions are presented above using winter values and ROG emissions are presented above using summer values to provide a conservative estimate based on the seasons in which individual criteria pollutant emissions are highest.

As shown in Table 4.2-7, emissions levels are forecast to decline with implementation of the 2016 RTP-SCS in 2040 compared to 2014, despite projected future growth in Butte County. The 2016 RTP-SCS would also produce lower emissions than the “No Project” scenario would in the year 2040. These estimates are consistent with the state-wide continuing downward emissions trend, due to CARB rules designed to reduce emissions from cars and trucks. NO_x emissions are primarily sourced from trucks and would be lower due in part to the impact of CARB rules designed to reduce NO_x emissions from diesel trucks and buses. NO_x emissions would further decrease due to the transportation improvements and future land use scenario envisioned by the SCS, which encourages infill. This strategy is intended to increase residential and commercial land use capacity within existing developed corridors, shifting a greater share of future growth to these corridors and ultimately increasing density, reducing average trip lengths, and improving circulation and multimodal connections. ROG emissions are primarily due to gasoline vehicles and would decrease due to improvements in vehicle fuel efficiency and emission rates.

Transportation improvements and land use patterns identified in the 2016 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 “No Project” scenario. The 2016 RTP-SCS also includes several goals and policies that would contribute to a



reduction of air pollutant emissions. Therefore, impacts related to criteria pollutants would be less than significant.

Mitigation Measures. None required.

Significance after Mitigation. Impacts would be less than significant.

Impact AQ-3 The transportation improvement projects included under the 2016 RTP-SCS, along with the land use scenario envisioned by the SCS, may facilitate increased exposure of sensitive receptors to hazardous air pollutants that may cause health risks and odors that may be a nuisance. Implementation of the 2016 RTP-SCS would not result in a regional increase in toxic air emissions when compared to the future “No Project” scenario. However, localized increases may occur as a result of development facilitated by the land use scenario. Impacts would be Class II, *significant but mitigable*.

Diesel particulate matter is classified as the primary airborne carcinogen in the state. CARB reports that diesel particulate matter represents about 70 percent of the potential cancer risk from vehicle travel on a typical urban freeway. As discussed above, the significance threshold for long-term public health risk is set at 10 excess cancer cases in a million for cancer risk. For non-cancer risk, the significance level is set at a Hazard Index of more than one (1.0). The Hazard Index of more than one means that predicted levels of a toxic pollutant are greater than the exposure level, which is generally considered acceptable. If a formal health risk assessment shows that a significant impact results, mitigation measures to reduce the predicted levels of toxic air pollutants from the facility to a level of insignificance may be imposed by the lead agency. In addition, diesel exhaust has a distinct odor, which is primarily a result of hydrocarbons and aldehydes contained in diesel fuel. Moreover, the odors associated with diesel exhaust could be a nuisance to nearby receptors.

While toxic air contaminant concentration and health risks within any given distance of mobile sources in the region would decrease, exposure is primarily based on local parameters (e.g., average daily traffic on local roadway segments and 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.

An analysis of on-road mobile source diesel PM₁₀, diesel NO_x, and diesel ROG emissions is shown in Table 4.2-8. With implementation of the 2016 RTP-SCS, the diesel PM₁₀, diesel NO_x, and diesel ROG would be below the 2014 baseline and 2040 “No Project” scenario. Therefore, impacts related to diesel particulate matter exposure at the regional level would be less than significant.

**Table 4.2-8
On-Road Mobile Source Toxics Comparison¹**

Scenario	Diesel PM ₁₀ (tons/day)	Diesel NO _x (tons/day)	Diesel ROG (tons/day)
2014 EIR Baseline	0.19	5.76	0.30
2040 No Project Scenario	0.11	1.70	0.08
2040 Project (2016 RTP-SCS)	0.10	1.58	0.07

¹ The on-road mobile source criteria pollutant emissions estimates for the 2016 RTP-SCS were calculated using CARB's EMFAC2014 emission inventory model. VMT data were extracted from Fehr and Peers using the BCAG's Traffic Demand Model (as further described in Section 4.7, Transportation and Circulation), and include pass-through trips from vehicles travelling through Butte County that do not have an origin or destination within the county. Emissions are presented above using winter values to provide a conservative estimate since it was the season in which individual criteria pollutant emissions from diesel are highest.

The population residing close to freeways or busy roadways may experience adverse health effects beyond those typically found in urban areas. CARB, in the *Air Quality and Land Use Handbook: A Community Health Perspective* (June 2005) recommends avoiding siting new sensitive land uses, such as residences, schools, daycare centers, playgrounds, or medical facilities, within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles/day. Additional non-cancer, health risks attributable to proximity to freeways was seen within 1,000 feet and was strongest within 300 feet. California freeway studies show about a 70% drop-off in particulate pollution levels at 500 feet from freeways (CARB, 2005). As discussed above, proximity to freeways increases cancer risk and exposure to particulate matter. Similarly, proximity to heavily travelled transit corridors and intersections would expose residents to higher levels of diesel particulate matter and carbon monoxide.

As discussed in Section 2.0, *Project Description*, a strategy of the RTP-SCS land use scenario is to direct growth adjacent to transit and other transportation facilities in existing urban areas. This could result in more people being exposed to elevated health risks as compared to areas of the region more distant from such facilities. The location and pattern of the proposed RTP growth would influence travel behavior, and provide a means to determine the impact of future vehicle emissions in the proposed plan area. A compact growth pattern served by an efficient and diverse transportation system facilitates a reduction in automotive travel and increases walking, bicycling, and transit use—all of which reduce individual vehicle trips and associated VMT (refer to Section 4.7, *Transportation and Circulation*).

Reduced VMT and vehicle trips are directly linked to reduced regional criteria air pollutant emissions and toxic air emissions from mobile sources. It is important to note that a variety of other factors contribute to the decline in contaminant emissions compared to existing conditions, including vehicle technology, cleaner fuels, and fleet turnover to more efficient vehicles. However, in order to achieve the greatest VMT reductions from a compact growth pattern, development must also be in close proximity to public transit and major roadway corridors. Although the precise location and density of such development is not known at this time, the proposed RTP may result in new sensitive receptors close to existing and new hazardous air pollutant sources, potentially resulting in the exposure to substantial hazardous air pollutant concentrations. In addition, new sensitive receptors may be exposed to nuisance odors. Therefore, impacts would be significant but mitigable. The siting of new sensitive receptors would be subject to an individual jurisdiction's land use approval processes and

would be analyzed on an individual project basis and subject to mitigation measures identified below.

Mitigation Measures. BCAG shall implement and sponsor agencies can and should implement the following mitigation measure for applicable transportation projects near sensitive land uses. This measure can and should also be implemented for development pursuant to the 2016 RTP-SCS that would result in impacts related to the localized air quality impacts on sensitive land uses.

AQ-3

Consistent with the provisions contained in the CARB Air Quality and Land Use Handbook (June 2005), for the proposed building design for residential, school, and other sensitive use projects located within 500 feet of freeways, heavily travelled arterials, railways, and other sources of diesel particulate matter and other known carcinogens, the sponsor 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 pollutants prior to issuance of a demolition, grading, or building permit. The health risk assessment shall be submitted to the sponsor agency for review and approval. The sponsor agency shall implement any approved health risk assessment recommendations to a level that 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 unfiltered infiltration if the building is not positively pressurized.

Significance after Mitigation. Mitigation measure AQ-3 would assure that sensitive receptors would not be exposed to substantial pollutant concentrations through a variety of measures that would feasibly avoid or minimize exposure to public health impacts as identified in the CARB Air Quality and Land Use Handbook (June 2005). With the implementation of the above mitigation, impacts related to potential health risks would be less than significant.

Impact AQ-4 Re-entrained dust has the potential to increase airborne particulate matter levels in Butte County. The increase in growth expected through the year 2040 in Butte County would result in additional VMT compared to baseline conditions, which would add to the particulate emissions levels in the area. However, re-entrained dust levels would be lower with the 2016 RTP-SCS than the 'No Project' scenario and 2014 baseline. Impacts would be Class III, less than significant.

Re-entrained dust would be generated by roadway activity (i.e., roadway dust kicked up by moving vehicles on paved and unpaved roadways). In addition, dust from construction activity would add to regional dust levels. The synergistic effects of road dust (typically measured as PM₁₀) with ozone and the hazardous constituents of re-entrained road dust itself (carcinogens, irritants, and pathogens) may affect human health by contributing to respiratory illnesses such as asthma and allergies. Although advanced motor vehicle emission control technology has allowed vehicle tailpipe emissions of some pollutants to decrease over the last 20 years, the number of vehicles in use and the amount of vehicle activity has continued to increase. This would suggest that re-entrained road dust has increased as well.

Re-entrained roadway dust as well as roadway construction dust emissions are included in the estimation of criteria pollutant emissions for PM₁₀ discussed in Impacts AQ-1 and AQ-2 above. As discussed, emissions levels for PM₁₀ criteria pollutants would be reduced from the 2014 baseline and 2040 "No Project" scenario with the implementation of the 2016 RTP-SCS. Although VMT increases in 2040, emissions would continue to decrease from 2014 levels due to reductions from state measures. EMFAC 2014 takes into account reductions from the Paveley Clean Car Standard and Advanced Clean Cars. Furthermore, with the implementation of Mitigation Measures AQ-1, the 2016 RTP-SCS would not result in an increase in criteria pollutant emissions over the 2040 "No Project." Increased VMT may contribute to an increase in re-entrained roadway dust; however, the 2016 RTP-SCS would result in fewer VMT and lower re-entrained dust emissions when compared to the "No Project" scenario.

Mitigation Measures. None required.

Significance after Mitigation. Impacts are less than significant.

Impact AQ-5 The 2016 RTP-SCS would reduce emissions of ozone precursors consistent with the goals of the 2012 Triennial Update of the NSVAB AQAP. Impacts would be Class III, less than significant.

The 2012 Triennial Update of the NSVAB AQAP was a jointly prepared document with other air districts in the NSVAB and does not contain an inventory of criteria pollutant emissions specific to Butte County. As such, a direct comparison of emissions cannot be made between the AQAP and the proposed project. However, as discussed in Impact AQ-2, projects and land use patterns facilitated by the SCS within the 2016 RTP-SCS are projected to reduce emissions of ozone precursors below the 2014 baseline and future “No Project” scenario, consistent with the goals of the AQAP. This decrease in emissions is due to the proposed transportation improvements and land use patterns envisioned by the 2016 RTP-SCS, which, among other strategies, encourages infill development. This strategy would selectively increase residential and commercial land use capacity within existing developed corridors (Urban Center and Corridor Areas), shifting a greater share of future growth to these corridors, ultimately increasing density, reducing average trip lengths, and improving circulation and multi-modal connections, and leading to lower average VMT (refer to Section 4.7, *Transportation and Circulation*). While the State Implementation Plan (SIP) does not include any Transportation Control measures for BCAG, fewer VMT and vehicle trips would result in reduced regional criteria air pollutant emissions and toxic air contaminant emissions from mobile sources under the 2016 RTP-SCS.

Mitigation Measures. None required.

Significance After Mitigation. The 2016 RTP-SCS is considered consistent with the NSVAB AQAP and therefore impacts are less than significant.

c. Specific Projects That May Result in Impacts. The proposed projects listed in Table 2-1 of Section 2.0, *Project Description*, would have the potential to result in air quality impacts. All projects that include a construction component would be associated with Impact AQ-1. Projects that include roadway and transit features and/or expansions would be associated with Impacts AQ-2 through AQ-5. Additional specific analysis will need to be conducted as the individual projects are designed and implemented in order to determine the actual magnitude of impact. Mitigation measures discussed above could apply to these specific projects.

4.3 BIOLOGICAL RESOURCES

4.3.1 Setting

a. Habitats.

Butte County contains a diversity of tree (hardwood, coniferous, and mixed, and riparian forests), shrub (chaparrals), herbaceous (grasslands, pastures) and developed habitat types. Twenty seven terrestrial habitat types were mapped using the California Department of Fish and Wildlife (CDFW; formerly referred to as the California Department of Fish and Game) California Wildlife Habitat Relationships (CWHR) habitat classification system within Butte County (CDFW, 2016) (see Figure 4.3-1). Because of the scale of this Program EIR, the habitat categories presented in Figure 4.3-1 depict a broad illustration of the CWHR types found within Butte County. A description of each of the habitats adapted from *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer, 1988) is presented below. Two aquatic habitat types are also designated and are discussed. Note that these habitats are generalized and site-specific variation is present throughout Butte County. Also note that the CWHR classification system maps habitats from a broad perspective, and in many areas it is expected that two or more habitats may intergrade with one another. Habitats that occur within populated areas also show variation owing to greater anthropogenic influences, such as the introduction of non-native plant species and non-native and feral animals.

The CWHR habitat classification scheme has been developed to support the CWHR System, a wildlife information system and predictive model for California's regularly-occurring birds, mammals, reptiles and amphibians. When first published in 1988, the classification scheme had 53 habitats. In 2016, there are 59 wildlife habitats in the CWHR System: 27 tree, 12 shrub, 6 herbaceous, 4 aquatic, 8 agricultural, 1 developed, and 1 non-vegetated.

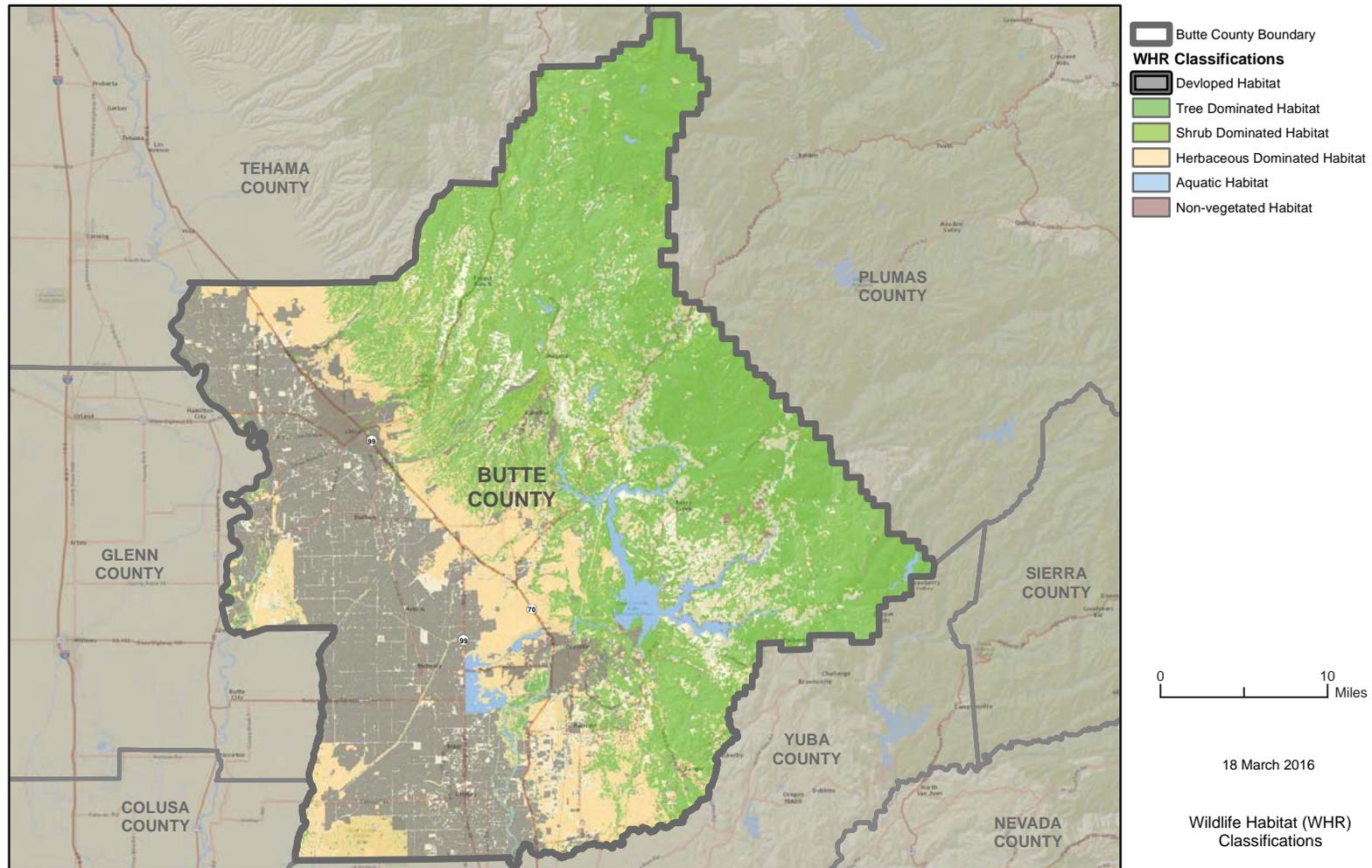
Butte County is a biologically diverse part of the state. According to the CWHR System, there are 43 wildlife habitat classifications in Butte County out of 59 found in the state. Appendix B contains a brief description of each habitat that is found in Butte County. Figure 4.3-1 illustrates the habitat and other land cover types within Butte County.

b. Wetlands.

Drainages. Butte County contains a major river, the Sacramento River, which drains an area of the southern Cascade Range, the northwestern Sierra Nevada, and the Central Valley. Major tributaries in the county include the Feather River, Butte Creek and Big Chico Creek and numerous streams (see Figure 4.3-2). The drainages within these watersheds are of high biological importance as they provide valuable foraging habitat, breeding habitat, and movement habitat for a wide variety of species, including sensitive species such as Chinook salmon (fall, late-fall, winter, and spring), Central Valley steelhead, and green sturgeon.

Canals. Butte County also contains a network of waterways that transport water through the county for use in irrigation. Western Canal, Cherokee Canal, and Main Drainage Canal are the predominant man-made canals in the County.







Source: Gallaway Enterprises, 2016

Hydrology/Riverine Resources

Figure 4.3-2



Wetlands. Wetlands are regarded as important biological resources both because of their rarity and because they serve a variety of functional values. Several types of wetlands exist in Butte County, including freshwater marshes, vernal pools, and riparian habitats.

Vernal Pools. These seasonal wetlands are small depressions that fill with water during the winter, gradually drying during the spring and becoming completely dry in the summer. These pools are found in only a few places in the world outside of California. Vernal pool vegetation comprises plant species that begin their growth as aquatic or semi-aquatic plants and transition to a dryland environment as the pool dries. Most vernal pool plants are annual herbs. Special status species supported by vernal pools include vernal pool fairy shrimp (*Branchinecta lynchi*) and Butte County meadowfoam (*Limnanthes floccosa* ssp. *californica*). In addition to vernal pools, several areas within Butte County contain wetlands mapped by the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) (USFWS, 2016c). A general description of each of the classifications is provided below. Of those wetland types mapped by the NWI, freshwater emergent wetland, riverine and lacustrine habitats are also mapped by the CWHR.

Freshwater Emergent Wetlands. Freshwater emergent wetlands include all non-tidal waters dominated by emergent herbaceous plant species, mosses, and/or lichens. Wetlands of this type are also low in salinity. Wetlands that lack vegetation can be included in this class if they are less than 20 acres, do not have an active wave-formed or bedrock shoreline feature, have a low water depth less than 6.6 feet. This wetland type is also mapped by the CWHR. Freshwater emergent wetlands are characterized by erect, rooted herbaceous hydrophytes. Dominant vegetation is generally perennial monocots. All emergent wetlands are flooded frequently, enough so that the roots of the vegetation prosper in an anaerobic environment. The vegetation may vary in size from small clumps to vast areas covering several kilometers. The acreage of Fresh Emergent Wetlands in California has decreased dramatically since the turn of the century due to drainage and conversion to other uses, primarily agriculture.

Freshwater Forested/Shrub Wetlands. These wetlands include non-tidal waters that are dominated by trees and shrubs, with emergent herbaceous plants, mosses and/or lichens. Wetlands that lack vegetation can be included in this classification if they also exhibit the same criteria as described for freshwater emergent wetlands. The vegetation found in freshwater forested/shrub wetlands is generally dominated by woody vegetation such as shrubs and trees.

Freshwater Ponds. Freshwater ponds include non-tidal waters with vegetative cover along its edges such as trees, shrubs, emergent herbaceous plants, mosses, and/or lichens. Freshwater ponds can be man-made or natural and typically consist of an area of standing water with variable amounts of shoreline. These wetlands and deepwater habitats are dominated by plants that grow on or below the surface of the water. This wetland type is also mapped by the CWHR and categorized as lacustrine habitat that includes vernal pools. Vernal pools predominate in the alluvial valleys and flat volcanic deposits in the western portions of the county, principally on soils underlain by hardpan.

Lakes. Lakes are a lacustrine system that includes wetlands and deepwater habitats that are located in a topographic depression or dammed river channel. These areas tend to be greater than 20 acres. Vegetation cover within this habitat is generally less than 30 percent and



often occurs in the form of emergent or surface vegetation. Substrates are composed of at least 25 percent cover of particles smaller than stones. This wetland type is also mapped by the CWHR and categorized as lacustrine habitat that also includes vernal pool complexes. Prominent reservoirs include Lake Oroville and the Thermalito Forebay and Afterbay

Riverine. Riverine habitats are a riverine system that includes all wetlands and deepwater habitats contained in natural or artificial channels that contain periodically or continuously flowing water. This system may also form a connecting link between two bodies of standing water. Substrates generally consist of rock, cobble, gravel or sand. The Sacramento River and its primary tributaries – Feather River, Butte Creek and Big Chico Creek – are the major riverine systems in Butte County.

c. Watersheds

A watershed is a region that is bound by a divide that drains to a common watercourse or body of water. Watersheds serve an important biological function, oftentimes supporting an abundance of aquatic and terrestrial wildlife including special-status species and anadromous and native local fisheries. Watersheds provide conditions necessary for riparian habitat.

Butte County is situated within the Sacramento River Basin. Some of the tributaries to the Sacramento River in Butte County include the Feather River, Pine Creek, Rock Creek, Mud Creek, Big Chico Creek, Butte Creek, Cherokee Canal/Clear Creek, as well as other smaller drainages. Some of the larger watersheds include Lake Oroville, Thermalito Forebay and Afterbay, Paradise Lake, and Sly Creek Reservoir. Figure 4.3-2 depicts the hydrology within the planning area.

Big Chico Creek Watershed. Big Chico Creek originates from a series of springs that flow off of the Sierra Mountains to form a main channel near Butte Meadows. This watercourse flows 45 miles from its origin, crossing portions of Butte and Tehama counties, to its confluence with the Sacramento River. The Big Chico Creek watershed also encompasses three smaller drainages to the north: Sycamore, Mud, and Rock Creeks.

Sycamore Creek is a tributary to Mud Creek. Rock Creek originates to the north of Sycamore Creek and drains the north side of Cohasset Ridge flowing 28 miles before it joins Mud Creek. Mud Creek drains off of Cohasset Ridge to the south, flowing 26 miles to its confluence with Big Chico Creek.

Butte Creek Watershed. Butte Creek originates in the Lassen National Forest at over 7,000 feet. Butte Creek travels through canyons in the northwestern region of Butte County, entering the valley floor near Chico. The northern Sierra Nevada mountain range and southern Cascade mountain ranges make up the mountainous region of the watershed, while a portion of the watershed lies within the Sacramento Valley. Once Butte Creek enters the valley region of the watershed near Chico, it travels approximately 45 miles before it enters the Sacramento River. Levees were constructed along Butte Creek in the 1950s by the USACE. These levees extend for over 14 miles along the Butte Creek channel.

Cherokee Watershed. Cherokee Canal, which was originally constructed to protect agricultural land from mining debris, now serves as an irrigation drainage canal. Dry Creek



becomes Cherokee Canal northeast of Richvale. Gold Run and Cottonwood Creek join the Cherokee Canal upstream of the Richvale Road crossing. Cherokee Canal enters Butte Creek near the southwestern corner of Butte County, south of Highway 162.

Feather River/Lower Honcut Creek Watershed. The Feather River flows through the Oroville Dam southward before merging with the Yuba River at Marysville and Yuba City, and eventually the Sacramento River. Dry Creek is located within the City of Oroville and contains three tributaries that converge within the City of Oroville. Wyman Ravine, which originates south of the City of Oroville, drains the southern portion of the watershed and flows into Honcut Creek. The north, middle, and south Honcut Creeks drain both the Lake Oroville/Upper Feather River watershed and the Feather River/Lower Honcut Creek watershed. The south fork of Honcut Creek forms the southern border of Butte County.

Lake Oroville/Upper Feather River Watershed. The North Fork of the Feather River originates in northern California in the Lassen Volcanic National Park. It flows south into Lake Oroville, where it joins the south and middle forks of the Feather River. Oroville Dam, constructed in 1968, houses six power generation units and four additional units in the Thermalito Power Plant. The Thermalito Forebay and Afterbay are holding reservoirs, located downstream of Lake Oroville, that allow water released from Lake Oroville to generate power during established peak periods and to be pumped back into the lake during off - peak periods. Other smaller creeks in the watershed flow into Lake Oroville, including Cirby and Concow Creeks, which converge before flowing into the Concow Reservoir.

Little Chico Creek Watershed. Little Chico Creek originates on the northwestern boundary of the Butte Creek watershed and flows through canyons before reaching the City of Chico. Before Little Chico Creek enters the City of Chico urban area, it passes a diversion structure constructed in the 1960's, which is intended to divert high flow from Little Chico Creek into Butte Creek. Little Chico Creek flows through the City of Chico before entering the valley, at which point it disperses through numerous waterways within the region.

Pine Creek Watershed. The Pine Creek watershed is located in the northeastern section of Butte County. Pine Creek, Rock Creek, and Keefer Slough, drain part of the northern region of the Big Chico Creek watershed and eventually drain into the Sacramento River.

d. Wildlife Movement Corridors.

Wildlife movement corridors, or habitat linkages, are generally defined as connections between habitat patches that allow for physical and genetic exchange between otherwise isolated animal populations. Such linkages may serve a local purpose, such as providing a linkage between foraging and denning areas, or they may be regional in nature. Some habitat linkages may serve as migration corridors, wherein animals periodically move away from an area and then subsequently return. Others may be important as dispersal corridors for young animals. A group of habitat linkages in an area can form a wildlife corridor network.

The habitats within the link do not necessarily need to be the same as the habitats that are being linked. Rather, the link merely needs to contain sufficient cover and forage to allow temporary inhabitation by ground-dwelling species. Typically habitat linkages are contiguous strips of



natural areas, though dense plantings of landscape vegetation can be used by certain disturbance-tolerant species. Depending upon the species using a corridor, specific physical resources (such as rock outcroppings, vernal pools, or oak trees) may need to be located within the habitat link at certain intervals to allow slower-moving species to traverse the link. For highly mobile or aerial species, habitat linkages may be discontinuous patches of suitable resources spaced sufficiently close together to permit travel along a route in a short period of time.

Wildlife movement corridors can be both large and small scale. The mountainous regions of Butte County may support wildlife movement on a regional scale while riparian corridors, waterways, flood control channels, canals, contiguous habitat and upland habitat on levees may provide more local scale opportunities for wildlife movement throughout the county. The CDFW BIOS (2016) mapped several essential connectivity areas within Butte County. One corridor extends from the border with Tehama County southward through the Paradise Ridge area then to Lake Oroville. A second corridor extends from the boarder with Tehama County in a southeast direction, across the Philbrook area, towards western Plumas County.

A summary of Salmon and Steelhead Trout Fisheries and Migratory Deer are provided in Appendix B.

e. Noxious Weeds

For the purpose of this analysis and future project-specific assessments, a noxious weed is defined as a plant that could displace native plants and natural habitats, affect the quality of forage on rangelands, or affect cropland productivity. The California Department of Food and Agriculture (CDFA) lists weeds and assigns ratings (A–C) to each species on the list. The ratings reflect CDFA’s view of the statewide importance of the pest, the likelihood that eradication or control efforts would be successful, and the present distribution of the pest in the state. These ratings are guidelines that indicate the most appropriate action to take against a pest under general circumstances. The rating system is explained below:

- **A:** an organism of known economic importance subject to state (or commissioner, when acting as a state agent) enforced action involving eradication, quarantine, containment, rejection, or other holding action.
- **B:** an organism of known economic importance subject to eradication, containment, control, or other holding action at the discretion of the individual county agricultural commissioner, or an organism of known economic importance subject to state- endorsed holding action and eradication only when found in a nursery.
- **C:** an organism subject to no state-enforced action outside of nurseries except to retard spread at the discretion of the commissioner, or an organism subject to no state-enforced action except to provide for pest cleanliness in nurseries.

In subsequent environmental review of Butte County transportation projects, a qualified biologist would develop a target list of noxious weeds that present a risk to the specific project area. The target list would include all A-rated weed species. Some B- and C-rated species would be included on project specific target lists if they are identified as target noxious weeds by the



county agricultural commission. Weeds would also be included in target lists if they are considered to have great potential for displacing native plants and damaging natural habitats but are not considered too widespread to be controlled effectively. Noxious weeds in Butte County were not inventoried for this program-level analysis because target weeds would differ widely from project to project, depending on the sensitivity of the site to infestation, the nature of the proposed project, and the type of weeds in the immediate area.

f. Special Status Species and Sensitive Communities.

For the purpose of this EIR, 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) and National Marine Fisheries Service (NMFS) 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, which are defined as:

List 1A = Plants presumed extinct in California

List 1B.1 = Rare or endangered in California and elsewhere; seriously endangered in California (over 80 percent of occurrences threatened/high degree and immediacy of threat)

List 1B.2 = Rare or endangered in California and elsewhere; fairly endangered in California (20-80 percent occurrences threatened)

List 1B.3 = Rare or endangered in California and elsewhere, not very endangered in California (<20 percent of occurrences threatened or no current threats known)

List 2 = Rare, threatened or endangered in California, but more common elsewhere

List 3 = Plants needing more information (most are species that are taxonomically unresolved; some species on this list meet the definitions of rarity under CNPS and CESA)

List 4.1 = Plants of limited distribution (watch list), seriously endangered in California

List 4.2 = Plants of limited distribution (watch list), fairly endangered in California (20-80 percent occurrences threatened)

List 4.3 = Plants of limited distribution (watch list), not very endangered in California

Queries of the USFWS Environmental Conservation Online System (ECOS): Information, Planning and Conservation System (IPaC) (USFWS, 2016b), USFWS Critical Habitat Portal (USFWS, 2016a), California Natural Diversity Database (CNDDDB) (California Department of Fish and Wildlife, 2016), and California Native Plant Society (CNPS) *Online Inventory of Rare, Threatened and Endangered Plants of California* (CNPS, 2016) were conducted. 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 Butte County.

Sensitive Communities and Critical Habitat. Several natural communities considered sensitive by the CDFW occur within Butte County (see Figure 4.3-3). The CNDDDB lists eight sensitive natural communities that occur within Butte County. Federally designated critical habitat for twelve species also occurs in Butte County (see Figure 4.3-4). These sensitive communities and critical habitats are listed in Appendix B.

Special Status Plants and Animals. Butte 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 CNDDDB (CDFW, 2016), CNPS (2016), and USFWS ECOS IPaC (2016) together list special status plant (67 species) and animal (53 species) species that are known or with potential to occur within Butte County. The status and habitat requirements for each of these species are presented in Appendix B.

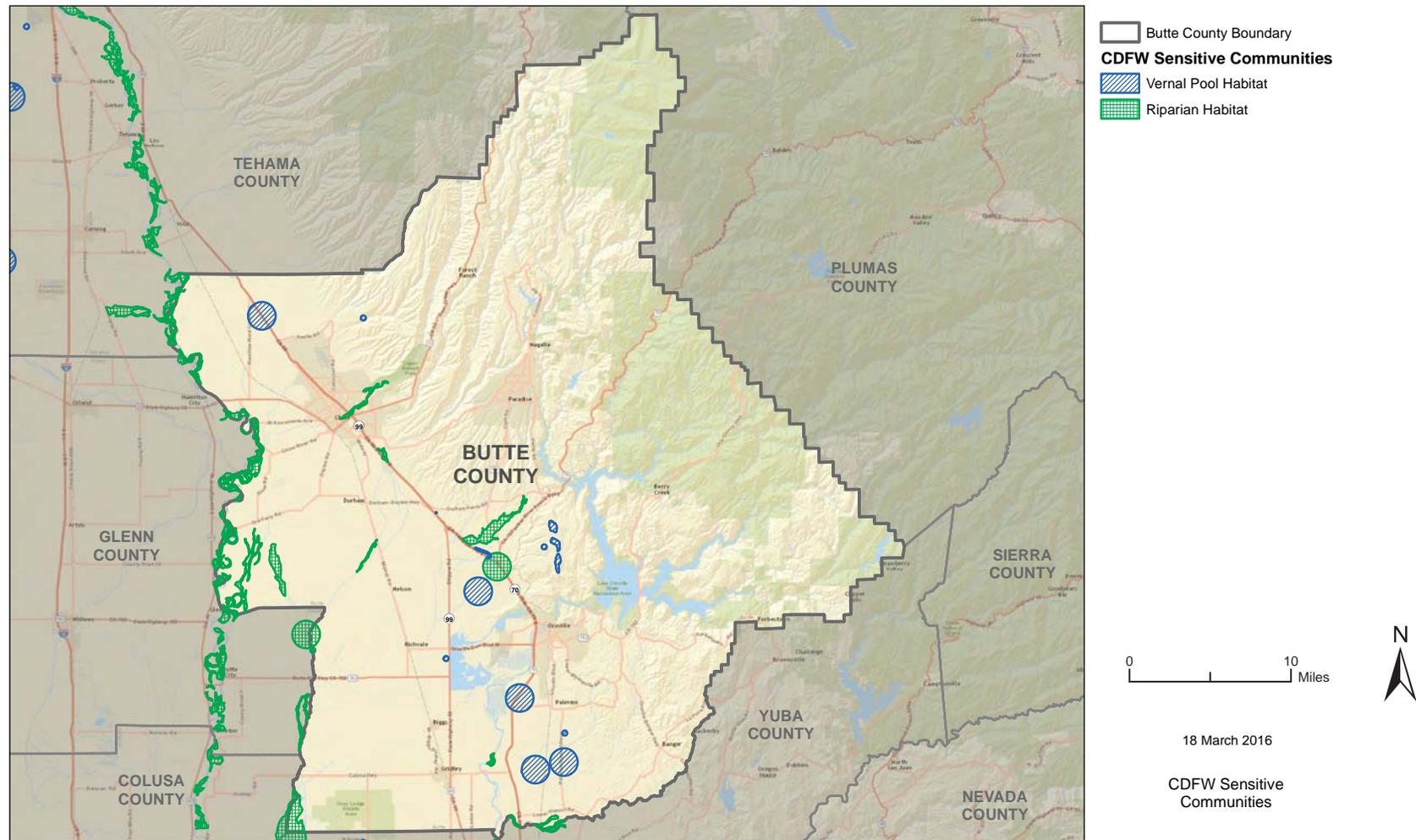
g. Regulatory Framework.

Federal, state, and local authorities under a variety of statutes and guidelines share regulatory authority over biological resources. The primary authority for general biological resources lies within the land use control and planning authority of local jurisdictions, which in this instance is the County of Butte and local municipalities. The CDFW is a trustee agency for biological resources throughout the state under the California Environmental Quality Act (CEQA) and also has direct jurisdiction under the California Fish and Game Code (CFGC), which includes, but is not limited to, resources protected by the State of California under the CESA.

Federal and State Jurisdictions.

United States Fish and Wildlife Service. The USFWS implements the Migratory Bird Treaty Act (16 United States Code [USC] Section 703-711) and the Bald and Golden Eagle Protection Act (16 USC Section 668). The USFWS and NMFS share responsibility for implementing the Federal Endangered Species Act (FESA) (16 USC § 153 *et seq.*). The USFWS generally implements the FESA for terrestrial and freshwater species, while the NMFS implements the FESA for marine and anadromous species. Projects that would result in “take” of any federally listed threatened or endangered species are required to obtain permits from the USFWS and/or NMFS through either Section 7 (interagency consultation with a federal nexus) or Section 10 (Habitat Conservation Plan) of FESA, depending on the involvement by the federal government in permitting and/or funding of the project. The permitting process is used to determine if a project would jeopardize the continued existence of a listed species and what measures would be required to avoid jeopardizing the species. “Take” under federal definition means to harass, harm (which includes habitat modification), pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Proposed or candidate species do not have the full protection of FESA; however, the USFWS and NMFS advise project applicants that they could be elevated to listed status at any time.

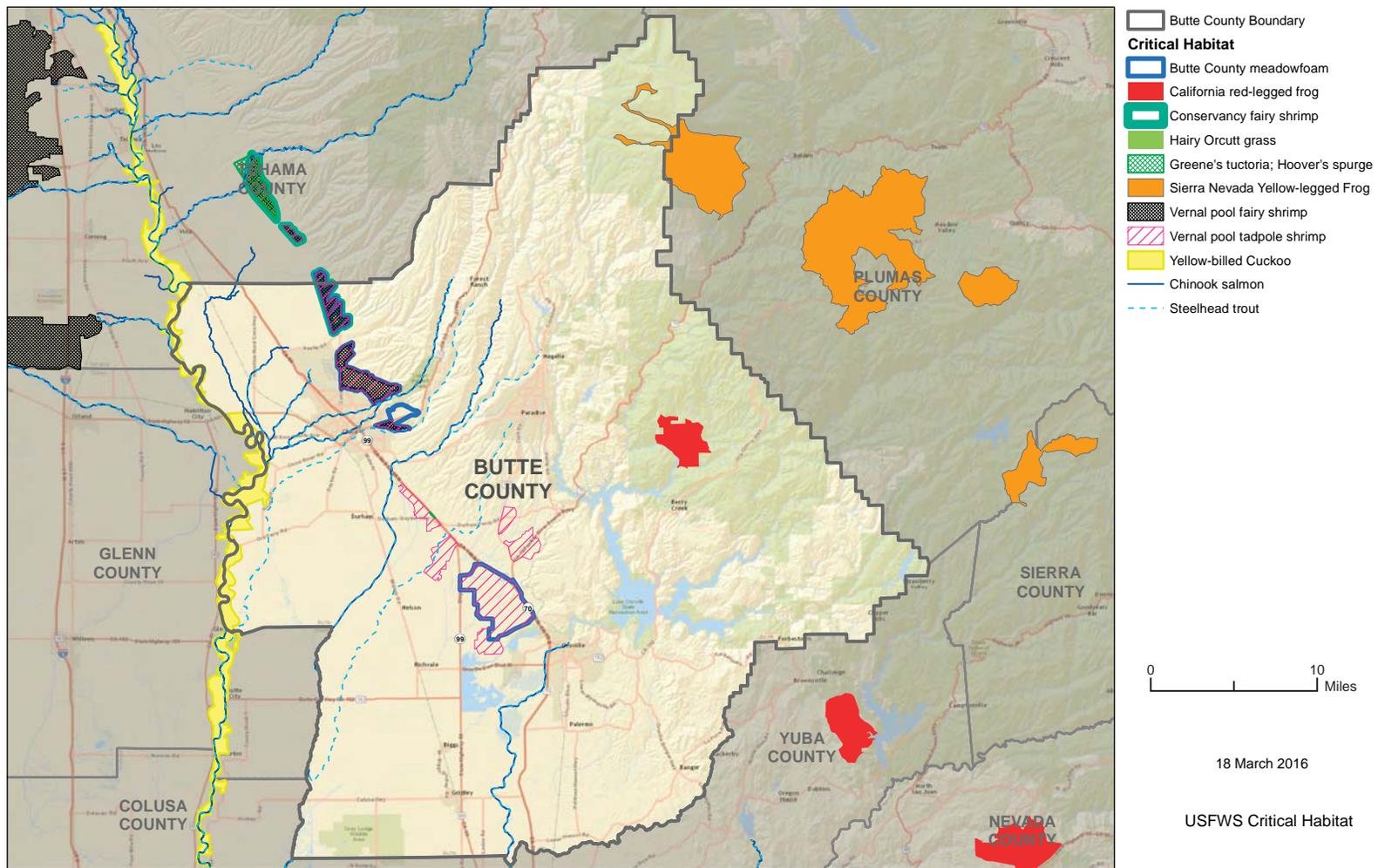




Source: Gallaway Enterprises, 2016

Sensitive Communities

Figure 4.3-3



Source: Gallaway Enterprises, 2016

Critical Habitat

Figure 4.3-4

United States Army Corps of Engineers. Under Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers (USACE) has authority to regulate activities that result in discharge of dredged or fill material into wetlands or other “waters of the United States.” Perennial and intermittent creeks are considered waters of the United States if they are hydrologically connected to other jurisdictional waters. The USACE also implements the federal policy embodied in Executive Order 11990, which is intended to result in no net loss of wetlands. In achieving the goals of the Clean Water Act, the USACE seeks to avoid adverse impacts and offset unavoidable adverse impacts on existing aquatic resources. Any discharge into wetlands or other “waters of the United States” that are hydrologically connected and/or demonstrate a significant nexus to jurisdictional waters would require a permit from the USACE prior to the start of work. Typically, when a project involves impacts to waters of the United States, the goal of no net loss of wetlands is met through compensatory mitigation involving creation or enhancement of similar habitats.

California Department of Fish and Wildlife (formerly the California Department of Fish and Game). The CDFW derives its authority from the CFGC. The CESA (Fish and Game Code Section 2050 et seq.) prohibits “take” of state-listed threatened and endangered species. Take under CESA is restricted to direct harm of a listed species and does not prohibit indirect harm by way of habitat modification. The CDFW additionally prohibits take for species designated as Fully Protected under the CFGC under various sections. Projects that would result in take of any state listed threatened or endangered species are required to obtain an incidental take permit (ITP) pursuant to Fish and Game Code Section 2081. The issuance of an ITP is dependent upon the following: 1) the authorized take is incidental to an otherwise lawful activity; 2) the impacts of the authorized take are minimized and fully mitigated; 3) the measures required to minimize and fully mitigate the impacts of the authorized take are roughly proportional in extent to the impact of the taking on the species, maintain the applicant’s objectives to the greatest extent possible, and are capable of successful implementation; 4) adequate funding is provided to implement the required minimization and mitigation measures and to monitor compliance with and the effectiveness of the measures; and 5) issuance of the permit will not jeopardize the continued existence of a state-listed species.

California Fish and Game Code sections 3503, 3503.5, and 3511 describe unlawful take, possession, or destruction of birds, nests, and eggs. Fully protected birds (CFGC Section 3511) may not be taken or possessed except under specific permit. Section 3503.5 of the Code protects all birds-of-prey and their eggs and nests against take, possession, or destruction of nests or eggs. Species of Special Concern (SSC) is a category used by the CDFW for those species that are considered to be indicators of regional habitat changes or are considered to be potential future protected species. Species of Special Concern do not have any special legal status except those afforded by the Fish and Game Code as noted above. The SSC category is intended by the CDFW for use as a management tool to include these species into special consideration when decisions are made concerning the development of natural lands, and these species are considered sensitive as described under the CEQA Appendix G questions. The CDFW also has authority to administer the Native Plant Protection Act (NPPA) (CFGC Section 1900 et seq.). The NPPA requires the CDFW to establish criteria for determining if a species, subspecies, or variety of native plant is endangered or rare. Under Section 1913(c) of the NPPA, the owner of land where a rare or endangered native plant is growing is required to notify the department at least 10 days in advance of changing the land use to allow for salvage of the plant(s).



Perennial and intermittent streams and associated riparian vegetation, when present, also fall under the jurisdiction of the CDFW. Section 1600 et seq. of the Fish and Game Code (Lake and Streambed Alteration Agreements) gives the CDFW regulatory authority over work within the stream zone (which could extend to the 100-year flood plain) consisting of, but not limited to, the diversion or obstruction of the natural flow or changes in the channel, bed, or bank of any river, stream or lake.

Regional Water Quality Control Board. The State Water Resources Control Board (SWRCB) and each of nine local Regional Water Quality Control Boards (RWQCB) has jurisdiction over “waters of the State” pursuant to the Porter-Cologne Water Quality Control Act, which are defined as any surface water or groundwater, including saline waters, within the boundaries of the State. The SWRCB has issued general Waste Discharge Requirements (WDRs) regarding discharges to “isolated” waters of the State (Water Quality Order No. 2004-0004-DWQ, *Statewide General Waste Discharge Requirements for Dredged or Fill Discharges to Waters Deemed by the U.S. Army Corps of Engineers to be Outside of Federal Jurisdiction*). The local RWQCB enforces actions under this general order for isolated waters not subject to federal jurisdiction, and is also responsible for the issuance of water quality certifications pursuant to Section 401 of the CWA for waters subject to federal jurisdiction.

California Department of Transportation - California Streets and Highways Code Section 156.3. Assessments and remediation of potential barriers to fish passage for transportation projects using state or federal transportation funds are required. Such assessments must be conducted for any projects that involve stream crossings or other alterations and must be submitted to the CDFW.

Local Jurisdictions General Plans. A discussion of the various General Plans adopted within Butte County and how they pertain to the protection of biological resources is presented below and in Appendix B.

Butte County. The Conservation and Open Space Element of the Butte County General Plan includes goals, policies and actions to protect biological resources. Various policies are also included that pertain to, but are not limited to, protection of rare and endangered species, development in environmentally sensitive areas, and protection of riverine and riparian areas. Goals, policies and actions regarding biological resources that are applicable to the project in Butte County pursuant to the 2016 RTP are listed in Appendix B.

City of Chico. The Open Space and Environment Element of the City of Chico General Plan includes goals, policies and actions to protect the natural resources found within the city. Goals, policies and actions that are applicable to projects in Chico pursuant to the 2016 RTP are listed in Appendix B.

City of Gridley. The Conservation Element and Open Space Element of the City of Gridley General Plan includes goals, policies and implementation measures to protect the biological resources found within the city. The policies and implementation measures that are applicable to projects in Gridley pursuant to the 2016 RTP are listed in Appendix B.



City of Biggs The Conservation, Open Space and Recreation Element of the City of Biggs General Plan includes goals, policies and actions to protect the biological resources found within the city. The goals, policies and actions that are applicable to projects in the City of Biggs pursuant to the 2016 RTP are listed in Appendix B.

City of Oroville. The Open Space / Natural Resource Conservation Element of the City of Oroville General Plan includes goals, objectives and implementation measures to protect the biological resources found within the city. The goals, objectives and implementation measures that are applicable to projects in the City of Biggs pursuant to the 2016 RTP are listed in Appendix B.

Town of Paradise. The Open Space, Natural Resources and Conservation Element of the Town of Paradise General Plan includes objectives, policies, and implementation measures to protect the biological resources found within the city. The objectives, policies and implementation measures that are applicable to projects in the Town of Paradise pursuant to the 2016 RTP are listed in Appendix B.

Regional Conservation Planning. A Habitat Conservation Plan (HCP) is a federal planning document that is prepared pursuant to Section 10 of the FESA. An approved HCP within a defined plan area allows for the incidental take of species and habitat that are otherwise protected under FESA during development activities.

A Natural Community Conservation Plan (NCCP) is a state planning document administered by CDFW. An approved NCCP within a defined plan area allows for the incidental take of species and habitat that are otherwise protected under CESA during growth and development activities.

Butte Regional Conservation Plan. BCAG is in the process of developing an HCP/NCCP for Butte County. The HCP/NCCP, called the Butte Regional Conservation Plan (BRCP), takes a broad-based ecosystem approach to planning for the protection of biological diversity in perpetuity. The BRCP is intended to establish and implement an effective program to conserve ecologically important resources in the lowland and foothill region of Butte County, including sensitive, at-risk species and their habitats, natural communities, and biodiversity. Important to the success of the BRCP is the continued ecological and economic function of working landscapes, including certain farming and ranching practices, and the preservation of open space. The BRCP addresses state and federal endangered species compliance requirements for the County of Butte, the City of Oroville, the City of Chico, the City of Biggs, the City of Gridley, the Butte County Association of Governments (BCAG), the California Department of Transportation (Caltrans), Western Canal Water District (WCWD), Biggs West Gridley Water District, Butte Water District, Richvale Irrigation District, and the BRCP Implementing Entity that will be established to implement the Plan (collectively, the "Permit Applicants" prior to permit issuance or "Permittees" following permit issuance) for activities and projects in the Plan Area that they conduct or approve. This Plan provides a more efficient, consistent, and effective alternative to project-by-project permitting that may be costly and time consuming for applicants and often results in uncoordinated and biologically ineffective mitigation.



BRCP Status. The BRCP has been in development since 2007, and has involved the public and other stakeholders interested in the region's future growth and protection of natural resources. Phase one included the development of an Ecological Baseline Conditions Report, supporting GIS database, Planning and Decision Making Structure, Covered Species Accounts, and determining the plan area boundary. Phase two included assembling an Independent Science Advisory Panel, coordinating a guidance report, and developing a planning agreement, public participation plan, covered species accounts, and species habitat models, as well as completing the three administrative draft chapters of the BRCP. Phase three included completion of the administrative draft BRCP. Phase four included preparation of the administrative draft BRCP, preparation of an administrative draft EIS/EIR, public workshops, development of a public draft BRCP and EIS/EIR, and development of draft implementing agreements. Phase five is currently underway and includes the following: development of a final BRCP and final EIS/EIR, and adopting/permitting of the BRCP.

BRCP Implementation. The BRCP is intended to establish a coordinated process for permitting and mitigating the incidental take of endangered species throughout the plan area. This process creates an alternative to the current project-by-project approach. Rather than individually surveying, negotiating, and securing mitigation as typically occurs through project by project mitigation, once the BRCP is in place, project proponents will receive authorization to proceed under programmatic endangered species permits by paying a fee or dedicating on-site mitigation.

The fees are collected by an implementation entity (in this case BCAG) as defined in the BRCP. The implementation entity uses the fee money, as well as grants and any other funding sources established in the plan, to purchase habitat lands and easements from willing sellers. Collected funds are also used for monitoring and any habitat enhancement or management actions.

4.3.2 Impact Analysis

a. Methodology and Significance Thresholds. It should be noted that the following analysis is programmatic, and encompasses the broader 2016 RTP region because final designs (which also includes project components such as potential staging areas, project access, etc.) are not developed for projects included in the 2016 RTP. Thus specific impacts to biological resources are unknown. Data used for this analysis include aerial photographs, topographic maps, the CNDDDB, the CNPS online inventory of rare and endangered plants, and accepted scientific texts to identify species. Federal special status species inventories maintained by the USFWS were reviewed in conjunction with the CNDDDB and CNPS online inventory. Other data on biological resources were collected from numerous sources, including relevant literature, maps of natural resources, and data on special status species and sensitive habitat information obtained from the CDFW CNDDDB (2016), CDFW BIOS (2016), CDFW CWHR (2016), CNPS online *Inventory of Rare, Threatened, and Endangered Plants of California* (2016), and USFWS ECOS IPaC (2016b). The USFWS Critical Habitat Mapper (2016a) and National Wetlands Inventory (NWI; 2016c) were also queried.



Evaluation Criteria. The following thresholds are based on Appendix G of the *State CEQA Guidelines*. Impacts would be significant if the 2016 RTP-SCS would result in any of the following:

7. *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.*
8. *Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.*
9. *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.*
10. *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.*
11. *Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.*
12. *Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.*

The following section presents a programmatic-level discussion of the potential for impacts to sensitive biological resources from implementation of the 2016 RTP.

b. Project Impacts and Mitigation Measures.

Impact B-1 Implementation of transportation improvements proposed and the land use scenario envisioned by the 2016 RTP-SCS may result in impacts to special status plant and animal species including their Habitat or Movement Corridors. Impacts would be Class II, significant but mitigable.

The USFWS, CNDDDB and CNPS databases identified 130 special status species that occur, or potentially occur within the region. All species are presumed present at any given time throughout their habitat range. Some species require localized micro-habitats, while others are highly mobile and may occur throughout the County. Many of the documented special status species may be directly or indirectly affected by individual RTP projects within the planning area if the improvements are to encroach on the species' habitat, or movement corridors. Appendix B provides the species detailed description of the species habitat and listing status. Because of the broad-scale nature of the 2016 RTP-SCS, a precise, project-level analysis of the specific impacts of individual transportation projects on special status species is not possible at this time and the level of analysis is maintained at the county level. That said some special



status species likely will be encountered at the locations where projects administered under the 2016 RTP-SCS would occur. Thus, it is assumed that some resources will not be avoided and that potentially significant impacts would occur. Construction and maintenance activities associated with individual RTP projects could result in the direct loss or indirect disturbance of special status plant and wildlife species. Impacts on special status species or their habitat could result in a substantial reduction in local population size, lowered reproductive success, or habitat fragmentation. Significant impacts on special status wildlife species associated with the RTP-SCS may be a result of:

- Increased mortality caused by higher numbers of automobiles on new or widened roads;
- Direct mortality from the collapse of underground burrows, resulting from soil compaction;
- Direct mortality resulting from the movement of equipment and vehicles through an individual RTP improvement project area;
- Direct mortality resulting from removal of trees with active nests;
- Direct mortality or loss of suitable habitat resulting from the trimming or removal of obligate host plants;
- Direct mortality resulting from fill of wetlands features;
- Loss of breeding and foraging habitat resulting from the filling of seasonal or perennial wetlands;
- Loss of breeding, foraging, and refuge habitat resulting from the permanent removal of riparian vegetation;
- Loss of suitable habitat for vernal pool invertebrates resulting from the destruction or degradation of vernal pools or seasonal wetlands;
- Abandoned eggs or young and subsequent nest failure for special-status nesting birds, including raptors, and other non-special status migratory birds resulting from construction-related noises;
- Loss or disturbance of rookeries and other colonial nests;
- Loss of suitable foraging habitat for special-status raptor species; and
- Loss of migration corridors resulting from the construction of permanent structures or features.

The design process for each improvement will involve a level of field reconnaissance to precisely identify the potential for impacts to special status species and to identify project specific design measures that can be employed to avoid or minimize an impact. Project specific design measures may include alternative designs to avoid habitats that are considered more sensitive and required for special status species. An impact would occur if a project would result in a take of a special status species or their habitat. If a project would in fact result in an incidental take of a special status species or their habitat it would be required to go through a permit process with the appropriate regulatory agency (e.g., Section 7 consultation with the USFWS and/or a Section 2081 consultation with the CDFW).

Because BCAG is currently in the last phase of the Butte Regional Conservation Plan (an HCP/NCCP) that will cover the western portion of Butte County, it is likely that some individual projects under the RTP-SCS will be implemented after the BRCP is adopted. In this case, any individual project that is a BRCP covered activity, is located within the BRCP plan



area, and requires an incidental take of a special status species, will require authorization by the appropriate local agency and BCAG as the implementing agency. The authorization will involve fees and avoidance/minimization measures for the individual transportation project. Any individual project that is located outside the BRCP plan area would not be covered by the BRCP permits and would be required to consult directly with the regulatory agencies prior to an incidental take of a special status species.

Consistency with the County and City policies as well as adopted federal and state regulations that protect special-status species, including their habitat and movement corridors, would ensure that appropriate design measures, including avoidance, if appropriate, are incorporated into the design of each improvement project. Additionally, compliance with the BRCP, once it is adopted, would ensure that special status species are protected to the extent feasible, and mitigation is incorporated as necessary. Because the RTP-SCS is a planning document and thus, no physical changes will occur to the environment, adoption of the RTP-SCS would not directly impact the environment. There is a reasonable chance that special status species will be impacted throughout the buildout of individual projects identified in the RTP-SCS due to the extent of special status species throughout the region. The following mitigation would ensure that any potential for impacts to special status species is reduced to a less than significant level.

MITIGATION MEASURES

Mitigation Measures. BCAG shall implement and sponsor agencies can and should implement the following mitigation measure for transportation projects identified in Table 4.3-1. This measure can and should be implemented for future land development pursuant to the 2016 RTP-SCS that would result in impacts to special status animal and plant species.

- B-1 Biological Resources Screening and Assessment.** Prior to final design approval of individual projects, the implementing agency shall have a qualified biologist conduct a field reconnaissance of the environmental limits of the project in an effort to identify any biological constraints for the project, including special status plants, animals, and their habitats, as well as protected natural communities including wetland and terrestrial communities. If the biologist identifies protected biological resources within the limits of the project, the implementing agency shall first, prepare alternative designs that seek to avoid and/or minimize impacts to the biological resources. If the project cannot be designed without complete avoidance, the implementing agency shall coordinate with the appropriate regulatory agency (i.e. USFWS, NMFS, CDFW, USACE) to obtain regulatory permits and implement project - specific mitigation prior to any construction activities.

