



DRAFT

ENVIRONMENTAL IMPACT REPORT

FOR THE

2012 BUTTE COUNTY METROPOLITAN TRANSPORTATION PLAN AND SUSTAINABLE COMMUNITIES STRATEGY (SCH: 2012012034)

SEPTEMBER 2012

Prepared for:

Butte County Association of Governments
2580 Sierra Sunrise Terrace, Suite 100
Chico, Ca 95928
(530)879-2468

Prepared by:

De Novo Planning Group
4630 Brand Way
Sacramento, CA 95819
(916) 580-9818

D e N o v o P l a n n i n g G r o u p

A Land Use Planning, Design, and Environmental Firm



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INTRODUCTION

The Butte County Association of Governments (BCAG) has determined that the 2012 Butte County Metropolitan Transportation Plan and Sustainable Communities Strategy (MTP/SCS or proposed project) is a "Project" within the definition of CEQA. CEQA requires the preparation of an environmental impact report (EIR) prior to approving any project, which may have a significant impact on the environment. For the purposes of CEQA, the term "Project" refers to the whole of an action, which has the potential for resulting in a direct physical change or a reasonably foreseeable indirect physical change in the environment (CEQA Guidelines Section 15378[a]).

The EIR contains a description of the project, description of the environmental setting, identification of project impacts, and mitigation measures for impacts found to be significant, as well as an analysis of project alternatives, identification of significant irreversible environmental changes, growth-inducing impacts, and cumulative impacts. This EIR identifies issues determined to have no impact or a less than significant impact, and provides detailed analysis of potentially significant and significant impacts. Comments received in response to the NOP were considered in preparing the analysis in this EIR.

PROJECT DESCRIPTION

The proposed project is the adoption and implementation of the 2012 Butte County Metropolitan Transportation Plan and Sustainable Communities Strategy. Each is discussed below.

Metropolitan Transportation Plan (MTP)

The MTP has been prepared to fulfill the state requirements of AB 402 (Government Code Title 7, Chapter 2.5, Sections 65080-65082) using specific guidance from the California Transportation Commission Regional Transportation Plan Guidelines. More specifically, the MTP is a twenty-three year, comprehensive transportation plan for all modes including: highways, local streets and roads, transit, bicycle, aviation, rail, and goods movement. BCAG is required to adopt and submit an updated MTP to the California Transportation Commission (CTC) and the Department of Transportation (Caltrans) every four years. In addition, the MTP is used to demonstrate Air Quality Conformity requirements applicable to Butte County, and it documents the BCAG Board's priorities for transportation funding to the region.

The secondary purpose of the MTP is to serve as a foundation for the development of the shorter "action" plans called the Regional Transportation Improvement Program, which satisfies California transportation planning requirements, and the federal counterpart referred to as the Federal Transportation Improvement Program (FTIP) for all transportation projects that contain federal transportation dollars or require federal approval.

The MTP contains three primary elements: Policy Element, Action Element, and Financial Element.

The **Policy Element** presents guidance to decision-makers of the implications, impacts, opportunities, and foreclosed options that will result from implementation of the MTP. California law (Government Code Section 65080 (b)) states that each MTP shall include a Policy Element that:

1. Describes the transportation issues in the region;
2. Identifies and quantifies regional needs expressed within both short and long range planning horizons; and,
3. Maintains internal consistency with the Financial Element and fund estimates.

The **Action Element** identifies programs and actions to implement the MTP in accordance with the goals, objectives, and policies set forth in the Policy Element. It includes regionally significant multimodal projects that currently have funding in place or that are projected to have funding in the future (Fiscally Constrained), while it also identifies other improvement projects that are needed but do not have funding (Fiscally Unconstrained).

The **Financial Element** identifies the current and anticipated revenue sources and financing techniques available to fund the fiscally constrained transportation investments described in the Action Element. It also identifies potential funding shortfalls and sources for the unconstrained project list.

More detailed information on the Butte County MTP can be found at the BCAG website, (www.bcag.org).

Sustainable Communities Strategy (SCS)

In September 2008 Governor Schwarzenegger signed Senate Bill 375 (SB 375), also known as the Sustainable Communities and Climate Change Act of 2008, as the mechanism to implement passenger vehicle greenhouse gas reductions outlined in Assembly Bill 32. Under SB 375, BCAG, as the region's MPO, has been designated by the state to prepare the area's SCS as an additional element of the 2012 MTP. The SCS will be the forecasted development pattern for the region, which, when integrated into the transportation network, and other transportation measures and policies, will meet the passenger vehicle greenhouse gas reduction target for the area.

AREAS OF CONTROVERSY AND ISSUES TO BE RESOLVED

This Draft EIR addresses environmental impacts associated with the MTP/SCS that are known to BCAG, were raised during the Notice of Preparation (NOP) process, or raised during preparation of the Draft EIR. This Draft EIR discusses potentially significant impacts associated with aesthetics, agricultural resources, air quality, biological resources, cultural resources, greenhouse gas emissions, land use and population, noise, and transportation. During the NOP process, comments were received from the Native American Heritage Commission (NAHC) and Central Valley Flood Protection Board (CVFPB).

The NAHC noted that CEQA requires the preparation of an EIR to assess the potential for the proposed project to have an adverse impact on historical and/or archaeological resources. The NAHC noted that the Sacred Lands File was searched for Butte County and Native American

cultural resources were identified, but are exempted from public disclosure pursuant to the California Government Code Section 6254. The NAHC recommends consultation with Native American tribes in the plan area as a way to best avoid unanticipated discoveries of resources during construction. The NAHC presents the appropriate steps for consulting with the Native American tribes for federal projects and recommends confidentiality of historic and archeological resources that occur in the plan area. The NAHC also cites regulations for dealing with accidentally discovered archaeological resources or human remains during construction. Lastly, the NAHC reiterates the needs for effective consultation with the Native American tribes on individual projects in the plan area.

The CVFPB notes that the proposed project is within their jurisdiction and that they are required to enforce standards for construction, maintenance, and protection of flood control plans. The CVFPB provides a list of activities that require a permit from their agency. The list includes a broad range of actions that involve cutting into a levee, landscaping/planting that could interfere with flood control, and existing structures that predate permitting. The CVFPB cites CEQA Guidelines that require a discussion of cumulative impacts. The CVFPB reiterates that vegetation must not interfere with flood control. The CVFPB states that the EIR should include mitigation measures for channel and levee improvements and maintenance to prevent and/or reduce hydraulic impacts. Lastly, the CVFPB provides a link to the permit application on their website.

ALTERNATIVES TO THE PROPOSED PROJECT

The CEQA Guidelines require an EIR to describe a reasonable range of alternatives to the project or to the location of the project which would reduce or avoid significant impacts, and which could feasibly accomplish the basic objectives of the proposed project. Since the MTP/SCS is a countywide planning document, a discussion of alternative sites is not appropriate. The alternatives analyzed in this EIR include the following three alternatives in addition to the proposed MTP/SCS:

- No Project Alternative (2008 Regional Transportation Plan)
- Financially Unconstrained Alternative (Funded and Unfunded Projects)
- Transit Investment Alternative (Increase Funding of Public Transit Projects by Diverting BCAG-Controlled Funds)

Alternatives are described in detail in Chapter 5. Table ES-1 provides a comparison of the alternatives using a qualitative matrix that quantifies the impacts of each alternative relative to the other alternatives.

The Financially Constrained Alternative has the lowest overall impact (score of 16) and is deemed the environmentally superior alternative because it provides the greatest reduction of potential impacts in comparison to the other alternatives, while also achieving the project goals and objectives. The Transit Investment Alternative ranks second with a score of 18, the No Project Alternative ranks third with a score of 20, and the Financially Unconstrained Alternative ranks fourth with a score of 31.

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

ENVIRONMENTAL ISSUE	NO PROJECT	FINANCIALLY CONSTRAINED (PROPOSED PROJECT)	FINANCIALLY UNCONSTRAINED	TRANSIT INVESTMENT
Aesthetics	1 (Best)	2 (Equal)	4 (Worst)	2 (Equal)
	The No Project Alternative would result in the lowest potential for adverse impacts on aesthetics. Development would still occur without the SCS; however, as roadway infrastructure improvement projects would decrease under this alternative, the potential for development of roadway infrastructure to degrade scenic views, remove scenic resources, change visual character, and result in increased light and glare would be less under the No Project Alternative when compared to the other alternatives.			
Agricultural Resources	1 (Best)	2 (Equal)	4 (Worst)	2 (Equal)
	The No Project Alternative would result in the lowest potential for adverse impacts on agricultural resources. Development would still occur without the SCS; however, as roadway infrastructure improvement projects would decrease under this alternative, the potential for development of roadway infrastructure to convert agricultural lands to non-agricultural uses as well as the potential for conflicts with agricultural lands would be less under the No Project Alternative when compared to the other alternatives.			
Air Quality	4 (Worst)	1 (Equal)	3 (Medium)	1 (Equal)
	The Financially Constrained and Transit Investment Alternative would equally result in the lowest potential for adverse impacts on air quality. Development would still occur without the SCS; however, as roadway infrastructure improvement projects would increase to alleviate LOS deficiencies and transit service and bike/pedestrian use would increase under these alternatives, the total VMT per capita would decrease, which would result in a corresponding decrease of vehicle related air quality emissions.			
Biological Resources	1 (Best)	2 (Equal)	4 (Worst)	2 (Equal)
	The No Project Alternative would result in the lowest potential for adverse impacts on biological resources. Development would still occur without the SCS; however, as roadway infrastructure improvement projects would decrease there would be fewer construction and infrastructure development projects that would negatively impact special-status species, their habitat, sensitive habitat, migration corridors, and wetlands/riparian resources under the No Project Alternative when compared to the other alternatives.			
Cultural Resources	1 (Best)	2 (Equal)	4 (Worst)	2 (Equal)
	The No Project Alternative would result in the lowest potential for adverse impacts on cultural resources. Development would still occur without the SCS; however, as roadway infrastructure improvement projects would decrease under this alternative, there would be fewer construction and infrastructure development projects that would have the potential to degrade or destroy cultural resources, including archaeological, paleontological, historic, and human remains, under the No Project Alternative when compared to the other alternatives.			
Greenhouse Gases and Climate Change	3 (Medium)	2 (Better)	4 (Worst)	1 (Best)
	The Transit Investment Alternative would result in the greatest improvement to Greenhouse Gases and Climate Change. Roadway infrastructure improvement projects would increase under this alternative to alleviate short-term LOS deficiencies. Alternatives modes of transportation, such as transit service and bike/pedestrian use, would increase under this alternative. The total VMT per capita would decrease in the long-term, although to the detriment of LOS conditions on roadways. The corresponding effect would be a decrease of vehicle related greenhouse gas emissions. The effect of the SCS on greenhouse gas emissions would be similar for the Transit Investment, Financially Unconstrained, and Financially Constrained Alternatives, while the No Project Alternative would not have the long-term greenhouse gas emissions benefits from the SCS.			
Land Use and Population	4 (Worst)	1 (Best)	3 (Medium)	2 (Better)
	The Financially Constrained Alternative would result in the lowest potential for adverse impacts associated with land use and population. The SCS would be implemented. This alternative would be the most consistent with land use planning activities in the county and its jurisdictions. This alternative would provide a growth strategy that is coordinated with the long range planning of transportation improvements necessary to serve new development. The Financially Unconstrained Alternatives would result in implementation of the SCS growth			

ENVIRONMENTAL ISSUE	NO PROJECT	FINANCIALLY CONSTRAINED (PROPOSED PROJECT)	FINANCIALLY UNCONSTRAINED	TRANSIT INVESTMENT
	strategy; however, it would provide more transportation projects which could induce growth. The Financially Constrained Alternative would have less of an impact on land use and population than other alternatives.			
Noise	1 (Best)	2 (Equal)	4 (Worst)	2 (Equal)
	The No Project alternative would have less short-term noise impacts associated with construction activities as a result of fewer transportation projects. Construction noise associated with development would be similar with and without the SCS. Long-term noise associated development would also be similar with and without the SCS. This alternative would have less noise impacts compared to the other alternatives.			
Transportation / Circulation	4 (Worst)	2 (Better)	1 (Best)	3 (Medium)
	The Financially Unconstrained Alternative would have a greater effect at reducing roadway LOS and improving roadway safety when compared to the other alternatives. This alternative would involve additional improvements to the roadway system to increase capacity and roadway safety, improve LOS, and reduce VHD in comparison with the proposed project and other alternatives. The SCS would have a similar effect on VMT for the Financially Unconstrained, Financially Constrained, and Transit Investment Alternatives, while the No Project Alternative would not have the long-term VMT benefits from the SCS.			

SUMMARY OF IMPACTS AND MITIGATION MEASURES

In accordance with the CEQA Guidelines, this EIR focuses on the significant effects on the environment. The CEQA Guidelines defines a significant effect as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project. A less than significant effect is one in which there is no long or short-term significant adverse change in environmental conditions. Some impacts are reduced to a less than significant level with the implementation of mitigation measures and/or compliance with regulations. The definition of "beneficial" effect is not defined in the CEQA Guidelines, but for purposes of this EIR a beneficial effect is one in which an environmental condition is enhanced or improved.

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

ES EXECUTIVE SUMMARY

TABLE ES-2: PROJECT IMPACTS AND PROPOSED MITIGATION MEASURES

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
AESTHETICS			
Impact 3.1-1: Substantial Adverse Effects on Scenic Vistas and Resources or Substantial Degradation of Visual Character	PS	<p>Mitigation Measure 3.1.1: The implementing agency shall implement the following measures in the design of a project:</p> <ul style="list-style-type: none"> • Design transportation systems in a manner where the surrounding landscape dominates. • Design transportation systems to be compatible with the surrounding environment (e.g., colors and materials of construction material). • Design transportation systems such that landscape vegetation blends in and complements the natural landscape. • Design transportation systems such that trees are maintained intact, or if removal is necessary, incorporate new trees into the design. • Design grades to blend with the adjacent landforms and topography. <p>Mitigation Measure 3.1.2: Prior to the design approval of a project, the implementing agency shall assess whether the project would remove any significant visual resources in the project area, which may include trees, rock outcroppings, and historical buildings, and shall also assess whether the project would significantly obstruct views of scenic resources including historic buildings, trees, rocks, or scenic water features, and shall also identify whether the improvement would significantly obstruct views of scenic resources, such as views of the Sutter Buttes, Coastal Range, Sierra Nevada Range, and scenic water features.</p> <p>If it is determined that a project would remove significant visual resources, the implementing agency shall consider alternative designs that seek to avoid and/or minimize impacts from removal of significant visual resources to the extent feasible. Project-specific design measures may include revisions to the plans to retain trees, rocks, and historic buildings, or replanting of trees, and/or the relocation of scenic features.</p> <p>If it is determined that the a project would significantly obstruct scenic views, the implementing agency shall consider alternative designs that seek to avoid and/or</p>	LS

CC – cumulatively considerable

LCC – less than cumulatively considerable

LS – less than significant

PS – potentially significant

B – beneficial impact

SU – significant and unavoidable

EXECUTIVE SUMMARY

ES

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
Impact 3.1-2: Creation of New Sources of Light and Glare	PS	<p>minimize obstruction of scenic views to the extent feasible. Project-specific design measures may include reduction in height of improvements or width of improvements to reduce obstruction of views, or relocation of improvements to reduce obstruction of views.</p> <p>Mitigation Measure 3.1.3: Projects shall be designed to meet minimum safety and security standards and to avoid spillover lighting to sensitive uses. Design measures shall include the following:</p> <ul style="list-style-type: none"> • Luminaries will be cutoff-type fixtures that cast low-angle illumination to minimize incidental spillover of light onto adjacent private properties and undeveloped open space. Fixtures that project light upward or horizontally will not be used. • Luminaries will be directed away from habitat and open space areas adjacent to the project site. • Luminaries will provide good color rendering and natural light qualities. Low-pressure sodium and high-pressure sodium fixtures that are not color corrected will not be used. Intensity will be approximately 10 lux for roadway intersections. • Luminary mountings will be downcast and the height of the poles minimized to reduce potential for back scatter into the nighttime sky and incidental spillover of light onto adjacent private properties and undeveloped open space. Light poles will be 20 feet high or shorter. Luminary mountings will have non-glare finishes. <p>Exterior lighting features shall be directed downward and shielded in order to confine light to the boundaries of the subject project. Where more intense lighting is necessary for safety purposes, the design shall include landscaping to block light from sensitive land uses, such as residences.</p>	LS
AGRICULTURAL RESOURCES			
Impact 3.2-1: Conversion of Farmlands,	PS	<p>Mitigation Measure 3.2.1: Prior to the design approval of a project, the implementing</p>	SU
CC – cumulatively considerable PS – potentially significant	LCC – less than cumulatively considerable B – beneficial impact	LS – less than significant SU – significant and unavoidable	

ES EXECUTIVE SUMMARY

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
including Prime Farmland, Unique Farmland, and Farmland of Statewide Importance, to Non-Agricultural Uses		<p>agency shall assess the project area for agricultural constraints. For federally funded projects, the implementing agency shall complete a form AD-1006 to determine the Farmland Conversion Impact Rating in compliance with the Farmland Protection Policy Act. The AD-1006 shall be submitted to the NRCS for approval. For non-federally funded projects, the implementing agency shall assess the project for the presence of important farmlands (prime farmland, unique farmland, farmland of statewide importance), and if present, perform a Land Assessment and Site Evaluation (LESA).</p> <p>If significant agricultural resources are identified within the limits of the project, the implementing agency shall consider alternative designs that seek to avoid and/or minimize impacts to the agricultural resources. Design measures may include, but are not limited to, reducing the footprint to avoid farmlands. If the project cannot be designed without complete avoidance of farmlands, the implementing agency shall compensate for unavoidable conversion impacts at an appropriate ratio and in accordance with the Farmland Protection Policy Act and local and regional standards, which may include enrolling offsite agricultural lands under a Williamson Act contract or other conservation easement, or paying mitigation fees.</p>	
Impact 3.2-2: Conflict with Existing Zoning for Agricultural Use or a Williamson Act Contract	PS	Implement Mitigation Measure 3.2-1	SU
Impact 3.2-3: Conflict with Existing Zoning of Forest or Timber Production or Result in the Loss or Conversion of Forest Land	PS	<p>Mitigation Measure 3.2.2: Prior to the design approval of a project, the implementing agency shall assess the project area for forest lands and forest resources as defined by Public Resources Code Section 12220(g), Section 4526, and Government Code Section 51104(g).</p> <p>If protected forest lands or timber resources are identified within the limits of the project, the implementing agency shall consider alternative designs that seek to avoid and/or minimize impacts to the forest lands or timber resources. Design measures may include, but are not limited to, reducing the footprint to avoid forest lands or timber resources, or avoiding significant stands of trees.</p>	SU
AIR QUALITY			

CC – cumulatively considerable

LCC – less than cumulatively considerable

LS – less than significant

PS – potentially significant

B – beneficial impact

SU – significant and unavoidable

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
Impact 3.3-1: Long-Term - Conflict with, or Obstruct, the Applicable Air Quality Plan, Cause a Violation of Air Quality Standards, Contribute Substantially to an Existing Air Quality Violation, or Result in a Cumulatively Considerable Net Increase of a Criteria Pollutant in a Non-Attainment Area	LS		--
Impact 3.3-2: Short-term - Conflict with, or Obstruct, the Applicable Air Quality Plan, Cause a Violation of Air Quality Standards, Contribute Substantially to an Existing Air Quality Violation, or Result in a Cumulatively Considerable Net Increase of a Criteria Pollutant in a Non-Attainment Area	PS	Mitigation Measure 3.3-1: The implementing agency shall review each individual project in accordance with Butte County Air Quality Management District's Guidelines for Assessing Air Quality Impacts for Projects Subject to CEQA Review. Each project shall include emission calculations and mitigation for construction impacts, including the incorporation of best available control measures outlined in Table 1 of Rule 205 Fugitive Dust Emission.	LS
Impact 3.3-3: Occasional Localized Carbon Monoxide Concentrations from Traffic Conditions at Some Individual Locations	PS	Mitigation Measure 3.3-2: The implementing agency shall screen individual projects at the time of design for localized CO hotspot concentrations and if necessary incorporate project-specific measures into the project design to reduce or alleviate CO hotspot concentrations.	LS
Impact 3.3-4: Create Objectionable Odors Affecting a Substantial Number of People	LS		--
Impact 3.3-5: Contribute Substantially to, or Result in a Cumulatively Considerable Net Increase of Mobile Source Air Toxics	PS	Mitigation Measure 3.3-3: As air toxics research continues, BCAG should utilize the tools and techniques that are developed for assessing health outcomes as a result of lifetime MSAT exposure. The potential health risks posed by MSAT exposure should continue to be factored into project-level decision-making in the context of environmental review.	LS
Impact 3.3-6: Potential to release asbestos from earth movement or structural asbestos from demolition/renovation of existing	PS	Mitigation Measure 3.3-4: Prior to construction of individual projects, the implementing agency should assess the site for the presence of asbestos including asbestos from structures such as road base, bridges, and other structures. In the event	LS

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ES EXECUTIVE SUMMARY

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
structures		that asbestos is present, the implementing agency should comply with applicable state and local regulations regarding asbestos, including ARB's asbestos airborne toxic control measure (ATCM) (Title 17, CCR § 93105 and 93106), to ensure that exposure to construction workers and the public is reduced to an acceptable level. This may include the preparation of an Asbestos Hazard Dust Mitigation Plan to be implemented during construction activities.	
BIOLOGICAL RESOURCES			
Impact 3.4-1: Direct or Indirect Effects on Candidate, Sensitive, or Special-Status Species including their Habitat or Movement Corridors	PS	<p>Mitigation Measure 3.4-1: 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, CDFG, ACOE) 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>	LS
Impact 3.4-2: Adverse Effects on Riparian Habitat or Other Sensitive Natural Community Identified in Local or Regional Plans, Policies, Regulations or by the California Department of	PS	<p>Mitigation Measure 3.4.2: 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</p>	LS

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<p>Fish and Game or U.S. Fish and Wildlife Service, or on Federally Protected Wetlands as Defined by Section 404 of the Clean Water Act through Direct Removal, Filling, Hydrological Interruption, or Other Means</p>		<p>Army Corps of Engineers Wetlands Delineation Manual. The wetland delineation shall be submitted to the USACE for verification.</p> <p>Mitigation Measure 3.4.3. 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' from edge), riparian area (100' from edge), and other aquatic habitats (250' from edge of vernal pool). 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 the BCAG. 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 a maximum 10-foot spacing.</p> <p>Immediately upon completion of construction activities the contractor shall stabilize</p>	

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		<p>exposed soil/slopes. On highly erodible soils/slopes, use a nonvegetative 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>Mitigation Measure 3.4.4: 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.</p>	
Impact 3.4-3: Interference with the Movement of 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	PS	<p>Mitigation Measure 3.4-5: 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, CDFG) to obtain regulatory permits and implement alternative project-specific mitigation prior to any construction activities.</p>	LS
Impact 3.4-4: Potential Introduction or Spread	PS	<p>Mitigation Measure 3.4.6: Prior to approval of individual projects, the implementing agency shall retain a qualified biologist determine whether noxious weeds are an issue</p>	LS

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of Noxious Weeds		<p>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. • Equipment will be cleaned at designated wash stations after leaving noxious weed infestation areas. 	
Impact 3.4-5: Conflicts with an Adopted Habitat Conservation Plan, Natural Community Conservation Plan, Recovery Plan, or Local Policies or Ordinances Protecting Biological Resources	PS	<p>Mitigation Measure 3.4.7: 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>	LS
CULTURAL RESOURCES			
Impact 3.5-1: Damage to or the Destruction of Archaeological Resources	PS	<p>Mitigation Measure 3.5-1: During environmental review of individual projects, the implementing agencies shall:</p> <ul style="list-style-type: none"> • Consult with the Native American Heritage Commission to determine whether known sacred sites are in the project area, and identify the Native 	LS

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		<p>American(s) to contact to obtain information about the project area.</p> <ul style="list-style-type: none"> Conduct a records search at the Central California Information Center of the California Historical Resources Information System to determine whether the project area has been previously surveyed and whether resources were identified. <p>In the event the records indicate that no previous survey has been conducted, the Central California Information Center will make a recommendation on whether a survey is warranted based on the archaeological sensitivity of the project area. If recommended, a qualified archaeologist shall be retained to conduct archaeological surveys. The significance of any resources that are determined to be in the project area shall be assessed according to the applicable local, state, and federal significance criteria. Implementing agencies shall devise treatment measures to ameliorate “substantial adverse changes” to significant archaeological resources, in consultation with qualified archaeologists and other concerned parties. Such treatment measures may include avoidance through project redesign, data recovery excavation, and public interpretation of the resource.</p> <p>Implementing agencies and the contractors performing the improvements shall adhere to the following requirements:</p> <ul style="list-style-type: none"> <i>If a project is located in an area rich with cultural materials, the implementing agency shall retain a qualified archaeologist to monitor any subsurface operations, including but not limited to grading, excavation, trenching, or removal of existing features of the subject property.</i> <i>If, during the course of construction cultural resources (i.e., prehistoric sites, historic sites, and isolated artifacts and features) are discovered work shall be halted immediately within 50 meters (165 feet) of the discovery, the implementing agency shall be notified, and a qualified archaeologist that meets the Secretary of the Interior’s Professional Qualifications Standards in prehistoric or historical archaeology shall be retained to determine the significance of the discovery.</i> <i>The implementing agency shall consider mitigation recommendations presented by a professional archaeologist that meets the Secretary of the</i> 	

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Impact 3.5-2: Inadvertent Discovery of Human Remains	PS	<p><i>Interior's Professional Qualifications Standards in prehistoric or historical archaeology for any unanticipated discoveries and shall carry out the measures deemed feasible and appropriate. Such measures may include avoidance, preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures. The project proponent shall be required to implement any mitigation necessary for the protection of cultural resources.</i></p> <p>Mitigation Measure 3.5-2: 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:</p> <ul style="list-style-type: none"> • <i>The Butte County Coroner has been informed and has determined that no investigation of the cause of death is required.</i> • <i>If the remains are of Native American origin, either of the following steps will be taken:</i> <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: 	LS

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Impact 3.5-3: Damage to or the Destruction of Paleontological Resources	PS	<ul style="list-style-type: none"> ▪ <i>The Native American Heritage Commission is unable to identify a descendant.</i> ▪ <i>The descendant identified fails to make a recommendation.</i> ▪ <i>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.</i> <p>Mitigation Measure 3.5-3: During environmental review of individual projects, the implementing agencies shall retain a qualified paleontologist to identify, survey, and evaluate paleontological resources where potential impacts are considered high. All construction activities shall avoid known paleontological resources, if feasible, especially if the resources in a particular lithologic unit formation have been determined to be unique or likely to contain paleontological resources. If avoidance is not feasible, paleontological resources should be excavated by a qualified paleontologist and given to a local agency, State University, or other applicable institution, where they could be curated and displayed for public education purposes.</p>	LS
Impact 3.5-4: Damage to or the Destruction of Historical Resources	PS	<p>Mitigation Measure 3.5-4: During environmental review of individual projects, the implementing agencies shall retain a qualified architectural historian to inventory and evaluate architectural resources located in project area using criteria for listing in the California Register of Historic Resources. In addition, the resources would be recorded by the architectural historian on appropriate California Department of Parks and Recreation (DPR) 523 forms, photographed, and mapped. The DPR forms shall be produced and forwarded to the Central California Information Center. If federal funding or approval is required, then the implementing agency shall comply with Section 106 of the National Historic Preservation Act.</p> <p>If architectural resources are deemed as potentially eligible for the California Register of Historic Resources or the National Register of Historic Places, the implementing shall consider avoidance through project redesign as feasible. If avoidance is not feasible, the implementing agencies shall ensure that the historic resource is formally documented through the use of large-format photography, measured drawings, written architectural descriptions, and historical narratives. The documentation shall</p>	SU

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		be entered into the Library of Congress, and archived in the California Historical Resources Information System. In the event of building relocation, the implementing agency shall ensure that any alterations to significant buildings or structures conform to the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings.	
GREENHOUSE GASES AND CLIMATE CHANGE			
Impact 3.6.1: Greenhouse Gas Emissions impacts from Growth and Transportation	LS		--
Impact 3.6.2: Consistency with AB 32 and SB 375	LS		--
Impact 3.6.3: Construction Related Impacts from GHG Emissions	LS		--
Impact 3.6.4: Conflict with applicable local plans designed to reduce GHG	LS		--
Impact 3.6.5: Conflict with the goal of reducing usage of nonrenewable energy resources for transportation purposes	LS		--
LAND USE AND PLANNING			
Impact 3.7-1: SCS - Physical Division of an Established Community	LS		--
Impact 3.7-2: MTP - Physical Division of an Established Community	PS	Mitigation Measure 3.7.1: Prior to approval of MTP projects, the implementing agency shall consult with local planning staff to ensure that the project will not physically divide the community. The consultation should include a more detailed project-level analysis of land uses adjacent to proposed improvements to identify specific impacts. The analysis	LS

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		<i>should consider new road widths and specific project locations in relation to existing roads. If it is determined that a project could physically divide a community, the implementing agency shall redesign the project to avoid the impact, if feasible. The measures could include realignment of the improvements to avoid the affected community. Where avoidance is not feasible, the implementing agency shall incorporate minimization measures to reduce the impact. The measures could include: alignment modifications, right-of-way reductions, provisions for bicycle, pedestrian, and vehicle facilities, and enhanced landscaping and architecture.</i>	
Impact 3.7-3: SCS - Conflicts with Applicable Land Use Plan, Policy, or Regulation Adopted to Avoid or Mitigate an Environmental Effect	LS		--
Impact 3.7-4: MTP - Conflicts with Applicable Land Use Plan, Policy, or Regulation Adopted to Avoid or Mitigate an Environmental Effect	LS		--
Impact 3.7-5: Conflicts with Any Applicable Habitat Conservation Plan or Natural Community Conservation Plan	PS	Implement Mitigation Measure 3.4-7	LS
Impact 3.7-6: Induce Substantial Population Growth in an Area	LS		--
Impact 3.7-7: SCS - Displace Substantial Numbers of People or Existing Housing, Necessitating the Construction of Replacement Housing Elsewhere	LS		--
Impact 3.7-8: MTP - Displace Substantial Numbers of People or Existing Housing, Necessitating the Construction of Replacement	LS		--

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Housing Elsewhere			
NOISE			
Impact 3.8-1: Exposure of Noise-Sensitive Land Uses to Short-Term Construction Noise	PS	<p>Mitigation Measure 3.8-1: Subsequent projects under the MTP/SCS shall be designed and implemented to reduce adverse construction noise and vibration impacts to sensitive receptors, as feasible. Measures to reduce noise and vibration effects may include, but are not limited to:</p> <ul style="list-style-type: none"> • Limit noise-generating construction activities, excluding those that would result in a safety concern to workers or the public, to the least noise-sensitive daytime hours, which is generally 6am to 9pm. • Construction of temporary sound barriers to shield noise-sensitive land uses. • Location of noise-generating stationary equipment (e.g., power generators, compressors, etc.) at the furthest practical distance from nearby noise-sensitive land uses. • Phase demolition, earth-moving and ground-impacting operations so as not to occur in the same time period. • Use of equipment noise-reduction devices (e.g., mufflers, intake silencers, and engine shrouds) in accordance with manufacturers' recommendations. • Substituting noise/vibration-generating equipment with equipment or procedures that would generate lower levels of noise/vibration. For instance, in comparison to impact piles, drilled piles or the use of a sonic or vibratory pile driver are preferred alternatives where geological conditions would permit their use. • Other specific measures as they are deemed appropriate by the implementing agency to maintain consistency with adopted policies and regulations regarding noise. • Comply with all local noise control and noise rules, regulations, and ordinances. 	LS

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Impact 3.8-2: Exposure of Noise-Sensitive Land Uses to Increases in Traffic Noise	PS	<p>Mitigation Measures 3.8-2: Prior to approval of MTP projects, the implementing agency shall perform a project-level noise evaluation. For projects adjacent to noise-sensitive uses, implementing agencies shall consider the following measures:</p> <ul style="list-style-type: none"> • Construct vegetative earth berms with mature trees and landscaping to attenuate roadway noise on adjacent residences or other sensitive use, and/or sound walls or other similar sound-attenuating buffers, as appropriate. • Properly zone, buffer, and restrict development to ensure that future development is compatible with transportation facilities. • Design projects to maximize the distance between noise-sensitive land uses and new roadway lanes, roadways, rail lines, transit centers, park-and-ride lots, and other new noise generating facilities. • Improve the acoustical insulation of residential units where setbacks and sound barriers do not sufficiently reduce noise. • Establish speed limits and limits on hours of operation of rail and transit systems. 	LS
TRANSPORTATION AND CIRCULATION			
Impact 3.9-1: Cause an increase in vehicle miles traveled (VMT) per capita above baseline conditions for the region	PS		SU
Impact 3.9-2: Cause an increase in vehicle miles traveled on congested roadways (CVMT) per capita relative to baseline conditions	PS		SU
Impact 3.9-3: Disrupt or interfere with existing or planned public transit facilities	LS		--
Impact 3.9-4: Disrupt or interfere with	LS		--

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planned bicycle and pedestrian facilities			
Impact 3.9-5: Disrupt or interfere with the movement of agricultural products on rural roadways	LS		--
Impact 3.9-6: Disrupt goods movement along the regional road system	LS		--
HAZARDS AND HAZARDOUS MATERIALS			
Impact 4.5.1: Potential to create a significant hazard through the routine transport, use, or disposal of hazardous materials or be located on a hazardous site.	PS	Mitigation Measure 4.5.1: Implement site-specific analysis for hazardous materials, remediation, and clean-up. Implementing agencies shall investigate potential for projects to be located at or near areas that are reasonably expected to contain hazardous materials, DTSC sites, areas containing ADL or naturally occurring asbestos, or at any structure that may contain asbestos. Site-specific evaluation should include an assessment of historical use of the area and soil sampling should be included as necessary. If a project site is found to be contaminated, clean up measures in accordance with the appropriate regulatory agency procedures will be implemented. Additionally, appropriate remediation measures will be employed to ensure worker safety during construction. All measures will be submitted to the DTSC for review and approval prior to project construction.	LS
Impact 4.5.2: Potential to create a significant hazard through reasonably foreseeable upset and accident conditions involving the release or emission of hazardous materials.	LS		--
Impact 4.5.3: For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a airport or airstrip, would the project result in a safety hazard for people residing or working	LS		--

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in the project area.			
Impact 4.5.4: Impair implementation of or physically interfere with an adopted emergency response plan or evacuation plan.	PS	Mitigation Measure 4.5.2: The implementing agencies shall assess the necessity of a Transportation Management Plan (TMP) on a project-by-project basis. If the individual project will result in road closures, traffic detours, or congestion on main thoroughfares or roads that provide primary access to populated areas, a TMP shall be prepared prior to the initiation of project construction. The TMP will be provided to all emergency service providers in the construction area and will notify them of anticipated dates and hours of construction, as well as any anticipated limits on access. Notice will be provided at least 5 days before construction begins.	LS
Impact 4.5.5: 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.	LS		--
HYDROLOGY AND WATER QUALITY			
Impact 4.5.6: Violate any water quality or waste discharge requirements or depletion of groundwater supplies or recharge.	PS	<p>Mitigation Measure 4.5.3: Prior to construction, the implementing agency shall:</p> <ul style="list-style-type: none"> • Design new bridges or bridge replacement in accordance with the Butte County Flood Mitigation Plan, which includes provisions for adequate clearance, proper design, and debris walls, where needed, to reduce damage caused by tree logs and excessive debris accumulation. • Develop and implement a spill prevention and control program to minimize the potential for, and effects from, spills of hazardous, toxic, or petroleum substances during all construction activities. • Comply with NPDES and Waste Discharge Requirements when dewatering is required. 	LS

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		<p>Mitigation Measure 4.5.4: After construction, the implementing agency shall:</p> <ul style="list-style-type: none"> • Implement source and treatment control measures that minimize the volume and rate of stormwater runoff discharge from the project site. General site design control measures incorporated into the project design can include: <ul style="list-style-type: none"> ○ conserving natural areas; ○ protecting slopes and channels; ○ minimizing impervious areas; ○ storm drain identification, and appropriate messaging and signing; and ○ minimizing effective imperviousness through the use of turf buffers and/or grass-lined channels, if feasible. • Implement treatment control measures, if possible and when feasible, to remove pollutants from stormwater runoff prior to discharge to the storm drain system or receiving water. Treatment control measures may include, but not be limited to, the following: <ul style="list-style-type: none"> ○ Vegetated buffer strip ○ Vegetated swale ○ Extended detention basin ○ Wet pond ○ Constructed wetland ○ Detention basin/sand filter ○ Porous pavement detention ○ Porous landscape detention ○ Infiltration basin ○ Infiltration trench ○ Media filter 	