For projects that are located within the BRCP plan area, and are constructed after adoption of the BRCP, the implementing agency shall coordinate with the BRCP administrator to verify whether construction within the study area would require a permit. The permit process will require a field reconnaissance of the project study area by an approved



biologist in an effort to identify any biological constraints, including covered species or habitat. If the biologist identifies covered species or habitat within the limits of the study limits the implementing agency shall implement all minimization measures and pay the appropriate mitigation fees or provide land in lieu of fees as established by the BRCP.

Significance After Mitigation. Mitigation Measure B-1 would assure that impacts to special status species would be less than significant because the measures require that specific analyses and studies are performed to identify and evaluate project impacts to special status species potentially affected by projects implemented under the 2016 RTP-SCS. Compliance with the above mitigation measure and all existing state, local and/or federal regulations would reduce impacts to a less than significant level.

Impact B-2 Implementation of transportation improvements proposed and the land use scenario envisioned by the 2016 RTP-SCS may result in impacts to riparian habitat or sensitive habitats, including federally protected wetlands. This impact would be Class II, significant but mitigable.

The RTP-SCS project area, which includes all of Butte County, contains sensitive natural communities, such as riparian, oak woodland, streams, rivers, wet meadows, and vernal pools. The project area contains oak woodland habitat predominately in the foothills. California regulations require a lead agency to determine whether a project within its jurisdiction may result in significant effects to oak woodlands. If an agency determines that there may be a significant effect to oak woodlands as a result of a project, the agency must require oak woodlands mitigation alternatives to mitigate the significant effect. Such mitigation alternatives includes: conservation through the use of conservation easements; planting and maintaining an appropriate number of replacement trees; or the contribution of funds for the purpose of purchasing oak woodlands conservation easements.

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

The project area contains numerous aquatic habitats that qualify as federally protected wetlands and jurisdictional waters. Section 404 of the CWA requires any project that involves disturbance to a wetland or water of the U.S. to obtain a permit that authorizes the disturbance. If a wetland or jurisdictional water is determined to be present, then a permit must be obtained from the USACE to authorize a disturbance to the wetland. Although subsequent improvements may disturb protected wetlands and/or jurisdictional waters, the regulatory process that is established through Section 404 of the CWA ensures that there is “no net loss” of wetlands or jurisdictional waters. If, through the design process, it is determined that an improvement project cannot avoid a wetland or jurisdictional water, then the USACE would require that there be an equal amount of wetland created elsewhere to mitigate any loss of wetland.

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

Detailed plans of the individual projects identified in the proposed project have not been developed. Consistency with the applicable County and City policies would ensure that appropriate design measures, including avoidance, if appropriate, are incorporated into the design of each improvement project. Because the proposed project is a planning document and thus, no physical changes will occur to the environment, adoption of the proposed project would not directly impact the environment. There is a reasonable chance that natural communities, including wetlands, riparian, or other sensitive natural communities will be impacted throughout the buildout of the individual projects. This impact is could result in adverse effects on wetlands, riparian, or other sensitive natural communities.

Mitigation Measures. BCAG shall implement and sponsor agencies can and should implement the following mitigation measures for transportation projects identified in Table 4.3-1. These measures can and should be implemented for future development pursuant to the 2016 RTP-SCS that would result in impacts to wetlands, riparian, or other sensitive natural communities.

B-2(a) Jurisdictional Delineation. Prior to approval of individual projects, the implementing agency shall retain a qualified biologist to perform an assessment of the project area to identify wetlands, riparian, and other sensitive aquatic environments. If wetlands are present the qualified biologist shall perform a wetland delineation following the 1987 Army Corps of Engineers Wetlands Delineation Manual and any applicable regional supplements to the Delineation Manual. The wetland delineation shall be submitted to the USACE for verification.

B-2(b) Wetlands, Riparian, or Other Sensitive Aquatic Environments. If wetlands, riparian, or other sensitive aquatic environments are found within the project limits, the implementing agency shall design or modify the project to avoid direct and indirect impacts on these habitats, if feasible. Additionally, the implementing agency shall minimize the loss of riparian vegetation by trimming rather than removal where feasible.

Prior to construction, the implementing agency shall install orange construction barrier fencing to identify environmentally sensitive areas around the wetland (20 feet from edge), riparian area (100 feet from edge), and other aquatic habitats (250 feet from edge of vernal pool), or as defined by the agency with regulatory authority over the resource(s). The location of the fencing shall be



marked in the field with stakes and flagging and shown on the construction drawings. The fencing will be installed before construction activities are initiated and will be maintained throughout the construction period. The following paragraph will be included in the construction specifications:

The Contractor's attention is directed to the areas designated as "environmentally sensitive areas." These areas are protected, and no entry by the Contractor for any purpose will be allowed unless specifically authorized in writing by lead agency overseeing the transportation improvement project. The Contractor will take measures to ensure that Contractor's forces do not enter or disturb these areas, including giving written notice to employees and subcontractors.

Temporary fences around the environmentally sensitive areas will be installed as the first order of work. Temporary fences will be furnished, constructed, maintained, and removed as shown on the plans, as specified in the special provisions, and as directed by the project engineer. The fencing will be commercial-quality woven polypropylene, orange in color, and at least 4 feet high (Tensor Polygrid or equivalent). The fencing will be tightly strung on posts with maximum 10-foot spacing.

Immediately upon completion of construction activities the contractor shall stabilize exposed soil/slopes. On highly erodible soils/slopes, use a non-vegetative material that binds the soil initially and breaks down within a few years. If more aggressive erosion control treatments are needed, geotextile mats, excelsior blankets, or other soil stabilization products will be used. All stabilization efforts should include habitat restoration efforts.

B-2(c)

If wetlands or riparian habitat are disturbed as part of an individual project, the implementing agency shall compensate for the disturbance to ensure no net loss of habitat functions and values. Compensation ratios shall be based on site -specific information and determined through coordination with state, federal, and local agencies as part of the permitting process for the project. Unless determined otherwise by the regulatory/permitting agency, the compensation shall be at a minimum ratio of 3 acres restored, created, and/or preserved for every 1 acre disturbed. Compensation may comprise onsite restoration/creation, off -site restoration, preservation, or mitigation credits (or a combination of these elements). The implementing agency shall develop and implement a restoration and monitoring plan that describes how the habitat shall be created and monitored over a minimum period of time.



Significance After Mitigation. Mitigation measures B-2(a) through (c) would assure that substantial adverse changes to wetland resources would be less than significant because measures would be taken to either avoid the impacts, minimize the impacts. Compliance with the above mitigation measures and existing State, local and/or federal regulations would reduce impacts to a less than significant level.

Impact B-3 Implementation of transportation improvements proposed and the land use scenario envisioned by the 2016 RTP-SCS may impact wildlife movement, including fish migration, and/or impede the use of a native wildlife nursery. This impact would be Class II, significant but mitigable.

There are many native fish and wildlife species within the County that migrate or utilize movement corridors. The most notable for their protection status include the Chinook salmon and steelhead trout. The Columbian black-tailed deer is a migratory wildlife species that is not recognized as a special-status species, but preserving deer habitat and migration corridors is of concern to the CDFW in many foothill and mountainous regions of California including Butte County.

Salmon and Steelhead. Salmon and steelhead trout are anadromous fish species that are present in the San Joaquin and Sacramento River Basins. The Sacramento River system has historically supported steelhead trout and four distinct spawning runs of Chinook salmon: fall, late fall, winter, and spring. The fall/late fall-run Chinook salmon is a federal and state species of concern, and a candidate species for federal listing. The spring-run Chinook salmon population is listed as threatened by both federal and state agencies. Winter-run Chinook salmon population is listed as a federally and state endangered species. The Central Valley steelhead was federally listed as threatened in 2003. Populations of Central Valley Steelhead and Chinook salmon have been supported by hatcheries within the Sacramento River Basin.

Fall-run and late fall-run Chinook salmon. Fall-run and late fall-run Chinook salmon migrate, hold, spawn, and rear throughout the entire reaches of Butte, Big Chico, and Little Chico creeks within the planning area. Fall -/late fall-run Chinook salmon also migrate, hold, spawn, and rear in the Feather River upstream to the Fish Diversion Dam, which serves as a barrier to movement further upstream. Non-natal juvenile rearing occurs in lower portions of Mud Creek and Big Chico Creek.

Spring-run Chinook salmon. Spring-run Chinook salmon spawning and holding has been recorded in three main drainages in the planning area, including Big Chico Creek, Butte Creek, and the Feather River. Spawning habitat occurs in Big Chico Creek from River Mile (RM) 13 to Bidwell Park, in Butte Creek from RM 44 to outside the planning area (RM 22), and in the Feather River from the Thermalito Afterbay Outlet to the Fish Barrier Dam. Adult migration habitat is located in waterways within Big Chico and Butte Creeks, Feather River, and on the Sacramento River. Juvenile migration habitat is located downstream towards the Pacific Ocean throughout all spawning and adult migration habitat in the planning area. Juvenile rearing habitat consists of all spawning and migration habitat, but can also include non-natal streams in Big Chico Creek, such as Mud, Rock, Pine, and Singer Creeks.



The Sacramento River along the western edge of the planning area supports upstream migration habitat for winter-run Chinook salmon moving upstream towards spawning habitat and downstream migration of juveniles moving towards the Pacific Ocean. Spawning habitat for winter-run Chinook salmon is located upstream of the planning area. For salmon to access this habitat and for juveniles to move downstream towards the Pacific Ocean, they must use the Sacramento River within the planning area as a migration corridor.

The spawning habitat of Central Valley steelhead exists in multiple waterways throughout the planning area. Spawning occurs in the planning area throughout Mud Creek, Little Chico Creek, Big Chico Creek, Little Dry Creek, Butte Creek, and the Feather River. Adult migration habitat occurs in all spawning habitat and downstream locations in the planning area. Juvenile rearing and migration habitat occurs throughout adult spawning and migration habitat. Some non-natal juvenile steelhead habitat exists in Rock Creek, which is a tributary to Big Chico Creek.

Riparian habitat is critical for the maintenance of high quality fish habitat. It provides cover, controls temperature, stabilizes stream banks, provides food, and buffers streams from erosion and impacts of adjacent land uses. Riparian vegetation also affects stream depth, current velocity, and substrate composition.

The individual transportation improvements identified in the proposed RTP-SCS (see Table 2-1 in Section 2.0, Project Description) have not been designed or approved. Each project will be designed consistent with the applicable County and City policies to ensure that appropriate design measures, including avoidance, if appropriate, are incorporated into the design of each improvement project. It will be important that each individual project include a review of the potential for impacts to riparian habitat, which is critical for the maintenance of high quality fish habitat. It provides cover, controls temperature, stabilizes stream banks, provides food, and buffers streams from erosion and impacts of adjacent land uses. Riparian vegetation also affects stream depth, current velocity, and substrate composition.

Migratory Deer. Three separate migratory deer herds occupy the eastern foothills and mountains in Butte County and depend on these areas for all or part of their habitat requirements: East Tehama, Bucks Mountain, and Mooretown. Deer that remain in a restricted area on a year-round basis are considered resident populations. Resident deer herds that occur within the County are Camp Beale and Sacramento Valley herds. Resident deer herds share the winter ranges with all of the migratory herd populations.

Linear transportation improvements can cause fragmentation of habitat where species can no longer easily move through an area. This may occur in cases where a linear transportation improvement includes a center barrier to be erected that suddenly affects the ability of a smaller animal, and sometimes, less mobile species, to cross the linear transportation corridor to areas that they previously frequented.

In addition certain fence designs are barriers to deer movement, particularly to does and fawns. Deer-proof or deer-resistant fences around large acreages in winter range and across critical deer migration corridors result in a significant adverse impact on deer populations. Also, the creation of highways and roads are a source of deer mortality.

There is a reasonable chance that native wildlife or wildlife corridors, including four distinct salmon runs, steelhead, and the migratory deer, will be impacted throughout the buildout of individual transportation projects under the RTP-SCS. Therefore, impacts to wildlife movement, including fish migration, and/or impede the use of a native wildlife nursery is potentially significant.

Mitigation Measures. BCAG shall implement and sponsor agencies can and should implement the following mitigation measure for transportation projects identified in Tables 4.3-1. This measure can and should also be implemented for development pursuant to the 2016 RTP-SCS that would result in that would impact wildlife movement, including fish migration, and/or impede the use of native wildlife nursery.

- B-3** **Design Measures.** Prior to design approval of individual projects that contain movement habitat, the implementing agency shall incorporate economically viable design measures, as applicable and necessary, to allow wildlife or fish to move through the transportation corridor, both during construction activities and post construction. Such measures may include appropriately spaced breaks in a center barrier, or other measures that are designed to allow wildlife to move through the transportation corridor. If the project cannot be designed with these design measures (i.e. due to traffic safety, etc.) the implementing agency shall coordinate with the appropriate regulatory agency (i.e. USFWS, NMFS, CDFW) to obtain regulatory permits and implement alternative project-specific mitigation prior to any construction activities.

Significance after Mitigation. Compliance with the above mitigation measures and adherence to existing State, local and/or federal regulations would reduce impacts to a less than significant level.

- Impact B-4** **Construction activities associated with the implementation of transportation improvements proposed and the land use scenario envisioned by the 2016 RTP-SCS result in the introduction and spread of noxious weeds. This impact would be Class II, significant but mitigable.**

Construction activities associated with individual transportation projects could introduce noxious weeds or result in their spread into currently non-infested areas, possibly resulting in the displacement of special - status plant species and degradation of habitat for special-status wildlife species. These projects may include, but are not limited to the congestion relief projects, roadway safety projects, bus and pedestrian/bicycle projects such as the construction of pedestrian/bicycle trails and park -and-ride lots, and the construction of railroad crossing safety projects. Plants or seeds may be dispersed via construction equipment if appropriate measures are not implemented. This impact is considered potentially significant because the introduction or spread of noxious weeds could result in a substantial reduction or elimination of species diversity or abundance.



Mitigation Measures. BCAG shall implement and sponsor agencies can and should implement the following mitigation measure for transportation projects identified in Tables 4.3-1. This measure can and should also be implemented for development pursuant to the 2016 RTP-SCS that would result in impacts related to noxious weeds.

B-4 Noxious Weed Survey. Prior to approval of individual projects, the implementing agency shall retain a qualified biologist determine whether noxious weeds are an issue for the project. If the biologist determines that noxious weeds are an issue, the implementing agency shall review the noxious weed list from the County Agricultural Commission, California Department of Food and Agriculture, and the California Exotic Pest Plant Council to identify target weed species for a field survey. Noxious weed infestations shall be mapped and documented. The implementing agency shall incorporate the following measures into project plans and specifications:

- Certified, weed-free, imported erosion-control materials (or rice straw in upland areas) will be used.
- The project sponsor will coordinate with the county agricultural commissioner and land management agencies to ensure that the appropriate BMPs are implemented.
- Construction supervisors and managers will be educated about noxious weed identification and the importance of controlling and preventing their spread.
- Equipment will be cleaned at designated wash stations after leaving noxious weed infestation areas.

Significance after Mitigation. With implementation of the above mitigation measures, potential impacts related to noxious weeds would be reduced to a less than significant level.

Impact B-5 Implementation of transportation improvements proposed and the land use scenario envisioned by the 2016 RTP-SCS may impact the Butte Regional Conservation Plan (BRCP). This impact would be Class II, *significant but mitigable*.

The Butte Regional Conservation Plan (BRCP) is a joint Habitat Conservation Plan (HCP)/Natural Community Conservation Plan (NCCP) that is currently being prepared for the western half of Butte County. The BRCP is being prepared by BCAG under the guidance of local citizens (the Stakeholder Committee) and government officials. Participating agencies include: Butte County, Chico, Oroville, Gridley, Biggs, Western Canal Water District, Biggs West Gridley Water District, Butte Water District, Richvale Irrigation District, and Caltrans.

The BRCP is a voluntary resources protection and management tool that balances the needs of endangered and threatened species with the needs of landowners, land developers, and local and state public agencies. Such a comprehensive HCP/NCCP assures that species protection occurs on a regional level, versus local or parcel level, and it assures participating entities that



once the agencies have approved the HCP/NCCP, they will not be required to accept species restrictions or financial commitments beyond those agreed to in the HCP/NCCP.

The BRCP is scheduled to be completed in 2017. Once it is completed, the BRCP will establish a coordinated process for permitting and mitigating the incidental take of endangered species throughout the BRCP planning area. This process creates an alternative to the current project-by-project approach. Rather than individually surveying, negotiating, and securing compensatory mitigation as typically occurs through project by project mitigation, once the BRCP is in place, project proponents will receive an incidental take permit by simply paying a compensatory fee (in some cases, dedication of on-site mitigation can be an alternative to paying a fee) for use to purchase compensatory habitat lands or easements.

After the BRCP is adopted, individual transportation projects that occur in BRCP planning area would need to be coordinated with BCAG to ensure that the project does not conflict with the BRCP. Because the BRCP is not yet adopted, there is currently no potential for conflict with this document. However, the anticipated completion date is within the implementation horizon for the proposed RTP-SCS and there is the potential for individual projects to conflict with the BRCP. Therefore impacts are potentially significant.

Implementation of the following mitigation measure would ensure that any potential for conflict is reduced to a less than significant level. It should be noted that the lead agency for the proposed project and the BRCP are the same agency (BCAG), and these planning documents were prepared to be consistent with each other.

Mitigation Measures. BCAG shall implement and sponsor agencies can and should implement the following mitigation measure for transportation projects identified in Tables 4.3-1. This measure can and should also be implemented for development pursuant to the 2016 RTP-SCS that would result in impacts related to the BRCP.

- B-5** **Coordinate with BCAG.** Prior to design approval of individual projects, the implementing agency shall coordinate with BCAG to determine the appropriate coverage, permits, compensatory mitigation or fees, and project specific avoidance, minimization, and mitigation measures.

Significance after Mitigation. With implementation of the above mitigation measures, potential impacts related to conflicts to the BRCP would be reduced to a less than significant level.

c. Specific RTP Projects That May Result in Impacts. Table 4.3-1 identifies those projects that may create biological resource impacts, as discussed in Section 4.3.2.b. Because of the programmatic nature of the 2016 RTP-SCS specific impacts to biological resources are not known at this time. The impacts for the individual projects listed below are those that have potential to occur given this level of analysis. Additional specific analysis 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. As such, mitigation measures discussed above could apply to these specific projects.



**Table 4.3-1
2016 RTP-SCS Projects that May Result in Biological Resource Impacts**

Agency	Title	Project Description	Impact	Description of Impact
Butte County	Central House Rd Bridge Widening (at Wyman Ravine)	Widen Central House Rd Bridge from 1 to 2 lanes at Wyman Ravine	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Butte County	SR 70 Widening (Ophir Rd to Palermo Rd)	Widen SR 70 from 2 to 4 lanes from Ophir Rd to Palermo Rd	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Butte County	SR 70 Widening (Palermo Rd to Cox Ln)	Widen SR 70 from 2 to 4 lanes from Palermo Rd to Cox Ln	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Butte County	Kittyhark Dr Extension (SR 99 to Garner Ln)	Construct 2 lane roadway from SR 99 to Garner Ln	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Butte County	SR 70 Widening (E Gridley Rd to Yuba Co.)	Widen SR 70 from 2 to 4 lanes from E. Gridley Rd to Yuba County	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Chico	SR 99 Auxillary Lanes (SR 32 to E. 1st Ave)	Add Auxillary lanes on SR 99 from SR 32 to E. 1st Ave	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Chico	SR 32 Widening (SR 99 to El Monte Ave)	Widen SR 32 from 2 to 4 lanes from SR 99 to El Monte Ave	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Chico	Eaton Rd Extension (Ceanothus Ave to Floral Ave)	Construct 4 lane roadway for extension of Eaton Rd from Ceanothus Ave to Floral Ave	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Chico	Eaton Rd Extension (St Lawrence Ave to Wildwood Ave)	Construct 4 lane roadway for extension of Eaton Rd from St Lawrence Ave to Wildwood Ave	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.

**Table 4.3-1
2016 RTP-SCS Projects that May Result in Biological Resource Impacts**

Agency	Title	Project Description	Impact	Description of Impact
Chico	Eaton Rd Widening (Ceanothus Ave to St Lawrence Ave)	Widen Eaton Rd from 2 to 4 lanes from Ceanothus Ave to St Lawrence Ave	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Chico	Forest Ave Widening (SR 32 to Humboldt Rd)	Widen Forest Ave from 2 to 4 lanes from SR 32 to Humboldt Rd		None
Chico	Cohasset Rd Widening (Two Oaks Dr to Thorntree Dr)	Widen Cohasset Rd from 2 to 4 lanes from Two Oaks Dr to Thorntree Dr	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Chico	Cohasset Rd Widening (Airport Blvd to Eaton Rd)	Widen Cohasset Rd from 2 to 4 lanes from Airport Blvd to Eaton Rd	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Chico	Midway Widening (Hegan Ln to E. Park Ave)	Widen Midway from 2 to 4 lanes from Hegan Ln to E. Park Ave	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Chico	MLK Blvd Widening (E. Park Ave to 20th St)	Widen MLK Blvd from 2 to 4 lanes from E. Park Ave to 20th St	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Chico	Bruce Rd Widening (Skyway to SR 32)	Widen Bruce Rd from 2 to 4 lanes from Skyway to SR 32	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Chico	Notre Dame Extension (E. 20th St to Little Chico Creek)	Construct 2 lane roadway for extension of Notre Dame from E. 20th St to Little Chico Creek	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Chico	SR 32 Widening (El Monte Ave to Yosemite Dr)	Widen SR 32 from 2 to 4 lanes from El Monte Ave to Yosemite Dr	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.

**Table 4.3-1
2016 RTP-SCS Projects that May Result in Biological Resource Impacts**

Agency	Title	Project Description	Impact	Description of Impact
Chico	E. 20th St Widening (Forest Ave to Bruce Rd)	Widen E. 20th St from 2 to 4 lanes from Forest Ave to Bruce Rd	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Chico	SR 32 Lane Reduction (W 1st St to W 4th St) - aka Nord Ave Complete Street	Reduce SR 32 from 4 to 2 lanes from W 1st St to W 4th St)	B-3,	Direct and indirect impacts to breeding/nursery habitat or migratory/dispersal corridors.
Chico	SR 32 and Fir St Multi Modal	Change Fir St lanes from 2 lane bi-directional to 2 lane northbound travel between east and westbound travel lanes of SR 32 and add 30 spaces to park and ride.	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Chico	Guynn Rd Bridge Widening (at Lindo Channel)	Widen Guynn Rd Bridge from 1 to 2 lanes at Lindo Channel	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Chico	Eaton Rd Widening (at SR 99 interchange)	Widen Eaton Rd from 2 to 4 lanes at SR 99 interchange	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Chico	W. Eaton Rd Extension (SR 32 to W. Eaton Rd end)	Construct 2 lane roadway for extension of W. Eaton Rd from SR 32 to end	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Chico	SR 99 Auxillary Lanes (Skyway to 20th St)	Add Auxillary lanes on SR 99 from Skyway to 20th St	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Chico	SR 99 Auxillary Lanes (20th St to SR 32)	Add Auxillary lanes on SR 99 from 20th St to SR 32	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Chico	Esplanade Widening (Eaton Rd to Nord Hwy)	Widen Esplanade from 2 to 4 lanes from Eaton Rd to Nord Hwy	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.

**Table 4.3-1
2016 RTP-SCS Projects that May Result in Biological Resource Impacts**

Agency	Title	Project Description	Impact	Description of Impact
Chico	Notre Dame Extension (Comanche Creek to Southgate Ave)	Construct 2 lane roadway for extension of Notre Dame from Comanche Creek to Southgate Ave	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Chico	Southgate Ave Interchange (at SR 99)	Replace intersection of Southgate Ln and SR 99 with new 2 lane overpass and interchange	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Chico	Southgate Extension (Midway to Skyway and Entler Ave to Player Ln)	Construct 2 lane roadway for extension of Southgate from Midway to Skyway and Entler Ave to Player Ln	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Chico	Fair St Extension (Fair St end to Entler Ave)	Construct 2 lane roadway for extension of Fair St from existing end to Entler Ave	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Chico	Silver Dollar Way Extension (Fair St to MLK Jr Parkway)	Construct 2 lane roadway for extension of Silver Dollar Way from Fair St to MLK Jr Parkway	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Chico	Manzanita Ave (Chico Canyon Rd to Wildwood Ave)	Widen Manzanita Ave from 2 to 4 lanes from Chico Canyon Rd to Wildwood Ave	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Chico	Chico Canyon Rd (E. 8th St to Manzanita Ave)	Widen Chico Canyon Rd from 2 to 4 lanes from E. 8th St to Manzanita Ave	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Oroville	Olive Highway Widening (Oro-Dam Blvd to Foothill Blvd)	Widen Olive Hwy from 2 to 3 lanes from Oro-Dam Blvd to Foothill Blvd. Additional lane will be added to eastbound travel.	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Paradise	Skyway Lane Reduction (Pearson Rd to Elliott Rd)	Reduce Skyway from 4 to 2 lanes from Pearson Rd to Elliott Rd	B-3	Direct and indirect impacts to breeding/nursery habitat or migratory/dispersal corridors.
Paradise	Anchor Way Construction (South Libby to Clark Rd)	Construct 2 lane roadway from S. Libby Rd to Clark Rd	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of

**Table 4.3-1
2016 RTP-SCS Projects that May Result in Biological Resource Impacts**

Agency	Title	Project Description	Impact	Description of Impact
				noxious weeds.
Paradise	Buschmann Rd Extension (Foster Rd to Skyway)	Construct 2 lane roadway extension from Foster Rd to Skyway	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Paradise	Forest Service Ln Extension (Moore Rd to Skyway)	Construct 2 lane roadway extension from Moore Rd to Skyway	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Paradise	Elliott Rd Extension (End to Kibler Rd)	Construct 2 lane roadway extension from Elliott to Kibler Rd	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Paradise	Grinding Rock Rd Extension (End to Skyway)	Construct 2 lane roadway extension from Grinding Rock Rd to Skyway	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Paradise	S. Libby Rd Extension (End to Edgewood Ln)	Construct 2 lane roadway extension from S. Libby Rd to Edgewood Ln	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Paradise	Sawmill Rd Extension (End to S. Libby Rd)	Construct 2 lane roadway extension from Sawmill Rd to S. Libby Rd	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
County	Neal Road and Cohasset Road Bike Project	On Neal Rd. from Oro-Chico Hwy to the Skyway & unincorporated portion of Cohasset Rd from Chico Limits to the Cohasset School. Construct Class 2 bike lanes.	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
County	Butte County Forest Motorized Trail Management Plan	Plumas National Forest and Feather River Ranger District. Develop a Trail Assessment Study Report for 19 OHV trails totaling 15.25 miles with the Feather River Ranger District.	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
County	Butte County Highway Safety Improvement	HSIP3-03-002. Lincoln Blvd from 50' north of Idora St to 100' south of	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or

**Table 4.3-1
2016 RTP-SCS Projects that May Result in Biological Resource Impacts**

Agency	Title	Project Description	Impact	Description of Impact
	Program (HSIP) Grouped Projects	Arnold Ave.		migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Various	Butte County Highway Safety Improvement Program (HSIP) Grouped Projects	HSIP5-03-001. County of Butte, Durham-Pentz Rd between SR 99 and SR 191.	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
HSIP5-03-002. County of Butte, signal at East Gridley Rd and Larkin Rd.		B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.	
HSIP5-03-009. City of Oroville, signals at Oro Dam Blvd, Orange Ave, and Acacia Ave signal install.		B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.	
HSIP6-03-006. Town of Paradise, Clark Rd between Adams Rd and Kimberly Ln.		B-2, B-3, B-4	Direct and indirect impacts to sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.	
HSIP6-03-008. Town of Paradise, Pearson Rd between Clark Rd and Pentz Rd.		B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.	
HSIP6-03-009. Town of Paradise, Clark Rd between Bille Rd and Wagstaff Rd.		B-3	Direct and indirect impacts to breeding/nursery habitat or migratory/dispersal corridors,	
HSIP7-03-001. City of Chico, Nord Ave (SR 32) from 1st St to 4th St.		B-3	Direct and indirect impacts to breeding/nursery habitat or migratory/dispersal corridors,	
HSIP7-03-002. City of Chico, Esplanade between Cohasset Rd and Memorial Way.		B-3	Direct and indirect impacts to breeding/nursery habitat or migratory/dispersal corridors,	
HSIP7-03-003. City of Chico, intersection of Nord Ave and West Sacramento Ave.		B-3	Direct and indirect impacts to breeding/nursery habitat or migratory/dispersal corridors,	
HSIP7-03-004. Town of Paradise, intersection of Skyway at Black Olive Dr.		B-3	Direct and indirect impacts to breeding/nursery habitat or migratory/dispersal corridors,	

**Table 4.3-1
2016 RTP-SCS Projects that May Result in Biological Resource Impacts**

Agency	Title	Project Description	Impact	Description of Impact
County	Las Plumas SRTS	Between Waler Rd and Autrey Ln. Walmer Rd between Lincoln Blvd and Rosedale Ave. Construct sidewalks, curb, gutter, ramps and AC tie-in; install speed humps and speed feedback signs; upgrade crosswalks	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
County	South Oroville SRTS - ATP	South Oroville SRTS - Lincoln Blvd and Las Plumas Ave. Safe Routes to School project along Lincoln Blvd, Las Plumas Ave, Lower Wyandotte Rd, and Monte Vista Ave. Install bike lanes, sidewalks, pedestrian crossing safety enhancements, and driver feedback signs along the main corridors of the south Oroville area routes to school.	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
BCAG	Butte Regional Transit Operations and Maintenance Facility	In Chico, construct new Butte Regional Transit Operations Center (326 Huss Dr).	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Caltrans	Butte County SHOPP Minor Grouped Listing	SR 99 (Chico) - Install street lighting and construct crosswalks in the City of Chico at northbound off-ramps at Cohassett Rd. and Eaton Rd. to meet current standards for urban interchanges.	B-3	Direct and indirect impacts to breeding/nursery habitat or migratory/dispersal corridors,
Caltrans	Butte County SHOPP Collision Reduction Grouped Listing	SR 99 Near Chico at the Rock Creek Bridge #12-27. Widen shoulder on structure	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
		SR 191 Near Town of Paradise. Safety improvement project to reduce the number and severity of collisions. SR 191 near Paradise from 2 miles south of Clear Creek Cemetery Rd to South Airport Rd.	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Caltrans	Butte County SHOPP Mandates Grouped Listing	SHOPP Mandates - ADA pedestrian infrastructure project on SR 32 near Chico from Kennedy Avenue to the	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of

**Table 4.3-1
2016 RTP-SCS Projects that May Result in Biological Resource Impacts**

Agency	Title	Project Description	Impact	Description of Impact
		SR 99/32 separation. Construct sidewalks, curb-ramps and crosswalks.		noxious weeds.
Caltrans	Butte County SHOPP Bridge Preservation Grouped Listing	State Route 70 in Oroville at Flag Canyon Creek Bridge # 12-0140 and SR 99 near Chico from Estates Drive at 0.4 mile north of Butte Creek Bridge #12-0126R. Replace bridges.	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Biggs	City of Biggs SRTS - Aleut St - ATP	Constructs new sidewalks to close existing gaps along the main routes to school. Project includes sidewalk construction on Aleut Street, Bannock Street, 2nd Street and 3rd Street within the central portion of the City of Biggs.	B-3	Direct and indirect impacts to breeding/nursery habitat or migratory/dispersal corridors,
Biggs	City of Biggs SRTS - B St - ATP	SRTS B Street & 2nd St Sidewalk Improvement Project. Construct sidewalk and curb ramps along B Street (1st St to 11th St) and 2nd Street (E St to I St) to close sidewalk gaps and provide a safe route to school.	B-3	Direct and indirect impacts to breeding/nursery habitat or migratory/dispersal corridors,
Chico	SR 99 Corridor Bikeway Phase 4 - ATP	SR 99 Bikeway Phase 4 Improvements. Constructs Class 1 bikeway from Business Lane to Skyway.	B-3	Direct and indirect impacts to breeding/nursery habitat or migratory/dispersal corridors,
Oroville	Table Mountain Blvd Roundabout	In Oroville at Table Mountain Blvd., Nelson Ave and Cherokee Rd - Reconfigure intersection and construct a roundabout.	B-3	Direct and indirect impacts to breeding/nursery habitat or migratory/dispersal corridors,
Paradise	Maxwell Dr SR2S Project	Safe Routes to School project along Maxwell Dr between Skyway and Elliot Rd. Improvements include the construction of sidewalks, curb and gutter along Maxwell Dr. Shoulders will also be widened to facilitate Class	B-3	Direct and indirect impacts to breeding/nursery habitat or migratory/dispersal corridors,

**Table 4.3-1
2016 RTP-SCS Projects that May Result in Biological Resource Impacts**

Agency	Title	Project Description	Impact	Description of Impact
		2 bike lanes.		
Paradise	Pearson Rd SR2S Connectivity Project	Safe Routes to School project along Pearson Rd between Black Olive and Academy Drives. Improvements include the construction of sidewalks, curb and gutter on the north and south sides of Pearson Rd. The project will require minor drainage improvements and construction of appropriate retaining walls for hillside slopes.	B-2, B-3, B-4	Direct and indirect impacts to sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Paradise	Almond St Multi-Modal - ATP	Almond Street Multi-Modal. The proposed project will add sidewalks, curbs and gutters to Almond Street between Pearson Rd and Elliot Rd.	B-2, B-3, B-4	Direct and indirect impacts to sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Paradise	Paradise Memorial Trailway - ATP	Memorial Trailway Class 1 Enhancements (Neal Rd to Pentz Rd). Upgrade bike/ped facility, to current standard for width and minimum standard for shoulders. Project also includes crosswalk enhancements at 5 arterial intersections.	B-2, B-3, B-4	Direct and indirect impacts to sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Paradise	Ponderosa Elementary SRTS - ATP	Ponderosa Elementary SRTS Project. Project will convert Pentz Road (between Bille Rd and 300' north of Wagstaff Rd) from a 2-lane, 20' wide roadway to a complete street solution supporting walking, bicycling and rolling to and from school and nearby destinations. No change in travel lanes.	B-2, B-3, B-4	Direct and indirect impacts to sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Paradise	Downtown Paradise Equal Mobility - ATP	Downtown Paradise Equal Mobility Project. Improvements include the removal of barriers, gravel sidewalks, asphalt sidewalks, and driveways with construction of ADA-compliant	B-3	Direct and indirect impacts to breeding/nursery habitat or migratory/dispersal corridors,

**Table 4.3-1
2016 RTP-SCS Projects that May Result in Biological Resource Impacts**

Agency	Title	Project Description	Impact	Description of Impact
		facilities. On Skyway between Pearson Rd and Elliott Rd.		
Various	Local Highway Bridge Projects (HBP) - Grouped Listing -Lump Sum	Midway Bridge Replacement across Butte Creek. On Midway (old SR 99) approximately 0.2 miles south of White Ave to approximately 0.7 miles south of White Ave. ,spanning Butte Creek and Butte Creek Overflow. Replace 2 bridge structures.	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
Various	Local Highway Bridge Projects (HBP) - Grouped Listing -Lump Sum	E Rio Bonito Rd over Hamilton Slough	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
		E Rio Bonito Rd over Sutter Butte Canal	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
		Oregon Gulch Rd over Morris Ravine	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
		Ord Ferry Rd over Little Chico Creek	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
		Pomona Rd over Little Chico Creek	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
		Salem St over Little Chico Creek	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.
County	Oro-Chico Hwy Bike Project	Construct Class 2 Bike lane from Midway to Butte Campus Drive along Oro Chico Hwy, Durham Dayton Hwy & Durham Pentz Rd.	B-1, B-2, B-3, B-4	Direct and indirect impacts to special-status species, sensitive habitats including wetlands, breeding/nursery habitat or migratory/dispersal corridors, and potential introduction or spread of noxious weeds.

4.4 CULTURAL RESOURCES

4.4.1 Setting

a. Prehistoric Background. The initial evidence for human activity in the Butte County area east of the crest of the Sierra Nevada began sometime from approximately 11,500 to 7,000 years before present. This time period was characterized by a period of moist conditions and cooler temperatures that favored the development of surface water (lakes, marshes, streams) and, by association, increased numbers of plants and animals. The population density during this period was thought to have been low with a foraging system of resource acquisition practiced.

From 7,000 to 3,500 years before present the climate became warmer and drier. The availability of surface water decreased as did the population density. Seed processing tools made their first appearance in the archeological collection during this period as did the basic tool production technology that characterized the cultural remains up until the time of historic contact.

Between 4,200 to 1,500 years before present, the moisture availability increased. Human populations apparently increased in response to this more favorable climatic condition. The populations during this time apparently fully exploited their resource base and the use of the higher elevation areas is thought to have greatly increased.

From 1,500 years before present to historic times, new forms of ground stone artifacts, the introduction of the bow and arrow technology and a general increase in the exploitation of all parts of the environment occurred. The emphasis of resource collection was on seeds and small game with a lesser emphasis on hunting large game. The population densities during this period are thought to have been lower when compared to the previous 2,000 years.

In summary, the trend in prehistoric times has been toward increased diversity in utilized resources, greater dependence on lower ranked resources, and increased intensity of resource exploitation. Over time plant food gathering and tool processing became more elaborate, while flaked stone tools grew simpler and exhibited less stylistic elaboration. Although perhaps triggered and moderated by climatic change, these trends are thought to be adaptive responses to stress on resources caused mainly by population pressure.

b. Historic Background. Among the initial penetrations of the upper Sacramento Valley region by Europeans was that of the Spanish explorer Gabriel Moraga, who in 1808, explored the lower reaches of Feather River, perhaps as far north as Sutter Buttes. In 1820, Captain Luis Arguello led an expedition into the foothills east of Oroville, and gave the Feather River its name (Fariss and Smith 1882:144 -145). By 1828, and throughout the next two decades, Hudson's Bay Company and American Fur Company trappers were active within the region (Wells and Chambers 1973:128).

In 1844, Mexican Governor Manuel Micheltorena issued several land grants within northern California, including portions of what would later become Butte County. Peter Lassen was awarded a grant on Deer Creek, part of which extended into northern Butte County. That same year,



Edward A. Farwell and Thomas Fallon settled on the Farwell grant, the eastern boundary of which cuts through present-day Chico, and Samuel Neal occupied the Esquon Grant, encompassing the modern hamlets of Durham and Nelson. In 1847, grantee John Bidwell settled on his famous estate in Chico. Neal and Bidwell in particular were instrumental in establishing the agricultural and livestock industries in the county, and they both made important gold discoveries as well (McGie 1982:35-37; Talbitzer 1987:21-24; Wells and Chambers 1973:128-129).

Butte County was incorporated on February 18, 1850 by an act of the newly commissioned state legislature. The original Butte County embraced all of present-day Butte and Plumas Counties along with portions of Lassen, Tehama, Sutter, and Colusa Counties (Wells and Chambers 1973:131). By 1853, when farms and settlements began to appear in some of the county's more remote regions, it became evident that the area was too large for the Butte County government to meet growing demands for roads, schools, law and order. Thus, beginning with Plumas County on March 18, 1854, areas within the original Butte County configuration began to be incorporated as separate counties (Fariss and Smith 1882:156-157).

The agricultural value of the land was soon recognized, and large tracts of land were claimed by permanent settlers. The region in the low foothills was originally claimed by a number of individuals who attempted to make a living by farming and ranching. It was soon discovered that the long dry period between May and October with no rainfall caused the grasses to dry off, leaving the land useless for grazing livestock except in the winter and spring. Cattle and sheep ranchers were forced to move their herds to the mountains to a summer range. This was not cost-efficient except for landowners who had large tracts of land at the lower elevations to support large herds that could be moved seasonally. As a result, many sold their small tracts to their neighbors and moved on to other pursuits, with some families amassing thousands of acres in the region for their cattle and sheep. Other lands were discovered to be productive for orchards and vineyards. Agriculture continues to be an important industry in the region.

Lumbering was also an important industry in the County. There were a number of sawmills in the County, with shipping of the milled lumber first by railroad, and later by truck.

Historic backgrounds of the cities and town in Butte County are described briefly below.

Chico. During the late 1840s and early 1850s, Bidwell established the Chico area as an agricultural, transportation, and commercial center. As early as 1847, Bidwell maintained experimental orchards and fields, and a flour mill and fruit-drying plant were soon built. Stage lines pass through Chico, connecting Marysville and the Shasta area. Bidwell opened a hotel to accommodate travelers. By 1851, the first post office was established under Postmaster A.H. Barbar. A court had already been founded, and Chico became a voting precinct in 1852. By 1859, a school was established in the town (McGie 1982:35; Talbitzer 1987:40-41, 60).

By 1860, the future City of Chico was thriving. Bidwell had purchased John Potter's ranch, a part of the Farwell Grant, and had a surveyor produce a plat of the town. Bidwell laid out plans for the town's future streets, and gave free home sites to persons wishing to settle along those streets. About 500 people inhabited the town as of 1860. The town's growth was aided by commerce with the mining camps and towns to the east (McGie 1982:35; Talbitzer 1987:63, 66).



Agriculture and livestock raising along with mining in outlying communities continued to sustain Chico through the final decades of the last century. The California and Oregon railroad, which arrived in 1870, provided another economic boost to Chico, and facilitated the growth of the logging and lumbering industry in the nearby mountains. By 1872, the year in which the Town of Chico was incorporated, Chico boasted several lumber yards and sawmills, and hundreds of people in the vicinity were employed in the industry. Flumes were eventually constructed to transport logs from the mountains directly to the mills of Chico (Talbitzer 1987:67-70).

One of the major developments in the cultural and economic history of Chico was the decision by the state legislature in 1887 to erect a "normal school" in Chico to train elementary school teachers. Chico Normal School accepted its first students for the fall term of 1889. Over the succeeding decades, the school has evolved into California State University, Chico.

Oroville. Oroville was originally started as a camp named "Ophir" on the Feather River in 1849. When the Post Office was established in 1854, the name had to be changed because there were already two post offices in other counties with similar names. When the Feather River Ditch was completed in the spring of 1856, the town became the supply center for the mining district (Gudde 1975:256).

Oroville is the site where Ishi was found emaciated, starving, exhausted, and frightened in the corral of the Ward Slaughterhouse in 1911. He was taken to the Oroville jail, and was held there until A. L. Kroeber and T. T. Waterman, anthropologists from University of California, Berkeley, arrived and arranged to take him to San Francisco. Ishi shared his knowledge of the Yahi with the anthropologists and worked at the museum. He died of tuberculosis in 1916 (The Santa Barbara Indian Center and Dutschke 1982:39).

Paradise. Paradise had its beginnings around 1860, when William Leonard established a sawmill there (Talbitzer 1987:63). However, the town experienced little growth until the beginning of the current century, when the expansion of the lumber industry brought many new people into the area. Paradise became a center of commerce for many of the newcomers (Talbitzer 1987:78, 80).

The ridge area received an economic boost when, in 1900, the Centerville Powerhouse and a power transmission line were completed within Butte Creek Canyon, about four or five miles northwest of the project area. De Sabla Powerhouse, located about seven miles upstream of the Centerville Powerhouse in Butte Creek Canyon, was completed by 1903. Water was diverted from the Feather River to increase the capacities of both powerhouses (Farber 1988; Mansfield 1918:352-353).

Diamond Match Company began to acquire about 55,000 acres on or near the ridge in 1902. A huge sawmill, then one of the world's largest, was built in Stirling City in 1904. That same year, Butte County Railroad was built along Magalia Ridge to connect the sawmill at Stirling City to the match plant, planning, and finishing mills in Chico. This railroad passed through Paradise, resulting, as noted, in the growth of that community (McGie 1982[I]:184; Talbitzer 1987:80). In 1907, Southern Pacific took over operation of the railroad (Mansfield 1918:341, 359).



In summary, while Paradise can trace its beginnings to the construction of Leonards Mill in 1860, and although at least three roads passed through the hamlet in the 1850s to connect mining communities further up the ridge, the growth of Paradise into a real town occurred after the turn of the century, and stemmed from the establishment of the railroad to Stirling City by Diamond Match Company, and the later formation of the Paradise Irrigation District in 1916. Apple and pear orchards thrived, and in more recent years, Paradise grew into a retirement community (cf. McGie 1982[I]:200-201).

Gridley. The community of Gridley was established in 1870 when the California Oregon Railroad laid tracks through the area (Tailbitzer 1987:67-68). It was named in honor of George W. Gridley who owned the area where the town was established and who had built the first structure in the new town, a barn (Gudde 1969:128).

Biggs. The community of Biggs was also established in 1870 with the construction of the California Oregon Railroad. It was named after a Major Marion Biggs, a local rancher, who is said to have been the first person to ship grain from the new station (Gudde 1969:29).

c. Existing Cultural and Historic Resources. There are over three thousand cultural resources identified within Butte County that have been assigned primary identification numbers according to the Northeast Information Center. This includes cultural resources that are assigned primary numbers only (isolated artifacts, resources that lack complete documentation, State Landmarks) and those resources that are more comprehensive in nature and have been documented to standards established by the Office of Historic Preservation. This second category receives both a permanent and primary number.

Site types present, or expected to exist, within Butte County include prehistoric period occupation areas (both short and long term), burial areas, ceremonial areas, resource collection and processing sites, lithic scatters, quarries, rock art sites, trails, and isolated examples of prehistoric period artifacts.

For the historic period, cultural resources may include post-contact Native American occupation and ceremonial areas, trails, roads, railroads, small and large-scale mining features, logging features, occupation areas (short and long term), buildings, structures, water conveyance features (ditches), quarries, trash dumps, and cemeteries.

In general, prehistoric period cultural resources were situated in the most favored environmental settings – areas adjacent to permanent water sources with relatively level topography. This is also true of most historic period resources, with the exception of mining related features and settlements where the discovery of a mineral deposit did not always correspond with a favored environmental setting. It is important to note that lower sensitivity area could still contain resources, and the review of all areas proposed for impact should always be indicated.

Tables 4.4-1 through 4.4-3 provide a list of various historical resources in Butte County. Table 4.4-1 contains a list of National Register of Historic Places (NRHP) in Butte County. Table 4.4-2 contains a list of California specific historical landmarks in the County. And Table 4.4-3 presents

in-service bridges in the Caltrans Bridge Inventory that may have historical significance and might be eligible for inclusion in the NHRP, pending further evaluation.

**Table 4.4-1
National Register of Historic Places in Butte County**

Reference Number	Location	Resource Name	Address	Year Listed
83001175	Chico	Silberstein Park Building	426, 430, 434 Broadway	1983
82002171	Chico	St. John's Episcopal Church	230 Salem St.	1982
75000424	Chico	Stansbury House	307 W. 5th St.	1975
77000288	Chico	Allen--Sommer--Gage House	410 Normal St.	1977
82002170	Chico	Chapman, A. H., House	256 E. 12th St.	1982
72000216	Chico	Bidwell Mansion	Sowillenno Ave.	1972
72000217	Chico	Patrick Ranch House	3 mi. SE of Chico off U.S. 99E	1972
73000396	Chico	Mud Creek Canyon	Address Restricted	1973
87000001	Chico	Southern Pacific Depot	430 Orange St.	1987
85000122	Chico	US Post Office--Chico Midtown Station	141 W. 5th St.	1985
72000218	Chico	Patrick Rancheria	Address Restricted	1972
88000920	Chico	Honey Run Covered Bridge	Honey Run Humbug Rd.	1988
91000636	Chico	South of Campus Neighborhood	Bounded by W. 2nd, Normal, W. 6th and Cherry Sts.	1991
92000316	Durham	Durham, W. W., House	2280 Durham--Dayton Rd.	1992
01000705	Gridley	Hazel Hotel	850, 860, 880, 890 Hazel St., and 602,608, 620 Kentucky	2001
82002172	Magalia	Magalia Community Church	Stirling Hwy.	1982
83001174	Oroville	Oroville Commercial District (old)	Montgomery, Myers and Huntoon Sts. and Miner Alley	1983
76000478	Oroville	Oroville Chinese Temple	1500 Broderick St.	1976
85000123	Oroville	US Post Office--Oroville Main	1735 Robinson St.	1985
82002173	Oroville	Lee, Fong, Company	Address Restricted	1982
90001431	Oroville	Oroville Inn	2066 Bird St.	1990
91001383	Oroville	State Theatre	1489 Myers St.	1991
07000405	Oroville	Oroville Carnegie Library	1675 Montgomery St.	2007
72000219	Paradise	Centerville Schoolhouse	2 mi. NE of Paradise on Humbug Rd.	1972
03001357	Paradise	Forks of Butte	Address Restricted	2004
75000425	Stirling City	Inskip Hotel	6 mi. N of Stirling on Skyway (Old Humbug Rd.)	1975

Source: National Register of Historic Places, 2015



**Table 4.4-2
California Historical Landmarks in Butte County**

Reference Number	Location	Resource Name	Address
313	Chico	Hooker Oak Tree	Bidwell Park, Hooker Oak Recreation Area, Manzanita Ave between Vallombrosa and Hooker Oak Ave, Chico
314	Oroville	Old Suspension Bridge	Lake Oroville State Recreation Area, Bidwell Canyon, Bidwell Canyon Rd, Oroville
329	Chico	Rancho Chico And Bidwell Adobe	Bidwell Mansion State Historic Park, 525 The Esplanade, Chico
330	Oroville	Bidwell's Bar	Lake Oroville State Recreation Area, Bidwell Canyon, Bidwell Canyon Rd, Oroville
770	Oroville	Chinese Temple	1500 Broderick St, Oroville
771	Magalia	Dogtown Nugget Discovery Site	0.3 mi N of Pentz-Magalia Rd on Skyway, Magalia
807	Oroville	Oregon City	Diggins Dr between Oroville and Cherokee
809	Oroville	Discovery Site of the Last Yahi Indian	2547 Oroville-Quincy Hwy at Oak Ave, Oroville
840-2	Chico	Chico Forestry Station And Nursery	Bidwell Nature Center, Cedar Grove Picnic Area, Cedar Grove and E 8th, Bidwell Park, Chico
1043	Oroville	Mother Orange Tree of Butte County	400 Glen Drive, Oroville

Source: California Office of Historic Preservation, 2016

**Table 4.4-3
Caltrans Historic Bridge Inventory**

LOCAL AGENCY BRIDGES				
Bridge Number	Bridge Name	Location	Historical Significance	Year Built
12C0104	Keefer Slough	1.41 MI N STATE HWY 99E	4. Historical Significance not determined	1992
12C0146	Drainage Canal	0.5 MI N COLUSA HWY	4. Historical Significance not determined	1991
12C0194	Camp Creek	3.3 CAMP CRK & 2.4 DIXIE	4. Historical Significance not determined	1925
12C0285	Myers Street UP	N BALDWIN AVE	4. Historical Significance not determined	1924
12C0286	Lincoln Street UP	JUST N MITCHELL AVE	4. Historical Significance not determined	1924
STATE AGENCY BRIDGES				
12 0038	North Fork Feather River	03-BUT-070-40.99	2. Bridge is eligible for NRHP	1932
12 0039	Bear Creek	03-BUT-070-46.44	4. Historical Significance not determined	1936
12 0109	Arch Rock Tunnel	03-BUT-070-47.15	2. Bridge is eligible for NRHP	1937
12 0134	W Bridge Feather River (Lake Oroville)	03-BUT-070-28.22	2. Bridge is eligible for NRHP	1962
12 0169L	East 20 th Street OC	CHC 03-BUT-099-R31.50-	4. Historical Significance not determined	1993

Source: Caltrans Historic Bridge Inventory website, 2015

Historic significance designations:

- 1 – Listed on the National Register of Historic Places.
- 2 – Eligible for National Register listing.
- 3 – May be eligible for National Register listing.
- 4 – Unevaluated. (Generally, Category 4 bridges constructed before 1960 are associated with properties that have not yet been evaluated, such as railroads, canals, or potentially eligible historic roads.)
- 5 – Ineligible for National Register listing



Native American Resources. There are four Native American Rancherias present in Butte County. These include Berry Creek Rancheria, Enterprise Rancheria, and Mooretown Rancheria all located in the Oroville area, and the Chico Rancheria located in the Chico area. A search of the Native American Heritage Commission Sacred Land File revealed that there are Native American cultural resources within the plan area. Such resources are exempt from public disclosure. The Native American Heritage Commission provided contacts from the following Native American organizations for use during consultations: Berry Creek Rancheria of Maidu Indians, Enterprise Rancheria of Maidu Indians, Mooretown Rancheria of Maidu Indians, Mechoopda Indian Tribe of Chico Rancheria, Greenville Rancheria of Maidu (from Tehama County), Maidu Nation, Butte Tribal Council, Maidu Cultural and Development Group, KonKow Band of Maidu, and Tsi-Akim Maidu. Consultation with these Native American organizations is required prior to the approval and construction of individual projects.

d. Paleontological Resources Paleontology is a branch of geology that studies prehistoric life forms other than humans, through the study of plant and animal fossils. Paleontological resources are fossilized remains of organisms that lived in the region in the geologic past and therefore preserve an aspect of the County's prehistory which is important in understanding the development of the region as a whole, as many of these species are now extinct. Like archaeological sites and objects (which pertain to human occupation), paleontological sites and fossils are non-renewable resources. They are found primarily in sedimentary rock deposits and are most easily found in regions that may have been uplifted and eroded, but they may also be found anywhere that subsurface excavation is being carried out (e.g., streambeds, under roads).

Fossils and Their Associated Formations. Geologic formations are the matrix in which most fossils are found, occasionally in buried paleosols (ancient soils). These formations are totally different from modern soils and cannot be correlated with soil maps that depict modern surface soils representing only a thin veneer on the surface of the earth. Geologic formations may range in thickness from a few feet to hundreds of thousands of feet, and form complex relationships below the surface. Geologic maps (available through the U.S. Geological Survey [USGS] or California Geological Survey) show the surface expression (in two dimensions) of geologic formations along with other geologic features such as faults, folds, and landslides. Although sedimentary formations were initially deposited one atop the other, much like a layer cake, over time the layers have been squeezed, tilted, folded, cut by faults and vertically and horizontally displaced, so that today, any one rock unit does not usually extend in a simple horizontal layer. If a sensitive formation bearing fossils can be found at the surface in an outcrop, chances are that same formation may extend not only many feet into the ground straight down, it may well extend for miles just below the surface. Consequently, predicting which areas are paleontologically sensitive is a difficult task.

Determining Paleontological Potential. The most general paleontological information can be obtained from geologic maps, but geologic cross sections (slices of the layer cake to view the third dimension) must be reviewed for each area in question. These usually accompany geologic maps or technical reports. Once it can be determined which formations may be present in the subsurface, the question of paleontological resources must be addressed. Even though a formation is known to contain fossils, they are not usually distributed uniformly throughout the many square miles the formation may cover. If the fossils were part of a bay environment when



they died, perhaps a scattered layer of shells will be preserved over large areas. If on the other hand, a whale died in this bay, you might expect to find fossil whalebone only in one small area of less than a few hundred square feet. Other resources to be considered in the determination of paleontological potential are regional geologic reports, site records on file with paleontological repositories and site-specific field surveys.

Paleontologists consider all vertebrate fossils to be of significance. Fossils of other types are considered significant if they represent a new record, new species, an oldest occurring species, the most complete specimen of its kind, a rare species worldwide, or a species helpful in the dating of formations. However, even a previously designated low potential site may yield significant fossils. The exact locations are considered proprietary and therefore not presented in CEQA documents (to prevent the removal or destruction of these important, nonrenewable resources).

e. Regulatory Setting. A cultural resource may be designated as significant by National, State, or local authorities. In order for a resource to qualify for listing in the National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR), it must meet one or more identified criteria of significance. Resources may qualify for NRHP listing if one or more of the following criteria are met:

- 1) *The resource is associated with events that have made a significant contribution to the broad patterns of our history.*
- 2) *The resource is associated with the lives of persons important in our past.*
- 3) *The resource embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.*
- 4) *The resource has yielded, or may be likely to yield, information important in prehistory or history.*

4.4.2 Impact Analysis

a. Methodology and Significance Thresholds. The significance of a cultural resource, and subsequently the significance of any impacts, is determined by whether or not that resource can increase our knowledge of the past. The determining factors are site content and degree of preservation. Where the significance of a site is unknown, it is presumed to be significant for the purposes of this EIR. A finding of archaeological significance follows the criteria established in the *State CEQA Guidelines*.

According to Appendix G of the CEQA Guidelines, a proposed project would have significant impacts on cultural resources if the project would have one or more of the following effects:

- a) The project will cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5.
- b) The project will cause a substantial adverse change in the significant of an archaeological resource pursuant to § 15064.5.
- c) The project will directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.
- d) The project will disturb any human remains, including those interred outside of formal cemeteries.



According to the CEQA Guidelines § 15126.4(b)(3) public agencies should, whenever feasible, seek to avoid damaging effects on any historical resource of an archaeological nature. The following factors shall be considered for a project involving such an archaeological site:

- A. *Preservation in place (avoidance) is the preferred manner of mitigating impacts to archaeological sites. Preservation in place maintains the relationship between artifacts and the archaeological context. Preservation may also avoid conflict with religious or cultural values of groups associated with the site.*
- B. *Preservation in place may be accomplished by, but is not limited to, the following:*
 - *Planning construction to avoid archaeological sites.*
 - *Incorporation of sites within parks, greenspace, or other open space.*
 - *Covering the archaeological sites with a layer of chemically stable soil before building tennis courts, parking lots, or similar facilities on the site.*
 - *Deeding the site into a permanent conservation easement.*
- C. *When data recovery through excavation is the only feasible mitigation, a data recovery plan, which makes provision for adequately recovering the scientifically consequential information from and about the historical resource, shall be prepared and adopted prior to any excavation being undertaken. Such studies shall be deposited with the California Historical Resources Regional Information Center. Archaeological sites known to contain human remains shall be treated in accordance with the provisions of Section 7050.5 Health and Safety Code.*
- D. *Data recovery shall not be required for an historical resource if the lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the archaeological or historical resource, provided that the determination is documented and that the studies are deposited with the California Historical Resources Regional Information Center.*

b. Project Impacts and Mitigation Measures. This section describes generalized impacts associated with the projects anticipated under the 2016 RTP-SCS. Table 4.4-2 in Section 4.4.2.c. summarizes specific 2016 RTP-SCS projects that could result in the types of impacts discussed below.

Impact CR-1 Implementation of proposed transportation improvements and the land use scenario envisioned by the 2016 RTP-SCS could disturb known and unknown cultural resources. Impacts to archaeological and paleontological resources would be Class II, significant but mitigable and impacts to historical resources would be Class I, significant and unavoidable.

Archaeological and Paleontological Resources. It is known that paleontological resources and archaeological resources are present throughout Butte County. Therefore, it is possible to encounter known and unknown archaeological and paleontological resources as a result of implementation of transportation improvement projects pursuant to the 2016 RTP-SCS. Many of the improvements proposed under the 2016 RTP-SCS consist of minor expansions of existing facilities that would not involve construction in previously undisturbed areas. However, depending on the location and extent of the proposed improvement and ground disturbance,



known and/or unknown cultural resources could be impacted. Representative projects that may disrupt previously undisturbed areas are listed in Table 4.4-4. The projects listed in this table were chosen based on potential to include new infrastructure. It is possible that some of the proposed roadway or bridge widening or extension projects, beyond those listed in Table 4.4-24 would adversely impact archaeological and paleontological resources. In particular, construction activities may disturb the resources, thereby exposing them to potential vandalism, or causing them to be displaced from the original context and integrity. Specific analysis will be required as individual projects are implemented.

In addition, the 2016 RTP-SCS also contains a future land use scenario that envisions infill development. This land use scenario focuses future development within existing urbanized areas. As a result, encroachment into undisturbed areas would be reduced when compared to land use scenario that does not focus future development within existing urbanized areas, thereby reducing the potential for impacting known or unknown archaeological or paleontological resources in undisturbed areas. However, it is still possible that archaeological or paleontological resources could be located on or near future infill project sites. Impacts to cultural resources would be potentially significant.

Historic Resources. With regard to known significant historic resources, the location and nature of the proposed 2016 RTP-SCS projects listed in Section 2.0 *Project Description* were evaluated relative to the location of the historic properties listed in Table 4.4-1. It has been determined that none of the proposed improvement projects would affect any California Historical Landmarks or Butte County Landmarks. In each case, the proposed improvements are well away from a designated historic resource.

In addition, the 2016 RTP-SCS also contains a future land use scenario that envisions infill development. This land use scenario focuses future development within existing urbanized areas. There are no specific development projects pursuant to the land use scenario envisioned by the 2016 RTP-SCS identified at this time, so a site specific evaluation is not possible at this time.

However, because future infill could be located near or adjacent to existing historic structures, the integrity of such structures could be indirectly or directly impacted as a result. Moreover, if future infill would involve redevelopment/ demolition of existing structures, it is possible that such structures could have historical significance (as determined by site-specific evaluation) given the presence of structures that are over 50 years old within the Butte County region, particularly within existing urbanized areas. Redevelopment or demolition could result in the permanent loss of historic structures. Similarly, while proposed transportation projects would not impact known historic structures, it is possible that such projects may require reconstruction or demolition of transportation infrastructure or other structures that are over 50 years old (such as Caltrans historic bridges as listed in Table 4.4-3), and which may be considered historically significant as determined by site-specific evaluation. Such reconstruction or demolition could result in the permanent loss of historic structures. Impacts would be potentially significant.

In conclusion, the nature of potential impacts to archaeological and paleontological resources cannot be fully evaluated at this point since the specific “Area of Potential Effect” for each



improvement project has not yet been defined. However, many of the projects included in the 2016 RTP-SCS will require an independent review at which time the significance of the impact can be precisely determined. As discussed above, the proposed transportation improvements and the land use plan envisioned by the 2016 RTP-SCS may impact known and/or unknown cultural resources. Impacts to archaeological and paleontological resources would be potentially significant.

As discussed above, impacts to historic resources would be potentially significant because future transportation improvements and/or infill development could directly or indirectly impact historic structures. The nature of potential impacts cannot be fully evaluated at this point because the precise characteristics of future infill are not known. Nonetheless, the potential for historic structures to be impacted remains.

Mitigation Measures. Transportation project sponsor agencies can and should implement the following mitigation measures for transportation projects identified in Table 4.4-4. Butte County and cities in the County should implement these measures, where relevant to land use projects implementing the RTP-SCS.

- CR-1(a)** The project sponsor of a 2016 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:
1. Prior to construction, a map defining the Area of Potential Effects (APE) shall be prepared on a project by project basis for 2016 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. 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 sponsor 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 sponsor 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 sponsor shall ensure that mitigation for potential impacts to significant cultural resources includes one or more of the following:

- Realignment of the project right-of-way (avoidance; the most preferable method);
- Capping of the site and leaving it undisturbed;
- Addressing structural remains with respect to NRHP guidelines (Phase III studies);
- Relocating structures per NRHP guidelines;
- Creation of interpretative facilities; and/or
- Development of measures to prevent vandalism.

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

Significance After Mitigation. Mitigation Measures CR-1(a)-(d) would assure that substantial adverse changes to archeological and paleontological resources would be less than significant because measures would be taken to either avoid the impacts, minimize the impacts, or recover the resources. However, impacts related to historic structures would remain significant and unavoidable because redevelopment or demolition that may be required to



implement infill development in accordance with the SCS may result in the permanent loss of historic structures.

Impact CR-2 Implementation of proposed transportation improvements and the land use scenario envisioned by the 2016 RTP-SCS could disturb unknown human remains during construction activity. Impacts would be Class II, significant but mitigable

Indications are that humans have occupied Butte County for over 10,000 years and it is not always possible to predict where human remains may occur outside of formal burials. Therefore, excavation and construction activities, regardless of depth, may yield human remains that may not be interred in marked, formal burials. Under CEQA, human remains are protected under the definition of archaeological materials as being “any evidence of human activity.” Additionally, Public Resources Code Section 5097 has specific stop-work and notification procedures to follow in the event that human remains are inadvertently discovered during project implementation. Construction activity associated with the transportation improvements and any development envisioned by the 2016 RTP-SCS may result in the discovery of human remains. Therefore, impacts are potentially significant.

Mitigation Measures. Transportation project sponsor agencies can and should implement the following mitigation measure for transportation projects identified in Table 4.4-4. Butte County and cities in the County should implement these measures, where relevant to land use projects implementing the RTP-SCS.

CR-2 Implement Stop-Work and Consultation Procedures Mandated by Public Resources Code 5097. In the event of discovery or recognition of any human remains during construction or excavation activities, the implementing agency shall cease further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the following steps are taken:

- The Butte County Coroner has been informed and has determined that no investigation of the cause of death is required.
- If the remains are of Native American origin, either of the following steps will be taken:
 - The coroner will contact the Native American Heritage Commission in order to ascertain the proper descendants from the deceased individual. The coroner will make a recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods, which may include obtaining a qualified archaeologist or team of archaeologists to properly excavate the human remains.

- The implementing agency or its authorized representative will retain a Native American monitor, and an archaeologist, if recommended by the Native American monitor, and rebury the Native American human remains and any associated grave goods, with appropriate dignity, on the property and in a location that is not subject to further subsurface disturbance when any of the following conditions occurs:
 - The Native American Heritage Commission is unable to identify a descendent.
 - The descendant identified fails to make a recommendation.
 - The implementing agency or its authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.

Significance After Mitigation. Mitigation Measures CR-2 would assure that substantial adverse changes to human remains would be less than significant.

c. Specific 2016 RTP-SCS Projects That May Result in Impacts. Table 4.4-4 identifies representative projects with the potential to cause or contribute to direct or indirect impacts to cultural resources such as those discussed in Section 4.4.2.b above. These projects were chosen based on their scope and potential to include the development of new transportation infrastructure. While many projects have the potential to impact cultural resources, those requiring substantial ground disturbance in undisturbed areas have greater potential to impact prehistoric archaeological resources. Projects located in urban infill or previously disturbed areas have a greater potential to impact historic built environment resources, as well as historic archaeological resources in older developed areas. Additional specific analysis will be required as individual projects are implemented to determine the actual magnitude of impact. Mitigation measures discussed above would apply to these specific projects.

**Table 4.4-4
2016 RTP-SCS Projects that May Result in Cultural Resources Impacts**

AGENCY	TITLE	PROJECT DESCRIPTION	IMPACT	DESCRIPTION OF IMPACT
Butte County	Central House Rd Bridge Widening (at Wyman Ravine)	Widen Central House Rd Bridge from 1 to 2 lanes at Wyman Ravine	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Butte County	SR 70 Widening (Ophir Rd to Palermo Rd)	Widen SR 70 from 2 to 4 lanes from Ophir Rd to Palermo Rd	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Butte County	SR 70 Widening (Palermo Rd to Cox Ln)	Widen SR 70 from 2 to 4 lanes from Palermo Rd to Cox Ln	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Butte County	Kittyhark Dr Extension (SR 99 to Garner Ln)	Construct 2 lane roadway from SR 99 to Garner Ln	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Butte County	SR 70 Widening (E Gridley Rd to Yuba Co.)	Widen SR 70 from 2 to 4 lanes from E. Gridley Rd to Yuba County	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Chico	SR 99 Auxiliary Lanes (SR 32 to E. 1st Ave)	Add Auxiliary lanes on SR 99 from SR 32 to E. 1st Ave	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Chico	SR 32 Widening (SR 99 to El Monte Ave)	Widen SR 32 from 2 to 4 lanes from SR 99 to El Monte Ave	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Chico	Eaton Rd Extension (Ceanothus Ave to Floral Ave)	Construct 4 lane roadway for extension of Eaton Rd from Ceanothus Ave to Floral Ave	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Chico	Eaton Rd Extension (St Lawrence Ave to Wildwood Ave)	Construct 4 lane roadway for extension of Eaton Rd from St Lawrence Ave to Wildwood Ave	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Chico	Eaton Rd Widening (Ceanothus Ave to St Lawrence Ave)	Widen Eaton Rd from 2 to 4 lanes from Ceanothus Ave to St Lawrence Ave	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Chico	Forest Ave Widening (SR 32 to Humboldt Rd)	Widen Forest Ave from 2 to 4 lanes from SR 32 to Humboldt Rd		Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains

**Table 4.4-4
2016 RTP-SCS Projects that May Result in Cultural Resources Impacts**

AGENCY	TITLE	PROJECT DESCRIPTION	IMPACT	DESCRIPTION OF IMPACT
Chico	Cohasset Rd Widening (Two Oaks Dr to Thorntree Dr)	Widen Cohasset Rd from 2 to 4 lanes from Two Oaks Dr to Thorntree Dr	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Chico	Cohasset Rd Widening (Airport Blvd to Eaton Rd)	Widen Cohasset Rd from 2 to 4 lanes from Airport Blvd to Eaton Rd	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Chico	Midway Widening (Hegan Ln to E. Park Ave)	Widen Midway from 2 to 4 lanes from Hegan Ln to E. Park Ave	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Chico	MLK Blvd Widening (E. Park Ave to 20th St)	Widen MLK Blvd from 2 to 4 lanes from E. Park Ave to 20th St	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Chico	Bruce Rd Widening (Skyway to SR 32)	Widen Bruce Rd from 2 to 4 lanes from Skyway to SR 32	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Chico	Notre Dame Extension (E. 20th St to Little Chico Creek)	Construct 2 lane roadway for extension of Notre Dame from E. 20th St to Little Chico Creek	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Chico	SR 32 Widening (El Monte Ave to Yosemite Dr)	Widen SR 32 from 2 to 4 lanes from El Monte Ave to Yosemite Dr	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Chico	E. 20th St Widening (Forest Ave to Bruce Rd)	Widen E. 20th St from 2 to 4 lanes from Forest Ave to Bruce Rd	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Chico	SR 32 Lane Reduction (W 1st St to W 4th St) - aka Nord Ave Complete Street	Reduce SR 32 from 4 to 2 lanes from W 1st St to W 4th St)	B-3,	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Chico	SR 32 and Fir St Multi Modal	Change Fir St lanes from 2 lane bi-directional to 2 lane northbound travel between east and westbound travel lanes of SR 32 and add 30 spaces to park and ride.	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains

**Table 4.4-4
2016 RTP-SCS Projects that May Result in Cultural Resources Impacts**

AGENCY	TITLE	PROJECT DESCRIPTION	IMPACT	DESCRIPTION OF IMPACT
Chico	Guyonn Rd Bridge Widening (at Lindo Channel)	Widen Guyonn Rd Bridge from 1 to 2 lanes at Lindo Channel	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Chico	Eaton Rd Widening (at SR 99 interchange)	Widen Eaton Rd from 2 to 4 lanes at SR 99 interchange	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Chico	W. Eaton Rd Extension (SR 32 to W. Eaton Rd end)	Construct 2 lane roadway for extension of W. Eaton Rd from SR 32 to end	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Chico	SR 99 Auxiliary Lanes (Skyway to 20th St)	Add Auxiliary lanes on SR 99 from Skyway to 20th St	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Chico	SR 99 Auxiliary Lanes (20th St to SR 32)	Add Auxiliary lanes on SR 99 from 20th St to SR 32	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Chico	Esplanade Widening (Eaton Rd to Nord Hwy)	Widen Esplanade from 2 to 4 lanes from Eaton Rd to Nord Hwy	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Chico	Notre Dame Extension (Comanche Creek to Southgate Ave)	Construct 2 lane roadway for extension of Notre Dame from Comanche Creek to Southgate Ave	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Chico	Southgate Ave Interchange (at SR 99)	Replace intersection of Southgate Ln and SR 99 with new 2 lane overpass and interchange	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Chico	Southgate Extension (Midway to Skyway and Entler Ave to Player Ln)	Construct 2 lane roadway for extension of Southgate from Midway to Skyway and Entler Ave to Player Ln	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Chico	Fair St Extension (Fair St end to Entler Ave)	Construct 2 lane roadway for extension of Fair St from existing end to Entler Ave	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains

**Table 4.4-4
2016 RTP-SCS Projects that May Result in Cultural Resources Impacts**

AGENCY	TITLE	PROJECT DESCRIPTION	IMPACT	DESCRIPTION OF IMPACT
Chico	Silver Dollar Way Extension (Fair St to MLK Jr Parkway)	Construct 2 lane roadway for extension of Silver Dollar Way from Fair St to MLK Jr Parkway	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Chico	Manzanita Ave (Chico Canyon Rd to Wildwood Ave)	Widen Manzanita Ave from 2 to 4 lanes from Chico Canyon Rd to Wildwood Ave	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Chico	Chico Canyon Rd (E. 8th St to Manzanita Ave)	Widen Chico Canyon Rd from 2 to 4 lanes from E. 8th St to Manzanita Ave	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Oroville	Olive Highway Widening (Oro-Dam Blvd to Foothill Blvd)	Widen Olive Hwy from 2 to 3 lanes from Oro-Dam Blvd to Foothill Blvd. Additional lane will be added to eastbound travel.	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Paradise	Skyway Lane Reduction (Pearson Rd to Elliott Rd)	Reduce Skyway from 4 to 2 lanes from Pearson Rd to Elliott Rd	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Paradise	Anchor Way Construction (South Libby to Clark Rd)	Construct 2 lane roadway from S. Libby Rd to Clark Rd	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Paradise	Buschmann Rd Extension (Foster Rd to Skyway)	Construct 2 lane roadway extension from Foster Rd to Skyway	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Paradise	Forest Service Ln Extension (Moore Rd to Skyway)	Construct 2 lane roadway extension from Moore Rd to Skyway	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Paradise	Elliott Rd Extension (End to Kibler Rd)	Construct 2 lane roadway extension from Elliott to Kibler Rd	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Paradise	Grinding Rock Rd Extension (End to Skyway)	Construct 2 lane roadway extension from Grinding Rock Rd to Skyway	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Paradise	S. Libby Rd Extension (End to Edgewood Ln)	Construct 2 lane roadway extension from S. Libby Rd to Edgewood Ln	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Paradise	Sawmill Rd Extension (End to S. Libby Rd)	Construct 2 lane roadway extension from Sawmill Rd to S. Libby Rd	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains

**Table 4.4-4
2016 RTP-SCS Projects that May Result in Cultural Resources Impacts**

AGENCY	TITLE	PROJECT DESCRIPTION	IMPACT	DESCRIPTION OF IMPACT
Butte County	Neal Road and Cohasset Road Bike Project	On Neal Rd. from Oro-Chico Hwy to the Skyway & unincorporated portion of Cohasset Rd from Chico Limits to the Cohasset School. Construct Class 2 bike lanes.	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Butte County	Butte County Forest Motorized Trail Management Plan	Plumas National Forest and Feather River Ranger District. Develop a Trail Assessment Study Report for 19 OHV trails totaling 15.25 miles with the Feather River Ranger District.	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Butte County	Butte County Highway Safety Improvement Program (HSIP) Grouped Projects	HSIP3-03-002. Lincoln Blvd from 50' north of Idora St to 100' south of Arnold Ave.	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Various	Butte County Highway Safety Improvement Program (HSIP) Grouped Projects	HSIP5-03-001. County of Butte, Durham-Pentz Rd between SR 99 and SR 191.	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
		HSIP5-03-002. County of Butte, signal at East Gridley Rd and Larkin Rd.	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
		HSIP5-03-009. City of Oroville, signals at Oro Dam Blvd, Orange Ave, and Acacia Ave signal install.	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
		HSIP6-03-006. Town of Paradise, Clark Rd between Adams Rd and Kimberly Ln.	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
		HSIP6-03-008. Town of Paradise, Pearson Rd between Clark Rd and Pentz Rd.	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
		HSIP6-03-009. Town of Paradise, Clark Rd between Bille Rd and Wagstaff Rd.	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains

**Table 4.4-4
2016 RTP-SCS Projects that May Result in Cultural Resources Impacts**

AGENCY	TITLE	PROJECT DESCRIPTION	IMPACT	DESCRIPTION OF IMPACT
		HSIP7-03-001. City of Chico, Nord Ave (SR 32) from 1st St to 4th St.	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
		HSIP7-03-002. City of Chico, Esplanade between Cohasset Rd and Memorial Way.	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
		HSIP7-03-003. City of Chico, intersection of Nord Ave and West Sacramento Ave.	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
		HSIP7-03-004. Town of Paradise, intersection of Skyway at Black Olive Dr.	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Butte County	Las Plumas SRTS	Between Waler Rd and Autrey Ln. Walmer Rd between Lincoln Blvd and Rosedale Ave. Construct sidewalks, curb, gutter, ramps and AC tie-in; install speed humps and speed feedback signs; upgrade crosswalks	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Butte County	South Oroville SRTS - ATP	South Oroville SRTS - Lincoln Blvd and Las Plumas Ave. Safe Routes to School project along Lincoln Blvd, Las Plumas Ave, Lower Wyandotte Rd, and Monte Vista Ave. Install bike lanes, sidewalks, pedestrian crossing safety enhancements, and driver feedback signs along the main corridors of the south Oroville area routes to school.	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
BCAG	Butte Regional Transit Operations and Maintenance Facility	In Chico, construct new Butte Regional Transit Operations Center (326 Huss Dr).	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Caltrans	Butte County SHOPP Collision Reduction Grouped Listing	SR 99 Near Chico at the Rock Creek Bridge #12-27. Widen shoulder on structure	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains

**Table 4.4-4
2016 RTP-SCS Projects that May Result in Cultural Resources Impacts**

AGENCY	TITLE	PROJECT DESCRIPTION	IMPACT	DESCRIPTION OF IMPACT
		SR 191 Near Town of Paradise. Safety improvement project to reduce the number and severity of collisions. SR 191 near Paradise from 2 miles south of Clear Creek Cemetery Rd to South Airport Rd.	C-1, C-2	Damage to or the Destruction of Archaeological Resources, or Inadvertent Discovery of Human Remains
Caltrans	Butte County SHOPP Mandates Grouped Listing	SHOPP Mandates - ADA pedestrian infrastructure project on SR 32 near Chico from Kennedy Avenue to the SR 99/32 separation. Construct sidewalks, curb-ramps and crosswalks.	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Caltrans	Butte County SHOPP Bridge Preservation Grouped Listing	State Route 70 in Oroville at Flag Canyon Creek Bridge # 12-0140 and SR 99 near Chico from Estates Drive at 0.4 mile north of Butte Creek Bridge #12-0126R. Replace bridges.	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Biggs	City of Biggs SRTS - Aleut St - ATP	Constructs new sidewalks to close existing gaps along the main routes to school. Project includes sidewalk construction on Aleut Street, Bannock Street, 2nd Street and 3rd Street within the central portion of the City of Biggs.	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Biggs	City of Biggs SRTS - B St - ATP	SRTS B Street & 2nd St Sidewalk Improvement Project. Construct sidewalk and curb ramps along B Street (1st St to 11th St) and 2nd Street (E St to I St) to close sidewalk gaps and provide a safe route to school.	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Chico	SR 99 Corridor Bikeway Phase 4 - ATP	SR 99 Bikeway Phase 4 Improvements. Constructs Class 1 bikeway from Business Lane to Skyway.	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Oroville	Table Mountain Blvd Roundabout	In Oroville at Table Mountain Blvd., Nelson Ave and Cherokee Rd - Reconfigure intersection and construct a roundabout.	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains

**Table 4.4-4
2016 RTP-SCS Projects that May Result in Cultural Resources Impacts**

AGENCY	TITLE	PROJECT DESCRIPTION	IMPACT	DESCRIPTION OF IMPACT
Paradise	Maxwell Dr SR2S Project	Safe Routes to School project along Maxwell Dr between Skyway and Elliot Rd. Improvements include the construction of sidewalks, curb and gutter along Maxwell Dr. Shoulders will also be widened to facilitate Class 2 bike lanes.	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Paradise	Pearson Rd SR2S Connectivity Project	Safe Routes to School project along Pearson Rd between Black Olive and Academy Drives. Improvements include the construction of sidewalks, curb and gutter on the north and south sides of Pearson Rd. The project will require minor drainage improvements and construction of appropriate retaining walls for hillside slopes.	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Paradise	Almond St Multi-Modal - ATP	Almond Street Multi-Modal. The proposed project will add sidewalks, curbs and gutters to Almond Street between Pearson Rd and Elliot Rd.	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Paradise	Paradise Memorial Trailway - ATP	Memorial Trailway Class 1 Enhancements (Neal Rd to Pentz Rd). Upgrade bike/ped facility, to current standard for width and minimum standard for shoulders. Project also includes crosswalk enhancements at 5 arterial intersections.	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Paradise	Ponderosa Elementary SRTS - ATP	Ponderosa Elementary SRTS Project. Project will convert Pentz Road (between Bille Rd and 300' north of Wagstaff Rd) from a 2-lane, 20' wide roadway to a complete street solution supporting walking, bicycling and rolling to and from school and nearby destinations. No change in travel lanes.	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Paradise	Downtown Paradise Equal Mobility - ATP	Downtown Paradise Equal Mobility Project. Improvements include the removal of barriers, gravel sidewalks, asphalt sidewalks, and driveways with construction of ADA-compliant facilities. On Skyway between Pearson Rd and Elliott Rd.	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains

**Table 4.4-4
2016 RTP-SCS Projects that May Result in Cultural Resources Impacts**

AGENCY	TITLE	PROJECT DESCRIPTION	IMPACT	DESCRIPTION OF IMPACT
Various	Local Highway Bridge Projects (HBP) - Grouped Listing - Lump Sum	Midway Bridge Replacement across Butte Creek. On Midway (old SR 99) approximately 0.2 miles south of White Ave to approximately 0.7 miles south of White Ave. ,spanning Butte Creek and Butte Creek Overflow. Replace 2 bridge structures.	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Various	Local Highway Bridge Projects (HBP) - Grouped Listing - Lump Sum	E Rio Bonito Rd over Hamilton Slough	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
		E Rio Bonito Rd over Sutter Butte Canal	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
		Oregon Gulch Rd over Morris Ravine	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
		Ord Ferry Rd over Little Chico Creek	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
		Pomona Rd over Little Chico Creek	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
		Salem St over Little Chico Creek	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains
Butte County	Oro-Chico Hwy Bike Project	Construct Class 2 Bike lane from Midway to Butte Campus Drive along Oro Chico Hwy, Durham Dayton Hwy & Durham Pentz Rd.	C-1, C-2	Damage to or the Destruction of Archaeological, Paleontological or Historic Resources, or Inadvertent Discovery of Human Remains

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4.5 GREENHOUSE GAS EMISSIONS/CLIMATE CHANGE

This section discusses potential impacts of the 2016 RTP-SCS related to greenhouse gas emissions and climate change. Air quality impacts are discussed in Section 4.2, *Air Quality*.

4.5.1 Setting

a. Climate Change and Greenhouse Gases. Climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period of time. The term "climate change" is often used interchangeably with the term "global warming," but "climate change" is preferred to "global warming" because it helps convey that there are other changes in addition to rising temperatures. The baseline against which these changes are measured originates in historical records identifying temperature changes that have occurred in the past, such as during previous ice ages. The global climate is continuously changing, as evidenced by repeated episodes of substantial warming and cooling documented in the geologic record. The rate of change has typically been incremental, with warming or cooling trends occurring over the course of thousands of years. The past 10,000 years have been marked by a period of incremental warming, as glaciers have steadily retreated across the globe. However, scientists have observed acceleration in the rate of warming during the past 150 years. Per the United Nations Intergovernmental Panel on Climate Change (IPCC, 2013), the understanding of anthropogenic warming and cooling influences on climate has led to a high confidence (95 percent or greater chance) that the global average net effect of human activities has been the dominant cause of warming since the mid-20th century (IPCC, 2013).

Gases that absorb and re-emit infrared radiation in the atmosphere are called greenhouse gases (GHGs). The gases that are widely seen as the principal contributors to human-induced climate change include carbon dioxide (CO₂), methane (CH₄), nitrous oxides (N₂O), fluorinated gases such as hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). Water vapor is excluded from the list of GHGs because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation.

GHGs are emitted by both natural processes and human activities. Of these gases, CO₂ and CH₄ are emitted in the greatest quantities from human activities. Emissions of CO₂ are largely by-products of fossil fuel combustion, whereas CH₄ results from off-gassing associated with agricultural practices and landfills. Observations of CO₂ concentrations, globally-averaged temperature, and sea level rise are generally well within the range of the extent of the earlier IPCC projections. The recently observed increases in CH₄ and N₂O concentrations are smaller than those assumed in the scenarios in the previous assessments. Each IPCC assessment has used new projections of future climate change that have become more detailed as the models have become more advanced.

Man-made GHGs, many of which have greater heat-absorption potential than CO₂, include fluorinated gases and sulfur hexafluoride (SF₆) (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 (CO₂) is used to relate the amount of heat absorbed to the amount of the gas emissions, referred to as “carbon dioxide equivalent” (CO₂e), and is the amount of a GHG emitted multiplied by its GWP. Carbon dioxide has a 100-year GWP of one. By contrast, methane CH₄ has a GWP of 25, meaning its global warming effect is 25 times greater than carbon dioxide on a molecule per molecule basis (IPCC, 2007).

The accumulation of GHGs in the atmosphere regulates the earth’s temperature. Without the natural heat trapping effect of GHGs, Earth’s surface would be about 34°C cooler (CalEPA, 2006). However, it is believed that emissions from human activities, particularly the consumption of fossil fuels for electricity production and transportation, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations. The following discusses the primary GHGs of concern.

Carbon Dioxide. The global carbon cycle is made up of large carbon flows and reservoirs. Billions of tons of carbon in the form of CO₂ are absorbed by oceans and living biomass (i.e., sinks) and are emitted to the atmosphere annually through natural processes (i.e., sources). When in equilibrium, carbon fluxes among these various reservoirs are roughly balanced (United States Environmental Protection Agency [U.S. EPA], 2014). CO₂ was the first GHG demonstrated to be increasing in atmospheric concentration, with the first conclusive measurements being made in the second half of the 20th century. Concentrations of CO₂ in the atmosphere have risen approximately 40 percent since the industrial revolution. The global atmospheric concentration of CO₂ has increased from a pre-industrial value of about 280 parts per million (ppm) to 391 ppm in 2011 (IPCC, 2007; National Oceanic and Atmospheric Administration [NOAA], 2010). The average annual CO₂ concentration growth rate was larger between 1995 and 2005 (average: 1.9 ppm per year) than it has been since the beginning of continuous direct atmospheric measurements (1960–2005 average: 1.4 ppm per year), although there is year-to-year variability in growth rates (NOAA, 2010). Currently, CO₂ represents an estimated 74 percent of total GHG emissions (IPCC, 2007). The largest source of CO₂ emissions, and of overall GHG emissions, is fossil fuel combustion.

Methane. Methane (CH₄) is an effective absorber of radiation, though its atmospheric concentration is less than that of CO₂ and its lifetime in the atmosphere is limited to 10 to 12 years. It has a GWP approximately 25 times that of CO₂. Over the last 250 years, the concentration of CH₄ in the atmosphere has increased by 148 percent (IPCC, 2007), although emissions have declined from 1990 levels. Anthropogenic sources of CH₄ include enteric fermentation associated with domestic livestock, landfills, natural gas and petroleum systems, agricultural activities, coal mining, wastewater treatment, stationary and mobile combustion, and certain industrial processes (U.S. EPA, 2014).

Nitrous Oxide. Concentrations of nitrous oxide (N₂O) began to rise at the beginning of the industrial revolution and continue to increase at a relatively uniform growth rate (NOAA, 2010). N₂O 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. Use of these fertilizers has increased over the last century. Agricultural soil management and mobile source fossil fuel combustion are the major sources of N₂O emissions. The GWP of nitrous oxide is approximately 298 times that of CO₂ (IPCC, 2007).



Fluorinated Gases (HFCS, PFCS and SF₆). Fluorinated gases, such as hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfurhexafluoride (SF₆), are powerful GHGs that are emitted from a variety of industrial processes. Fluorinated gases are used as substitutes for ozone-depleting substances such as chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), and halons, which have been regulated since the mid-1980s because of their ozone-destroying potential and are phased out under the Montreal Protocol (1987) and Clean Air Act Amendments of 1990. Electrical transmission and distribution systems account for most SF₆ emissions, while PFC emissions result from semiconductor manufacturing and as a by-product of primary aluminum production. Fluorinated gases are typically emitted in smaller quantities than CO₂, CH₄, and N₂O, but these compounds have much higher GWPs. SF₆ is the most potent GHG the IPCC has evaluated.

b. Statewide Greenhouse Gas Emissions Inventory. Worldwide anthropogenic emissions of GHGs were approximately 46,000 million metric tons (MMT, or gigatonne) CO₂e in 2010 (IPCC, 2014). CO₂ emissions from fossil fuel combustion and industrial processes contributed about 65 percent of total emissions in 2010. Of anthropogenic GHGs, carbon dioxide was the most abundant accounting for 76 percent of total 2010 emissions. Methane emissions accounted for 16 percent of the 2010 total, while nitrous oxide and fluorinated gases account for 6 and 2 percent respectively (IPCC, 2014).

Total U.S. GHG emissions were 6,525.6 MMT CO₂e in 2012 (U.S. EPA, 2014). Total U.S. emissions have increased by 4.7 percent since 1990; emissions decreased by 3.4 percent from 2011 to 2012 (U.S. EPA, 2014). The decrease from 2011 to 2012 was due to a decrease in the carbon intensity of fuels consumed to generate electricity due to a decrease in coal consumption, with increased natural gas consumption. Additionally, relatively mild winter conditions, especially in regions of the United States where electricity is important for heating, resulted in an overall decrease in electricity demand in most sectors. Since 1990, U.S. emissions have increased at an average annual rate of 0.2 percent. In 2012, the transportation and industrial end-use sectors accounted for 28.2 percent and 27.9 percent of CO₂ emissions (with electricity-related emissions distributed), respectively. Meanwhile, the residential and commercial end-use sectors accounted for 16.3 percent and 16.4 percent of CO₂ emissions, respectively (U.S. EPA, 2014).

Based upon the California Air Resources Board (CARB) California Greenhouse Gas Inventory for 2000-2013, California produced 459.3 MMT CO₂e in 2013 (CARB, 2015). The major source of GHG in California is transportation, contributing 37 percent of the state's total GHG emissions. Industrial sources are the second largest source of the state's GHG emissions (CARB, 2015). California emissions are due in part to its large size and large population compared to other states. However, a factor that reduces California's per capita fuel use and GHG emissions, as compared to other states, is its relatively mild climate. The CARB has projected statewide unregulated GHG emissions for the year 2020 will be 509.4 MMT CO₂e (CARB, 2014). 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–1.08°C) over the period 1901–2012 and about 0.72°C (0.49°C–0.89°C) over the period 1951–2012 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, 2013).

According to the CalEPA's 2010 *Climate Action Team Biennial Report*, 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 (California Energy Commission [CEC], 2009).

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 only two years, Los Angeles experienced both its driest and wettest years on record (California Department of Water Resources [DWR], 2008; 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 upon historical data and DWR modeling projects, 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).



Hydrology and Sea Level Rise. As discussed above, climate change could potentially affect: the amount of snowfall, rainfall, and snow pack; 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 salt water intrusion. According to *The Impacts of Sea-Level Rise on the California Coast*, prepared by the California Climate Change Center (CCCC) (CCCC, 2009), climate change has the potential to induce substantial sea level rise in the coming century. The rising sea level increases the likelihood and risk of flooding. The rate of increase of global mean sea levels over the 2001-2010 decade, as observed by satellites, ocean buoys, and land gauges, was approximately 3.2 mm per year, which is double the observed 20th century trend of 1.6 mm per year (World Meteorological Organization [WMO], 2013). As a result, sea levels averaged over the last decade were about 8 inches higher than those of 1880 (WMO, 2013). Sea levels are rising faster now than in the previous two millennia, and the rise is expected to accelerate, even with robust GHG emission control measures. The most recent IPCC report (2013) predicts a mean sea-level rise of 11-38 inches by 2100. This prediction is more than 50 percent higher than earlier projections of 7-23 inches, when comparing the same emissions scenarios and time periods. A rise in sea levels could result in coastal flooding and erosion and could jeopardize California's water supply due to salt water intrusion. In addition, increased CO₂ emissions can cause oceans to acidify due to the carbonic acid it forms. Increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events.

Agriculture. California has a \$30 billion annual agricultural industry that produces half of the country's fruits and vegetables. Higher CO₂ levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, water demand could increase and crop-yield could be threatened by a less reliable water supply. 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).

Ecosystems and Wildlife. Climate change and the potential resulting changes in weather patterns could have ecological effects on a global 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 1.0-4.5°F (0.6-2.5°C) in the next 50 years, and 2.2-10°F (1.4-5.8°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. Local Effects of Climate Change. While the above discussion identifies the possible effects of climate change at a global and potentially statewide level, current scientific modeling tools are unable to predict what local impacts may occur with a similar degree of accuracy. In general, regional and local predictions are made based on downscaling statewide models (CalEPA, 2010). Further, certain factors such as sea level rise would not have a direct impact to the Butte County region, which is located more than 100 miles inland of the Pacific Ocean.

e. Regulatory Setting. The following regulations address both climate change and GHG emissions.



International Regulations. The United States is, and has been, a participant in the United Nations Framework Convention on Climate Change (UNFCCC) since it was produced in 1992. The UNFCCC is an international environmental treaty with the objective of, “stabilization of GHG concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.” This is generally understood to be achieved by stabilizing global GHG concentrations between 350 and 400 ppm in order to limit the global average temperature increases between 2 and 2.4°C above pre-industrial levels (IPCC, 2007). The UNFCCC itself does not set limits on GHG emissions for individual countries or enforcement mechanisms. Instead, the treaty provides for updates, called “protocols,” that would identify mandatory emissions limits.

Five years later, the UNFCCC brought nations together again to draft the Kyoto Protocol (1997). The Kyoto Protocol established commitments for industrialized nations to reduce their collective emissions of six GHGs (CO₂, CH₄, N₂O, SF₆, HFCs, and PFCs) to 5.2 percent below 1990 levels by 2012. The United States is a signatory of the Kyoto Protocol, but Congress has not ratified it and the United States has not bound itself to the Protocol’s commitments (UNFCCC, 2007). The first commitment period of the Kyoto Protocol ended in 2012. Governments, including 38 industrialized countries, agreed to a second commitment period of the Kyoto Protocol beginning January 1, 2013 and ending either on December 31, 2017 or December 31, 2020, to be decided by the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol at its seventeenth session (UNFCCC, 2011).

In Durban (17th session of the Conference of the Parties in Durban, South Africa, 2011), governments decided to adopt a universal legal agreement on climate change. Work began on that task immediately under a new group called the Ad Hoc Working Group on the Durban Platform for Enhanced Action. Progress was also made regarding the creation of a Green Climate Fund (GCF) for which a management framework was adopted (UNFCCC, 2011; United Nations, 2011).

In December 2015, the 21st session of the Conference of the Parties (COP21) adopted the Paris Agreement. The agreement requires all countries that ratify it to commit to reducing greenhouse gas emissions, with the goal of peaking greenhouse gas emissions “as soon as possible” (Worland, 2015). The agreement includes commitments to (1) achieve a balance between sources and sinks of greenhouse gases in the second half of this century; (2) to keep global temperature increase “well below” 2°C (or 3.6°F) and to pursue efforts to limit it to 1.5°C; (3) to review progress every five years; and (4) to spend \$100 billion a year in climate finance for developing countries by 2020 (UNFCCC, 2015). The agreement includes both legally binding measures, like reporting requirements, as well as voluntary or non-binding measures such as the setting of emissions targets for any individual country (Worland, 2015).

Federal Regulations. The United States Supreme Court in *Massachusetts et al. v. Environmental Protection Agency et al.* ([2007] 549 U.S. 05-1120) 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. The first annual reports for these sources were due in March 2011.

On May 13, 2010, the U.S. EPA issued a Final Rule that took effect on January 2, 2011, setting a threshold of 75,000 tons CO₂e per year for GHG emissions. New and existing industrial facilities that meet or exceed that threshold will require a permit after that date. On November 10, 2010, the U.S. EPA published the "PSD and Title V Permitting Guidance for Greenhouse Gases." The U.S. EPA's guidance document is directed at state agencies responsible for air pollution permits under the Federal Clean Air Act to help them understand how to implement GHG reduction requirements while mitigating costs for industry. It is expected that most states will use the U.S. EPA's new guidelines when processing new air pollution permits for power plants, oil refineries, cement manufacturing, and other large pollution point sources.

On January 2, 2011, the U.S. EPA implemented the first phase of the Tailoring Rule for GHG emissions Title V Permitting. Under the first phase of the Tailoring Rule, all new sources of emissions are subject to GHG Title V permitting if they are otherwise subject to Title V for another air pollutant and they emit at least 75,000 tons CO₂e per year. Under Phase 1, no sources were required to obtain a Title V permit solely due to GHG emissions. Phase 2 of the Tailoring Rule went into effect July 1, 2011. At that time, new sources were subject to GHG Title V permitting if the source emits 100,000 tons CO₂e per year. Otherwise, they were subject to Title V permitting for another pollutant and must address GHG emissions increases higher than 75,000 tons CO₂e per year.

On July 3, 2012, the U.S. EPA issued the final rule that retains the GHG permitting thresholds that were established in Phases 1 and 2 of the GHG Tailoring Rule. These emission thresholds determine when Clean Air Act 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.

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

Assembly Bill (AB) 1493 (2002), California's Advanced Clean Cars program (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." On June 30, 2009, 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 took effect for model years starting in 2009 to 2016, and Pavley II, which is now referred to as "LEV (Low Emission Vehicle) III GHG," will cover 2017 to 2025. Fleet average emission standards would reach 22 percent reduction from 2009 levels by 2012 and 30 percent by 2016. The Advanced Clean Cars program coordinates the goals of the Low Emissions Vehicles (LEV), Zero Emissions Vehicles (ZEV), and Clean Fuels Outlet programs and would provide major reductions in GHG emissions. By 2025, when the rules will be fully implemented, new automobiles will emit 34 percent fewer GHGs and 75 percent fewer smog-forming emissions from their model year 2016 levels (CARB, 2011).



In 2005, former Governor Schwarzenegger issued Executive Order (EO) S-3-05, establishing statewide GHG emissions reduction targets. EO S-3-05 provides that by 2010, emissions shall be reduced to 2000 levels; by 2020, emissions shall be reduced to 1990 levels; and by 2050, emissions shall be reduced to 80 percent below 1990 levels (CalEPA, 2006). In response to EO S-3-05, 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. In April 2015, Governor Brown issued EO B-30-15, calling for a new target of 40% below 1990 levels by 2030.

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 (essentially a 15 percent reduction below 2005 emission levels; the same requirement as under S-3-05), 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 to require reporting and verification of statewide GHG emissions.

After completing a comprehensive review and update process, CARB approved a 1990 statewide GHG level and 2020 limit of 427 MMT CO₂e. The Scoping Plan was approved by CARB on December 11, 2008, and included measures to address GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among other measures. 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 over the last five years. Implementation activities are ongoing, and CARB is currently in the process of updating 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 goals set forth in EO S-3-05. 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 for water, waste, natural resources, clean energy and transportation, and land use (CARB, 2014).

Senate Bill (SB) 97, signed in August 2007, acknowledges that climate change is an environmental issue that requires analysis in California Environmental Quality Act (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 GHGs and climate change impacts.

CARB Resolution 07-54 establishes 25,000 MT of GHG emissions as the threshold for identifying the largest stationary emission sources in California for purposes of requiring the annual reporting of emissions. This threshold is just over 0.005 percent of California's total inventory of GHG emissions for 2004.

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.

Renewables Portfolio Standards (RPS) pursuant to SB 1038, SB 1078, SB 1250, and SB 107 requires retail sellers of electricity to increase the amount of renewable energy they procure each year by at least one percent until 20 percent of their retail sales are served with renewable energy.

In early 2010, CARB adopted a regulation for reducing SF₆ emissions from electric power system gas-insulated switchgear (17 CCR 95350). SF₆ gas is commonly used as an arc quenching and insulating medium for high and medium voltage switchgear systems used in electrical substations. The regulation requires owners of such switchgear to: (1) annually report their SF₆ emissions; (2) determine the emission rate relative to the SF₆ capacity of the switchgear; (3) provide a complete inventory of all gas-insulated switchgear and their SF₆ capacities; (4) produce a SF₆ gas container inventory; and (5) keep all information current for CARB enforcement staff inspection and verification. Changes to the switching station owned by PG&E and any gas insulated switchgear associated with the project would be subject to this regulation.

In April 2011, Governor Brown signed SB 2X requiring California to generate 33 percent of its electricity from renewable energy by 2020.

On April 29, 2015, Governor Brown issued Executive Order B-30-15 to establish a statewide mid-term GHG reduction target of 40 percent below 1990 levels by 2030. According to CARB, reducing GHG emissions by 40 percent below 1990 levels in 2030 ensures that California will continue its efforts to reduce carbon pollution and help to achieve federal health-based air quality standards. Setting clear targets beyond 2020 also provides market certainty to foster investment and growth in a wide array of industries throughout the State, including clean technology and clean energy. CARB is currently working to update the Scoping Plan to provide a framework for achieving the 2030 target. The updated Scoping Plan is expected to be completed and adopted by CARB in 2016 (CARB 2015).

For more information on the Senate and Assembly Bills, Executive Orders, and reports discussed above, and to view reports and research referenced above, please refer to the following websites: www.climatechange.ca.gov and www.arb.ca.gov/cc/cc.htm.

California Environmental Quality Act. Pursuant to the requirements of SB 97, the Resources Agency has adopted amendments to the *State 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.

Local Regulations and CEQA Requirements. Pursuant to the requirements of SB 97, the Natural Resources Agency has adopted amendments to the *State 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, but contain no suggested thresholds of significance for GHG emissions. Instead, they give lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHGs and climate change impacts. The general approach to developing a threshold of significance for GHG emissions is to identify the emissions level for which a project would not be expected to substantially conflict with existing California legislation, adopted for the purpose of reducing statewide GHG emissions sufficiently to move the state towards climate stabilization. If a project would generate GHG emissions above the threshold level, its contribution to cumulative impacts would be considered significant. To date, the Bay Area Air Quality Management District (BAAQMD), the South Coast Air Quality Management District (SCAQMD), the San Luis Obispo Air Pollution Control District (SLOAPCD), and the San Joaquin Air Pollution Control District (SJVAPCD) have adopted quantitative significance thresholds for GHGs.

Butte County Climate Action Plan (CAP). The Butte County Climate Action Plan (CAP) was adopted on February 25, 2014 in response to the County's 2030 General Plan efforts to address climate change and protect local quality of life. The CAP provides goals, policies, and programs aimed to address climate change adaptation and reduce GHG emissions goals as identified in AB 32 and SB 375. A key goal of the CAP is to reach the General Plan goal of 15 percent below 2006 GHG emissions by 2020, which would reduce emissions from all sources including vehicle miles traveled, sources of electricity, agricultural practices, and energy use (CAP, 2014). The CAP further addresses climate change with several adaptation measures. Adaptation (A) Measures address increased frequency and severity of wildfires, extreme heat, and flooding, as well as changing precipitation patterns and reduced water supply. Resiliency (R) Measures address local agriculture, ecosystems, and economy. Government Resiliency (GR) Measures address the effects of climate change on government operations and regional coordination (CAP, 2014). These measures are anticipated to help achieve the County's vision of thriving communities, a strong agricultural base, and healthy natural resources. Moreover, the City of Chico adopted a 2020 Climate Action Plan, and the City of Oroville recently completed a Sustainability Code Update and Climate Action Plan as of February 9, 2016 but has not publicly released the plan yet. According to the Butte Environmental Council, the City of Gridley has a climate action plan in progress and the Town of Paradise is also in the planning stages.

City of Chico 2020 Climate Action Plan. The City of Chico developed the 2020 Climate Action Plan to outline strategies for a substantial reduction of greenhouse gas emissions generated by local activities. Organized within a ten-year framework, the plan guides the growth of Chico and contains actions to reduce energy, water, fuel consumption, and waste. The plan is implemented in two phases, with a Phase 1 target to reach a ten percent reduction of emissions below the 2005 base year level by 2015 and a Phase 2 target to reach a 25 percent reduction of emissions below the 2005 base year level by 2020.



4.5.2 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, the Butte County Air Quality Management District (BCAQMD) has not formally adopted GHG CEQA thresholds. As a result, this section uses three thresholds of significance (consistent with CEQA guidelines):

1. Increase in per capita GHG emissions compared to baseline conditions (defined as the emissions inventory for 2014);
2. Conflict with AB 32 or SB 375 GHG emission reduction targets; and/or
3. Conflict with applicable local GHG reduction plans.

For the GHG emissions impacts resulting from the proposed 2016 RTP-SCS, this analysis evaluates potential impacts against both (1) a forecasted future baseline condition (year 2040) and (2) current, existing baseline conditions (year 2014), controlling for impacts caused by population growth and other factors that would occur whether or not the proposed plan is adopted. The year 2014 is used as the EIR baseline, as it is the most recent year for which accurate county-wide vehicle miles travelled (VMT) data is available. If county-wide per capita GHG emissions associated with the proposed plan do not significantly exceed the 2014 baseline, impacts related to GHG emissions would not be significant.

The SB 375-based threshold is also included as part of the SCS to achieve CARB-specified targets and consistency toward achieving the goals of AB 32.



The 2050 Executive Order S-3-05 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). 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 2050 target is well beyond the horizon year (2040) of the 2016 RTP-SCS. In the future when the plan has a planning horizon to 2050 or beyond, compliance with S-3-05 will be evaluated.

For the purposes of SB 375 compliance, passenger vehicles analyzed include the following vehicle categories from CARB’s Emission FACTors (EMFAC) 2014 air quality model: LDA (passenger cars), LDT1 (light-duty trucks, 0-3,750 pounds), LDT2 (light-duty trucks, 3,751-5,750 pounds), and MDV (medium-duty trucks, 5,751-8,500 pounds).

Construction Emissions. Although construction activity is addressed in this analysis, 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).

Additionally, the municipalities in Butte County have not identified any construction-related GHG emissions thresholds. Construction-related emissions are speculative at the RTP level because such emissions are dependent on the characteristics of individual development projects. However, because construction of the 2016 RTP-SCS would generate temporary GHG emissions primarily due to the operation of construction equipment and truck trips, a qualitative analysis is provided below.

Methodology for Estimating GHG Emissions. Two basic quantities are required to calculate a given emissions estimate: an emission factor (CO₂) and an activity factor (VMT). In general, the emission factor is the amount of emissions generated by VMT. A county-wide, on-road mobile source emission estimate was calculated by adding the product of the vehicle activity (VMT and trips) generated by the land use pattern and transportation projects envisioned in the 2016 RTP-SCS (the preferred land use and transportation scenario as modeled by BCAG and Fehr and Peers) to the emissions factors contained in CARB’s EMFAC 2014 air quality model.

The EMFAC 2014 model generates an output of carbon dioxide (CO₂) emissions, which were used as the overall indicator of greenhouse gas emissions, per the recommendations of the CARB SB 375 Regional Targets Advisory Committee. In order to calculate the CO₂ emissions within EMFAC 2014, VMT, vehicle trips, and VMT by speed class distributions were extracted from the Fehr & Peers traffic analysis for the baseline years (2005 and 2014) and target years (2020, 2035, and 2040) based on the preferred and alternative transportation/land use scenarios (Medium Scenario for population forecasts). The VMT speed bin data was then entered into the EMFAC 2014 model. The CO₂ emissions associated with vehicle starts are accounted for in the EMFAC 2014 model based on the distribution of vehicle starts by vehicle classification, vehicle technology class, and operating mode. EMFAC 2014 adds these vehicle starts to the running emissions to compute total on-road mobile source emissions. The CO₂ emissions for the vehicle classes were then extracted from the EMFAC 2014 output and reported. Per capita emissions

rates were calculated by dividing total CO₂ emissions for each scenario by the region's population in each respective year.

b. Project Impacts and Mitigation Measures.

Impact GHG-1 Construction of the transportation improvement projects and future land use patterns envisioned by the 2016 RTP-SCS would generate temporary short-term GHG emissions. Impacts would be Class II, *significant but mitigable*.

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. However, GHG emissions would be emitted from travel to and from the worksite and the operation of construction equipment such as graders, backhoes, and generators. Site preparation and grading typically generate the greatest amount of emissions due to the use of grading equipment and soil hauling. The precise construction timing and construction equipment for individual projects is not specifically known at this time. Nonetheless, construction activities would result in GHG emissions. Impacts would be potentially significant.

Mitigation Measures. BCAG shall and transportation project sponsor agencies can and should implement the following mitigation measures for transportation projects identified in Tables 2-1 of Section 2.0, *Project Description*. Butte County and Cities in the County can and should implement these measures, where relevant to land use projects implementing the RTP-SCS. Project-specific environmental impacts may require this mitigation measure be revised or expanded in response to site-specific conditions.

- GHG-1** BCAG shall and sponsor agencies can and should ensure that diesel particulate exhaust from construction equipment apply the following applicable GHG-reducing measures recommended by the Butte County Air Quality Management District (BCAQMD):
- Fuel all off-road and portable diesel powered equipment with CARB certified motor vehicle diesel fuel;
 - Use diesel construction equipment meeting CARB's Tier 2 certified engines or cleaner off-road heavy-duty diesel engines, and comply with State On-Road Regulation;
 - Use on-road heavy-duty trucks that meet CARB's 2007 or cleaner certification standard for on-road heavy-duty diesel engines, and comply with the State On-Road Regulation;
 - Construction or trucking companies with fleets that do not have engines in their fleet that meet the engine standards identified in the above two measures may be eligible by proving alternative compliance;
 - Electrify equipment when feasible;



- Substitute gasoline-powered in place of diesel-powered equipment, where feasible; and
- Use alternatively fueled construction equipment on site where feasible, such as compressed natural gas, liquefied natural gas, propane, or biodiesel.

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

Impact GHG-2 Implementation of the 2016 RTP-SCS would decrease per capita GHG emissions compared to the 2014 baseline and 2040 “No Project” scenario. Impacts would be Class III, less than significant.

Projected GHG emissions for the year 2040 under the proposed 2016 RTP-SCS were compared to the 2014 baseline and to the year 2040 under the future “No Project” scenario, a scenario in which the new transportation improvements identified in the proposed plan are not implemented. Instead, under the “No Project” scenario, only those improvement projects included in the existing adopted MTP-SCS would occur. As discussed above, GHG emissions for the proposed plan were calculated using CARB’s EMFAC 2014 air quality model based on the VMT that would be generated as a result of the proposed plan (refer to Section 4.7, *Transportation and Circulation*). Table 4.5-1 summarizes the plan’s per-capita transportation-related emissions from all vehicles classes. An analysis of all vehicle classes is provided to determine the significance of total per-capita GHG emissions in accordance with the CEQA Guidelines. As such, if the 2016 RTP-SCS does not result in a significant increase in GHG emissions, impacts would be less than significant. This is independent of the SB 375 analysis and regional targets for per-capita transportation emissions from passenger vehicles, which are analyzed under Impact GHG-3 below.

**Table 4.5-1
 Total Per Capita Carbon Dioxide Emission Comparison: All Vehicle Classes**

Scenario	VMT	CO ₂ Emissions (lbs/year) ¹	Population	Per Capita CO ₂ Emissions (lbs/year)	Percent Change from 2014
2014 EIR Baseline ²	4,741,051	2,059,371,519	222,316	9,263	N/A
2040 No Project Scenario ³	7,190,319	1,921,196,248	332,459	5,779	-38%
2040 Project (2016 RTP-SCS) ²	6,667,402	1,781,879,675	319,342	5,580	-40%

¹ The on-road mobile source CO₂ emissions estimates for the 2016 RTP-SCS were calculated using CARB’s EMFAC2014 emission inventory model. VMT data were provided from Fehr and Peers using the County’s Traffic Demand Model (see Section 4.7, *Transportation and Circulation*). VMT data for GHG analysis excludes pass-through trips from vehicles travelling through Butte County that do not have an origin or destination within the county.

² Population used the Medium Scenario from the BCAG Growth Forecasts 2014-2040 for 2020 and 2035: http://www.bcag.org/documents/demographics/pop_emp_projections/Growth_Forecasts_2014-2040_draft.pdf

³ The “No Project” scenario assumes the same growth and population as in the 2012 MTP-SCS.

As shown in Table 4.5-1, the 2014 per capita GHG emissions were estimated for the plan area to be 9,263 pounds per year. With the proposed plan, the 2040 GHG per capita emissions were modeled for the plan area to be 5,580 pounds per year, a decrease of 40 percent from 2014.



Moreover, per capita GHG emissions under the “No Project” scenario for 2040 had higher per capita GHG emissions than for the 2040 project levels. Thus, under the 2016 RTP-SCS, emissions would be reduced compared to existing baseline conditions and 2040 “No Project” scenario. It is important to note that transportation related GHG emissions would continue to occur throughout the county regardless of whether the proposed plan is adopted.