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Impact 4.5.7: Alter the existing drainage pattern in a manner which would result in substantial erosion, siltation, flooding, or polluted runoff	PS	<ul style="list-style-type: none"> ○ Retention/irrigation ○ Proprietary control device <p>Selection and implementation of these measures would be based on a project-by-project basis depending on project size and stormwater treatment needs.</p> <p>Mitigation Measure 4.5.5: Implementing agencies shall conduct project-level drainage studies. This study shall address the following topics:</p> <ul style="list-style-type: none"> • A calculation of pre-development runoff conditions and post-development runoff scenarios using appropriate engineering methods. This analysis will evaluate potential changes to runoff through specific design criteria, and account for increased surface runoff. • An assessment of existing drainage facilities within the project area, and an inventory of necessary upgrades, replacements, redesigns, and/or rehabilitation, including the sizing of on-site stormwater detention features and pump stations. • A description of the proposed maintenance program for the onsite drainage system. • Standards for drainage systems to be installed on a project/parcel-specific basis. • Proposed design measures to ensure structures are not located within 100-year floodplain areas. <p>Drainage systems will be designed in accordance with applicable flood control design criteria. As a performance standard, measures to be implemented from those studies will provide for no net increase in peak stormwater discharge relative to current conditions, ensure that 100-year flooding and its potential impacts are maintained at or below current levels, and that people and structures are not exposed to additional flood risk.</p> <p>Mitigation Measure 4.5.6: Avoid restriction of flood flows. Proposed projects requiring</p>	LS

CC – cumulatively considerable

LCC – less than cumulatively considerable

LS – less than significant

PS – potentially significant

B – beneficial impact

SU – significant and unavoidable

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
		<p><i>federal approval or funding will comply with Executive Order 11988 for floodplain management. Projects will avoid incompatible floodplain development designs, they will restore and preserve the natural and beneficial floodplain values, and they will maintain consistency with the standards and criteria of the National Flood Insurance Program. In addition, a Letter of Map Revision (LOMR) will be prepared and submitted to FEMA where unavoidable construction would occur within 100-year floodplains. The LOMR will include revised local base flood elevations for projects constructed within flood prone areas. Potential impacts due to flooding as a result of MTP projects are assumed to be alleviated through the FEMA LOMR approval process.</i></p> <p>Mitigation Measure 4.5.7: Avoid project dewatering. Project designs that require continual de-watering activities for the life of the projects will be avoided if possible. Due to the potential for flooding and destabilizing conditions, project implementing agencies should choose project designs that do not require continual dewatering, if suitable project alternatives exist. Project alternatives may include construction of overpasses, as opposed to below-grade underpasses, which would avoid interception with groundwater.</p>	
MINERAL RESOURCES			
Impact 4.5.9: Potential to result in the loss of availability of a mineral resource of value to the region or state.	LS		--
PUBLIC SERVICES			
Impact 4.5.10: Potential to result in adverse impacts associated with the provision of public services including: fire, police, schools, parks, or other public services.	LS		--

CC – cumulatively considerable

LCC – less than cumulatively considerable

LS – less than significant

PS – potentially significant

B – beneficial impact

SU – significant and unavoidable

ES EXECUTIVE SUMMARY

<i>ENVIRONMENTAL IMPACT</i>	<i>LEVEL OF SIGNIFICANCE WITHOUT MITIGATION</i>	<i>MITIGATION MEASURE</i>	<i>RESULTING LEVEL OF SIGNIFICANCE</i>
RECREATION			
Impact 4.5.11: Potential to increase the use of recreational facilities.	LS		--
UTILITIES AND SERVICE SYSTEMS			
Impact 4.5.12: Potential to impact wastewater treatment, water supply, landfill or solid waste facilities or requirements.	LS		--
Impact 4.5.13: Potential to result in the construction of new storm water drainage facilities.	LS		--
CUMULATIVE IMPACTS			
Impact 4.1: Cumulative Degradation of the Existing Visual Character of the Region	LCC		--
Impact 4.2: Cumulative Impact on Agricultural and Forest Resources	PS	<i>Implement mitigation measure 3.2.1 and 3.2.2</i>	CC and SU
Impact 4.3: Cumulative Impact on the Region's Air Quality	LCC		--
Impact 4.4: Cumulative Loss of Biological Resources Including Habitats and Special Status Species	LCC		--
Impact 4.5: Cumulative Impacts on Known and Undiscovered Cultural Resources	PS	<i>Implement mitigation measure 3.5.1 through 3.5.4</i>	CC and SU

CC – cumulatively considerable *LCC – less than cumulatively considerable* *LS – less than significant*
PS – potentially significant *B – beneficial impact* *SU – significant and unavoidable*

EXECUTIVE SUMMARY

ES

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
Impact 4.6: Greenhouse Gas Emissions May Contribute to Climate Change	LCC		--
Impact 4.7: Cumulative Impact on Communities and Local Land Uses	LCC		--
Impact 4.8: Cumulative Noise Impacts	PS	Implement mitigation measure 3.8.1 and 3.8.2	CC and SU
Impact 4.9: Cumulative Impact on the Transportation Network	LCC		--

CC – cumulatively considerable

LCC – less than cumulatively considerable

LS – less than significant

PS – potentially significant

B – beneficial impact

SU – significant and unavoidable

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1.1 BUTTE COUNTY ASSOCIATION OF GOVERNMENTS

The Butte County Association of Governments (BCAG) is the federally designated Metropolitan Planning Organization (MPO) and the state designated Regional Transportation Planning Agency (RTPA) for Butte County, including the Cities of Biggs, Chico, Gridley, Oroville, and the Town of Paradise. As the MPO and RTPA, BCAG's transportation planning and programming efforts secure transportation funding for the region's highways, transit, streets and roads, pedestrian and other transportation system improvements throughout the region. BCAG will serve as CEQA lead agency for the environmental review of the 2012 MTP/SCS.

1.2 PLANNING FRAMEWORK

The 2012 Metropolitan Transportation Plan and Sustainable Communities Strategy (2012 MTP/SCS) introduces a planning framework that is updated from the 2008 RTP, to reflect current priorities and practices at the regional, State, and federal levels. This framework provides guidance to policy makers as they make decisions impacting the region's transportation system. Over the planning horizon of this long-range plan, the goals, policies, and objectives will produce a more coordinated and comprehensive transportation system that effectively and efficiently utilizes the region's resources to the benefit of the citizens of Butte County. The goals, policies, and objectives reflect the desired outcomes of the 2012 MTP/SCS.

FEDERAL PLANNING REQUIREMENTS

SAFETEA-LU

The Safe, Accountable, Flexible, Efficient, Transportation Equity Act – A Legacy for Users (SAFETEA-LU) requires metropolitan planning organizations (MPOs) to consider federal planning factors in their projects and strategies. These include:

- 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 nonmotorized users;
- Increase the security of the transportation system for motorized and nonmotorized users;
- Increase the accessibility and mobility of people and for 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.

The 2012 MTP is consistent with this federal requirement, and reflects all of the planning factors in the Goals and Objectives as described in the MTP.

Air Quality Conformity

The Clean Air Act Section 176(c) (42 U.S.C. 7506 (c)) and EPA's transportation conformity regulations (40 CFR 93.104(b) and (c)) require that each MTP demonstrate conformity to the State Implementation Plan (SIP) before the MTP is approved by the MPO or accepted by the U.S. Department of Transportation (DOT). This ensures that federally supported highway and transit project activities will not cause new air quality violations, worsen existing violations, or delay timely attainment of the relevant national ambient air quality standards (NAAQS). Conformity currently applies under EPA's rules to areas that are designated non-attainment, and those redesignated to attainment after 1990 ("maintenance areas").

An Air Quality Conformity Analysis and Determination has been prepared for the 2012 MTP. The Conformity demonstrates conformity to the State Implementation Plan.

STATE PLANNING REQUIREMENTS

SB 375 - Sustainable Communities Strategy

In September 2008 Governor Schwarzenegger signed Senate Bill 375 (SB 375), also known as the Sustainable Communities and Climate Change Act of 2008, as the mechanism to implement passenger vehicle greenhouse gas reductions outlined in Assembly Bill 32. Under SB 375, BCAG, as the region's MPO, has been designated by the state to prepare the area's "Sustainable Communities Strategy" (SCS) as an additional element of the 2012 MTP. The SCS will be the forecasted development pattern for the region, which, when integrated into the transportation network, and other transportation measures and policies, will meet the passenger vehicle greenhouse gas reduction target for the area. An SCS has been prepared for the 2012 MTP.

1.3 PURPOSE OF THE EIR

BCAG, as lead agency, determined that the proposed project is a "Project" within the definition of CEQA. CEQA requires the preparation of an environmental impact report (EIR) prior to approving any project, which may have a significant impact on the environment. For the purposes of CEQA, the term "Project" refers to the whole of an action, which has the potential for resulting in a direct physical change or a reasonably foreseeable indirect physical change in the environment (CEQA Guidelines Section 15378[a]).

An EIR must disclose the expected environmental impacts, including impacts that cannot be avoided, growth-inducing effects, impacts found not to be significant, and significant cumulative impacts, as well as identify mitigation measures and alternatives to the proposed project that could reduce or avoid its adverse environmental impacts. CEQA requires government agencies to consider and, where feasible, minimize environmental impacts of proposed development, and an obligation to balance a variety of public objectives, including economic, environmental, and social factors.

1.4 TYPE OF EIR

The State CEQA Guidelines identify several types of EIRs, each applicable to different project circumstances. This EIR has been prepared as a Program EIR pursuant to CEQA Guidelines Section 15168. Section 15168 states:

A program EIR is an EIR which may be prepared on a series of actions that can be characterized as one large project and are related either:

- 1) Geographically,
- 2) As logical parts in the chain of contemplated actions,
- 3) In connection with issuance of rules, regulations, plans or other general criteria to govern the conduct of a continuing program, or
- 4) As individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways.

The program-level analysis considers the broad environmental effects of the proposed 2012 Butte County MTP and SCS. This EIR will be used to evaluate subsequent projects and activities under the 2012 Butte County MTP and SCS. This EIR is intended to provide the information and environmental analysis necessary to assist public agency decision-makers in considering approval of the 2012 Butte County MTP and SCS, but not to the level of detail to consider approval of each transportation project identified in the MTP or the development of each individual land use within the SCS.

Additional environmental review under CEQA will be required and would be generally based on the subsequent project's consistency with the 2012 Butte County MTP and SCS and the analysis in this EIR, as required under CEQA. It may be determined that some future improvements may be exempt from environmental review. When individual subsequent projects or activities under the 2012 Butte County MTP and SCS are proposed, the lead agency that would approve and/or implement the individual project will examine the projects or activities to determine whether their effects were adequately analyzed in the program EIR (CEQA Guidelines Section 15168). If the projects or activities would have no effects beyond those disclosed in this EIR, no further CEQA compliance would be required.

1.5 INTENDED USES OF THE EIR

BCAG, as the lead agency, has prepared this EIR to provide the public and responsible and trustee agencies with an objective analysis of the potential environmental impacts resulting from adoption of the proposed project ("2012 Butte County MTP and SCS ") and subsequent implementation of individual projects outlined in the proposed project. The environmental review process enables interested parties to evaluate the proposed project in terms of its environmental consequences, to examine and recommend methods to eliminate or reduce potential adverse impacts, and to consider a reasonable range of alternatives to the project. While CEQA requires that consideration be given to avoiding adverse environmental effects, the lead agency must balance adverse

1.0 INTRODUCTION

environmental effects against other public objectives, including the economic and social benefits of a project, in determining whether a project should be approved.

This EIR will be used as the primary environmental document to evaluate all subsequent planning and permitting actions associated with the proposed project. Subsequent actions that may be associated with the proposed project are identified in Chapter 2.0, Project Description.

1.6 KNOWN RESPONSIBLE AND TRUSTEE AGENCIES

The term “Responsible Agency” includes all public agencies other than the Lead Agency that have discretionary approval power over the project or an aspect of the project (CEQA Guidelines Section 15381). For the purpose of CEQA, a “Trustee” agency has jurisdiction by law over natural resources that are held in trust for the people of the State of California (CEQA Guidelines Section 15386). While no Responsible Agencies or Trustee Agencies are responsible for approvals associated with adoption of the MTP/SCS, implementation of projects identified in the MTP/SCS will require permits and approvals from Lead, Trustee, and Responsible Agencies, which may include the following:

- Butte County
- City of Biggs
- City of Chico
- City of Gridley
- City of Oroville
- Town of Paradise
- Butte County Air Quality Management District
- California Transportation Commission
- California Department of Transportation
- California Department of Fish and Game
- California Department of Conservation
- Regional Water Quality Control Board
- State Water Resources Control Board
- Native American Heritage Commission
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service

1.7 ENVIRONMENTAL REVIEW PROCESS

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

NOTICE OF PREPARATION AND INITIAL STUDY

The BCAG circulated a Notice of Preparation (NOP) of an EIR for the proposed project and an Initial Study on January 17, 2012 to trustee and responsible agencies, the State Clearinghouse (SCH# 2012012034), and the public. A scoping meeting was held on Wednesday February 8th 4-6pm, Butte County Library in Oroville and on Thursday February 9th 4-6pm, Butte County Library in Chico. The NOP and Initial Study are presented in Appendix A.

DRAFT EIR

This document constitutes the Draft EIR. The Draft EIR contains a description of the project, description of the environmental setting, identification of project impacts, and mitigation measures for impacts found to be significant, as well as an analysis of project alternatives, identification of significant irreversible environmental changes, growth-inducing impacts, and

cumulative impacts. This Draft EIR identifies issues determined to have no impact or a less than significant impact, and provides detailed analysis of potentially significant and significant and unavoidable impacts. Comments received in response to the NOP were considered in preparing the analysis in this EIR. Upon completion of the Draft EIR, the BCAG will file the Notice of Completion (NOC) with the State Clearinghouse of the Governor's Office of Planning and Research to begin the public review period.

PUBLIC NOTICE/PUBLIC REVIEW

Concurrent with the NOC, the BCAG will provide a public notice of availability for the Draft EIR, and invite comment from the general public, agencies, organizations, and other interested parties. Consistent with CEQA requirements, the review period for this Draft EIR is forty-five (45) days. Public comment on the Draft EIR will be accepted both in written form and oral form. All comments or questions regarding the Draft EIR should be addressed to:

Brian Lasagna, Senior Planner
Butte County Association of Governments
2580 Sierra Sunrise Terrace, Suite 100
Chico, Ca 95928
(530) 879-2468

RESPONSE TO COMMENTS/FINAL EIR

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

CERTIFICATION OF THE EIR/PROJECT CONSIDERATION

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

- 1) The EIR shows a good faith effort at full disclosure of environmental information; and
- 2) The EIR provides sufficient analysis to allow decisions to be made regarding the proposed project in contemplation of environmental considerations.

Upon review and consideration of the Final EIR, the BCAG Board may take action to approve, revise, or reject the project. A decision to approve the proposed project, for which this EIR identifies significant environmental effects, must be accompanied by written findings in accordance with State CEQA Guidelines Sections 15091 and 15093. A Mitigation Monitoring Program, as described below, would also be adopted in accordance with Public Resources Code Section 21081.6(a) and CEQA Guidelines Section 15097 for mitigation measures that have been incorporated into or imposed upon the project to reduce or avoid significant effects on the environment. This Mitigation Monitoring Program will be designed to ensure that these measures are carried out during project implementation, in a manner that is consistent with the EIR.

1.8 ORGANIZATION AND SCOPE

Sections 15122 through 15132 of the State CEQA Guidelines identify the content requirements for Draft and Final EIRs. An EIR must include a description of the environmental setting, an environmental impact analysis, mitigation measures, alternatives, significant irreversible environmental changes, growth-inducing impacts, and cumulative impacts. Discussion of the environmental issues addressed in the Draft EIR was established through review of environmental and planning documentation developed for the project, environmental and planning documentation prepared for recent projects located within Butte County, and responses to the Notice of Preparation (NOP). This Draft EIR is organized in the following manner:

EXECUTIVE SUMMARY

The Executive Summary summarizes the characteristics of the proposed project, known areas of controversy and issues to be resolved, and provides a concise summary matrix of the project's environmental impacts and possible mitigation measures. This chapter identifies alternatives that reduce or avoid at least one significant environmental effect of the proposed project.

CHAPTER 1.0 – INTRODUCTION

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

CHAPTER 2.0 – PROJECT DESCRIPTION

Chapter 2.0 provides a detailed description of the proposed project, including the location, intended objectives, background information, the physical and technical characteristics, including the decisions subject to CEQA, subsequent projects and activities, and a list of related agency action requirements.

CHAPTER 3.0 - ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES

Chapter 3.0 contains an analysis of environmental topic areas as identified below. Each subchapter addressing a topical area is organized as follows:

Environmental Setting. A description of the existing environment as it pertains to the topical area.

Regulatory Setting. A description of the regulatory environment that may be applicable to the project.

Impacts and Mitigation Measures. Identification of the thresholds of significant by which impacts are determined, a description of project-related impacts associated with the environmental topic, identification of appropriate mitigation measures, and a conclusion as to the significance of each impact. The following environmental topics are addressed in this section:

- Aesthetics
- Agricultural Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Green House Gases/Climate Change
- Land Use and Population
- Noise
- Transportation and Circulation

The Initial Study determined that there would be no impact or a less-than-significant impact to the following environmental issue areas: geology/soils, hazards and hazardous materials, hydrology, mineral resources, public services, recreation, and utilities. These issues are discussed in Chapter 4 under "Issues Determined to be Less than Significant. The basis for the no impact or less than significant determination for each of these topics is also described in the Initial Study (Appendix A).

CHAPTER 4.0 – OTHER CEQA-REQUIRED TOPICS

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

CHAPTER 5.0 - ALTERNATIVES TO THE PROJECT

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

CHAPTER 6 - REPORT PREPARERS

Chapter 6.0 lists all authors and agencies that assisted in the preparation of the EIR, by name, title, and company or agency affiliation.

APPENDICES

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

1.9 COMMENTS RECEIVED ON THE NOTICE OF PREPARATION

The BCAG received two comment letters on the NOP. A copy of each letter is provided in Appendix B of this Draft EIR and the comments are summarized below.

Native American Heritage Commission (NAHC). The NAHC noted that CEQA requires the preparation of an Environmental Impact Report to assess the potential for the proposed project to have an adverse impact on historical and/or archaeological resources. The NAHC noted that the Sacred Lands File was searched for Butte County and Native American cultural resources were identified, but are exempted from public disclosure pursuant to the California Government Code Section 6254. The NAHC recommends consultation with Native American tribes in the plan area as a way to best avoid unanticipated discoveries of resources during construction. The NAHC presents

the appropriate steps for consulting with the Native American tribes for federal projects and recommends confidentiality of historic and archeological resources that occur in the plan area. The NAHC also cites regulations for dealing with accidentally discovered archaeological resources or human remains during construction. Lastly, the NAHC reiterates the needs for effective consultation with the Native American tribes on individual projects in the plan area.

Central Valley Flood Protection Board (CVFPB). The CVFPB notes that the proposed project is within their jurisdiction and that they are required to enforce standards for construction, maintenance, and protection of flood control plans. The CVFPB provides a list of activities that require a permit from their agency. The list includes a broad range of actions that involve cutting into a levee, landscaping/planting that could interfere with flood control, and existing structures that predate permitting. The CVFPB cites CEQA Guidelines that require a discussion of cumulative impacts. The CVFPB reiterates that vegetation must not interfere with flood control. The CVFPB states that the EIR should include mitigation measures for channel and levee improvements and maintenance to prevent and/or reduce hydraulic impacts. Lastly, the CVFPB provides a link to the permit application on their website.

The proposed project is the 2012 Metropolitan Transportation Plan and Sustainable Communities Strategy (2012 MTP/SCS) for Butte County (County). This section describes the primary components of the 2012 MTP/SCS and provides the following information: (1) The location and boundaries of the proposed project on a regional map; (2) A statement of objectives sought by the proposed project; (3) A general description of the project's technical, economic and environmental characteristics; and (4) A statement briefly describing the intended uses of the EIR. Figures referenced throughout this section are located at the end of the section. The full 2012 MTP/SCS is available for review at the BCAG website (www.bcag.org).

2.1 PROJECT LOCATION

Butte County encompasses approximately 1,665 square miles in north central California (**Figure 2.1-1**). The western part of the county is located in the northern Sacramento Valley, while the eastern portion extends into the foothills of the Cascade and Sierra Nevada Mountain Ranges. Elevations range from 50 feet above sea level at Butte Sink along the Sacramento River at the southwest portion of the county, to 7,087 feet above sea level at Humboldt Summit near the county's northeastern border.

Butte County has five incorporated cities which range from small farming communities to regional urban centers. The Cities of Biggs and Gridley are located about five miles apart in the valley area in the southwest portion of the county, while the City of Chico is located further north in the western valley area. The City of Oroville, the County seat, is located along the Feather River in the southern portion of the county, and the Town of Paradise is on a ridge in the foothills near the center of the county (**Figure 2.1-2**).

Numerous unincorporated communities also dot Butte County. Feather Falls, Berry Creek, and Brush Creek are in the foothills in the southeastern portion of the county, while Paradise Pines, Magalia, Stirling City, Forest Ranch, Cohasset, and Butte Meadows are in the foothills in the northeastern area. The western portion of the valley includes the communities of Dayton, Durham, Nelson, and Richvale, with Palermo, Honcut, Cherokee and Forbestown further to the east (**Figure 2.1-2**).

Butte County is home to four local Native American Rancherias. These include Berry Creek Rancheria, Chico Rancheria, Enterprise Rancheria, and Mooretown Rancheria.

2.2 PROJECT GOALS AND OBJECTIVES

The purpose of the MTP is to provide a clear vision of the regional transportation goals, objectives, and policies in Butte County. The MTP 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 2012 MTP/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 maintain a Level of Service “D” on all regionally significant roads
- 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 transportationally disadvantaged persons.

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.
- 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.
- 10.4 Preserve productive farmland and land that provides habitat for rare, endangered or threatened species.

2.0 PROJECT DESCRIPTION

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 Metropolitan 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 DESCRIPTION

The proposed project is the adoption and implementation of the 2012 Butte County Metropolitan Transportation Plan and Sustainable Communities Strategy. Each are discussed below.

METROPOLITAN TRANSPORTATION PLAN (MTP)

The MTP has been prepared to fulfill the state requirements of AB 402 (Government Code Title 7, Chapter 2.5, Sections 65080-65082) using specific guidance from the California Transportation Commission Regional Transportation Plan Guidelines. More specifically, the MTP is a twenty-three year, comprehensive transportation plan for all modes including: highways, local streets and roads, transit, bicycle, aviation, rail, and goods movement. BCAG is required to adopt and submit an updated MTP to the California Transportation Commission (CTC) and the Department of Transportation (Caltrans) every four years. In addition, the MTP is used to demonstrate Air Quality Conformity requirements applicable to Butte County, and it documents the BCAG Board's priorities for transportation funding to the region.

The secondary purpose of the MTP is to serve as a foundation for the development of the shorter "action" plans called the Regional Transportation Improvement Program (RTIP), which satisfies California transportation planning requirements, and the federal counterpart referred to as the Federal Transportation Improvement Program (FTIP) for all transportation projects that contain federal transportation dollars, require federal approval, or are regionally significant.

2.0 PROJECT DESCRIPTION

The MTP contains three primary elements: Policy Element, Action Element, and Financial Element. The Sustainable Communities Strategy is also an integral part of the MTP, but it is discussed separately in this Section.

The **Policy Element** presents guidance to decision-makers of the implications, impacts, opportunities, and foreclosed options that will result from implementation of the MTP. California law (Government Code Section 65080 (b)) states that each MTP shall include a Policy Element that:

1. Describes the transportation issues in the region;
2. Identifies and quantifies regional needs expressed within both short and long range planning horizons; and,
3. Maintains internal consistency with the Financial Element and fund estimates.

The **Action Element** identifies programs and actions to implement the MTP in accordance with the goals, objectives, and policies set forth in the Policy Element. It includes regionally significant multimodal projects that currently have funding in place or that are projected to have funding in the future (Fiscally Constrained), while it also identifies other improvement projects that are needed but do not have funding (Fiscally Unconstrained).

The **Financial Element** identifies the current and anticipated revenue sources and financing techniques available to fund the fiscally constrained transportation investments described in the Action Element. It also identifies potential funding shortfalls and sources for the unconstrained project list.

More detailed information on the Butte County MTP can be found at the BCAG website, (www.bcag.org).

The Policy Element

The 2012 MTP built upon the 2008 RTP goals, policies, objectives, and performance measures in order to provide a simplified and more clearly articulated vision of the future that emphasizes the fundamental values reflected in past RTPs, while at the same time, addresses the current values and priorities as articulated through public outreach efforts.

The purpose of the Policy Element is to identify legislative, planning, financial and institutional issues and requirements, as well as any areas of regional consensus. The Policy Element presents guidance to decision-makers of the implications, impacts, opportunities, and foreclosed options that will result from implementation of the MTP. The Policy Element is a resource for providing input and promoting consistency of action among State, regional and local agencies. California statutes state that each MTP shall (Government Code Section 65080 (b)) include a Policy Element that:

1. Describes the transportation issues in the region;
2. Identifies and quantifies regional needs expressed within both short and long range planning horizons (Government Code Section 65080(b)(1)); and,
3. Maintains internal consistency with the Financial Element and fund estimates.

The Action Element

The Action Element identifies programs and actions to implement the 2012 MTP/SCS in accordance with the goals, objectives, and policies set forth in the Policy Element. The Action Element consists of short-term and long-term activities that address regional transportation issues and needs. All transportation modes and strategies (highways, local roads, bridges, transit, bicycle, aviation, ITS, TCM and rail) are addressed. The Action Element is divided up into eight chapters as follows:

- **Action Element Conclusions:** This chapter is a summary of the Action Element.
- **Highways, Local Streets and Roads:** The highways, local streets, and roads component of the Action Element identifies highway/roadway needs and presents planned improvements. Because this MTP is financially constrained, those projects that do not fall within the anticipated funding projections have been identified as “un-funded needs” in the Financial Element.
- **Transit:** The transit component of the Action Element identifies in detail the current Butte Regional Transit system as well as discussion of planned improvements. Since the last RTP was prepared, BCAG has prepared a market based transit study and have implemented its recommendations.
- **Non-motorized:** The non-motorized component of the Action Element provides a detailed discussion of non-motorized travel options with appropriate plans for needed improvements.
- **ITS:** The ITS component of the Action Element discusses the ITS Plan prepared for Butte, Glenn, and Colusa counties in collaboration. ITS is intended to apply electronics, computers, and technology to efficiently manage transportation systems and assets.
- **Aviation:** The aviation component of the Action Element is a direct product of a project initiated by Caltrans Division of Aeronautics. The project is a joint effort to prepare Butte County’s portion of the Interregional California Aviation System Plan (ICASP).
- **Rail:** The rail component of the Action Element discusses the existing rail services, and provides an assessment of rail service needs. This chapter provides short and long range actions for addressing the rail service needs of the region including planned improvements.
- **Goods Movement:** The goods movement component of the Action Element covers all transportation methods by which freight, commodities, and information are transported into and out of Butte County. This includes rail, truck, air, bus, and pipelines for freight transport, and fiber optic cable, cellular towers, telephone wire, radio waves, electrical wires, and other technology for information. This chapter provides short and long range actions for addressing the goods movement needs of the region.

The Action Element must be consistent with the financial constraints identified in the Financial Element, and must conform to the State Implementation Plan. Regionally significant projects are listed in the Action Element by transportation mode, and are grouped into tier I and tier II categories.

Tier I investments contain the highest priority and most urgent investment needs, and are separated into short term and long term categories. Enough funding is anticipated to be available over the life of the MTP to develop and construct or implement these improvements. Tier I improvements constitute the “financially constrained” element of the MTP.

Also included in the 2012 MTP is a vision element, titled “Tier II,” which includes additional projects and improvements that are needed and important to the regional system but which are not able to be funded at this time. Tier II improvements constitute the “financially unconstrained” element of the 2012 MTP.

LINKAGES

This portion of the Action Element identifies (links) the specific projects currently funded in the Regional Transportation Improvement Program (RTIP) and Federal Transportation Improvement Program (FTIP). The MTP is used as the foundation for the programming of the FTIP and RTIP. The RTIP and the FTIP identify the majority of the transportation projects programmed or planned through the state and federal process. The projects contained in this section are detailed enough in order to prepare an appropriate regional emissions analysis required to evaluate and demonstrate air quality conformity. In addition, during the 2004/2005 fiscal year, BCAG prepared a Regional ITS Architecture in compliance with the National Architecture. Project or project components that are later defined as a result of the Regional Architecture will be amended into the MTP to ensure consistency and to maintain a linkage with the RTIP and FTIP.

Where state highway projects are identified, BCAG consulted Caltrans District 3 to ensure consistency and linkage between the MTP, RTIP and Caltrans’ ITIP and SHOPP. This ensures consistency as well with the objectives contained in the State California Transportation Plan prepared by Caltrans. In addition, BCAG referred to the Transportation Concept Reports (TCRs) for the state highways in Butte County. Caltrans TCR website can be found at the following link: <http://www.dot.ca.gov/dist3/departments/planning/systemplanning.htm>

The Financial Element

The Financial Element identifies the current and anticipated revenue sources and financing techniques available to fund the planned transportation investments described in the Action Element. The purpose of the Financial Element is to:

- Estimate the costs and revenues to implement the projects identified in the Action Element
- Identify potential funding shortfalls
- List the candidate projects with available funding, and
- List the candidate projects if funding becomes available

The Financial Element of the MTP describes anticipated revenues over the next 23 years, including a discussion of the potential for other revenue sources.

SUSTAINABLE COMMUNITIES STRATEGY (SCS)

In 2008, Senate Bill 375 (SB 375), also known as the Sustainable Communities and Climate Change Act of 2008, was passed as the mechanism to implement passenger vehicle greenhouse gas reductions outlined in Assembly Bill 32 (AB 32). Under SB 375, BCAG, as the region's Metropolitan Planning Organization (MPO), has been designated by the state to prepare the area's "Sustainable Communities Strategy" (SCS) as an additional component of the 2012 MTP. The SCS demonstrates the integration of land use, housing, and transportation for the purpose of reducing greenhouse gas (GHG) emissions from passenger vehicles. In addition, SB 375 amends CEQA to provide incentives for residential and residential mixed use projects that help to implement the 2012 MTP/SCS.

Regional Targets

In 2010, the California Air Resources Board approved passenger vehicle GHG emission targets for the Butte County region for the years 2020 and 2035. The targets established for the Butte County region allow for a 1% increase, per capita, in passenger vehicle GHG emissions for both time periods (compared with 2005).

The SCS shows that the Butte County region will meet these targets, shown in Table 2-1, by balancing housing and employment growth within the specified growth areas; protecting sensitive habitat and open space; and investing in a multi-modal transportation system that serves the population of Butte County. The determination that BCAG will meet the CARB GHG reduction target is based upon model results as discussed in Section 3.6 Greenhouse Gas Emissions and Climate Change. The models and methodology used in preparing the per capita GHG estimates is described in the SCS Appendix 6, which can be found at the BCAG website (www.bcag.org).

TABLE 2-1: MTP/SCS PER CAPITA CO₂ FOR PASSENGER VEHICLES FROM 2005

TARGET YEAR	ARB TARGET	BCAG MTP/SCS
2020	1% increase	12% decrease
2035	1% increase	2% decrease

SOURCE: BCAG, 2012

Land Use Scenarios

The SCS included the development of land use scenarios that are intended to achieve the reduction targets. These land use scenarios were developed through a cooperative effort between BCAG, each local jurisdiction, and LAFCO. This partnership included the exchange of planning assumptions, review and comments regarding the information to be considered, review of the various documents, and the development of the land use scenarios. Additional public and stakeholder participation, in the development of the SCS and forecasted development pattern, were implemented through the BCAG Public Participation Plan (PPP).

Ultimately, three distinctive land use scenarios were developed for the purpose of illustrating the travel effects of different development patterns on the regional transportation system and the associated greenhouse gas emissions resulting from these patterns. In addition, the scenarios

2.0 PROJECT DESCRIPTION

allow BCAG to test the performance of the enhanced regional travel demand model to assure it was responding appropriately to changes in land use.

All three scenarios were prepared using the same regional employment, population and housing growth projections and regional transportation network. However, the following land use variables were adjusted to create the distinctive scenarios:

- The amount of development occurring within each of the five Growth Areas (i.e., Urban Center and Corridor, Established, New, Rural, and Agricultural).
- The levels of infill and redevelopment occurring within the Urban Center and Corridor and Established Growth Areas.
- The shares of single-family to multi-family development.
- The amount of growth accommodated within each local jurisdiction.

The land use scenarios were designed by first assembling the “balanced” scenario. The “balanced” scenario (scenario #1) was prepared based on land use information from the recent general plan updates, the latest information regarding planned development, reasonable assumptions regarding infill and redevelopment, regional growth forecasts, and a review of development attractions (i.e., motorized and non-motorized transportation networks, existing development, utility areas, etc.) and discouragements (i.e., resource areas and farmland, public lands, areas exceeding 25% slope, etc.). Secondly, the “dispersed” (scenario #2) and “compact” (scenario #3) scenarios were prepared to represent development occurring at opposite ends of the spectrum from scenario #1. The scenarios are described in more detail in Table 2-2. Each land use scenario was analyzed and results were compared for VMT, congested VMT, and CO₂. A complete description of the analysis for the land use scenarios is included in Appendix 10 of the SCS.

TABLE 2-2: DESCRIPTION OF MTP/SCS LAND USE SCENARIOS

<i>SCENARIO</i>	<i>LAND USE</i>
Scenario 1 – Balanced	<ul style="list-style-type: none"> • Balanced share of new housing within the center, established and new growth areas • Contains reasonable levels of infill and redevelopment • Consistent with local land use plans and draft habitat conservation plan • Consistent with BCAG long-term regional growth forecasts by jurisdiction
Scenario 2 – Dispersed	<ul style="list-style-type: none"> • Largest share of single-family housing with a greater amount of growth directed to the new, rural, and agricultural growth areas • Minimize the amount of infill and redevelopment • Exceeds the unincorporated areas local land use plans reasonable capacities for growth
Scenario 3 – Compact	<ul style="list-style-type: none"> • Greatest share of infill and redevelopment within the established and center growth areas • Highest share of multi-family housing • Potential incompatibilities with existing infrastructure capacity • Exceeds the incorporated areas local land use plans reasonable capacities for growth

SOURCE: BCAG, 2012.

Growth Area Types

BCAG developed a framework for describing the MTP/SCS that is made up of Growth Area Types. The Growth Area Types are an adaption to a similar framework developed by the Sacramento Area Council of Governments (SACOG), BCAGs closest neighboring Metropolitan Planning Organization (MPO). Local land use plans (e.g., adopted and proposed general plans, specific plans, master plans, corridor plans, etc.) were divided into one of five Growth Area Types based on the location of the plans. The following contains a brief description of each Growth Area Type.

Table 2-3 summarizes the housing and employment in the MTP/SCS by Growth Area Type based on the “balanced” or preferred land use scenario. The forecasted allocations rely on growth that is consistent with the location, density, and intensity of use in existing or active draft general plans or other local adopted or active draft plans, but does not utilize all available capacity in those plans by 2035. **Exhibit 2-1** provides an illustration of the Growth Area Types.

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 which are more supportive of walking and bicycling. Future growth within these areas consists of compact infill developments on underutilized lands, or redevelopment of existing developed lands. Local plans identify these areas as opportunity 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 utilizes 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 may well be provided to areas which are directly adjacent to current urban routing and are able to achieve build-out. Pedestrian and bicycle infrastructure are typically required to be incorporated under the local jurisdictions plans.

Rural Areas consist of areas outside existing and planned urban areas with development at residential 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.

Agricultural, 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, or other rural uses.

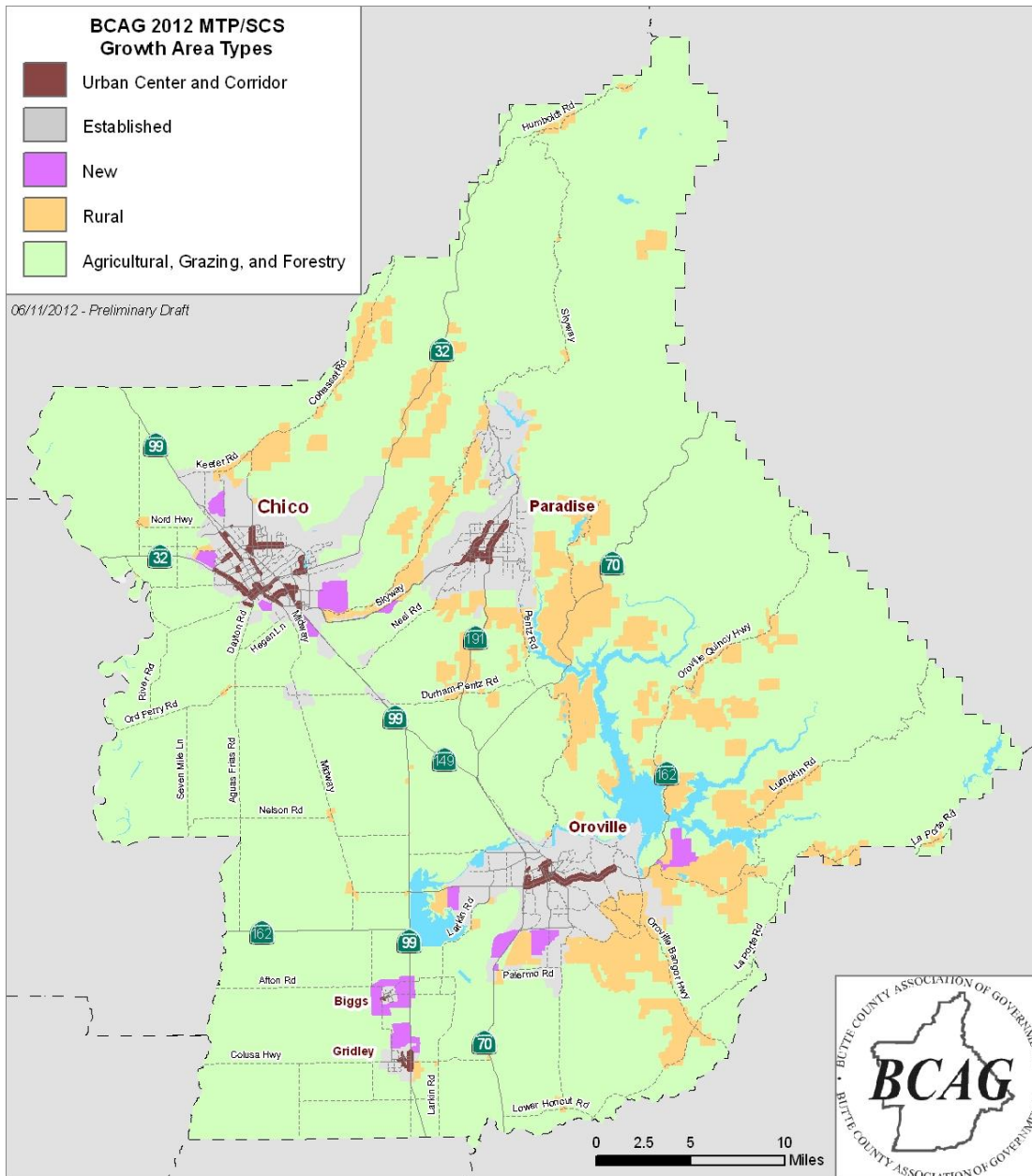


Exhibit 2-1 Growth Area Types

TABLE 2-3: SUMMARY OF HOUSING UNITS AND EMPLOYEES IN ESTABLISHED GROWTH AREA

GROWTH AREA TYPE	2010 EXISTING CONDITIONS		2010 - 2020 FORECASTED GROWTH		2010 - 2035 FORECASTED GROWTH		2035 FORECASTED EMPLOYEES AND HOUSING	
	EMPLOYEES	HOUSING UNITS	EMPLOYEE GROWTH	HOUSING GROWTH	EMPLOYEE GROWTH	HOUSING GROWTH	TOTAL EMPLOYEES	TOTAL HOUSING
Urban Center and Corridor Areas	30,471	8,375	3,063	838	9,804	2,760	40,275	11,135
Established Areas	37,535	73,639	11,137	10,960	23,573	26,493	61,108	100,131
New Areas	1,277	440	893	1,825	6,229	13,859	7,506	14,299
Rural Areas	950	7,829	429	955	902	2,924	1,852	10,753
Agricultural, Grazing, and Forestry Areas	1,268	6,340	192	613	271	1,289	1,539	7,629
Regional Total	71,501	96,623	15,713	15,190	40,778	40,778	112,279	143,948

SOURCE: BCAG, 2012.

Transit Priority Project Area

As established by SB 375, a Transit Priority Project (TPP) area is defined as a location within one-half mile of a major transit stop or an existing or planned high-quality transit corridor included in the MTP/SCS. A high-quality transit corridor is a corridor with fixed route bus service intervals no longer than 15 minutes during peak commute hours. Certain projects within a TPP area are eligible for CEQA streamlining benefits.

The MTP/SCS has identified the Chico Transit Priority Project Area (**Exhibit 2-2**) as an area with the greatest potential to meet the TPP definition, within the timeframe of the plan. The Chico TPP area covers the Downtown Chico Transit Center and the area surrounding B-Line route 15, which currently operates at the highest frequency in the BCAG region. New development within the Chico TPA consists mainly of infill and redevelopment opportunities. Mixed use, higher density, development, creating both employment and housing, is the primary allocation of new growth within the Chico TPA. Table 2-4 provides a summary of housing and employment forecasted to occur with the Chico TPP area.

TABLE 2-4: SUMMARY OF MTP/SCS NEW EMPLOYMENT AND HOUSING WITHIN CHICO TPP AREA

LOCATION	2010 - 2035 NEW EMPLOYEES	2010 - 2035 NEW HOUSING	
		SINGLE FAMILY	MULTI-FAMILY
Within Chico TPP Area	14%	4%	15%
Outside Chico TPP Area	86%	96%	85%
Region Total	100%	100%	100%

SOURCE: BCAG, 2012.

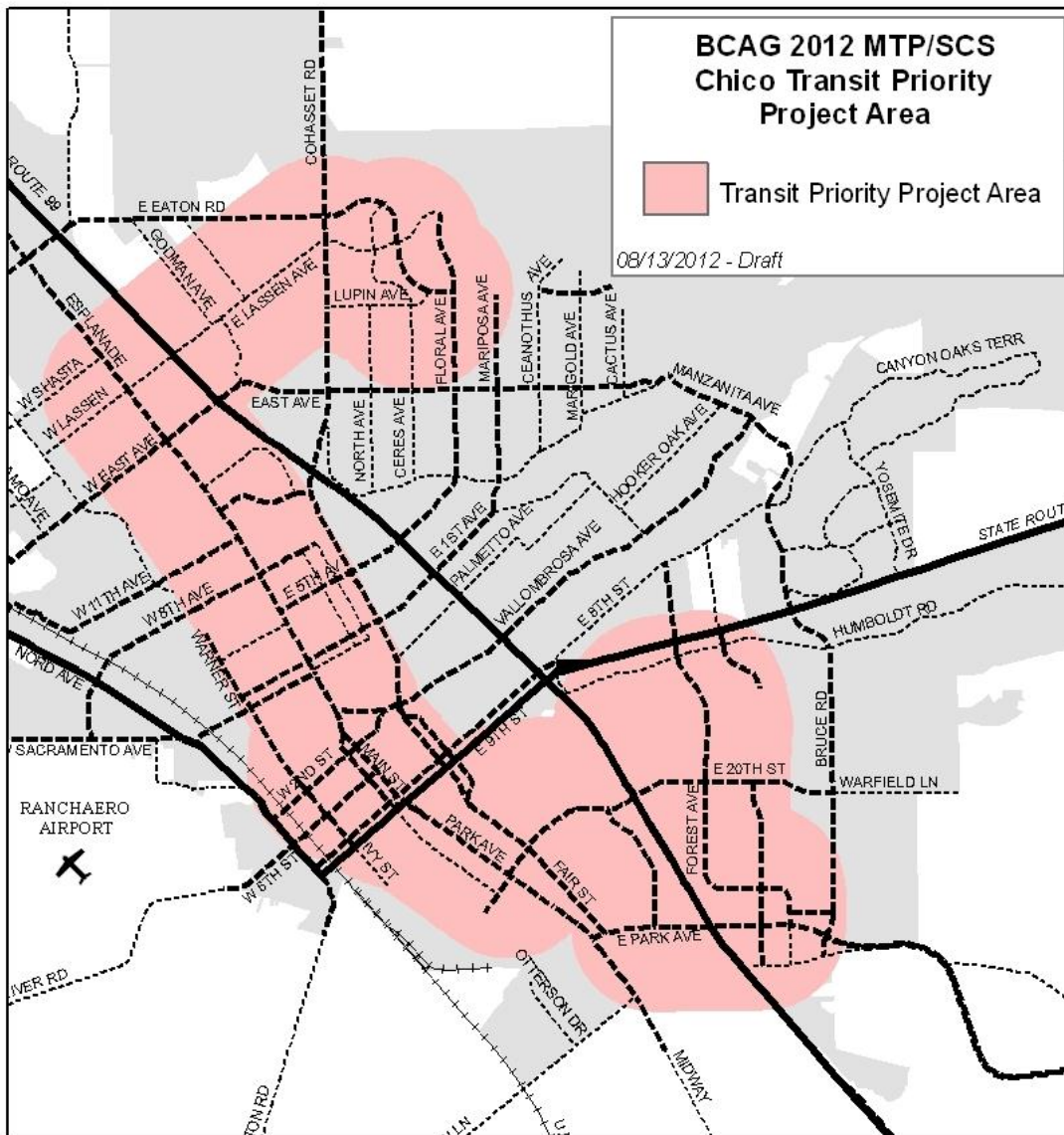


Exhibit 2-2 Chico Transit Priority Areas

Regional Housing Need Allocation

BCAG is required by state law to complete a Regional Housing Needs Allocation (RHNA), in consultation with the California Department of Housing and Community Development (HCD), in order to determine the region’s housing needs in four income categories - very low, low, moderate, and above moderate. This process occurs before each housing element cycle, which SB 375 changed from a five-year to eight-year cycle, for the Butte County region.

In the past, the RHNA was completed separately from the MTP. SB 375 now links the RHNA and MTP/SCS processes to better integrate housing, land use, and transportation planning. Integrating both processes helps ensure that the state’s housing goals are met. BCAG received the RHNA

Determination from HCD for the fifth housing element cycle (2014-2022), as shown in Table 2-5 below.

TABLE 2-5 REGIONAL DISTRIBUTION OF TOTAL RHNA DETERMINATION BY INCOME GROUP

INCOME GROUP	HOUSING UNITS
Very Low	2,495 (24.2%)
Low	1,720 (16.7%)
Moderate	1,710 (16.6%)
Above Moderate	4,395 (42.5%)
Total	10,320 (100%)

SOURCE: HCD AND BCAG, 2012.

Once the RHNA is determined each jurisdiction will receive an allocation and each jurisdiction will need to identify adequate sites to address its RHNA numbers in the four income categories when updating its housing element. Housing elements will be due no later than 18 months after the BCAG Board adopts the 2012 MTP/SCS.

SB 375 requires that the RHNA and SCS are consistent with one another – that is, that the SCS land use pattern can accommodate the 8-year RHNA Determination. Table 2-6 demonstrates the capacity of the SCS land use pattern to accommodate the RHNA determination.

TABLE 2-6: MTP/SCS 2010-2035 HOUSING UNIT GROWTH FORECAST BY JURISDICTION

JURISDICTION	HOUSING UNIT GROWTH FORECAST (2010 – 2035)	RHNP ALLOCATION*
Biggs	950	184
Chico	19,255	3,963
Gridley	3,405	769
Oroville	6,565	1,793
Paradise	2,975	637
Unincorporated	14,175	2,974
Total Region	47,325	10,320

*DRAFT RHNP ALLOCATION BASED ON ADOPTED METHODOLOGY

Local Government Land Use Authority and CEQA Streamlining

With the passage of SB 375 came the addition of California Environmental Quality Act (CEQA) streamlining incentives to assist and encourage residential and mixed use housing projects consistent with the SCS and Transit Priority Project Areas. The CEQA benefits available under SB 375 are for residential and residential mixed-use projects that are consistent with the general use designation, density, building intensity, and applicable policies specified for the project area in the SCS. The CEQA benefits provided by SB 375 apply to three types of projects. Table 2-7 contains a summary of the types of development projects eligible for these CEQA benefits, specific qualifications for each project, and the types of CEQA streamlining available to each type of project.

These streamlining provisions merely provide opportunities for local land use actions and do not prohibit the planning or development of any particular form of housing development. By express provision, SB 375 does not supersede the land use authority of a city or county and does not

regulate the use of land. Projects that use the SB 375 CEQA provisions still must obtain discretionary permits or other approvals from lead and responsible agencies in accordance with local codes and procedures. Moreover, SB 375 does not change how CEQA applies to projects that are inconsistent with the SCS or Alternative Planning Strategy (APS). As these CEQA benefits are designed to incentivize development projects consistent with the MTP/SCS, there is no disincentive for development projects not in the MTP/SCS. As noted, CEQA does not mandate that local agencies use the MTP/SCS to regulate GHG emissions or for any other purpose. Local government land use authority remains unchanged by SB 375; jurisdictions can consider, review, and approve any land use project by the same process and guidelines they use currently.

Although this MTP/SCS has no regulatory authority over local land use decisions, it provides information about the SCS so that local jurisdictions can determine whether a project is consistent with the SCS, and therefore, eligible for the CEQA benefits based on consistency with the SCS. To determine a project's consistency with the SCS, a jurisdiction must find it consistent with the general land use, density, intensity, and any applicable land use policies of the SCS. BCAG will provide assistance to a local jurisdiction in making this determination if the local jurisdiction requests such assistance.

TABLE 2-7 SB 375 CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) BENEFITS

<i>PROJECT DESIGNATION</i>	<i>QUALIFICATIONS</i>	<i>STREAMLINING BENEFITS</i>
Mixed Use Residential Project	<ul style="list-style-type: none"> At least 75% of total building square footage for residential use Consistent with the use designation, density, building intensity, and applicable policies for the project area of an SCS or APS accepted by ARB; OR A Transit Priority Project as defined below 	Environmental documents are not required to reference, describe or discuss: 1) growth-inducing impacts, 2) impacts on transportation or climate change of increased car and truck VMT induced by project, 3) reduced-density alternative to project.
Transit Priority Project	<ul style="list-style-type: none"> At least 50% of total building square footage for residential use; OR If 26-50% of total building square footage is nonresidential, a minimum FAR of 0.75 Minimum net density of 20 du/acre Within 0.5 miles of major transit stop or high-quality transit corridor included in the regional transportation plan (No parcel more than 25% further, and less than 10% of units or no more than 100 units further than 0.5 miles) Consistent with the use designation, density, building intensity, and applicable policies of an SCS or APS 	<ul style="list-style-type: none"> Benefits described above PLUS: Option to review under a "Sustainable Communities Environmental Assessment" - An Initial Study is prepared identifying significant or potentially significant impacts. Where the lead agency determines that cumulative impacts have been addressed and mitigated in SCS/APS, they will not be "considerable." Off-site alternatives do not need to be addressed. Deferential review standard - the burden of proof for legal challenge is on the petitioner/plaintiff. Traffic control/mitigation may be covered by SCS/APS.

<i>PROJECT</i>	<i>QUALIFICATIONS</i>	<i>STREAMLINING BENEFITS</i>
Sustainable Communities Project	<ul style="list-style-type: none"> • Everything for Transit Priority Project; PLUS: • Served by existing utilities • Does not contain wetlands or riparian areas • Does not have significant value as a wildlife habitat and does not harm any protected species • Not on the Cortese List • Not on developed open space • No impacts to historic resources • No risks from hazardous substances • No wildfire, seismic, flood, public health risk • 15% more energy-efficient than CA requirements and 25% more water-efficient than average for community • No more than 8 acres • No more than 200 units • No building greater than 75,000 square feet • No net loss of affordable housing • Compatible with surrounding industrial uses • Within ½-mile of rail/ferry or ¼-mile of high quality bus line • Meets minimum affordable housing requirements as prescribed in SB 375 OR in-lieu fee paid OR 5 acres of open space per 1,000 residents provided 	<ul style="list-style-type: none"> • Exempt from CEQA

SOURCE: BCAG, 2012.

2.4 USES OF THE EIR AND REQUIRED AGENCY APPROVALS

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

BUTTE COUNTY ASSOCIATION OF GOVERNMENTS

The BCAG is the lead agency for the 2012 Butte County MTP and SCS. The 2012 Butte County MTP and SCS will be presented to BCAG's Board for comment, review, and recommendations. The BCAG Board has the sole discretionary authority to adopt the 2012 Butte County MTP and SCS. In order to approve the 2012 Butte County MTP and SCS, the BCAG Board would consider the following actions:

- Certification of the 2012 Butte County MTP and SCS EIR;
- Adoption of required CEQA findings for the above action;
- Adoption of a Mitigation Monitoring and Reporting Program; and
- Adoption of the 2012 Butte County MTP and SCS.

Subsequent Use of the EIR

This EIR provides a review of environmental effects associated with implementation of the 2012 Butte County MTP and SCS. Agencies considering approval of subsequent activities under the 2012

2.0 PROJECT DESCRIPTION

Butte County MTP and SCS project would utilize this EIR as the basis in determining potential environmental effects and the appropriate level of environmental review of a subsequent activity.

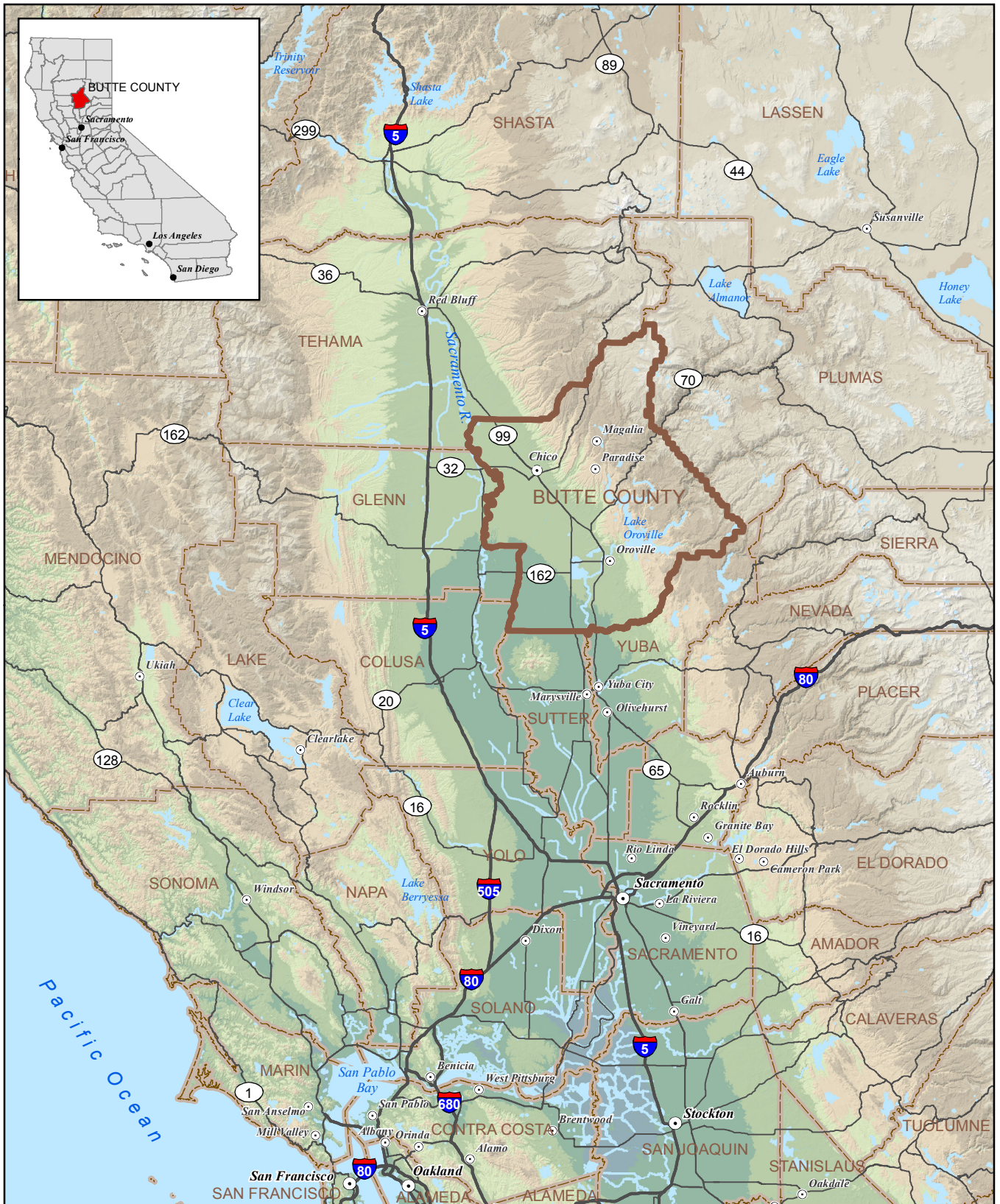
The BCAG and jurisdictions within the BCAG's jurisdiction, including Caltrans District 3, Butte County, the cities of Chico, Oroville, Gridley, Biggs, and the Town of Paradise, may perform or consider the following subsequent activities to implement the 2012 Butte County MTP and SCS:

- Tier off of this EIR for project-level environmental analysis;
- Further focused feasibility, planning and design studies;
- Various fee and financing programs; and
- Carrying out various infrastructure improvement projects.

OTHER GOVERNMENTAL AGENCY APPROVALS

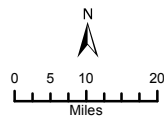
The BCAG approval of the proposed project would not require any actions by other public agencies. Subsequent infrastructure projects and other actions to support implementation of the proposed project would require actions, including permits and approvals, by other public agencies that may include, but are not necessarily limited to:

- California Department of Fish and Game (CDFG) approval of potential future streambed alteration agreements, pursuant to Fish and Game Code. Approval of any future potential take of state-listed wildlife and plant species covered under the California Endangered Species Act.
- California Department of Transportation (Caltrans) approval of projects and encroachment permits for projects affecting state highway facilities.
- Central Valley Flood Protection Board (CVFPB) approval for any construction activities within the tributaries or distributaries of the Sacramento River or designated floodways.
- Regional Water Quality Control Board (RWQCB) approval for National Pollution Discharge Elimination System compliance, including permits and Storm Water Pollution Prevention Plan approval and monitoring.
- U.S. Army Corps of Engineers (USACE) approval of any future wetland fill activities, pursuant to the Clean Water Act.
- U.S. Fish and Wildlife Service (USFWS) approvals involving any future potential take of federally listed wildlife and plant species and their habitats, pursuant to the Federal Endangered Species Act.



2012 BUTTE COUNTY METROPOLITAN TRANSPORTATION PLAN AND SUSTAINABLE COMMUNITIES STRATEGY

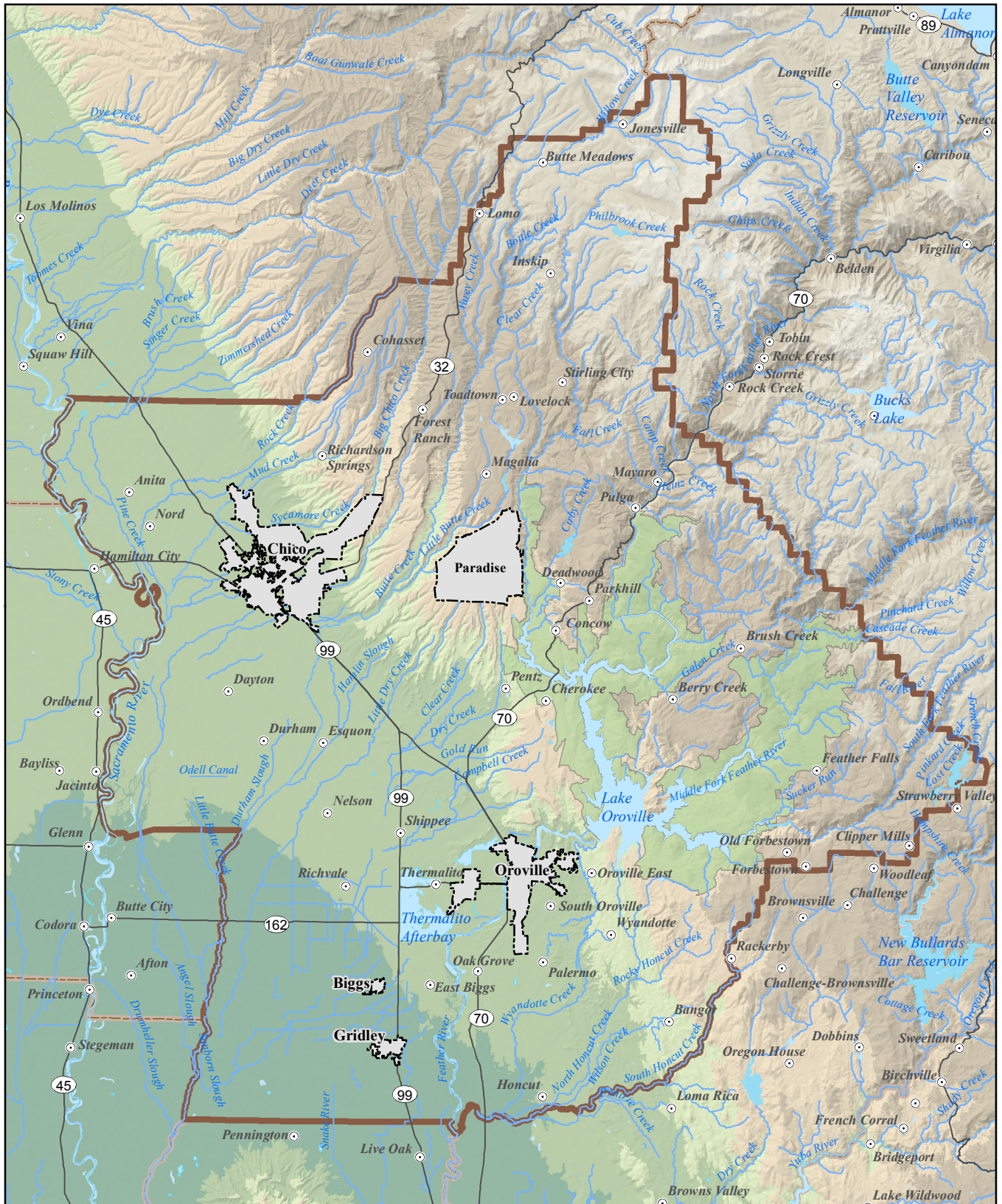
Figure 2.1-1. Regional Location



Data source: California Spatial Information Library
 Map date: August 9, 2011, Revised January 11, 2012.

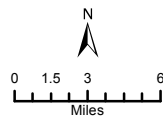
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2012 BUTTE COUNTY METROPOLITAN TRANSPORTATION PLAN AND SUSTAINABLE COMMUNITIES STRATEGY

Figure 2.1-2. Vicinity Map



Data source: California Spatial Information Library
 Map date: November 11, 2011, Revised January 11, 2012.

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This section provides an overview of the visual character, scenic resources, views, scenic highways, and sources of light and glare that are encountered throughout Butte County and the incorporated cities. This section concludes with an evaluation of the impacts and recommendations for mitigating impacts. No comments were received during the public review period or scoping meeting for the Notice of Preparation regarding this topic.

3.1.1 ENVIRONMENTAL SETTING

CONCEPTS AND TERMINOLOGY

The aesthetic value of an area is a measure of its visual character and quality, combined with the viewer response to the area (Federal Highway Administration 1983). Scenic quality can best be described as the overall impression that an individual viewer retains after driving through, walking through, or flying over an area (U.S. Bureau of Land Management 1980). Viewer response is a combination of viewer exposure and viewer sensitivity. Viewer exposure is a function of the number of viewers, number of views seen, distance of the viewers, and viewing duration. Viewer sensitivity relates to the extent of the public's concern for a particular viewshed. These terms and criteria are described in detail below.

Visual Character

Natural and artificial landscape features contribute to the visual character of an area or view. Visual character is influenced by geologic, hydrologic, botanical, wildlife, recreational, and urban features. Urban features include those associated with landscape settlements and development, including roads, utilities, structures, earthworks, and the results of other human activities. The perception of visual character can vary significantly seasonally, even hourly, as weather, light, shadow, and elements that compose the viewshed change. The basic components used to describe visual character for most visual assessments are the elements of form, line, color, and texture of the landscape features (U.S. Forest Service 1974; Federal Highway Administration 1983). The appearance of the landscape is described in terms of the dominance of each of these components.

Visual Quality

Visual quality is evaluated using the well-established approach to visual analysis adopted by Federal Highway Administration, employing the concepts of vividness, intactness, and unity (Federal Highway Administration 1983), which are described below.

- Vividness is the visual power or memorability of landscape components as they combine in striking and distinctive visual patterns.
- Intactness is the visual integrity of the natural and human-built landscape and its freedom from encroaching elements; this factor can be present in well-kept urban and rural landscapes, and in natural settings.

- Unity is the visual coherence and compositional harmony of the landscape considered as a whole; it frequently attests to the careful design of individual components in the landscape.

Visual quality is evaluated based on the relative degree of vividness, intactness, and unity, as modified by visual sensitivity. High-quality views are highly vivid, relatively intact, and exhibit a high degree of visual unity. Low-quality views lack vividness, are not visually intact, and possess a low degree of visual unity.

Viewer Exposure and Sensitivity

The measure of the quality of a view must be tempered by the overall sensitivity of the viewer. Viewer sensitivity or concern is based on the visibility of resources in the landscape, proximity of viewers to the visual resource, elevation of viewers relative to the visual resource, frequency and duration of views, number of viewers, and type and expectations of individuals and viewer groups.

The importance of a view is related, in part, to the position of the viewer to the resource; therefore, visibility and visual dominance of landscape elements depend on their placement within the viewshed. A viewshed is defined as all of the surface area visible from a particular location (e.g., an overlook) or sequence of locations (e.g., a roadway or trail) (Federal Highway Administration 1983). To identify the importance of views of a resource, a viewshed must be broken into distance zones of foreground, middle ground, and background. Generally, the closer a resource is to the viewer, the more dominant it is and the greater its importance to the viewer. Although distance zones in a viewshed may vary between different geographic region or types of terrain, the standard foreground zone is 0.25–0.5 mile from the viewer, the middle ground zone is from the foreground zone to 3–5 miles from the viewer, and the background zone is from the middle ground to infinity (U.S. Forest Service 1974).

Visual sensitivity depends on the number and type of viewers and the frequency and duration of views. Visual sensitivity is also modified by viewer activity, awareness, and visual expectations in relation to the number of viewers and viewing duration. For example, visual sensitivity is generally higher for views seen by people who are driving for pleasure, people engaging in recreational activities such as hiking, biking, or camping, and homeowners. Sensitivity tends to be lower for views seen by people driving to and from work or as part of their work (U.S. Forest Service 1974; Federal Highway Administration 1983; U.S. Soil Conservation Service 1978). Commuters and non-recreational travelers have generally fleeting views and tend to focus on commute traffic, not on surrounding scenery; therefore, they are generally considered to have low visual sensitivity. Residential viewers typically have extended viewing periods and are concerned about changes in the views from their homes; therefore, they are generally considered to have high visual sensitivity. Viewers using recreation trails and areas, scenic highways, and scenic overlooks are usually assessed as having high visual sensitivity.

Judgments of visual quality and viewer response must be made based in a regional frame of reference (U.S. Soil Conservation Service 1978). The same landform or visual resource appearing in different geographic areas could have a different degree of visual quality and sensitivity in each

setting. For example, a small hill may be a significant visual element on a flat landscape but have very little significance in mountainous terrain.

EXISTING CONDITIONS

Butte County is divided up into three geographic regions: the valley floor comprises 45 percent, the foothills region comprises 25 percent, and mountainous areas comprise 30 percent. The foothill and mountainous regions have varying topographic features, including rolling hills, volcanic peaks, and mesas. Much of the foothill and mountainous region is controlled by the federal government (USDA Forest Service and the Bureau of Land Management), while much of the valley is privately owned.

The density and intensity of development varies, with the majority of higher density development located in or near the incorporated cities and unincorporated urban communities. Incorporated communities within Butte County include: Biggs, Chico, Gridley, Oroville, and Paradise. Unincorporated communities in Butte County include: Berry Creek, Brush Creek, Butte Meadows, Cherokee, Cohasset, Dayton, Durham, Feather Falls, Forbestown, Forest Ranch, Honcut, Magalia, Nelson, Palermo, Paradise Pines, Richvale, and Stirling City. Native American Rancherias in Butte County include: Berry Creek Rancheria, Chico Rancheria, Enterprise Rancheria, and Mooretown Rancheria.

Scenic Views and Resources

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

Aesthetically significant features occur in a diverse array of environments within the region, ranging in character from urban centers to rural agricultural lands to natural water bodies, meadows, river canyons, rolling hills, buttes, woodlands, and forests. The extraordinary range of visual features in the region is afforded by the mixture of climate, topography, and flora and fauna found in the natural environment, and the diversity of style, composition, and distribution of the built environment.

Features of the built environment that may also have visual significance include individual or groups of structures that are distinctive due to their aesthetic, historical, social, or cultural significance or characteristics. Examples of the visually significant built environment may include bridges or overpasses, architecturally appealing buildings or groups of buildings, landscaped freeways, and a location where a historic event occurred.

Figure 3.1-1 illustrates the location of scenic views and resources within Butte County.

SCENIC RESOURCES

Table Mountain Spring Floral Area. The lava flow that now tops Table Mountain, located north of Oroville and east of State Route 70. Table Mountain blooms in the spring with native wildflowers, attracting many tourists and locals alike. The area is considered significant and much of it has been acquired by the State as a scenic area.

Central Buttes. Rising from the valley floor, the central buttes are geologic features that are remnants of the surrounding landform that eroded around them over the thousands of years. Many of these buttes are visible from three state highways (SR 99, SR 149 & SR 70). Some of the buttes have prehistoric caves and bedrock mortar sites located near their top.

Sacramento River and its Riparian Corridor. Some of the county's richest plant and animal habitat areas are found along the Sacramento River and its associated riparian corridor. The Sacramento River State Wildlife Area and the Sacramento River National Wildlife Refuge are located within this area.

Butte Meadows (and Colby Meadows area). Located in the Sierra Nevada mountains off SR 32 on the way to Chester/Susanville, Butte Meadows provides a series of wet meadows, some adjacent to Butte Creek. The Colby meadows area provides a recreation area for regional outdoor enthusiasts.

Butte Creek Canyon (vista along the Skyway). The heights of the Skyway open onto a panoramic display of the topographic and geologic features below.

Vina Plains (vernal pools) and Butte County Meadowfoam. While much of the Vina Plains are located in Tehama County, a portion of these plains occupy the northern portion of Butte County. The Vina Plains consist of vernal pools interspersed throughout the area. A vast array of flora, including Butte County Meadowfoam, exists on the Plains and around the vernal pools.

Lake Oroville. This lake provides many scenic vistas from several state highways (SR 70 and SR 162) that traverse its shores and provides an assortment of recreational activities for residents and visitors. Although the shores of the lake are owned by the California Department of Parks & Recreation, many of the vista points and accesses to viewsheds of the lake are privately held.

Gray Lodge Wildlife Area. The state owns and manages this 8,400-acre wildlife area located southwest of the city of Gridley. The wildlife area was created primarily as a winter feeding and resting habitat for migratory waterfowl.

Oroville Wildlife Area. The state owns and manages this 5,500-acre wildlife area located immediately west of the city of Oroville. It was created as a wildlife habitat to mitigate the construction of the Oroville Reservoir. Formed on the dredge tailing along the Feather River, it provides additional habitat for migrating waterfowl, shorebirds, and resident wildlife.

Philbrook Lake. A beautiful, tranquil mountain lake nestled between several scenic mountain outcroppings, the lake provides a variety of recreational opportunities, including boating and fishing.

Feather Falls. The Feather Falls Scenic Area is located northeast of Lake Oroville, near the community of Feather Falls. Outstanding features of the area include the spectacular granite domes and picturesque waterfalls. Feather Falls, the sixth highest waterfall in the U.S., is one of the most magnificent attractions in Butte County. Water plunges 640 feet over a sheer granite cliff to the canyon floor to meet the Middle Fork of the Feather River and Lake Oroville.