As previously discussed, the AB 32 Scoping Plan outlines the main state strategies for reducing GHGs to meet targets. Many of these strategies contribute to reductions from transportation-related emissions at the regional and local levels. The projections discussed above do not include any additional measures from the Scoping Plan to further reduce GHG emissions and are, therefore, conservative. Application of Pavley fuel efficiency standards and low carbon fuel standards, both Scoping Plan measures, are anticipated to reduce levels even further. Implementation of the 2016 RTP-SCS would help the region reduce per capita GHG emissions, and impacts would be less than significant.

In addition to the vehicle GHG emissions shown in Table 4.5-1, infill development projects envisioned by the proposed SCS chapter of the RTP would also result in GHG emissions due to electricity and natural gas consumption. However, it is important to note that residential and commercial growth is not directly attributed to the proposed 2016 RTP-SCS. This growth is anticipated to occur in the region regardless of whether the proposed RTP-SCS is adopted. The SCS chapter of the RTP proposes that a portion of each jurisdiction’s future growth be encouraged to develop within established urban community areas with existing infrastructure and transportation services. As a result, this land use scenario would result in fewer vehicle trips, shorter average trip lengths, and possibly smaller residential units, which would result in fewer overall GHG emissions when compared to a traditional land use pattern that does not emphasize infill development. Moreover, such development would take advantage of existing underutilized infrastructure capacity before necessitating the construction and associated impacts of new infrastructure systems. Impacts would be less than significant.

Mitigation Measures. None required.

Significance after Mitigation. Impacts are less than significant.

Impact GHG-3 Implementation of the 2016 RTP-SCS would not interfere with the GHG emissions goals of AB 32 or SB 375. Impacts would be Class III, less than significant.

One of the goals of SB 375 is to reach the GHG emissions targets for passenger vehicles set by CARB through an integrated land use, transportation, and housing plan. Achievement of this goal is an objective of the proposed 2016 RTP-SCS. For BCAG, the targets set by CARB allow a one percent increase in per capita GHG emissions for the planning year 2020 and a one percent increase in per capita GHG emissions in planning year 2035, as compared to baseline per capita emissions levels in 2005. These targets apply to the BCAG region as a whole for all on-road light-duty trucks and passenger vehicle emissions. Table 4.5-2 summarizes the plan’s per capita transportation-related emissions from passenger vehicles.

As shown in Table 4.5-2, the 2005 per capita GHG emissions from passenger vehicles were estimated for the plan area to be 6,035 pounds per year. Under the 2016 RTP-SCS, per capita



GHG emissions in 2020 would be 5,775 pounds per year (a decrease of approximately 4.3 percent from 2005 levels) and in 2035 would be 5,638 pounds per year (a decrease of approximately 6.6 percent from 2005 levels). Thus, the SB 375 targets would be met, as the per capita GHG emissions in 2020 and 2035 would both decrease below the allowed one percent increase target set by CARB. It is important to note that population is expected to increase and passenger vehicle related GHG emissions would continue to occur throughout the county, regardless of whether the proposed 2016 RTP-SCS is adopted. As demonstrated above, the proposed 2016 RTP-SCS would contribute to an overall reduction in passenger vehicle related emissions.

**Table 4.5-2
 Per Capita Carbon Dioxide Emission Comparison: Passenger Vehicles**

Scenario	VMT	CO ₂ Emissions (lbs/year) ¹	Population	Per Capita CO ₂ Emissions (lbs/year)	Percent Change from 2005
2005 Baseline ²	3,831,740	1,295,061,134	214,582	6,035	N/A
2020 Project (2016 RTP-SCS) ³	4,312,020	1,388,859,046	240,476	5,775	-4.3%
2035 Project (2016 RTP-SCS) ³	5,567,238	1,728,511,149	306,598	5,638	-6.6%

¹ The on-road mobile source CO₂ emissions estimates for the 2016 RTP-SCS were calculated using CARB's EMFAC2014 emission inventory model. VMT data were provided from Fehr and Peers using the County's Traffic Demand Model (see Section 4.7, Transportation and Circulation). VMT data for GHG analysis excludes pass-through trips from vehicles travelling through Butte County that do not have an origin or destination within the county.

² 2005 baseline assumes the same growth and population as in the 2012 MTP-SCS.

³ Population used the Medium Scenario from the BCAG Growth Forecasts 2014-2040 for 2020 and 2035: http://www.bcag.org/documents/demographics/pop_emp_projections/Growth_Forecasts_2014-2040_draft.pdf

These projections do not include any additional measures from the Scoping Plan to further reduce passenger vehicle GHG emissions and are, therefore, conservative. Application of Pavley fuel efficiency standards and low carbon fuel standards, both Scoping Plan measures, are anticipated to reduce levels even further. Implementation of the proposed plan would help the region achieve its SB 375 reduction targets for years 2020 and 2035 as well as help the state achieve its AB 32 GHG emissions reduction targets. Therefore, impacts would be less than significant.

Mitigation Measures. None required.

Significance after Mitigation. Impacts would be less than significant.

Impact GHG-4 Implementation of the 2016 RTP-SCS would not interfere with the goals of applicable GHG reduction plans and policies, as well as AB 32 and SB 375. Impacts would be Class III, less than significant.

As discussed in Impact GHG-3 above, the proposed 2016 RTP-SCS was determined to be consistent with the goals of AB 32. The projects and policies identified in the proposed project are designed to align transportation and land use planning to reduce VMT and transportation-related GHG emissions. Implementation of the proposed 2016 RTP-SCS would help the region achieve its SB 375 GHG emissions reduction target, therefore contributing to the state's overall GHG emissions reduction goals identified in AB 32. Since the proposed 2016 RTP-SCS is



consistent with the goals of AB 32 and SB 375, it would not conflict with the goals of local reduction plans, including the Butte County Climate Action Plan and City of Chico Climate Action Plan discussed above, which are designed to meet the same state goals.

Mitigation Measures. None required.

Significance after Mitigation. Impacts are less than significant.

c. Specific Projects That May Result in Impacts. All proposed projects listed in Table 2-1 in Section 2.0, *Project Description*, would have the potential to result in GHG emissions. All projects that include a construction component would be associated with Impact GHG-1. Projects that include roadway and transit features and/or expansions would be associated with Impacts GHG-2 through GHG-4. Additional specific analysis will need to be conducted as the individual transportation projects and any land use projects overseen by Butte County or the incorporated cities are designed and implemented in order to determine the actual magnitude of impact. However, the proposed plan as a whole is designed to reduce VMT and per capita transportation-related GHG emissions in accordance with AB 32 and SB 375. Since plan level emissions meet these targets, all planned 2016 RTP-SCS projects remain below the thresholds of significance.

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4.6 NOISE

4.6.1 Setting

a. Overview of Sound Measurement.

Noise. Noise level (or volume) is generally measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound power levels to be consistent with that of human hearing response, which is most sensitive to frequencies around 4,000 Hertz (about the highest note on a piano) and less sensitive to low frequencies (below 100 Hertz). In addition to the actual instantaneous measurement of sound levels, the duration of sound is important since sounds that occur over a long period of time are more likely to be an annoyance or cause direct physical damage or environmental stress. One of the most frequently used noise metrics that considers both duration and sound power level is the equivalent noise level (Leq). The Leq is defined as the single steady A-weighted level that is equivalent to the same amount of energy as that contained in the actual fluctuating levels over a period of time. Typically, Leq is summed over a one-hour period.

Sound pressure is measured on a logarithmic scale with the 0 dB level based on the lowest detectable sound pressure level that people can perceive (an audible sound that is not zero sound pressure level). Based on the logarithmic scale, a doubling of sound energy is equivalent to an increase of 3 dB and a sound that is 10 dB less than the ambient sound level has no effect on ambient noise. Because of the nature of the human ear, a sound must be about 10 dB greater than the reference sound to be judged as twice as loud. In general, a 3 dBA change in community noise levels is noticeable, while 1-2 dBA changes generally are not perceived. Quiet suburban areas typically have noise levels in the range of 40 to 50 dBA, while noise levels along arterial streets are generally in the 50 to 60+ dBA range. Normal conversational levels are in the 60-65 dBA range, and ambient noise levels greater than that can interrupt conversations.

Noise levels typically attenuate at a rate of 6 dBA per doubling of distance from point sources such as industrial machinery. Noise from lightly traveled roads typically attenuates at a rate of about 4.11 dBA per doubling of distance. Noise from heavily traveled roads typically attenuates at about 3 dBA per doubling of distance.

The actual time period in which noise occurs is also important since noise that occurs at night tends to be more disturbing than that which occurs during the daytime. To evaluate community noise on a 24-hour basis, the day-night average sound level was developed (Ldn). Ldn is the time average of all A-weighted levels for a 24-hour period with a 10 dB upward adjustment added to those noise levels occurring between 10:00 PM and 7:00 AM to account for the general increased sensitivity of people to nighttime noise levels. The Community Noise Equivalent Level (CNEL) is identical to the Ldn with one exception. The CNEL adds 5 dB to evening noise levels (7:00 PM to 10:00 PM). Thus, both the Ldn and CNEL noise measures represent a 24-hour average of A-weighted noise levels with Ldn providing a nighttime adjustment and CNEL providing both an evening and nighttime adjustment.



Vibration. Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Vibration can be a serious concern, causing buildings to shake and rumbling sounds to be heard. In contrast to noise, vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads.

There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings and is usually measured in inches per second. The root mean square (RMS) amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. Decibel notation (VdB) is commonly used to measure RMS. The decibel notation acts to compress the range of numbers required to describe vibration.

High levels of vibration may cause physical personal injury or damage to buildings. However, groundborne vibration levels rarely affect human health. Instead, most people consider groundborne vibration to be an annoyance that can affect concentration or disturb sleep. In addition, high levels of groundborne vibration can damage fragile buildings or interfere with equipment that is highly sensitive to groundborne vibration (e.g., electron microscopes).

In contrast to noise, groundborne vibration is not a phenomenon that most people experience every day. The background vibration velocity level in residential areas is usually 50 RMS or lower which is well below the threshold of perception for humans (human perception is around 65 RMS). Most perceptible indoor vibration is caused by sources within buildings, such as operation of mechanical equipment, movement of people, or slamming of doors. Typical outdoor sources of perceptible groundborne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If the roadway is smooth, the vibration from traffic is rarely perceptible.

b. Noise Sources. Ambient noise levels in Butte County vary widely depending upon proximity to noise generators, such as major roads, airports, and rail lines. According to the Butte County General Plan Health and Safety Element, noise is especially a concern in rural areas and in the vicinity of residences, schools, and churches. The major noise sources in the county are described below.

Motor Vehicle Traffic. Roadways and traffic noise are the most prevalent source of ambient noise in Butte County (Butte County General Plan 2030 Health and Safety Element). The noise generated from vehicles using roads within the unincorporated areas of the county and within the incorporated cities is governed primarily by the number of vehicles, type of vehicles (mix of automobiles, trucks, and other large vehicles), and speed. Major traffic noise sources include State Routes 99, 70, 32, 149, 162, and 191. Nearly all of these roadways reach noise levels exceeding 65 dBA CNEL within 100 feet from the centerline of the freeway due to both the high traffic volumes experienced and the high speed of traffic (Butte County General Plan 2030 Settings and Trends). State Route 99 generates the highest level of noise due to it being the most travelled. Receptors in the cities of Chico, Biggs, and Gridley are impacted by traffic noise generated by State Route 99. Receptors in the City of Oroville are primarily exposed

to traffic noise generated by State Route 70, while receptors in the Town of Paradise are exposed to traffic noise generated by State Route 191.

Railroad Operations. In general, noise is generated during rail operations by locomotives starting and stopping, trains braking, the connection and disconnection of cars, train whistles, and track noise (the trains' wheels running on the track). Railroad operations through Butte County consist of two north/south lines of the Union Pacific (UP) railroad which run through the County. The western leg of the UP railroad runs through the Cities of Gridley, Biggs, and Chico parallel to the west side of State Route (SR) 99 and is referred to as the "Valley Line." The eastern leg of the UP railroad runs generally parallel to the east and west sides of the Feather River, through the City of Oroville before heading through the Feather River Canyon. The average sound exposure level (SEL) for train operations along both the east and west lines, absent warning horns, is 103 dB at 100 feet (Butte County General Plan 2030 Settings and Trends).

The lines are used primarily for the movement of freight. In addition, the Coast Starlight passenger train operates twice per day on the west line. The Coast Starlight service provides passenger train runs between Seattle and Los Angeles and stops in Chico at 1:45 am (northbound) and 3:50 a.m. (southbound) daily.

Aircraft Operation. There are two publicly owned public-use airports, Chico Municipal Airport and Oroville Municipal Airport; five privately owned public-use airports, Paradise Skypark Airport and Ranchero Airport; three privately owned special-use airports, Butte Creek Hog Ranch Airport, Jones Airport, and Richvale Airport; one publicly owned seaplane landing site on Lake Oroville; two privately owned private-use heliports at Enloe Hospital and Oroville Hospital; and one publicly owned private-use airport for the Butte County Sheriff's Department. In addition, there are several agricultural and private-use airports in the county. These varieties of aviation facilities are located throughout Butte County and create noise associated with aircraft operations. Maximum noise levels due to typical single engine aircraft over flights can range between 65 dB and 80 dB, which may be considered annoying to individuals. The busiest airports with the greatest potential for air traffic noise impacts are discussed below:

Chico Municipal Airport. The Chico Municipal Airport is the largest airport in Butte County. According to the Airport Land Use Compatibility Plan, the airport has 70,000 annual takeoffs and landings. There are approximately 130 based aircraft at the airport. The airport runway is equipped with a precision instrument landing system and accommodates a full range of business aircraft. The airport also receives major use during the fire season, due to the fact that it is a designated "fire attack base".

Average annual daily aircraft operations (without fire attack aircraft) are approximately 182 operations. During a peak-fire-season day, an additional 200 aircraft operations may occur. Future operations at the airport are estimated to increase up to 257 daily operations (without fire attack aircraft) and an additional 200 aircraft during a peak fire season. (Butte County General Plan 2030 Settings and Trends).



The Airport Land Use Compatibility Plan has developed CNEL noise-level contours for three scenarios: the Future Average Fire Season Day, the Expanded Forecast and the Peak Fire Attack Day. These are shown in Exhibits 4E, 4F and 4G of the Airport Land Use Compatibility Plan. According to Exhibit 4E, noise levels can reach up to 75 dBA CNEL in the immediate vicinity of Chico Municipal Airport and between 55-60 dBA CNEL contours stretch out into adjacent land uses.

Oroville Municipal Airport. The Oroville Municipal Airport is located within an extension of the Oroville city limits and is approximately 2.5 miles west of the remainder of the city. An unincorporated area of Butte County, including the community of Thermalito, is located northeast of the airport. Existing annual average operations are approximately 100 operations per day. Future annual average operations are estimated to be approximately 200 operations per day. The Airport Land Use Compatibility Plan contains one set of noise-level contours for the airport, which is shown in Exhibit 5E of the Airport Land Use Compatibility Plan (Butte County General Plan 2030 Settings and Trends). According to Exhibit 5E, noise levels can reach up to 65 dBA CNEL in the immediate vicinity of Oroville Municipal Airport and between 55-60 dBA CNEL contours stretch out into adjacent land uses.

Paradise Skypark Airport. The Paradise Skypark Airport is a privately owned airport. Existing annual average operations are approximately 41 operations per day. Future annual average operations are approximately 82 operations per day. The Airport Land Use Compatibility Plan contains one set of noise level contours for the airport, which is shown in Exhibit 6E of the Airport Land Use Compatibility Plan. Except to the north, few homes are located in the airport vicinity. The steep, undulating terrain greatly limits the potential for nearby development, either residential or otherwise (Butte County General Plan 2030 Settings and Trends). According to Exhibit 6E, noise levels can reach up to 65 dBA CNEL in the immediate vicinity of Paradise Skypark Airport and 55-60 dBA CNEL contours stretch out into adjacent land uses.

Ranchaero Airport. This airport is a privately owned airport located near the southwestern edge of the City of Chico. This airport serves a combination of recreational, flight training, agricultural and limited business flights. Existing annual average operations are approximately 14 operations per day. Future annual average operations are approximately 27 operations per day. The Airport Land Use Compatibility Plan contains one set of noise level contours for the airport, which is shown in Exhibit 7E of the Airport Land Use Compatibility Plan (Butte County General Plan 2030 Settings and Trends). According to Exhibit 7E, noise levels can reach up to 65 dBA CNEL in the immediate vicinity of Ranchaero Airport and 50-60 dBA CNEL contours stretch out into adjacent land uses.

Transit Operations. The Butte County region transit service is primarily provided by Butte Regional Transit (B-Line). B-Line provides both fixed route and paratransit services to Chico, Oroville, Paradise, Gridley, Biggs, and the unincorporated County. B-Line operates three routes for inter-city transportation between Chico, Paradise, Oroville and the Gridley-Biggs area. One line runs between Paradise and Chico, a second between Oroville and Chico, and a third between Paradise, Oroville, and Gridley-Biggs. B-Line's fleet consists of 36 standard buses, with 19 of these vehicles powered by Compressed Natural Gas (CNG). All B-Line vehicles are fully equipped with wheelchair lifts or low-floor ramps and include a wheelchair securement



area with space for two wheelchairs. Additionally, all fixed route buses are equipped with front-mounted bicycle racks (BCAG Transit and Non-Motorized Plan, April 2015).

Route 40/41 provides twelve round trips daily connecting Chico and Paradise; Route 20 provides eleven round trips daily connecting Chico and Oroville; and Routes 30/31/32 provides round trips daily connecting Paradise, Oroville, Gridley, and Biggs. Extended service is provided to Paradise Pines and Magalia. Transit service is operated between 5:50 a.m. and 7:30 p.m. Monday through Friday, with weekend service between 8:00 a.m. and 7:30 p.m. (Butte County General Plan 2030 Settings and Trends).

B-Line provides service in Oroville on four routes serving the City of Oroville, the County Administrative Complex, and the Oroville transit center. While service is primarily within the Oroville City limits, a portion of Thermalito and South Oroville are also served. Operating hours are from 6:10 a.m. to 7:30 p.m. Monday through Friday, except for major holidays.

Glenn County (Glenn Ride) provides seven trips per day between Willows and Chico on weekdays and three trips per day on Saturdays. There is no service on Sundays (Butte County General Plan 2030 Settings and Trends).

Stationary Noise Sources. Significant stationary noise sources in Butte County are the Neal Road Recycling and Waste Facility, solid waste transfer stations, aggregate mining operations, general service commercial and light industrial uses, recreational uses, and parks and school playing fields.

Noise sources associated with service commercial uses such as automotive repair facilities, wrecking yards, tire installation centers, car washes, loading docks, etc., are found at various locations within Butte County. The noise emissions of these types of uses are dependent on many factors and are therefore difficult to quantify precisely. Nonetheless, noise generated by these uses contributes to the ambient noise environment in the immediate vicinity of these uses and should be considered where either new noise sensitive uses are proposed nearby or where similar uses are proposed in existing residential areas.

Commercial, recreational, and public facility activities can also produce noise that may affect adjacent noise-sensitive land uses. These noise sources can be continuous or intermittent and may contain tonal components that are annoying to individuals who live nearby. For instance, emergency-use sirens and backup alarms are often considered nuisance noise sources, but may not occur frequently enough to be considered incompatible with noise-sensitive land uses. There are numerous park and school uses within Butte County. School playing field activities tend to generate more noise than those of neighborhood parks, as the intensity of school playground usage tends to be higher. At a distance of 100 feet from an elementary school playground being used by 100 students, average and maximum noise levels of 60 and 75 dB, respectively, can be expected. At organized events such as high-school football games with large crowds and public address systems, the noise generation is often significantly higher. As with service commercial uses, the noise generation of parks and school playing fields is variable (Butte County General Plan 2030 Settings and Trends).

c. Regulatory Framework. Various federal agencies have set standards for transportation-related noise and vibration sources that are closely linked to interstate commerce, such as aircraft, locomotives, and trucks. The state sets noise standards for those noise sources that are not preempted from regulation, such as automobiles, light trucks, and motorcycles. Noise and vibration sources associated with industrial, commercial, and construction activities are generally subject to local control through noise ordinances and general plan policies.

Federal Regulations. Relevant federal regulations include those established by the Federal Highway Administration (FHWA), Federal Transit Authority (FTA), Federal Aviation Administration (FAA), and Department of Housing and Urban Development (HUD).

Federal Highway Administration. Federal regulations for railroad noise are contained in 40 CFR Part 201 and 49 CFR Part 210. The regulations set noise limits for locomotives and are implemented through regulatory controls on locomotive manufacturers.

Federal regulations also establish noise limits for medium and heavy trucks (more than 4.5 tons, gross vehicle weight rating) under 40 CFR Part 205, Subpart B. The federal truck passby noise standard is 80 dB at 15 meters from the vehicle pathway centerline. These controls are implemented through regulatory controls on truck manufacturers. The FHWA regulations for noise abatement must be considered for federal or federally-funded projects involving the construction of a new highway or significant modification of an existing freeway when the project would result in a substantial noise increase or when the predicted noise levels approach or exceed the Noise Abatement Criteria (NAC).

Title 23 of the Code of Federal Regulations (23 CFR § 772) provides procedures for preparing operational and construction noise studies and evaluating noise abatement for federal and federal-aid highway projects. Under 23 CFR § 772.7, projects are categorized as Type I or Type II projects. FHWA defines a Type I project as a proposed federal or federal-aid highway project for the construction of a highway on a new location or the physical alteration of an existing highway which significantly changes either the horizontal or vertical alignment, or increases the number of through-traffic lanes. A Type II project is a noise barrier retrofit project that involves no changes to highway capacity or alignment.

Type I projects include those that create a completely new noise source, increase the volume or speed of traffic or move the traffic closer to a receiver. Type I projects include the addition of an interchange, ramp, auxiliary lane, or truck-climbing lane to an existing highway, or the widening an existing ramp by a full lane width for its entire length. Projects unrelated to increased noise levels, such as striping, lighting, signing, and landscaping projects, are not considered Type I projects.

Under 23 CFR § 772.11, noise abatement must be considered for Type I projects if the project is predicted to result in a traffic noise impact. In such cases, 23 CFR § 772 requires that the project lead agency “consider” noise abatement before adoption of the environmental document. This process involves identification of noise abatement measures that are reasonable, feasible, and likely to be incorporated into the project as well as noise impacts for which no apparent solution is available.

Traffic noise impacts, as defined in 23 CFR § 772.5, occur when the predicted noise level in the design year approach or exceed the NAC specified in 23 CFR § 772, or a predicted noise level substantially exceeds the existing noise level (a “substantial” noise increase). A “substantial increase” is defined as an increase of 12 dB Leq during the peak hour of traffic. For sensitive uses, such as residences, schools, churches, parks, and playgrounds, the NAC for interior and exterior spaces is 57 dB Leq and 66 dB Leq, respectively, during the peak hour of traffic noise. Table 4.6-1 summarizes NAC corresponding to various land use activity categories. Activity categories and related traffic noise impacts are determined based on the actual land use in a given area.

**Table 4.6-1
Noise Abatement Criteria**

NAC, Hourly A-Weighted Noise Level, dBA Leq(h)	Description of Activities
57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
67 (Exterior)	Residential, active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas,
52 (Interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
72 (Exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands not included above.

Source: FWHA, http://www.fhwa.dot.gov/environment/noise/regulations_and_guidance/faq_nois.cfm, accessed February 2016.

Federal Aviation Administration (FAA). Aircraft operated in the U.S. are subject to federal requirements regarding noise emissions levels. These requirements are set forth in Title 14 CFR, Part 36. Part 36 establishes maximum acceptable noise levels for specific aircraft types, taking into account the model year, aircraft weight, and number of engines

Federal Transit Administration. The FTA has developed guidance to evaluate noise impacts from operation of surface transportation modes (i.e. passenger cars, trucks, buses, and rail) in the 2006 FTA *Transit Noise Impact and Vibration Assessment*. All mass transit projects receiving federal funding must use these guidelines to predict and assess potential noise and vibration impacts. As ambient levels increase, smaller increments of change are allowed to minimize community annoyance related to transit operations.

Housing and Urban Development. The mission of HUD includes fostering "a decent, safe, and sanitary home and suitable living environment for every American." Accounting for acoustics is intrinsic to this mission as safety and comfort can be compromised by excessive noise. To facilitate the creation of suitable living environments, HUD has developed a standard for noise criteria. The basic foundation of the HUD noise program is set out in the noise regulation 24 CFR Part 51 Subpart B, Noise Abatement and Control.



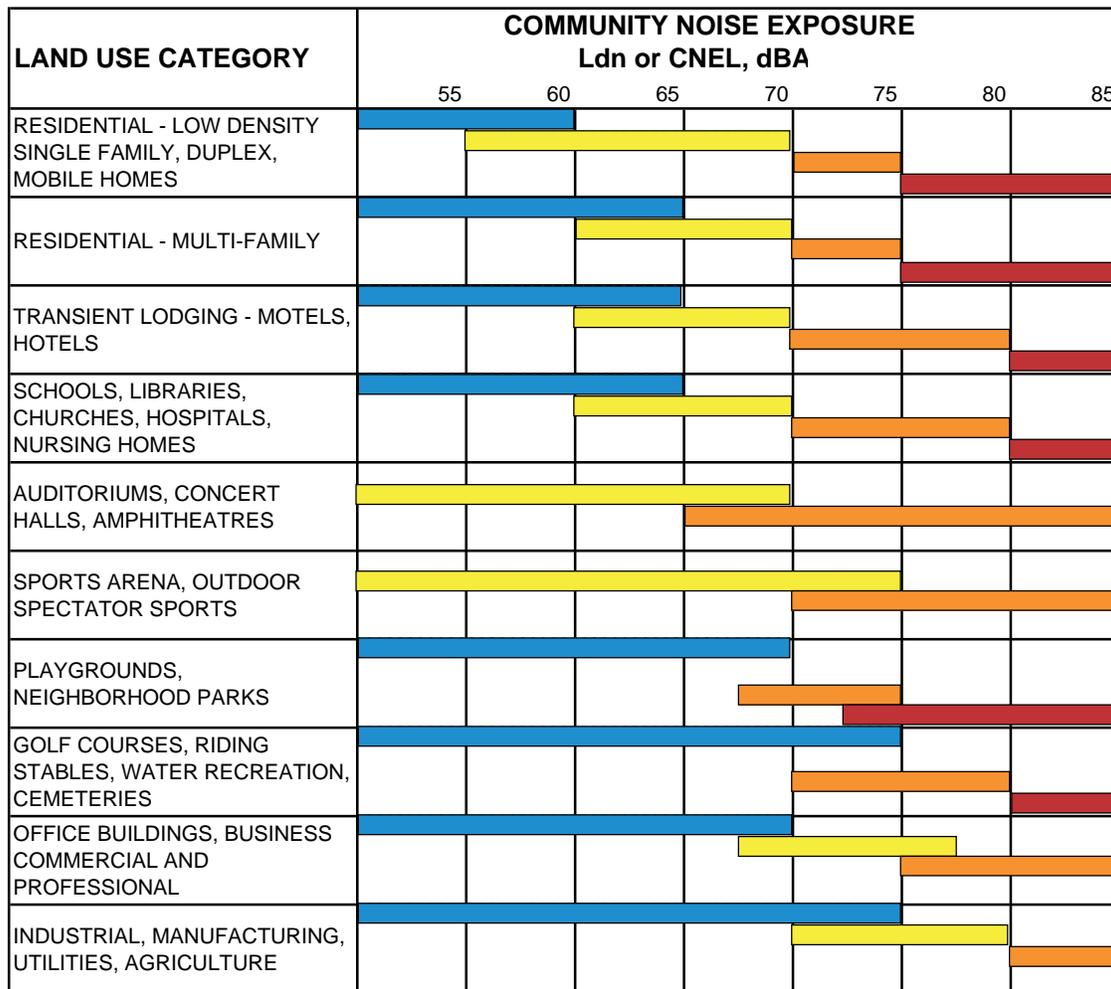
HUD's noise policy requires noise attenuation measures be provided when proposed projects are to be located in high noise areas. Within the HUD Noise Assessment Guidelines, potential noise sources are examined for projects located within 15 miles of a military or civilian airport, 1,000 feet from a road or 3,000 feet from a railroad.

HUD exterior noise regulations state that 65 dBA Ldn noise levels or less are acceptable for residential land uses and noise levels exceeding 75 dBA Ldn are unacceptable. HUD's regulations do not contain standards for interior noise levels. Rather a goal of 45 decibels is set forth and the attenuation requirements are focused on achieving that goal. It is assumed that with standard construction methods and materials, any building will provide sufficient attenuation so that if the exterior level is 65 dBA Ldn or less, the interior level will be 45 dBA Ldn or less. Noise criteria are consistent with FHWA and related state requirements.

State Regulations. Relevant state noise regulations include those established by the California Department of Health Services and the California Department of Transportation (Caltrans), as well as standards in the California Code of Regulations. The Governor's Office of Planning and Research have also established guidelines regarding sound level and land use compatibility. There are no adopted state policies or standards for ground-borne vibration. However, Caltrans recommends that extreme care be taken when sustained pile driving occurs within 7.5 meters (25 feet) of any building, 15 to 30 meters (50 to 100 feet) of a historic building or near a building in poor condition.

State of California General Plan Guidelines. The state of California General Plan Guidelines (California Governor's Office of Planning and Research, 2003) identifies guidelines for the Noise Elements of city and county General Plans, including a sound level/land-use compatibility chart that categorizes, by land use, outdoor Ldn ranges in up to four categories (normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable). These guidelines provide the state's recommendations for city and county General Plan Noise Elements, as shown in Figure 4.6-1. Compliance with the guidelines by the cities and counties is not required, but nonetheless is quite common because many general plan noise elements are based on these guidelines. The noise element guidelines identify the normally acceptable range for low-density residential uses as less than 60 dB, and the conditionally acceptable range as 55-70 dB. The normally acceptable range for high-density residential uses is identified as Ldn values below 65 dB, and the conditionally acceptable range is identified as 60-70 dB. For educational and medical facilities, Ldn values below 70 dB are considered normally acceptable, and Ldn values of 60-70 dB are considered conditionally acceptable. For office and commercial land uses, Ldn values below 70 dB are considered normally acceptable, and Ldn values of 67.5-77.5 are categorized as conditionally acceptable. These overlapping Ldn ranges are intended to indicate that local conditions (existing sound levels and community attitudes toward dominant sound sources) should be considered in evaluating land-use compatibility at specific locations.

California's Airport Noise Standards. The state of California has the authority to establish regulations requiring airports to address aircraft noise impacts near airports. The state of California's Airport Noise Standards, found in Title 21 of the California Code of Regulations, identify a noise exposure level of 65 dB CNEL as the noise impact boundary around airports.



NORMALLY ACCEPTABLE
Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

NORMALLY UNACCEPTABLE
New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design

CONDITIONALLY ACCEPTABLE
New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

CLEARLY UNACCEPTABLE
New construction or development should generally not be undertaken.

Guidelines for the Preparation and Content of Noise Elements of the General Plan, California Office of Planning and Research, 2003.

Noise Compatibility Matrix

Figure 4.6-1

Within the noise impact boundary, airport proprietors are required to ensure that all land uses are compatible with the aircraft noise environment or the airport proprietor must secure a variance from the California Department of Transportation.

The Aeronautics Division of the California Department of Transportation has published the *California Airport Land Use Planning Handbook* (October 2011). The purpose of the California Airport Land Use Planning Handbook is to provide guidance for conducting airport land use compatibility planning. This handbook includes a section related to noise and states, "The basic strategy for achieving noise compatibility in the vicinity of an airport is to prevent or limit development of land uses that are particularly sensitive to noise. Common land use strategies are ones that either involve few people (especially people engaged in noise-sensitive activities) or generate significant noise levels themselves (such as other transportation facilities or some industrial uses)."

California Department of Transportation. The state of California establishes noise limits for vehicles licensed to operate on public roads. For heavy trucks, the state passby standard is consistent with the federal limit of 80 dB. The state passby standard for light trucks and passenger cars (less than 4.5 tons gross vehicle rating) is also 80 dB at 15 meters from the centerline. For new roadway projects, Caltrans uses the NAC discussed above in connection with FHWA. In addition, Caltrans has published the *Traffic Noise Analysis Protocol* (May 2011) for assessing noise levels associated with roadway projects.

Section 216 of the California Streets and Highways Code relates to the noise effects of a proposed freeway project on public and private elementary and secondary schools. Under this code, a noise impact occurs if, as a result of a proposed freeway project, noise levels exceed 52 dBA Leq in the interior of public or private elementary or secondary classrooms, libraries, multipurpose rooms, or spaces. If a project results in a noise impact under this code, noise abatement must be provided to reduce classroom noise to a level that is at or below 52 dBA Leq. If the noise levels generated from roadway sources exceed 52 dBA Leq prior to the construction of the proposed freeway project, then noise abatement must be provided to reduce the noise to the level that existed prior to construction of the project.

California Noise Insulation Standards. The California Noise Insulation Standards found in Title 24 of the California Code of Regulations set requirements for new multi-family residential units, hotels, and motels that may be subject to relatively high levels of transportation-related noise. For exterior noise, the noise insulation standard is Ldn 45 dB in any habitable room and requires an acoustical analysis demonstrating how dwelling units have been designed to meet this interior standard where such units are proposed in areas subject to noise levels greater than Ldn 60 dB. Applicable thresholds are shown in Figure 4.6-1.

State Aeronautics Act. The State Aeronautics Act (Public Utilities Code, Section 21670 et seq.) requires the preparation of an Airport Land Use Compatibility Plan (ALUCP) for nearly all public-use airports in the state (Section 21675). The intent of the ALUCP is to encourage compatibility between airports and the various land uses that surround them. Some of the actions that airport operators have been allowed to take to address local community noise concerns include runway use and flight routing changes, aircraft operational procedure changes and engine run-up restrictions. These actions generally are subject to approval by the FAA,

which has the authority and responsibility to control aircraft noise sources, implement and enforce flight operational procedures and manage the air traffic control system. Airport operators may also consider limitations on airport use but such restrictions can be overridden by the FAA if it is determined that they unjustly discriminate against any user, impede the federal interest in safety and management of the air navigation system or unreasonably interfere with interstate commerce.

Local Regulations. Butte County and the incorporated Cities of Chico, Oroville, Gridley, Biggs, and Town of Paradise have established policies and regulations concerning noise that could adversely affect noise-sensitive land uses in their respective General Plan Noise Elements. The Noise Elements establish objectives and implements policies intended to limit community exposure to excessive noise levels. Noise sources such as roadways, rails and airports are identified in each Noise Element. Noise land use compatibility guidelines listed by the California Governor's Office of Planning and Research (refer to Figure 4.6-1) are typically used for reference.

4.6.2 Impact Analysis

a. Methodology and Significance Thresholds. The analysis of noise impacts considers the effects of both temporary construction-related noise and long-term noise associated with proposed transportation system improvements. Temporary construction noise was estimated based upon levels presented in the May 2006 Federal Transit Administration (FTA) *Transit Noise and Vibration Impact Assessment*.

Pursuant to the State *CEQA Guidelines*, potentially significant impacts would occur if the project would result in:

Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;

Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels;

A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project; or

A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

For a project located 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, exposure of people residing or working in the project area to excessive noise levels;

For a project within the vicinity of a private airstrip, exposure of people residing or working in the project area to excessive noise levels.

Since this document analyzes noise impacts on a program level only, project-level analyses for various projects within the 2016 RTP-SCS will be necessary in the future. The project proponent or local jurisdiction shall be responsible for ensuring adherence to the mitigation measures prior to construction. The analysis of potential impacts should include an assessment of all applicable standards, including those established by local jurisdictions, counties, the state of California, and federal agencies, where appropriate.



Local Thresholds. Butte County and the incorporated cities within the County each have their own noise standards. Noise standards for the County and the cities within the county typically apply land-use compatibility criteria of 60-65 dBA Ldn as being the normally acceptable range for new residential developments, and interior noise criteria of 45 dBA Ldn, consistent with the overall state recommendations in Figure 4.6-1.

b. Project Impacts and Mitigation Measures. This section describes generalized impacts associated with some of the projects anticipated in the 2016 RTP-SCS.

Impact N-1 Construction activity associated with transportation improvement projects and development envisioned by the 2016 RTP-SCS would create temporary noise level increases in discrete locations throughout the County. Impacts would be Class II, significant but mitigable.

Noise. The operation of equipment during the construction of roadway infrastructure, as well as development projects envisioned by the SCS, would result in temporary increases in noise in the immediate vicinity of individual construction sites. As shown in Table 4.6-2, average noise levels associated with the use of heavy equipment at construction sites can range from about 76 to 89 dBA at 50 feet from the source, depending upon the types of equipment in operation at any given time and the phase of construction. The highest noise levels generally occur during excavation and foundation development, which involve the use of such equipment as backhoes, bulldozers, shovels, and front end loaders.

**Table 4.6-2
Typical Construction Noise Levels (in dBA)**

Equipment	Typical Level 25 Feet from the Source	Typical Level 50 Feet from the Source	Typical Level 100 Feet from the Source	Typical Level 200 Feet from the Source	Typical Level 800 Feet from the Source
Air Compressor	87	81	75	69	57
Backhoe	86	80	74	68	56
Concrete Mixer	91	85	79	73	61
Grader	91	85	79	73	61
Paver	95	89	83	77	65
Saw	82	76	70	64	52
Scraper	95	89	83	77	65
Truck	94	88	82	76	64

Source: Typical noise level 50 feet from the source was taken from FTA, May 2006. Noise levels at 25 feet, 100 feet and 200 feet were extrapolated using a 6 dBA attenuation rate for the doubling of distance. Noise levels are measured in Leq for the expected duration that each piece of equipment is expected to operate. Each noise level assumes the piece of equipment is operating at full power for the expected duration to complete the construction activity. The duration varies widely between each piece of equipment. Noise levels also depend on the model and year of the equipment used. The noise levels assume simultaneous construction activities associated with the respective phase of construction and equipment being used.

Noise generated by construction activity would vary depending on the project and intensity of equipment use. Roadway widening projects would likely require the operation of many pieces of heavy-duty equipment that generate high noise levels. Alternatively, repainting/restriping would typically be less intense requiring minimal, if any, use of heavy equipment. This



conservative analysis assesses construction noise based on the operation of heavy-duty equipment. Noise levels from point sources such as construction sites typically attenuate at a rate of about 6 dBA per doubling of distance. Therefore, areas within 800 feet of construction site with heavy-duty equipment may be exposed to noise levels exceeding 65 dBA. Impacts related to construction noise would be significant but mitigable.

Vibration. Construction-related vibration has the potential to damage structures, cause cosmetic damage (e.g., crack plaster), or disrupt the operation of vibration-sensitive equipment. Vibration can also be a source of annoyance to individuals who live or work close to vibration-generating activities. Heavy construction operations can cause substantial vibration near the source. As shown in Table 4.6-3, the highest impact caused by equipment such as pile drivers or large bulldozers can generate vibrations of 1.518 to 0.089 inches per second of peak particle velocity (PPV) at a distance of 25 feet. Similar to construction noise, vibration levels would be variable depending on the type of construction project and related equipment use.

**Table 4.6-3
Construction Equipment Vibration Levels**

Equipment		Peak Particle Velocity (PPV) at 25 Feet (Inches per Second)	Root Mean Square (RMS) at 25 Feet (Vdb)
Pile Driver (Impact)	Upper Range	1.518	112
	Typical	0.644	104
Pile Driver (Sonic)	Upper Range	0.734	105
	Typical	0.170	93
Vibratory Roller		0.210	95
Clam Shovel Drop (Slurry Wall)		0.202	94
Hydrol Mill (Slurry Wall)	In Soil	0.008	66
	In Rock	0.017	75
Large Bulldozer		0.089	87
Caisson Drilling		0.089	87
Loaded Trucks		0.076	86
Jackhammer		0.035	79
Small Bulldozer		0.003	58

Source: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, 2006.

Typical project construction activities, such as the use of jackhammers, other high-power or vibratory tools, compactors, and tracked equipment, may also generate substantial vibration (i.e., greater than 0.2 inches per second PPV) in the immediate vicinity, typically within 15 feet of the equipment. Through the use of scheduling controls, typical construction activities would be restricted to hours with least potential to affect nearby properties. Thus, perceptible vibration can be kept to a minimum and not result in human annoyance or structural damage.

Some specific construction activities result in higher levels of vibration. Pile driving has the potential to generate the highest vibration levels and is the primary concern for structural damage when it occurs within 50 feet of structures. Vibration levels generated by pile driving activities would vary depending on project conditions, such as soil conditions, construction methods and equipment used. Depending on the proximity of existing structures to each



construction site, the structural soundness of the affected buildings and construction methods, vibration caused by pile driving or other foundation work with a substantial impact component such as blasting, rock or caisson drilling, and site excavation or compaction may be high enough to be perceptible within 100 feet and damage existing structures within 50 feet. Impacts related to vibration from construction activities would be significant but mitigable.

Mitigation Measures. BCAG shall and transportation project sponsor agencies can and should implement the following mitigation measures for transportation projects identified in Tables 2-1 of Section 2.0, *Project Description*. Butte County and cities in the County can and should implement these measures where relevant to land use projects implementing the RTP-SCS. Project-specific environmental impacts may require these mitigation measures be revised or expanded in response to site-specific conditions.

- N-1(a)** Sponsor agencies of 2016 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)** If a particular project within 800 feet of sensitive receptors requires pile driving, the sponsor agency in which this project is located shall require the use of pile drilling techniques instead, where feasible. This shall be accomplished through the placement of conditions on the project during its individual environmental review.
- N-1 (c)** Sponsor 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)** Sponsor agencies shall ensure that impact equipment (e.g., jack hammers, pavement breakers, and rock drills) used for project construction be hydraulically or electrical powered wherever feasible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatically powered tools is unavoidable, use of an exhaust muffler on the compressed air exhaust can lower noise levels from the exhaust by up to about 10 dBA. When feasible, external jackets on the impact equipment can achieve a reduction of 5 dBA. Whenever feasible, use quieter procedures, such as drilling rather than impact equipment operation.



- 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.

Significance After Mitigation. Mitigation Measures N-1(a)-(e) would assure that construction noise impacts would not be substantial through a variety of measures to minimize exposure of existing receptors. If a project is located near a sensitive receptor, the project sponsor would ensure that noise reduction measures are implemented during construction that would reduce noise levels below local and/or Caltrans standards. With implementation of local noise control requirements and proposed mitigation measures N-1(a-e), impacts would be reduced to a less than significant level.

- Impact N-2 Implementation of the 2016 RTP-SCS would increase traffic-generated noise levels on highways and roadways which could expose existing sensitive receptors to noise in excess of normally acceptable levels. This is a Class II, significant but mitigable, impact.**

Traffic Noise. As discussed above, nearly all of the most heavily travelled roadways currently reach noise levels exceeding 65 dBA CNEL within 100 feet from the centerline of the freeway. The 2016 RTP-SCS includes several projects that would potentially increase traffic noise levels by increasing the traffic itself. Such projects include bridge construction and modification and connector roads, as well as improvements to roads that would allow increased traffic volumes. Such projects would not in themselves introduce new traffic, but rather are intended to relieve current or projected future traffic congestion or unacceptable safety conditions. However, in some cases, widening and extension projects would accommodate additional traffic volumes and/or relocate noise sources closer to receptors. It should be noted that while traffic may increase in certain locations, the expected number of annual vehicle miles traveled (VMT) in 2040 would be reduced from 7,190,319 annually without the RTP-SCS ('No Project' scenario) to 6,667,402 annually with the RTP-SCS, a reduction of approximately 522,917 VMT annually. As the VMT decreases, noise associated with VMT would also decrease.

Airports. The 2016 RTP includes roadway widenings on Cohasset Road near Chico Municipal Airport and Airport Road near Paradise Skypark Airport. These projects would not directly or indirectly increase aircraft operations at public use airports in the county. Any future infill project under the 2016 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, which would ensure that noise attenuation features are implemented into the project as necessary. Therefore, the 2016 RTP-SCS would not increase ambient noise levels near airports. No significant impacts due to aircraft operations would occur.

Transit Projects. Proposed projects and programs include improvements designed to enhance bus service. Improvements may include the construction of bus stop amenities, transfer facilities, the provision of replacement buses, computer equipment, fare equipment, security upgrades, and investments in para-transit and elderly services. New transit trips would be generated where demand for service is needed and some existing routes may be removed or replaced from the transit schedule. Thus, transit related traffic noise would increase along some



routes but decrease on others. Overall, transit noise is not expected to be significantly greater than normal roadway noise and VMT overall would decrease as a result of the proposed project since the RTP would increase ridership of transit; therefore, traffic noise would also decrease incrementally. Therefore, the overall change in the noise environment would not be significant.

Rail Projects. There are no rail-related projects included in the 2016 RTP-SCS. Since there would be no increase in train trips, there would be no increase ambient noise levels in the vicinity of the rail line. There would be no overall change in the noise environment.

Mitigation Measures. BCAG shall and transportation project sponsor agencies can and should implement the following mitigation measures for transportation projects identified in Tables 2-1 of Section 2.0, *Project Description*. Butte County and cities in the County can and should implement these measures where relevant to land use projects implementing the RTP-SCS. Project-specific environmental impacts may require these mitigation measures be revised or expanded in response to site-specific conditions.

N-2(a) Sponsor agencies of RTP-SCS projects shall complete detailed noise assessments using applicable guidelines (e.g., Federal Transit Administration Transit Noise and Vibration Impact Assessment for rail and bus projects and the California Department of Transportation Traffic Noise Analysis Protocol for roadway projects). The project sponsor 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 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 lead agency.

Significance After Mitigation. Mitigation Measures N-2(a) and (b) would require attenuation meeting state and local standards to assure that exposure of sensitive receptors to mobile source noise levels would not be significant. If a project is located near a sensitive receptor, the project sponsor would ensure that the facility is designed and constructed to avoid or minimize exposure to unacceptable noise levels. Projects would either be placed outside an appropriate setback distance, implement sound attenuating building design, and/or implement sound barriers to avoid substantial adverse effects. Implementation of the recommended programmatic measures would reduce potential impacts to a less than significant level.

Impact N-3 The proposed 2016 RTP-SCS land use scenario would encourage infill development, which may place sensitive receptors in areas with unacceptable noise levels. This is a Class II, *significant but mitigable*, impact.

The 2016 RTP is based on a preferred land use and transportation scenario which lays out a pattern of future growth emphasizing intensified land use distribution that concentrates growth in urban areas and corridors. This land use scenario would shift a greater share of future residential and commercial growth within urban areas. New noise sensitive development in infill areas could be exposed to noise levels exceeding the County or city noise standards. Potential sources of noise exposure include: roadway traffic, railway or bus operations, commercial activity, and industrial activity. Impacts are potentially significant.

Mitigation Measures. BCAG shall and transportation project sponsor agencies can and should implement the following mitigation measures for transportation projects identified in Tables 2-1 of Section 2.0, *Project Description*. Butte County and cities in the County can and should implement these measures where relevant to land use projects implementing the RTP-SCS. Project-specific environmental impacts may require these mitigation measures be revised or expanded in response to site-specific conditions.

N-3 If a 2016 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 individual 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 with perimeter weather stripping, air condition system so that windows and doors may remain closed, and situating exterior doors away from roads. This shall be accomplished during the project's individual environmental review.



Significance After Mitigation. Mitigation measure N-3 would assure that sensitive receptors would not be exposed to unacceptable noise levels by requiring feasible attenuation measures that reduce noise levels below local standards. If a development project is located in an area with exterior ambient noise levels above local noise standards, the project sponsor would ensure that the project is designed and constructed to avoid or minimize exposure to unacceptable noise levels. Compliance with local general plans and implementation of the programmatic mitigation measure would reduce potential impacts to a less than significant level.

c. Specific 2016 RTP Projects That May Result in Impacts. The proposed projects listed in Table 2-1 in Section 2.0, *Project Description* would have the potential to result in noise impacts. All projects that involve construction activities would result in Impact N-1, temporary increases in noise and vibration associated with construction. The individual projects that would accommodate additional roadway, freeway, or bus traffic could create significant noise impacts associated with Impact N-2, but would not necessarily do so. In addition, road widening/extension projects or construction of new roadways have the potential to place roadway traffic noise closer to sensitive receptors. Land use projects that would include infill development could create significant impacts associated with Impact N-3. Additional specific analysis will need to be conducted as the individual projects are implemented in order to determine the actual magnitude of impact. Mitigation measures discussed above would apply to these specific projects.

4.7 TRANSPORTATION AND CIRCULATION

4.7.1 Setting

a. Regional Road Network.

Existing Road System. The Butte County regional road system is a network of highways and roads constrained by the region's geography. The circulation system in the flat valley of the southwestern portion of the county is affected most significantly by the Feather River. The river bisects the lower portion of the county running south. Travel in the foothills and mountains of the eastern part of the county is limited to east-west roadways that run through valleys and canyons.

Man-made barriers, like the railroad tracks running north-south parallel to the state highways, also constrain the circulation system. Together the river and railroad tracks facilitate north-south travel, though they also hinder east-west travel in the southern portion of the county.

Butte County has nearly 2,100 miles of public roadways under the jurisdiction of various government entities. These roadways carry an estimated 4.6 million vehicle miles of travel (VMT) daily, according to the most recent 2013 Caltrans Highway Performance Monitoring System (HPMS) data. Figure 4.7-1 presents the major roadways in the network.

Functional Classification and Design Standards of Roadways. Butte County's streets and highways can be described in terms of a hierarchy of roadways according to their functional classification. This hierarchy of streets and highways is only a general guide to the classification of roadways that make up the circulation system. Because streets often serve dual functions, they cannot be definitively classified. In addition, the width of a roadway does not always correspond directly to its function in the overall circulation system, though the wider roadways tend to have more regional function.

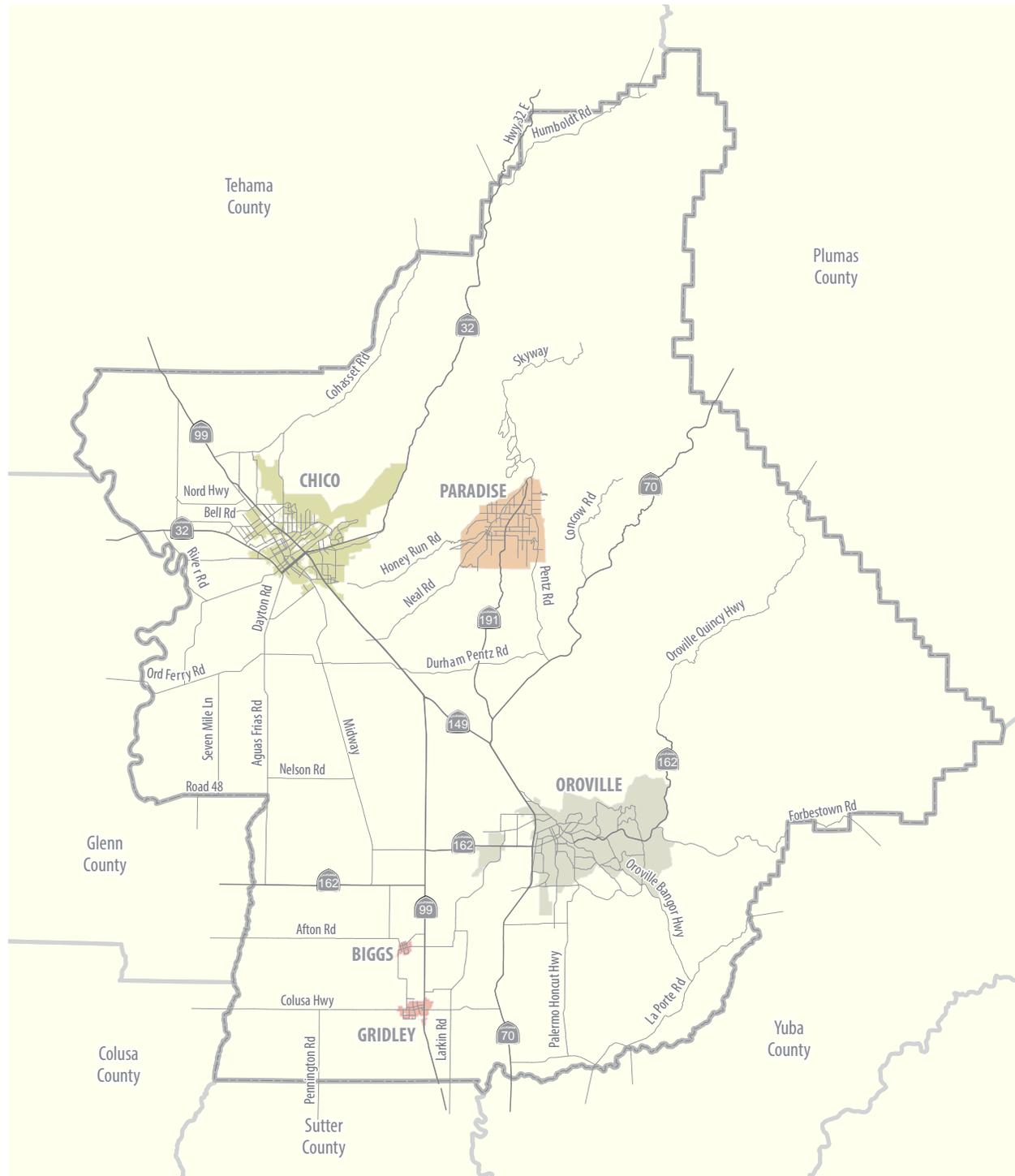
Two major classifications, urban and rural streets, are grouped according to the character of service they are expected to provide. It is necessary to differentiate between urban and rural areas since the services they provide can differ greatly.

Urban Roadway Classes

Urban Local Roadways. Urban local roadways are intended to serve adjacent properties only. They carry very little, if any, through traffic and generally have low volumes. They are normally discontinuous in alignment to discourage through traffic, although they are occasionally laid out in a grid system. Speed limits on local roads seldom exceed 25 miles per hour. An example of a local roadway in an urban environment is the cul-de-sac.

Urban Collector Roadways. Urban collector roadways are intended to collect traffic from local roadways and carry it to roads higher in the hierarchy of classification. Collector roads also serve adjacent properties. They generally carry light to moderate traffic volumes at speed limits typically in the range of 35 to 45 miles per hour.





Urban Arterial Roadways. Urban arterial roadways can be further divided into major and minor facilities. They are fed by local and collector roads and provide intra-city circulation and connection to regional roadways. Although their primary purpose is to move heavy volumes of traffic, arterial roadways often provide access to adjacent properties, especially in commercial areas. Speed limits on arterial roadways typically range from 45 to 55 miles per hour.

Rural Roadway Classes

Rural Local Roads. Rural local roads serve primarily to provide access to adjacent land and provide for travel over relatively short distances.

Rural Collector Roads. Rural collector roads serve travel that is primarily intra-county rather than of regional or statewide importance. Travel distances on these roads are usually shorter than on arterial roadways.

Rural Arterial Roadways. Rural arterial roadways provide for corridor movements having trip lengths and volumes that indicate substantial statewide or interstate travel. They generally link urban areas of over 50,000 population as well as many areas with 25,000 population or more. They are often regional highways or freeways as described below.

High-Volume Corridors

The following classifications of roadway serve both rural and urban areas by providing travel on important, high-volume corridors.

Regional Highways. Regional highways are used as primary connections between major traffic generators or as primary links in state and national highway networks. Such routes often have sections of many miles through rural environments without traffic control interruptions. Six State Highways serve as regional highways in Butte County. These highways, which provide the primary access through the county, include State Routes 32, 70, 99, 149, 162, and 191.

Freeways and Expressways. Freeways and expressways are intended to serve both intra-regional and inter-regional travel. They provide no access to adjacent properties, but rather are fed traffic from collector and arterial roadways by access ramps. Freeways provide connections to other regional highways and are capable of carrying heavy traffic volumes. Speed limits on freeways are usually the highest allowed by law.

Butte County has two segments of four-lane limited-access freeway or expressway. One segment is State Route (SR) 70 between 0.4 mile south of SR 162 through Oroville to the junction of SR 149. The other segment is State Route (SR) 99 starting at the SR99/SR149 intersection and continuing through Chico to one mile north of the Eaton Road interchange. These segments are part of the north-south travel corridor of SR 99 and part of SR 70 as described below. Because these state routes have only two segments of freeway, the Butte County region has one of only two standard metropolitan statistical areas (SMSAs) in the United States that is not served by an interstate freeway.

b. Transit Service. While the automobile is the primary mode of travel in Butte County, this Regional Transportation Plan (RTP), the Butte County General Plan, and the general plans



of the local jurisdictions support a balanced transportation system that facilitates all modes of travel.