Seven Falls (aka South Branch Falls). Seven Falls is located in a remote part of the Plumas National Forest and is accessible by hiking only. It is a series of seven impressive waterfalls along the South Branch Middle Fork of the Feather River. Each waterfall is at least 40 feet high and is found in a narrow, steep, secluded canyon. The total change in elevation of all seven waterfalls is around 600 feet.

Scenic Highways and Corridors

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

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

SCENIC HIGHWAYS

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

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

SCENIC CORRIDORS

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

3.1 AESTHETICS

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

BUTTE COUNTY SCENIC HIGHWAYS/CORRIDORS

Only one highway section in Butte County is currently listed as an “Eligible State Scenic Highway” — State Route 70 north of State Route 149.

State Route 70 through the Feather River Canyon and a portion of State Route 32 north of Forest Ranch are recognized as County Scenic Highways.

There are scenic corridors in the county including: Forbestown Road east of Lake Oroville above 2,000 feet elevation; SR 162 on the south side of Lake Oroville and north of the North Fork of the Feather River; SR 70 north of Oroville and west/north of Table Mountain; SR 99 west of the Central Buttes; and SR 149 south of the Central Buttes and west of Table Mountain. Some of the scenic corridors traverse state-owned lands, where development poses little threat to the viewshed. Other scenic corridors pass through privately held areas.

Butte County has established a Scenic Highway Overlay Zone in the Zoning Ordinance that is applied to an area extended 350 linear feet from the centerline of scenic routes, including:

- Portions of State Route 32 north of Chico.
- Portions of State Route 70 north of the State Route 149 intersection.
- The Skyway with its expansive views of the Northern Sacramento Valley and Coast Range.
- The southern portions of State Route 191 and Pentz Road.
- The portion of State Route 162 along Lake Oroville.
- Portions of Forbestown Road and Lumpkin Road.

Scenic Water Resources and Wild and Scenic Rivers

Water resources are important visual resources that draw tourists to the area for recreational opportunities. The most visually significant water bodies in the region are Lake Oroville, Thermalito Forebay, and Thermalito Afterbay. Other recognized water bodies include Concow Reservoir, Lake Madrone, Lake Wyandotte, Magalia Reservoir, Paradise Lake, Philbrook Lake, Ponderosa Reservoir, and Round Valley Reservoir.

There are a multitude of rivers and streams within the region that drain precipitation and snowmelt from the Sierra Nevada and Cascades ranges. The most recognized include the Sacramento River, Butte Creek, Big Chico Creek, and the North, Middle and South Forks of the Feather River. The terrain ranges from very remote with limited access in the eastern portions of the county to very accessible in the western portions of the county. The Sacramento and Feather Rivers are popular recreational resources because of their scenic quality and accessibility.

WILD AND SCENIC RIVERS

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

There is one river in Butte County designated under the National Wild and Scenic Rivers System. The entire 77.6 mile reach of the Middle Fork Feather River downstream from the confluence of its tributary streams was designated as a Wild and Scenic River on October 2, 1968. The designation includes 32.9 miles of Wild classification, 9.7 miles of Scenic classification, and 35 miles of Recreational classification. The Middle Fork features Feather Falls and is an outstanding fishery.

3.1.2 REGULATORY SETTING

FEDERAL

U.S. Forest Service

The USFS prepared the Plumas National Forest Land and Resource Management Plan in 1988 to guide management and land use planning decisions in the Plumas National Forest. The plan provides a designation for areas based on established priorities for various resources, including wilderness, recreation, wildlife, timber, and visual resources. The plan establishes visual quality objectives for decisions that are made within the planning area.

Bureau of Land Management

The Bureau of Land Management (BLM) is responsible for ensuring that the scenic values of public lands under their jurisdiction are considered before allowing uses that may have negative visual impacts. BLM developed the Visual Resource Management (VRM) system as a means to provide a systematic approach to evaluating a proposed project and to determine whether the project conforms to the approved VRM objectives. It also provides a means to identify mitigation measures that can be taken to minimize adverse visual impacts. The VRM system helps to ensure that the actions taken on public lands today will benefit the landscape and adjacent communities in the future.

STATE

California Scenic Highway Program

The intent of the California Scenic Highway Program is “to protect and enhance California’s natural scenic beauty and to protect the social and economic values provided by the State’s scenic resources.” Caltrans administers the program, which was established in 1963 and is governed by the California Streets and Highways Code §260 et seq. The goal of the program is to preserve and protect scenic highway corridors from changes that would diminish the aesthetic value of the adjacent land. Caltrans has compiled a list of state highways that are designated as scenic and county highways that are officially designated or eligible for designation as scenic. State Route 70 north of State Route 149 is currently listed as an “Eligible State Scenic Highway.”

Scenic highway designation can provide several types of benefits to the region. Scenic areas are protected from encroachment of inappropriate land uses, free of billboards, and are generally required to maintain existing contours and preserve important vegetative features. Only low density development is allowed on steep slopes and along ridgelines on scenic highways, and noise setbacks are required for residential development.

LOCAL

Butte County General Plan

The Butte County General Plan establishes the following goals relative to visual resources in the General Plan:

- Goal COS-17 Maintain and enhance the quality of Butte County's scenic and visual resources.
- Goal COS-18 Protect and enhance scenic areas adjacent to and visible from highways for enjoyment by residents and visitors.

City of Biggs General Plan

The Biggs General Plan establishes the following goals relative to visual resources in the General Plan:

- Goal 2.1 Plan and develop roadways in an orderly and visually attractive manner which enhances the community and provides for the movement of people and goods within the City of Biggs.
- Goal 3.1 Maintain the small town character that makes Biggs a special place to live.
- Goal 3.2 Maintain and enhance the City's character and visual appearance in order to create a quality future community.

City of Chico General Plan

The Chico General Plan establishes the following goals relative to visual resources in the General Plan:

- Goal CD-1: Strengthen Chico's image and sense of place by reinforcing the desired form and character of the community.
- Goal CD-2: Enhance edges and corridors that represent physical boundaries, transitions and connections throughout the community.
- Goal CD-3: Ensure project design that reinforces a sense of place with context sensitive elements and a human scale.
- Goal CD-4: Maintain and enhance the character of Chico's diverse neighborhoods.
- Goal CD-5: Support infill and redevelopment compatible with the surrounding neighborhood.
- Goal CD-6: Enhance gateways and wayfinding systems for an improved sense of arrival and orientation for residents and visitors throughout Chico.

- Goal CD-7: Celebrate public art and expand the significant role the arts play in the quality of life and economic vitality of Chico.

City of Gridley General Plan

The Gridley General Plan establishes the following goals relative to visual resources in the General Plan:

- Conservation Goal 9.1 The City will consider views of the Sutter Buttes in the orientation of new roadways and trails, and maintain visual connections, where feasible.
- Conservation Goal 10: To reduce impacts from nighttime lighting and glare in the City of Gridley.
- Open Space Goal 2: To provide visual screening, buffering, trails, and drainage in open space corridors along the railroad and Highway 99 in the Planned Growth Area.

City of Oroville General Plan

The Oroville General Plan establishes the following goals relative to visual resources in the General Plan:

- Goal OPS-5 Maintain and enhance the quality of Oroville's scenic and visual resources.
- Goal OPS-14 Preserve Oroville's cultural resources, including archaeological, historic and paleontological resources, for their aesthetic, scientific, educational and cultural values.

Town of Paradise General Plan

The Paradise General Plan establishes the following goals relative to visual resources in the General Plan:

- OCEG-1 Improve the aesthetic appearance of the open areas within the primary and secondary study areas, particularly the entrances to the town.
- OCEG-5 Preserve the natural beauty and rural charm of Paradise.

Standards and Ordinances

The county and incorporated communities have various policies, implementing measures, standards and ordinances that address issues relating to aesthetics, such as minimizing the effect of development on scenic views, design standards, and lighting requirements. These requirements primarily pertain to new development, including infrastructure projects, within the jurisdictions.

3.1.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

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

3.1 AESTHETICS

- Have a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- Substantially degrade the existing visual character or quality of the site and its surroundings;
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

Generally, the greater the change from existing conditions, the more significant the impact. For example, the construction of a new interchange usually has a greater impact on the surrounding scenic area than the modification of an existing one. Likewise, the construction of a new roadway generally has a greater impact on scenic resources than the widening of an existing one. Road widening, however, can have potentially significant local impacts, especially when requiring the removal of trees and other important landscape buffers, or when construction of noise barriers or other visual impediments is necessary.

METHODOLOGY

The exact individual locations of each project under the MTP/SCS is not known and was therefore not physically surveyed or photo-documented as part of this program-level review. As the individual improvement projects are designed and the exact location of the improvements is known there will be a project-level review that will include an evaluation of the site-specific visual resources and potential impacts, and site specific design and mitigation measures.

IMPACTS AND MITIGATION MEASURES

Impact 3.1-1: Substantial Adverse Effects on Scenic Vistas and Resources or Substantial Degradation of Visual Character (less than significant with mitigation)

Views of scenic resources, including the Sutter Buttes, Coastal Range, Sierra Nevada, Skyway viewshed, scenic water resources, and other scenic resources in the county are available from highways and roadways, including scenic roads and corridors, throughout the county. Improvements to existing infrastructure, such as roadway widening, bridge replacements, signal installation, road rehabilitation, runway resurfacing, and runway extensions, may result in modification of the foreground of the various scenic viewsheds throughout the county. There is also potential for individual improvement projects, such as new roadways, bridges, and park-n-ride lots, or development consistent with the SCS, to affect scenic vistas and resources or degrade the visual character of the area. Examples would include improvement projects or development projects that are located adjacent to a broad viewshed such as the mountain ranges, valleys, ridgelines, or water bodies along roadways, or adjacent to the focal point of the forefront of the broad viewshed, such as visually important trees, rocks, or historic buildings. An impact would occur if a project would change the view to the middle ground or background elements of the broad viewshed, or remove the visually important trees, rocks, or historic buildings in the foreground.

While individual projects are not anticipated to significantly disrupt mid-ground or backdrop views of scenic vistas, individual projects have not yet been designed and may involve features, such as soundwalls, grading, or structures that may disrupt views. These projects may involve removal of trees or other visually significant features, or may result in development that would cause an intermittent interruption in views to users of the highways, roadways, and other components of the transportation system. Individual projects could also convert areas of open space to developed uses, resulting in a permanent change in views.

While each jurisdiction in which the improvements may be located has policies related to the protection of scenic resources and views, the potential remains for removal of scenic features, particularly those that would be in the foreground of scenic viewsheds and vistas. This impact is potentially significant. Mitigation Measures 3.1.1 and 3.1.2 require projects to include design measures to avoid or reduce removal of scenic features and scenic views. Implementation of Mitigation Measures 3.1.1 and 3.1.2 would reduce the impact to a **less-than-significant** level.

MITIGATION MEASURE

Mitigation Measure 3.1.1: *The implementing agency shall implement the following measures in the design of a project:*

- *Design transportation systems in a manner where the surrounding landscape dominates.*
- *Design transportation systems to be compatible with the surrounding environment (e.g., colors and materials of construction material).*
- *Design transportation systems such that landscape vegetation blends in and complements the natural landscape.*
- *Design transportation systems such that trees are maintained intact, or if removal is necessary, incorporate new trees into the design.*
- *Design grades to blend with the adjacent landforms and topography.*

Mitigation Measure 3.1.2: *Prior to the design approval of a project, the implementing agency shall assess whether the project would remove any significant visual resources in the project area, which may include trees, rock outcroppings, and historical buildings, and shall also assess whether the project would significantly obstruct views of scenic resources including historic buildings, trees, rocks, or scenic water features, and shall also identify whether the improvement would significantly obstruct views of scenic resources, such as views of the Sutter Buttes, Coastal Range, Sierra Nevada Range, and scenic water features.*

If it is determined that a project would remove significant visual resources, the implementing agency shall consider alternative designs that seek to avoid and/or minimize impacts from removal of significant visual resources to the extent feasible. Project-specific design measures may include revisions to the plans to retain trees, rocks, and historic buildings, or replanting of trees, and/or the relocation of scenic features.

If it is determined that the a project would significantly obstruct scenic views, the implementing agency shall consider alternative designs that seek to avoid and/or minimize obstruction of scenic views to the extent feasible. Project-specific design measures may include reduction in height of improvements or width of improvements to reduce obstruction of views, or relocation of improvements to reduce obstruction of views.

Impact 3.1-2: Creation of New Sources of Light and Glare (less than significant with mitigation)

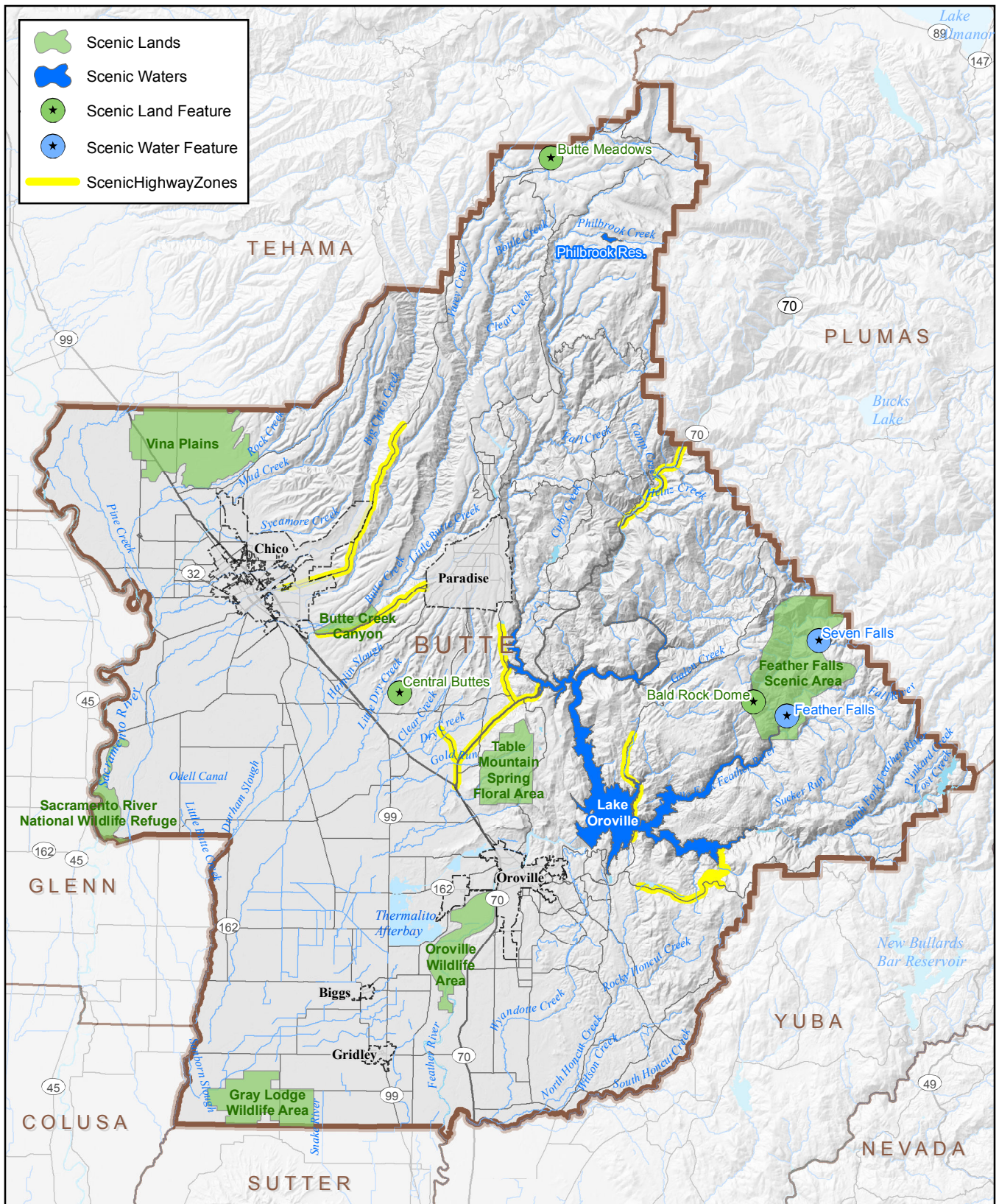
There is a potential for an individual project under the MTP/SCS to create new sources of light and glare near sensitive receptors. Examples would include projects that require the new roadway lighting, lit signs, and/or construction lighting. While the county and incorporated communities have policies regarding visual resources, there is not a consistent approach to restrictions on sources of lighting and glare. As a result, an individual project under the MTP/SCS may result in increased lighting and glare. This impact is potentially significant. The following mitigation measure would require lighting that is directed downward and away from adjacent sensitive land uses, installation of shields to avoid light spillage, installation of dense landscaping to block light from sensitive land uses where necessary. Implementation of the following mitigation measure would reduce this impact to a ***less-than-significant*** level.

MITIGATION MEASURES

Mitigation Measure 3.1.3: *Projects shall be designed to meet minimum safety and security standards and to avoid spillover lighting to sensitive uses. Design measures shall include the following:*

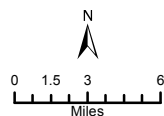
- *Luminaries will be cutoff-type fixtures that cast low-angle illumination to minimize incidental spillover of light onto adjacent private properties and undeveloped open space. Fixtures that project light upward or horizontally will not be used.*
- *Luminaries will be directed away from habitat and open space areas adjacent to the project site.*
- *Luminaries will provide good color rendering and natural light qualities. Low-pressure sodium and high-pressure sodium fixtures that are not color corrected will not be used. Intensity will be approximately 10 lux for roadway intersections.*
- *Luminary mountings will be downcast and the height of the poles minimized to reduce potential for back scatter into the nighttime sky and incidental spillover of light onto adjacent private properties and undeveloped open space. Light poles will be 20 feet high or shorter. Luminary mountings will have non-glare finishes.*

Exterior lighting features shall be directed downward and shielded in order to confine light to the boundaries of the subject project. Where more intense lighting is necessary for safety purposes, the design shall include landscaping to block light from sensitive land uses, such as residences.



2012 BUTTE COUNTY METROPOLITAN TRANSPORTATION PLAN AND SUSTAINABLE COMMUNITIES STRATEGY

Figure 3.1. Scenic Resources



Data source: Butte County General Plan 2030, California Spatial Information Library, ESRI StreetMap North America. Map date: March 29, 2012.

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

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This section provides an overview of the agricultural economy, production and values, soils, and the important farmland mapping program. This section concludes with an evaluation of the impacts and recommendations for mitigating impacts. No comments were received during the public review period or scoping meeting for the Notice of Preparation regarding this topic.

3.2.1 ENVIRONMENTAL SETTING

AGRICULTURAL CONTRIBUTION TO BUTTE COUNTY

Butte County is divided into three agricultural regions—the valley, foothills, and timber lands. The valley region has rich alluvial soils and is the location of most of the intensive agriculture. The foothill region consists mostly of grazing lands, with limited crop production. The timber lands consist of timber harvesting and recreation.

Agricultural Production and Value

The County's total plant crop acreage was 466,989 acres in 2010. This farmland consists of 367,419 acres of field crops, 97,709 acres of fruit and nut crops, 5,785 acres of seed crops, and 755 acres of vegetable crops.

The estimated gross value of agricultural production in Butte County for 2010 totaled over \$620 million, which is an estimated \$40 million dollar increase over the 2009 gross value total of \$580 million. The total increase in gross value of agriculture during 2010 is 29.0 percent above the County's 10-year average of \$443,046,000. Table 3.2-1 lists the top ten commodities in Butte County in 2010.

TABLE 3.2-1: SUMMARY COMPARISON OF CROP VALUES

<i>PRODUCT</i>	<i>2010</i>
RICE	\$182,248,000
WALNUTS	\$173,392,000
ALMONDS	\$113,781,000
DRIED PLUM	\$42,566,000
NURSERY STOCK	\$23,837,000
CATTLE/CALVES	\$11,714,000
RICE SEED	\$10,865,000
FRUIT NUTS Misc.	\$10,494,000
PEACHES-CLINGSTONE	\$9,690,000
KIWIS	\$8,177,000
OLIVES ALL	\$7,270,000
APPIARY/POLLINATION	\$7,078,000
FIELD CROPS Misc.	\$6,634,000
TIMBER	\$4,747,000
ALMOND HULLS	\$3,404,000
DRYLAND PASTURE & RANGE	\$3,553,000
SEED, Misc	\$2,701,000
PASTURE , Irrigated	\$2,030,000
BEANS	\$1,970,000
PISTACHIOS	\$1,892,000
WHEAT	\$1,591,000

SOURCE: 2010 BUTTE COUNTY AGRICULTURAL REPORT

Important Farmlands

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

IMPORTANT FARMLANDS IN BUTTE COUNTY

Data from Department of Conservation for 2010 indicates that within the county, Prime Farmland encompassed approximately 18% of total county agricultural land. The remaining agricultural land comprises Farmland of Statewide Importance (2%), Unique Farmland (2%), and Grazing Land (37%) (California Department of Conservation 2010). The types and acreages of farmland totals for 2008 and 2010 are shown below in Table 3.2-2. Figure 3.2-1 illustrates the Important Farmlands located within the County. Definitions of these types of farmland are provided below.

TABLE 3.2-2: BUTTE COUNTY FARMLANDS SUMMARY AND CHANGE BY LAND USE CATEGORY

LAND USE CATEGORY	TOTAL ACREAGE INVENTORIED		2008-10 ACREAGE CHANGES			
	2008	2010	ACRES LOST (-)	ACRES GAINED (+)	TOTAL ACREAGE CHANGED	NET ACREAGE CHANGED
Prime Farmland	194,689	193,290	1,926	527	2,453	-1,399
Farmland of Statewide Importance	22,794	21,792	1,215	213	1,428	-1,002
Unique Farmland	23,078	22,190	1,143	255	1,398	-888
Farmland of Local Importance	0	0	0	0	0	0
IMPORTANT FARMLAND SUBTOTAL	240,561	237,272	4,284	995	5,279	-3,289
Grazing Land	401,859	403,078	873	2,092	2,965	1,219
AGRICULTURAL LAND SUBTOTAL	642,420	640,350	5,157	3,087	8,244	-2,070
Urban and Built-up Land	45,350	45,914	204	768	972	564
Other Land	362,624	364,130	977	2,483	3,460	1,506
Water Area	22,858	22,858	0	0	0	0
TOTAL INVENTORIED AREA	1,073,252	1,073,252	6,338	6,338	12,676	0

SOURCE: CA DEPARTMENT OF CONSERVATION, FARMLAND MAPPING AND MONITORING PROGRAM, 2012

PRIME FARMLAND

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

FARMLAND OF STATEWIDE IMPORTANCE

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

UNIQUE FARMLAND

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

FARMLAND OF LOCAL IMPORTANCE

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

GRAZING LAND

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

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 Butte County Board of Supervisors has codified regulations for administration of the County's Williamson Act program. Since 1965, the Williamson Act has been Butte County's primary tool for preserving agricultural land from development. According to Butte County GIS, approximately 220,000 acres within the county (20 percent) are subject to the restrictions of a 10-year term self-renewing Williamson Act contract. Butte County has contracts with approximately 450 separate landowners. Roughly 40 percent of all Butte County land west of State Route 99 is under Williamson Act contract.

FOREST LANDS IN BUTTE COUNTY

The combination of ample rainfall, a long growing season, and deep soils result in good growing conditions for mixed conifer forest in Butte County. These timber resources are primarily located in the northeastern portions of the county at elevations between approximately 2,200 and 6,200 feet. The major vegetation community associated with timberlands in Butte County is westside mixed conifer (Sierra mixed conifer), which is dominated by sugar pine, ponderosa pine, Douglas fir, white fir, and incense cedar. In 2007, almost 66 million board feet of timber was produced in Butte County, with a value of over \$16 million.

Timberlands occur on both public and private lands. Some logging occurs in the areas managed by the US Forest Service within the Lassen and Plumas National Forests. Sierra Pacific Industries, a timber company, is the largest private landowner in Butte County, with land holdings located primarily in the northern part of the county, near the Lassen National Forest. Timber harvests on private lands are primarily regulated by the California Department of Forestry and Fire Protection (CAL FIRE) through the timber harvesting plan review process.

3.2.2 REGULATORY SETTING

FEDERAL

Farmland Protection Policy Act

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

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

STATE

Williamson Act

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

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

Farmland Security Zones

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

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.

Forest Practices Rules

The California Department of Forestry and Fire Protection (CalFire) implement the laws that regulate timber harvesting on privately-owned lands. These laws are contained in the Z'berg-Nejedly Forest Practice Act of 1973 which established a set of rules known as the Forest Practice Rules (FPRs) to be applied to forest management related activities (i.e., timber harvests, timberland conversions, fire hazard removal, etc.). They are intended to ensure that timber harvesting is conducted in a manner that will preserve and protect fish, wildlife, forests, and streams. Under the Forest Practices Act, a Timber Harvesting Plan (THP) is submitted to CalFire by the landowner outlining what timber is proposed to be harvested, harvesting method, and the steps that will be taken to prevent damage to the environment. If the landowner intends to convert timberland to non-timberland uses, such as a winery or vineyard, a Timberland Conversion Permit (TCP) is required in addition to the THP. It is CalFire's intent that a THP will not be approved which fails to adopt feasible mitigation measures or alternatives from the range of measures set out or provided for in the Forest Practice Rules, which would substantially lessen or avoid significant adverse environmental impacts resulting from timber harvest activities. THPs are required to be prepared by Registered Professional Foresters (RPFs) who are licensed to prepare these plans (CalFire, 2007). For projects involving TCPs, CalFire acts as lead agency under CEQA, and the County acts as a responsible agency.

LOCAL

The local agency General Plans includes 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.

3.2.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

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

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Important Farmlands), as shown on the maps prepared pursuant to the Farmland

Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use;

- Conflict with existing zoning for agricultural use, or a Williamson Act contract;
- Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?
- Result in the loss of forest land or conversion of forest land to non-forest use?
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

IMPACTS AND MITIGATION MEASURES

Impact 3.2-1: Conversion of Farmlands, including Prime Farmland, Unique Farmland, and Farmland of Statewide Importance, to Non-Agricultural Uses (significant and unavoidable)

Individual projects have the potential to result in the conversion of farmlands, including important farmlands, to nonagricultural uses. The majority of the individual transportation projects would occur within or adjacent to existing rights-of-way, which would result in a negligible, if any impact, to important farmland located adjacent to these improvements. Some projects, such as roadway extensions, park-n-ride facilities, and extension of airport runways, would occur outside of existing rights-of-way, which may result in impacts to important farmlands.

The SCS 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 MTP/SCS is a long range planning document, therefore the individual transportation projects have not been designed and the precise location and development footprint of some facilities have not yet been determined. 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 Department of Conservation for state and locally funded projects.

Mitigation Measure 3.2.1 would minimize the amount of farmland converted, and require protection of comparable farmlands or improvement of farmlands in order to off-set the impact associated with the conversion of important or significant farmlands. While Mitigation Measure

3.2.1 would result in protection or improvement of comparable farmlands, the potential remains for a net reduction in the overall amount of farmland in the County as a result of the proposed project. This impact is **significant and unavoidable**.

MITIGATION MEASURES

Mitigation Measure 3.2.1: *Prior to the design approval of a project, the implementing agency shall assess the project area for agricultural constraints. For federally funded projects, the implementing agency shall complete a form AD-1006 to determine the Farmland Conversion Impact Rating in compliance with the Farmland Protection Policy Act. The AD-1006 shall be submitted to the NRCS for approval. For non-federally funded projects, the implementing agency shall assess the project for the presence of important farmlands (prime farmland, unique farmland, farmland of statewide importance), and if present, perform a Land Assessment and Site Evaluation (LESA).*

If significant agricultural resources are identified within the limits of the project, the implementing agency shall consider alternative designs that seek to avoid and/or minimize impacts to the agricultural resources. Design measures may include, but are not limited to, reducing the footprint to avoid farmlands. If the project cannot be designed without complete avoidance of farmlands, the implementing agency shall compensate for unavoidable conversion impacts at an appropriate ratio and in accordance with the Farmland Protection Policy Act and local and regional standards, which may include enrolling offsite agricultural lands under a Williamson Act contract or other conservation easement, or paying mitigation fees.

Impact 3.2-2: Conflict with Existing Zoning for Agricultural Use or a Williamson Act Contract (significant and unavoidable)

The MTP includes individual transportation projects such as roadway and highway widening, roadway extensions, bridge replacements, runway rehabilitation and extension, and transportation facilities, such as park-n-ride lots. Improvements to the transportation systems throughout the county are designed to facilitate the Circulation Elements of the applicable General Plans. Transportation improvements are typically compatible with agricultural land uses, including those designated for agricultural uses. Agricultural operations throughout the county would benefit from improved movement of their commodities from the farm to the marketplace as a result of the improvements to the transportation systems. In some cases there may be linear strips of agricultural land located proximate to transportation facilities that would be removed from production.

The SCS is a planning document that forecasts the development pattern for the region, and integrates the pattern into the transportation network. The SCS is intended to provide a framework for agencies to meet the passenger vehicle greenhouse gas reduction target for the area while also being consistent with the land use planning efforts of the local jurisdictions throughout Butte County. Individual development projects would be designed and engineered in accordance with the local General Plan where the individual project is located.

While each jurisdiction in which the improvements may be located has policies related to the protection of agricultural resources, the potential remains for conflicts with Williamson Act

Contracts and Zoning. Mitigation measures 3.2.1 is included to reduce potentially significant impacts to agricultural resources, including land under Williamson Act contracts. While this mitigation measure will help reduce the potential impact, it may not be possible to fully mitigate the impact to a level of insignificance. Therefore, impacts on Williamson Act contracts and Agricultural Zoning remain *significant and unavoidable*.

MITIGATION MEASURES

Implement Mitigation Measure 3.2.1

Impact 3.2-3: Conflict with Existing Zoning of Forest or Timber Production or Result in the Loss or Conversion of Forest Land (significant and unavoidable)

Nearly all of the Forest Lands within Butte County are located outside of the incorporated cities. Public Resources Code section 12220(g) defines “forest land” as “land that can support 10 percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits.” Government Code section 51104(g) defines timberland as “privately owned land, or land acquired for state forest purposes, which is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses, and which is capable of growing an average annual volume of wood fiber of at least 15 cubic feet per acre.” The *Butte County GPA and Zoning Ordinance Update Draft Supplemental EIR* (Butte County, May 2012) evaluates forest land in unincorporated Butte County, as mapped by the California Department of Forestry and Fire Protection Multi-Source Land Cover Data (2002), as covered with a density of trees of 10 percent or greater. This EIR notes that the Butte County General Plan Update would result in the redesignation of forest land to designations that would allow some amount of development. In total, the Butte County General Plan update would allow 4,460 acres of forest land to be redesignated to a non-forest designation.

The Butte County General Plan 2030 Conservation and Open Space Element and its goals, policies, and actions seek to protect forest land from conversion to non-forest uses. In particular, Goal COS-11 and its associated policies and actions direct the County to protect timber resources. However, the designation of forest resources for non-forest uses in the General Plan Update could lead to the conversion of such forest land to non-forest uses, regardless of the goals, policies, and actions found in General Plan 2030.

Individual MTP projects have the potential to result in the conversion of forest lands and timber resources to non-forest uses. The majority of the individual transportation projects would occur within or adjacent to existing rights-of-way, which would result in a negligible, if any impact, to forest lands located adjacent to these improvements. Some projects, such as roadway extensions, park-n-ride facilities, and extension of airport runways, would occur outside of existing rights-of-way, which may result in impacts to forest lands or timber resources.

The SCS 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.

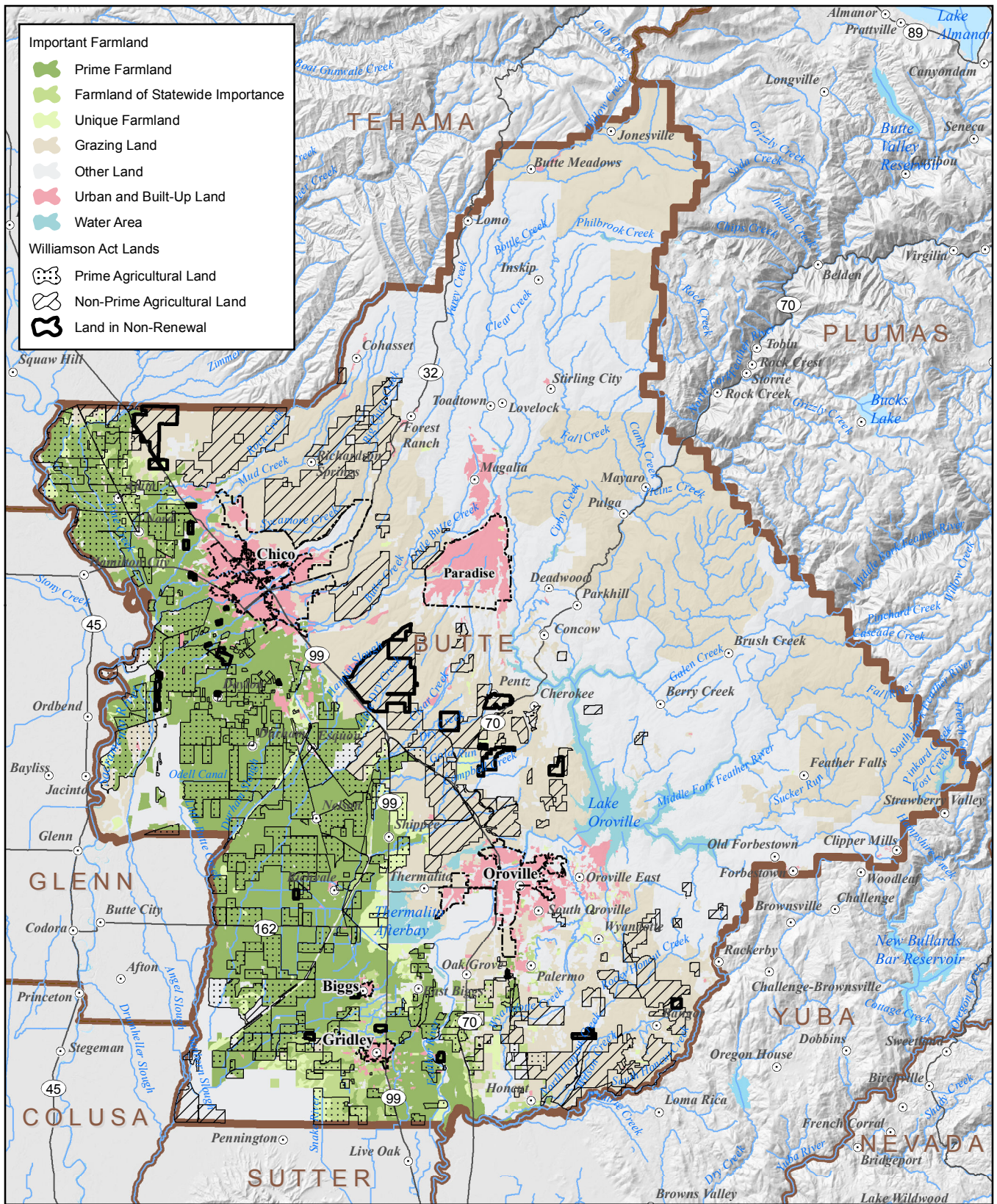
The MTP/SCS is a long range planning document, therefore the individual transportation projects have not been designed and the precise location and development footprint of some facilities have not yet been determined. If an individual project has the potential to impact protected forest lands the implementing agency will be required to address potential impacts to forest lands in the project-level review.

Mitigation Measure 3.2.2 would minimize the amount of forest lands converted, and require protection of timber lands and timber resources. While Mitigation Measure 3.2.2 would result in protections for forest lands and timber resources, the potential remains for a net reduction in the overall amount of forest lands and timber resources in the County as a result of the proposed project. This impact is ***significant and unavoidable***.

MITIGATION MEASURES

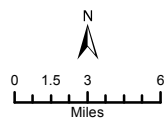
Mitigation Measure 3.2.2: *Prior to the design approval of a project, the implementing agency shall assess the project area for forest lands and forest resources as defined by Public Resources Code Section 12220(g), Section 4526, and Government Code Section 51104(g).*

If protected forest lands or timber resources are identified within the limits of the project, the implementing agency shall consider alternative designs that seek to avoid and/or minimize impacts to the forest lands or timber resources. Design measures may include, but are not limited to, reducing the footprint to avoid forest lands or timber resources, or avoiding significant stands of trees.



2012 BUTTE COUNTY METROPOLITAN TRANSPORTATION PLAN AND SUSTAINABLE COMMUNITIES STRATEGY

Figure 3.2-1. Prime Farmland and Williamson Act Lands



Data source: California Department of Conservation, Farmland Mapping and Monitoring Program, Butte County 2010; California Department of Conservation, Williamson Act Contracts, Butte County 2009; California Spatial Information Library; ESRI StreetMap North America. Map date: March 27, 2012.

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This section describes the regional air quality, current attainment status of the air basin, local sensitive receptors, emission sources, and impacts that are likely to result from project implementation. Following this discussion is an assessment of consistency of the proposed project with applicable policies and local plans. The Greenhouse Gases and Climate Change analysis is located in Section 3.6. No comments were received during the public review period or scoping meeting for the Notice of Preparation regarding this topic.

3.3.1 EXISTING SETTING

SACRAMENTO VALLEY AIR BASIN

Butte County is located within the Sacramento Valley Air Basin (SVAB). The SVAB is the northern half of California's Great Valley and is bordered on three sides (west, north, and east) by mountain ranges, with peaks in the eastern range above 9,000 feet. **Figure 3.3-1** delineates the boundary of the SVAB. The SVAB is approximately 13,700 square miles and essentially a smooth valley floor with elevations ranging from 40 to 500 feet. The rolling valley is interrupted by the Sutter Buttes, an area of 80 square miles in northern Sutter County, which rise abruptly to more than 2,100 feet above the valley floor.

The SVAB consists of 13 counties and is split into two planning sections based on the degree of pollutant transport from one area to the other and the level of emissions within each area. The Butte County area belongs to the Northern Sacramento Valley Air Basin (NSVAB), which is composed of the seven northern-most counties of the SVAB. These counties include Butte, Colusa, Glenn, Shasta, Sutter, Tehama, and Yuba.

The NSVAB has been categorized as "moderately" non-attainment for ozone and particulate matter. The City of Chico is located in the northern area of the Sacramento Valley, approximately 92 miles north of Sacramento and 72 miles southeast of Redding. The air basin of the Sacramento Valley is about 200 miles long in a north-south direction, and has a maximum width of about 150 miles, although the width of the valley floor only averages about 50 miles.

Butte County Air Quality Management District

The County is under the jurisdiction of the Butte County Air Quality Management District (BCAQMD), a regional agency responsible for regulating sources of air pollution in Butte County. The BCAQMD is responsible for the preparation of plans for the attainment and maintenance of Ambient Air Quality Standards (AAQS), adoption and enforcement of rules and regulations for sources of air pollution, and issuance of permits for stationary sources of air pollution.

The BCAQMD also inspects stationary sources of air pollution, regulates agricultural burning, responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by federal and state air quality regulations. BCAQMD's boundaries are the same as Butte County's.

The BCAQMD works with the Butte County Association of Government (BCAG) to ensure a coordinated approach in the development and implementation of transportation plans throughout

the county. This coordination ensures compliance with pertinent provisions of the federal and state Clean Air Acts, as well as related transportation legislation (such as the Intermodal Surface Transportation Efficiency Act, Transportation Conformity, and Transportation Improvement Plans).

Climate

The climate in the Butte County area is considered Mediterranean, which is characterized by hot, dry summers and cool, wet winters. Within the Butte County area, temperatures range from an average January low of approximately 36°F to an average July high of approximately 96°F. Between mid-April and mid-October, significant precipitation is unlikely and high temperatures often peak at over 100 degrees Fahrenheit (F) with lows in the high 50s and low 60s.

Winters are fairly mild, with the most rainfall coming in January. Rainfall in the project area averages approximately 26 inches annually and occurs predominantly from October to May. During the winter, highs are typically in the 60s with lows in the 30s. “Tule fog” (thick ground fog) is often present during the autumn and winter months. The typical seasonal pattern is for North Pacific cyclonic storms to periodically sweep into the area from October through April and for high pressure to dominate over the area and to deflect storms from May to October.

Air Movement

As with all of Central California, climate in the Butte County area is dominated by the strength and location of a semi-permanent, subtropical high-pressure cell over the northeastern Pacific Ocean. Climate is also affected by the temperature moderating effects of the nearby oceanic heat reservoir. Warm summers, cool winters, rainfall, daytime onshore breezes, and moderate humidity characterize regional climatic conditions.

In summer, when the high-pressure cell is strongest, temperatures are very warm and humidity is low. The daily incursion of the sea breeze into the Central Valley, however, creates persistent breezes that moderate the summer heat. In winter, when the high-pressure cell is weakest, conditions are characterized by occasional rainstorms interspersed with stagnant conditions and sometimes heavy fog.

Airflow patterns in the basin can be characterized by one of eight directional types, the most frequent being northwesterly, that is to say, predominant surface wind flows in the Butte County area are from the south/southeast. These wind flows generally occur at speeds of approximately 9-10 mph (WRCC 2007, ARB 1992). The northwesterly flow is predominant in spring and summer, but seasonal variations do occur. Calm conditions dominate the winter months.

Inversions occur in the SVAB with great frequency in all seasons. The most stable inversions occur in late summer and fall. The summertime inversions are often the result of marine air pushing under an overlying warm air mass. These are termed “marine inversions” and are generally accompanied by brisk afternoon winds, which provide good air circulation.

In contrast, many autumn inversions are the result of warm air subsiding in a high-pressure cell where accompanying light winds do not provide adequate dispersion. Autumn inversions limit vertical mixing, creating a very stable layer of air with very light or calm winds. These inversions

are usually present on clear cold nights during late fall and winter. In the morning, these ground based inversions are weakened and eventually eliminated by solar heating. As a result, they are strongest in the late night and early morning, when ground-level temperatures are coldest and solar radiation is low.

Seasonal Pollution Variations

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

Pollution potential in the Butte County area is relatively high due to the combination of air pollutant emissions sources, transport of pollutants into the area and meteorological conditions that are conducive to high levels of air pollution. Elevated levels of particulate matter (primarily very small particulates or PM₁₀) and ground-level ozone are of most concern to regional air quality officials.

Local carbon monoxide "hot spots" are important to a lesser extent. Ground-level ozone, the principal component of smog, is not directly emitted into the atmosphere but is formed by the reaction of reactive organic gases (ROG) and nitrogen oxides (NOx) (known as ozone precursor pollutants) in the presence of strong sunlight. Ozone levels are highest in Butte County during late spring through early fall, when weather conditions are conducive and emissions of the precursor pollutants are highest.

Surface-based inversions that form during late fall and winter nights cause localized air pollution problems (PM₁₀ and carbon monoxide) near the emission sources because of poor dispersion conditions. Emission sources are primarily from automobiles. Conditions are exacerbated during drought-year winters.

CRITERIA POLLUTANTS

The United States Environmental Protection Agency (EPA) uses six "criteria pollutants" as indicators of air quality, and has established for each of them a maximum concentration above which adverse effects on human health may occur. These threshold concentrations are called National Ambient Air Quality Standards (NAAQS). Each criteria pollutant is described below.

Ozone (O3) is a photochemical oxidant and the major component of smog. While O3 in the upper atmosphere is beneficial to life by shielding the earth from harmful ultraviolet radiation from the sun, high concentrations of O3 at ground level are a major health and environmental concern. O3 is not emitted directly into the air but is formed through complex chemical reactions between precursor emissions of volatile organic compounds (VOC) and oxides of nitrogen (NOx) in the presence of sunlight. These reactions are stimulated by sunlight and temperature so that peak O3 levels occur typically during the warmer times of the year. Both VOCs and NOx are emitted by

3.3 AIR QUALITY

transportation and industrial sources. VOCs are emitted from sources as diverse as autos, chemical manufacturing, dry cleaners, paint shops and other sources using solvents.

The reactivity of O₃ causes health problems because it damages lung tissue, reduces lung function and sensitizes the lungs to other irritants. Scientific evidence indicates that ambient levels of O₃ not only affect people with impaired respiratory systems, such as asthmatics, but healthy adults and children as well. Exposure to O₃ for several hours at relatively low concentrations has been found to significantly reduce lung function and induce respiratory inflammation in normal, healthy people during exercise. This decrease in lung function generally is accompanied by symptoms including chest pain, coughing, sneezing and pulmonary congestion.

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

Nitrogen dioxide (NO₂) is a brownish, highly reactive gas that is present in all urban atmospheres. NO₂ can irritate the lungs, cause bronchitis and pneumonia, and lower resistance to respiratory infections. Nitrogen oxides are an important precursor both to ozone (O₃) and acid rain, and may affect both terrestrial and aquatic ecosystems. The major mechanism for the formation of NO₂ in the atmosphere is the oxidation of the primary air pollutant nitric oxide (NO_x). NO_x plays a major role, together with VOCs, in the atmospheric reactions that produce O₃. NO_x forms when fuel is burned at high temperatures. The two major emission sources are transportation and stationary fuel combustion sources such as electric utility and industrial boilers.

Sulfur dioxide (SO₂) affects breathing and may aggravate existing respiratory and cardiovascular disease in high doses. Sensitive populations include asthmatics, individuals with bronchitis or emphysema, children and the elderly. SO₂ is also a primary contributor to acid deposition, or acid rain, which causes acidification of lakes and streams and can damage trees, crops, historic buildings and statues. In addition, sulfur compounds in the air contribute to visibility impairment in large parts of the country. This is especially noticeable in national parks. Ambient SO₂ results largely from stationary sources such as coal and oil combustion, steel mills, refineries, pulp and paper mills and from nonferrous smelters.

Particulate matter (PM) includes dust, dirt, soot, smoke and liquid droplets directly emitted into the air by sources such as factories, power plants, cars, construction activity, fires and natural windblown dust. Particles formed in the atmosphere by condensation or the transformation of emitted gases such as SO₂ and VOCs are also considered particulate matter.

Based on studies of human populations exposed to high concentrations of particles (sometimes in the presence of SO₂) and laboratory studies of animals and humans, there are major effects of concern for human health. These include effects on breathing and respiratory symptoms,

aggravation of existing respiratory and cardiovascular disease, alterations in the body's defense systems against foreign materials, damage to lung tissue, carcinogenesis and premature death.

Respirable particulate matter (PM₁₀) consists of small particles, less than 10 microns in diameter, of dust, smoke, or droplets of liquid which penetrate the human respiratory system and cause irritation by themselves, or in combination with other gases. Particulate matter is caused primarily by dust from grading and excavation activities, from agricultural uses (as created by soil preparation activities, fertilizer and pesticide spraying, weed burning and animal husbandry), and from motor vehicles, particularly diesel-powered vehicles. PM₁₀ causes a greater health risk than larger particles, since these fine particles can more easily penetrate the defenses of the human respiratory system.

Fine particulate matter (PM_{2.5}) consists of small particles, which are less than 2.5 microns in size. Similar to PM₁₀, these particles are primarily the result of combustion in motor vehicles, particularly diesel engines, as well as from industrial sources and residential/agricultural activities such as burning. It is also formed through the reaction of other pollutants. As with PM₁₀, these particulates can increase the chance of respiratory disease, and cause lung damage and cancer. In 1997, the EPA created new Federal air quality standards for PM_{2.5}.

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

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

ODORS

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

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

It is also important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue,

in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

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

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

SENSITIVE RECEPTORS

A sensitive receptor is a location where human populations, especially children, seniors, and sick persons, are present and where there is a reasonable expectation of continuous human exposure to pollutants. Examples of sensitive receptors include residences, hospitals and schools.

AMBIENT AIR QUALITY

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

The federal and California state ambient air quality standards are summarized in **Table 3.3-1** for important pollutants. The federal and state ambient standards were developed independently, although both processes attempted to avoid health-related effects. As a result, the federal and state standards differ in some cases. In general, the California state standards are more stringent. This is particularly true for ozone and particulate matter between 2.5 and 10 microns in diameter (PM₁₀).

The U.S. Environmental Protection Agency established new national air quality standards for ground-level ozone and for fine particulate matter in 1997. The 1-hour ozone standard was phased out and replaced by an 8-hour standard of 0.075 PPM. Implementation of the 8-hour standard was delayed by litigation, but was determined to be valid and enforceable by the U.S. Supreme Court in a decision issued in February of 2001.

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

POLLUTANT	AVERAGING TIME	FEDERAL PRIMARY STANDARD	STATE STANDARD
Ozone	1-Hour	--	0.09 ppm
	8-Hour	0.075 ppm	0.070 ppm
Carbon Monoxide	8-Hour	9.0 ppm	9.0 ppm
	1-Hour	35.0 ppm	20.0 ppm
Nitrogen Dioxide	Annual	--	0.03 ppm
	1-Hour	0.53 ppm	0.18 ppm
Sulfur Dioxide	Annual	0.03 ppm	--
	24-Hour	0.14 ppm	0.04 ppm
	1-Hour	--	0.25 ppm
PM10	Annual	--	20 ug/m3
	24-Hour	150 ug/m3	50 ug/m3
PM2.5	Annual	35 ug/m3	12 ug/m3
	24-Hour	15 ug/m3	--
Lead	30-Day Avg.	--	1.5 ug/m3
	3-Month Avg.	1.5 ug/m3	--

Notes: ppm = parts per million, ug/m3 = Micrograms per Cubic Meter

SOURCE: CALIFORNIA AIR RESOURCES BOARD, 2010

In 1997, new national standards for fine particulate matter diameter 2.5 microns or less (PM_{2.5}) were adopted for 24-hour and annual averaging periods. The current PM₁₀ standards were to be retained, but the method and form for determining compliance with the standards were revised.

The State of California regularly reviews scientific literature regarding the health effects and exposure to PM and other pollutants. On May 3, 2002, CARB staff recommended lowering the level of the annual standard for PM₁₀ and establishing a new annual standard for PM_{2.5}. The new standards became effective on July 5, 2003, with another revision on November 29, 2005.

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

Existing air quality concerns within Butte County and the entire NSVPA are related to increases of regional criteria air pollutants (e.g., ozone and particulate matter), exposure to toxic air contaminants, odors, and increases in greenhouse gas emissions contributing to climate change. The primary source of ozone (smog) pollution is motor vehicles which account for 70 percent of the ozone in the region. Particulate matter is caused by dust, primarily dust generated from construction and grading activities, and smoke which is emitted from fireplaces, wood-burning stoves, and agricultural burning.

It should be noted that Butte County is subject to significant ozone transport from the Sacramento area. These factors, coupled with the region’s climate and topography, have resulted in the air quality of the Butte County area becoming “moderately” polluted with ozone and particulate matter.

Attainment Status

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

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

The U.S. EPA designates areas for ozone (O₃), carbon monoxide (CO), and nitrogen dioxide (NO₂) as “does not meet the primary standards,” “cannot be classified,” or “better than national standards.” For sulfur dioxide (SO₂), areas are designated as “does not meet the primary standards,” “does not meet the secondary standards,” “cannot be classified,” or “better than national standards.” However, the CARB terminology of attainment, nonattainment, and unclassified is more frequently used.

Butte County has a state designation of Nonattainment for Ozone, PM₁₀, and PM_{2.5} and is either Unclassified or Attainment for all other criteria pollutants. The County has a national designation of Nonattainment for ozone and PM_{2.5}. The County is designated either attainment or unclassified for all other criteria pollutants. **Table 3.3-2** presents the state and nation attainment status for Butte County.

TABLE 3.3-2: STATE AND NATIONAL ATTAINMENT STATUS

<i>CRITERIA POLLUTANTS</i>	<i>STATE DESIGNATIONS</i>	<i>NATIONAL DESIGNATIONS</i>
Ozone	Nonattainment	Nonattainment
PM ₁₀	Nonattainment	Attainment
PM _{2.5}	Nonattainment	Nonattainment
Carbon Monoxide	Attainment	Unclassified/Attainment
Nitrogen Dioxide	Attainment	Unclassified/Attainment
Sulfur Dioxide	Attainment	Unclassified
Sulfates	Attainment	
Lead	Attainment	
Hydrogen Sulfide	Unclassified	
Visibility Reducing Particles	Unclassified	

SOURCES: CALIFORNIA AIR RESOURCES BOARD (2012).

Sacramento Valley Air Basin Monitoring

The SVAB consists of 13 counties covering approximately 13,700 square miles. The SVAB stretches about 200 miles long in a north-south direction, and has a maximum width of about 150 miles,

although the width of the valley floor only averages about 50 miles. Topography in the SVAB varies drastically with valley floor, rolling foothills, and mountains. Elevations range from 40 feet to over 9,000 feet.

CARB maintain numerous air quality monitoring sites throughout each County in the Air Basin to measure ozone, PM_{2.5}, and PM₁₀. It is important to note that the federal ozone 1-hour standard was revoked by the EPA and is no longer applicable for federal standards. Data obtained from the monitoring sites throughout the SVAB between 2008 and 2010 is summarized in **Tables 3.3-3 through 3.3-5**.

TABLE 3.3-3 SVAB AMBIENT AIR QUALITY MONITORING DATA SUMMARY - OZONE 2008-2010

Year	Days > Standard				1-Hour Observations			8-Hour Averages				Year Coverage	
	State		National		Max.	State	Nat'l	State		National			
	1-Hr	8-Hr	1-Hr	'08 8-Hr				D.V. ¹	D.V. ²	Max.	D.V. ¹	Max.	'08 D.V. ²
2010	15	46	0	29	0.124	0.13	0.132	0.112	0.116	0.112	0.102	85	100
2009	30	65	1	45	0.247	0.13	0.132	0.104	0.116	0.104	0.100	86	100
2008	41	78	9	54	0.166	0.14	0.133	0.123	0.116	0.123	0.102	0	100

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

SOURCES: CALIFORNIA AIR RESOURCES BOARD (ADAM) AIR POLLUTION SUMMARIES, 2012.

TABLE 3.3-4 SVAB AMBIENT AIR QUALITY MONITORING DATA SUMMARY - PM 2.5 2008-2010

Year	Est. Days > Nat'l '06 Std.	Annual Average		Nat'l Ann. Std. D.V. ¹	State Annual D.V. ²	Nat'l '06 Std. 98th Percentile	Nat'l '06 24-Hr Std. D.V. ¹	High 24-Hour Average		Year Coverage	
		Nat'l	State					Nat'l	State	Min.	Max.
2010	1.1	8.8	10.9	11.5	19	29.0	51	72.2	92.3	46	100
2009	8.9	10.7	15.5	12.4	19	38.7	59	49.8	71.7	78	100
2008	36.5	16.4	18.9	13.4	19	97.1	69	200.2	200.2	83	100

NOTES: ALL CONCENTRATIONS EXPRESSED IN PARTS PER MILLION. STATE AND NATIONAL STATISTICS MAY DIFFER FOR THE FOLLOWING REASONS: STATE STATISTICS ARE BASED ON CALIFORNIA APPROVED SAMPLERS, WHEREAS NATIONAL STATISTICS ARE BASED ON SAMPLERS USING FEDERAL REFERENCE OR EQUIVALENT METHODS. STATE AND NATIONAL STATISTICS MAY THEREFORE BE BASED ON DIFFERENT SAMPLERS. STATE CRITERIA FOR ENSURING THAT DATA ARE SUFFICIENTLY COMPLETE FOR CALCULATING VALID ANNUAL AVERAGES ARE MORE STRINGENT THAN THE NATIONAL CRITERIA. D.V.¹ = STATE DESIGNATION VALUE . D.V.² = NATIONAL DESIGN VALUE

SOURCES: CALIFORNIA AIR RESOURCES BOARD (ADAM) AIR POLLUTION SUMMARIES, 2012.

TABLE 3.3-5: SVAB AMBIENT AIR QUALITY MONITORING DATA SUMMARY - PM 10 2008-2010

Year	Est. Days > Std.		Annual Average		3-Year Average		High 24-Hr Average		Year Coverage
	Nat'l	State	Nat'l	State	Nat'l	State	Nat'l	State	
2010	0.0	12.2	20.5	21.0	26	33	87.4	87.4	100
2009	0.0	18.4	25.6	26.4	28	33	76.0	76.0	100
2008	6.6	68.7	32.9	33.4	28	33	236.7	232.0	100

NOTES: THE NATIONAL ANNUAL AVERAGE PM10 STANDARD WAS REVOKED IN DECEMBER 2006 AND IS NO LONGER IN EFFECT. AN EXCEEDANCE IS NOT NECESSARILY A VIOLATION. STATISTICS MAY INCLUDE DATA THAT ARE RELATED TO AN EXCEPTIONAL EVENT. STATE AND NATIONAL STATISTICS MAY DIFFER FOR THE FOLLOWING REASONS: STATE STATISTICS ARE BASED ON CALIFORNIA APPROVED SAMPLERS, WHEREAS NATIONAL STATISTICS ARE BASED ON SAMPLERS USING FEDERAL REFERENCE OR EQUIVALENT METHODS. STATE AND NATIONAL STATISTICS MAY THEREFORE BE BASED ON DIFFERENT SAMPLERS. NATIONAL STATISTICS ARE BASED ON STANDARD CONDITIONS. STATE CRITERIA FOR ENSURING THAT DATA ARE SUFFICIENTLY COMPLETE FOR CALCULATING VALID ANNUAL AVERAGES ARE MORE STRINGENT THAN THE NATIONAL CRITERIA.

SOURCES: CALIFORNIA AIR RESOURCES BOARD (ADAM) AIR POLLUTION SUMMARIES, 2012.

3.3 AIR QUALITY

Butte County Air Quality Monitoring

There are four air quality monitoring sites in Butte County: Chico - Manzanita Avenue, Paradise – 4405 Airport Road, Paradise – Fire station #1, Gridley - Cowee Avenue. The Paradise - Fire Station #1 and Gridley - Cowee Avenue monitoring sites do not have air quality data on record with CARB for the most recent reportable years (2008-2010). The Paradise – 4405 Airport Road site has data for ozone and the Chico - Manzanita Avenue site has data for ozone and particulate matter. Data obtained from the monitoring sites between 2008 and 2010 is shown in **Tables 3.3-6 through 3.3-7**. It is important to note that the federal ozone 1-hour standard was revoked by the EPA and is no longer applicable for federal standards.

TABLE 3.3-6: AMBIENT AIR QUALITY MONITORING DATA (CHICO – MANZANITA AVENUE)

POLLUTANT	CAL.	FED.	YEAR	MAX CONCENTRATION	DAYS EXCEEDED STATE/FED STANDARD
	PRIMARY STANDARD				
Ozone (O3) (1-hour)	0.09 ppm for 1 hour	NA	2008	0.111	2 / (N/A)
			2009	0.080	0 / (N/A)
			2010	0.077	0 / (N/A)
Ozone (O3) (8-hour)	0.07 ppm for 8 hour	0.075 ppm for 8 hour	2008	0.097	14 / 6
			2009	0.073	2 / 0
			2010	0.071	1 / 0
Particulate Matter (PM10)	50 ug/m3 for 24 hours	150 ug/m3 for 24 hours	2008	143.5	37 / 0
			2009	48.2	0 / 0
			2010	38.3	0 / 0
Fine Particulate Matter (PM2.5)	12 µg/m3 (Annual standard)	35 ug/m3 for 24 hours	2008	107.6	18.2 / 16.8
			2009	35.1	13.0 / 10.0
			2010	31.9	10.9 / 8.0

SOURCES: CALIFORNIA AIR RESOURCES BOARD (ADAM) AIR POLLUTION SUMMARIES, 2012.

TABLE 3.3-7: AMBIENT AIR QUALITY MONITORING DATA (PARADISE – 4405 AIRPORT ROAD)

POLLUTANT	CAL.	FED.	YEAR	MAX CONCENTRATION	DAYS EXCEEDED STATE/FED STANDARD
	PRIMARY STANDARD				
Ozone (O3) (1-hour)	0.09 ppm for 1 hour	NA	2008	0.129	3 / (N/A)
			2009	0.099	1 / (N/A)
			2010	0.085	0 / (N/A)
Ozone (O3) (8-hour)	0.07 ppm for 8 hour	0.075 ppm for 8 hour	2008	0.108	23 / 16
			2009	0.088	35 / 13
			2010	0.078	14 / 4

SOURCES: CALIFORNIA AIR RESOURCES BOARD (ADAM) AIR POLLUTION SUMMARIES, 2012.

Notes:

ppm = parts per million.

Ug/m3 = microns per cubic meter.

NA= not applicable

* = There was insufficient (or no) data available to determine the value

3.3.2 REGULATORY SETTING

FEDERAL

Clean Air Act

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

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

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

Transportation Conformity Analysis

Transportation conformity requirements were added to the FCAA in the 1990 amendments, and the EPA adopted implementing regulations in 1997. See §176 of the FCAA (42 U.S.C. §7506) and 40 CFR Part 93, Subpart A. Transportation conformity serves much the same purpose as general conformity: it ensures that transportation plans, transportation improvement programs, and projects that are developed, funded, or approved by the United States Department of Transportation or that are recipients of funds under the Federal Transit Act or from the Federal Highway Administration (FHWA), conform to the SIP as approved or promulgated by EPA.

Currently, transportation conformity applies in nonattainment areas and maintenance areas. Under transportation conformity, a determination of conformity with the applicable SIP must be made by the agency responsible for the project, such as the Metropolitan Planning Organization, the Council of Governments, or a federal agency. The agency making the determination is also responsible for all the requirements relating to public participation. Generally, a project will be considered in conformance if it is in the transportation improvement plan and the transportation improvement plan is incorporated in the SIP. If an action is covered under transportation conformity, it does not need to be separately evaluated under general conformity.

Transportation Control Measures

One particular aspect of the SIP development process is the consideration of potential control measures as a part of making progress towards clean air goals. While most SIP control measures are aimed at reducing emissions from stationary sources, some are typically also created to address mobile or transportation sources. These are known as transportation control measures (TCMs). TCM strategies are designed to reduce vehicle miles traveled and trips, or vehicle idling and associated air pollution. These goals are achieved by developing attractive and convenient alternatives to single-occupant vehicle use. Examples of TCMs include ridesharing programs, transportation infrastructure improvements such as adding bicycle and carpool lanes, and expansion of public transit.

STATE

CARB Mobile-Source Regulation

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

California Clean Air Act

The California Clean Air Act (CCAA) was first signed into law in 1988. The CCAA provides a comprehensive framework for air quality planning and regulation, and spells out, in statute, the state's air quality goals, planning and regulatory strategies, and performance. CARB is the agency responsible for administering the CCAA. CARB established ambient air quality standards pursuant to the California Health and Safety Code (CH&SC) [§39606(b)], which are similar to the federal standards.

Air Quality Standards

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

Federal and state ambient air quality standards have been established for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, suspended particulates (PM₁₀) and lead. In addition, California has created standards for pollutants that are not covered by federal standards. The state and federal primary standards for major pollutants are shown in Table 3.3-1.

Tanner Air Toxics Act

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

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

LOCAL

Butte County Air Quality Management District

The Butte County Air Quality Management District (BCAQMD) is the local agency with primary responsibility for compliance with both the federal and state standards and for ensuring that air quality conditions are maintained. They do this through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues.

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

In January 2008, the BCAQMD released the *CEQA Air Quality Handbook Guidelines for Assessing Air Quality Impacts for Projects Subject to CEQA Review*, which provides quantitative emission thresholds and established protocols for the analysis of air quality impacts from projects and plans.

3.3 AIR QUALITY

Air quality management districts and air pollution control districts within the Northern Sacramento Valley Planning Area work together to create a triennial attainment plan. The most recent plan, *Northern Sacramento Valley Planning Area 2009 Triennial Air Quality Attainment Plan*, identifies those portions of the NSVPA designated as “nonattainment” 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 which 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 1994, 1997, 2000, 2003, and 2006 Plans, the 2009 Plan 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 2009 Plan also addresses the effect that pollutant transport has on the ability of the NSVPA to meet and attain the State standards.

BCAQMD RULES AND REGULATIONS

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

RULE 200 - NUISANCE

No person shall discharge from any non-vehicular source such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health or safety of any such persons or the public or which cause or have a natural tendency to cause injury or damage to business or property

RULE 201 - VISIBLE EMISSIONS

No person shall discharge into the atmosphere from any single non-vehicular source of emission whatsoever any air contaminant, other than uncombined water vapor, for a period or periods aggregating more than three (3) minutes in any one hour which is:

- 1.1 As dark or darker in shade as that designated as No. 2 on the Ringelmann Chart as published by the U.S. Bureau of Mines; or,
- 2.2 Of such opacity as to obscure an observers view to a degree equal to or greater than does smoke described in Section 1 of this Rule.

RULE 202 - PARTICULATE MATTER CONCENTRATION

A person shall not discharge into the atmosphere from any source particulate matter in excess of 0.3 grains per cubic foot of gas at standard conditions.

When the source involves a combustion process, the concentration must be calculated to 12 percent (12%) carbon dioxide (CO₂). In measuring the combustion contaminants from incinerators used to dispose of combustible refuse by burning, the carbon dioxide (CO₂) produced by combustion of any liquid or gaseous fuels shall be excluded from the calculation of 12 percent (12%) of carbon dioxide (CO₂).

RULE 205 – FUGITIVE DUST EMISSIONS

The purpose of this Rule is to reduce ambient concentrations and limit fugitive emissions of fine particulate matter (PM₁₀) from construction activities, bulk material handling and storage, carryout and trackout, and similar activities, weed abatement activities, unpaved parking lots, unpaved staging areas, unpaved roads, inactive disturbed land, disturbed open areas, and windblown dust.

RULE 230 - ARCHITECTURAL COATINGS

The purpose of this Rule to limit the quantity of Volatile Organic Compounds (VOCs) in architectural coatings supplied, sold, offered for sale, applied, solicited for application, or manufactured for use within the District.

RULE 231 - CUTBACK AND EMULSIFIED ASPHALT

The purpose of this Rule is to limit emissions of volatile organic compounds (VOCs) from the use of cutback and emulsified asphalt in paving, construction, or maintenance of parking lots, driveways, streets, and highways.

RULE 237 - SOIL DECONTAMINATION

The purpose of this Rule to limit emissions of volatile organic compounds (VOC) from soil excavation and remediation, or treatment of soil that has been contaminated by volatile organic compounds.

RULE 252 - STATIONARY INTERNAL COMBUSTION ENGINES

The purpose of this Rule to limit emissions of nitrogen oxides (NOx) and carbon monoxide (CO) from stationary internal combustion engines.

RULE 440 - PORTABLE EQUIPMENT REGISTRATION

The purpose of this Rule is to establish standards and procedures for the issuance of Certificate(s) of Registration by the Air Pollution Control Officer (APCO) of the Butte County Air Quality Management District (DISTRICT) for registration of certain portable emissions units for operation within the District and to recognize registrations issued by other districts within the State of California with comparable requirements. The DISTRICT may update, through rulemaking, the emission standards for new emissions units as more effective control technology becomes available.

RULE 1000 - STATE AIRBORNE TOXIC CONTROL MEASURES

The purpose of this Rule is to incorporate California State Airborne Toxic Control Measures (ATCM) as per Health and Safety Code (HSC) Section 39666.

RULE 1102 - CONFORMITY TO STATE IMPLEMENTATION PLANS OF TRANSPORTATION PLANS, PROGRAMS, AND PROJECTS DEVELOPED, FUNDED OR APPROVED UNDER TITLE 23 U.S.C. OR THE FEDERAL TRANSIT ACT

The purpose of this Rule is to implement Section 176(c) of the federal Clean Air Act (CAA), as amended (42 United States Code (U.S.C.) 7401 et seq.), the related requirements of 23 U.S.C. 109(j), and regulations under 40 Code of Federal Regulations (CFR) Part 51 Subpart T, with respect to the conformity of transportation plans, programs, and projects which are developed, funded, or approved by the United States Department of Transportation (DOT), and by metropolitan planning organizations (MPOs), or other recipients of funds under title 23 U.S.C. or the Federal Transit Act (49 U.S.C. 1601 et seq.). This Rule sets forth policy, criteria, and procedures for demonstrating and assuring conformity of such activities to this applicable implementation plan, developed and applicable pursuant to Section 110 and Part D of the CAA.

3.3.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

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

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

IMPACTS AND MITIGATION MEASURES

Impact 3.3-1: Long-Term - Conflict with, or Obstruct, the Applicable Air Quality Plan, Cause a Violation of Air Quality Standards, Contribute Substantially to an Existing Air Quality Violation, or Result in a Cumulatively Considerable Net Increase of a Criteria Pollutant in a Non-Attainment Area (less than significant)

The Clean Air Act Section 176(c) (42 U.S.C. 7506(c)) and U.S. Environmental Protection Agency (EPA) transportation conformity regulations (40 CFR 93 Subpart A) require that each new MTP and TIP demonstrate conformity to the State Implementation Plan (SIP) before the MTP and TIP are approved by the MPO or accepted by the U.S. Department of Transportation (DOT). The conformity analysis is a federal requirement designed to demonstrate compliance with the national ambient air quality standards. However, because the State Implementation Plan (SIP) for

CO, PM₁₀, PM_{2.5} and Ozone address attainment of both the state and federal standards, for these pollutants, demonstrating conformity to the federal standards is also an indication of progress toward attainment of the state standards. Compliance with the state air quality standards is provided on the pages following this federal conformity discussion.

FEDERAL AIR QUALITY STANDARDS

Transportation projects occurring within Butte County are subject to an air quality conformity determination for ozone precursors, Reactive Organic Gases (ROG) and Oxides of Nitrogen (NOx), carbon monoxide (CO), and PM_{2.5}. The conformity tests for these criteria pollutants are as follows:

- The conformity test to be used to demonstrate conformity to the 1997 8-hour federal ozone NAAQS is the “no-greater-than 2002” test whereby future emissions must be less than or equal to those emission present in 2002.
- The conformity test to be used to demonstrate conformity for CO is the “budget test” whereby CO emissions are not to exceed the 80 tons per day budget.
- The conformity test to be used to demonstrate conformity to the 2006 24-hour PM_{2.5} standard is the “no-greater-than 2008” test whereby future emissions must be less than or equal to those emission present in 2008. The baseline year of 2008 is consistent with U.S. EPA’s finalized Transportation Conformity Rule PM_{2.5} and PM₁₀ amendments signed March 10, 2010 and detailed in 40 CFR 93.119.

This impact analysis is based primarily on the Air Quality Conformity Analysis and Determination prepared by Butte County Association of Governments in September 2012.

The emissions estimates developed by BCAG for the conformity determination were based on the latest planning assumptions available for Butte County in accordance with 40 CFR 93.110 of the Federal Conformity Rule. A comprehensive update of the BCAG traffic model was recently completed in July 2012 and the population, housing, and employment projections identified in BCAGs Butte County Long-Term Regional Growth Forecasts 2010-2035 are the same as those used in the updated model. The model was validated in 2012 for the 2010 base year, and utilizes TransCAD V5.0 modeling software. The latest planning assumptions used in the transportation model validation and conformity analysis is summarized in Table 3.3-8.

3.3 AIR QUALITY

TABLE 3.3-8: SUMMARY OF LATEST PLANNING ASSUMPTIONS FOR THE CONFORMITY ANALYSIS

<i>ASSUMPTION</i>	<i>YEAR AND SOURCE OF DATA (MPO ACTION)</i>	<i>MODELING</i>	<i>NEXT SCHEDULED UPDATE</i>
Population	Base Year: 2010 CA DOF Projections: based on BCAG's Butte County Long-Term Regional Growth Forecasts 2010-2035, prepared January 2011. Modeling utilizes "medium scenario" included in the plan.	Included in developing latest BCAG regional transportation model and land use allocations for the years 2020 and 2035.	Next update to population forecasts is anticipated to be in January 2015.
Employment	Base Year: 2010 CA EDD Projections: based on BCAG's Butte County Long-Term Regional Growth Forecasts 2010-2035, prepared January 2011. Modeling utilizes "medium scenario" included in the plan.	Included in developing latest BCAG regional transportation model and land use allocations for the years 2020 and 2035.	Next update to employment forecasts is anticipated to be in January 2015.
Traffic Counts	Base Year: 2009/10 The transportation model was validated to the base year using year 2009/10 traffic counts collected by Caltrans, local jurisdictions, and BCAG.	Latest BCAG regional transportation model was validated using counts.	Traffic counts are updated every 4 years, dependent upon availability of funding.
Vehicle Miles of Travel	The transportation model was validated in 2012 to the 2010 base year.	TransCAD V5 is the model used to estimate VMT for the BCAG regional transportation model.	VMT is an output of the transportation model; VMT is affected by the MTP/FTIP project updates and is included in each new conformity analysis.
Speeds	The transportation model uses industry-standard volume delay curves. Baseline speeds are set according to posted and surveyed speeds and the speeds are sensitive to the amount of traffic on the roadway segments.	TransCAD v5, EMFAC 2007 V2.3, and EMFAC 2011	Speed data is updated every 4 years, dependent upon availability of funding.
Vehicle Registration	EMFAC 2007 is the most recent federally approved model for use in California conformity analysis. Vehicle registration is included by ARB in the model and cannot be updated by the user. EMFAC 2011 has also been used based in the case it is approved by for use in conformity determinations prior to adoption of this determination.	EMFAC 2007 V2.3 and EMFAC 2011	The next update is scheduled to occur in 2012/13.
Transit	Base Year: 2010 American Community Survey 3-year estimates Projections: based on BCAG's transportation forecasts which project a 0.11% increase of transit mode share from 2010 levels. These levels assume transit fares remain constant in 2010 dollars.	TransCAD v5 and BCAG off-model transit forecasting tool	The next update of the land use forecasts and transit mode share is scheduled to occur in 2015.