Public transit service is provided by Butte Regional Transit (B-Line) along with other transit service providers such as Glenn Ride (service between Chico and Glenn County), various social service agencies, Greyhound Bus Lines, and other private transportation services.

Fixed Route Public Transit. B-Line is a countywide public transit system that provides both inter-city and intra-city fixed-route and demand responsive service (Paratransit). Intra-city service is provided in Chico, Paradise, and Oroville. Inter-city service is provided between Chico, Paradise, Oroville, and the Gridley/Biggs area. B-Line currently operates a fleet of 36 vehicles to serve its fixed route service.

Local Chico Service. Service within the Chico area accounts for most (74 percent) of the ridership of the B-Line system. Eleven fixed routes provide intra-city service. Many of the routes are through-routed (interlined) with each other to improve connectivity and to reduce the number of vehicles that are needed to operate the system. The routes provide connections to all the major origins and destinations in Chico including California State University, Chico, junior high and high schools, downtown, shopping areas, hospitals, the library, and major high density residential areas. Two routes (8 & 9) are specifically designated as student shuttle routes and connect the university and downtown with the major student-housing corridors.

General operating hours are 6:15 a.m. to about 9:00 p.m. Monday through Friday with some service as late as 10:00 p.m. Saturday service runs between 8:15 a.m. and 7:00 p.m. No local service is provided on Sunday. Inter-city service to Paradise is provided by two routes. One inter-city route connects Chico to Oroville. These regional lines operate 7 days a week. Inter-city service to Gridley is provided by a route that operates once per day during the work week. Most of the local routes in Chico have timed connections with inter-city routes at the Chico Transit Center.

Local Oroville Service. Oroville is served by four fixed-routes that operate Monday through Friday, 6:00 a.m. to 7:30 p.m. Local service is not provided on weekends or major holidays. The routes provide connections to the County Administrative Complex, the downtown transit center, residential areas within the City of Oroville and portions of Thermalito and South Oroville. Inter-city service to Chico operates 7 days a week. Inter-city service to Paradise operates once per day during the work week. Inter-city service to Gridley/Biggs is provided by one route that operates Monday through Saturday with varying levels of frequency. Most of the local routes in Oroville have connections with inter-city routes at the Oroville Transit Center.

Local Paradise Service. Paradise is served by three regional fixed-routes. Two of the routes connect to Chico and the other connects to Oroville. Magalia is also served by one of these regional routes. General operating hours are from 6:00 a.m. to 7:00 p.m. Monday through Friday, except for major holidays, with select routes operating on Saturday or Sunday with varying levels of frequency.

Paratransit Service. B-Line provides complimentary Paratransit service, in accordance with the American with Disabilities Act (ADA), along with Dial-a-Ride service for seniors and



persons with disabilities. The service area includes the Chico urban area, Paradise, Oroville, and portions of unincorporated Butte County. Operating hours are 5:50 a.m. to 10:00 p.m. Monday through Friday, 7:00 a.m. to 10:00 p.m. on Saturday, and 7:50 a.m. to 6:00 p.m. on Sunday.

c. Aviation. Air transportation in Butte County is served by a number of private and public airfields and heliports serving general aviation and agricultural users. Most of these are small fields for private use. Commercial flights to distant or out-of-state destinations are available at the Sacramento International Airport, about 60 miles south of Oroville.

Chico Municipal Airport. CMA is owned and operated by the City of Chico. The airport is located to the north of the city, west of Cohasset Road. This facility is the largest airport in Butte County, however Chico Municipal Airport (CMA) commercial service ended in December 2014. High air fares for flights from CMA coupled with lower fares, more flight options, and easy access at Sacramento International Airport contributed to the service loss. The CMA is now used exclusively for business and general aviation serving the Chico and Central Sacramento Valley area. .

The 1,475 acre airport facility has two paved runways; the main runway is 6,722 feet long and 150 feet wide and secondary runway is 3,005 feet long and 75 feet wide. The control tower is open from 7:00 a.m. to 7:00 p.m. seven days a week. The tower and all other navigational aids are maintained and operated by the Federal Aviation Administration (FAA).

Chico Municipal Airport is the primary airport for air cargo service in Butte County. It also provides air cargo service to Glenn, Tehama, and Plumas Counties. Paradise Skypark is also used by commercial air cargo carriers as a reliever airport when Chico Municipal Airport is closed due to fog.

Oroville Municipal Airport. The Oroville Municipal Airport is owned by the City of Oroville. This 795-acre facility is located 2.5 miles west of the city along State Route 162. Although the city's sphere of influence extends a mile west of the airport, only the airport property and some private land to the north and west are within the city boundary. The airport has two paved runways; the main runway is 6,000 feet long and 150 feet wide and the secondary runway is 3,570 feet long and 150 feet wide.

According to the Caltrans 2013 California Aviation System Plan, this airport served 36,000 annual operations. There were 78 aircraft based at the airport, 73 of which were single-engine general aviation aircraft.

Paradise Skypark Airport. The Paradise Skypark Airport is located three miles south of the Paradise town center. It is privately owned and operated and has one runway of 3,100 feet. As of 2005, aircraft based at Paradise Skypark totaled 45, including 44 single engine and 1 multi-engine plane.

Ranchaero Airport. The The Ranchoero Airport is a 23.5 acre facility located on the west side of Chico. Privately owned and operated, it has one runway of 2,280 feet. As of 2004, 34 aircraft are based there, including 30 single engine and 4 helicopters.



Other aviation facilities include three special use airports: Butte Creek Hog Ranch Airport, Jones Airport, and Richvale Airport, a seaplane-landing area in the center of Lake Oroville, and heliports at the Butte County Sheriff's Office (jail complex), Enloe Hospital, and Oroville Hospital.

d. Rail Transportation. Butte County is served by Union Pacific Railroad. The Union Pacific maintains 100.4 miles of mainline track in Butte County; one line, in the western portion of the county (formerly the Southern Pacific mainline) that passes through Gridley, Biggs, and Chico and two in the eastern portion that pass through Oroville. Goods shipped by the railroad include bulk items such as grains, rice, vehicles, lumber, and fuel.

e. Truck Transport. Truck transport is the primary method of moving goods into and through Butte County. The designated truck route through Butte County encompasses a combination of State Route 70 (south county), State Route 149, and State Route 99 (north county). This route was designated because there is no continuous four-lane freeway/expressway on which to safely accommodate the movement of goods by truck. State Routes 32, 70, 99 and Skyway are commonly used to transport freight to and from the urban centers in Butte County. The incorporated cities in Butte County have designated truck routes.

f. Bicycle/Pedestrian Facilities. Many communities in Butte County support bicycling for both transportation and recreation. All of the incorporated cities and the County have Bicycle Master Plans to aid in the planning and development of a comprehensive bicycle network throughout the County. These plans were adopted between 2009 and 2012. As requirements of the ATP Program local jurisdictions would prepare Alternative Transportation Plans instead of Bike Plans. In 2015, BCAG completed the Butte County Transit and Non-Motorized Plan, which focused on short-term and long-term improvements to the pedestrian, bike, and transit networks. Given the energy savings, health advantages, and environmental benefits of alternative modes of travel, bicycle facilities will continue to play an important role in transportation planning.

Bike facilities are categorized into three different classifications:

- **Class I Bike Paths** are bikeway facilities designated for exclusive use by bicycles and pedestrians. They are separated from roadways, usually designed for two-way travel, and are designed to minimize cross-flow by motor vehicles. Whenever practical, these paths should be at least 8 feet wide, paved with asphalt concrete, and have two-foot wide, graded shoulders made of aggregate base.
- **Class II Bike Lanes** are areas within paved streets. They usually consist of adjacent one-way lanes on either side of the roadway for exclusive and semi-exclusive use by bicycles. At minimum, Class II bike lane facilities require four-foot wide lanes on both sides of the roadway where shoulders are present and five-foot wide lanes where curb and gutters are present. These facilities are for the exclusive use of bicycles where they are separated from the motor vehicle lane by a six-inch painted white stripe and designated with signs and permanent pavement markings. Shared use by motor vehicles within these facilities is only permissible where indicated by broken or dashed striping.

- **Class III Bike Routes** are located in shared use travel lanes with sufficient width for both motor vehicle and bicycle usage. Class III bike routes are usually only designated by signs or permanent pavement markings indicating the route.

The Butte County Transit and Non-Motorized Plan identifies a number of planned facility improvements, including bikeway facilities along Humboldt Road, Chico River Road and Sacramento Avenue in the Chico Area. Bikeway facilities are planned along Pentz Road, Pearson Road, and Wagstaff Road in Paradise while a bike path is planned along Skyway to connect Chico with Paradise and Durham. Bike paths are also proposed along the Feather River and Lincoln Boulevard in Oroville. Finally, a number of additional bike facilities are planned for Biggs, Gridley, and the unincorporated county.

Most of the pedestrian facilities located within the urban areas of Butte County are sidewalks built in conjunction with site improvements for residential and commercial development. Newer sidewalk facilities include access ramps that meet both County and American with Disabilities Act (ADA) standards. Older facilities are being gradually upgraded to include access ramps as part of the County's Capital Improvement Program. To create uniform pedestrian corridors, sidewalk improvements will also have to be added to complete existing facilities that presently terminate without accessible ramps or connections to adjacent facilities.

Development standards for jurisdictions within Butte County typically require proposed residential and commercial developments in urban areas to construct curb, gutter, and sidewalk improvements along a development's frontage on a public street. In the Chico urban area, residential developments with lot sizes greater than one acre are not presently required to construct curb, gutter, and sidewalk improvements along public street frontage.

f. Regulatory Setting.

Federal.

The primary federal requirements applicable to transportation components of the RTP relate to transportation planning and funding and conformity with federal air quality requirements. Requirements for RTPs are addressed in the metropolitan transportation planning rules in 23 Code of Federal Regulations (CFR) 450. These federal regulations incorporate the most recent transportation statute affecting federal funding for transportation projects (i.e., *Fixing America's Surface Transportation (FAST) Act*, enacted in December, 2015).

Key federal requirements for long-range plans include the following:

- *RTPs must be developed through an open and inclusive process that ensures public input and seeks out and considers the needs of those traditionally under served by existing transportation systems;*
- *RTPs must be developed through a performance-driven, outcome-based approach that includes state and public transportation operators;*
- *RTPs must be developed at least every four years for non-attainment regions;*
- *RTPs must have a planning period of at least 20 years into the future;*
- *RTPs must reflect the most recent assumptions for population, travel, land use, congestion, employment, and economic activity;*



- *RTPs must have a financially constrained element, and transportation revenue assumptions must be reasonable;*
- *RTPs must conform to the applicable federal air quality plan, called the State Implementation Plan (SIP), for ozone and other pollutants for which an area is not in attainment;*
- *RTPs must consider eight planning factors and strategies, in the local context;*
- *RTPs must provide for the development of accessible pedestrian walkways and bicycle transportation facilities;*
- *RTPs shall address resiliency and reliability of the transportation system;*
- *RTPs shall include strategies to reduce vulnerabilities due to natural disasters;*
- *RTPs shall identify public transportation facilities and intercity bus facilities; and*
- *RTPs must consider public ports and freight shippers.*

MAP-21. The most recent federal transportation legislation, the Moving Ahead for Progress in the 21st Century Act (MAP-21), was enacted in 2012. Through the RTP development process, MAP-21 encourages BCAG 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.⁵

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 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.⁶*

The 2016 RTP discusses in detail how these requirements are met.

National Environmental Policy Act (NEPA). The National Environment Policy Act of 1969 (42 U.S.C. § 4321 et seq.) requires federal agencies to assess the possible environmental

⁵ 23 U.S.C. §134(g)(3)(A).

⁶ 23 U.S.C. §134(h)(1).



consequences of projects which they propose to undertake, fund, or approve. While the RTP 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.

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 (see Senate Bill 375 (SB 375) discussion below).

California Transportation Commission Regional Transportation Plan Guidelines. The CTC publishes and periodically updates guidelines for the development of long-range transportation plans. Pursuant to Government Code Section 65080(d), each regional transportation planning agency (RTPA) is required to adopt and submit an updated regional transportation plan (RTP) to the California Transportation Commission (CTC) and the Department of Transportation (Caltrans) every four years. BCAG is the designated RTPA for Butte County.

Under Government Code Section 14522, the CTC is authorized to prepare guidelines to assist with 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 California 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 2010, and includes new provisions for complying with Senate Bill 375 (see below), as well as new guidelines for regional travel demand modeling. The regional travel demand model guidelines are "scaled" to different sizes of MPO's.

SB 375. The Sustainable Communities Strategy and Climate Protection Act of 2008, SB 375 (codified at CAL.GOV'T 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 California Air Resources Board (ARB). A complete description of SB 375 including GHG reduction targets is provided in Section 2.0, *Project Description*.



California Office of Planning and Research: Update to the Analysis of Transportation Impacts under the California Environmental Quality Act (SB 743). On September 27, 2013, California Governor Jerry Brown signed SB 743, a law that fundamentally changes transportation impact analysis as part of CEQA compliance. These changes include the following key elements.

- Removal of aesthetics and parking for residential, mixed-use residential, or employment center projects on an infill site within a transit priority area as a basis for determining transportation impacts on the environment.
- Removal of auto delay, level of service (LOS), and other similar measures of vehicular capacity or traffic congestion as a basis for determining transportation impacts on the environment.
- Development of an alternative metric to LOS for determining the significance of transportation impacts within transit priority areas with the option for the Governor's Office of Planning and Research to extend use of this metric statewide.

On January 20, 2016, OPR released its updated guidelines that recommend VMT as the most appropriate measure for transportation impacts. The guidelines include specific VMT significance thresholds for land use and transportation projects plus recommendations for analyzing induced travel and safety. The recommended VMT thresholds are aggressive and would require individual land use development or transportation projects to achieve VMT reductions greater than those obtained through Regional Transportation Plans/Sustainable Communities Strategies (RTP-SCS).

Currently, the guidelines provide a 2-year opt-in period, giving agencies a grace period to update their technical practices.

Local.

Airport Land Use Commission. On December 20, 2000 Butte County's Airport Land Use Commission (ALUC) adopted the Butte County Airport Land Use Compatibility Plan (ALUCP). It establishes procedures and criteria for the ALUC to review proposed land use development and affected cities within the county for compatibility with airport activity. State law requires public access airports to develop Comprehensive Land Use Plans, (CLUPs) designating airport vicinity land use and clear zones. Such plans are to be adopted by the County's Airport Land Use Commission (ALUC), which consists of representatives as follows: two city representatives, two airport managers, two County Supervisors and one member from the public at large. The Butte County ALUCP is distinct from airport master plans, which address planning issues within a specific airport. The purpose of a compatibility plan is to assure that incompatible development does not occur on lands surrounding the airport.

The 2000 ALUCP encompasses the Chico Municipal Airport, the Oroville Municipal Airport, the Paradise Skypark Airport, and the Ranchoero Airport. These four airports are the principal facilities in Butte County and are described above.

As of January 2004, the existing Butte County General Plan land use designations and zoning districts located within the Airport Compatibility Zones for the four airports within Butte County were not completely consistent with the 2000 ALUCP. The communities of Chico and



Paradise have not established consistency with the 2000 ALUCP and their respective General Plans and land use regulations. The City of Oroville has established consistency between their General Plan and land use regulations and the 2000 ALUCP.

Local Jurisdictions. Local jurisdictions within Butte County have established standards for the performance of roadways and intersections within their boundaries. The most common standards apply to peak hour operations at surface street intersections or roadways, which are defined as a minimum level-of-service (LOS).

LOS is typically defined on an A through F scale; with LOS A corresponding to little or no congestion or delay, and LOS F to the most congested condition or a high level of delay. The specific standard applied, calculation methodology, and exceptions for unique conditions vary widely among jurisdictions. The standards are applied on a location-by-location basis, and do not account for overall system performance either within the jurisdiction, or in areas outside the jurisdiction. The performance measures used for evaluation of the RTP-SCS are intended to supplement these local standards by focusing on overall system performance.

4.7.2 Impact Analysis

a. Methodology and Significance Thresholds. Thresholds of significance are used to determine whether implementation of the 2016 RTP-SCS would result in significant traffic/circulation impacts. The thresholds of significance outlined in this section are derived from the policies and practices of BCAG, as well as the performance standards detailed in the 2016 RTP.

Methods and Assumptions.

Population and Land Use Projections. BCAG prepared a land use growth scenario to accommodate a population growth of about 97,000 by Year 2040. This scenario is considered the proposed project for the purpose of the environmental analysis. The following framework, which includes five distinct Growth Area Types, was developed for describing the land use growth associated with the horizon year:

- **Urban Center and Corridor Areas** consist of higher density and mixed land uses with access to frequent transit service. These areas typically have existing or planned infrastructure for non-motorized transportation modes that are more supportive of walking and bicycling. Future growth within these areas consists of compact infill developments on underutilized lands, or development of existing developed lands. Local plans identify these areas as opportunities sites, downtowns, central business districts, or mixed use corridors.
- **Established Areas** generally consist of the remaining existing urban development footprint surrounding the Urban Center and Corridor Areas. Locations disconnected from Urban and Corridor Centers may be residential-only, employment-only, or a mix of these uses with urban densities. These areas consist of a range of urban development densities with most locations having access to transit through the urban fixed route system or commuter service. Future growth within these areas typically uses locations

of currently planned developments or vacant infill parcels. Local plans generally seek to maintain the existing character of these areas.

- **New Areas** are typically connected to the outer edge of an Established Area. These areas currently consist of vacant land adjacent to existing development and represent areas of future urban expansion. Future growth within these areas will most often consist of urban densities of residential and employment uses with a few select areas being residential only. Local plans identify these areas as special or specific plan areas, master plans, and planned development or planned growth areas. Currently, fixed route transit service is nonexistent in these areas. However, fixed route transit service will be provided to areas that are next to current urban routing and are able to achieve build-out. Pedestrian and bicycle infrastructure are typically required to be incorporated under the local jurisdiction's plans.
- **Rural Areas** consist of areas outside existing and planned urban areas with development at rural densities. These areas are predominantly residential and may contain a small commercial component. The densities at which these areas are developed do not reasonably allow for pedestrian or bicycle infrastructure and transit service is limited or nonexistent. Automobile travel is typically the only transportation option.
- **Agriculture, Grazing, and Forestry Areas** represent the remaining areas of the region not being planned for development at urban densities. These areas support agricultural, grazing, forestry, mining, recreational, and resource conservation type uses. Locations within these areas may be protected from future urban development under federal, state, and local plans or programs such as the Chico area "greenline", Williamson Act contracts, or conservation easements. Employment and residential uses are typically allowed within portions of this area but are most often secondary to agricultural, forestry, and other rural uses.

BCAG also prepared a land use growth scenario representing the 2035 horizon year of the 2012 MTP/SCS. This scenario is considered the 'No Project' scenario for the purpose of the environmental analysis and assumes no additional growth between 2035 and 2040.

Travel Demand Modeling. BCAG maintains a countywide travel demand forecasting (TDF) model and conducted a focused update of the regional model for use in developing and evaluating the transportation impacts of the RTP-SCS. The BCAG TDF Model encompasses Butte County, which includes the cities of Chico, Paradise, Oroville, Biggs, and Gridley. The focused update included the following enhancements:

- New socioeconomic data inputs from 2012 California Household Travel Survey (CHTS)
- New 2014 traffic counts
- Updated TransCAD user interface and additional automated functions
- Updated trip generation sub-model to implement sensitivity for cost of travel
- Updated transit direct ridership forecasting tool
- Updated 2020, 2035, and 2040 forecast years



To evaluate the suitability of the updated model for developing and evaluating the BCAG RTP-SCS, a series of static and dynamic validation tests were conducted, consistent with recommendations in the 2010 RTP Guidelines.

Model validation describes a model's performance in terms of how closely the model's output matches existing travel data in the base year. During the model development process, these outputs are used to further calibrate model inputs. The extent to which model outputs match existing travel data validates the assumptions of the inputs.

Traditionally, most model validation guidelines have focused on the performance of the trip assignment function in accurately assigning trips to the street network. This metric is called static validation, and it remains the most common means of measuring model accuracy. While reproducing existing conditions is important, it is also important to know that the model will produce stable and reasonable results when various inputs such as land use are changed. This type of testing is referred to as dynamic validation.

The results of the static validation were within the criteria identified in the 2010 RTP Guidelines and the model response to dynamic testing was reasonable and in the appropriate direction and magnitude. The BCAG Model Development Report, which includes a detailed summary of the model development structure, model calibration, and validation, is available for review during the comment period.

The BCAG TDF model was used to evaluate the regional performance of the land use scenario outlined above. The analysis period is a typical weekday, representative of non-summer/non-holiday conditions with school in session.

Transportation Performance Measures. The following regional-level performance measures were estimated using the regional travel model and are used to evaluate the transportation impacts of the RTP-SCS.

Vehicle Miles of Travel (VMT) - The term, vehicle miles of travel or vehicle miles traveled (VMT), is defined as one vehicle traveling on a roadway for one mile. VMT is a primary indicator of the amount of travel for policymakers and transportation professionals. It is relatively easy to measure, is directly related to vehicle emissions, is generally correlated with congestion, and can be influenced by policymakers in a number of different ways. VMT is an important measure in calculations to determine compliance in California with greenhouse gas (GHG) per person emissions reductions targets set forth in SB 375.

Congested Vehicle Miles of Travel (CVMT) - Congested vehicle miles traveled (CVMT) is the portion of VMT traveling on roadways that are above an assigned capacity. For this analysis, CVMT is defined as vehicles traveling on roadways with a volume-to-capacity ratio of 1.0 or greater, and is calculated using roadway capacities from the BCAG Travel Demand Forecasting (TDF) model. Per lane capacities in the BCAG TDF model range from 1,800 vehicles per hour for freeway mainline segments to 600 vehicles per hour for local roadways.

Results are presented in absolute travel and normalized to population to provide a rate of VMT per person. The absolute amount of VMT will generally trend with population growth. The "per capita" rate is useful for understanding how individual travel behavior will change over



time due to planned population growth and development patterns and is a good overall measure for evaluating network performance. The VMT summarized includes all vehicles (including heavy vehicles) and was developed using an Origin-Destination (OD) method approach that excludes through trips that have an origin and destination outside of Butte County (i.e., trips that do not stop in Butte County).

Significance Thresholds

It is important to emphasize that population growth, urbanization and volume of average daily traffic generated in the BCAG region will increase by 2040. This will occur with or without implementation of the 2016 RTP-SCS as a result of a range of demographic and economic factors independent of policy and land use decisions by BCAG and its member agencies. In light of this, the analysis below describes operational changes relative to both a year 2040 baseline scenario and a current (2014) baseline. The evaluation describes the full effect of the proposed 2016 RTP-SCS in combination with future growth that would already occur, as compared to existing baseline conditions. However, impacts and mitigation measures for these environmental issue areas are based on the increment of physical change resulting from the 2016 RTP-SCS, rather than the future regional growth that would occur regardless of whether the plan is adopted and implemented.

The proposed project would result in significant impacts under CEQA (consistent with Appendix G of the CEQA Guidelines) if implementation of the plan would cause any of the following to occur:

1. *An increase in vehicle miles traveled (VMT) per capita above 2040 baseline conditions (without implementation of the RTP) for the region.*
2. *An increase in VMT on congested highways (CVMT) per capita relative to 2040 baseline conditions (without implementation of the RTP).*
3. *Disruption or interference with existing or planned public transit facilities.*
4. *Disruption or interference with existing or planned bicycle and pedestrian facilities.*
5. *Disruption with the movement of agricultural products on rural roadways.*
6. *Disruption to goods movement along the regional road system.*

b. Project Impacts and Mitigation Measures.

Impact T-1 **Total vehicle miles traveled on freeways and roadways in 2040 would increase when compared to existing (2014) baseline conditions. However, implementation of the 2016 RTP-SCS would reduce overall VMT in 2040 when compared to 2040 baseline conditions without the 2016 RTP-SCS and would also reduce per capita VMT compared to existing (2014) baseline conditions. Impacts related to total and per capita freeway and roadway vehicle miles traveled would be Class III, less than significant.**

Two forecasts were generated for the 2016 RTP-SCS; the 2040 'No Project' scenario, which accounts for future growth without implementation of the 2016 RTP-SCS and the 2040 'with



project’ scenario, which accounts for future growth and all transportation projects and the land use scenario envisioned by the SCS component of the 2016 RTP-SCS. Table 4.7-2 summarizes countywide weekday VMT for years 2014 and 2040 with and without the implementation of the proposed 2016 RTP-SCS.

**Table 4.7-1
 Countywide Weekday VMT**

Scenario	Population	VMT*	VMT per Capita
Year 2014	222,316	4,741,051	21.33
2040 No Project Scenario (2012 MTP-SCS)	332,459	7,190,319	21.63
2040 Plus Project (2016 RTP-SCS)	319,342	6,667,402	20.88

Source: Fehr & Peers, 2016
 BCAG Travel Demand Forecasting model

* VMT data excludes pass-through trips from vehicles travelling through Butte County that do not have an origin or destination within the county.

As identified in Table 4.7-1, the proposed RTP-SCS will result in a decrease in weekday VMT of about 522,917 miles over 2040 “No Project” scenario conditions (i.e., a 7% decrease) partly due to a reduction in projected population growth of about 13,000 residents from the previous MTP/SCS forecast. However, the percentage reduction in VMT is greater than the corresponding reduction in population (only a four percent decrease), which is an indication of the general balance of planned development. This trend is also highlighted by the comparison of per capita VMT, which shows that the 2016 RTP-SCS would result in about a three percent decrease compared to no project conditions, an indication that overall daily travel for residents in Butte County will be more efficient with the implementation of the 2016 RTP-SCS. Since the proposed RTP-SCS would result in a decrease in per capita VMT compared to the 2040 “No Project” scenario’s baseline conditions, implementation of the plan would result in a less than significant impact.

Mitigation Measures. No mitigation measures are required for overall freeway and roadway VMT impacts.

Significance After Mitigation. Impacts related to overall freeway and roadway VMT would be less than significant without mitigation.

Impact T-2 Implementation of the 2016 RTP-SCS would reduce overall CVMT in 2040 when compared to 2040 baseline conditions without the 2016 RTP-SCS and would also reduce per capita CVMT compared to existing (2014) baseline conditions. Impacts related to CVMT would be Class III, less than significant.

Table 4.7-2 summarizes countywide weekday CVMT on highways in Butte County for years 2014 and 2040 with and without the implementation of the proposed 2016 RTP-SCS.



**Table 4.7-2
 Countywide Weekday Highway CVMT**

Scenario	Population	CVMT	CVMT per Capita
Year 2014	222,316	0*	0*
2040 No Project Scenario (2012 MTP-SCS)	332,459	52,810	0.16
2040 Plus Project (2016 RTP-SCS)	319,342	52,374	0.16

Source: Fehr & Peers, 2016

BCAG Travel Demand Forecasting model

** For the year 2014, the CVMT and CVMT per Capita are "0" because in the baseline the highway congestion threshold was not exceeded and therefore there are no CVMT in the year 2014.*

As identified in Table 4.7-2, the proposed RTP-SCS would result in generally the same weekday CVMT on highways per capita as 2040 baseline conditions. Since the proposed RTP-SCS would result in a similar CVMT per capita as 2040 baseline conditions under the "No Project" scenario, implementation of the 2016 RTP-SCS would result in a less than significant impact.

Mitigation Measures. No mitigation measures are required for overall and per capita freeway and roadway CVMT impacts.

Significance After Mitigation. Impacts related to overall and per capita freeway and roadway VMT would be less than significant without mitigation.

Impact T-3 The 2016 RTP-SCS would generally be consistent with applicable alternative transportation plans and policies and would not disrupt or interfere with existing or planned public transit, bicycle and pedestrian, rail, or aviation facilities. This is a Class III, less than significant impact.

Transit. The 2016 RTP-SCS, reflective of the Transit & Non-Motorized Transportation Plan, includes short- and long-range transit goals, policy, actions, and projects to support population growth in Butte County. These actions include a focus on maximizing service efficiency, reliability, and effectiveness in ridership markets as well as expanding B-Line services into new areas and advocating sustainable development practices that support transit. Since the proposed RTP-SCS is supportive of public transit, implementation of the plan would not disrupt or interfere with existing or planned public transit facilities and would result in a less than significant impact.

Bicycle and Pedestrian Facilities. The RTP-SCS includes goals, policy, actions and projects to support non-motorized transportation for the region, including bicycle/pedestrian projects that would carry out components of the county and incorporated communities' bicycle plans and would implement local policies associated with alternative modes of transportation. Since the proposed RTP-SCS is designed to be consistent with adopted regional plans, including the Transit & Non-Motorized Transportation Plan, implementation of the plan would not disrupt or interfere with existing or planned bicycle and pedestrian facilities and would result in a less than significant impact.



Rail Transportation. The 2016 RTP-SCS encourages the use of alternative modes of transportation, including the use of rail. However, no specific funded rail improvement projects are included in the 2016 RTP-SCS. Future train trips within the region are expected to minimally increase by 2040. The degree of potential traffic impacts resulting from the expansion of rail service would depend on current traffic conditions when additional service begins, the circulation pattern around the station, and any roadway improvements in the station area, which at this point is not known. It is not anticipated that vehicle trips generated by additional train trips would be significant. Impacts would be less than significant.

Aviation. The 2016 RTP-SCS encourages the use of alternative modes of transportation, and supports aviation services within Butte County. However, no specific funded aviation improvement projects are included in the 2016 RTP-SCS. If air service were to increase at any of the airports in Butte County because of higher demand, it is not anticipated that vehicle trips generated by additional aircraft service would be significant. Impacts would be less than significant.

Mitigation Measures. No mitigation measures are required.

Significance After Mitigation. Impacts would be less than significant without mitigation.

Impact T-4 The 2016 RTP-SCS would generally promote goods movement and thus would not result in a disruption with the movement of agricultural products on rural roadways or the disruption to goods movement along the regional road system. This is a Class III, less than significant impact.

The 2016 RTP-SCS includes policy, actions, and projects to support goods movement, including agricultural products on rural roadways in Butte County. Since actions specific to rural roadways include securing, prioritizing, and implementing improvements to the regional roadway system and identifying obstacles that prevent or impede goods movement, implementation of the RTP-SCS would not disrupt the movement of agricultural products on rural roadways and would likely enhance goods movement as transportation improvement would ensure movement of agricultural products on rural roadways has adequate infrastructure.

Further, since the RTP-SCS includes policies, actions, and projects to support goods movement on the regional road system in Butte County such as continuing to work with State and Federal legislators to secure funding for improvements on the SR 70/99 corridor to provide a continuous four-lane highway, implementation of the RTP-SCS would not disrupt goods movement along the regional road system.

Impacts related to goods movement would be less than significant.

Mitigation Measures. No mitigation measures are required.

Significance After Mitigation. Impacts would be less than significant without mitigation.



c. Specific 2016 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 2016 RTP-SCS. The projects that comprise the program are evaluated herein in their entirety and all are intended to improve traffic circulation rather than cause adverse impacts. No specific projects that are likely to have an adverse impact on traffic/transportation system would be implemented; thus, none are specified within this section.

5.0 LONG-TERM EFFECTS

5.1 GROWTH-INDUCING IMPACTS

Section 15126.2(g) 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 does 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

Implementation of the 2016 RTP-SCS would create economic growth in Butte County as a result of construction-related job opportunities and by encouraging infill development within the existing urban areas. The 2016 RTP-SCS implementation would also generate additional employment opportunities for transportation construction, maintenance and operation. The SCS Chapter of the 2016 RTP-SCS encourages infill development in the region's existing urban areas as part of the objective to "Work towards a transportation system that leads to environmental sustainability and fosters efficient development patterns that optimizes travel, housing, and employment choices and encourages future growth away from rural areas and closer to existing and planned development" (Objective 14.2) and by enhancing mobility, destination accessibility, transportation affordability, and economic opportunity. The 2016 RTP-SCS could lead to more vibrant communities, with better access to and within infill areas creating new economic opportunities or expanding existing employment opportunities. In addition, another objective of the 2016 RTP-SCS (Objective 14.3) is to "Work towards a prosperous economy in making transportation decisions. The transportation system should play a significant role in raising the region's standard of living."

The potential employment increase related to both construction-related job opportunities and new or expanded economic opportunities in infill areas or those opportunities related to maintenance and operation of transportation projects may subsequently increase the demand for support services and utilities, which could generate secondary employment opportunities. This additional economic growth would likely raise the existing revenue base within the region. Although such growth may incrementally increase economic activity in the county, significant physical effects beyond those impacts discussed in this EIR are not expected to result from economic growth generated by the 2016 RTP-SCS. Further, all transportation improvement projects and land uses envisioned by the 2016 RTP-SCS (including associated population and economic growth) are anticipated by the general plans of the applicable local jurisdictions, as all improvements have been coordinated with the applicable local jurisdictions. Impacts associated with such growth are discussed in Sections 4.1 through 4.7 of this EIR.



5.1.2 Removal of an Impediment to Growth

The majority of 2016 RTP-SCS transportation improvements will take place in existing urbanized areas such as the cities of Chico, Oroville, and the Town of Paradise. The remaining bulk of transportation improvements will take place throughout the unincorporated area and communities of Butte County. Such transportation improvements can be perceived as removing an obstacle to growth by either creating additional traffic capacity (in the case of widenings) 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.

However, these improvements would not necessarily remove any obstacles to growth. Rather, they are designed to fully support the transportation needs of the growing population while implementing the land use 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 sprawl development on greenfields/undeveloped areas of the region. The 2016 RTP-SCS transportation improvement projects are intended and designed to support the land use patterns established in the SCS. Therefore, the 2016 RTP-SCS is consistent with projected and planned growth. Further, all transportation improvement projects and land uses envisioned by the RTP-SCS are anticipated by the general plans of the applicable local jurisdictions, as all improvements have been coordinated with the applicable local jurisdiction.

5.2 IRREVERSIBLE EFFECTS

Section 15126.2(c) of the CEQA Guidelines requires a discussion of significant irreversible environmental changes that would occur as a result of a proposed project.

The 2016 RTP-SCS update is anticipated to cover a planning period from 2016 to 2040. The proposed improvements would be located primarily in areas where transportation facilities already exist, where transportation facilities are already planned, or where transportation facilities are needed to support the new land use patterns identified in the Sustainable Communities Strategy. Therefore, most proposed transportation projects are not generally expected to dramatically alter development patterns in the county and projects would support planned future development patterns. The 2016 RTP-SCS would provide a foundation for local, regional, and state officials in making decisions aimed at achieving a coordinated and balanced transportation system.

In the absence of the programmed and planned capital improvements under the 2016 RTP-SCS, traffic conditions throughout the county would continue to worsen as the county's population grows, see Section 4.7 *Transportation and Circulation*. The increasing traffic may also worsen safety problems on some county roads. However, implementation of the project would involve certain tradeoffs as it would create impacts in other issue areas that would not occur without the planned improvements.

Many of the potential adverse impacts that could occur from implementation of the 2016 RTP-SCS are short-term in nature, resulting primarily from construction of the proposed transportation projects. Typical construction-related impacts can involve the following issues:



noise, air quality, aesthetics, and hydrology/water quality. In addition, though such materials would not be used in a wasteful manner, all construction activity would involve the use of non-renewable energy sources and building materials.

Long-term environmental impacts are associated with increased paving, and the related loss of agricultural soils, biological impacts, and cultural resources (historic resources), as discussed in their respective sections of this EIR. In addition, the 2016 RTP-SCS would result in an overall increase in the urbanized character of the region. Mitigation measures have been prescribed to minimize these impacts. However, impacts in certain instances (conversion of agricultural lands and cultural resources (historic resources) would remain significant.

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6.0 ALTERNATIVES

As required by Section 15126(d) of the *State CEQA Guidelines*, this EIR examines a range of reasonable alternatives to the proposed project that could feasibly achieve similar objectives. A primary objective is to achieve a coordinated and balanced regional transportation system while reducing GHG emissions from passenger vehicles and light trucks to meet the regional GHG reduction targets set by the California Air Resources Board (CARB). The analysis of alternatives focuses on the various land use and transportation scenarios that incorporate different assumptions regarding the combinations of future land uses and transportation system improvements. An alternative location for the project as a whole is not possible. However, within Butte County, the 2016 RTP-SCS considers different patterns of land use and transportation investments to accommodate forecast future growth and regional housing needs. Each of the alternatives is summarized below.

Alternative 1: No Project: The No Project Alternative is comprised of a land use pattern that reflects land use trends according to the 2012 MTP-SCS and a transportation network comprised of transportation projects that are currently in construction or are funded in the 2012 MTP-SCS, updated to reflect current conditions.

Alternative 2: Financially Unconstrained: The Financially Unconstrained Alternative includes the implementation of the SCS and all projects envisioned under the 2016 RTP-SCS, without regard to whether or not they can be funded. This alternative would focus on decreasing traffic congestion through a combination of capacity and operational roadway improvements, and investments in the regional transit, bike, and pedestrian facilities.

Alternative 3: Transit Investment: The Transit Investment Alternative focuses investment into development of public transit systems and alternative transportation modes, emphasizing bus, pedestrian, and bicycle modes of transportation, while reducing funding to roadway and VMT improvements.

Each alternative is described and analyzed below to determine whether environmental impacts would be similar to, less than, or greater than those of the 2016 RTP-SCS. As required by CEQA, this section also includes a discussion of the “environmentally superior alternative” among those studied.

The State CEQA Guidelines require that an EIR identify any alternatives that were considered but rejected as infeasible during the scoping process and a brief explanation justifying the determination. During the development of the 2016 RTP-SCS, BCAG received public and agency comment and participation in developing the alternatives analyzed in this EIR. During this process, all comments and recommendations for transportation improvements were considered and integrated into the alternatives developed and discussed herein.

Alternative 4: Transit Investment Plus Energy Efficiency: Similar to Alternative 3, the Transit Investment Plus Energy Efficiency Alternative focuses investment into development of public transit systems and alternative transportation modes, emphasizing bus, pedestrian, and bicycle modes of transportation. In addition, this alternative invests in measures such as solar panels, a plug-in electric (PEV) vehicle fleet, and natural gas and electric buses to further reduce



project environmental effects through energy efficiency projects. This alternative assumes that funding related to energy efficiency and renewable energy system projects would be secured to constrain those type of projects. Under this scenario all transportation improvement projects as proposed under the 2016 RTP-SCS would remain (as all of the projects are constrained or funded). However, in addition to those projects, under this alternative there would be an increased amount of public transit, alternative transportation, and energy efficient transportation projects implemented. An increased amount of transit projects under this alternative would result in an increased amount of associated development of those facilities relative to the 2016 RTP-SCS. This would cause increased agricultural land conversion and cultural and critical habitat impacts. However, the increased transit opportunities for Butte County residents would result in reduced traffic congestion and associated emissions. Use of PEV, solar, and electric and natural gas buses would further reduce air quality and GHG emissions associated with the proposed project. It is noted, however, that the increases in transit improvements under this alternative would not result in a proportionate increase in ridership, particularly in the smaller communities and more rural areas of Butte County.

6.1 ALTERNATIVE 1: NO PROJECT ALTERNATIVE

6.1.1 Description

The No Project Alternative is defined as a land use pattern comprised of land use trends according to the 2012 MTP-SCS. It assumes that regional growth trends and land use according to the 2012 MTP-SCS would continue. Transportation projects would be comprised of those that are currently in construction or are funded through the 2012 MTP-SCS, updated to reflect current conditions, and would not include transit and bike improvements included in the new Transit and Non-Motorized Plan. No new transportation improvement projects would be added to the RTP list and therefore would not occur.

While some transportation benefits may occur by implementing programmed improvements, relative to the 2016 RTP-SCS (those that are the same as the ones on the 2012 MTP-SCS list), Alternative 1 would not perform as well. Specifically, it would result in higher VMT as a fewer percentage of trips by transit, bicycle or walking would occur and overall population would be higher in the region compared to the projections of the 2016 RTP-SCS.

6.1.2 Impact Analysis

a. Agricultural Resources. Implementation of this alternative would result in less conversion of farmland to non-agricultural use as a result of fewer overall transportation improvement projects, including roadway extensions and widening, interchanges and bicycle and pedestrian projects that would occur. However, implementation of this alternative and continued land use patterns of the 2012 MTP-SCS would result in similar amounts of agricultural land conversion relative to that envisioned under the land use scenario in the 2016 RTP-SCS. Therefore, impacts to agricultural resources would be similar and would remain significant and unavoidable. All related mitigation measures referenced in Section 4.1, *Agricultural Resources*, would apply.

b. Air Quality. Implementation of this alternative would result in less construction related air quality due to fewer transportation improvement projects. Like the 2016 RTP-SCS, the overall land use scenario envisioned by the 2012 MTP-SCS is intended to increase residential and commercial land use capacity within existing transit corridors which would shift a greater share of future growth to these corridors, ultimately increasing density, improving circulation and multimodal connections. However, overall population growth and the regional VMT would be greater under this alternative than the proposed project, and other performance measures also show an improvement with the 2016 RTP-SCS in the overall efficiency of the transportation network compared to this alternative. Further, as shown in Table 4.2-7 in Section 4.2, *Air Quality*, emissions under the “No Project” alternative would be greater than those produced with implementation of the 2016 RTP-SCS. Thus, overall air quality impacts would be greater under this alternative when compared to the 2016 RTP-SCS. Thus, all mitigation measures identified in Section 4.2, *Air Quality*, would still be required to reduce or avoid potentially significant impacts.

c. Biological Resources. Implementation of this alternative would result in less impact to biological resources as fewer overall transportation projects, including roadway extensions, widening projects and creek crossings would occur. This would result in less ground disturbance and fewer impacts to special status plants and animals, critical habitats, and wildlife movement associated with transportation improvement projects than anticipated if the 2016 RTP-SCS were implemented. However, development in Butte County under this alternative would continue to occur similar to the 2016 RTP-SCS with potential impacts to biological resources. While impacts to sensitive plant and animal species, critical habitats and wildlife movement may be reduced under this alternative relative to the 2016 RTP-SCS, impacts would remain significant, but mitigable and all related mitigation measures referenced in Section 4.3, *Biological Resources* would apply.

d. Cultural Resources. Implementation of this alternative would involve less ground disturbance than would occur under the 2016 RTP-SCS due to the reduced number of transportation improvement projects such as roadway extension and widening, interchanges and bicycle and pedestrian facilities. Therefore, the potential to impact unknown cultural resources would be reduced. However, some ground disturbance would still occur from completion of projects that are currently funded under the 2012 MTP-SCS and impacts related to unknown cultural resources would remain significant but mitigable and all related mitigation measures referenced in Section 4.4, *Cultural Resources*, would apply. Because this alternative would include similar infill type development as the 2016 RTP-SCS, potential impacts to historic structures would be similar. However, like the proposed project, the expansion of urban areas into undeveloped land that may occur under this alternative could result in potential impacts to cultural resources, similar to the proposed project. Overall, impacts related to cultural resources would be similar or slightly reduced under this alternative than what could occur as a result of 2016 RTP-SCS.

e. Greenhouse Gas Emissions/Climate Change. Implementation of this alternative would result in fewer impacts associated with GHG emissions during construction activities as fewer transportation related projects would be constructed. However, this alternative would continue existing land use patterns similar to those envisioned by the 2016 RTP-SCS. However, overall population growth and the regional VMT would be greater under this alternative than

the proposed project, and other performance measures also show an improvement with the 2016 RTP-SCS in the overall efficiency of the transportation network compared to this alternative. As a result, the No Project Alternative would result in more GHG emissions than compared with the 2016 RTP-SCS, as shown in Table 4.5-1, of Section 4.5, *Greenhouse Gas Emissions/Climate Change*. Implementation of this alternative would result in an estimated 5,779 per capita CO₂ emissions (lbs/year) as opposed to the 5,580 per capita CO₂ emissions that would result from the 2016 RTP-SCS. As long-term GHG emissions would be increased under this alternative, the overall impact of this alternative would be greater than what would occur under the 2016 RTP-SCS.

f. Noise. Because noise is a site specific issue, noise studies would be prepared for each project to determine whether impacts would occur. From a program perspective, fewer transportation projects would result in less construction activity. This would reduce temporary noise impacts throughout Butte County. However, construction noise would still occur and impacts may be significant and mitigable. All related construction noise mitigation measures specified in Section 4.6, *Noise*, would be required.

Although the number of transportation projects would be reduced under this alternative as compared to the proposed project, an increase in traffic volumes resulting from regional growth would likely occur. Whether noise impacts would be greater or less remains dependent on project specific studies. Regionally, the difference in VMT between the No Project alternative and the 2016 RTP-SCS is not enough to noticeably change noise levels. Because a number of transit improvements planned under the 2016 RTP-SCS would not be implemented in this alternative, the potential for increased transit noise, while site specific, overall would be less than the 2016 RTP-SCS. Overall, noise impacts would be similar to or less than the proposed project.

g. Transportation and Circulation. This alternative would not include some of the projects envisioned under the proposed plan, including new roadway extension and widening projects, new intersection projects, new bikeway and pedestrian projects (active transportation), and new transit projects. Many of these projects are intended to reduce automobile trips and address traffic congestion, and in many cases would serve as mitigation measures to reduce potential impacts associated with planned long-term development.

Overall, VMT within the region would increase as a result of regional population growth. As discussed in Section 4.7 *Transportation and Circulation*, overall VMT would be greater under the No Project alternative compared to the proposed project. This would result from a higher estimated population growth under the previous MTP-SCS as well as a result of capacity increases planned as part of the 2016 RTP-SCS as well as infill and higher density development projects in proximity to some of the new RTP projects in the 2016 RTP-SCS that would reduce demand for vehicle trips and would result in relatively shorter vehicle trip lengths.

Under the No Project alternative, fewer transit projects would be implemented which would result in greater impact to populations dependent on transit services. As a result, impacts to public transit would be greater under this alternative when compared to the proposed project. Thus, overall, impacts to transportation and circulation would be greater under the No Project alternative than the proposed project.

6.2 ALTERNATIVE 2: FINANCIALLY UNCONSTRAINED

6.2.1 Description

The Financially Unconstrained Alternative includes the SCS and all projects identified in the 2016 RTP-SCS, including those classified as financially “unconstrained”, without regard to whether or not they can be funded. Transportation benefits under Alternative 2 relative to the 2016 RTP-SCS would be greater because of the increased volume of both roadway improvement and transit projects. Specifically, it would result in lower VMT as more trips by transit, bicycle or walking would occur and an improved LOS at intersections with more roadway and capacity projects. However, the increased number of projects would additionally lead an increased amount of agricultural land converted and cultural resources and critical habitat impacted.

6.2.2 Impact Analysis

a. Agricultural Resources. This alternative would result in a greater impact to agricultural resources as it would include an overall greater number of transportation projects, including roadway extension and widening projects, than the proposed project. This would result in greater amounts of conversion of prime farmland, unique farmland or farmland of statewide importance to non-agricultural use than if the financially constrained 2016 RTP-SCS is implemented. This would also lead to greater conflicts with land use under a Williamson Act contract. Additionally, the increased number of projects would lead to more conversion of forest or timber production land to non-forest uses. Impacts to agricultural resources under this alternative would be greater and would remain significant and unavoidable. All related mitigation measures referenced in Section 4.1, *Agricultural Resources*, would apply.

b. Air Quality. Implementation of the Financially Unconstrained Alternative would result in greater short-term air quality impacts relative to the 2016 RTP-SCS as construction activities related to increased amount of transportation projects would expose people to greater amounts of construction-related air emissions. Accordingly, air pollutant emissions (including diesel particulates from construction equipment) would be greater under this alternative when compared to the 2016 RTP-SCS. However, with implementation of a greater amount of transportation and transit improvement projects under this alternative, VMT would likely be reduced relative to the 2016 RTP-SCS. Therefore, while short-term construction related emissions would be greater, regional air emissions would be slightly lower than the 2016 RTP-SCS since the overall VMT for the “Financially Unconstrained” alternative is expected to be slightly less than the 2016 RTP-SCS. All mitigation measures identified in Section 4.2 *Air Quality* would be required.

c. Biological Resources. The Financially Unconstrained alternative would result in greater overall transportation construction activity and ground disturbance than the proposed financially constrained 2016 RTP-SCS. The increased amount of projects in the Financially Unconstrained alternative would create greater potential for impacts on biological resources. Impacts related to wildlife movement would be greater under this alternative because of the greater number of projects that could potentially impact wildlife movement than under the financially constrained 2016 RTP-SCS. Impacts to sensitive plant and animal species, sensitive communities and wildlife movement would be greater with the implementation of this

alternative. Impacts would remain significant but mitigable and all related mitigation measures presented in section 4.3, *Biological Resources*, would apply.

d. Cultural Resources. Implementation of the Financially Unconstrained alternative would result in greater chance of disturbing cultural and historical resources due to the increase in grading and other land disturbance associated with more projects for roadway extensions and widenings, bicycle and pedestrian facilities and other transportation infrastructure projects. Impacts related to unknown cultural resources would remain significant but mitigable and all related mitigation measures referenced in Section 4.4, *Cultural Resources*, would apply. Because this alternative would include more transportation projects than the proposed 2016 RTP-SCS, potential impacts to historic structures may be increased and thus impacts would remain significant and unavoidable. Overall, impacts related to cultural resources would be similar or greater under this alternative than what could occur as a result of 2016 RTP-SCS.

e. Greenhouse Gas Emissions/Climate Change. Short-term construction-related GHG emissions under this alternative would be greater than the 2016 RTP-SCS because the number of transportation improvement projects would be greater. In comparison to the 2016 RTP-SCS, VMT under the “Financially Unconstrained” alternative would likely be reduced and thus GHG emissions are expected to be less under this alternative as the overall system is more efficient and accommodating to various modes of transportation. Impacts associated with long term GHG emissions would be expected to be slightly less relative to the 2016 RTP-SCS. All mitigation measures included in Section 4.5, *Greenhouse Gas Emissions/Climate Change*, would be applicable.

f. Noise. Because noise is a site specific issue, noise studies would be prepared for each project to determine whether impacts would occur. From a program perspective, the greater amount of transportation projects under the “Financially Unconstrained” alternative would result in greater construction activity. This would increase temporary noise impacts throughout Butte County. Construction noise impacts may be significant and mitigable. All related mitigation measures specified in Section 4.6, *Noise*, would be required.

The number of transportation projects would be increased relative to the proposed project, and while VMT may be slightly less, whether noise impacts would be greater or less remains dependent on project specific studies and specific site locations. However, because the number of transportation improvements planned under the 2016 RTP-SCS would be increased in this alternative, the potential for traffic noise, while site specific, overall would be greater than the 2016 RTP-SCS as traffic improvements may place new roadways or routes in close proximity to sensitive receptors. Overall, noise impacts would be similar to or greater than the proposed project.

g. Transportation and Circulation. This alternative would include more transportation projects than the proposed project and thus would likely reduce congestion compared to the 2016 RTP-SCS. The improved transportation infrastructure that would result from these additional projects would also result in slightly reduced VMT region wide and enhanced mobility choices (increased transit availability and enhanced pedestrian and bicycling facilities) relative to the 2016 RTP-SCS. This alternative would also further enhance goods movement as a result of the increase in transportation projects countywide. Transportation and circulation impacts under this alternative would be less than anticipated for the 2016 RTP-SCS.



6.3 ALTERNATIVE 3: TRANSIT INVESTMENT

6.3.1 Description

The Transit Investment Alternative focuses investment into development of public transit systems and alternative transportation modes, emphasizing bus, pedestrian, and bicycle modes of transportation. Under this scenario all transportation improvement projects as proposed under the 2016 RTP-SCS would remain (as all of those projects are constrained or funded) but there would also be an increased amount of public transit and alternative transportation projects implemented. An increased amount of transit projects under this alternative would result in an increased amount of associated development of those facilities relative to the 2016 RTP-SCS. This would cause increased agricultural land conversion and cultural and critical habitat impacts. However, the increased transit opportunities for Butte County residents would result in reduced traffic congestion and associated emissions. It is noted, however, that the increases in transit improvements under this alternative would not result in a proportionate increase in ridership, particularly in the smaller communities and more rural areas of Butte County.

6.3.2 Impact Analysis

a. Agricultural Resources. Implementation of this alternative would result in greater impact to agricultural resources as an increased amount of transit oriented projects would be constructed relative to the 2016 RTP-SCS. This would result in greater potential conversion of prime farmland, unique farmland or farmland of statewide importance to non-agricultural use and conflicts with Williamson Contract lands when compared to the 2016 RTP-SCS. Impacts to agricultural resources would be increased under this alternative relative to the 2016 RTP-SCS, and would remain significant and unavoidable. All related mitigation measures referenced in Section 4.1, *Agricultural Resources*, would apply.

b. Air Quality. Implementation of this alternative may result in some additional short-term construction-related air quality impacts as compared to the proposed 2016 RTP-SCS with the increase in transit related improvement projects in addition to the other funded transportation improvement projects. Increased investment in transit oriented projects under this alternative relative to the 2016 RTP-SCS would promote increased numbers of people to utilize public transit and alternative means of transportation. Further, this alternative would include implementation of the transportation improvement projects included under the 2016 RTP-SCS (as listed in Table 2-1). Therefore, the Transit Investment Alternative would reduce VMT compared to the 2016 RTP-SCS as it would include the same transportation projects but would also invest in additional transit projects that would further reduce VMT as additional modes of transportation are available. Due to this reduction in VMT, the overall potential air quality impacts would be slightly less than the 2016 RTP -SCS. Overall toxic air emissions (diesel particulates) would be expected to be slightly less under this alternative as would emissions of PM₁₀, ROG, and NO_x. Air quality impacts would be less under this alternative when compared to the 2016 RTP-SCS. However, all mitigation measures identified in Section 4.2 *Air Quality* would be required.

c. Biological Resources. The Transit Investment Alternative would result in greater ground disturbance than the 2016 RTP-SCS due to the increased amount of transit projects in addition to the projects included in the 2016 RTP-SCS. Therefore, the Transit Investment Alternative would result in greater impact to special status plants and animals, sensitive habitats, and wildlife movement, as compared to the 2016 RTP-SCS. Impacts associated with the increased number of projects would remain potentially significant but mitigable and all related mitigation measures discussed in Section 4.3, *Biological Resources*, would apply.

d. Cultural Resources. This alternative would result in greater ground disturbance than the 2016 RTP-SCS due to the increased amount of transit projects in addition to the projects proposed under the 2016 RTP-SCS. Ground disturbance associated with projects under the Transit Investment Alternative would result in greater impacts to cultural resources relative to the 2016 RTP-SCS. Impacts related to unknown cultural resources would remain significant but mitigable and all related mitigation measures referenced in Section 4.4, *Cultural Resources*, would apply. Because this alternative would include more transportation projects with the investment in additional transit projects than the proposed 2016 RTP-SCS, potential impacts to historic structures may be increased and thus impacts would remain significant and unavoidable. Overall, impacts related to cultural resources would be greater under this alternative than what could occur as a result of 2016 RTP-SCS.

e. Greenhouse Gas Emissions/Climate Change. Overall VMT under the “Transit Investment” alternative would be expected to be slightly less than the 2016 RTP-SCS due to the increased investment in transit oriented projects that would promote increased numbers of people to utilize public transit and alternative means of transportation beyond that envisioned in the 2016 RTP-SCS. Thus, GHG emissions are expected to also be slightly lower than the 2016 RTP-SCS under this alternative. Construction-related emissions of GHGs under the Transit Investment Alternative would be slightly greater than the 2016 RTP-SCS because the increased amount of transit oriented projects that would be constructed. Overall, the reduction in VMT under the Transit Investment alternative would reduce impacts associated with GHG emissions and Climate Change, but all mitigation measures included in Section 4.5, *Greenhouse Gas Emissions/Climate Change*, would remain applicable

f. Noise. Because noise is a site specific issue, noise studies would be prepared for each project to determine whether impacts would occur. From a program perspective, the amount of projects under the Transit Investment Alternative would increase because of the increased transit oriented projects added to the projects list included in the 2016 RTP -SCS. This would result in a greater amount of construction activity. Therefore, temporary noise impacts throughout the Butte County would be slightly greater but would remain significant and mitigable. All related mitigation measures specified in Section 4.6, *Noise*, would be required.