SOURCE: BCAG, 2012

In order to determine emissions, the most recent, federally approved, emissions model is used. To develop the air quality conformity analysis, two types of models were used: the BCAG transportation model and EMFAC. The BCAG transportation model was used to prepare the traffic model runs for the necessary analysis years. The BCAG transportation model produced forecasts

of vehicle miles traveled (VMT), trip ends, speed distributions, lane miles, and other travel related data required for the emission models.

The most current federally approved emissions model was used to prepare the regional emissions analysis. At the time this document was prepared, August 2012, EMFAC 2007 V2.3 was the latest federally approved model in California. However, EMFAC 2011 was released by the California Air Resources Board (ARB) in September of 2011. ARB is presently awaiting approval of EMFAC 2011 for federal emissions modeling, which is anticipated to occur prior to the end of 2012. This analysis utilizes both models.

Analysis of regional emissions was performed for the following analysis years:

- 2015 – No greater than five years from the preparation of the MTP/FTIP conformity determination
- 2018 – CO maintenance year (new 80 tons-per-day budget)
- 2025 – Milestone year no more than 10 years from last analysis
- 2035 – Horizon year of BCAG's long-range MTP and additional analysis year for GHG

The regional emissions analysis begins with the year of 2015, as the transportation conformity rule states that the first emissions analysis year may not exceed five years from the year the RTP/FTIP conformity determination was prepared (2012). The next analysis year is the attainment year for CO under the 80-tons-per-day budget which is 2018. The milestone year of 2025 is included since analysis is required between years and cannot be more than 10 years apart. The last year included in the emissions analysis is the long-range MTP horizon year of 2035.

REGIONAL EMISSIONS ANALYSIS AND FORECAST

The regional emissions analysis and forecast for ozone precursors, carbon monoxide, PM_{2.5} and its precursor have been summarized in the following tables. The summary of emissions forecasts is derived from outputs of the EMFAC 2007 Version 2.3 and EMFAC 2011 models. These tables show comparisons of:

- ROG: Reactive Organic Gases as an ozone precursor
- NOx: Oxides of Nitrogen as an ozone and PM_{2.5} precursor
- CO: Carbon Monoxide
- PM_{2.5}: Fine Particulate Matter (smaller than 2.5 micrometers)

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TABLE 3.3-9: ROG “NO-GREATER-THAN-2002” EMISSIONS TEST

ROG - TONS PER DAY OF EMISSIONS						
ANALYSIS YEAR	(EMFAC 2007 SUMMER RUN)			(EMFAC 2011 SUMMER RUN)		
	ROG EMISSIONS	LESS THAN 2002?	PASS CONFORMITY TEST?	ROG EMISSIONS	LESS THAN 2002?	PASS CONFORMITY TEST?
2002	7.3	--	--	5.6	--	--
2015	3.1	yes	yes	2.3	yes	yes
2018	2.4	yes	yes	1.7	yes	yes
2025	1.8	yes	yes	1.4	yes	yes
2035	1.5	yes	yes	1.3	yes	yes

TABLE 3.3-10: NOx “NO-GREATER-THAN-2002” EMISSIONS TEST

NOx - TONS PER DAY OF EMISSIONS						
ANALYSIS YEAR	(EMFAC 2007 SUMMER RUN)			(EMFAC 2011 SUMMER RUN)		
	NOx EMISSIONS	LESS THAN 2002?	PASS CONFORMITY TEST?	NOx EMISSIONS	LESS THAN 2002?	PASS CONFORMITY TEST?
2002	10.7	--	--	12.1	--	--
2015	5.9	yes	yes	4.8	yes	yes
2018	4.5	yes	yes	3.6	yes	yes
2025	3.1	yes	yes	2.6	yes	yes
2035	2.8	yes	yes	2.2	yes	yes

TABLE 3.3-11: CO “BUDGET TEST” EMISSIONS TEST 80 TONS-PER-DAY BUDGET

CO - TONS PER DAY OF EMISSIONS						
ANALYSIS YEAR	(EMFAC 2007 WINTER RUN)			(EMFAC 2011 WINTER RUN)		
	CO EMISSIONS	CO BUDGET	PASS CONFORMITY TEST?	CO EMISSIONS	CO BUDGET	PASS CONFORMITY TEST?
2015	23.6	80.0	yes	19.7	80.0	yes
2018	17.4	80.0	yes	14.2	80.0	yes
2025	11.6	80.0	yes	9.9	80.0	yes
2035	9.9	80.0	yes	9.5	80.0	yes

TABLE 3.3-12: 24-HOUR PM2.5 “NO-GREATER-THAN-2008” EMISSIONS TEST

24-HOUR PM2.5 - TONS PER DAY OF EMISSIONS						
ANALYSIS YEAR	(EMFAC 2007 WINTER RUN)			(EMFAC 2011 WINTER RUN)		
	PM2.5 EMISSIONS	LESS THAN 2008?	PASS CONFORMITY TEST?	PM2.5 EMISSIONS	LESS THAN 2008?	PASS CONFORMITY TEST?
2008	0.3	--	--	0.3	--	--
2015	0.2	yes	yes	0.2	yes	yes
2018	0.2	yes	yes	0.2	yes	yes
2025	0.2	yes	yes	0.2	yes	yes
2035	0.2	yes	yes	0.2	yes	yes

TABLE 3.3-13: NO_x “NO-GREATER-THAN-2008” EMISSIONS TEST

<i>NO_x - TONS PER DAY OF EMISSIONS</i>						
<i>ANALYSIS YEAR</i>	<i>(EMFAC 2007 WINTER RUN)</i>			<i>(EMFAC 2011 WINTER RUN)</i>		
	<i>NO_x EMISSIONS</i>	<i>LESS THAN 2008?</i>	<i>PASS CONFORMITY TEST?</i>	<i>NO_x EMISSIONS</i>	<i>LESS THAN 2008?</i>	<i>PASS CONFORMITY TEST?</i>
2008	11.2	--	--	10.3	--	--
2015	6.2	yes	yes	5.4	yes	yes
2018	4.6	yes	yes	4.0	yes	yes
2025	3.2	yes	yes	2.6	yes	yes
2035	2.8	yes	yes	2.4	yes	yes

AIR QUALITY CONFORMITY DETERMINATION

The results from this conformity analysis show that current and future emissions of the ozone precursors ROG and NO_x will be less than the 2002 emissions levels, current and future carbon monoxide emissions will be below their budget threshold of 80 tons per day, and future emissions of 24-hour PM_{2.5} and its precursor NO_x will be less than the 2008 emissions levels. Thus, Butte County, in accordance with the Transportation Conformity Rule requirements applicable to Butte County (§51.464 and §51.436 – 51.440), has satisfied the requirements of the “no-greater-than-2002” test for the 1997 8-hour federal ozone NAAQS, the “budget test” for carbon monoxide for the 80-tons-per-day budget, and the “no-greater-than-2008” test for federal 24-hour PM_{2.5} NAAQS. Based on this analysis, the proposed project conforms to the applicable State Implementation Plan (SIP) and all applicable sections of the EPA’s Transportation Conformity Rule and would result in a **less than significant** impact on ROG, NO_x and CO.

Impact 3.3-2: Short-term - Conflict with, or Obstruct, the Applicable Air Quality Plan, Cause a Violation of Air Quality Standards, Contribute Substantially to an Existing Air Quality Violation, or Result in a Cumulatively Considerable Net Increase of a Criteria Pollutant in a Non-Attainment Area (less than significant with mitigation)

Construction activities associated with construction and implementation of individual improvement projects would result in temporary short-term emissions associated with vehicle trips from construction workers, operation of construction equipment, and the dust generated during construction activities. These temporary and short-term emissions would generate additional ozone precursors (ROG and NO_x) as well as PM₁₀, which could exacerbate the County’s existing non-attainment status for these criteria pollutants.

As individual projects are constructed, the activity at individual construction sites will involve grading and other earth-moving operations and use of diesel and gasoline-powered construction equipment. Where asphalt is used, volatile organic compounds (VOCs) will be released from asphalt when it is applied to the roadways’ surfaces. If an individual construction site is located near existing homes or other sensitive receptors, such emissions could have the potential to result in significant short-term impacts at that particular location.

The BCAQMD's *Guidelines for Assessing Air Quality Impacts for Projects Subject to CEQA Review* requires project-level calculations of construction emissions and implementation of effective and comprehensive control measures. The amount of emissions emitted during construction activities varies greatly depending on the level of activity, the specific operations taking place, the equipment being operated, soil characteristics, and weather conditions. Despite this variability in emissions, experience has shown that several feasible control measures can be reasonably implemented to reduce emissions during construction. The following mitigation measure would ensure that construction activities implement required BCAQMD construction related mitigation measures and best available control measures to reduce construction-related air emissions. Implementation of the following mitigation measure would reduce this impact to a **less-than-significant** level.

MITIGATION MEASURES

Mitigation Measure 3.3-1: *The implementing agency shall review each individual project in accordance with Butte County Air Quality Management District's Guidelines for Assessing Air Quality Impacts for Projects Subject to CEQA Review. Each project shall include emission calculations and mitigation for construction impacts, including the incorporation of best available control measures outlined in Table 1 of Rule 205 Fugitive Dust Emission.*

Impact 3.3-3: Occasional Localized Carbon Monoxide Concentrations from Traffic Conditions at Some Individual Locations (less than significant with mitigation)

The coordination of land use and transportation planning through the SCS, combined with the individual MTP projects, is expected to improve traffic flows and reduce congestion system-wide, reducing the potential for CO “hot spots” that can occur from exhaust of idling cars waiting to clear a heavily congested intersection or crossing. The individual MTP projects are intended to reduce congested conditions throughout the system while accommodating additional traffic generated by the increase in population projected for Butte County. These are considered beneficial effects.

While the SCS and MTP will enable regional transportation planning to respond to additional traffic and reduction of congestion (brought by that additional traffic) system-wide, there is a potential for CO concentrations or hot spots to develop under adverse atmospheric conditions that prevent a rapid dispersion of CO. Currently, the SVAB is in attainment of federal and State standards for CO. Nonetheless, there is a potential for some, albeit, rare instances of congestion and an occasional hot spot. The following mitigation measure would ensure traffic flows near sensitive receptors are improved in order to reduce the potential for the formation of CO hot spots. Implementation of the following mitigation measure would reduce this impact to a **less-than-significant** level.

MITIGATION MEASURES

Mitigation Measure 3.3-2: *The implementing agency shall screen individual projects at the time of design for localized CO hotspot concentrations and if necessary incorporate project-specific measures into the project design to reduce or alleviate CO hotspot concentrations.*

Impact 3.3-4: Create Objectionable Odors Affecting a Substantial Number of People (less than significant)

Implementation of the MTP and SCS would not directly create or generate objectionable odors. Persons residing in the immediate vicinity of individual improvements may be subject to temporary odors typically associated with construction activities (diesel exhaust, hot asphalt, etc.). However, any odors generated by construction activities would be minor and would be short and temporary in duration. This is considered a *less than significant* impact.

Impact 3.3-5: Contribute Substantially to, or Result in a Cumulatively Considerable Net Increase of Mobile Source Air Toxics (less than significant)

Mobile Source Air Toxics (MSAT) Background: Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments (CAAA) of 1990, whereby Congress mandated that the U.S. Environmental Protection Agency (EPA) regulate 188 air toxics, also known as hazardous air pollutants. The EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007) and identified a group of 93 compounds emitted from mobile sources. In addition, EPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment. These are acrolein, benzene, 1,3-butadiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter.

STATEWIDE TOXIC AIR INVENTORY

The California Toxics Inventory (CTI) currently provides emissions estimates for onroad mobile (gasoline and diesel), and offroad mobile (gasoline, diesel, and other) sources. The mobile sources consist of onroad vehicles such as passenger cars and trucks, motorcycles, busses, and heavy-duty trucks. Offroad sources include trains, ships, and boats. Table 3.3-14 provides the 2008 California Toxic Inventory for mobile source air toxics.

3.3 AIR QUALITY

TABLE 3.3-14: 2008 CALIFORNIA TOXIC INVENTORY FOR MOBILE SOURCES (TONS/YR)

Toxic Air Contaminant	Onroad Diesel	Onroad Gasoline	Other Mobile Gasoline	Other Mobile Diesel	Other Mobile Other	TOTAL
1,2,4-Trimethylbenzene	140	2,773	1,124	231	20	4,288
1,3-Butadiene	50	943	723	83	206	2,005
2,2,4-Trimethylpentane	79	10,066	2,432	130	20	12,728
Acetaldehyde	1947	745	854	3,197	529	7,271
Acrolein	149	188	157	203	256	954
Aluminum	8			5		13
Ammonia	81.2	20,117				20,199
Antimony and compounds	2			2		4
Arsenic and compounds (inorganic)	0			0	15	16
Barium and compounds	281			8		289
Benzene	530	4,494	3,127	870	326	9,347
Bromine and compounds	0	3	3	0	0.05	7
Butyraldehyde	495	61	44	813	138	1,551
Cadmium and compounds	1			1	1.46	3
Chlorine	38	444	394	4	6	886
Chlorobenzenes					2	2
Chromium	6	3	3	0	15	28
Chromium, hexavalent	0	0	0	0	0.0006	0.31
Cobalt	0	3	3	0	0.05	6
Copper and compounds	60	3	3	0	0.05	66
Crotonaldehyde		89	113.24		296	499
Cumene	5	90	49	9	0.78	154
Cyclohexane	8	1,129	924	13	0.96	2,075
Cyclohexanol						0
Diesel engine exhaust	13670			14,877	6,805	35,353
Ethyl benzene	82	3,109	1,402	135	36	4,764
Ethylene	3808	10,006	7,979	6,254	2,425	30,472
Formaldehyde	3896	2,478	2,613	6,398	1,716	17,101
Hexane	42	2,992	1,950	70	60	5,113
Isoprene, except from vegetative emission sources		251	122			373
Lead and compounds (inorganic)	1			0	16	18
Manganese and compounds	9	3	3	0	0.05	16
Mercury and compounds	0			0	0.0012	1
Methanol	8	337	305	13		663
Methyl ethyl ketone	392	68	52	644	0.69	1,156
Methyl tert-butyl ether					3	3
Xylenes (mixed xylenes)	162	8,195	4,145	265	15	12,781
Nickel and compounds	3.70	3	3	0	2	11
Xylenes (mixed xylenes)	90	3,328	1,451	148	52	5,068
PAHs, total w/ indiv. isomers	638	1,001	468	525	66	2,698
Phenol					27	27
Phosphorus	6			2		8
Propionaldehyde	257	98	113	422	107	997
Propylene	689	5,010	4,373	1,131	794	11,996
Xylenes (mixed xylenes)	26	1,030	56	43		1,156
Selenium and compounds	0			0	1	2
Styrene and styrene oxide	16	238	113	26	47	441
Toluene	389	13,258	6,926	639	200	21,413
Vanadium (fume or dust)	4			0	39	43
Zinc and compounds	25	3	3	6	16	53

NOTE: THE 2008 INVENTORY IS BASED ON THE ALMANAC 2009. AS OF 2012, THE 2008 INVENTORY IS THE LATEST AVAILABLE TOXIC AIR INVENTORY FOR CALIFORNIA.

SOURCE: CALIFORNIA AIR RESOURCES BOARD, 2012

LOCAL TOXIC MONITORING (ESTIMATION OF RISK)

CARB monitors toxics throughout California, including one site in Butte County: Chico-Manzanita Avenue. Data obtained from this monitoring site between 2007 and 2011 is shown in **Tables 3.3-15 through 3.3-18**. The estimated risks shown in CARB's annual toxics summaries in the tables below are estimated chronic cancer risk (acute risks and non-cancer risks are not shown) resulting from the inhalation pathway. These risks are expressed in terms of expected cancer cases per million population based on exposure to the annual mean concentration over 70 years. They are calculated using unit risk factors provided to the Air Resources Board by the California Office of Environmental Health Hazard Assessment. The most significant risks from mobile source air toxics in Butte County are associated with Benzene, 1, 3, Butadiene, and Formaldehyde, as well diesel particulates.

TABLE 3.3-16: CHICO-MANZANITA AVENUE SITE (BENZENE)

Year	Minimum	Median	Mean	90th Percentile	Max	Stan. Dev.	Number of Observations	Detection Limit	Estimated Risk
2011	0.09	0.2	0.335	0.8	1.3	0.34	30	0.05	31
2010	0.08	0.23	0.288	0.55	1.0	0.203	30	0.05	27
2009	0.08	0.23	0.313	0.71	1.2	0.273	31	0.05	29
2008	0.09	0.23	0.399	0.9	1.2	0.314	31	0.05	37
2007	0.07	0.22	0.284	0.75	1.1	0.257	29	0.05	26

NOTE: PARTS PER BILLION

SOURCE: CALIFORNIA AIR RESOURCES BOARD, 2012

TABLE 3.3-17: CHICO-MANZANITA AVENUE SITE (1, 3, BUTADIENE)

Year	Minimum	Median	Mean	90th Percentile	Max.	Stan. Dev.	Number of Observations	Detection Limit	Estimated Risk
2011	0.02	0.02	0.072	0.19	0.37	0.096	30	0.04	27
2010	0.02	0.02	0.056	0.13	0.3	0.062	30	0.04	21
2009	0.02	0.05	0.071	0.18	0.35	0.084	31	0.04	27
2008	0.02	0.02	0.074	0.19	0.31	0.08	31	0.04	28
2007	0.02	0.04	0.06	0.18	0.24	0.064	29	0.04	22

NOTE: PARTS PER BILLION

SOURCE: CALIFORNIA AIR RESOURCES BOARD, 2012

TABLE 3.3-18: CHICO-MANZANITA AVENUE SITE (FORMALDEHYDE)

Year	Minimum	Median	Mean	90th Percentile	Max.	Stan. Dev.	Number of Observations	Detection Limit	Estimated Risk
2011	0.7	0.7	3.0	2.96	5.9	1.54	31	0.1	22
2010	0.4	0.4	2.0	2.49	7.0	1.87	30	0.1	18
2009	0.3	0.3	1.7	2.54	6.0	1.66	31	0.1	19
2008	0.7	0.7	2.9	3.15	13	2.47	31	0.1	23
2007	0.6	0.6	2.7	2.82	9.3	1.75	30	0.1	21

NOTE: PARTS PER BILLION

SOURCE: CALIFORNIA AIR RESOURCES BOARD, 2012

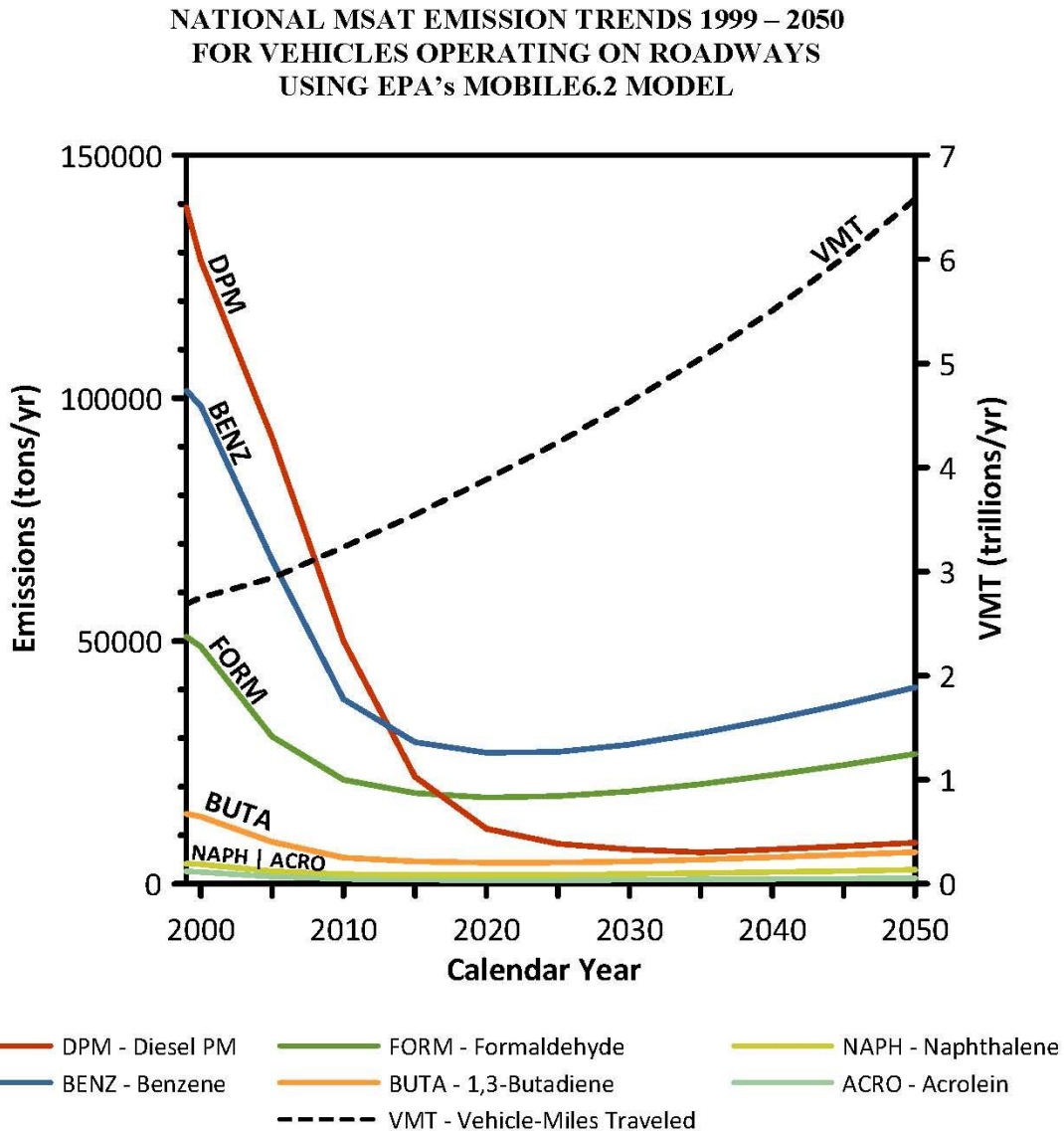
MSAT ASSESSMENT

The 2007 EPA rule requires controls that will dramatically decrease Mobile Source Air Toxics (MSAT) emissions through cleaner fuels and cleaner engines. According to an FHWA analysis using EPA's MOBILE6.2 model, even if vehicle activity (VMT) increases by 145 percent, a combined

3.3 AIR QUALITY

reduction of 72 percent in the total annual emission rate for the priority MSAT is projected from 1999 to 2050, as shown below in Exhibit 3.3-1.

EXHIBIT 3.3-1: NATIONAL MSAT EMISSION TRENDS 1999 – 2050 FOR VEHICLES OPERATING ON ROADWAYS USING EPA’S MOBILE6.2 MODEL



Note: (1) Annual emissions of polycyclic organic matter are projected to be 561 tons/yr for 1999, decreasing to 373 tons/yr for 2050.
 (2) Trends for specific locations may be different, depending on locally derived information representing vehicle-miles travelled, vehicle speeds, vehicle mix, fuels, emission control programs, meteorology, and other factors

Local monitoring in Butte County shows an estimated chronic cancer risk from MSATs in the range of 18 to 31 people per one million. The most significant areas that pose an elevated risk is along the major highways (SR 99 and SR 70) as well as localized areas with high congestion near sensitive land uses. The volume of MSATs associated with the transportation system is directly correlated to

the chemical composition of fuels. New fuel standards that are being phased into the petroleum industry over time is specifically aimed at reducing MSATs through cleaner fuels.

The U.S. EPA has demonstrated a national decreasing trend for MSATs including, acrolein, benzene, 1,3-butadiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter. The decreasing trend is directly correlated to cleaner fuels. California maintains stricter standards for clean fuels and emissions compared to the national standards, therefore it is expected that MSAT trends in California will decrease consistent with or more than the U.S. EPA's national projections.

The proposed project does not affect the federal or state clean fuel standards that are projected to significantly improve MSAT conditions throughout the State, including Butte County. The MTP/SCS is designed to improve traffic conditions in congested areas through a combination of roadway design, promoting alternative modes of transportation, and coordinating with land use agencies for smarter growth patterns relative to transportation systems. Implementation of the proposed project will have a **less than significant** impact. The following mitigation measure is presented to ensure that MSAT assessments are performed on a project-level, and to ensure that the most current tools and techniques are used for assessing the health risks of MSATs.

Mitigation Measure 3.3-3: *As air toxics research continues, BCAG should utilize the tools and techniques that are developed for assessing health outcomes as a result of lifetime MSAT exposure. The potential health risks posed by MSAT exposure should continue to be factored into project-level decision-making in the context of environmental review.*

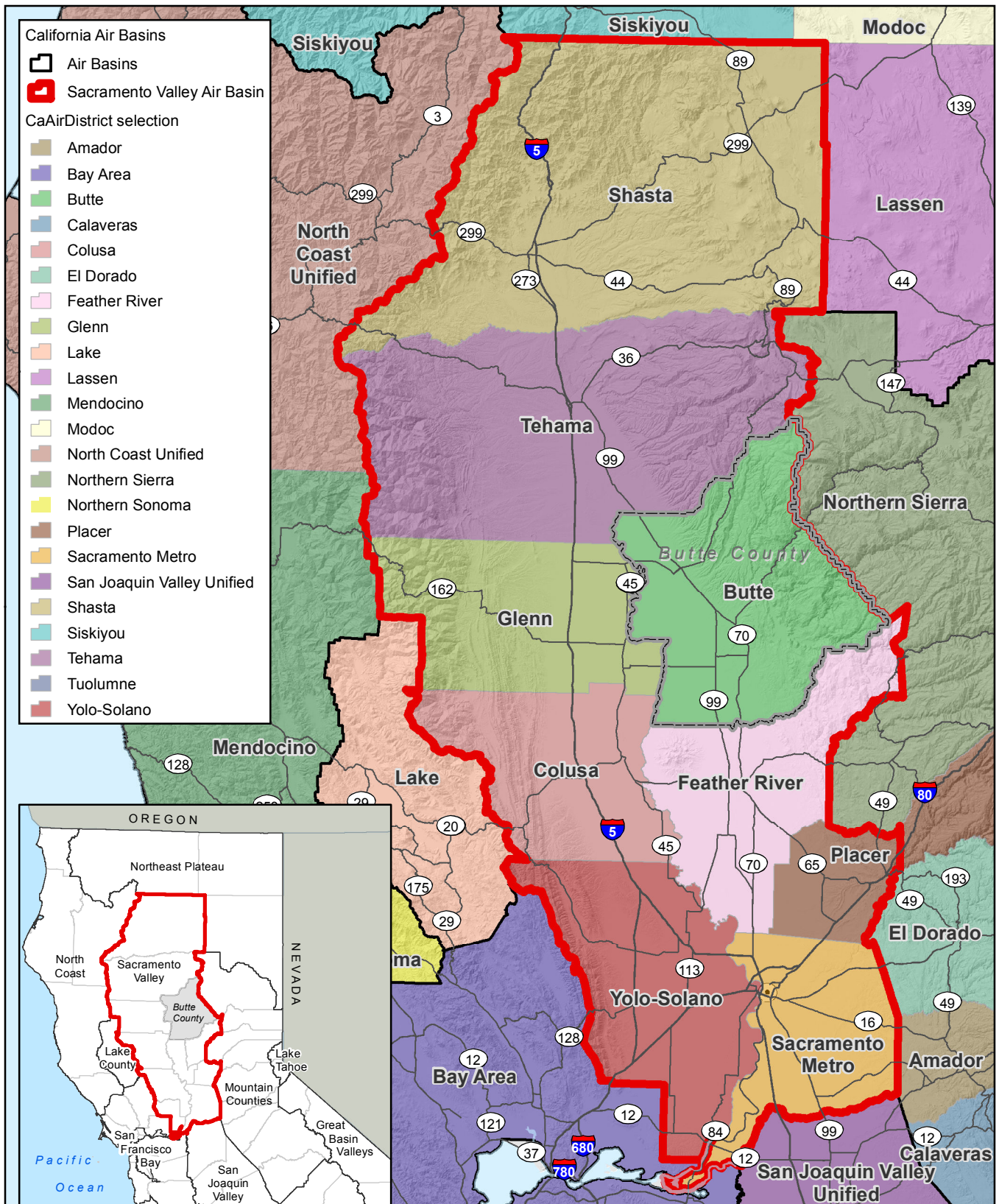
Impact 3.3-6: Potential to release asbestos from earth movement or structural asbestos from demolition/renovation of existing structures (less than significant with mitigation)

Asbestos is a material that has been used in a variety of transportation facilities, including bridges, walls, and road base. Demolition and excavation activities of facilities containing asbestos requires monitoring to insure that they are properly removed and disposed in accordance with local and state regulations.

Based upon the regional nature of the proposed project, development of detailed, site-specific information on this impact at planning level is not feasible. The implementing agency of each individual project will conduct appropriate project-level assessments and will be responsible for consideration of mitigation measures for significant effects on the environment. If asbestos is deemed present naturally, or in existing facilities, an Asbestos Hazard Dust Mitigation Plan would be prepared to ensure that adequate dust control and asbestos hazard mitigation measures are implemented during project construction. The following mitigation measure would ensure that any construction activities that may result in the release of asbestos would include appropriate measures contained within an Asbestos Hazard Dust Mitigation Plan to ensure that exposure to construction workers and the public is minimized to acceptable State and local levels. Implementation of the following mitigation measure would ensure that this potential impact is reduced to a **less-than-significant** level.

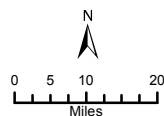
MITIGATION MEASURES

Mitigation Measure 3.3-4: *Prior to construction of individual projects, the implementing agency should assess the site for the presence of asbestos including asbestos from structures such as road base, bridges, and other structures. In the event that asbestos is present, the implementing agency should comply with applicable state and local regulations regarding asbestos, including ARB's asbestos airborne toxic control measure (ATCM) (Title 17, CCR § 93105 and 93106), to ensure that exposure to construction workers and the public is reduced to an acceptable level. This may include the preparation of an Asbestos Hazard Dust Mitigation Plan to be implemented during construction activities.*



2012 BUTTE COUNTY METROPOLITAN TRANSPORTATION PLAN AND SUSTAINABLE COMMUNITIES STRATEGY

Figure 3.3-1. Air Basins and Districts



Data source: California Environmental Protection Agency Air Resources Board, California Spatial Information Library.
Map date: March 28, 2012.

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

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This section describes the regulatory setting, regional biological resources, and impacts that are likely to result from project implementation. No comments were received during the public review period or scoping meeting for the Notice of Preparation regarding this topic.

3.4.1 ENVIRONMENTAL SETTING

Butte County encompasses approximately 1,665 square miles in north central California. The western part of the county is located in the northern Sacramento Valley, while the eastern portion extends into the foothills of the Cascade and Sierra Nevada Mountain Ranges. Elevations range from 50 feet above sea level at Butte Sink along the Sacramento River at the southwest portion of the county, to 7,087 feet above sea level at Humboldt Summit near the county's northeastern border. The climate is Mediterranean, with cool, wet winters and hot, dry summers. Precipitation is normally in the form of rain, with snow in the higher elevations, and ranges from approximately 20 to 80 inches per year.

The County consists of a combination of agricultural and urban environments that have been drastically altered from their native state by human activities, as well as natural environments that are largely unchanged. Native terrestrial habitat types that still exist in the County include chaparral, grassland, oak woodland/savannah, and riparian woodland. Aquatic habitat types remaining in the County are represented by lakes, streams, rivers, and wetlands such as sloughs, marshes, and vernal pools and this aquatic environment supports a rich fishery. Climatic and physiographic differences distinguish the various terrestrial and aquatic communities. Unique biological resources are contained within each of these habitats. In addition to providing habitat for resident wildlife and plant species, this region also functions as an important dispersal corridor for wildlife and a vital link in the migratory pathway of the Pacific Flyway.

GEOMORPHIC PROVINCES

California's geomorphic provinces are naturally defined geologic regions that display a distinct landscape or landform. Earth scientists recognize eleven provinces in California. Each region displays unique, defining features based on geology, faults, topographic relief and climate. These geomorphic provinces are remarkably diverse. They provide spectacular vistas and unique opportunities to learn about earth's geologic processes and history.

Butte County is uniquely located in three geomorphic provinces of California. The western portion of the County is located in the Great Valley province, which is characterized by sedimentary rocks. The eastern portion of the County is located in the Sierra Nevada province, characterized by igneous and metamorphic rocks. The northern portion of the County is located in the Cascade Range province, characterized by volcanic sediments and mudflows.

GREAT VALLEY. The Great Valley is an alluvial plain about 50 miles wide and 400 miles long in the central part of California. Its northern part is the Sacramento Valley, drained by the Sacramento River and its southern part is the San Joaquin Valley drained by the San Joaquin River. The Great Valley is a trough in which sediments have been deposited almost continuously since the Jurassic (about 160 million years ago). Great oil fields have been found in southernmost San Joaquin Valley

3.4 BIOLOGICAL RESOURCES

and along anticlinal uplifts on its southwestern margin. In the Sacramento Valley, the Sutter Buttes, the remnants of an isolated Pliocene volcano, rise above the valley floor.

SIERRA NEVADA. The Sierra is a tilted fault block nearly 400 miles long. Its east face is a high, rugged multiple scarp, contrasting with the gentle western slope (about 2°) that disappears under sediments of the Great Valley. Deep river canyons are cut into the western slope. Their upper courses, especially in massive granites of the higher Sierra, are modified by glacial sculpturing, forming such scenic features as Yosemite Valley. The high crest culminates in Mt. Whitney with an elevation of 14,495 feet above sea level near the eastern scarp. The metamorphic bedrock contains goldbearing veins in the northwest trending Mother Lode. The northern Sierra boundary is marked where bedrock disappears under the Cenozoic volcanic cover of the Cascade Range.

CASCADE RANGE. The Cascade Range, a chain of volcanic cones, extends through Washington and Oregon into California. It is dominated by Mt. Shasta, a glacier-mantled volcanic cone, rising 14,162 feet above sea level. The southern termination is Lassen Peak, which last erupted in the early 1900s. The Cascade Range is transected by deep canyons of the Pit River. The river flows through the range between these two major volcanic cones, after winding across interior Modoc Plateau on its way to the Shasta Lake.

BIOREGIONS

The county is defined by three different bioregions including the Sacramento Valley, Sierra Nevada, and Modoc. **Figure 3.4-1** illustrates the boundaries of the bioregions within the region. A brief description of these bioregions is presented below.

SACRAMENTO VALLEY BIOREGION. The Sacramento Valley Bioregion is a watershed of the Sierra Nevada that encompasses the northern end of the great Central Valley, stretching from Redding to the southeast corner of Sacramento County. The bioregion is generally flat, and is rich in agriculture. The south-central portion of the County falls within this bioregion, which has a climate that is characterized by hot dry summers and cool wet winters. Oak woodlands, riparian forests, vernal pools, freshwater marshes, and grasslands provide the major natural vegetation of the bioregion. This bioregion is the most prominent wintering area for waterfowl, attracting significant numbers of ducks and geese to its seasonal marshes along the Pacific Flyway. Species include northern pintails, snow geese, tundra swans, sandhill cranes, mallards, grebes, peregrine falcons, heron, egrets, and hawks. Black-tailed deer, coyotes, river otters, muskrats, beavers, ospreys, bald eagles, salmon, steelhead, and swallowtail butterflies are some of the wildlife that are common in this bioregion.

MODOC BIOREGION. The Modoc bioregion extends across California's northeast corner from Oregon to Nevada, and south to the southern border of Lassen County and northern border of Plumas and Butte County. Much of this sparsely populated bioregion is forests, mountains, high desert, valleys, piney woodlands, and volcanic uplands. The eastern portion of Shasta County falls within this bioregion. The climate features hot dry summers and cold moist winters with snow at higher elevations. Geography is varied in the Modoc Bioregion, with volcanic areas and wetlands to the west and high desert to the east. Juniper and sagebrush cover much of the eastern side of

the Modoc Bioregion, while yellow and Jeffrey pine, white fir, mixed conifer, cedar, and aspen are common in the more mountainous and forested areas to the west. Wildlife include bald eagles, antelope, greater sandhill cranes, ospreys, Canada geese, black-crowned night herons, mule deer, muskrats, pronghorn, cinnamon teal, northern pintails, Swainson's hawks, sage grouse, rainbow trout, marmots, hummingbirds, great horned owls, black bears, coyotes, porcupine, Modoc sucker, goshawk, bank swallow, Shasta crayfish, sage grouse, and Lost River sucker. Rare plants include yellow arrowleaf, balsam root, long-haired star tulip, spiny milkwort, Ash Creek ivesia, Raven's lomatium, and woolly stenotus.

SIERRA BIOREGION. The Sierra Bioregion is a vast and rugged mountainous area extending some 380 miles along California's eastern side and largely contiguous with Nevada. Named for the Sierra Nevada mountain range it encompasses, the Sierra Bioregion includes magnificent forests, lakes, and rivers that generate much of the state's water supply. It shares spectacular Lake Tahoe with Nevada and features eight national forests, three national parks -- Yosemite, Kings Canyon and Sequoia -- numerous state parks, historical sites, wilderness, special recreation and national scenic areas, and mountain peaks that beckon climbers, including 14,495-foot Mt. Whitney.

CALIFORNIA WILDLIFE HABITAT RELATIONSHIP SYSTEM

The California Wildlife Habitat Relationship (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. At present, 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 California Wildlife Habitat Relationship System there are 27 wildlife habitat classifications in Butte County out of 59 found in the state. Below is a brief description of each habitat that is found in Butte County. **Figure 3.4-2** illustrates the land cover types within Butte County.

Developed

Agricultural land may be defined broadly as land used primarily for production of food and fiber. This habitat can generally be broken into the following categories: cropland, dryland grain crops, irrigated grain crops, irrigated hayfield, irrigated row and field crops, rice, orchard - vineyard, deciduous orchard, evergreen orchard, and vineyard. On satellite imagery, the chief indications of agricultural activity are distinctive geometric field and road patterns on the landscape and the traces produced by livestock or mechanized equipment. However, pasture and other lands where such equipment is used infrequently may not show as well-defined shapes as other areas. The number of building complexes is smaller and the density of the road and highway network is much lower in Agricultural land than in Urban land.

Urban habitats are not limited to any particular physical setting. 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.

Hardwood Forest/Woodland

Aspen stands occur at high elevations on a variety of sites and soils. 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 is rigorous long winters with heavy snows and very cold temperatures.

Montane hardwood habitat 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 F and in winter vary from 37 to 45 F. Frost-free days range from 160 to 230. Annual precipitation varies from 110 inches in the northern Coast Range to 36 inches in the mountains of southern California.

Montane Riparian areas are found associated with montane lakes, ponds, seeps, bogs and meadows as well as rivers, streams and springs. Water may be permanent or ephemeral. The growing season extends from spring until late fall, becoming shorter at higher elevations. Most tree species flower in early spring before leafing out.

Blue oak-foothill pine habitat occurs in a typically 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 F and summer temperatures averaging 90 F. Soils are from a variety of generally well-drained parent materials, ranging from gravelly loam through stony clay loam, with soils commonly rich in rock fragments.

Blue oak woodland habitat 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 75-96 F in summer to 29-42 F in winter. The growing season ranges from 6 months in the north to the entire year in the south, with 175 to 365 frost-free days.

Coastal oak woodlands occupy a variety of Mediterranean type climates that vary from north to south and west to east. Precipitation occurs in the milder winter months, almost entirely as rainfall, followed by warm to hot, dry summers. Near the coast, the summers are tempered by fogs and cool, humid sea breezes. Mean annual precipitation varies from about 40 in in the north to about 15 in in southern and interior regions. Mean minimum winter temperatures are 29 to 44

F, and the mean maximum summer temperatures are 75 to 96 F. The growing season ranges from six months in the north to the entire year in mild coastal regions to the south. The soils and parent material on which coastal oak woodlands occur are extremely variable. Coastal oak woodlands generally occur on moderately to well-drained soils that are moderately deep and have low to medium fertility.

Valley oak woodland habitat occurs in a wide range of physiographic settings but is best developed on deep, well-drained alluvial soils, usually in valley bottoms. Most large, healthy valley oaks are probably rooted down to permanent water supplies. Stands of valley oaks are found in deep sills on broad ridge-tops in the southern Coast Range. Where this type occurs near the coast, it is usually found away from the main fog zone. The climate is Mediterranean, with mild, wet winters and hot, dry summers.

Valley-foothill riparian habitats are found in valleys bordered by sloping alluvial fans, slightly dissected terraces, lower foothills, and coastal plains. 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 F in the summer to 29 to 44 F in the winter. Average precipitation ranges from 6-30 inches, with little or no snow. The growing season is 7 to 11 months.

Aquatic

Riverine habitats can occur in association with many terrestrial habitats. Riparian habitats are found adjacent to many rivers and streams. 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, and flows downward at a rate relative to slope or gradient and the volume of surface runoff or discharge. Velocity generally declines at progressively lower altitudes, and the volume of water increases until the enlarged stream 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

Lacustrine habitats are inland depressions or dammed riverine channels containing standing water. 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.

Shrub

Mixed Chaparral occurs on all aspects, but at lower elevations, it generally is 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 38 to 63 cm (15 to 25 in) with less than 20 percent falling during the summer.

Montane chaparral can be found on shallow to deep soils, on all exposures, and from gentle to relatively steep slopes. 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. In the northern portion of the state, montane chaparral is found between 914 to 2743 m (3000-9000 ft).

Conifer Forest

Closed-cone pine-cypress habitats are 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 ft. Landforms are gentle to steep slopes where stands occur in interior California and coastal terraces or bluffs where distributed along coastal California.

Douglas fir habitat is typically found in hot, dry summers and cool, mild, wet winters. Temperatures range from 57-72 F in the summer to 32-46 F in the winter. Annual precipitation varies from 24-27 in, generally less than 15 percent falling during summer. Precipitation increases inland and at higher elevations. Snowfall ranges from 2 to 31 inches and rarely persists later than June. Topography is characterized by rugged, deeply dissected terrain and steep slopes, especially toward the south. Major soil types are sedimentary granitic, and Ultramafic parent materials of gabbro, peridotite, and serpentine.

Lodgepole pine habitat occupies an array of landscape units within its zone of adaptation. Areas of lodgepole pine in the red fir habitats are characterized by poor drainage and often a cooler microsite. Lodgepole pine is commonly associated with meadows, and it typically occupies areas with at least 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.

Montane hardwood-conifer habitat 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. In southern California, this habitat is found at higher elevations, and in moist canyons. Average rainfall is 25 to 65 in, with some fog. The growing season is 7 to 11 months, with 200 to 300 frost-free days.

Ponderosa pine habitat is found on suitable mountain and foothill sites throughout California except in the immediate area of San Francisco Bay, in the north coast area, south of Kern County in the Sierra Nevada and east of the Sierra Nevada Crest. Ponderosa pine is found on all aspects, depending on soils and location within the local elevational range. Mean annual temperature is generally less than 55 F and precipitation is greater than 33 inches except in southern California. Less than one-third of the precipitation is snowfall.

Red fir habitats are found on frigid soils over a wide range of topography exclusive 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.

Sierran mixed conifer habitat is found in varied soils, derived primarily from Mesozoic granitic, Paleozoic sedimentary and volcanic rocks, and Cenozoic volcanic rocks. Serpentine soils, found primarily in the northern mixed conifer zone, support a number of endemic plants. Soils are deep to shallow. Fissures and cracks in granitic parent material often support forest growth, even where soil development is shallow. Temperatures range from 40 to 96 F in summer and 10 to 60 F in winter and decrease with elevation. The growing season ranges between 90 and 330 days in the north with 40 to 200 frost-free days, and 180 to 365 days in the south with 180 frost-free days. Precipitation ranges from 30 to 90 inches per year, from October to May, with increasing snowfall as elevation increases.

White fir habitats are found on a variety of soils developed from different parent material, including volcanic and igneous rocks, granitics, various metamorphics, and sedimentary material. Soils are coarse textured, well-drained, have poorly developed profiles, are often rocky, and are cold, with mean annual temperatures from 32 -50 F. Cooler north- and east-facing slopes are the most common sites throughout the state. Precipitation is between 30-70 inches mostly in the form of snow. Almost all precipitation falls between October and May.

Wetland Types

Wet meadows occur where water is at or near the surface most of the growing season, following spring runoff. Hydrologically, they occupy lotic, sunken concave, and hanging sites. Lotic sites are those with main input flow (other than precipitation) from upstream sources; at least early in the growing season, water flows across them at depths of 4-8 inches. Downstream runoff is the principal output flow. Lotic sites are topographic basins but have a slight slope, which permits drainage of surface water. Percolation is nil due to the saturated or slowly permeable nature of underlying materials. Sunken concave sites also receive water input from upstream sources, but evapotranspiration is the main output flow. Percolation is slowed by heavy-textured soils and/or shallow bedrock; however, in contrast to lotic and hanging sites, soil of sunken concave sites may dry to considerable depth by fall. Hanging sites are watered by hydrostatic flows as springs or seeps. 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 inches deep.

Fresh emergent wetland habitats occur 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.

Non-vegetated

Barren habitat is defined by the absence of vegetation. Any habitat with <2% total vegetation cover by herbaceous, desert, or nonwildland species and <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.

Herbaceous

Annual Grassland habitat occurs mostly on flat plains to gently rolling foothills. 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 (18 to 21 fortnights). Annual precipitation is highest in northern California.

Pastures are planted on flat and gently rolling terrain. Flat terrain is irrigated by the border and check method of irrigation, except on sandy soils or where water supplies are limited. Pastures established on sandy soils or hills are sprinklered. Hilly lands also use wild flooding; that is, ditches that follow the grade along ridges and hillsides, where water is released at selected points along the ditch. Climate influences the length of growing season. For example, pastures at higher elevations or in the north have a shorter growing season.

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 3.4-3** 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 1950's 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.

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 Game. 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 Game (CDFG) 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.

3.4 BIOLOGICAL RESOURCES

The Study Panel, in coordination with the CDFG, developed overlay maps that illustrate summer/winter range and migration corridors; General Plan land uses; parcel sizes; transportation corridors; and suitable development sites. CDFG 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 Beale 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.

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.

SPECIAL-STATUS SPECIES

Special-status species are generally defined as: 1) species listed as a candidate, threatened, or endangered under the federal or state Endangered Species Act; 2) species considered rare or endangered under the California Environmental Quality Act; 3) plants considered “rare, threatened, or endangered in California” by the California Native Plant Society (Lists 1B and 2); 4) animal listed as "species of special concern" by the state; and 5) animals fully protected in California by the Fish and Game Code.

3.4 BIOLOGICAL RESOURCES

The following discussion is based on a background search of special-status species that are documented in the California Natural Diversity Database (CNDDDB) Rarefind 4, the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants, the U.S. Fish and Wildlife Service's (USFWS) endangered and threatened species lists, and the Baseline Conditions Report for the BRCP. The background search was regional in scope and focused on the documented occurrences within the boundaries of Butte County.

The search revealed 141 special status species that occur, or potentially occur within the region: 69 plants, four invertebrates, nine reptiles/amphibian, ten fish, 41 birds, and eight mammals. **Table 3.4-1** provides a list of special-status plant species that are documented in the region, their habitat, and current protective status. **Table 3.4-2** provides a list of special-status wildlife and fish species that are documented in the region, their habitat, current protective status, and coverage status under the BRCP.

In addition to these species status species the search revealed eight sensitive natural communities including: Coastal and Valley Freshwater Marsh, Great Valley Cottonwood Riparian Forest, Great Valley Mixed Riparian Forest, Great Valley Valley Oak Riparian Forest, Great Valley Willow Scrub, Northern Basalt Flow Vernal Pool, Northern Hardpan Vernal Pool, Northern Volcanic Mud Flow Vernal Pool.

TABLE 3.4-1: SPECIAL STATUS PLANTS PRESENT OR POTENTIALLY PRESENT IN BUTTE COUNTY

<i>SPECIES</i>	<i>STATUS</i>	<i>HABITAT</i>
Plants		
<i>Agrostis hendersonii</i> Henderson's bent grass	--;;3.2	Valley and foothill grassland Vernal pool Wetland
<i>Allium jepsonii</i> Jepson's onion	--;;1B.2	Cismontane woodland Lower montane coniferous forest Ultramafic
<i>Anomobryum julaceum</i> slender silver moss	--;;2.2	Broadleaved upland forest Lower montane coniferous forest North coast coniferous forest
<i>Astragalus tener var. ferrisiae</i> Ferris' milk-vetch	--;;1B.1 (Covered)	Meadow and seep Valley and foothill grassland Wetland
<i>Atriplex cordulata var. cordulata</i> heartscale	--;;1B.2	Chenopod scrub Meadow and seep Valley and foothill grassland
<i>Atriplex depressa</i> Brittlescale	--;;1B.1	Alkali playa Chenopod scrub Meadow and seep Valley and foothill grassland Vernal pool Wetland
<i>Atriplex minuscula</i> lesser saltscale	--;;1B.1 (Covered)	Alkali playa Chenopod scrub Valley and foothill grassland
<i>Atriplex subtilis</i> subtle orache	--;;1B.2	Valley and foothill grassland
<i>Balsamorhiza macrolepis</i> big-scale balsamroot	--;;1B.2	Cismontane woodland Ultramafic Valley and foothill grassland
<i>Botrychium ascendens</i> upswept moonwort	--;;2.3	Lower montane coniferous forest

SPECIES	STATUS	HABITAT
<i>Botrychium crenulatum</i> scalloped moonwort	--;--;2.2	Bog and fen Lower montane coniferous forest Marsh and swamp Meadow and seep Wetland
<i>Botrychium minganense</i> mingan moonwort	--;--;2.2	Lower montane coniferous forest
<i>Botrychium montanum</i> western goblin	--;--;2.1	Lower montane coniferous forest Oldgrowth
<i>Brasenia schreberi</i> watershield	--;--;2.3	Marsh and swamp Wetland
<i>California macrophylla</i> round-leaved filaree	--;--;1B.1	Cismontane woodland Valley and foothill grassland
<i>Calystegia atriplicifolia</i> ssp. <i>Buttensis</i> Butte County morning-glory	--;--;4.2	Lower montane coniferous forest
<i>Campylopodiella stenocarpa</i> flagella-like atractylocarpus	--;--;2.2	Cismontane woodland
<i>Carex limosa</i> mud sedge	--;--;2.2	Bog and fen Freshwater marsh Lower montane coniferous forest Marsh and swamp Meadow and seep Upper montane coniferous forest Wetland
<i>Carex vulpinoidea</i> fox sedge	--;--;2.2	Bog and fen Freshwater marsh Lower montane coniferous forest Marsh and swamp Meadow and seep Wetland
<i>Castilleja rubicundula</i> ssp. <i>Rubicundula</i> pink creamsacs	--;--;1B.2	Chaparral Meadow and seep Ultramafic Valley and foothill grassland
<i>Centromadia parryi</i> ssp. <i>Parryi</i> pappose tarplant	--;--;1B.2	Coastal prairie Marsh and swamp Meadow and seep Valley and foothill grassland
<i>Chamaesyce hooveri</i> Hoover's spurge	FT;--;1B.2 (Covered)	Valley and foothill grassland Vernal pool Wetland
<i>Chlorogalum grandiflorum</i> Red Hills soaproot	--;--;1B.2	Chaparral Cismontane woodland Lower montane coniferous forest Ultramafic
<i>Clarkia biloba</i> ssp. <i>Brandegeeae</i> Brandegee's clarkia	--;--;1B.2	Chaparral Cismontane woodland
<i>Clarkia gracilis</i> ssp. <i>Albicaulis</i> white-stemmed clarkia	--;--;1B.2	Chaparral Cismontane woodland Ultramafic
<i>Clarkia mildrediae</i> ssp. <i>Mildrediae</i> Mildred's clarkia	--;--;1B.3	Cismontane woodland Lower montane coniferous forest
<i>Clarkia mosquinii</i> Mosquin's clarkia	--;--;1B.1	Cismontane woodland Lower montane coniferous forest
<i>Delphinium recurvatum</i> recurved larkspur	--;--;1B.2	Chenopod scrub Cismontane woodland Valley and foothill grassland
<i>Didymodon norrisii</i> Norris' beard moss	--;--;2.2	Cismontane woodland Lower montane coniferous forest
<i>Eleocharis quadrangulata</i> Four-angled spikerush	--;--;2.2	Bog and fen Freshwater marsh Marsh and swamp Meadow and seep Wetland
<i>Eremogone cliftonii</i> Clifton's eremogone	--;--;1B.3	Chaparral Lower montane coniferous forest Upper montane coniferous forest

3.4 BIOLOGICAL RESOURCES

<i>SPECIES</i>	<i>STATUS</i>	<i>HABITAT</i>
<i>Eriogonum umbellatum</i> var. <i>ahartii</i> Ahart's buckwheat	--;;1B.2	Cismontane woodland Ultramafic
<i>Erodium macrophyllum</i> Round-leaved filaree	--;;1B.3	Cismontane woodland Valley and foothill grassland
<i>Fissidens pauperculus</i> minute pocket moss	--;;1B.2	North coast coniferous forest Redwood
<i>Fritillaria eastwoodiae</i> Butte County fritillary	--;;3.2	Chaparral Cismontane woodland Lower montane coniferous forest Ultramafic
<i>Fritillaria pluriflora</i> adobe-lily	--;;1B.2	Chaparral Cismontane woodland Ultramafic Valley and foothill grassland
<i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i> woolly rose-mallow	--;;1B.2	Freshwater marsh Marsh and swamp Wetland
<i>Imperata brevifolia</i> California satintail	--;;2.1	Chaparral Coastal scrub Meadow and seep Mojavean desert scrub Riparian forest Wetland
<i>Juncus leiospermus</i> var. <i>ahartii</i> Ahart's dwarf rush	--;;1B.2 (Covered)	Vernal pool Wetland
<i>Juncus leiospermus</i> var. <i>leiospermus</i> Red Bluff dwarf rush	--;;1B.1 (Covered)	Chaparral Cismontane woodland Valley and foothill grassland Vernal pool Wetland
<i>Lewisia cantelovii</i> Cantelow's lewisia	--;;1B.2	Broadleaved upland forest Chaparral Cismontane woodland Lower montane coniferous forest Ultramafic
<i>Limnanthes floccosa</i> ssp. <i>californica</i> Butte County meadowfoam	FE;CE;1B.1 (Covered)	Valley and foothill grassland Vernal pool Wetland
<i>Limnanthes floccosa</i> ssp. <i>floccosa</i> woolly meadowfoam	--;;4.2	Chaparral Cismontane woodland Valley and foothill grassland Vernal pool Wetland
<i>Monardella venosa</i> veiny monardella	--;;1B.1 (Covered)	Cismontane woodland Valley and foothill grassland
<i>Orcuttia pilosa</i> hairy Orcutt grass	FE;CE;1B.1 (Covered)	Vernal pool Wetland
<i>Orcuttia tenuis</i> slender Orcutt grass	FT;CE;1B.1 (Covered)	Valley and foothill grassland Vernal pool Wetland
<i>Packera eurycephala</i> var. <i>lewisrosei</i> Lewis Rose's ragwort	--;;1B.2	Chaparral Cismontane woodland Lower montane coniferous forest Ultramafic
<i>Packera layneae</i> Layne's ragwort	FT;CR;1B.2	Chaparral Cismontane woodland Ultramafic
<i>Paronychia ahartii</i> Ahart's paronychia	--;;1B.1 (Covered)	Cismontane woodland Valley and foothill grassland Vernal pool Wetland
<i>Penstemon personatus</i> closed-throated beardtongue	--;;1B.2	Chaparral Lower montane coniferous forest Upper montane coniferous forest
<i>Poa sierra</i> Sierra blue grass	--;;1B.3	Lower montane coniferous forest
<i>Rhynchospora californica</i> California beaked-rush	--;;1B.1 (Covered)	Freshwater marsh Marsh and swamp Meadow and seep Wetland
<i>Rhynchospora capitellata</i> brownish beaked-rush	--;;2.2	Lower montane coniferous forest Marsh and swamp Meadow and seep Upper montane coniferous forest Wetland

SPECIES	STATUS	HABITAT
<i>Rupertia hallii</i> Hall's rupertia	--;--;1B.2	Cismontane woodland Lower montane coniferous forest
<i>Sagittaria sanfordii</i> Sanford's arrowhead	--;--;1B.2	Marsh and swamp Wetland
<i>Sanicula tracyi</i> Tracy's sanicle	--;--;4.2	Cismontane woodland Lower montane coniferous forest Upper montane coniferous forest
<i>Schoenoplectus subterminalis</i> water bulrush	--;--;2.3	Marsh and swamp Wetland
<i>Sedum albomarginatum</i> Feather River stonecrop	--;--;1B.2	Chaparral Lower montane coniferous forest Ultramafic
<i>Senecio eurycephalus var. lewisrosei</i> Cut-leaved ragwort	--;--;1B.2	Cismontane woodland Lower montane coniferous forest Chaparral
<i>Sidalcea robusta</i> Butte County checkerbloom	--;--;1B.2 (Covered)	Chaparral Cismontane woodland
<i>Silene occidentalis ssp. Longistipitata</i> long-stiped campion	--;--;1B.2	Chaparral Lower montane coniferous forest Upper montane coniferous forest
<i>Stellaria longifolia</i> long-leaved starwort	--;--;2.2	Meadow and seep Riparian woodland Wetland
<i>Stellaria obtuse</i> obtuse starwort	--;--;4.3	Lower montane coniferous forest Riparian woodland Upper montane coniferous forest Wetland
<i>Stuckenia filiformis</i> slender-leaved pondweed	--;--;2.2	Marsh and swamp Wetland
<i>Trifolium jokerstii</i> Butte County golden clover	--;--;1B.2 (Covered)	Valley and foothill grassland Vernal pool Wetland
<i>Tuctoria greenei</i> Greene's tuctoria	FE;CR;1B.1 (Covered)	Valley and foothill grassland Vernal pool Wetland
<i>Utricularia intermedia</i> flat-leaved bladderwort	--;--;2.2	Bog and fen Marsh and swamp Meadow and seep Wetland
<i>Viola tomentosa</i> felt-leaved violet	--;--;4.2	Lower montane coniferous forest Subalpine coniferous forest Upper montane coniferous forest
<i>Wolffia brasiliensis</i> Brazilian watermeal	--;--;2.3	Marsh and swamp Wetland

SOURCE: DFG CNDDDB RAREFIND 4 2012

FE	Federal Endangered	CR	California Rare (Protected by Native Plant Protection Act)
FT	Federal Threatened	CSC	CDFG Species of Special Concern
FC	Federal Candidate	CC	State candidate for listing
FPD	Federal proposed for delisting	1B	CNPS - Rare, Threatened, or Endangered
FPT	Federal proposed threatened	2	CNPS - Rare, Threatened, or Endangered in California, but more Common Elsewhere.
FD	Federal delisted		
CE	California Endangered Species		
CT	California Threatened		
CD	California Delisted		

TABLE 3.4-2: SPECIAL STATUS ANIMALS PRESENT OR POTENTIALLY PRESENT IN BUTTE COUNTY

SPECIES	STATUS	HABITAT
Invertebrates		
<i>Branchinecta conservation</i> Conservancy fairy shrimp	FE;-- (Covered)	Valley and foothill grassland Vernal pool Wetland
<i>Branchinecta lynchi</i>	FT;--	Valley and foothill grassland Vernal pool Wetland

3.4 BIOLOGICAL RESOURCES

<i>SPECIES</i>	<i>STATUS</i>	<i>HABITAT</i>
Vernal pool fairy shrimp	(Covered)	
<i>Desmocerus californicus dimorphus</i> Valley elderberry longhorn beetle	FT;-- (Covered)	Riparian scrub
<i>Lepidurus packardi</i> Vernal pool tadpole shrimp	FE;-- (Covered)	Valley and foothill grassland Vernal pool Wetland
Amphibians/Reptiles		
<i>Ambystoma californiense</i> California tiger salamander	FT;CT	Cismontane woodland Meadow and seep Riparian woodland Valley and foothill grassland Vernal pool Wetland
<i>Emys marmorata</i> Western pond turtle	FSC;CSC (Covered)	Aquatic Artificial flowing waters Klamath/North coast flowing waters Klamath/North coast standing waters Marsh and swamp Sacramento/San Joaquin flowing waters Sacramento/San Joaquin standing waters South coast flowing waters South coast standing waters Wetland
<i>Phrynosoma blainvillii</i> Blainville's horned lizard	FSC;CSC (Covered)	Chaparral Cismontane woodland Coastal bluff scrub Coastal scrub Desert wash Pinon and juniper woodlands Riparian scrub Riparian woodland Valley and foothill grassland
<i>Rana boylei</i> Foothill yellow-legged frog	FSC;CSC (Covered)	Aquatic Chaparral Cismontane woodland Coastal scrub Klamath/North coast flowing waters Lower montane coniferous forest Meadow and seep Riparian forest Riparian woodland Sacramento/San Joaquin flowing waters
<i>Rana cascadae</i> Cascades frog	FSC;CSC	Aquatic Lower montane coniferous forest
<i>Rana aurora draytonii</i> California red-legged frog	FT;CSC	Aquatic Artificial flowing waters Artificial standing waters Freshwater marsh Marsh and swamp Riparian forest Riparian scrub Riparian woodland Sacramento/San Joaquin flowing waters Sacramento/San Joaquin standing waters South coast flowing waters South coast standing waters Wetland
<i>Rana sierra</i> Sierra Nevada yellow-legged frog	FC;CC	Aquatic
<i>Spea hammondi</i> Western spadefoot	--;CSC (Covered)	Cismontane woodland Coastal scrub Valley and foothill grassland Vernal pool Wetland
<i>Thamnophis gigas</i> Giant garter snake	FT;CT (Covered)	Marsh and swamp Riparian scrub Wetland
Fish		
<i>Acipenser medirostris</i> Green sturgeon	FT;CSC (Covered)	Aquatic Sacramento/San Joaquin flowing waters
<i>Hysterocarpus traski</i> Tule perch	--;-- (Local Concern)	Aquatic
<i>Lampertra ayresi</i> River lamprey	--;CSC (Covered)	Aquatic Sacramento/San Joaquin flowing waters
<i>Lavinia exilicauda</i> Hitch	--;-- (Local Concern)	Aquatic
<i>Mylopharodon conocephalus</i> Hardhead	FSC;CSC (Local Concern)	Klamath/North coast flowing waters Sacramento/San Joaquin flowing waters
<i>Oncorhynchus mykiss</i> Central Valley steelhead	FT; -- (Covered)	Aquatic Sacramento/San Joaquin flowing waters

<i>SPECIES</i>	<i>STATUS</i>	<i>HABITAT</i>
<i>Oncorhynchus tshawytscha</i> Chinook salmon – Sacramento River winter-run	FE; CE (Covered)	Aquatic Sacramento/San Joaquin flowing waters
<i>Oncorhynchus tshawytscha</i> Chinook salmon - Central Valley spring-run ESU	FT; CT (Covered)	Aquatic Sacramento/San Joaquin flowing waters
<i>Oncorhynchus tshawytscha</i> Chinook salmon – Central Valley fall/late fall-run	; CSC (Covered))	Aquatic Sacramento/San Joaquin flowing waters
<i>Pogonichthys macrolepidotus</i> Sacramento spittail	--; CSC (Covered)	Aquatic Sacramento/San Joaquin flowing waters
Birds		
<i>Accipiter cooperii</i> Cooper’s hawk	--;--	Cismontane woodland Riparian forest Riparian woodland Upper montane coniferous forest
<i>Accipiter gentilis</i> Northern goshawk	FSC;CSC	North coast coniferous forest Subalpine coniferous forest Upper montane coniferous forest
<i>Accipiter striatus</i> Sharp-shinned hawk	--;--	Cismontane woodland Lower montane coniferous forest Riparian forest Riparian woodland
<i>Agelaius tricolor</i> Tricolored blackbird	FSC;CSC (Covered)	Freshwater marsh Marsh and swamp Swamp Wetland
<i>Aquila chrysaetos</i> Golden eagle	FSC;FP (Local Concern)	Broadleaved upland forest Cismontane woodland Coastal prairie Great Basin grassland Great Basin scrub Lower montane coniferous forest Pinon and juniper
<i>Asio flammeus</i> Short-eared owl	--;CSC (Local Concern)	Great Basin grassland Marsh and swamp Meadow and seep Valley and foothill grassland Wetland
<i>Asio otus</i> Long-eared owl	--;CSC (Local Concern)	Cismontane woodland Great Basin scrub Riparian forest Riparian woodland Upper montane coniferous forest
<i>Athene cucularia hypugea</i> Western burrowing owl	FSC;CSC (Covered)	Coastal prairie Coastal scrub Great Basin grassland Great Basin scrub Mojavean desert scrub Sonoran desert scrub Valley and foothill grassland
<i>Branta Canadensis leucopareia</i> Aleutian Canada goose	FD;--	Artificial standing waters Sacramento/San Joaquin standing waters Valley and foothill grassland
<i>Bucephala islandica</i> Barrow’s goldeneye	FSC;	Lower montane coniferous forest Meadow and seep Upper montane coniferous forest
<i>Buteo regalis</i> Ferruginous hawk	FSC;--	Great Basin grassland Great Basin scrub Pinon and juniper woodlands Valley and foothill grassland
<i>Buteo swainsoni</i> Swainson’s hawk	FSC;CT (Covered)	Great Basin grassland Riparian forest Riparian woodland Valley and foothill grassland
<i>Circus cyaneus</i> Northern harrier	--;CSC (Local concern)	Coastal scrub Great Basin grassland Marsh and swamp Riparian scrub Valley and foothill grassland Wetland
<i>Coccyzus americanus occidentalis</i> Western yellow billed cuckoo	FC;CE (Covered)	Riparian forest
<i>Cypseloides niger</i> Black swift	FSC;CSC	Nests in moist crevices or caves or cliffs behind or adjacent to waterfalls in deep canyons.

3.4 BIOLOGICAL RESOURCES

<i>SPECIES</i>	<i>STATUS</i>	<i>HABITAT</i>
<i>Dendroica petechia brewsteri</i> Yellow warbler	FSC;CSC (Local Concern)	Riparian woodland
<i>Elanus leucurus</i> White-tailed kite	FSC;FP (Covered)	Cismontane woodland Marsh and swamp Riparian woodland Valley and foothill grassland Wetland
<i>Empidonax traillii</i> Willow flycatcher	FSC;CE (Local Concern)	Meadow and seep Riparian scrub Riparian woodland Wetland
<i>Eremophila alpestris actia</i> California horned lark	--;-- (Local Concern)	Marine intertidal and splash zone communities Meadow and seep
<i>Falco columbarius</i> Merlin	--;-- (Local Concern)	Estuary Great Basin grassland Valley and foothill grassland
<i>Falco mexicanus</i> Prairie falcon	FSC;-- (Local Concern)	Great Basin grassland Great Basin scrub Mojavean desert scrub Sonoran desert scrub Valley and foothill grassland
<i>Falco mexicanus</i> Prairie falcon	FSC;-- (Local Concern)	Great Basin grassland Great Basin scrub Mojavean desert scrub Sonoran desert scrub Valley and foothill grassland
<i>Falco peregrinus anatum</i> American peregrine falcon	FD;CD	Nests and roosts on protected ledges of high cliffs, usually adjacent to lakes, rivers, or marshes that support large prey populations.
<i>Geococcyx californianus</i> Greater roadrunner	--;-- (Local Concern)	Scrub desert and mesquite groves, less common in chaparral and open woodland.
<i>Grus canadensis tabida</i> Greater sandhill crane	FSC;CT (Covered)	Marsh and swamp Meadow and seep Wetland
<i>Haliaeetus leucocephalus</i> Bald eagle	FD;CE (Covered)	Lower montane coniferous forest Oldgrowth
<i>Histrionicus histrionicus</i> Harlequin duck	--;CSC	Riparian scrub Sacramento/San Joaquin flowing waters
<i>Icteria virens</i> Yellow-breasted chat	--;CSC (Covered)	Riparian forest Riparian scrub Riparian woodland
<i>Lanius ludovicianus</i> Loggerhead shrike	FSC;CSC (Local Concern)	Broadleaved upland forest Desert wash Joshua tree woodland Mojavean desert scrub Pinon and juniper woodlands Riparian woodland Sonoran desert scrub
<i>Larus californicus</i> California gull	--;--	Forages in a variety of habitats, including beaches, mudflats, freshwater and alkali marshes, rivers, lakes, and urban areas; nests colonially on islands isolated from mainland predators.
<i>Latterallus jamaicensis coturniculus</i> California black rail	FSC;CT (Covered)	Brackish marsh Freshwater marsh Marsh and swamp Salt marsh Wetland
<i>Numenius americanus</i> Long-billed curlew	FSC;--	Great Basin grassland Meadow and seep
<i>Pandion haliaetus</i>	--;--	Riparian forest

<i>SPECIES</i>	<i>STATUS</i>	<i>HABITAT</i>
Osprey		
<i>Pelecanus erythrorhynchos</i> American white pelican	--;CSC	Freshwater lakes with islands for breeding; inhabits river sloughs, freshwater marshes, salt ponds, and coastal bays during the rest of the year.
<i>Phalacrocorax auritus</i> Double-crested cormorant	--;--	Riparian forest Riparian scrub Riparian woodland
<i>Pica nuttali</i> Yellow-billed magpie	FSC;-- (Local Concern)	Cismontane woodland Riparian woodland Valley and foothill grassland
<i>Progne subis</i> Purple martin	--;CSC (Local Concern)	Broadleaved upland forest Lower montane coniferous forest
<i>Riparia riparia</i> Bank swallow	FSC;CT (Covered)	Riparian scrub Riparian woodland
<i>Strix occidentalis nebulosa</i> Great gray owl	--;CE	Lower montane coniferous forest Oldgrowth Subalpine coniferous forest Upper montane coniferous forest
<i>Strix occidentalis occidentalis</i> California spotted owl	--;CSC	Broadleaved upland forest Lower montane coniferous forest Upper montane coniferous forest
<i>Vireo bellii pusillus</i> Least Bell's vireo	FE;CE	Riparian forest Riparian scrub Riparian woodland
Raptors (birds of prey: falcons, hawks, owls, eagles, etc.) and other migratory and resident birds.	MBTA; §3503.5 DFG Code	Large trees/cliffs/structures for nesting, various habitats for foraging.
Mammals		
<i>Antrozous pallidus</i> Palid bat	FSC;CSC	Chaparral Coastal scrub Desert wash Great Basin grassland Great Basin scrub Mojavean desert scrub Riparian woodland Sonoran desert scrub Upper montane coniferous forest Valley and foothill grassland
<i>Corynorhinus townsendii townsendii</i> Pacific Townsend's (= western) bigeared bat	--;CSC	Broadleaved upland forest Chaparral Chenopod scrub Great Basin grassland Great Basin scrub Joshua tree woodland Lower montane coniferous forest Meadow and seep Mojavean desert scrub Riparian forest Riparian woodland Sonoran desert scrub Sonoran thorn woodland Upper montane coniferous forest Valley and foothill grassland
<i>Eumops perotis californicus</i> Western mastiff bat	--;CSC	Chaparral Cismontane woodland Coastal scrub Valley and foothill grassland
<i>Gulo gulo luteus</i> California wolverine	--;FP	Alpine Alpine dwarf scrub Meadow and seep Montane dwarf scrub North coast coniferous forest Riparian forest Subalpine coniferous forest Upper montane
<i>Lasiurus blossevillei</i> western red bat	FSC;CSC	Cismontane woodland Lower montane coniferous forest Riparian forest Riparian woodland
<i>Martes pennanti pacifica</i> Pacific fisher	FC;CSC	North coast coniferous forest Oldgrowth Riparian forest
<i>Taxidea taxus</i> American badger	--;CSC	Alkali marsh Alkali playa Alpine Alpine dwarf scrub Bog and fen Brackish marsh Broadleaved upland forest Chaparral Chenopod scrub Cismontane woodland Closed-cone coniferous forest Coastal bluff scrub

3.4 BIOLOGICAL RESOURCES

<i>SPECIES</i>	<i>STATUS</i>	<i>HABITAT</i>
		Coastal dunes Coastal prairie Coastal scrub Desert dunes Desert wash Freshwater marsh Great Basin grassland Great Basin scrub Interior dunes Ione formation Joshua tree woodland Limestone Lower montane coniferous forest Marsh and swamp Meadow and seep Mojavean desert scrub Montane dwarf scrub North coast coniferous forest Oldgrowth Pavement plain Redwood Riparian forest Riparian scrub Riparian woodland Salt marsh Sonoran desert scrub Sonoran thorn woodland Ultramafic Upper montane coniferous forest Upper Sonoran scrub Valley and foothill grassland
<i>Vulpes vulpes necator</i> Sierra Nevada red fox	FSC;CT	Alpine Alpine dwarf scrub Broadleaved upland forest Meadow and seep Riparian scrub Subalpine coniferous forest Upper montane coniferous forest Wetland

SOURCE: DFG CNDDDB RAREFIND4 2012

Abbreviations:	MBTA	Protected by Migratory Bird Treaty Act
FE	CE	California Endangered Species
FT	CT	California Threatened
FC	CD	California Delisted
FSC	CSC	CDFG Species of Special Concern
FPD	CC	State candidate for listing
FPT	FP	Fully Protected
FD		

3.4.2 REGULATORY SETTING

There are a number of regulatory agencies whose responsibility includes the oversight of the natural resources of the state and nation including the CDFG, USFWS, USACE, and the National Marine Fisheries Service. These agencies often respond to declines in the quantity of a particular habitat or plant or animal species by developing protective measures for those species or habitat type. The following is an overview of the federal, state and local regulations that are applicable to subsequent projects under the proposed project.