Under the Transit Investment Alternative a greater number of people would utilize public transit or alternative transportation, leading to a decrease in VMT compared to the 2016 RTP-SCS. Whether noise impacts would be greater or less remains dependent on project specific studies. However, because overall VMT would be reduced with this alternative, the potential for increased traffic generated noise, while site specific, overall would be less than the 2016 RTP-SCS. Overall, noise impacts would be similar to or slightly less than the proposed project.

g. Transportation and Circulation. This alternative would focus more investments on transit improvements relative to the 2016 RTP-SCS. As a result, congestion and overall VMT would be slightly less than the 2016 RTP-SCS as a result of higher population densities in urban areas being able to utilize various modes of transit that would be funded under this alternative. Under the Transit Investment Alternative, transit facilities, pedestrian and bicycle facilities would likely be enhanced further than that proposed by the 2016 RTP-SCS. In addition, because all other constrained transportation projects would remain the same under this alternative, goods movement would also be enhanced as congestion on highways and rural roads would likely be reduced under this alternative as more investment in transit would likely result in fewer vehicle trips countywide. Transportation and circulation impacts under this alternative would be less than anticipated for the 2016 RTP-SCS and all impacts would remain less than significant.

6.4 ALTERNATIVE 4: TRANSIT INVESTMENT PLUS ENERGY EFFICIENCY

6.4.1 Description

The Transit Investment Plus Energy Efficiency Alternative focuses investment into development of public transit systems and alternative transportation modes, emphasizing bus, pedestrian, and bicycle modes of transportation. In addition, this alternative would invest in measures such as solar panels, a plug-in efficiency (PEV) vehicle fleet, and natural gas and electric buses to further reduce project environmental effects through energy efficiency. Under this scenario all transportation improvement project as proposed under the 2016 RTP-SCS would remain (as all of the projects are constrained or funded), however in addition there would be an increased amount of public transit, alternative transportation, and energy efficient transportation projects implemented. An increased amount of transit projects under this alternative would result in an increased amount of associated development of those facilities relative to the 2016 RTP-SCS. This would cause increased agricultural land conversion and cultural and critical habitat impacts. However, the increased transit opportunities for Butte County residents would result in reduced traffic congestion and associated emissions. Use of PEV, solar, and electric and natural gas buses would further reduce emissions associated with the proposed project. It is noted, however, that the increases in transit improvements under this alternative would not result in a proportionate increase in ridership, particularly in the smaller communities and more rural areas of Butte County.

6.3.2 Impact Analysis

a. Agricultural Resources. Implementation of this alternative would result in a greater impact to agricultural resources as an increased amount of transit oriented projects would be constructed relative to the 2016 RTP-SCS. This would result in greater potential conversion of prime farmland, unique farmland, and/or farmland of statewide significance to non-agricultural use and potential conflicts with Williamson Contract lands when compared to the 2016 RTP-SCS. Impacts to agricultural resources would be increased under this alternative relative to the 2016 RPS-SCS, and would remain significant and unavoidable. All related mitigation measures reference in Section 4.1, *Agricultural Resources*, would apply.



b. Air Quality. Implementation of this alternative may result in some additional short-term construction-related air quality impacts as compared to the proposed 2016 RTP-SCS with the increase in transit related improvement projects in addition to the other funded transportation improvement projects. Increased investment in transit oriented projects under this alternative relative to the 2016 RTP-SCS would promote an increased number of people to utilize public transit and alternative means of transportation. The implementation of energy efficient vehicles and technologies such as natural gas and electric transit buses, would further reduce emissions as compared to the transportation oriented projects within the 2016 RTP-SCS. Further, this alternative would include implementation of the transportation improvement projects included under the 2016 RTP-SCS (as listed in Table 2-1). Therefore, the Transit Investment Plus Energy Efficiency Alternative would reduce VMT and vehicle emissions as compared to the 2016 RTP-SCS. This alternative would include the same transportation projects but would invest in additional transit projects that would further reduce VMT as additional modes of transportation are available and would invest in cleaner energy vehicles and solar to continue to reduce emissions. Construction-related emissions under this alternative would be slightly greater than the 2016 RTP-SCS because the increased amount of transit oriented projects that would be constructed. Due to this reduction in VMT and implementation of clean energy vehicles, the overall potential air quality impacts would be less than the 2016 RTP-SCS. Overall toxic air emissions (diesel particulates) would be expected to be less under this alternative as would emissions of PM₁₀, ROG, and NO_x. Air quality impacts would be less under this alternative then compared to the 2016 RTP-SCS. However, all mitigation measures identified in Section 4.2 *Air Quality* would be required.

c. Biological Resources. The Transit Investment Plus Energy Efficiency Alternative would result in greater ground disturbance than the 2016 RTP-SCS due to the increased amount of transit projects in addition to the projects included in the 2016 RTP-SCS. Therefore, this alternative would result in greater impacts to special-status plant and animal species, sensitive habitats, and wildlife movement as compared to the 2016 RTP-SCS. Impacts associated with the increased number of projects would remain potentially significant but mitigable and all mitigation measures related to biology discussed in Section 4.3, *Biological Resources*, would apply.

d. Cultural Resources. This alternative would result in greater ground disturbance than the 2016 RTP-SCS due to the increased amount of transit projects in addition to the projects proposed under the 2016 RTP-SCS. Ground disturbance associated with the projects under the Transit Investment Plus Energy Efficiency Alternative would result in greater impacts to cultural resources relative to the 2016 RTP-SCS. Impacts related to unknown cultural resources would remain significant and unavoidable and all related mitigation measures referenced in Section 4.4, *Cultural Resources*, would apply. This alternative would include more transportation projects with the investment in additional projects than the proposed 2016 RTP-SCS, thus potential impacts to historic structures may be increased and thus impacts would remain significant and unavoidable. Overall, impacts related to cultural resources would be greater under this alternative than what would occur as a result of the 2016 RTP-SCS.

e. Greenhouse Gas Emissions/Climate Change. Overall VMT and project related operational emissions under the Transit Investment Plus Energy Efficiency Alternative would be anticipated to be less than the 2016 RTP-SCS due to the increased investment in transit oriented projects and clean energy vehicles. Increased transit oriented projects, as compared to



the 2016 RTP-SCS, would promote utilization of public transit and alternative means of transportation beyond that envisioned in the 2016 RTP-SCS. Implementation of a PEV fleet, solar panels, and electric and natural gas transit buses would use energy efficient technology to reduce GHG emissions as compared to the 2016 RTP-SCS. Thus, GHG emissions are anticipated to be lower than the 2016 RTP-SCS under this alternative.

Construction-related emissions of GHGs under this alternative would be slightly greater than the 2016 RTP-SCS because the increased amount of transit oriented projects that would be constructed. Overall, the reduction in VTM and implemented energy efficiency under the Transit Investment Plus Energy Efficiency Alternative would reduce impacts associated with GHG emissions and Climate Change, however all mitigation measures included in Section 4.5, *Greenhouse Gas Emissions/Climate Change*, would remain applicable.

f. Noise. Because noise is a site specific issue, noise studies would be prepared for each project to determine whether impacts would occur. From a program perspective, the amount of projects under the Transit Investment Plus Energy Efficiency Alternative would increase because of the increased transit oriented projects added to the projects list included in the 2016 RTP-SCS. This would result in a greater amount of construction activity. Therefore, temporary noise impacts throughout Butte County would be slightly greater but would remain significant and mitigable. All related mitigation measures specified in Section 4.6, *Noise*, would be required.

Under the Transit Investment Plus Energy Efficiency Alternative a greater number of people would utilize public transit or alternative transportation, leading to a decrease in VMT compared to the 2016 RTP-SCS. Whether noise impacts would be greater or less remains dependent on project specific studies. However, because overall VMT would be reduced with this alternative, the potential for increased traffic generated noise, while site specific, overall would be less than the 2016 RTP-SCS. Overall, noise impacts would be similar to or slightly less than the proposed project.

g. Transportation and Circulation. This alternative would focus more investments on transit improvements relative to the 2016 RTP-SCS. As a result, congestion and overall VMT would be slightly less than the 2016 RTP-SCS as higher population densities in urban areas would have access to various modes of transit that would be funded under this alternative. Under this alternative, transit facilities, pedestrian and bicycle facilities would be likely enhanced further than that proposed by the 2016 RTP-SCS. In addition, because all other constrained transportation projects would remain the same under this alternative, goods movements would also be enhanced as congestion on highways and rural roads would likely be reduced under this alternative as more investment in transit would likely result in fewer vehicle trips countywide. Transportation and circulation impacts under this alternative would be less than expected for the 2016 RTP-SCS and all impacts would remain less than significant.

6.5 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

This section compares the impacts of the three alternatives under consideration to those of the proposed 2016 RTP-SCS. Table 6-1 shows whether each alternative would have impacts that are less than, similar to or greater than the proposed project for each of the issue areas studied.



The No Project Alternative (Alternative 1) would not be considered environmentally superior overall. Although it would entail the fewest projects and therefore result in the fewest construction-related impacts and impacts associated with ground disturbance, many of the transportation improvements and greater density development envisioned in the 2016 RTP-SCS would not occur. As a consequence, total VMT be greater with this alternative as compared to the 2016 RTP-SCS. In addition, air contaminant, and GHG emissions impacts would be greater than the 2016 RTP-SCS. Under Alternative 2, the “Financially Unconstrained”, land use patterns would encourage development consistent with the proposed 2016 RTP-SCS, but more transportation improvement projects would be constructed. Alternative 2 would not be considered environmentally superior to the proposed project primarily because impacts to agricultural resources, critical habitats and cultural resources would be higher due to the increased amount of transportation improvement projects.

Alternative 3, the Transit Investment Alternative, performs similar or better than the proposed 2016 RTP-SCS and is considered to be environmentally superior to the proposed project. This alternative would result in an increased potential for agricultural lands to be converted for other uses and the amount of habitat and cultural resources impacted. However, overall VMT would be expected to be less because of a greater use of active transportation modes (biking and pedestrian) and greater use of public transit. Further, based exclusively on expected VMT, the Transit Investment Alternative would result in less GHG and transportation impacts than the 2016 RTP-SCS and would likely result in less congestion. This alternative would result in similar impacts to noise.

Alternative 4, the Transit Investment Plus Energy Efficiency Alternative, performs similar or better than the proposed 2016 RTP-SCS and is considered to be environmentally superior to the proposed project. This alternative would result in an increased potential for agricultural lands to be converted for other uses and the amount of habitat and cultural resources impacted. However, overall VMT would be expected to be less because of a greater use of active transportation modes (biking and pedestrian) and greater use of public transit. Further, based on expected VMT as well as the energy savings attributed the efficiency investments, the Transit Investment Plus Energy Efficiency Alternative would result in less GHG and transportation impacts than the 2016 RTP-SCS and would likely result in less congestion. This alternative would result in similar impacts to noise.

Based on the information presented herein, the Transit Investment Plus Energy Efficiency Alternative is determined to be the environmentally superior alternative when considering overall environmental impact relative to the performance metrics and attainment of SB 375 requirements. However, superior performance of this alternative with respect to certain metrics is largely attributable to individual behavior parameters that are beyond the control of BCAG. For example, under this alternative, traffic, air quality and GHG emission benefits from the expansion and improvement of public and active transportation facilities as well as through energy efficiency investments would rely upon individuals throughout Butte County utilizing these amenities. Therefore, implementation of this alternative and achievement of performance metrics such as lower VMT may not be feasible.

**Table 6-1
Alternative Comparison**

Issue	Alternative 1: 2040 No Project Scenario	Alternative 2: Financially Unconstrained	Alternative 3: Transit Investment	Alternative 4: Transit Investment Plus Energy Efficiency
Agriculture	=/+	-	=/-	=/-
Air Quality	-	=/+	=/+	+
Biological Resources	=/+	-	=/-	=/-
Cultural Resources	=/+	=/-	=/-	=/-
Greenhouse Gases	-	=/+	=/+	+
Noise	=/+	-	=/+	=/+
Transportation and Circulation	-	=/+	=/+	=/+
Overall	=/-	=/-	=/+	=/+

+ Superior to the proposed project (reduced level of impact)

- Inferior to the proposed project (increased level of impact)

= / + slightly superior to the proposed project in one or more aspects, but not significantly superior

= / - slightly inferior to the proposed project in one or more aspects, but not significantly inferior

+/- Some areas inferior to the proposed project, and some areas superior, but not significantly inferior or superior

= Similar level of impact to the proposed project



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7.1 REFERENCES

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7.2 LIST OF PREPARERS

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Appendix A
Notice of Preparation, Initial Study, and Responses



2015092038

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Notice of Preparation of a Draft Environmental Impact Report for the 2016 Regional Transportation Plan and Sustainable Communities Strategy

NOTICE IS HEREBY GIVEN that the Butte County Association of Governments (BCAG) is the lead agency for the preparation and review of the Program Environmental Impact Report (EIR) for the 2016 Regional Transportation Plan (RTP) and Sustainable Communities Strategy (SCS). Pursuant to section 15082 of the California Environmental Quality Act (CEQA), BCAG 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 in connection with the proposed project. BCAG will accept written comments concerning the scope and content of the EIR from interested persons and organizations concerned with the project.

The Draft EIR will be a Program EIR. Per the CEQA Guidelines, a Program EIR is an EIR that may be prepared on a series of actions that can be characterized as one large project. The purpose of a Program EIR is to allow the lead agency to consider broad policy alternatives and program-wide mitigation measures at an early time when the agency has greater flexibility to deal with basic problems or cumulative impacts.

PROJECT DESCRIPTION AND SCOPE OF ENVIRONMENTAL ANALYSIS

Project Title

Program EIR for the Butte County Association of Governments (BCAG) 2016 Regional Transportation Plan and Sustainable Communities Strategy (RTP-SCS)

Project Location

The geographical extent of the proposed RTP-SCS includes the area within the limits of Butte County, California, including the incorporated cities of Biggs, Chico, Gridley, Oroville, and Paradise, and all unincorporated areas under the jurisdiction of the County of Butte. The attached figure shows the RTP-SCS plan area.

Project Description

The Butte County Association of Governments (BCAG), as both the federally-designated metropolitan planning organization (MPO) and the State-designated regional transportation planning agency (RTPA) for Butte County, is required by both federal and State law to prepare a long-range (at least 20-year) 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 Regional Transportation Planning Agencies (RTPA) and Metropolitan Planning Organizations (MPO) 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 serve as the foundation for the short-range transportation planning documents: the Regional and Federal Transportation Improvement Programs (RTIP and FTIP).

BCAG has the responsibility to prepare a Sustainable Communities Strategy (SCS) as part of the RTP, pursuant to the requirements of California Senate Bill 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 (ARB).

Under both federal and State law, BCAG must update its RTP every four years. The 2016 RTP-SCS is the long-range planning, policy, action, and financial document for the Butte County Region. The RTP-SCS covers a 24-year period from 2016 to 2040 and is an update of the 2012 Metropolitan Transportation Plan (MTP) and Sustainable Communities Strategy (SCS) (please note for the 2016 cycle, the plan will be called "Regional Transportation Plan" instead of "Metropolitan Transportation Plan" as it was in 2012). The RTP-SCS identifies the region's transportation needs and issues and sets forth actions, programs, and projects to address those needs and issues. The RTP-SCS adopts policies, sets goals, and identifies financial resources to encourage and promote the safe and efficient management, operation, and development of a regional intermodal transportation system that would serve the mobility needs of goods and people. In addition, as the MPO for Butte County, BCAG is required to prepare a SCS that demonstrates how GHG reduction targets will be met through integrated land use, housing, and transportation planning. Thus the RTP-SCS will address both the transportation component of the RTP, as well as the land use component of the SCS. It should be noted that BCAG does not propose any land use changes, but rather the land use patterns envisioned by the RTP-SCS are based on the General Plan land use and zoning designations of the local agencies (the five incorporated cities and the county). The RTP-SCS would be consistent with the land use and zoning designations in the incorporated and unincorporated areas.

In 2010, the California ARB set GHG reduction targets for the BCAG region from on-road light-duty trucks and passenger vehicles as a 1% increase from 2005 emissions levels by 2020 and a 1% increase from 2005 emissions levels by 2035 (California Air Resources Board). The reduction targets are currently proposed to be updated in 2016. These targets apply to the BCAG region as a whole for all on-road light-duty trucks and passenger vehicles emissions, and not to individual cities or sub-regions.

SB 375 specifically states that local governments retain their autonomy to plan local General Plan policies and land uses. The RTP-SCS rather is intended to provide a regional policy foundation that local governments may build upon, if they so choose. As described above, 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 buildout of the local General Plans. SB 375 also requires that the RTP-SCS's forecasted development pattern 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.

In addition, the RTP-SCS EIR will lay the groundwork for the streamlined review of qualifying development projects within Transit Priority Areas. Qualifying projects that meet statutory criteria and are consistent with the RTP-SCS are eligible for streamlined environmental review pursuant to CEQA.

Issues to Be Addressed in the EIR

The impact categories listed below have been preliminarily identified for analysis in the 2016 RTP-SCS EIR. An Initial Study was prepared for the project and will be available for review at the BCAG office, located at 2580 Sierra Sunrise Terrace, Suite 100, Chico, CA 95928 and on the BCAG website at <http://www.bcag.org/Planning/MTP--SCS/index.html>.

- Agricultural Resources
- Air Quality and Health Impacts/Risks
- Biological Resources
- Cultural and Historic Resources
- Climate Change/Greenhouse Gases
- Noise
- Transportation and Circulation

In addition, the EIR will address cumulative impacts, growth inducing impacts, and other issues required by CEQA.

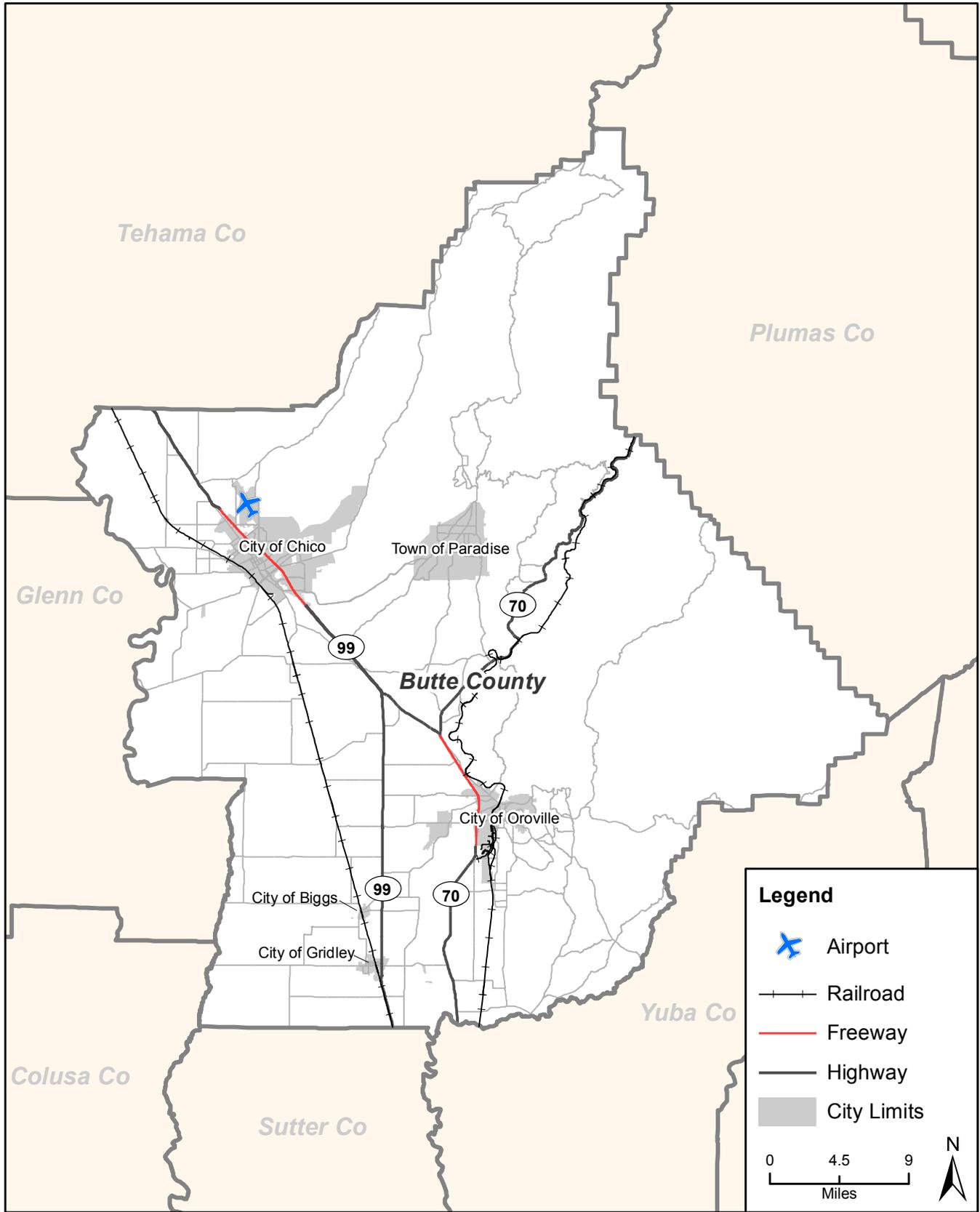
Through the NOP, BCAG is seeking input on further categories of analysis or areas of focus within the specified categories above. Time limits required by State law mandate your response be sent at the earliest possible date but not later than 30 days after receipt of this notice.

Public Review and Public Scoping Meetings

The 30-day public review and comment period will commence on September 15, 2015 and conclude October 15, 2015 at 5:00 p.m. Public comments may be submitted in writing by 5:00 p.m. on October 15 to Brian Lasagna at the address below.

Contact Person: Brian Lasagna, Senior Planner
Butte County Association of Governments
2580 Sierra Sunrise Terrace, Suite 100,
Chico, CA 95928
blasagna@bcag.org

BCAG will hold two public information/EIR scoping meetings. The first meeting will be held on **Tuesday September 29, 2015** in the Butte County Association of Governments Conference Room located at 2580 Sierra Sunrise Terrace, Suite 100, Chico, CA 95928, from 4:00 p.m. to 6:00 p.m. The second meeting will be held on **Wednesday September 30, 2015** in the Oroville City Hall Conference Room located at 1735 Montgomery Street, Oroville, CA 95965, from 3:00 p.m. to 5:00 p.m. The purpose of these meetings are to solicit input on the scope and content of the environmental analysis that will be included in the Draft EIR.



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Additional data provided by BCAG, 2015.

RTP-SCS Plan Area

Figure 1

Butte County Association of Governments (BCAG)

2016 Butte County Regional Transportation Plan and Sustainable Communities Strategy

Initial Study

Prepared for:

Butte County Association of Governments
2580 Sierra Sunrise Terrace, Suite 100
Chico, CA 95928

Prepared by:

Rincon Consultants, Inc.
4825 J Street, Suite 200
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March 2016

2016 Butte County Regional Transportation Plan and Sustainable Communities Strategy

Initial Study

Prepared for:

Butte County Association of Governments
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*September 2015
Updated March 2016*

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INTRODUCTION

LEGAL AUTHORITY AND ENVIRONMENTAL DETERMINATION:

This Initial Study (IS) has been prepared in accordance with the *California Environmental Quality Act (CEQA) Guidelines* and relevant provisions of CEQA, as amended.

Initial Study. Section 15063(c) of the *CEQA Guidelines* defines an Initial Study as the proper preliminary method of analyzing the potential environmental consequences of a project. The purposes of an Initial Study are:

- (1) To provide the Lead Agency with the necessary information to decide whether to prepare an Environmental Impact Report (EIR), or a Negative Declaration, or a Mitigated Negative Declaration, or an Exemption
- (2) To enable the Lead Agency to modify a project, mitigating adverse impacts, thus avoiding the need to prepare an EIR; and
- (3) To provide sufficient technical analysis of the environmental effects of a project to permit a judgment to be made by the Lead Agency, based on the record as a whole, that the environmental effects of a project have been adequately mitigated or require further in-depth study in an EIR.

EVALUATION OF POSSIBLE ENVIRONMENTAL IMPACTS AND SIGNIFICANCE DETERMINATION:

The following sections of this Initial Study provide discussions of the possible environmental effects of the proposed project for specific environmental issue areas that have been identified on the CEQA Initial Study Checklist. For each environmental issue area, potential effects are evaluated.

A “significant effect” is defined by Section 15382 of the *CEQA Guidelines* as “a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by a project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance.” According to the *CEQA Guidelines*, “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.”

Following the evaluation of each environmental effect is a discussion of mitigation measures and the residual effects or level of significance remaining after the implementation of the measures. In those cases where a mitigation measure for an impact could have a significant environmental impact in another issue area, this impact is discussed as a residual effect.

INITIAL STUDY

PROJECT TITLE:

2016 Butte County Regional Transportation Plan and Sustainable Communities Strategy (RTP-SCS)

LEAD AGENCY NAME AND ADDRESS:

Butte County Association of Governments
2580 Sierra Sunrise Terrace, Suite 100
Chico, CA 95928

CONTACT PERSON AND PHONE NUMBER:

Brian Lasagna, Senior Planner
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PROJECT SPONSOR:

Butte County Association of Governments
2580 Sierra Sunrise Terrace, Suite 100,
Chico, CA 95928

PROJECT LOCATION:

The study area includes all of Butte County's 1,677 square miles. Located in California's Central Valley, Butte County is bounded by Tehama, Glenn, Colusa, Sutter, Yuba, and Plumas counties. There are five incorporated cities within Butte County: Biggs, Chico, Gridley, Oroville, and Paradise. Figure 1 on the following page provides the 2016 RTP-SCS Plan Area.

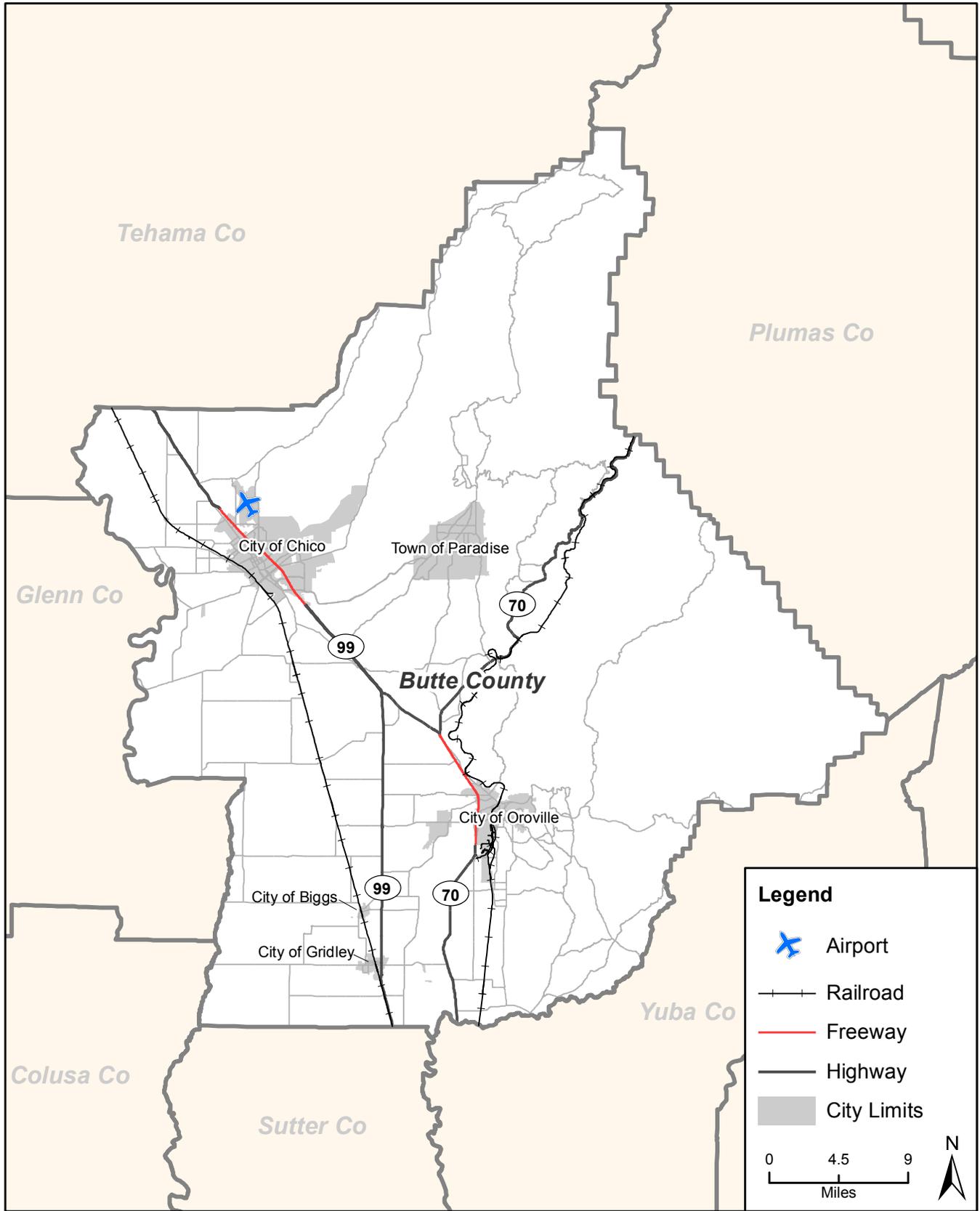
GENERAL PLAN AND ZONING DESIGNATIONS:

The 2016 Regional Transportation Plan and Sustainable Communities Strategy (RTP-SCS) is a regional planning document; therefore it covers the entire County. The RTP-SCS will include any and all General Plan land use and zoning designations that are established in the incorporated and unincorporated areas. The 2016 RTP-SCS does not propose to change any of these land use and zoning designations; rather, the land use scenario envisioned by the 2016 RTP-SCS is based on and would be consistent with the existing General Plan land use and zoning designations as established by the land use authorities in the incorporated and unincorporated areas.

PUBLIC AGENCIES WHOSE APPROVAL MAY BE REQUIRED:

Approval of the proposed project is at the discretion of the Butte County Association of Governments (BCAG), which is the lead agency for the 2016 RTP-SCS. It should be noted that





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Additional data provided by BCAG, 2015.

RTP-SCS Plan Area

Figure 1

additional environmental review may be required to be conducted by the project sponsor, as the lead agency for the individual transportation projects contained within the 2016 RTP-SCS, prior to project implementation. Depending on the location of the project, future approvals for individual transportation projects identified in the 2016 RTP-SCS would have to be completed by one or more of the following agencies:

- Butte County Association of Governments
- Butte County Regional Transit
- California Department of Transportation (Caltrans)
- Cities of Biggs, Chico, Gridley, Oroville, and Paradise
- County of Butte

DESCRIPTION OF PROJECT:

The Butte County Association of Governments (BCAG), as both the federally-designated metropolitan planning organization (MPO) and the State-designated regional transportation planning agency (RTPA) for Butte County, is required by both federal and State law to prepare a long-range (at least 20-year) 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 Regional Transportation Planning Agencies (RTPA) and Metropolitan Planning Organizations (MPO) 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 serve as the foundation for the short-range transportation planning documents: the Regional and Federal Transportation Improvement Programs (RTIP and FTIP).

BCAG has the responsibility to prepare a Sustainable Communities Strategy (SCS) as part of the RTP, pursuant to the requirements of California Senate Bill 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 (ARB).

Under both federal and State law, BCAG must update its RTP every four years. The 2016 RTP-SCS is the long-range planning, policy, action, and financial document for the Butte County Region. The 2016 RTP-SCS covers a 30-year period from 2016 to 2036 and is an update of the 2012 Metropolitan Transportation Plan (MTP) and Sustainable Communities Strategy (SCS) (please note for the 2016 cycle, the plan will be called “Regional Transportation Plan” instead of “Metropolitan Transportation Plan” as it was in 2012). The 2016 RTP-SCS identifies the region’s transportation needs and issues and sets forth actions, programs, and projects to address those needs and issues. The 2016 RTP-SCS adopts policies, sets goals, and identifies financial resources to encourage and promote the safe and efficient management, operation, and development of a regional intermodal transportation system that would serve the mobility needs of goods and people. In addition, as the MPO for Butte County, BCAG is required to prepare a SCS that demonstrates how GHG reduction targets will be met through integrated



land use, housing, and transportation planning. Thus the 2016 RTP-SCS will address both the transportation component of the RTP, as well as the land use component of the SCS. It should be noted that BCAG does not propose any land use changes, but rather the land use patterns envisioned by the 2016 RTP-SCS are based on the General Plan land use and zoning designations of the local agencies (the five incorporated cities and the county). The 2016 RTP-SCS would be consistent with the land use and zoning designations in the incorporated and unincorporated areas.

In 2010, the California ARB set GHG reduction targets for the BCAG region from on-road light-duty trucks and passenger vehicles as a 1% increase from 2005 emissions levels by 2020 and a 1% increase from 2005 emissions levels by 2035 (California Air Resources Board). The reduction targets are currently proposed to be updated in 2016. These targets apply to the BCAG region as a whole for all on-road light-duty trucks and passenger vehicles emissions, and not to individual cities or sub-regions.

SB 375 specifically states that local governments retain their autonomy to plan local General Plan policies and land uses. The 2016 RTP-SCS rather is intended to provide a regional policy foundation that local governments may build upon, if they so choose. As described above, the 2016 RTP-SCS does not propose to change any land use and zoning designations; rather, the land use scenario envisioned by the 2016 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 2016 RTP-SCS includes and accommodates the quantitative growth projections for the region based on the buildout of the local General Plans. SB 375 also requires that the 2016 RTP-SCS's forecasted development pattern 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.

In addition, the 2016 RTP-SCS EIR will lay the groundwork for the streamlined review of qualifying development projects within Transit Priority Areas.¹ Qualifying projects that meet statutory criteria and are consistent with the 2016 RTP-SCS are eligible for streamlined environmental review pursuant to CEQA.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, and either would be mitigated as described in this Initial Study, or involve at least one impact that would be addressed in the EIR, as indicated by the checklist on the following pages.

- | | | |
|----------------------------------------------------------------|------------------------------------------------------------------------|-------------------------------------------------------------|
| <input checked="" type="checkbox"/> Aesthetics | <input checked="" type="checkbox"/> Agriculture and Forestry Resources | <input checked="" type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Cultural Resources | <input checked="" type="checkbox"/> Greenhouse Gases |
| <input checked="" type="checkbox"/> Geology/Soils | <input type="checkbox"/> Hazards/Hazardous Materials | <input checked="" type="checkbox"/> Hydrology/Water Quality |
| <input checked="" type="checkbox"/> Land Use/Planning | <input type="checkbox"/> Mineral Resources | <input checked="" type="checkbox"/> Noise |
| <input type="checkbox"/> Population/Housing | <input type="checkbox"/> Public Services | <input type="checkbox"/> Recreation |
| <input checked="" type="checkbox"/> Transportation/Circulation | <input type="checkbox"/> Utilities/Service Systems | |

¹ A Transit Priority Area is an area within 1/2-mile of high quality transit: a rail stop or a bus corridor that provides or will provide at least 15-minute frequency service during peak hours by the year 2035.



DETERMINATION:

On the basis of 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 in 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 potentially 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.

Brian Lasagna, Senior Planner
Butte County Association of Governments

Date



EVALUATION OF ENVIRONMENTAL IMPACTS:

I. AESTHETICS - <i>Would the project:</i>	Impact to be Addressed in the EIR	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?		X		
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?		X		
c) Substantially degrade the existing visual character or quality of the site and its surroundings?		X		
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?		X		

a, c. Butte County contains many scenic resources including: Table Mountain Spring Floral Area, Central Buttes, Sacramento River and its Riparian Corridor, Butte Creek Canyon, Lake Oroville, Philbrook Lake, and Feather Falls Scenic Area Features. Transportation projects included in the 2016 RTP-SCS could adversely affect scenic vistas and resources and degrade the existing visual quality of an area. Increases in the dimensions of existing routes and structural rehabilitations could entail the removal of existing vegetation and/or open space that lines scenic roadways, altering scenic views. However, the incorporation of Mitigation Measures AES-1(a) and AES-1(b) would reduce the impacts to scenic resources and the visual character of the area to less than significant.

BCAG recommends that project sponsors (those lead agencies overseeing implementation of individual transportation projects) implement the following mitigation measures for applicable transportation projects. These measures can and should be implemented for all projects developed pursuant to the 2016 RTP-SCS that would adversely affect scenic vistas and resources and degrade the existing visual quality.

AES-1(a) Where a particular 2016 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.

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.

b. Butte County does not contain any State designated scenic highways. The County has designated six scenic routes within Butte County: Portions of State Route (SR) 32 north of Chico, portions of SR 70 north of the SR 149 intersection, the Skyway with it expansive views of the



Northern Sacramento Valley and Coast Range, the southern portions of SR 191 and Pentz Road, the portion of SR 162 along Lake Oroville, and portions of Forbestown Road and Lumpkin Road. SR 70 north of 149 is an eligible State Scenic Highway, however it has not been officially designated. These resources have the potential to be significantly impacted by implementation of transportation improvements, through the removal of vegetation, addition of safety barriers and sound walls, or the incremental transformation in visual character from rural to more urban. However, the incorporation of Mitigation Measures AES-2(a) and AES-2(b) would reduce impacts to less than significant.

BCAG recommends that project sponsors implement the following mitigation measures for applicable transportation projects. These measures can and should be implemented for all projects developed pursuant to the 2016 RTP-SCS that would adversely affect scenic resources.

- AES-2(a)** 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-2(b)** 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 feature 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.

d. Transportation projects have the potential to create new light sources that could affect nighttime views. The addition of street lighting that spills onto adjacent properties could be introduced, which would alter nighttime views, particularly on scenic routes. The incorporation of Mitigation Measure AES-3 would reduce these effects to less than significant.

BCAG recommends that project sponsors implement the following mitigation measure for applicable transportation projects. This measure can and should be implemented for all projects developed pursuant to the 2016 RTP-SCS that would create new light sources that could affect nighttime views.

- AES-3** 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.

II. AGRICULTURE AND FOREST RESOURCES -- <i>In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. -- Would the Project:</i>	Impact to be Addressed in the EIR	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) 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?	X			
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	X			
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))?			X	
d) Result in the loss of forest land or conversion of forest land to non-forest use?			X	
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?	X			

a, b, e. As the largest land use in Butte County, the 2016 RTP-SCS has the potential to conflict with agricultural land. Transportation projects proposed by the 2016 RTP-SCS and land use development envisioned by the SCS could potentially alter or convert agricultural lands to more urban uses. These issues will be further addressed in the EIR.

c, d. Butte County has a long growing season and deep soils, which creates good growing conditions for mixed conifer forest in the northeastern portion of the county. The forest is dominated by sugar pine, ponderosa pine, Douglas fir, white fir, and incense cedar. Timberlands are on both public and private lands, with some logging controlled by the US Forest Service and some regulated by the California Department of Forestry and Fire Protection (CalFIRE). In order for any forestland to be converted from timber production to an alternate use, a Timberland Conversion Permit (TCP) would be need to be issued by CalFIRE, which acts as the lead agency under CEQA for forestland, with the County being the responsible agency. In order for a TCP to be approved by CalFIRE, the project plan must incorporate mitigation



measures to substantially lessen or avoid environmental impacts. The 2016 RTP-SCS would not conflict with forestland or timberland and any projects that would occur in forestland or timberland as a result of the 2016 RTP-SCS would be required to adhere to US Forest Service and/or CalFIRE requirements including the preparation of TCP if applicable. Thus impacts related to forestland or timberland would be less than significant.

III. AIR QUALITY - Would the project¹:	Impact to be Addressed in the EIR	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable Air Quality Attainment Plan or Congestion Management Plan?	X			
b) Violate any stationary source air quality standard or contribute substantially to an existing or projected air quality violation?	X			
c) Result in a 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)?	X			
d) Expose sensitive receptors to substantial pollutant concentrations?	X			
e) Create objectionable odors affecting a substantial number of people?	X			
<i>1 Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations</i>				

a-e. Butte County is located within the Sacramento Valley Air Basin (SVAB). The SVAB is composed of nine air districts, including Butte County Air Pollution Control District (BCAPCD). The BCAPCD is responsible for implementing programs and regulations required by the Federal and State Clean Air Acts. Butte County is in nonattainment for state and federal 8-hour ozone, state 24-hour PM10, federal 24-hour PM2.5, and state annual PM2.5 standards (Butte County Air Quality Management District, 2014).

The 2016 RTP-SCS could increase pollutant emissions from improvements to existing transportation infrastructure or development of additional infrastructure. Future development associated with transportation projects listed in the 2016 RTP-SCS and future land use patterns established by the local agency’s general plans and envisioned by the 2016 RTP-SCS may increase air pollution due to construction activities and/or operational emissions. Buildout of the proposed 2016 RTP-SCS could also result in the creation of isolated objectionable odors. Air quality impacts associated with the 2016 RTP-SCS will be assessed in the EIR.



IV. BIOLOGICAL RESOURCES - <i>Would the project:</i>	Impact to be Addressed in the EIR	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
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 Game or U.S. Fish and Wildlife Service?	X			
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	X			
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?	X			
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?	X			
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	X			
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?	X			

a-f. Existing undeveloped lands in the county provide open space and habitats that are considered sensitive. Transportation projects contained in and future land use patterns envisioned by the 2016 RTP-SCS may have the potential to affect sensitive species, their habitats, and wildlife corridors.

Butte County contains a variety of biological communities, special status species, important wildlife areas, and migratory deer herds. Biological communities in Butte County include conifer forest, oak woodland, riparian woodland, chaparral, annual grasslands, open water, and wetlands. Special status species include 77 plant species, 47 wildlife species, and five fish species that have been documented in or have the potential to occur in Butte County (Butte County General Plan 2030, Conservation and Open Space Element). Important wildlife areas in Butte County are public lands that have been conserved for the benefit of wildlife, these include Big Chico Creek Ecological Preserve, the Butte Creek Ecological Preserve, Bidwell Park, Table Mountain, the Gray Lodge Wildlife Area, the Oroville Wildlife Area, the Sacramento River Wildlife Area, and the Sacramento River National Wildlife Refuge. Migratory deer herds migrate from higher elevations in Plumas and Lassen Counties to lower elevations in Butte County in the winter. Their winter range in Butte County comprises most of central Butte County and includes critical winter range areas.

The Butte Regional Habitat Conservation Plan (HCP) and Natural Community Conservation Plan (NCCP) (BR HCP/NCCP) provides an assessment of the county’s natural resources and a



strategy for protecting those resources. The BR HCP/NCCP focuses on the western half of Butte County, where the conflict between urban development and protected species is greatest.

Impacts to biological resources which may occur as a result of the 2016 RTP-SCS will be analyzed in the EIR.

V. CULTURAL RESOURCES - <i>Would the project:</i>	Impact to be Addressed in the EIR	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?	X			
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	X			
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	X			
d) Disturb any human remains, including those interred outside of formal cemeteries?	X			

a-d. The prehistoric archaeological sensitivity of Butte County is considered high and the historic archaeological sensitivity of Butte County is considered moderately high. Over 2,900 prehistoric archaeological sites and 1,500 historical sites are spread throughout Butte County. 129 archaeological sites are eligible for or have been listed on the National Register of Historic Places and are therefore on the California Register of Historic Resources (Butte County General Plan 2030, Conservation and Open Space Element). Transportation projects contained in and future land use patterns envisioned by the 2016 RTP-SCS have the potential to impact these cultural resources. These issues will be addressed in the EIR.

VI. GEOLOGY AND SOILS - <i>Would the project:</i>	Impact to be Addressed in the EIR	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: <ul style="list-style-type: none"> i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. ii. Strong seismic ground shaking? iii. Seismic-related ground failure, including liquefaction? iv. Landslides? 		X		
b) Result in substantial soil erosion or the loss of topsoil?		X		



VI. GEOLOGY AND SOILS - <i>Would the project:</i>	Impact to be Addressed in the EIR	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?		X		
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?		X		
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?		X		

a-e. The Cleveland Hills fault is the only active fault in Butte County identified by the Alquist-Priolo Earthquake Fault Zoning Map (California Division of Mines and Geology). Seismic activity can also be caused by faults located as far as 100 miles away, including Coast Ranges faults, the San Andreas Fault, the Midland-Sweitzer Fault, the Melones Fault zone, and Eastern Sierra faults. Smaller active faults are also present in Butte County and surrounding areas that could be potentially active. Future seismic events could significantly impact Butte County and earthquakes with a magnitude of up to 7.0 are possible. Butte County is also susceptible to liquefaction, seiches, landslides, erosion, expansive soils, and subsidence (Butte County General Plan, Health and Safety Element). While transportation projects in the 2016 RTP-SCS have the potential to be exposed to these hazards, the incorporation of mitigation measures GEO-1(a) and GEO-1(b) will reduce the impact to less than significant.

BCAG recommends that project sponsors implement the following mitigation measures for applicable transportation projects. These measures can and should be implemented for all projects developed pursuant to the 2016 RTP-SCS that could potentially be adversely effected by seismic ground shaking, liquefaction, seiches, landslides, erosion, expansive soils, and/or subsidence.

- GEO-1(a)** For a 2016 RTP-SCS project involving a bridge, the lead agency 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 ground shaking zones. This can be accomplished through the placement of conditions on the project by the lead agency during individual environmental review.
- GEO-1(b)** For a 2016 RTP-SCS project that involves cut slopes over 15 feet in height, the lead agency shall ensure that specific slope stabilization studies are conducted. Possible stabilization methods include buttresses, retaining walls, and soldier piles.



VII. GREENHOUSE GAS EMISSIONS - <i>Would the project:</i>	Impact to be Addressed in the EIR	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, based on any applicable threshold of significance?	X			
b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	X			

a-b. It is a primary objective of the 2016 RTP-SCS to reduce GHG emissions in the BCAG region from passenger vehicles to target levels established by ARB (a 1% increase from 2005 emissions levels by 2020 and a 1% increase from 2005 emissions levels by 2035). Nevertheless, transportation projects included in and the land use scenario envisioned by the 2016 RTP-SCS may result in an increase in greenhouse gas emissions due to construction activities and/or operational emissions. Greenhouse gas emissions associated with the 2016 RTP-SCS will be further assessed in the EIR.

VIII. HAZARDS AND HAZARDOUS MATERIALS - <i>Would the project:</i>	Impact to be Addressed in the EIR	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment?			X	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X	
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?			X	
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?			X	
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?			X	
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
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?			X	



a-c. Transportation projects under the 2016 RTP-SCS could potentially facilitate the transport of hazardous materials on roadways in Butte County but would not directly result in a transportation related hazard. All transport of hazardous materials would be required to comply 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. This would ensure that the transport of hazardous materials, the handling of hazardous substances within proximity to schools, and the release of hazardous materials would be adequately controlled such that impacts would be less than significant.

d. With respect to hazardous materials sites listed under Government Code Section 65962.5, the majority of transportation improvements 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 project, it is not possible to determine with accuracy whether future projects located on previously undisturbed land would contain hazardous materials. However, such projects would be required to address any on-site environmental issues, including any potential hazardous materials, and remediate identified contamination beyond action levels accordingly. Impacts would be less than significant.

e-f. Some projects associated with the 2016 RTP-SCS may be located within an airport land use plan or within the vicinity of a private airstrip. However, the 2016 RTP-SCS would not directly expose people or create a new airport safety hazard. Impacts would be less than significant.

g. The implementation of the 2016 RTP-SCS would not have an adverse effect on adopted emergency response plans or emergency evacuation plans. By improving roadways and circulation in Butte County, there could be a beneficial impact on emergency response and evacuation. Impacts would be less than significant.

h. The implementation of the 2016 RTP-SCS would not increase risk of wildland fires or increase exposure of people or structures to wildland fires. The majority of future projects would be transportation improvements and modifications of existing facilities. Impacts would be less than significant.

IX. HYDROLOGY AND WATER QUALITY - <i>Would the project:</i>	Impact to be Addressed in the EIR	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?		X		
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 of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?			X	
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the		X		



course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?				
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?		X	-	
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?		X	-	
f) Otherwise substantially degrade water quality?		X		
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				X
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?		X		
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?		X		
j) Inundation by seiche, tsunami, or mudflow?			X	

a, c-f. Drainage patterns may be altered as a result of projects associated with the 2016 RTP-SCS. Projects may introduce impervious surfaces in undeveloped areas, which could result in increased surface runoff that has the potential to affect surface water quantities, result in changes to absorption rates, discharge degraded surface water quality, affect the capacity of existing or planned drainage systems, and/or create erosion. Implementation of proposed transportation improvements and future projects associated with the 2016 RTP-SCS would result in both short-term and long-term impacts to water quality. Due to the programmatic nature of the 2016 RTP-SCS, a precise, project-level analysis of the specific impacts of individual transportation projects on water quality is not possible at this time. However, the general nature of water quality impacts is described below.

Certain transportation improvements, such as road widening and expansion, as well as infill projects, would increase overall impervious surface area throughout the County. These projects may generate significant adverse impacts to surface water quality. Pollutants and chemicals associated with urban activities would run off new roadways and other impervious surfaces flowing into nearby bodies of water during storm events. These pollutants would include, but are not limited to: heavy metals from auto emissions, oil, grease, debris, and air pollution residues. Such contaminated urban runoff may remain largely untreated, thus resulting in the incremental long-term degradation of water quality.

Short-term adverse impacts to surface water quality may also occur during the construction periods of individual improvement projects because areas of disturbed soils would be highly susceptible to water erosion and downstream sedimentation. This impact is of particular concern where projects are located on previously contaminated sites. Without effective erosion and storm water control, contaminated soils exposed during construction activities may result in surface water contamination. In addition, grading and vegetation removal in proximity to creeks for construction, widening, and repair of bridges could result in an increase in erosion and sedimentation of creek banks. This could affect both water quality and the stability of slopes along the creeks. Regulations under the federal Clean Water Act require that a National



Pollutant Discharge Elimination System (NPDES) storm water permit be obtained for projects that would disturb greater than an acre. Acquisition of the General Construction permit is dependent on the preparation of a Storm Water Pollution Prevention Plan (SWPPP) that contains specific actions, termed Best Management Practices (BMPs) to control the discharge of pollutants, including sediment, into the local surface water drainages. Many 2016 RTP projects, especially roadway extensions at the periphery of cities, would be subject to these regulations.

BCAG shall and sponsor agencies (those lead agencies overseeing implementation of individual transportation projects) can and should implement the following mitigation measures for applicable transportation projects. These measures can and should be implemented for all projects developed pursuant to the 2016 RTP-SCS that would degrade water quality. Adherence to applicable NPDES storm water permits and SWPPPs, in addition to incorporation of Mitigation Measures W-1(a), W-1(b), and W-1(c) would reduce impacts related to water quality to a less than significant level.

- W-1(a)** The sponsor agency of a 2016 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-1(b)** The sponsor agency of a 2016 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-1(c)** For a 2016 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.

b. Impacts related to groundwater supplies are discussed below in Section XVII, Utilities and Service Systems.

g. The 2016 RTP-SCS would not place housing in a flood hazard area. No housing is proposed by the plan and no land use designations would be changed by the plan. The 2016 RTP-SCS would have no impact on housing in flood plains.

h-i. Portions of Butte County lie in FEMA flood zones. Transportation projects associated with the 2016 RTP-SCS have the potential to expose people or structures to flooding and to impede or redirect flood flows. Implementation of proposed transportation improvements and future projects associated with the 2016 RTP-SCS could be subject to flooding hazards due to storm



events and/or dam failure. Due to the programmatic nature of the 2016 RTP, a precise, project-level analysis of the specific impacts of individual transportation projects on flooding hazards is not possible at this time. However, the general nature of these hazards, and their potential impacts, are described below.

Proposed transportation improvements and future projects envisioned by the 2016 RTP-SCS in low-lying areas and in proximity to waterways and/or dam inundation zones may be subject to the hazard of flooding. According to the Butte County Local Hazard Mitigation Plan Update 2013, there are 35 dams located in the County, 16 of which are rated high hazard, 5 as significant hazard, and 4 as low hazard. Dam failure, overtopping, and inundation at any of these dams would potentially subject RTP-SCS projects to inundation. The effects of flooding could include temporary inundation of a facility that impedes its use, or causes long-term damage to the facility. Flooding may also cause immediate damage to roadways and bridges, particularly during high-velocity flood events that wash away or erode facilities. This would typically occur adjacent to rising rivers or streams. Any facility within the flood zone of a stream would be subject to impacts. Erosion caused by flooding can damage paved facilities, and bridge supports can be undermined or washed away. Flood hazards can also endanger occupants of habitable structures. Impacts are potentially significant.

Mitigation Measures. BCAG shall implement and sponsor agencies can and should implement the following mitigation measures for applicable transportation projects subject to flood hazards. This measure can and should also be implemented for all projects developed pursuant to the 2016 RTP-SCS that would result in impacts from flooding.

- W-2(a)** If a 2016 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.

- W-2(b)** For 2016 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.

Incorporation of Mitigation Measures W-2(a) and W-2(b) would reduce impacts related to flooding to a less than significant level.

j. Butte County is located inland and is not subject to inundation by tsunamis. Mudflow is not an issue in Butte County due to climate and geography. No seiches have been recorded in Butte County. While the potential for seiches does exist, the likelihood is low and the majority of 2016 RTP-SCS projects would be improvements to existing roadways and would not introduce new facilities to the environment. Any new facilities would be required to address any on-site environmental issues. Impacts related to seiches would be less than significant.



X. LAND USE AND PLANNING – <i>Would the project:</i>	Impact to be Addressed in the EIR	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Physically divide an established community?		X		
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?			X	
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	X			

a. The 2016 RTP-SCS transportation projects are designed to improve traffic and circulation throughout Butte County. However, the implementation of 2016 RTP-SCS projects could temporarily or permanently disrupt existing residences and business. During construction on both new and existing roadways, businesses may be temporarily disrupted through temporary road or land closures, or blockage of access to parking. Projects that involve extension of roadways may result in displacement of residents or businesses. While the majority of transportation projects would occur within the existing roadway rights-of-way, it is possible that future projects, particularly widening or expansion projects, could encroach onto private property or limit access. Access and disruption impacts associated with construction would occur to varying degrees with all construction projects, but would be most acute in urban areas with high volumes of traffic and businesses that depend upon ease of vehicular access. These impacts are significant; however the implementation of mitigation measures LU-1(a-c) would reduce impacts to less than significant.

BCAG recommends that project sponsors implement the following mitigation measures for applicable transportation projects. These measures can and should be implemented for all projects developed pursuant to the 2016 RTP-SCS that could potentially adversely effect communities.

- LU-1(a)** The individual project lead agency of 2016 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.
- LU-1(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 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-1(c)** For all 2016 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.

b. State-level policies applicable to the 2016 RTP-SCS include MAP-21, Caltrans Smart Mobility 2010, SB 375, and AB 32. The 2016 RTP-SCS contains goals that guide future transportation improvement projects and land use patterns within the region. The goals of the 2016 RTP-SCS are based on, and consistent with, both the planning factors stated in MAP-21, and the Caltrans Smart Mobility 2010 framework, tailored to the Butte County region. Additionally, the Butte County General Plan and the general plans of the five incorporated cities in the County each provide for cooperation with the Butte County Association of Governments as the Regional Transportation Planning Agency in their respective Circulation Elements. The 2016 RTP-SCS represents a voluntary strategy that retains local government land use autonomy. Neither SB 375 nor any other law requires local member agency general plans or land use regulation be consistent with the 2016 RTP-SCS. Full participation, therefore, is dependent on local government policy decisions and voluntary local government action.

The objective of the 2016 RTP-SCS is to provide for a comprehensive transportation system of facilities and services that meet the public’s need for the movement of people and goods, and that is consistent with the social, economic, and environmental goals and policies of the region. Therefore, impacts regarding conflict with local plans, policies, and regulations, would be less than significant.

c. The Butte Regional Conservation Plan (BRCP) is a Natural Community Conservation Plan (NCCP) and a Habitat Conservation Plan (HCP) to provide endangered species and wetland protection. The BRCP covers the western half of Butte County. The 2016 RTP-SCS has the potential to significantly impact the BRCP. These impacts will be further evaluated in the EIR’s Biological Resources section.

<i>XI. MINERAL RESOURCES –</i> <i>Would the project:</i>	Impact to be Addressed in the EIR	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
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?			X	
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?			X	

a-b. Most mining in Butte County focuses on sand and gravel, with other mineral resources being extracted in smaller quantities. Most gravel and sand is mined from the gravel belt, which runs north to south down the middle of the County. Gravel is also present along the Sacramento River; however the area is no longer mined due to environmental constraints and the high water table. A more minor mineral resource in Butte County is gold, mined with placer mining, a method of removing surface gold bearing gravels and washing or chemically



extracting the gold ore from the gravel. There are no permitted placer mines in Butte County; however the Department of Fish and Wildlife regulates suction dredge mining in the county's creeks and rivers. Drift mining for buried placer deposits and lode mining are also utilized for gold extraction. Lode gold mines in Butte County include the Blue Lead, Ohio Dix, and Carr mines (Butte County General Plan 2030, Conservation and Open Space Element). The location of the buried placer deposits are throughout the county and are not easily identified.

The Surface Mining and Reclamation Act of 1975 (SMARA) requires all cities and counties to incorporate mapped designations, approved by the State Mining and Geology Board, into their General Plans. This includes lands categorized as Mineral Resource Zones (MRZs), with the most significant being land designated as mineral resources that are of regional or statewide importance. These must be recognized and have established policies and programs for their conservation and development in the local General Plan. While the State Geologist has not yet mapped the mineral resources in Butte County, Martin Marietta Materials Table Mountain Quarry, an active basalt mine, near Oroville, was petitioned for classification. Part of the 320 acres of land, has been classified as a mineral resource of regional or statewide significance. Additionally, a portion of M&T Chico Ranch was classified as a mineral resource of regional or statewide significance (Butte County General Plan 2030, Conservation and Open Space Element). While this site is a proposed mining site, the proposal was not approved and is not currently being considered for mining.

While these resources exist in the 2016 RTP-SCS plan area, their use would not be affected by implementation of the 2016 RTP-SCS. The 2016 RTP-SCS would not alter any land use designations and there would be no loss of availability of a known or important mineral resource as a result of the 2016 RTP-SCS. Impacts to mineral resources would be less than significant.

<i>XII. NOISE</i> - <i>Would the project result in:</i>	Impact to be Addressed in the EIR	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
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?	X			
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	X			
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	X			
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	X			
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 expose people residing or working in the project area to excessive noise levels?	X			
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 levels?	X			



a-f. Implementation of the 2016 RTP-SCS and its associated transportation projects have the potential to increase noise generating uses and vehicular traffic in addition to possibly locating noise generating uses near noise sensitive land uses. Short-term noise level increases could arise from project construction, while long-term increases may be associated with changes in traffic patterns. Additionally, projects and noise increases could be associated with airports and airstrips in Butte County. These issues will be further evaluated in the EIR.

<i>XIII. POPULATION AND HOUSING --</i> <i>Would the project:</i>	Impact to be Addressed in the EIR	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) 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)?			X	
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?			X	
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?			X	

a-c. The proposed 2016 RTP-SCS would not cause an increase in population beyond anticipated growth in the region. The improvements associated with the 2016 RTP-SCS are designed to support the transportation needs of the growing population. All transportation improvement projects and land uses in the 2016 RTP-SCS are anticipated by the General Plans of the applicable local jurisdictions in Butte County. Projects in the 2016 RTP-SCS would not change housing patterns nor remove or add housing. No people would be displaced due to the projects and replacement housing would not be necessary. Therefore, impacts from the 2016 RTP-SCS on Population and Housing would be less than significant.

<i>XIV. PUBLIC SERVICES -</i> <i>Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:</i>	Impact to be Addressed in the EIR	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Fire protection?			X	
b) Police protection?			X	
c) Schools?			X	
d) Parks?			X	
e) Other public facilities?			X	

a - e. The transportation projects associated with the 2016 RTP-SCS would not generate demand for police or fire services, schools, parks, or other facilities. The 2016 RTP-SCS is designed to improve circulation and movement in Butte County which would facilitate police and fire movement throughout the County. The 2016 RTP-SCS would not induce new population growth beyond growth already anticipated by the General Plans of the County and five cities in



Butte County and therefore would not increase the use of police, fire, schools, parks, or other public services. Planned transportation improvements would be expected to improve service response times. The impact of the 2016 RTP-SCS on public services would be less than significant.

XV. RECREATION -	Impact to be Addressed in the EIR	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
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?			X	
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?			X	

a-b. The 2016 RTP-SCS and its associated transportation projects would not generate demand for park land, as the projects would not generate population growth. Future infill and development projects may increase demand on park land, however this demand would not exceed that which is already anticipated by the respective areas in which these projects would be located. Impacts to recreation would be less than significant.

XVI. TRANSPORTATION/TRAFFIC - Would the project:	Impact to be Addressed in the EIR	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) 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?	X			
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?	X			
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?	X			
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?	X			
e) Result in inadequate emergency access?	X			
f) Conflict with adopted policies, plans, or programs regarding public transit, bikeways, or pedestrian facilities, or otherwise substantially decrease the performance or safety of such facilities?	X			



a-f. Although the transportation projects envisioned by the 2016 RTP-SCS are intended to reduce traffic congestion in the region, the projects may nevertheless result in increased volumes of traffic on certain roads, and/or alter existing traffic patterns. Either individually or cumulatively, these projects have the potential to exceed a level of service standard for designated roads or highways which may conflict with an applicable plan, ordinance, policy or congestion management program. Transportation projects would also have the potential to result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in safety risks. The implementation of individual projects listed in the 2016 RTP-SCS may result in an increase in hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). These projects would also have the potential to result in inadequate emergency access, as well as conflict with adopted policies, plans, or programs supporting alternative transportation. These issues will be discussed in the EIR.

<i>XVII. UTILITIES AND SERVICE SYSTEMS</i> -Would the project:	Impact to be Addressed in the EIR	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?			X	
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?			X	
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?			X	
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?			X	
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?			X	
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?			X	
g). Comply with federal, state, and local statutes and regulations related to solid waste?			X	

a-c, e-g. (Stormwater drainage, wastewater facilities) The 2016 RTP-SCS consists of transportation improvements and modifications to enhance maneuverability throughout Butte County. These improvements would not exceed wastewater treatment requirements, require construction or expansion of wastewater treatment facilities, require a determination by the wastewater treatment provider, or conflict with regulations pertaining to solid waste. Construction activities may generate solid waste that would need to be disposed of at a local landfill. However, the waste generation would be temporary and reduced by compliance with the California Green Building Code, which requires that construction operations recycle a minimum of 50% of waste generation. Future infill projects envisioned by the land use scenario in the 2016 RTP-SCS may need to connect to sewer services, increase demand for wastewater



treatment, or require the upgrading of sewers. These would be addressed at the time of the projects by the local agency. These projects may also generate additional solid waste that would need disposed of at a local landfill.

However, these additional demands would not exceed the anticipated demand from current growth anticipated in the General Plan of the County and each of the five cities within the County. The 2016 RTP-SCS would not result in increased growth above what is already anticipated. Therefore, impacts to public utilities would be less than significant.

d. Sixty-nine percent of Butte County's water supply is from surface water from the Sacramento River watershed and 31% is groundwater, with the majority of water usage, 71%, being used for agricultural purposes (Butte County General Plan 2030, Water Resources Element). Primary surface waterways include the Feather River and its several tributaries, as well as Butte Creek and Big Chico Creek. Reserves of groundwater are found in the Sacramento Valley and the mountains areas to the east and north.

Implementation of proposed transportation improvements and future projects facilitated by land use scenario envisioned in the 2016 RTP-SCS would result in both short-term and long-term impacts to the County's water supply. Due to the programmatic nature of the 2016 RTP-SCS, a precise, project-level analysis of the specific impacts of individual transportation projects on water supply is not possible at this time. However, the general nature of water supply impacts is described below.

During grading and general construction activities, water would be needed to suppress fugitive dust generated by construction equipment. Water used during construction could be drawn from waterways such as the Feather River, Butte Creek, or Big Chico Creek, supplies of which would potentially be in deficit during drought years. Because this could contribute further to any potential water supply deficit, the short-term water impact of the proposed plan is considered potentially significant.

The majority of transportation improvements involve modification of existing infrastructure. As such, a substantial increase in landscaped areas, and thereby increase in water demand, is not anticipated for these projects. Projects involving construction of new bike and pedestrian paths could include landscaping, which may require water supply. Irrigation of landscaping associated with these projects, and other projects in the proposed RTP, would generate demand for water. In addition, future infill development projects or development along key corridors constructed in accordance with the 2016 RTP's preferred growth scenario (as outlined in the SCS Chapter of the RTP) would require water supply. The precise size and type of these projects is not known at this time; however, such development would require potable water.

Major 2016 RTP projects, 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. This reduction in groundwater recharge could occur because the impermeable surfaces associated with the proposed improvements would increase surface water runoff at the expense of natural infiltration. The magnitude of impacts associated with individual 2016 RTP projects cannot be accurately determined at this programmatic stage of analysis. Nevertheless, given the potential for water supply deficit of the County's

hydrological resources during drought years, the reduction in groundwater recharge is considered to be potentially significant.

BCAG recommends that individual project lead agencies implement the following mitigation measures for applicable transportation projects that result in hydrology and water quality impacts. Project-specific environmental documents prepared by the lead agency may adjust these mitigation measures as necessary to respond to site-specific conditions. Incorporation of Mitigation Measures UTI-1(a) through UTI-1(e) would reduce impacts related to water supply to a less than significant level.

- UTI-1(a)** The individual lead agency of a 2016 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.
- UTI -1(b)** The individual lead agency of a 2016 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.
- UTI -1(c)** The individual lead agency of a 2016 RTP-SCS project shall ensure that, if feasible, landscaping associated with proposed improvements is maintained using reclaimed water.
- UTI -1(d)** The individual lead agency of a 2016 RTP-SCS project shall ensure that porous pavement materials are utilized, where feasible, to allow for groundwater percolation.
- UTI -1(e)** The individual lead agency of a 2016 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.

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE	Impact to be Addressed in the EIR	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate	X			



XVIII. MANDATORY FINDINGS OF SIGNIFICANCE	Impact to be Addressed in the EIR	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
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)?	X			
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	X			

a. The 2016 RTP-SCS is a guide for the development of transportation improvements and forecasts land use patterns within the plan area consistent with the existing local General Plan policies and land use designations as specified by the local agencies. The 2016 RTP-SCS also includes policies that would reduce or prevent impacts to the environment. Nevertheless, the 2016 RTP-SCS may generate impacts in the following areas: Aesthetics, Agricultural Resources, Air Quality, Biological Resources, Cultural Resources, Geology and Soils, Greenhouse Gases, Hydrology and Water Quality, Land Use and Planning, Noise, and/or Transportation and Traffic. These impact areas will be further evaluated in the EIR and any feasible mitigation measures will be identified in order to avoid and/or reduce any significant impacts to the environment.

b. The cumulative impacts of the proposed 2016 RTP-SCS could be cumulatively considerable. In combination with other plans, projects proposed by the 2016 RTP-SCS have the potential to have an adverse impact. The cumulative effects of the project will be further evaluated in the EIR.

c. The proposed 2016 RTP-SCS could potentially cause adverse effects on human beings. Potential impacts from the 2016 RTP-SCS include Noise, Air Quality, Aesthetics, Cultural Resources, and Agricultural Resources. Potential direct and indirect impacts to humans will be further discussed and evaluated in the EIR and mitigation measures shall be identified to avoid or reduce any potential impacts.

REFERENCES

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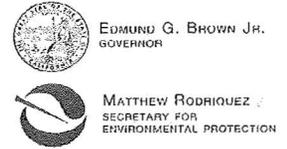
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Central Valley Regional Water Quality Control Board

20 October 2015

Mr. Brian Lasagna
Butte County Association of Governments
2580 Sierra Sunrise Terrace, Suite 100
Chico, CA 95928

COMMENTS ON THE NOTICE OF PREPARATION FOR PROPOSED 2016 REGIONAL TRANSPORTATION PLAN & SUSTAINABLE COMMUNITIES STRATEGY PROJECT, BUTTE COUNTY

The Central Valley Regional Water Quality Control Board (Central Valley Water Board) is a responsible agency for this project, as defined by the California Environmental Quality Act (CEQA). On 1 October 2015, we received your request for comments on the Notice of Preparation for the 2016 Regional Transportation Plan & Sustainable Communities Strategy Project.

The Butte County Association of Governments (BCAG), as both the federally-designated metropolitan planning organization (MPO) and the State-designated regional transportation planning agency (RTPA) for Butte County, is required by both federal and State law to prepare a long-range (at least 20 year) 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 Regional Transportation Planning Agencies (RTPA) and Metropolitan Planning Organizations (MPO) to prepare long-range transportation plans to: 1) Establish regional goals, 2) identify future and present needs, deficiencies and constraints, 3) analyze potential solutions, 4) estimate available funding, and 5) propose investments. State Statutes require that the RTP serve as the foundation for the short-range transportation planning documents: the Regional and Federal Transportation Improvement Programs (RTIP and FTIP). BCAG has the responsibility to prepare a Sustainable Communities Strategy (SCS) as part of the RTP, pursuant to the requirements of the California Senate Bill 375 as adopted in 2008.

Under Federal and State law, BCAG must update its RTP every four years. The RTP-SCS covers a 24 year period from 2016 to 2040 and is an update of the 2012 Metropolitan Transportation Plan (MTP) and Sustainable Communities Strategy (SCS). In 2010, the California ARB set GHG reduction targets for the BCAG region from on-road light-duty trucks and passenger vehicles as a 1% increase from 2005 emissions levels by 2020 and a 1% increase from 2005 emissions levels by 2035 (California Air Resources Board). The reduction targets are currently proposed to be updated in 2016. In addition the RTP-SCS EIR will lay the groundwork for the streamlined review of qualifying development projects within Transit Priority Areas. Qualifying projects that meet statutory criteria and are consistent with the RTP-SCS are eligible for streamlined environmental review pursuant CEQA.

Based on our review of the information submitted for the proposed project, we have the following comments:

Clean Water Act (CWA) Section 401, Water Quality Certification

The Central Valley Water Board has regulatory authority over wetlands and waterways under both the Federal Clean Water Act (CWA) and the California Water Code, Division 7 (CWC). Discharge of dredged or fill material to waters of the United States requires a CWA Section 401 Water Quality Certification from the Central Valley Water Board. Typical activities include any modifications to these waters, such as stream crossings, stream bank modifications, filling of wetlands, etc. 401 Certifications are issued in combination with CWA Section 404 Permits issued by the Army Corps of Engineers. The proposed project must be evaluated for the presence of jurisdictional waters, including wetlands and other waters of the State. Steps must be taken to first avoid and minimize impacts to these waters, and then mitigate for unavoidable impacts. Both the Section 404 Permit and Section 401 Water Quality Certification must be obtained prior to site disturbance.

Isolated wetlands and other waters not covered by the Federal Clean Water Act

Some wetlands and other waters are considered "geographically isolated" from navigable waters and are not within the jurisdiction of the Clean Water Act. (e.g., isolated wetlands, vernal pools, or stream banks above the ordinary high water mark). Discharge of dredged or fill material to these waters may require either individual or general waste discharge requirements from the Central Valley Water Board. If the U.S. Army Corps of Engineers determine that isolated wetlands or other waters exist at the project site, and the project impacts or has potential to impact these non-jurisdictional waters, a Report of Waste Discharge and filing fee must be submitted to the Central Valley Water Board. The Central Valley Water Board will consider the information provided and either issue or waive Waste Discharge Requirements. Failure to obtain waste discharge requirements or a waiver may result in enforcement action.

Any person discharging dredge or fill materials to waters of the State must file a report of waste discharge pursuant to Sections 13376 and 13260 of the CWC. Both the requirements to submit a report of waste discharge and apply for a Water Quality Certification may be met using the same application form, found at:

http://www.waterboards.ca.gov/centralvalley/water_issues/water_quality_certification/wqc_application.pdf

General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (CGP)

Construction activity, including demolition, resulting in a land disturbance of one acre or more must obtain coverage under the CGP. The 2016 Regional Transportation Plan & Sustainable Communities Strategy Project must be conditioned to implement storm water pollution controls during construction and post-construction as required by the CGP. To apply for coverage under the CGP the property owner must submit Permit Registration Documents electronically prior to construction. Detailed information on the CGP can be found on the State Water Board website: http://www.waterboards.ca.gov/water_issues/programs/stormwater/gen_const.shtml

Post-Construction Storm Water Requirements

Studies have found the amount of impervious surface in a community is strongly correlated with the impacts on community's water quality. New development and redevelopment result in increased impervious surfaces in a community. Post-construction programs and design standards are most efficient when they involve (i) low impact design; (ii) source controls; and (iii) treatment controls. To comply with Phase II Municipal Storm Water Permit requirements the

2016 Regional Transportation Plan & Sustainable Communities Strategy Project

City of Oroville, City of Chico, Town of Paradise, County of Butte must ensure that new developments comply with specific design strategies and standards to provide source and treatment controls to minimize the short and long-term impacts on receiving water quality. The design standards include minimum sizing criteria for treatment controls and establish maintenance requirements. The proposed project must be conditioned to comply with post construction standards adopted by the City of Oroville, City of Chico, Town of Paradise, County of Butte in compliance with their Phase II Municipal Storm Water Permit.

If you have any questions or comments regarding this matter please contact me at (530) 224-4784 or by email at Scott.Zaitz@waterboards.ca.gov.



Scott A. Zaitz, R.E.H.S.
Environmental Scientist
Storm Water & Water Quality Certification Unit

SAZ: wrb:sjs

cc w/o

enclosures: Ms. Leah Fisher, U.S. Army Corp of Engineers, Sacramento
Department of Fish and Wildlife, Region 2, Rancho Cordova

From: Laslo Karen [<mailto:karenlaslo@gmail.com>]
Sent: Thursday, October 15, 2015 12:42 PM
To: Brian Lasagna <BLasagna@bcag.org>
Subject: MPT/SCS - my comments

Mr. Lasagna,

I'm writing to add my comments to the DEI Report for the MPT/SCD. Specifically, I wish to comment on Chapters 7 and 8, the Transit and Non-Motorized Transportation Plan.

Chapter 7 Comments: I'm a healthy, active Senior Citizen. I live in Chico and I ride my bicycle just about everywhere I need or want to go. It's an easy way to get around town without polluting the environment. However, as I've told Chico City Manager, the roads and "bike lanes" in Chico are sorely lacking in convenience, safety and numbers. If we, as a county community want to get people to use alternative modes of transportation, then we need to create safe, clearly defined bike routes through-out Butte County. My ideal would be to have smooth bike roads, totally separate from car roads, free of pot-holes, with lights for night transportation. I know we already have some bike routes around the county but I think they're mainly for recreational biking. I'm more interested in having safe and convenient bike roads for people like me who want to ride a bike instead of driving a car.

Chapter 8 Comments: I know we have a bus service in Butte County but it's not convenient at all because it only runs every hour. In downtown Portland, Oregon the buses run every 15 minutes. My preference would be to add more lines to the bus routes and to increase the running times to every 15 minutes. If the running times were increased I know more people would ride the bus, including myself. But as it stands now, I see only a few people on the buses. In summary, when I get really old and can't ride my bike or drive my car, I'd like to be able to take a bus to where ever I need to go in Chico or Butte County, but the bus service would have to be more convenient then it is now.

Thank you for considering my comments.

Sincerely,

Karen Laslo
468 E. Sacramento Ave.
Chico, CA 95926
896-1168



Appendix B
Biological Resources

Wildlife Habitat Descriptions within Butte County

Tree Dominated Habitats

Subalpine Conifer habitat type is found in the extreme northeast corner of Butte County. This habitat type is composed of open structure evergreen forests at high elevations and typically occupies extremely harsh environments. Mountain hemlock (*Tsuga mertensiana*), western white pine (*Pinus monticola*), lodgepole pine (*Pinus contorta*), and whitebark pine (*Pinus albicaulis*) are tree species that typify this habitat type. Soils are generally thin and of low quality coarse sand, gravel, volcanic debris, and rocks derived from decomposing parent material. Most stands of subalpine conifer are on dry, well-drained soils. The climate is especially challenging. Precipitation averages 30 to 50 inches, heavy snow cover is usual. Mean summer high temperatures probably do not exceed 65 degrees Fahrenheit, and killing frosts are possible during all months. Intense winds are also characteristic of this habitat. These harsh conditions typically support fewer species than any other major forest type in the State.

Red Fir habitat type is also found in the extreme northeast corner of Butte County and occurs from approximately 6,000 to 9,000 feet in elevation. This habitat type is typified by even-aged groups of red fir (*Abies magnifica*) trees. Red Fir habitat is found on frigid soils of very wet sites. Annual precipitation ranges from 40 to 50 inches per year, primarily as snow that forms packs up to 15 feet in winter. Summers are dry, limiting tree growth to seasonally available soil moisture. Red fir habitat provides food and cover to many species and is considered a very important habitat for goshawk (*Accipiter gentilis*), blue grouse (*Dendragapus fuliginosus*), great gray owl (*Strix nebulosa*), red fox (*Vulpes vulpes*), American marten (*Martes americana*), and wolverine (*Gulo gulo*).

Lodgepole Pine is another habitat type found in the extreme northeast corner of Butte County and occurs above 5,900 feet in elevation. It is typically found above the red fir habitat type and below other subalpine conifer habitats. Lodgepole pine habitat typically forms open stands of similarly sized trees with a sparse understory. Lodgepole pine is commonly associated with meadows, and it typically occupies areas with seasonally wet soils. Annual precipitation in the lodgepole pine zone averages from 30 to 40 inches annually, mostly as snow. The growing season is short, averaging 2 to 3 months. Lodgepole pine habitat generally has low species richness.

Sierran Mixed Conifer habitat is found on the eastern edge of Butte County in the higher elevations. It is typified by white fir (*Abies concolor*), Douglas fir (*Pseudotsuga menziesii*), ponderosa pine (*Pinus ponderosa*), sugar pine (*Pinus lambertiana*), incense cedar (*Calocedrus decurrens*), and California black oak (*Quercus kelloggii*). This habitat type is found in varied soils, ranging from deep to shallow. Serpentine soils, found primarily in the northern mixed conifer zone, support a number of endemic plants. Fissures and cracks in granitic parent material often support forest growth, even where soil development is shallow. Temperatures range from 40 to 96 degrees Fahrenheit in summer and 10 to 60 degrees Fahrenheit in winter, and decrease with elevation. Precipitation ranges from 30 to 90 inches per year, from October to May, with increasing snowfall as elevation increases. Sierran Mixed Conifer is extremely important habitat for many sensitive species such as California spotted owl (*Strix occidentalis occidentalis*), bald eagle (*Haliaeetus leucocephalus*), peregrine falcon (*Falco peregrinus*), fisher (*Martes pennanti*), and

American marten.

White Fir habitat type is found at mid to high elevations in northern and northeastern Butte County. This habitat type is fairly monotypic, and is composed of an average of 80 percent white fir trees. Soils are coarse textured, well-drained, have poorly developed profiles, are often rocky, and are cold, with mean annual temperatures from 32 to 50 degrees Fahrenheit. Cooler north- and east-facing slopes are the most common sites where white fir habitat occurs throughout the State. Precipitation is between 30 to 70 inches, mostly in the form of snow. Almost all precipitation falls between October and May. Wildlife habitat quality increases, mostly in the form of snag trees, as the maturity of these forests increases. White fir is the preferred tree species for many forest-dwelling insect-gleaning songbirds.

Douglas Fir habitat type is found in eastern Butte County in the mid to higher elevations. Douglas fir, tanoak (*Notholithocarpus densiflorus*), and ponderosa pine typify the canopy of this habitat type. The Douglas Fir habitat type is typically found in areas with hot, dry summers and cool, mild, wet winters. Temperatures range from 57 to 72 degrees Fahrenheit in the summer to 32 to 46 degrees Fahrenheit in the winter. Annual precipitation varies from 24 to 27 inches, generally less than 15 percent falling during summer. Topography is characterized by rugged, deeply dissected terrain and steep slopes, especially toward the south. The Douglas Fir habitat type supports a wide variety of wildlife species, many considered sensitive, threatened, or endangered.

Jeffrey Pine habitat type occurs in the extreme northeast corner of Butte County at high elevations. Tree species typically found in the Jeffrey Pine habitat type are Jeffrey pine (*Pinus jeffreyi*), ponderosa pine, and sugar pine. The tolerance of Jeffrey pine to low temperatures allows the habitat type to occupy the borders of topographic frost pockets and high cold ridges. It is commonly found on soils developed from granite and lava flows, but can also develop as a type on ultramafic soils. Jeffrey pine is not restricted by aspect or slope. Jeffrey Pine habitat is intermediate in wildlife species richness between warmer forest at lower elevations, and colder forests at higher elevations. Jeffrey pine seeds are included in the diet of more wildlife species than any other genus besides oak.

Ponderosa Pine habitat type is found in eastern Butte County from mid to higher elevations. The canopy is typified by ponderosa pine, Jeffrey pine, and Douglas fir. Ponderosa Pine habitat type is found on all aspects, depending on soils and location within the local elevation range. Ponderosa Pine stands occur above Valley Oak Woodland, Blue Oak Woodland, Blue Oak-Foothill Pine, and below Mixed Conifer habitat types. Mean annual temperature is generally less than 55 degrees Fahrenheit and precipitation is greater than 33 inches. Less than one-third of the precipitation is snowfall. The ponderosa pine habitat type sometimes is a transitional or migratory habitat for deer and can be extremely important to deer nutrition in migration holding areas.

Eastside Pine habitat type is found at mid to high elevations in northern and northeastern Butte County. The canopy is typified by short to moderate height ponderosa pine, Jeffrey pine, and white fir. It occurs on coarse, well-drained basaltic soils, in a drier, colder setting than the Ponderosa Pine habitat type. Eastside pine occupies an intermediate, less harsh environment than Jeffrey pine, which occurs above and intermingles with eastside pine. Large pine branches

form good nesting substrates for large raptors. Eastside pine stands often form important migratory and winter range for deer. Higher elevation stands with grassy understories near water may be extremely important deer fawning areas and migratory holding areas.

Juniper habitat type occurs at mid elevations in the foothills of Butte County. The canopy of the juniper habitat type is typified by western juniper (*Juniperus occidentalis*), white fir, and Jeffrey pine. Juniper habitat type occurs on ridges, slopes, alluvial fans, and valley bottoms on soils that are porous, rocky, coarse, sandy, or silty, and often very shallow. Juniper berries are an important food source for wintering birds.

Aspen habitat type occurs at high elevations near seeps, streams, and meadows on eastern slopes in northeastern Butte County. The aspen habitat type is dominated by quaking aspens (*Populus tremuloides*), with subdominant species such as willow species (*Salix* spp.), and black cottonwood (*Populus trichocarpa*). A high water table during the early part of the growing season is required, and their presence is an indicator of moist conditions. Sites with permanent high water tables are occupied by willows, with which aspens may form ecotones. Soils range from shallow stony soils and loamy sands, to heavy clays. Best development occurs on well-drained sandy to silt loam soils. The climate has rigorous long winters with heavy snows and very cold temperatures. Mesic sites produce large numbers of insects that are a large food source of many migratory birds. Meadows associated with the Aspen habitat type provide important deer fawning areas.

Closed-Cone Pine-Cypress habitat type occurs in the extreme southeast corner of Butte County at mid to high elevations. More specifically, this habitat type occurs southeast of Lake Oroville. Macnab's cypress (*Cupressus macnabiana*) occurs in low abundance in this habitat type when found in Butte County. This habitat type is dominated by pines such as knobcone pine (*Pinus attenuata*). It often occurs as "arboreal islands" within a matrix of chaparral or Montane Hardwood-Conifer or Mixed Conifer habitats. This habitat type is typically found on sites that are more rocky and infertile than the surrounding soils. Many stands are found on serpentine soils. Although, typically found at low elevations, due to the coastal distribution of much of this habitat type, interior stands may be found at elevations up to 6550 feet. Landforms are gentle to steep slopes where stands occur in interior California. Numerous wildlife species use this habitat type for feed and cover.

Montane Hardwood-Conifer habitat occurs over eastern Butte County and some of the western portions of northern Butte County. The closed canopy of this habitat type is typified by ponderosa pine, incense cedar, and California black oak. It generally occurs on coarse, well drained mesic soils, in mountainous terrain with narrow valleys. Slopes average approximately 57 percent with all aspects encountered. Winters are cool and wet; summers are hot and dry. Northern California Montane Hardwood-Conifer sites have less rainfall and fog than Redwood or Mixed Conifer habitats. Average rainfall is 25 to 65 inches, with some fog. The Montane Hardwood-Conifer habitat type provides valuable wildlife habitat for cavity nesting birds, as well as an abundant food source from masting hardwoods.

Montane Hardwood habitat occurs over eastern Butte County and some of the western portions of northern Butte County. The canopy of this habitat type is dominated by canyon live oak (*Quercus chrysolepis*), California black oak, and Oregon white oak (*Quercus garryana*). It is

found on a wide range of slopes, especially those that are moderate to steep. Soils are for the most part rocky, alluvial, coarse textured, poorly developed, and well drained. Soil depth ranges from shallow to deep. Summer temperatures vary between 68 and 77 degrees Fahrenheit and in winter vary from 37 to 45 degrees Fahrenheit. Animal species characteristic of the Montane Hardwood habitat include disseminators of acorns, such as the acorn woodpecker (*Melanerpes formicivorus*), and other species that utilize acorns as a major food source (i.e. dusky-footed woodrat (*Neotoma fuscipes*), black bear (*Ursus americanus*), and mule deer (*Odocoileus hemionus*)). Many species of amphibians and reptiles are found on the forest floor in Montane Hardwood habitat.

Blue Oak Woodland habitat type occurs in the foothills of Butte County. The canopy of this habitat type possesses a scattered overstory dominated by blue oak (*Quercus douglasii*), interior live oak (*Quercus wislizeni*), and California buckeye (*Aesculus californica*). It is usually associated with shallow, rocky, infertile, well-drained soils from a variety of parent materials. The climate is Mediterranean, with mild wet winters and hot dry summers. Average annual precipitation varies from 20 to 40 inches over most of the range, although extremes are noted from 10 to 60 inches. Mean temperatures range from 75 to 96 degrees Fahrenheit in summer and 29 to 42 degrees Fahrenheit in winter. Blue Oak Woodland habitat is important for cavity nesting birds, as well as the many species that forage on the acorns of these trees.

Valley Oak Woodland habitat type occurs in the western portion of Butte County in low elevations. This habitat type occurs in a wide range of physiographic settings but is best developed on deep, well-drained alluvial soils, usually in valley bottoms. Valley oak (*Quercus lobata*) trees dominate the canopy of this habitat type. Other trees associated with the Valley Oak Woodland habitat in the Central Valley include California sycamore (*Platanus racemosa*), interior live oak, and blue oak. Most large, healthy valley oaks are probably rooted down to permanent water supplies. Valley Oak Woodlands are associated with a Mediterranean climate, with mild, wet winters and hot, dry summers. These woodlands provide food and cover for many species of wildlife.

Blue Oak-Foothill Pine habitat type occurs in the mid elevation foothills of Butte County. This habitat type is typically diverse in structure both vertically and horizontally. The canopy is typically composed of blue oak, foothill pine, and interior live oak. Blue Oak-Foothill Pine is associated with a Mediterranean climate with hot, dry summers and cool, wet winters. Most precipitation falls as rain from November through April, averaging 20 to 40 inches within the primary range of blue oak. The frost-free growing season ranges from 150 to 300 days, with winter temperatures averaging 30 degrees Fahrenheit and summer temperatures averaging 90 degrees Fahrenheit. Soils are from a variety of generally well-drained parent materials, ranging from gravelly loam to stony clay loam, with soils commonly rich in rock fragments. This habitat type is used by a large variety of wildlife species, although no species is totally dependent on it for breeding, feeding, or cover.

Eucalyptus habitat type occurs in low elevations of western Butte County. Both blue gum eucalyptus (*Eucalyptus globulus*) and red gum eucalyptus (*Eucalyptus camaldulensis*) have been extensively planted throughout the state since their introduction in 1856 with large-scale planting operations beginning in 1870. As such, they are found in locations with highly variable site characteristics. Generally, they are found on relatively flat or gently rolling terrain,

occasionally in the foothills. Climatic conditions are typically referred to as Mediterranean, characterized by hot, dry summers and cool, mild winters. Precipitation ranges from approximately 12 to 24 inches. Eucalyptus demonstrates the ability to withstand many temperature conditions, with the exception of prolonged cold or freezing weather. Eucalyptus trees are important as roosts, perches, and nest sites for a number of bird species, particularly raptors. Hummingbirds use the nectaries of eucalyptus as a significant food source.

Montane Riparian habitat type is found in high elevations of eastern Butte County. This habitat type is found associated with montane lakes, ponds, seeps, bogs and meadows as well as rivers, streams and springs. Water may be permanent or ephemeral. The canopy is dominated by black cottonwood, bigleaf maple (*Acer macrophyllum*), and white alder (*Alnus rhombifolia*). The growing season extends from spring until late fall, becoming shorter at higher elevations. Most tree species flower in early spring before leafing out. Riparian habitats have exceptionally high value for many wildlife species by providing water, thermal cover, migration corridors, and diverse nesting and feeding opportunities.

Valley-Foothill Riparian habitat type occurs in the low elevation of western Butte County. The canopy of this habitat is typified by cottonwood species, sycamore, and valley oak. This habitat type is found in valleys bordered by sloping alluvial fans, slightly dissected terraces, and lower foothills. They are generally associated with low velocity flows, flood plains, and gentle topography. Valleys provide deep alluvial soils and a high water table. The substrate is coarse, gravelly or rocky soils more or less permanently moist, but probably well aerated. Frost and short periods of freezing occur in winter (200 to 350 frost-free days). This habitat is characterized by hot, dry summers, mild and wet winters. Temperatures range from 75 to 102 degrees Fahrenheit in the summer to 29 to 44 degrees Fahrenheit in the winter. Average precipitation ranges from 6 to 30 inches, with little or no snow. Valley-Foothill Riparian habitat type provides significant sources of food, water, migration and dispersal corridors, and escape, nesting, and thermal cover for an abundance of wildlife.

Shrub Dominated Habitats

Low Sage habitat type occurs in the high elevations of north and northeastern Butte County. The shrub layer is relatively spread out and consists of low sagebrush (*Artemisia arbuscula*), black sagebrush (*Artemisia nova*), and rubber rabbitbrush (*Ericameria nauseosa*). The habitat occurs in areas with cold, harsh winters and hot, dry summers. Precipitation generally ranges from 8 to 18 inches, falling mostly as snow from December through March. Stands of low sagebrush are usually found on shallow soils with impaired drainage in the transition zone between the wetter bottom and open timber on the mountainsides. The type also occurs on terraces with hardpan or heavy clay soils. In mosaics formed with bitterbrush, low sagebrush occurs on harsher sites with shallow, well-drained soils, and bitterbrush occupies areas with deeper soils. The clay-rich soils yield much of their snowmelt as runoff, making them very important watershed areas. Low Sage habitat tends to lose its snow cover earlier in spring than surrounding habitats; thus it provides an especially important source of new, green forage for mule deer.

Bitterbrush habitat type occurs in the extreme northeast corner of Butte County at high elevation. The habitat type is dominated by bitterbrush (*Purshia tridentata*), big sagebrush

(*Artemisia tridentata*), and rubber rabbitbrush. It is often found with ponderosa or Jeffrey pine, lodgepole pine, or western juniper. It is found on flats and slopes with deep, well-drained, rapidly permeable soils having a slightly acidic reaction (pH 6.0 to 7.0). Precipitation in Bitterbrush habitat types varies from about 12 to 35 inches and is in the form of mostly snow in the winter. Summers are warm and winters are very cold in Bitterbrush habitat. Basins and lowlands that have restricted drainage or alkali give way to low sagebrush, silver sagebrush or one of the more moisture tolerant species. Bitterbrush is highly digestible and its leaves and twigs are favored by mule deer. Many bird species will either eat the seeds or the insects that are commonly feeding on bitterbrush.

Sagebrush habitat type occurs at middle and high elevations in northern and northeastern Butte County. Sagebrush habitat type is typified by sagebrush species, rabbitbrush species, and horsebrush (*Tetradymia canescens*). At high elevations it intergrades with Ponderosa Pine and Aspen habitat types. This habitat type is important summer grounds for mule deer and is used by a wide variety of bird and mammal species.

Montane Chaparral habitat type is found from mid to high elevations in eastern Butte County. In the northern portion of the state, Montane Chaparral is found from 3000 to 9000 feet in elevation. Montane Chaparral can be found on shallow to deep soils, on all exposures, and from gentle to relatively steep slopes. Montane Chaparral is typified by ceanothus species (*Ceanothus* spp.), manzanita species (*Arctostaphylos* spp.), and bitter cherry (*Prunus emarginata*). It may dominate on more xeric sites, but occurs locally throughout the coniferous forest zone. Generally, climate is like that associated with the coniferous forest zone, cold winter temperatures with substantial precipitation. Summers are typically hot and dry. Rodents, deer, birds, and other herbivores often make extensive use of chaparral. It provides seeds, fruits, insects, protection from predators and climate, as well as singing, roosting and nesting sites.

Mixed Chaparral habitat type occurs at mid to high elevations in eastern Butte County. This habitat type is commonly comprised of scrub oak (*Quercus berberidifolia*), ceanothus species, and manzanita species. It occurs on all aspects, but at lower elevations it is generally found on north-facing slopes. Generally, it occurs on steep slopes and ridges with relatively thin, well-drained soils. Soils can be rocky, sandy, gravelly or heavy. The Mediterranean climate is characterized by cool, wet winters and hot, dry summers. Total rainfall is 15 to 25 inches with less than 20 percent falling during the summer. Wildlife management considerations usually focus on selecting alternative fire management treatments. This habitat type is similar to Chamise-Redshank Chaparral.

Chamise-Redshank Chaparral habitat type is found at mid to high elevations in eastern Butte County. Fire is the main component influencing habitat structure. This habitat type is found in a Mediterranean climate; rainfall is 15 to 25 inches, less than 20 percent of total precipitation falls in summer, and winters are mild. The predominant land forms are steep slopes and ridges. Chamise (*Adenostoma fasciculatum*) is the dominant species with redshank (*Percaria maculosa*), and Ceanothus species as the subdominant species. Chamise-dominated stands are most common on south- and west-facing slopes; redshank is found on all aspects. Soils are usually thin with little accumulation of organic material. Chamise may be a dominant shrub on some serpentine sites.

Herbaceous Dominated Habitats

Annual Grassland habitat type is found over the entirety of Butte County. It is typically dominated by wild oats (*Avena fatua*), soft chess (*Bromus hordeaceus*), and other brome species. This habitat type occurs mostly on flat plains to gently rolling foothills, often as the understory to valley oak woodlands. Climatic conditions are typically Mediterranean, with cool, wet winters and dry, hot summers. The length of the frost free season averages 250 to 300 days. Many wildlife species use Annual Grasslands for foraging, but some require special habitat features such as cliffs, caves, ponds, or habitats with woody plants for breeding, resting, and escape cover.

Perennial Grassland habitat type occurs over the entirety of Butte County. California oatgrass (*Danthonia californica*), Pacific hairgrass (*Deschampsia cespitosa*), and sweet vernalgrass (*Anthoxanthum odoratum*) are typical species found in Perennial Grassland. This habitat type typically occurs on ridges and south-facing slopes, alternating with forest and scrub in the valleys and on north-facing slopes. Historically, factors that have affected Perennial Grassland habitat include the introduction of non-native annual plant species, increased grazing pressure, elimination of frequent fires, and cultivation. Perennial Grassland habitats are most often found on Mollisols. Perennial grasslands are most productive in wetter and cooler conditions and provide optimal habitat for many species of wildlife.

Wet Meadow habitat type occurs in mid to high elevations in eastern Butte County. Dominant species in the Wet Meadow habitat type include sedge species (*Carex* spp.), rush species (*Juncus* spp.), and hairgrass species (*Deschampsia* spp.). This habitat type occurs where water is at or near the surface most of the growing season. Hydrologically, they occupy lotic, sunken concave, and hanging sites. They frequently occur on rather steep slopes, and downstream runoff is the main output flow. Surface flows, although constant, are usually no more than 0.4 inch deep. Various mammals, frogs, waterfowl, and blackbirds often use Wet Meadow habitat.

Fresh Emergent Wetland habitat type has the potential to occur over the entirety of Butte County. Fresh Emergent Wetland is characterized by erect, rooted herbaceous hydrophytes. Dominant vegetation is generally perennial monocots. This habitat type occurs on virtually all exposures and slopes, provided a basin or depression is saturated or at least periodically flooded. They are most common on level to gently rolling topography. They are found in various depressions or at the edge of rivers or lakes. Soils are predominantly silt and clay, although coarser sediments and organic material may be intermixed. In some areas organic soils (peat) may constitute the primary growth medium. Climatic conditions are highly variable and range from the extreme summer heat to winter temperatures well below freezing. Fresh Emergent Wetlands are among the most productive wildlife habitats in California. Fresh Emergent Wetlands function as a filtering and purifying system for much of the State's water.

Pastures habitat type is found in the valley, or western portion, of Butte County. Pastures often contain Bermuda grass (*Cynodon dactylon*), perennial ryegrass (*Festuca perennis*), and tall fescue (*Festuca arundinacea*). They are planted on flat and gently rolling terrain. Climate influences the length of growing season. For example, pastures at higher elevations, or in the north, have a shorter growing season. Pastures are used by a variety of wildlife depending

upon geographic area and types of adjacent habitats. Ground-nesting birds use pastures if adequate residual vegetation is present at the onset of the nesting season.

Aquatic Habitats

Riverine habitat type is found across Butte County wherever rivers and streams are found. Water moss (*Fontinalis antipyretica*), algae, and duckweed species (*Lemna* spp.) are often the dominant aquatic plants found in the Riverine habitat type. Riverine habitats are also found contiguous to Lacustrine and Fresh Emergent Wetland habitats. This habitat requires intermittent or continually running water generally originating at some elevated source, such as a spring or lake. Velocity generally declines at progressively lower altitudes, and the volume of water increases until the enlarged body of water finally becomes sluggish. Over this transition from a rapid, surging stream to a slow, sluggish river, water temperature and turbidity will tend to increase, dissolved oxygen will decrease and the bottom will change from rocky to muddy. Many sensitive, threatened, and endangered species of fish use Riverine habitats. Bird species extensively use the Riverine habitat type as well as mammals such as river otter (*Lontra canadensis*), mink (*Neovison vison*), muskrat (*Ondatra zibethicus*), and beaver (*Castor canadensis*).

Lacustrine habitat type is found across Butte County wherever there are inland depressions or dammed riverine channels containing standing water. Typical species found in the Lacustrine habitat type are plankton, duckweed, yellow pond-lily (*Nuphar lutea*), and American white water-lily (*Nymphaea odorata*). These habitats may occur in association with any terrestrial habitats, Riverine or Fresh Emergent Wetlands. They may vary from small ponds less than one hectare to large areas covering several square kilometers. Depth can vary from a few centimeters to hundreds of meters. Typical lacustrine habitats include permanently flooded lakes and reservoirs, intermittent lakes and ponds (including vernal pools) so shallow that rooted plants can grow over the bottom. Most permanent lacustrine systems support fish life; intermittent types usually do not. Many species of wildlife either congregate at Lacustrine habitats or spend most of their life at the water.

Developed Habitats

Dryland Grain Crops habitat type occurs in the lowlands of western Butte County. Cereal rye, barley, and wheat are typical crops farmed in the Dryland Grain Crops habitat type. They are often located on flat to gently rolling terrain. When flat terrain is put into crop production, it usually is leveled to facilitate irrigation. Rolling terrain is either dry farmed or irrigated by sprinklers. Soils often dictate the crops grown. Barley can grow on poor quality soils, such as, saline or alkaline soils. Climate also influences the types of crops grown. Grain crops have reduced wildlife habitat richness and diversity in these areas. Small mammals, some birds, and raptors will forage in these areas.

Irrigated Grain Crops habitat type occurs in the lowlands of western Butte County. Corn, dry beans, and safflower are typical crops farmed in the Irrigated Grain Crops habitat type. They are often located on flat to gently rolling terrain. When flat terrain is put into crop production, it usually is leveled to facilitate irrigation. Rolling terrain is either dry farmed or irrigated by sprinklers. Soils often dictate the crops grown. Corn requires better soils than barley, which can grow on poor quality soils, such as saline and alkaline soils. Rice and barley

can do well on clay soils not suitable for other crops. Leaching can remove contaminants in areas of high salt or alkali levels, making the soils highly productive. Climate also influences the types of crops grown. Irrigated grain and seed crops are established on the State's most fertile soils, which historically supported an abundance of wildlife unequalled in other sites. Croplands have greatly reduced the wildlife habitat richness and diversity in California. Small mammals, some birds, and raptors will forage in these areas.

Irrigated Hayfield habitat type occurs in the valley, or western portion of Butte County. It occurs in variable climates, from hot and dry, to cool and wet, to cold and snowy. Irrigated hayfield requires relatively flat topography that allows irrigation or water-spreading. Soils are highly variable but usually more than 1 meter (3.3 feet) deep and often of alluvial origin. Alfalfa and hay are crops typically farmed in the Irrigated Hayfield habitat type. This habitat provides a high quality seasonal resource for many birds, mammals, and snakes. However, where harvesting is constant, reproduction values for ground-nesting species are reduced to zero. If rotational cropland is adjacent, this habitat can provide cover during seasonal disking and planting on the rotated fields.

Irrigated Row and Field Crops habitat type occurs in the valley, or the western portion of Butte County. Tomatoes, cotton, and lettuce are typical crops farmed on the Irrigated Row and Field Crops habitat type. They are often located on flat to gently rolling terrain. When flat terrain is put into crop production, it usually is leveled to facilitate irrigation. Rolling terrain is either dry farmed or irrigated by sprinklers. Soils often dictate the crops grown. Cotton and sugar beets can grow on poor quality and alkaline soils. These soils are not suited for many row and field crops unless leaching of salts is practiced. Leaching can remove contaminants in areas of high salt or alkali levels, making the soils highly productive. Climate also influences the types of crops grown. Row and field crops are established on the State's most fertile soils, which historically supported an abundance of wildlife unequalled in other sites. Croplands have greatly reduced the wildlife habitat richness and diversity in California. Small mammals, some birds, and raptors will forage in these areas. Monoculture often results in very low species richness in this habitat type.

Rice habitat type occurs in the valley, or western portion of Butte County. It is usually located on flat terrain. When flat terrain is put into rice production, it usually is leveled to facilitate irrigation. Rice can grow on poor quality soils. Rice and barley can do well on clay soils not suitable for other crops. Leaching or flushing can remove contaminants in areas of high salt or alkali levels, making the soils more productive. This has occurred in the Sacramento Valley. Rice fields are supportive of many types of waterfowl, shorebirds, and raptors. They offer foraging opportunities in the form of waste grain and migration refugia.

Deciduous Orchard habitat type can be found on flat alluvial soils in the valley floors of Butte County, in rolling foothill areas, or on relatively steep slopes. Though some deciduous orchards are non-irrigated, most are irrigated. Some flat soils are flood irrigated, but many deciduous orchards are sprinkler irrigated. Large numbers of orchards are irrigated by drip or trickle irrigation systems. Most deciduous orchards are in valley or foothill areas, with a few, such as, apples and pears, up to 3000 feet in elevation. Typical crops farmed in this habitat type include almonds, walnuts, plums, and pistachios. Many birds and small mammals forage on the crops, but rarely nest due to human disturbance. Monoculture often results in very low species

richness in this habitat type.

Evergreen Orchard habitat type can be found on flat alluvial soils in the valley floors in southwest Butte County. All are irrigated. Some flat soils are flood irrigated, such as with dates, but most evergreen orchards are sprinkler irrigated. Large numbers of orchards are irrigated by drip or trickle irrigation systems. Most evergreen orchards are in valley or foothill areas. Except for olive, most evergreen orchard trees are not very frost tolerant. Oranges and lemons are crops typically farmed in the Evergreen Orchard habitat type. Many birds and small mammals forage on the crops, but rarely nest due to human disturbance. Monoculture often results in very low species richness in this habitat type.

Vineyard habitat type can be found on flat alluvial soils in the valley floors in western Butte County. All are irrigated. Most vineyards are sprinkler irrigated. Large numbers of vineyards are irrigated by drip or trickle irrigation systems. Most vineyards are in valley or foothill areas. Common crops farmed in vineyards are grapes, kiwi, and blackberries. Many birds and small mammals forage on the crops, but rarely nest due to human disturbances. Monoculture often results in very low species richness in this habitat type.

Urban habitat type is not limited to any particular physical setting. It occurs anywhere in Butte County there are cities. Three Urban categories relevant to wildlife are distinguished: downtown, urban residential, and suburbia. The heavily -developed downtown is usually at the center, followed by concentric zones of urban residential and suburbs. There is a progression outward of decreasing development and increasing vegetative cover. Species richness and diversity is extremely low in the inner cover. The structure of urban vegetation varies, with five types of vegetative structure defined: tree grove, street strip, shade tree/lawn, lawn, and shrub cover. A distinguishing feature of the urban wildlife habitat is the mixture of native and exotic species. Plants typical to an urban setting include ornamental trees, grass lawns, and hedges.

Non-vegetated Habitat

Barren habitat type is defined by the absence of vegetation. Any habitat with less than 2 percent (%) total vegetation cover by herbaceous, desert, or non-wildland species and less than 10% cover by tree or shrub species is defined this way. The physical settings for permanently barren habitat represent extreme environments for vegetation. An extremely hot or cold climate, a near-vertical slope, an impermeable substrate, constant disturbance by either human or natural forces, or a soil either lacking in organic matter or excessively saline can each contribute to a habitat being inhospitable to plants. Barren habitat type usually consists of rock, gravel, and soil and provides little to any wildlife habitat. Cliffs are important habitat for peregrine falcon eyries.

Summary of Salmon and Steelhead Trout Fisheries and Migratory Deer

Salmon and Steelhead Trout Fisheries

Salmon and steelhead trout are anadromous fish species that are present in the Bay Delta and San Joaquin and Sacramento River Basins. Anadromous fish are born in freshwater rivers and streams, and then migrate to the Pacific Ocean to grow and mature before returning to their place of origin to spawn. The San Joaquin and Sacramento River system produces most of the Chinook salmon (*Oncorhynchus tshawytscha*) and a large percentage of the steelhead trout (*Oncorhynchus mykiss*) in California.

Anadromous fish resources once flourished naturally in the San Joaquin and Sacramento River system, but as a result of habitat destruction from water storage/diversion projects, mining, sedimentation, and bank degradation, they are protected species under the Endangered Species Act. The San Joaquin and Sacramento River system has historically supported steelhead trout and four distinct spawning runs of Chinook salmon: fall, late fall, winter, and spring. The salmon runs have declined since the late 1800s and are now characterized as episodic. The Central Valley steelhead was federally listed as threatened in 2003. The fall/late fall-run salmon is a federal and state species of concern, and a candidate species for federal listing. The spring-run Chinook salmon population is listed as threatened by both federal and state agencies. Winter-run Chinook salmon population is listed as a federally and state endangered species. Populations of Central Valley Steelhead and Chinook salmon are supported by hatcheries within the San Joaquin and Sacramento River Basin.

Water remaining behind the dams by the start of the spawning run in October is often warmed by summer heat. Warm water and low water elevation are harmful to most coldwater anadromous fish species. Riparian vegetation is critical for the maintenance of high quality fish habitat. It provides cover, controls temperature, stabilizes stream banks, provides food, and buffers streams from erosion and impacts of adjacent land uses. Riparian vegetation also affects stream depth, current velocity, and substrate composition. The decline of riparian communities in California is a factor contributing to the loss of high quality fish habitat.

Feather River State Hatchery. The Feather River is one of two major tributaries of the Sacramento River. Chinook salmon spawn in ten riffles in the low flow section of the Feather River below Oroville Dam. However, as few as 40 percent of the salmon eggs survive in this reach because there are too many adults spawning this limited area. The Feather River State Hatchery was constructed to mitigate the loss of salmonid habitat attributed to the construction of Oroville Dam; an impassable barrier to anadromous fish.

The Feather River State Hatchery is located in the City of Oroville and operated by the Department of Fish and Wildlife. This hatchery produced its first fry in 1968. The main hatchery houses the spawning operation and incubators. The facility can accommodate 9,000 adult salmon, 2,000 adult steelhead, 20 million eggs, and 9.6 million fingerlings.

At the base of the fish barrier dam, salmon and steelhead enter and climb the ladder to the hatchery gathering tank. During their spawning runs, the fish can be seen through special view windows as they climb the fish ladder to reach the hatchery. Spring-run salmon begin arriving

in June, while steelhead and fall-run salmon arrive from September through November. Eggs are taken from the fish and fertilized, incubated and hatched. The small fish, called fry, are transferred to rearing tanks where they are kept until large enough to put into the river. From the river, they move to the ocean, and then later migrate back to their birth waters.

Butte Creek. Butte Creek supports the largest remaining wild spring-run Chinook salmon in California. This creek and its tributaries also support small populations of steelhead trout and late fall -run Chinook salmon. The fisheries in Butte Creek have several known problems including inadequate fish passage over diversion dams, unblocked drains that attract and strand fish, and poor water quality. Temperatures in the Upper Butte Creek are at the upper limit of tolerance, which can result in mortality of over-summering adults.

Big Chico Creek. Fall-run Chinook salmon have historically been the main salmonid species in Big Chico Creek, but have since declined and are rarely observed. Big Chico Creek supports small non-sustaining populations of spring-run Chinook salmon. In addition there are small populations of steelhead trout and late fall-run salmon occurring within this creek.

The decline of salmon and steelhead populations has been attributed to limited access to the Upper watershed. Access is limited by intermittent flows in Lindo Channel, poor fish passage at the One Mile Recreation Area of Bidwell Park, and inadequate fish passage at the Five Mile Culvert Dam and Iron Canyon.

Migratory Deer

Butte County's deer include both resident and migratory populations. Although Columbian black-tailed deer (*Odocoileus hemionus columbianus*) is not recognized as a special-status species, preserving deer habitat and migration corridors is of concern to the California Department of Fish and Wildlife (CDFW) in many foothill and mountainous regions of California currently experiencing urbanization.

In 1983 the Butte County Board of Supervisors created the Butte County Deer Herd Study Panel to study ways to maintain herd populations and to reduce the impacts of development on migratory deer. The goals of the Study Panel were to identify important migratory deer habitats, protect migratory deer from adverse impacts from development, and to develop policies and implementation measures that would protect deer herds.

As part of the Butte County General Plan 2030 planning process, the Study Panel, in coordination with the CDFW, developed overlay maps that illustrate summer/winter range and migration corridors; General Plan land uses; parcel sizes; transportation corridors; and suitable development sites. CDFW is responsible for identifying impacted deer winter range where development may continue with mitigation measures, deer winter range in need of protection, and mitigation measures to offset loss of habitat.

Deer populations migrate to lower elevations during the winter in response to the lack of food at higher elevations during the snow covered months. Most of the deer habitat in Butte County is winter range, which extends from the valley floor to nearly 4,000 feet. The critical winter range generally extends from 1,000 to 3,000 feet.

Deer migration is a result of annual weather patterns. The first winter storms of the year will initiate the herd migration to a lower elevation. The herds will generally hold as high as possible until the first major snowstorm forces the deer to migrate lower. The deer migration reverses in late winter to early spring when weather conditions begin to warm and the snow begins to melt at higher elevations.

Three separate migratory deer herds, East Tehama, Bucks Mountain, and Mooretown, occupy the eastern foothills and mountains in Butte County and depend on these areas for all or part of their habitat requirements. Deer that remain in a restricted area on a year-round basis are considered resident populations. Resident deer herds that occur within the county include the Camp Beal e and Sacramento Valley herds. Resident deer herds share the winter ranges with all of the migratory herd populations.

Eastern Tehama Deer Herd. The Eastern Tehama deer herd is the largest migratory deer herd in the county and is considered the most extensive range in the state. The range includes portions of Tehama, Plumas, Lassen, Shasta, and Butte counties. Winter range is approximately 520,000 acres; migratory and summer ranges total approximately 920,000 acres and migration routes to and from seasonal ranges are the longest in the state, covering a distance of 50 to 100 miles. Approximately 40 percent of the critical winter range for the Eastern Tehama deer herd in Butte County has been severely impacted due to residential encroachment since the mid-1960s.

Bucks Mountain Deer Herd. The Bucks Mountain deer herd range extends from eastern Butte County to western Plumas County. The winter range includes approximately 200,000 acres and the migratory/summer ranges include approximately 265,000 acres. An estimated 28 percent of the critical winter range for the Bucks Mountain deer herd in Butte County has been lost to residential encroachment since the mid-1960s.

Mooretown Deer Herd. The Mooretown deer herd occupies a range extending from the southern boundary of the Bucks Mountain deer herd into northwestern Sierra and northeastern Yuba counties. The winter range includes approximately 232,000 acres and the migratory and summer ranges include approximately 217,000 acres. An estimated 50 percent of the critical winter range for the Mooretown deer herd in Butte County has been lost to residential encroachment since the mid-1960s.

Special Status Species and Sensitive Communities

Table B-1
Sensitive Communities and Critical Habitats Documented within Butte County

Communities Considered Sensitive by the CDFW
Northern Hardpan Vernal Pool
Northern Basalt Flow Vernal Pool
Northern Volcanic Mud Flow Vernal Pool
Coastal and Valley Freshwater Marsh
Great Valley Valley Oak Riparian Forest
Great Valley Cottonwood Riparian Forest
Great Valley Mixed Riparian Forest
Great Valley Willow Scrub
Critical Habitat designated by the USFWS and NMFS
Butte County meadowfoam
California Red-legged Frog
Chinook Salmon
Conservancy Fairy Shrimp
Greene's Tuctoria
Hairy Orcutt Grass
Hoover's Spurge
Sierra Nevada Yellow-legged Frog
Steelhead
Vernal Pool Fairy Shrimp
Vernal Pool Tadpole Shrimp
Yellow-billed Cuckoo

Sources: CNDDDB (CDFW, 2016); USFWS, Critical Habitat Portal (2016)

**Table B-2
Special-Status Plant Species Known to Occur or with
Potential to Occur within Butte County**

Scientific Name Common Name	Status Fed/State ESA Global Rank/ State Rank	Habitat Requirements
<i>Clarkia mildrediae</i> ssp. <i>mildrediae</i> Mildred's clarkia	FS/— G3T3/S3 1B.3	Blooming Period (BP): May – August. Cismontane woodland and lower montane coniferous forest.
<i>Agrostis hendersonii</i> Henderson's bent grass	—/— G2Q/S2 3.2	BP: April – May. Occurs in mesic valley/foothill grassland and vernal pools.
<i>Allium jepsonii</i> Jepson's onion	FS/— G2/S2 1B.2	BP: April – August. Cismontane woodland, lower montane coniferous forest, and chaparral.
<i>Astragalus tener</i> var. <i>ferrisiae</i> Ferris' milk-vetch	FS/— G2T1/S1 1B.1	BP: April - May. Meadows, seeps, valley and foothill grassland, and wetlands.
<i>Atriplex cordulata</i> var. <i>cordulata</i> Heartscale	FS/— G3T2/S2 1B.2	BP: April - October. Chenopod scrub, meadows, seeps, and valley and foothill grasslands.
<i>Atriplex minuscula</i> Lesser saltscale	—/— G2/S2 1B.1	BP: May – October. Alkali playa, chenopod scrub, valley and foothill grasslands.
<i>Atriplex subtilis</i> Subtle orache	FS/— G1/S1 1B.2	BP: June - October. Valley and foothill grasslands.
<i>Balsamorhiza macrolepis</i> Big-scale balsamroot	FS/— G2/S2 1B.2	BP: March - June. Cismontane woodland, chaparral, valley and foothill grasslands.
<i>Betula glandulosa</i> Dwarf resin birch	—/— G5/S2 2B.2	BP: May –June. Occurs almost always under natural conditions in wetlands.
<i>Botrychium ascendens</i> Upswept moonwort	FS/— G3/S2 2B.3	BP: July - August. Lower montane coniferous forest.
<i>Botrychium crenulatum</i> Scalloped moonwort	FS/— G3/S2 2B.2	BP: June - September. Bog and fen, lower montane coniferous forest, marshes and swamps, meadows, seeps, and wetlands.

**Table B-2
Special-Status Plant Species Known to Occur or with
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Scientific Name Common Name	Status Fed/State ESA Global Rank/ State Rank	Habitat Requirements
<i>Botrychium minganense</i> Mingan moonwort	FS/— G4G5/S2 2B.2	BP: July - September. Lower montane coniferous forest.
<i>Botrychium montanum</i> Western goblin	FS/— G3/S2 2B.1	BP: July - September. Lower montane coniferous forest, meadows, seeps, and upper montane coniferous forests.
<i>Brasenia schreberi</i> Watershield	—/— G5/S3 2B.3	BP: June - September. Marshes, swamps, and wetlands.
<i>California macrophylla</i> Round-leaved filaree	FS/— G3/S3 1B.2	BP: March - May. Cismontane woodland, valley and foothill grasslands.
<i>Campylopodiella stenocarpa</i> Flagella-like atractylocarpus	—/— G5/S1 2B.2	BP: N/A (moss). Cismontane woodland
<i>Cardamine pachystigma</i> var. <i>dissectifolia</i> Dissected-leaved toothwort	—/— G3G5T2Q/S2 1B.2	BP: February – May. Chaparral, lower montane coniferous forest usually serpentinite, rocky.
<i>Cares cyrtostachya</i> Sierra arching sedge	—/— G2G3/S2S3 1B.2	BP: May – August. Lower montane coniferous forest (mesic), meadows and seeps, marshes and swamps, and riparian forest (margins).
<i>Carex limosa</i> Mud sedge	—/— G5/S3 2B.2	BP: June – August. Bog and fen, freshwater marsh, lower montane coniferous forest, swamps, meadow and seep, upper montane coniferous forest, and wetlands.
<i>Castilleja rubicundula</i> ssp. <i>rubicundula</i> Pink creamsacs	FS/— G5T2/S2 1B.2	BP: May – August. Chaparral, meadow and seep, chaparral, valley and foothill grasslands.
<i>Centromadia parryi</i> ssp. <i>parryi</i> Pappose tarplant	FS/— G3/S2 1B.2	BP: May – November. Chaparral, coastal prairie, meadows and seeps, marshes and swamps (coastal salt), valley and foothill grassland (vernally mesic).

Table B-2
Special-Status Plant Species Known to Occur or with
Potential to Occur within Butte County

Scientific Name Common Name	Status Fed/State ESA Global Rank/ State Rank	Habitat Requirements
<i>Chlorogalum grandiflorum</i> Red Hills soaproot	—/— G2/S2 1B.2	BP: May – June. Chaparral, cismontane woodland and lower montane coniferous forest.
<i>Clarkia gracilis</i> ssp. <i>albicaulis</i> White-stemmed clarkia	FS/— G5T2/S2 1B.2	BP: May – July. Chaparral and cismontane woodland.
<i>Clarkia mosquinii</i> Mosquin's clarkia	FS/— G2/S2 1B.1	BP: May – September. Cismontane woodland and lower montane coniferous forest.
<i>Cuscuta obtusiflora</i> var. <i>glandulosa</i> Peruvian dodder	—/— G5T4T5/SH 2B.2	BP: June –October. Freshwater, marshes and swamps.
<i>Delphinium recurvatum</i> Recurved larkspur	FS/— G3/S3 1B.2	BP: March – June. Chenopod scrub, cismontane woodland, valley and foothill grassland.
<i>Drosera anglica</i> English sundew	—/— G5/S2 2B.3	BP: July – October. Marshes and swamps (freshwater).
<i>Eremogone cliftonii</i> Clifton's eremogone	FS/— G3/S3 1B.3	BP: April – September. Chaparral, lower montane coniferous forest and upper montane coniferous forest.
<i>Eriogonum umbellatum</i> var. <i>ahartii</i> Ahart's buckwheat	FS/— G5T3/S3 1B.2	BP: June - September. Cismontane woodland and chaparral.
<i>Euphorbia hooveri</i> Hoover's spurge	FT/— G2/S2 1B.2	BP: July - October. Valley and foothill grassland, vernal pools and wetlands.
<i>Fissidens pauperculus</i> Minute pocket moss	FS/— G3/S2 1B.2	BP: N/A (moss). Coniferous forests and clay soils along stream banks.
<i>Fritillaria eastwoodiae</i>	FS/— G3Q/S3	BP: March - June. Chaparral, cismontane woodland, and lower montane coniferous forest.

**Table B-2
Special-Status Plant Species Known to Occur or with
Potential to Occur within Butte County**

Scientific Name Common Name	Status Fed/State ESA Global Rank/ State Rank	Habitat Requirements
Butte County fritillary	3.2	
<i>Fritillaria pluriflora</i> Adobe-lily	FS/— G2G3/S2S3 1B.2	BP: February - April. Chaparral, cismontane woodland, valley and foothill grassland.
<i>Heteranthera dubia</i> Water star-grass	—/— G5/S1 2B.2	BP: July – October. Requires a pH of 7 or higher, usually in slightly eutrophic waters. Marshes and swamps (alkaline, still or slow-moving water).
<i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i> Woolly rose-mallow	—/— G5T2/S2 1B.2	BP: June - September. Freshwater marsh, swamps, and wetlands.
<i>Imperata brevifolia</i> California satintail	—/— G3/S3 2B.1	BP: September - May. Chaparral, coastal scrub, meadow and seep, mojavean desert scrub, riparian forest and wetlands.
<i>Juncus leiosterpmus</i> var. <i>ahartii</i> Ahart's dwarf rush	—/— G2T1/S1 1B.2	BP: March - May. Vernal pools and wetlands.
<i>Juncus leiosterpmus</i> var. <i>leiosterpmus</i> Red Bluff dwarf rush	FS/— G2T2/S2 1B.1	BP: March - June. Chaparral, cismontane woodland valley and foothill grassland, vernal pool and wetlands.
<i>Lagophylla dichotoma</i> Forked hare-leaf	—/— G1/S1 1B.1	BP: April – May. Cismontane woodland, valley and foothill grassland.
<i>Lewisia cantelovii</i> Cantelow's lewisia	FS/— G3/S3 1B.2	BP: May - October. Broadleaved upland forest, chaparral, cismontane woodland, and lower montane coniferous forest.
<i>Lewisia cantelovii</i> Hutchison's lewisia	—/— G3G4T3Q/S3 3.2	BP: April – August. Upper montane coniferous forest, openings, ridge tops.
<i>Limnanthes floccosa</i> ssp. <i>californica</i> Butte County meadowfoam	FE/SE G4T1/S1 1B.1	BP: March - May. Valley and foothill grassland, vernal pool and wetlands.

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Special-Status Plant Species Known to Occur or with
Potential to Occur within Butte County**

Scientific Name Common Name	Status Fed/State ESA Global Rank/ State Rank	Habitat Requirements
<i>Monardella venosa</i> Veiny monardella	FS/— G1/S1 1B.1	BP: May - July. Cismontane woodland, valley and foothill grasslands.
<i>Orcuttia pilosa</i> Hairy Orcutt grass	FE/SE G1/S1 1B.1	BP: May - September. Vernal pools and wetlands.
<i>Orcuttia tenuis</i> Slender Orcutt grass	FT/SE G2/S2 1B.1	BP: May - October. Valley and foothill grassland, vernal pools and wetlands.
<i>Packera eurycephala</i> var. <i>lewisrosei</i> Lewis Rose's ragwort	FS/— G4T2/S2 1B.2	BP: March - September. Chaparral, cismontane woodland, and lower montane coniferous forest.
<i>Paronychia ahartii</i> Ahart's paronychia	FS/— G3/S3 1B.1	BP: February - June. Cismontane woodland, valley and foothill grassland, vernal pools and wetlands.
<i>Penstemon personatus</i> Closed-throated beardtongue	FS/— G2/S2 1B.2	BP: June - October. Chaparral, lower montane coniferous forest and upper montane coniferous forest.
<i>Poa sierra</i> Sierra blue grass	FS/— G3/S3 1B.3	BP: April - June. Lower montane coniferous forest.
<i>Puccinellia simplex</i> California alkali grass	—/— G2G3/S2S3 1B.2	BP: March – May. Chenopod scrub, meadows and seeps, valley and foothill grassland, vernal pools.
<i>Rhamnus alnifolia</i> Alder buckthorn	—/— G5/S3 2B.2	BP: May – July. Lower montane coniferous forest, meadows and seeps, riparian scrub, upper montane coniferous forest.
<i>Rhynchospora californica</i> California beaked-rush	FS/— G1/S1 1B.1	BP: March - May. Freshwater marsh, marshes and swamps, meadows, seeps and wetlands.

Table B-2
Special-Status Plant Species Known to Occur or with
Potential to Occur within Butte County

Scientific Name Common Name	Status Fed/State ESA Global Rank/ State Rank	Habitat Requirements
<i>Rhynchospora capitellata</i> Brownish beaked-rush	—/— G5/S1 2B.2	BP: July - August. Lower montane coniferous forest, marshes and swamps, meadows, seeps, upper montane coniferous forest and wetlands.
<i>Rupertia hallii</i> Hall's rupertia	FS/— G2G3/S2S3 1B.2	BP: June - September. Cismontane woodland and lower montane coniferous forest.
<i>Sagittaria sanfordii</i> Sanford's arrowhead	FS/— G3/S3 1B.2	BP: May - November. Marshes, swamps and wetlands.
<i>Schoenoplectus subterminalis</i> Water bulrush	—/— G4G5/S3 2B.3	BP: June - September. Marshes, swamps and wetlands.
<i>Sedum albomarginatum</i> Feather River stonecrop	FS/— G2/S2 1B.2	BP: May - June. Chaparral and lower montane coniferous forest.
<i>Senecio layneae</i> Layne's ragwort	FT/— G4/S2 1B.2	BP: April - August. Chaparral and cismontane woodland.
<i>Sidalcea robusta</i> Butte County checkerbloom	FS/— G2/S2 1B.2	BP: April - June. Chaparral and cismontane woodlands.
<i>Silene occidentalis</i> <i>ssp. longistipitata</i> Long-stiped campion	FS/— G4T2Q/S2 1B.2	BP: June – August. Chaparral, lower montane coniferous forest and upper montane coniferous forest.
<i>Stellaria longifolia</i> Long-leaved starwort	—/— G5/S2 2B.2	BP: May - August. Meadows, seeps, riparian woodlands and wetlands.
<i>Stuckenia filiformis</i> <i>ssp. alpina</i> Slender-leaved pondweed	—/— G5T5/S3 2B.2	BP: May - July. Meadows, seeps, and wetlands.

**Table B-2
Special-Status Plant Species Known to Occur or with
Potential to Occur within Butte County**

Scientific Name Common Name	Status Fed/State ESA Global Rank/ State Rank	Habitat Requirements
<i>Trifolium jokerstii</i> Butte County golden clover	FS/— G2/S2 1B.2	BP: March - May. Valley and foothill grassland, vernal pools and wetlands.
<i>Tuctoria greenei</i> Greene's tuctoria	FE/SR G1/S1 1B.1	BP: May - September. Valley and foothill grassland, vernal pools and wetlands.
<i>Utricularia intermedia</i> Flat-leaved bladderwort	—/— G5/S3 2B.2	BP: July - August. Bog, fen, marsh, swamp, meadow, seep and wetlands.
<i>Wolffia brasiliensis</i> Brazilian watermeal	—/— G5/S1 2B.3	BP: April - December. Marshes, swamps and wetlands.

Sources: USFWS IPaC (Butte County, 2016), CNDDDB Rarefind v5 (Butte County, 2016), and CNPS (Butte County, 2016)

FE = Federally Endangered

FT = Federally Threatened

FC = Federal Candidate Species

FS = Federally Sensitive (BLM, USFS)

SE = State Endangered

ST = State Threatened

SC = State Candidate Species

SS = State Sensitive (CDF)

SSC = State Species of Special Concern

FP = Fully Protected

CRPR 1B = Rare or Endangered in California or elsewhere

CRPR 2 = Rare or Endangered in California, more common elsewhere

CRPR 3 = More information is needed

0.1 = Seriously Threatened

0.2 = Fairly Threatened

0.3 = Not very Threatened

G-Rank/S-Rank = Global Rank and State Rank as per CNDDDB RareFind 5.

**Table B-3
Special-Status Animal Species Known to Occur or with
Potential to Occur within Butte County**

Scientific Name Common Name	Status Fed/State Global Rank/ State Rank CDFW	Habitat Requirements
Mammals		
<i>Antrozous pallidus</i> Pallid bat	FS/— G5/S3 SSC	Deserts, grasslands, shrublands, woodlands, and forest. Most common in open, dry, habitats with rocky area for roosting. Roost must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.
<i>Aplodontia rufa californica</i> Sierra Nevada mountain beaver	—/— 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.
<i>Bassariscus astutus</i> Ring-tail	—/— 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.
<i>Corynorhinus townsendii</i> Townsend's big-eared bat	FS/SC G3G4/S2S3 SSC	Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls & ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.
<i>Euderma maculatum</i> Spotted bat	FS/— 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.
<i>Eumops perotis</i> Western mastiff bat	FS/— G5/S3S4 SSC	Many open habitats, including conifer and deciduous woodlands, grassland, and chaparral. Roosts in crevices in cliff faces and high buildings.
<i>Gulo gulo</i> California wolverine	FS/ST G4/S1 FP	Wide-ranging in alpine and subalpine regions of Cascades and Rockies. In 2008 and 2009, wolverines were sighted in the Sierra Nevada, near Lake Tahoe, for the first time since 1922.
<i>Lasiurus blossevillii</i> Western red bat	FS/— G5/S3 SSC	Occupies cismontane woodland, lower montane coniferous forest, riparian forests and riparian woodlands. Roosts primarily in broadleafed trees.
<i>Myotis evotis</i> Long-eared myotis	FS/— G5/S3 —	Found in all brush, woodland & forest habitats from sea level to about 9000 feet. Prefers coniferous woodlands & forests. Nursery colonies in buildings, crevices, spaces under bark, & snags. Caves used primarily as night roosts.
<i>Myotis thysanodes</i> Fringed myotis	FS/— 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.

**Table B-3
Special-Status Animal Species Known to Occur or with
Potential to Occur within Butte County**

Scientific Name Common Name	Status Fed/State Global Rank/ State Rank CDFW	Habitat Requirements
<i>Myotis yumanensis</i> Yuma myotis	FS/— 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.
<i>Pekania pennanti</i> Fisher – West Coast DPS	FC(FT),FS/— G5T2T3Q/S2S3 SSC	Intermediate to large-tree stages of coniferous forests & deciduous-riparian areas with high percent canopy closure. Uses cavities, snags, logs & rocky areas for cover & denning. Needs large areas of mature, dense forest.
<i>Taxidea taxus</i> American badger	—/— G5/S3 SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils & open, uncultivated ground. Preys on burrowing rodents.
<i>Vulpes vulpes necator</i> Sierra Nevada red fox	FS/ST G5T1T2/S1 —	Restricted to alpine and subalpine habitats of the Sierra Nevada, above 4500 feet elevation. Lassen Volcanic National Park is the major population center for the subspecies.
Birds		
<i>Accipiter gentilis</i> Northern goshawk	FS/SS 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.
<i>Agelaius tricolor</i> Tricolored blackbird	FS/SC 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 miles of the colony.
<i>Aquila chrysaetos</i> Golden eagle	FS/— G5/S3 FP	Rolling foothills, mountain areas, sage-juniper flats, & desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.
<i>Asio flammeus</i> Short-eared owl	—/— G5/S3 SSC	Open, treeless areas with elevated sites for perches and dense vegetation for roosting and nesting.
<i>Asio otus</i> Long-eared owl	—/— 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.
<i>Athene cunicularia hypugaea</i> Western burrowing owl	—/— G4/S3 SSC	Grasslands and ruderal habitats where ground squirrel burrows are available for nesting.
<i>Aythya americana</i> Redhead	—/— G5/S3S4 SSC	Freshwater emergent wetlands with dense stands of cattails interspersed with areas of deep, open water.

**Table B-3
Special-Status Animal Species Known to Occur or with
Potential to Occur within Butte County**

Scientific Name Common Name	Status Fed/State Global Rank/ State Rank CDFW	Habitat Requirements
<i>Buteo swainsoni</i> Swainson's hawk	FS/ST G5/S3 —	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.
<i>Chaetura vauxi</i> Vaux's swift	—/— G5/S2S3 SSC	Prefers redwood and Douglas-fir habitats, nests in hollow trees and snags or, occasionally, in chimneys; forages aerially.
<i>Chlidonias niger</i> Black tern	—/— G4/S2 SSC	Wetlands, fresh emergent wetlands, and rice fields.
<i>Circus cyaneus</i> Northern harrier	—/— G4/S3 SSC	Forages in marshes, grasslands, and ruderal habitats; nests in extensive marshes and wet fields.
<i>Coccyzus americanus occidentalis</i> Western yellow-billed cuckoo	FS,FT/SE 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.
<i>Contopus cooperi</i> Olive-sided flycatcher	—/— G4/S4 SSC	Nesting habitats are mixed conifer, montane hardwood-conifer, Douglas-fir, redwood, red fir & lodgepole pine. Most numerous in montane conifer forests where tall trees overlook canyons, meadows, lakes or other open terrain.
<i>Cypseloides niger</i> Black swift	—/— G4/S2 SSC	Breeding habitat is associated with water. Most often nests on high cliff faces, either above the ocean surf or behind or next to waterfalls.
<i>Dendroica petechia</i> Yellow warbler	—/— G5/S3S4 SSC	Breeds in riparian woodlands, particularly those dominated by willows and cottonwoods.
<i>Elanus leucurus</i> White-tailed kite	—/— G5/S3S4 FP	Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes often next to deciduous woodlands
<i>Empidonax traillii</i> Willow flycatcher	FS/SE G5/S1S2 —	Inhabits extensive thickets of low, dense willows on edge of wet meadows, ponds, or backwaters.
<i>Falco peregrinus anatum</i> American peregrine falcon	—/SS 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.
<i>Grus Canadensis tabida</i> Greater sandhill crane	FS/ST G5T4/S2 FP	Found in fresh emergent wetlands and wet meadows. 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.

**Table B-3
Special-Status Animal Species Known to Occur or with
Potential to Occur within Butte County**

Scientific Name Common Name	Status Fed/State Global Rank/ State Rank CDFW	Habitat Requirements
<i>Haliaeetus leucocephalus</i> Bald eagle	FS/SE,SS G5/S2 —	Ocean shore, lake margins, & rivers for both nesting & 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.
<i>Icteria virens</i> Yellow-breasted chat	—/— G5/S3 SSC	Breeds in riparian habitats having dense understory vegetation, such as willow and blackberry.
<i>Ixobrychus exilis</i> Least bittern	—/— G5/S2 SSC	Colonial nester in marshlands and borders of ponds and reservoirs which provide ample cover. Nests usually placed low in tules, over water.
<i>Lanius ludovicianus</i> Loggerhead shrike	—/— G4/S4 SSC	Forages in open grassland habitats throughout the Central Valley of California. Nests in shrubs and trees.
<i>Latterallus jamaicensis coturniculus</i> California black rail	FS/ST G3G4T1/S1 SSC,FP	Densely vegetated wetlands and marshes with a perennial water source. Needs water depths of about 1 inch that do not fluctuate during the year & dense vegetation for nesting habitat.
<i>Pelecanus erythrorhynchos</i> American white pelican	—/— G4/S1 SSC	Freshwater lakes with islands for breeding; inhabits river sloughs, freshwater marshes, salt ponds, and coastal bays during the rest of the year.
<i>Progne subis</i> Purple martin	—/— G5/S1 SSC	Inhabits woodlands, low elevation coniferous forest of Douglas-fir, ponderosa pine, & Monterey pine. Nests in old woodpecker cavities; also in human-made structures, including bridges. Nest often located in tall, isolated tree/snag.
<i>Riparia riparia</i> Bank swallow	FS/ST 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.
<i>Strix occidentalis occidentalis</i> California spotted owl	FS/— G3T3/S3 SSC	Mixed conifer forest, often with an understory of black oaks & other deciduous hardwoods. Most often found in deep-shaded canyons, on north-facing slopes, and within 300 meters of water.
Reptiles		

**Table B-3
Special-Status Animal Species Known to Occur or with
Potential to Occur within Butte County**

Scientific Name Common Name	Status Fed/State Global Rank/ State Rank CDFW	Habitat Requirements
<i>Emys marmorata</i> Western pond turtle	FS/— G3G4/S3 SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams & irrigation ditches, usually with aquatic vegetation, below 6000 feet elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 kilometers from water for egg laying.
<i>Phrynosoma blainvillii</i> Blainville's horned lizard	FS/— G3G4/S3S4 SSC	Occurs in sandy soils in valley foothill hardwood, coniferous, and riparian habitats, as well as pine-cypress, juniper, and annual grassland habitats (sea level - 8,000 feet elevation).
<i>Thamnophis gigas</i> Giant garter snake	FT/ST G2/S2 —	Agricultural wetlands and other wetlands such as irrigation and drainage canals, low gradient streams, marshes ponds, sloughs, small lakes, and there associated uplands (sea level - 400 feet elevation).
Amphibians		
<i>Ambystoma californiense</i> California tiger salamander	FT/ST G2G3/S2S3 SSC	Cismontane woodland, meadows, seeps, riparian woodland, valley and foothill grassland, vernal pools and wetlands (sea level – 3,200 feet elevation).
<i>Rana aurora draytonii</i> California red-legged frog	FT/— G2G3/S2S3 SSC	Semi-permanent or permanent water at least 2 feet deep, bordered by emergent or riparian vegetation, and upland grassland, forest or scrub habitats for refugia and dispersal.
<i>Rana boylei</i> Foothill yellow-legged frog	FS/— G3/S3 SSC	Partly shaded, shallow streams & riffles with a rocky substrate in a variety of habitats. Need at least some cobble-sized substrate for egg laying. Need at least 15 weeks to attain metamorphosis.
<i>Rana cascadae</i> Cascades frog	FS/— G3G4/S3 SSC	Found throughout the Cascade Range in streams, lakes, and associated riparian habitat between 2,250 and 8,000 feet elevation.
<i>Rana sierrae</i> Sierra Nevada yellow-legged frog	FE/FT G1/S1 SSC	Rocky streams within canyons, slow moving waters, alpine ponds, lakes and meadow streams (1,000 - over 12,000 feet elevation).
<i>Spea hammondi</i> Western spadefoot toad	FS/— G3/S3 SSC	Grasslands and, occasionally, valley-foothill hardwood woodlands; vernal pools or similar ephemeral pools required for breeding.
Fish		

**Table B-3
Special-Status Animal Species Known to Occur or with
Potential to Occur within Butte County**

Scientific Name Common Name	Status Fed/State Global Rank/ State Rank CDFW	Habitat Requirements
<i>Acipenser medirostris</i> Green sturgeon – Southern DPS	FT/— G3/S1S2 SSC	This DPS includes green sturgeon that spawn in rivers south of the Eel River, including the Sacramento River. Preferred spawning substrate is large cobble, but can range from clean sand to bedrock.
<i>Acipenser transmontanus</i> White sturgeon	—/— G4/S2 SSC	Live in estuaries of large rivers, moving into freshwater to spawn. Most abundant in brackish portions of estuaries. Can be found in the Sacramento River and its larger tributaries.
<i>Hypomesus transpacificus</i> Delta smelt	FT/SE G1/S1 —	Estuarine systems in the Sacramento-San Joaquin Delta.
<i>Lampetra ayresi</i> River lamprey	—/— G4/S3 SSC	An anadromous fish found in rivers from San Francisco Bay watershed north to Alaska. Suitable habitat in the Sacramento River below Keswick dam.
<i>Mylopharodon conocephalus</i> Hardhead	—/— G3/S3 SSC	Found in both small to large streams in low to mid-elevations in the Sacramento, San Joaquin, and Klamath rivers and their tributaries.
<i>Oncorhynchus mykiss irideus</i> Steelhead – Central Valley DPS	FT/— G5/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.
<i>Oncorhynchus tshawytscha</i> Chinook salmon – Sacramento River winter-run ESU	FE/SE 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.
<i>Oncorhynchus tshawytscha</i> Chinook salmon – Central Valley spring- run ESU	FT/ST 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.
<i>Oncorhynchus tshawytscha</i> Chinook salmon – Central Valley fall/late fall-run ESU	—/— G5/S2 SSC	Spawn and rear in main-stem Sacramento River and suitable perennial tributaries. Requires cool water temperatures for spawning, egg-incubation and juvenile rearing. Spawn in riffles with gravel and cobble.
<i>Pogonichthys macrolepidotus</i> Sacramento splittail	—/— G3/S3 SSC	Shallow, dead-end sloughs with submerged vegetation.

**Table B-3
Special-Status Animal Species Known to Occur or with
Potential to Occur within Butte County**

Scientific Name Common Name	Status Fed/State Global Rank/ State Rank CDFW	Habitat Requirements
Invertebrates		
<i>Branchinecta conservation</i> Conservancy fairy shrimp	FE/— G1/S1 —	Valley and foothill grassland, vernal pools and wetlands.
<i>Branchinecta lynchi</i> Vernal pool fairy shrimp	FT/— G3/S3 —	Lives in vernal pools, swales, and ephemeral freshwater habitats.
<i>Desmocerus californicus dimorphus</i> Valley elderberry longhorn beetle	FT/— G3/S2 —	Elderberry shrubs associated with riparian forests that occur along rivers and streams in the Sacramento Valley and foothills.
<i>Lepidurus packardi</i> Vernal pool tadpole shrimp	FE/— G3/S2S3 —	Lives in vernal pools, swales, and ephemeral freshwater habitats.

Sources: USFWS IPaC (Butte County, 2016), CNDDDB Rarefind v5 (Butte County, 2016), and CNPS (Butte County, 2016)

FE = Federally Endangered

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SSC = State Species of Special Concern

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G-Rank/S-Rank = Global Rank and State Rank as per CNDDDB RareFind 5.

Local Jurisdictions General Plans

A discussion of the various General Plans adopted within Butte County and how they pertain to the protection of biological resources is presented in the table below.

**Table B-4
Local General Plan
Goals, Objectives, Policies, Actions and Implementation Measures**

Butte County	
Goal COS-6	Engage in cooperative planning efforts to protect biological resources
Policy COS-P6.1	The County shall coordinate with applicable federal, State, regional and local agencies on natural resources and habitat planning.
Action COS-A6.1	Continue to work with the Butte County Association of Governments and the five municipalities to develop and implement the Butte Regional Habitat Conservation Plan and Natural Community Conservation Plan, and subsequently update it as necessary.
Action COS-A6.2	Work with Butte Creek Canyon residents and local groups toward adopting a planning strategy for a Butte Creek Canyon overlay. The purpose of the planning strategy is to facilitate the protection and preservation of the historical and ecological foundation of Butte Creek Canyon, including the survival of salmon, steelhead and other sensitive plants and animals such as the East Tehama Deer Herd, preservation of historical sites and ecological preserves, and the optimum balance of recreation and residential use.
Goal COS-7	Conserve and enhance habitat for protected species and sensitive biological communities.
Policy COS-P7.1	Conservation easements that protect habitat areas, habitat corridors and sensitive biological resources shall be promoted.
Policy COS-P7.2	Clustered development patterns shall be encouraged in order to conserve habitat for protected species and biological resources.
Policy COS-P7.3	Creeks shall be maintained in their natural state whenever possible, and creeks and floodways shall be allowed to function as natural flood protection features during storms.*
Policy COS-P7.4	New development projects shall mitigate their impacts in habitat areas for protected species through on- or off-site habitat restoration, clustering of development, and/or project design and through the provisions of the Butte Regional Habitat Conservation Plan (HCP) and Natural Community Conservation Plan (NCCP) within the HCP/NCCP Planning Area, upon the future adoption of the HCP/NCCP.*
Policy COS-P7.5	No new development projects shall occur in wetlands or within significant riparian habitats, except within the Butte Regional Habitat Conservation Plan (HCP) and Natural Community Conservation Plan (NCCP) Planning Area where such development is consistent with the conditions of the HCP/NCCP, upon the future adoption of the HCP/NCCP.*
Policy COS-P7.6	New development projects shall include setbacks and buffers along riparian corridors and adjacent to habitat for protected species, except where permitted in the Butte Regional Habitat Conservation Plan (HCP) and Natural Community Conservation Plan (NCCP) Planning Area and where such development is consistent with the conditions of the HCP/NCCP, upon the future adoption of the HCP/NCCP.*
Policy COS-P7.7	Construction barrier fencing shall be installed around sensitive resources on or adjacent to construction sites. Fencing shall be installed prior to construction activities and maintained throughout the construction period.*
Policy COS-P7.8	Where sensitive on-site biological resources have been identified, construction employees operating equipment or engaged in any development-associated activities involving vegetation removal or ground disturbing activities in sensitive resource areas shall be trained by a qualified biologist and/or botanist who will provide information on the on-site biological resources (sensitive natural communities, special status plant and wildlife habitats, nests of special-status birds, etc.), avoidance of invasive plant introduction and spread, and the penalties for not complying with biological mitigation requirements and other State and federal regulations.*

Policy COS-P7.9	A biologist shall be retained to conduct construction monitoring in and adjacent to all habitats for protected species when construction is taking place near such habitat areas.*
Policy COS-P7.10	Long-term recovery plans for areas affected by wildfire shall incorporate native species and enhance wildlife habitat.
Policy COS-P7.11	The County shall work with the military to ensure that land uses under the Military Operations Areas (MOAs) encourage the fulfillment of the County's biological resource protection goals.
Action COS-A7.1	Develop and provide incentives to developers to conserve and maintain important habitat areas and sensitive biological resources.
Action COS-A7.2	Develop a set of guidelines for evaluating development project impacts to habitat in locations outside of the approved Butte Regional Habitat Conservation Plan and Natural Community Conservation Plan Planning Area, as well as for requiring specific mitigations for impacts that are identified
Action COS-A7.3	Establish a mitigation bank program for impacts to habitats for protected species, such as oak woodlands, riparian woodlands and wetlands, in locations outside of the approved Butte Regional Habitat Conservation Plan and Natural Community Conservation Plan Planning Area, using mitigation fees on new development projects as a funding mechanism.
Action COS-A7.4	Seek funding to conduct a study to develop an approach to protecting significant specimen trees and tree groves
Goal COS-8	Maintain and promote native vegetation
Policy COS-P8.1	Native plant species shall be protected and planting and regeneration of native plant species shall be encouraged, wherever possible, in undisturbed portions of development sites.
Policy COS-P8.2	New landscaping shall promote the use of xeriscape and native tree and plant species, including those valued for traditional Native American cultural uses.
Policy COS-P8.3	Native plants shall be used wherever possible on County owned and -controlled property.
Policy COS-P8.4	Introduction or spread of invasive plant species during construction of development projects shall be avoided by minimizing surface disturbance; seeding and mulching disturbed areas with certified weed-free native mixes; and using native, noninvasive species in erosion control plantings.*
Goal COS-9	Protect identified special-status plant and animal species.
Policy COS-P9.1	A biological resources assessment shall be required for any proposed development project where special-status species or critical habitat may be present. Assessments shall be carried out under the direction of Butte County. Additional focused surveys shall be conducted during the appropriate season if necessary. Upon adoption of the Butte Regional Habitat Conservation Plan (HCP) and Natural Community Conservation Plan (NCCP), assessment requirements of the HCP/NCCP shall be implemented for development projects within the HCP/NCCP area.*

Policy COS-P9.2	If special-status plant or animal species are found to be located within a development site, proponents of the project shall engage in consultation with the appropriate federal, State and regional agencies and mitigate project impacts in accordance with State and federal law. Upon adoption of the Butte Regional Habitat Conservation Plan (HCP) and Natural Community Conservation Plan (NCCP), mitigation requirements of the HCP/NCCP shall be implemented for development projects within the HCP/NCCP area. Examples of mitigation may include:* a. Design the proposed project to avoid and minimize impacts. b. Restrict construction to specific seasons based on project specific special-status species issues (e.g. minimizing impacts to special-status nesting birds by constructing outside of the nesting season). c. Confine construction disturbance to the minimum area necessary to complete the work. d. Mitigate for the loss of special-status species by purchasing credits at an approved conservation bank (if a bank exists for the species in question), funding restoration or habitat improvement projects at existing preserves in Butte County, or purchasing or donating mitigation lands of substantially similar habitat. e. Maintain a minimum 100-foot buffer on each side of all riparian corridors, creeks and streams for special-status and common wildlife. f. Establish setbacks from the outer edge of special-status species habitat areas. g. Construct barriers to prevent compaction damage by foot or vehicular traffic.
Goal COS-10	Facilitate the survival of deer herds in winter and critical winter migratory deer herd ranges.
Policy COS-P10.1	Clustered development projects that are designed to accommodate herd migration patterns shall be allowed and encouraged, with remaining areas protected under conservation easements, within the Winter and Critical Winter Deer Herd Migration Area Overlays in order to protect migratory deer herd ranges.
Action COS-A10.1	Coordinate with the California Department of Fish and Game to monitor the effects of development on migratory deer herds.
Action COS-A10.2	Seek funding for and conduct more detailed studies about deer herd migration, and use those studies to update the Deer Herd Migration Area Overlay if needed.
City of Chico	
Goal OS-1	Protect and conserve native species and habitats.
Policy OS-1.1	Preserve native species and habitat through land use planning, cooperation, and collaboration.
Action OS-1.1.1	Direct development to appropriate locations consistent with the Land Use Diagram, and protect and preserve areas designated Open Space and areas that contain sensitive habitat and species.
Action OS-1.1.2	Actively participate in regional conservation planning efforts, in particular the Butte County Habitat Conservation Plan process, sponsored by the Butte County Association of Governments, which seeks the preservation of habitat areas needed for the ongoing viability of native species.
Action OS-1.1.3	In support of AB 32, work with the Butte County Association of Governments to implement the Sustainable Community Strategy (SB 375), which directs smart-growth development to urbanized areas.
Action OS-1.1.4	Consult with conservation groups to identify sites and projects for fund-raising and volunteer participation in public education, enhancement, maintenance, and protection of natural resources within the City's Sphere of Influence.
Action OS-1.1.5	Prioritize efforts to remove nonnative species within Bidwell Park and other City greenways, and condition new development adjacent to Bidwell Park and greenways to protect native species and habitat from the introduction of invasive species.
Policy OS-1.2	Protect special-status plant and animal species, including their habitats, in compliance with all applicable state, federal and other laws and regulations.
Action OS-1.2.1-	Ensure that project-related biological impacts are considered and mitigated, and require applicants to obtain all necessary local, state and federal permits for projects that may affect special status species or their habitat.
Policy OS-1.3	Reduce excessive nighttime light and glare.

Action OS-1.3.1	Consider adoption of a Dark Sky ordinance.
Action OS-1.3.2	Seek community cooperation to reduce existing light pollution.
Goal OS-2:	Connect the community with a network of protected and maintained open space and creekside greenways to build knowledge and appreciation of these resources.
Policy OS-2.1	Continue acquisition, management, and maintenance of open space to protect habitat and promote public access.
Action OS-2.1.1	Develop and adopt an Open Space and Greenways Master Plan that catalogues the City's open space land holdings, ensures that management and maintenance programs are in place, identifies long-term funding, coordinates with other public and private open space holdings, and prioritizes additional open space acquisitions, dedications, and easements to enhance connectivity, protect resources, and facilitate public access and circulation.
Action OS-2.1.2	Pursue outside funding sources for open space acquisition, management, maintenance, and restoration.
Policy OS-2.2	Expand creekside greenway areas for open space and additional pedestrian/bicycle routes.
Action OS-2.2.1	Continue collecting fees for creekside greenway acquisition, and purchase properties as opportunities arise.
Action OS-2.2.2	Seek easements and dedications along the City's creeks to expand the greenway system.
Policy OS-2.3	Support public access to publicly held foothill areas for non-intensive recreational purposes, where appropriate.
Policy OS-2.4	Preserve the foothills as a natural backdrop to the urban form.
Action OS-2.4.1	Require visual simulations for foothill development to assess viewshed impacts.
Action OS-2.4.2	Update City's Design Guidelines Manual to address viewshed issues associated with foothill development.
Policy OS-2.5	Preserve and enhance Chico's creeks and riparian corridors as open space for their aesthetic, drainage, habitat, flood control, and water quality values.
Action OS-2.5.1	Consistent with the City's Municipal Code, require a minimum 25-foot setback from the top of creek banks to development and associated above ground infrastructure as a part of project review, and seek to acquire an additional 75 feet. In addition, require a larger setback where necessary to mitigate environmental impacts.
Policy OS-2.6	Protect oak woodlands as open space for sensitive species and habitat.
City of Gridley	
Goal 5:	To protect wildlife habitats, including those that could support sensitive species, as the City grows.
Policy 5.1	New developments shall use techniques, such as buffers, setbacks, and clustering of development to protect wetlands, riparian corridors, vernal pools, and sensitive species.
Policy 5.2	New development shall preserve open space corridors alongside agricultural drainage ditches.
Policy 5.3	The City will have former agricultural drainage ditches improved or restored in a way that avoids or improves habitat value and maintains or improves wetland function.
Policy 5.4	The City will condition new development, as necessary, to reduce erosion, siltation, and mitigate impacts to wetland, riverine, and riparian habitats.
Policy 5.5	New developments shall preserve and plant native or naturalized vegetation and avoid the introduction of invasive exotic species.

Policy 5.6	The City will require compliance with state and federal laws concerning special status species.
Policy 5.7	The City will ensure consistency of new development with applicable portions of the Butte County Habitat Conservation Plan and Natural Communities Conservation Plan.
Policy 5.8	The City will explore opportunities to use mitigation fees from regional habitat preservation programs to restore agricultural ditches.
Policy 5.9	The City will continue to collaborate with the California Department of Fish and Game and the United States Fish and Wildlife Service, as appropriate, to ensure the protection and preservation of special-status species and their habitats within the Gridley Planning Area.
Implementation Strategy 5.1	The City will require plant and animal surveys and mitigation prior to new development, as necessary, for projects subject to CEQA compliance. The City will consult with state and federal resource agencies and BCAG to identify priority habitats and special status species locations, identify survey requirements, and establish mitigation ratios. In particular, the City will focus on valley elderberry shrub locations, raptor- and migratory bird nests, Swainson's hawk nesting areas and foraging habitat, potential giant garter snake habitat, and potential wetlands, riverine, and riparian habitats. The City's survey and mitigation requirements will be consistent with guidance from the California Department of Fish and Game, the U.S. Fish and Wildlife Service, the California Native Plant Society, and the U.S. Army Corps of Engineers and the Butte County Habitat Conservation Plan and Natural Communities Conservation Plan (HCP/NCCP), as appropriate.
Implementation Strategy 5.2	The City will communicate with BCAG and other participants in the HCP/NCCP process to encourage use of regional mitigation fees for restoration of agricultural ditches in the Gridley area. Conservation Implementation Strategy 5.3 The City will update or adopt a new drainage master plan following adoption of the 2030 General Plan to implement drainage policies within the Planned Growth Area. In coordination with this effort, the City of Gridley will engage with the California Department of Fish and Game, the Regional Water Quality Control Board, the Army Corps of Engineers, and the US Fish and Wildlife Service to ensure that the appropriate biological and wetland related objectives are incorporated into the City's natural drainage approach. The City will communicate with regional, state, and federal resource agencies to ensure ease of permitting for the City's natural drainage and low impact development approach for the Planned Growth Area. The City will consult with relevant agencies to develop a streamlined permit process that ensures the feasibility of the City's stormwater best management practices.
Goal 1:	To create high-quality, functional open space corridors
Policy 1.6	Existing vegetation in open space corridors should be preserved, where it could provide ongoing habitat benefits or stormwater filtering. Noxious weeds, invasive species, and unhealthy plants can be removed, as well as vegetation posing an issue for public health or safety.
Policy 1.7	Newly planted landscaping in open space corridors shall be selected and designed to enhance habitat, provide aesthetic value, filter pollutants out of, and slow down stormwater runoff, and minimize ongoing landscape maintenance and watering.

Implementation Strategy 1.1	Following the adoption of the 2030 General Plan, the City will update the existing or prepare a new drainage master plan to address the Planned Growth Area. The drainage master plan will be designed to move away from individual site drainage requirements to an areawide approach for the Planned Growth Area, consistent with the General Plan. Although the focus for the natural drainage system is on the Planned Growth Area, the City will look for opportunities to expand these concepts into the existing developed City, also. The drainage master plan will be designed to handle specified storm events and deliver pre-development flows to the reclamation districts under post-development conditions. Construction of the Planned Growth Area stormwater management system will be phased in a way that provides adequate drainage as the area builds out. Temporary detention facilities may be necessary. The drainage master plan will emphasize the use of drainage swales to convey runoff although piping may be used in combination with swales, as appropriate, in the Planned Growth Area. The drainage master plan will be coordinated with the location of future parks so that excess stormwater can be detained and infiltrated within open playfield areas. Linear open space corridors themselves may also be designed to detain and infiltrate stormwater runoff. Preservation and restoration of agricultural drainage ditches should consider habitat value, sensitive species, and water quality objectives (see the Conservation Element). The City will explore whether mitigation fees through regional habitat conservation planning or grants from other government agencies could be made available to fund restoration elements of the City's open space strategy. The drainage master plan will be coordinated with a Nexus Fee Study to allow fair-share contribution to drainage improvements. The Nexus Fee Study should consider efficiencies created through co-location of linear parkland, trails, drainage, and buffering. Drainage fees should be structured to provide incentives for use of low impact development stormwater management best practices (see also the Conservation Element). The City will revise the Subdivision Ordinance, as necessary, to implement the drainage approach in the 2030 General Plan (and as reflected in the master drainage plan). Fenced-off, single-use detention basins will be prohibited.
City of Biggs	
Goal CR-3:	Protect and conserve sensitive habitats suitable for special-status species.
Goal CR-4:	Protect and enhance existing riparian habitat.
Goal S-3:	Protect and conserve sensitive habitats suitable for special-status species.
Policy S-3.1	Applicants for projects that have the potential to negatively affect special-status species shall conduct a biological resources assessment and identify design solutions that avoid such impacts. If adverse impacts cannot be avoided, they should be mitigated as prescribed by the appropriate state or federal agency.
Policy S-3.2	Actively participate in and support regional conservation planning efforts such as the Butte Habitat Conservation Plan and Natural Community Conservation Plan (HCP/NCCP) sponsored by the Butte County Association of Governments (BCAG) to protect habitats and species and streamline permitting requirements and timelines.
Goal S-4:	Protect and enhance existing riparian habitat.
Policy S-4.1	Require new development to make all reasonable efforts to minimize and avoid the loss of federally and state-protected wetlands. If loss is unavoidable, require the applicant to mitigate the loss in accordance with federal and state law.
Policy S-4.2	Promote the establishment of open space reserves along riparian corridors for habitat protection and enhancement as well as community connectivity and open space.
Action S-4.2.1	Pursue the development of a linear parkway and recreation corridor along Hamilton Slough in the southwestern portion of the city and require new development adjacent to the slough to dedicate sufficient land for this intent. Include components of habitat preservation and public recreation, as well as maintain functions of storm water and irrigation water transport.
City of Oroville	
Goal OPS-8	Preserve and protect all special-status species, species that are candidates for federal or State listing, State species of special concern, and CNPS listed plant species.
Policy P8.1	Require a biological assessment of any proposed project site where federally-, or State-listed species or critical habitat may be present.

Policy P8.2	Require a habitat-based site assessment during the project design area. If potential habitat for special-status plant or animal species is identified, additional focused surveys may need to be conducted during the appropriate season.
Policy P8.3	Require agency consultation for proposed projects for which there is the potential to impact federal or State-listed species, or other appropriate agency assistance for non-listed special-status species.
Policy P8.4	Require proposed trail projects that have the potential to impact special-status species to coordinate trail planning and development with habitat preservation efforts.
Policy P8.5	Make information available to interested parties concerning the presence and condition of special-status species.
Policy P8.6	<p>If special-status plant or animal species are found to be located within a development site, the developer shall mitigate project impacts in accordance with State and federal law. Examples of mitigation may include:</p> <ul style="list-style-type: none"> • Redesign the proposed project to avoid and minimize impacts. • Restrict construction to specific seasons based on project specific special-status species issues (e.g. minimizing impacts to special-status nesting birds by constructing outside of the nesting season). • Confine construction disturbance to the minimum area necessary to complete the work. • Mitigate for the loss of special-status species by purchasing credits at an approved conservation bank (if a bank exists for the species in question), funding restoration or habitat improvement projects at existing preserves in Butte County, or purchasing or donating mitigation lands. • Maintain a minimum 100-foot buffer on each side of all riparian corridors, creeks and streams for special-status and common wildlife. Ruddy Creek would be an example of where this applies. • Establish setbacks from the outer edge of special-status species habitat areas. • Prohibit livestock grazing or drainage into the setback of special-status species habitat areas. • Construction of barriers to prevent compaction damage by foot or vehicular traffic.
Action A8.1	Work with BCAG to develop a regional Habitat Conservation Plan and Natural Community Conservation Plan and database, and subsequently update it as necessary, for the management and protection of sensitive biological resources such as wetlands, riparian corridors, and critical habitat areas. The plan should be developed in cooperation with the California Department of Fish and Wildlife, the U.S. Fish and Wildlife Service, and local interest groups, and should address all known critical habitat areas, special-status plant populations, wildlife movement corridors specifically including deer migration routes, and should prioritize areas for management and protection that are likely to be impacted by development.
Action A8.2	Prepare and maintain an updated list of State and federally listed, threatened, and endangered species and species that are candidates for listing known or suspected to occur in the City of Oroville and its immediate vicinity, as well as other special status species identified by the California Department of Fish and Wildlife and the Mt. Lassen Chapter of the California Native Plant Society. This list should be monitored and updated every two years.
Action A8.3	Develop a set of guidelines for preservation of special-status species, including, if it is found to be feasible, a tiered approach that would prioritize protection of State and federally listed species. Such an approach may include identification of appropriate buffers for preservation of species identified on a development site, and appropriate avoidance and mitigation measures for special-status species determined to be affected by a proposed development.
Goal OPS-9	Protect areas of significant wildlife habitat and sensitive biological resources to maintain biodiversity among plant and animal species in the City of Oroville and the surrounding area.

Policy P9.1	Encourage the Department of Water Resources and Department of Fish and Wildlife to manage and maintain the Oroville Wildlife Refuge for multiple uses, while protecting property values on land adjacent to the refuge.
Policy P9.2	Minimize loss of wetland value or acreage consistent with the needs of wildlife and humans, to the extent practicable and as regulated by State and federal law.
Policy P9.3	Work with Butte County and the Department of Fish and Wildlife to support the protection of migratory and resident deer herds in the Planning Area, by preserving habitat and movement corridors.
Policy P9.4	Develop a program to preserve wildlife corridors that includes designing and constructing freeway and arterial street undercrossing areas at locations that currently serve as wildlife corridors.
Policy P9.5	Require the preparation of a site-specific tree management and preservation report by a certified arborist or urban forester for development proposals on sites that contain significant oak woodlands and related habitat. This report shall include recommendations for the retention of healthy mature trees wherever feasible and promote the concept of oak regeneration corridors within project design.
Policy P9.6	Protect sensitive plant and wildlife habitat from destruction and intrusion by incompatible land uses where appropriate. All efforts to protect sensitive habitats should consider: <ul style="list-style-type: none"> • Sensitive habitat and movement corridors in the areas adjacent to development sites, as well as on the development site itself. • Prevention of habitat fragmentation and loss of habitat connectivity. • Use of appropriate protection measures for sensitive habitat areas such as non-disturbance easements and open space zoning. • On-site or off-site habitat restoration as a potential mitigation, with a no net loss of habitat policy. • Potential mitigation or elimination of impacts through mandatory clustering of development, and/or project redesign.
Policy P9.7	Protect native plant species in undisturbed portions of a development site and use native species for replanting in disturbed portions of the project site.
Policy P9.8	Support efforts to eradicate invasive and noxious weeds and vegetation on public and private property.
Policy P9.9	Monitor the on-going health of sensitive habitat resources in Oroville and ensure the continued effectiveness of General Plan policies intended to protect, preserve and enhance these resources.
Policy P9.10	Encourage the coordinated design of large projects to preserve on-site open space, cluster development (where feasible) and conserve natural communities and/or habitat for special-status species that have been identified in proposed project areas.
Policy P9.11	Utilize native plant species to landscape public open space areas to promote the unique local flora of the region and provide habitat for local species.
Policy P9.12	Preserve orchards, woodlands, and wetlands by clustering development in locations where the land supports fewer natural resources, and infrastructure is in or is close to the project site. Actions
Policy A9.1	Work with Butte County to coordinate the maintenance of open space and habitat preservation at or near South Table Mountain.
Policy A9.2	Work to create and establish a mitigation bank designed to offset development impacts on wetlands.
Policy A9.3	Develop a plan to enhance individual oaks, oak woodlands and other native tree groups throughout the Planning Area. The plan will provide options for the management of oaks and other tree resources.
Policy A9.4	Develop guidelines and an education strategy for property owners about issues concerning development near or adjacent to sensitive communities or habitats that support special-status species. The guidelines should clearly define the range of activities allowed within buffer areas adjacent to sensitive habitats.
Policy A9.5	Develop a Greenway Program to preserve and connect wildlife and sensitive habitat corridors.
Goal OPS-10	Protect riparian, riverine, and open water habitats.

Policy P10.1	Require an appropriately sized buffer or setback, as determined by a qualified biologist, on each side of a riparian corridor creeks, stream, wetland, or pond. Development shall be prohibited within established setback areas for these riparian corridors, creeks, stream, wetland, ponds, and waterways.
Policy P10.2	Support a multi-use concept for riparian corridors that incorporates open space, aesthetic, habitat and wildlife corridor values, while addressing social, cultural, flood control, and recreation needs.
Policy P10.3	Encourage the Department of Water Resources to maintain water levels in State Water Project facilities, including Lake Oroville, to optimize protection of fisheries and other biotic resources, preserve open water as open space, and maximize recreational opportunities per the Department of Water Resources Bulletin 117-6, while also allowing for power generation, flood control and water supply.
Policy P10.4	Work with the Department of Water Resources and Department of Fish and Wildlife to ensure the ongoing operation of the Feather River Fish Hatchery.
Policy P10.5	Work with the Department of Fish and Wildlife and Department of Water Resources to ensure the preservation and enhancement of species of resident and anadromous fish along the Feather River, in Lake Oroville, and throughout the Planning Area.
Policy P10.6	Support removal or relocation of levees on the west side of the Feather River south of Oro Dam Boulevard as a means to enhance habitat in and around the Oroville Wildlife Refuge.
Policy P10.7	Work with the Oroville Mosquito Abatement District and the Butte County Mosquito Abatement District to ensure that preservation, pre-planning and design of water features is coordinated with acceptable disease vector control measures.
Policy P10.8	Consider the effects of mosquito abatement measures on other aquatic species and minimize these effects where known special- status species occur.
Action A10.1	Search for and acquire State, federal, foundation, and private funding to preserve, promote, restore, protect and enhance riparian corridors throughout the Planning Area.
Action A10.2	Continuously monitor the Department of Water Resources' compliance with its Federal Energy Regulatory Commission licensing agreements.
Town of Paradise	
Goal OCEG-5	Preserve the natural beauty and rural charm of Paradise
Goal OCEG-6	Preserve and protect naturally sensitive areas, and significant natural features in Paradise such as trees, views, stream courses, wildlife habitat and clean air.
Policy OCEP-13	Existing large trees of historic and/or cultural significance should be protected to the best of the town's ability. Trees so identified should only be removed as a last resort.
Policy OCEP-14	Reforestation and maintenance of trees shall be encouraged along road corridors.
Policy OCEP-15	Existing, significantly important natural habitat areas having high value for birds and other wildlife should be preserved for future generations through careful land use planning and public participation.
Policy OCEP-16	Ares fisheries shall be protected, and the cooperation of responsible agencies shall be sought to assure minimum stream flow and restore fisheries.
Policy OCEP-17	Where feasible, limit new development within the secondary planning area to designated development zones as established by the Department of Fish and Game to protect deer herd migration routes.
Policy OCEP-24	Stream courses identified and designated as significantly important shall be carefully protected from the impacts of land use development, both within and outside the town limits.
Policy OCEP-26	Natural riparian vegetation along creeks should be protected.
Policy OCEP-27	Protective land use designations and zoning classifications should be established for sensitive lands such as areas of resource production, steep canyons and stream corridors, and areas of significant natural resource value.

Implementation OCEI-8	Identify and map significantly important permanent and intermittent stream courses and drainage areas in the planning area on the Land Use Constraints Diagram and develop standards for their protection, including appropriate setbacks.
Implementation OCEI-9	Establish open space, resource conservation, or low density rural residential zoning on sensitive (environmentally constrained) lands, such as areas of resource production, stream corridors and slopes greater than thirty percent
Implementation OCEI-12	Amend the tree ordinance to assure that its administration and enforcement will help sustain and enhance the present forested setting of Paradise, and to assure that trees are only removed as a last resort. Establish a mitigation program for tree removal.
Implementation OCEI-14	Require significantly important natural areas with high wildlife value to be set aside and preserved during land use development.
Implementation OCEI-16	Acquire conservation easements on important agricultural lands as funds are available to do so.