FEDERAL

Federal Endangered Species Act

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

Once a species is listed it is fully protected from a “take” unless a take permit is issued by the USFWS. A take is defined as the harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such conduct, including modification of its habitat (16 USC 1532, 50 CFR 17.3). Proposed endangered or

threatened species are those species for which a proposed regulation, but not a final rule, has been published in the Federal Register.

Migratory Bird Treaty Act

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

Federal Bald and Golden Eagle Protection Act

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

Clean Water Act – Section 404

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

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

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

Clean Water Act – Section 401

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

Rivers and Harbors Act of 1899

The Rivers and Harbors Act prohibits the obstruction or alteration of any navigable water of the United States. Requires authorization from the Corps for any excavation or deposition of materials

into these waters or for any work that could affect the course, location, condition, or capacity of rivers or harbors.

Department of Transportation Act - Section 4(f)

Section 4(f) has been part of Federal law since 1966. It was enacted as Section 4(f) of the Department of Transportation (DOT) Act of 1966 and set forth in Title 49 United States Code (U.S.C.), Section 1653(f). In January 1983, as part of an overall recodification of the DOT Act, Section 4(f) was amended and codified in 49 U.S.C. Section 303. This law established policy on Lands, Wildlife and Waterfowl Refuges, and Historic Sites as follows:

It is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites. The Secretary of Transportation shall cooperate and consult with the Secretaries of the Interior, Housing and Urban Development, and Agriculture, and with the States, in developing transportation plans and programs that include measures to maintain or enhance the natural beauty of lands crossed by transportation activities or facilities. The Secretary of Transportation may approve a transportation program or project (other than any project for a park road or parkway under section 204 of title 23) requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or land of a historic site of national, state, or local significance (as determined by the Federal, state, or local officials having jurisdiction over the park, area, refuge, or site) only if: a) There is no prudent and feasible alternative to using that land; and b) The program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.

STATE

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

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

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

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

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

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

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

Fish and Game Code §1601-1603 – Streambed Alteration

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

Public Resources Code § 21000 - California Environmental Quality Act

The California Environmental Quality Act (CEQA) identifies that a species that is not listed on the federal or state endangered species list may be considered rare or endangered if the species meets certain criteria. Under CEQA public agencies must determine if a project would adversely affect a species that is not protected by FESA or CESA. Species that are not listed under FESA or CESA, but are otherwise eligible for listing (i.e. candidate, or proposed) may be protected by the local government until the opportunity to list the species arises for the responsible agency.

Species that may be considered for review are included on a list of "Species of Special Concern," developed by the CDFG. Additionally, the California Native Plant Society (CNPS) maintains a list of plant species native to California that have low numbers, limited distribution, or are otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. List 1A contains plants that are believed to be extinct. List 1B contains plants that are rare, threatened, or endangered in California and elsewhere. List 2 contains plants that are rare, threatened, or endangered in California, but more numerous elsewhere. List 3 contains plants where additional information is needed. List 4 contains plants with a limited distribution.

Public Resources Code § 21083.4 - Oak woodlands conservation

In 2004, the California legislature enacted SB 1334, which added oak woodland conservation regulations to the Public Resources Code. This new law requires a County to determine whether a project, within its jurisdiction, may result in a conversion of oak woodlands that will have a significant effect on the environment. If a County determines that there may be a significant effect to oak woodlands, the County must require oak woodland mitigation alternatives to mitigate the significant effect of the conversion of oak woodlands. Such mitigation alternatives include: conservation through the use of conservation easements; planting and maintaining an appropriate number of replacement trees; contribution of funds to the Oak Woodlands Conservation Fund for the purpose of purchasing oak woodlands conservation easements; and/or other mitigation measures developed by the County.

California Wetlands Conservation Policy

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

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

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

Natural Community Conservation Planning Act

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

Porter-Cologne Water Quality Control Act

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

LOCAL

Regional Conservation Planning

A Habitat Conservation Plan (HCP) is a federal planning document that is prepared pursuant to Section 10 of the Federal Endangered Species Act (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 CDFG. 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 is currently underway. This task includes: preparation of the second 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 scheduled for 2013/14 and includes the following: development of a final BRCP and final EIS/EIR, public workshops, and adopting/permitting of the BRCP.

3.4 BIOLOGICAL RESOURCES

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 an endangered species permit by simply paying a fee or dedicating on-site mitigation.

The fees are collected by an implementation entity (likely BCAG) 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.

3.4.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

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

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

IMPACTS AND MITIGATION

Impact 3.4-1: Direct or Indirect Effects on Candidate, Sensitive, or Special-Status Species including their Habitat or Movement Corridors (less than significant with mitigation)

The California Natural Diversity Data Base (CNDDDB) search identified 141 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 projects within the planning area if the improvements are to encroach on the species' habitat, or movement corridors. Below is a brief description of the special status species that are present in the region and their habitat requirements. Table 3.4-1 and 3.4-2 provides the species detailed description of the species habitat and listing status.

Invertebrates. There are four special-status invertebrates that occur within the region. These include: the conservancy fairy shrimp, vernal pool fairy shrimp, and vernal pool tadpole shrimp, which requires vernal pools and swale areas within grasslands; the valley elderberry longhorn beetle, which is an insect that is only associated with blue elderberry plants, oftentimes in riparian areas and sometimes on land in the vicinity of riparian areas. All four special status invertebrates are proposed to be covered under the BRCP.

Reptiles and Amphibians. There are nine special-status reptiles and amphibians that occur within the region. These include: the California tiger salamander, which is found in grassland habitats where there are nearby seasonal wetlands for breeding; western pond turtle, which requires aquatic environments located along ponds, marshes, rivers, and ditches; Blainville's horned lizard, which occurs in a variety of habitats including, woodland, forest, riparian, and annual grasslands, usually in open sandy areas; the foothill yellow-legged frog, which occurs in partly shaded and shallow streams with rocky soils; the Cascades frog, which is found in water and surrounding vegetation in mountain lakes, streams, and ponds up to timber line; California red legged frog, which occurs in stream pools and ponds with riparian or emergent marsh vegetation; the Sierra Nevada yellow-legged frog, which occurs in streams, lakes, and ponds at higher elevations; western spadefoot toad, which requires grassland habitats associated with vernal pools; and giant garter snake, which is found in freshwater marshes sloughs, ponds, lakes, agricultural wetlands, and irrigation canals.

Five of the nine species are proposed to be covered under the BRCP. These include: western pond turtle, Blainville's horned lizard, Foothill yellow-legged frog, Western spadefoot, and Giant garter snake. The species that would not be covered under the BRCP include: California tiger salamander, Cascades frog, California red-legged frog, and Sierra Nevada yellow-legged frog. These species either occur outside the BRCP plan area, or are no longer considered present in Butte County (i.e. California tiger salamander).

3.4 BIOLOGICAL RESOURCES

Fish. There are ten special-status reptiles and amphibians that occur within the region. These include: green sturgeon, tule perch, river lamprey, hitch, hardhead, Central Valley steelhead, Chinook salmon – Sacramento River winter-run, Chinook salmon – Central Valley spring-run ESU, Central Valley fall/late fall-run Chinook salmon, and Sacramento splittail. All of these species are associated with aquatic habitat.

Seven of the ten species are proposed to be covered under the BRCP. These include: green sturgeon, river lamprey, hardhead, Central Valley steelhead, Chinook salmon – Sacramento River winter-run, Chinook salmon – Central Valley spring-run ESU, Central Valley fall/late fall-run Chinook salmon, and Sacramento splittail. The tule perch and hitch are not proposed to be covered under the BRCP, but are included in the BRCP's "species of local concern" which means that their conservation will still be addressed by the plan.

Birds. There are 41 special-status birds that occur within the region. These include: Cooper's hawk, Northern goshawk, Sharp-shinned hawk, Tricolored blackbird, Golden eagle, Short-eared owl, Long-eared owl, Western burrowing owl, Aleutian Canada goose, Barrow's goldeneye, Ferruginous hawk, Swainson's hawk, Northern harrier, Western yellow billed cuckoo, Black swift, Yellow warbler, White-tailed kite, Willow flycatcher, California horned lark, Merlin, Prairie falcon, American peregrine falcon, Greater roadrunner, Greater sandhill crane, Bald eagle, Harlequin duck, Yellow-breasted chat, Loggerhead shrike, California gull, California black rail, Long-billed curlew, Osprey, American white pelican, Double-crested cormorant, Yellow-billed magpie, Purple martin, Bank swallow, Great gray owl, California spotted owl, Least Bell's vireo. These bird species live in a broad range of habitat types within Butte County.

Nine of the 41 species are proposed to be covered under the BRCP. These include: Tricolored blackbird, Western burrowing owl, Swainson's hawk, Western yellow billed cuckoo, White-tailed kite, Bald eagle, Yellow-breasted chat, California black rail, and Bank swallow. All other species are not proposed to be covered under the BRCP. These species either occur outside the BRCP plan area, are included in the "BRCP species of local concern", or are not likely to be listed during the permit term of the plan.

Mammals. There are eight special-status mammals that occur within the region. These include: palid bat, Pacific Townsend's big-eared bat, western mastiff bat, and western red bat, which occur in a variety of habitats, including grasslands, foothill woodlands, coniferous forest, caves, mines, and buildings; California wolverine and Sierra Nevada red fox, which occurs in alpine, alpine scrub, meadows/seeps, coniferous/riparian/subalpine forests, and upper montane; Pacific fisher, which occurs in coniferous forest, and riparian; and American badger, which occurs in a broad range of habitats.

None of the eight species are proposed to be covered under the BRCP. These species either occur outside the BRCP plan area, or are not likely to be listed during the permit term of the BRCP.

Plants. The region is composed of a very diverse range of habitat types. These include chaparral, woodland, forest, alpine, grassland, meadows, and riparian, among others. Within these broad habitat types, there are cismontane forests and woodlands, lower montane forests, subalpine

forests, foothill grasslands, riparian forests, bogs and fens, and chaparral, among others. This diverse plant mosaic within the region allows for some of the most diverse plant communities in the state. Within these plants communities there are numerous special status plants, many of which only occur in the region (endemic). A full list of the special status plants within the region is in Table 3.4-1.

Fourteen of the 41 species are proposed to be covered under the BRCP. These include: Ferris' milk-vetch, lesser saltscale, Hoover's spurge, Ahart's dwarf rush, Red Bluff dwarf rush, Butte County meadowfoam, veiny monardella, hairy Orcutt grass, slender Orcutt grass, Ahart's paronychia, California beaked-rush, Butte County checkerbloom, Butte County golden clover, and Greene's tuctoria. All other species are not proposed to be covered under the BRCP. These species either occur outside the BRCP plan area, are included in the "BRCP species of local concern", or are not likely to be listed during the permit term of the plan.

Sensitive Natural Communities. Some of the terrestrial and wetlands resources found within Butte County are of global as well as regional significance and are therefore considered sensitive natural communities. The sensitive natural communities within the area that are currently rare enough to be listed in the CNDDDB include the following: Coastal and Valley Freshwater Marsh, Great Valley Cottonwood Riparian Forest, Great Valley Mixed Riparian Forest, Great Valley Valley Oak Riparian Forest, Great Valley Willow Scrub, Northern Basalt Flow Vernal Pool, Northern Hardpan Vernal Pool, Northern Volcanic Mud Flow Vernal Pool.

Discussion. Construction and maintenance activities associated with individual projects could result in the direct loss or indirect disturbance of special-status plants 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 MTP/SCS include:

- 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 the 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;

3.4 BIOLOGICAL RESOURCES

- 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 (i.e. Section 7 consultation with the USFWS and/or a Section 2081 consultation with the CDFG).

Because BCAG is currently in the last two phases 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 MTP/SCS will be implemented after the BRCP is adopted. In this case, any individual project that is located within the BRCP plan area and requires an incidental take of a special status species will require authorization by the agency implementing the BRCP. The authorization will likely involve fees and avoidance/minimization measures for the individual transportation project. Any individual project that is located outside the BRCP plan area would be required to consult directly with the regulatory agency 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 MTP/SCS is a planning document and thus, no physical changes will occur to the environment, adoption of the MTP/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 MTP/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 Measure 3.4-1: *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, CDFG, ACOE) 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.

Impact 3.4-2: Adverse Effects on 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 U.S. Fish and Wildlife Service, or on Federally Protected Wetlands as Defined by Section 404 of the Clean Water Act through Direct Removal, Filling, Hydrological Interruption, or Other Means (less than significant with mitigation)

The planning area contains sensitive natural communities, such as riparian, oak woodland, streams, rivers, wet meadows, and vernal pools. The planning 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 planning 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

3.4 BIOLOGICAL RESOURCES

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 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.

The following mitigation measures would ensure that all future projects are designed to avoid sensitive habitat and wetlands to the greatest extent feasible. Where full avoidance is not possible, the participation in pre-established habitat protection programs or state/federal permit mitigation programs would offset any potential impacts associated with project implementation. Adherence to the requirements in these mitigation measures would reduce this impact to a ***less than significant*** level.

MITIGATION MEASURES

Mitigation Measure 3.4.2. *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. The wetland delineation shall be submitted to the USACE for verification.*

Mitigation Measure 3.4.3. *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' from edge), riparian area (100' from edge), and other aquatic habitats (250' from edge of vernal pool). 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 the BCAG. 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 a maximum 10-foot spacing.

Immediately upon completion of construction activities the contractor shall stabilize exposed soil/slopes. On highly erodible soils/slopes, use a nonvegetative 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.

Mitigation Measure 3.4.4: *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.*

Impact 3.4-3: Interference with the Movement of 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 (less than significant with mitigation)

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 (*Oncorhynchus*

3.4 BIOLOGICAL RESOURCES

tshawytscha) and steelhead trout (*Oncorhynchus mykiss*). The Columbian black-tailed deer (*Odocoileus hemionus columbianus*) 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 CDFG 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 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 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 project 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.

Conclusion. The proposed project is a planning document and thus, no physical changes will occur to the environment from adoption of the MTP/SCS. 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 projects under the MTP/SCS. The individual projects 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 are incorporated into the design of each project. The following mitigation measure would ensure that all future projects are designed to facilitate the movement of sensitive species to the greatest extent feasible. Where full design mitigation is not feasible, compliance with state and federal permit requirements would offset any potential impacts associated with project implementation. Adherence to the requirements this mitigation measure would reduce this impact to a *less than significant* level.

MITIGATION MEASURES

Mitigation Measure 3.4-5: *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, CDFG) to obtain regulatory permits and implement alternative project-specific mitigation prior to any construction activities.*

Impact 3.4-4: Potential Introduction or Spread of Noxious Weeds (Less than Significant with Mitigation Incorporated)

Construction activities associated with individual projects could introduce noxious weeds or result in their spread into currently uninfested 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. The following mitigation measure would require a qualified biologist to perform a field survey to determine the presence of noxious weed infestations in the project area for individual projects. Additionally, this mitigation measure requires plans and specifications to include specific measures that reduce the likelihood of new noxious weed infestations after construction is completed. Implementation of the following mitigation measure would reduce this impact to a **less-than-significant** level.

MITIGATION MEASURES

Mitigation Measure 3.4.6: *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.*

Impact 3.4-5: Conflicts with an Adopted Habitat Conservation Plan, Natural Community Conservation Plan, Recovery Plan, or Local Policies or Ordinances Protecting Biological Resources (less than significant with mitigation)

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.

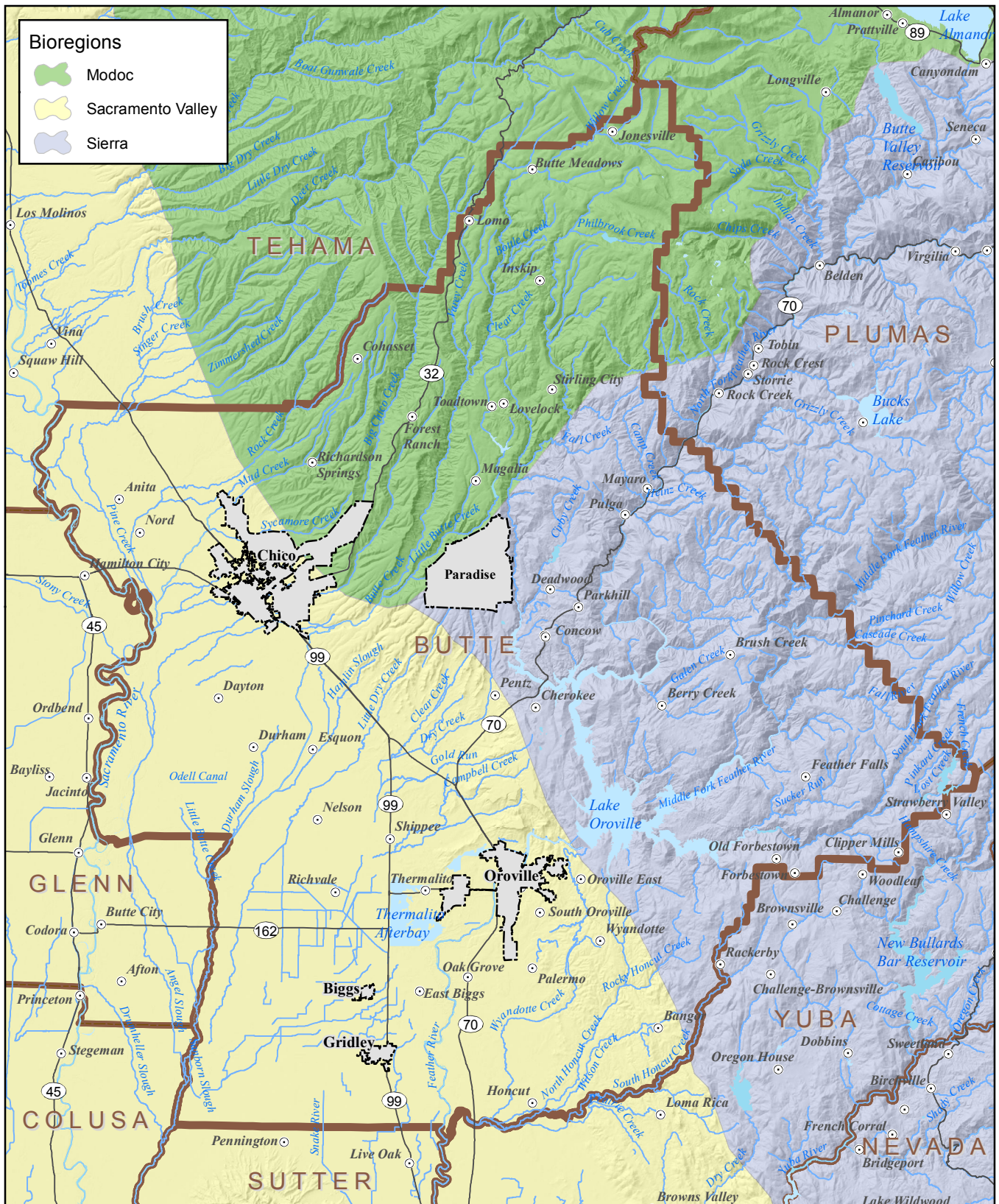
The BRCP is a voluntary resources protection and management tool that balances the needs of endangered and threatened species with the needs of landowners, land developers, and local and state public agencies. Such a comprehensive HCP/NCCP assures that species protection occurs on a regional level, versus 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 2013. 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 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 project and there is the potential for individual projects to conflict with the BRCP. 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

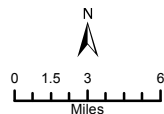
***Mitigation Measure 3.4.7:** Prior to design approval of individual projects, the implementing agency shall coordinate with BCAG to determine the appropriate coverage, permits, compensatory mitigation or fees, and project specific avoidance, minimization, and mitigation measures.*



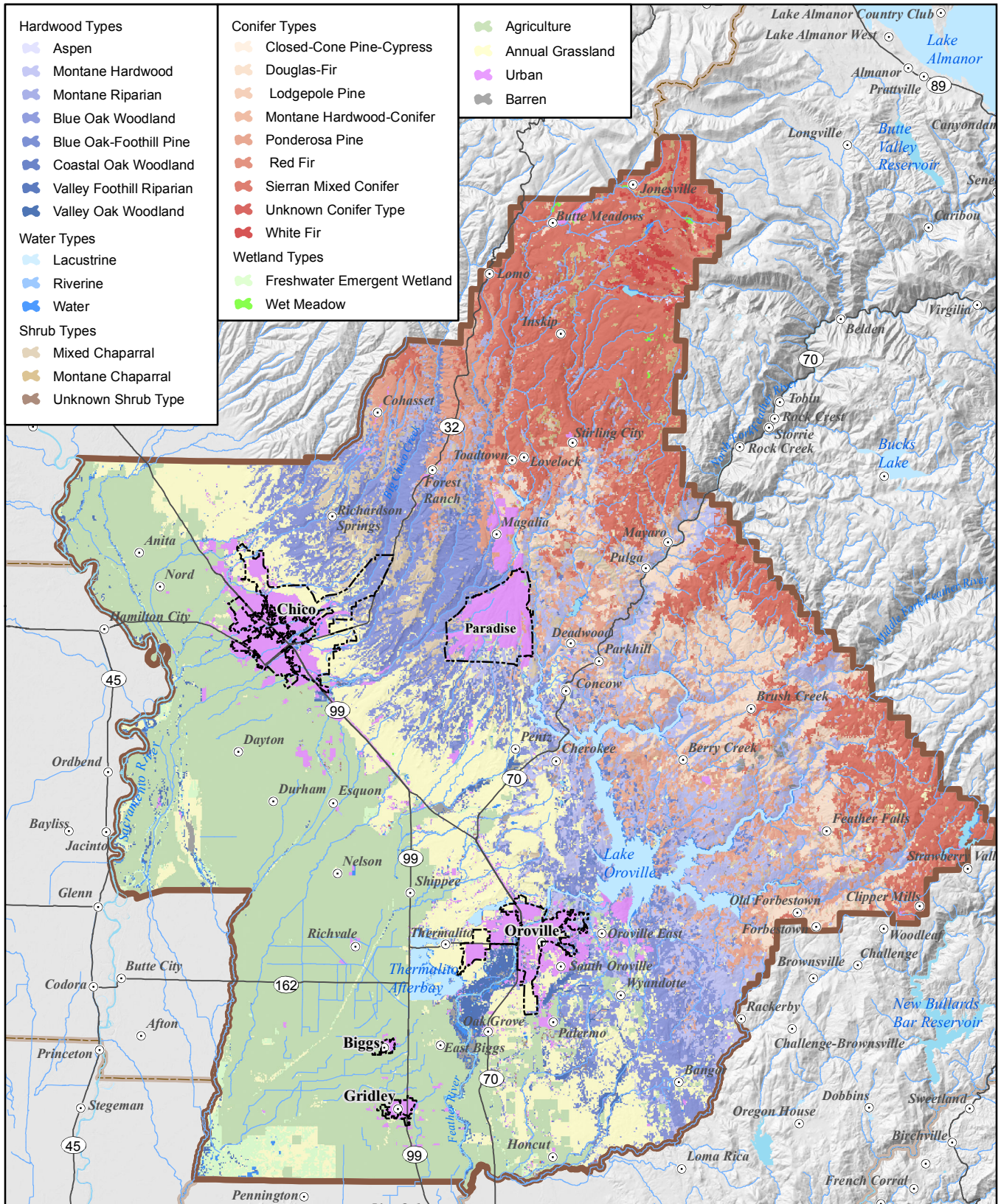
2012 BUTTE COUNTY METROPOLITAN TRANSPORTATION PLAN AND SUSTAINABLE COMMUNITIES STRATEGY

Figure 3.3-1. Bioregions Map

Data source: CAL FIRE - FRAP California Bioregions - INACCregions04_1, California Spatial Information Library, ESRI StreetMap North America. Map date: March 22, 2012.



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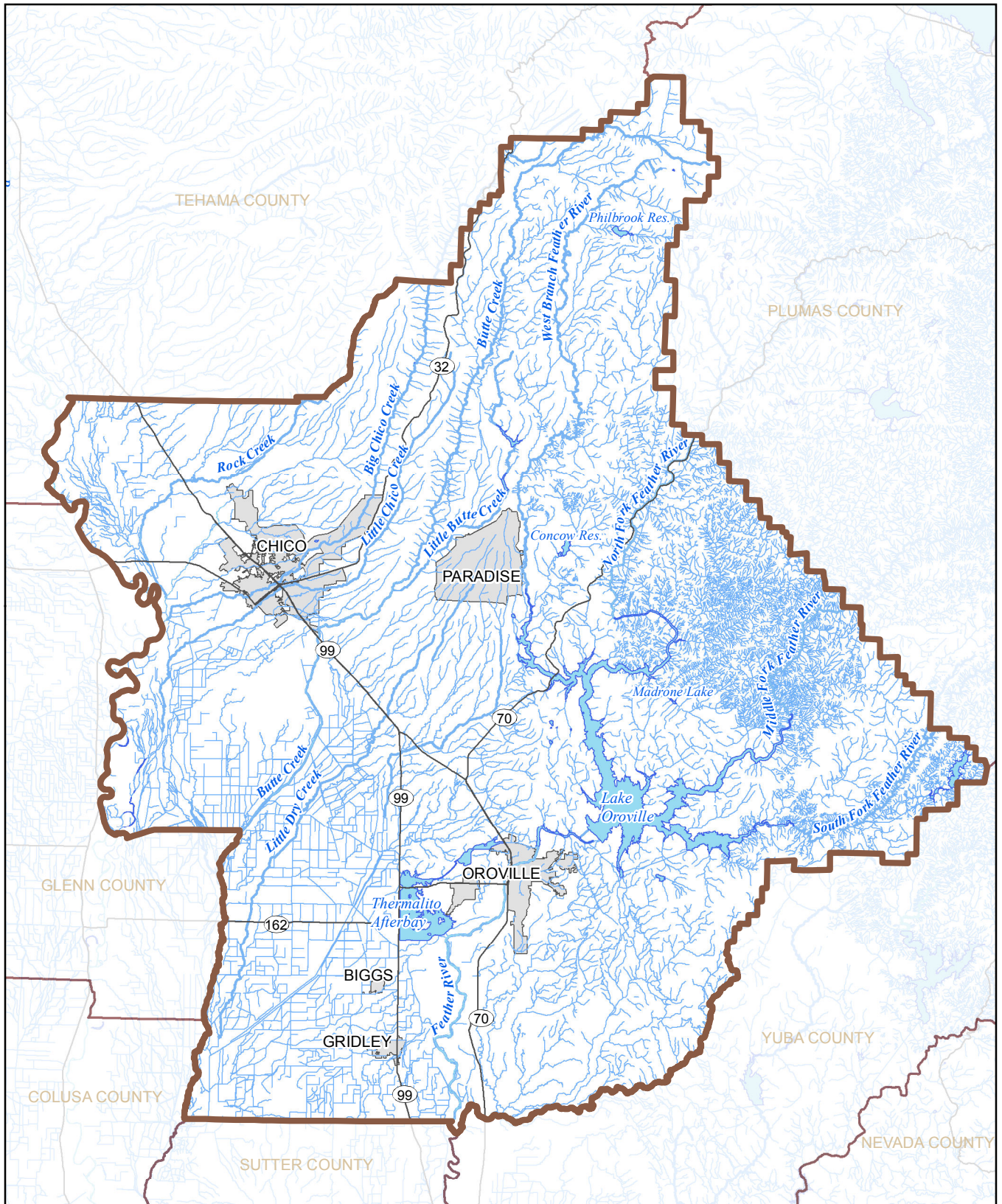
2012 BUTTE COUNTY METROPOLITAN TRANSPORTATION PLAN AND SUSTAINABLE COMMUNITIES STRATEGY

Figure 3.4-2. Land Cover Types

Data source: California Department of Forestry and Fire Protection Multi-Source Land Cover Data (v02_2), California Spatial Information Library, ESRI StreetMap North America. Map date: March 26, 2012.

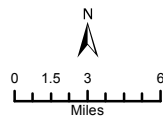
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2012 BUTTE COUNTY METROPOLITAN TRANSPORTATION PLAN AND SUSTAINABLE COMMUNITIES STRATEGY

Figure 3.4-3. Hydrology Map



Data source: USG National Hydrography Data Set, ESRI StreetMap North America, California Spatial Information Library. Map date: April 23, 2012.

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This section provides a background discussion of the prehistoric period background, ethnographic background, historic period background, known cultural resources in the region, the regulatory setting, an impact analysis, and mitigation measures. During the public review period for the Notice of Preparation the Native American Heritage Commission provided comment. The comment letter is provided in Appendix B, and is summarized in Section 1 Introduction.

3.5.1 ENVIRONMENTAL SETTING

PREHISTORIC PERIOD

The initial evidence for human activity in the area east of the crest of the Sierra Nevada began sometime from approximately 11,500 to 7000 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 7000 to 3500 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 4200 to 1500 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 1500 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 2000 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.

ETHNOGRAPHIC BACKGROUND

The Konkow, the neighboring Maidu to the east, and the Nisenan to the south all spoke Maiduan languages belonging to the Penutian superstock. Within the Konkow language, several dialects were spoken. The distribution of these dialectical groups was, in part, along the lower part of the Feather River Canyon, extending up to about the Rich Bar area. Others of the related groups held

3.5 CULTURAL RESOURCES

the Middle and South Fork Feather River drainages, extending westward onto the Sacramento Valley floor, immediately adjoining the lower foothill courses of these streams (Kroeber 1925:392; Riddell 1978:370).

Above the Central Valley and the gently-sloped lower Sierran foothills, the rivers have incised deep narrow canyons that are, at times, nearly inaccessible. By preference, the Konkow settlements were situated on ridges overlooking the rivers. Generally, selection was preferential towards ridge crest flats or midslope terraces (Dixon 1905:175).

The settlement pattern of the Konkow crossed multiple topographic and corresponding vegetation zones. It is unlikely that any one village had access to more than one or two biotic zones, but the cumulative territorial holdings included the Montane Forest, Montane Chaparral, Riparian Woodland, Valley and Foothill Woodland Chaparral and Valley Grassland (Ornduff 1974). Within each plant community were food resources for exploitation, and these include those faunal members associated with the biotic zones. The pattern of "village communities" (Kroeber 1925:398) constituted the only political organization. A community was comprised of several geographically-related villages with one maintaining a large semi-subterranean ceremonial lodge (Riddell 1978:373). This larger lodge may also have been the dwelling of the headman, who was the more authoritative person in the community. The headman acted only as a spokesman and advisor to the people and apparently lacked magisterial powers. Each village community held a known territory in which all community members had hunting and fishing rights. The Konkow had less well-defined territorial boundaries than did the Maidu (Kroeber 1925:398; Riddell 1978:373).

The Konkow followed a seasonal pattern of transhumance, leaving the winter villages to travel higher into the mountains during the late spring and summer. Hunting of the migrating deer was major occupation in these seasons. The Indians exploited a wide array of wild vegetable foods that included pine nuts, seeds, roots, berries, greens and bulbs. The acorn provided the dietary staple as it did for most California Indian groups. The nuts of three species -- black oak, golden oak and interior live oak -- were preferred above all others (Riddell 1978:374). The acorn was processed after gathering by hulling and then grinding the nut meats into flour or meal. Where bedrock was exposed, pits were ground into the flat rock faces. Through the use of elongate cobbles or cylindrical-shaped pestles, the nuts were reduced by pounding in the mortar pits. This arduous task was only the beginning of the task of preparing acorns into an edible commodity. Following the grinding of the nutmeats, the meal required leaching by water to remove the bitter tannin. The slow addition of increasing warmer water was done in shallow depressions in sand. This water process was repeated until the tannin was gone. The dough was either cooked with water to make soup or mush. Bread was also made by baking the dough under hot stones (Riddell 1978:374).

The largest game animal that was hunted for its meat was the deer. Smaller mammals were not excluded as protein sources, although wolf, dog, and coyotes were not eaten. Fishing produced salmon, trout, steelhead, eels and other rough fish.

The Konkow practiced hunting, gathering, and fishing subsistence strategies. Their intimate knowledge of the flora and fauna ensured a well-developed exploitation of their territorial environs (Riddell 1978:373).

There were three dwellings constructed by the people, with use of these types related to the season. Winter structures were of two kinds: a semi-subterranean earth-covered lodge and a smaller, conical, bark slab dwelling. The summer houses were informal, wall-less shades constructed of upright poles supporting a roof of branches and leaves.

Trade was well developed in an interlocking system, with neighboring groups such as the Maidu, Achumawi, and Wintuans. The exchange system brought desired goods into the Konkow groups while they supplied food stuffs, hides, arrows, and bows to their trading partners (Riddell 1978:380; Kroeber 1925).

The Konkow were almost decimated in 1833 by an epidemic of what may have been malaria (Cook 1955:322). In 1849, the onslaught of the gold miners completed the destruction of the Konkow lifeway. The miners penetrated to the most remote corners of the Konkow and Maidu lands with a consequent near total population displacement. The environmental balance was distorted by the whites, and the primary food sources were no longer easily available to the Indians. As a result, the starving Native Americans were forced to kill domestic livestock in order to survive. The white community responded in an often excessive manner and many innocent native people were killed. In 1863, the forced relocation of many surviving Indians to Round Valley Reservation brought the hostilities under control. By 1870, the Indian resistance was virtually over (Riddell 1978:385).

The Mechoopda in the Chico area were somewhat more fortunate, thanks largely to John Bidwell, who had employed many native Mechoopda and Konkow in his gold mining operations at nearby Bidwell Bar, shortly after the discovery of gold at Coloma. The Mechoopda Band of Konkow returned with Bidwell to his new residence at Rancho Chico where they were employed as laborers. The Mechoopda lived adjacent to Bidwell's home (cabin, adobe structure, and finally mansion) until being relocated to a nearby area so that they would have more room (and due to all-night cry ceremonies behind the mansion that were disturbing to Bidwell's new wife, Annie). It is uncertain as to whether the "Indian village" shown on a map drawn by Bidwell in 1867 pre or post-dated Bidwell's arrival in the area (White in White et al. 2002:4). In general, thanks to Bidwell's protection and employment, the Mechoopda were spared the forced relocation to the Round Valley Reservation in 1863 and continued to practice many traditional cultural lifeways well into the 20th century.

HISTORIC PERIOD

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 Micheltoarena 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,

3.5 CULTURAL RESOURCES

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 passes 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 homesites 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

3.5 CULTURAL RESOURCES

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).

KNOWN CULTURAL 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.

NATIVE AMERICAN CONCERNS

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 T si-Akim Maidu. Consultation with these Native American organizations is required prior to the approval and construction of individual projects.

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).

3.5.2 REGULATORY SETTING

FEDERAL

National Historic Preservation Act

The National Historic Preservation Act was enacted in 1966 as a means to protect cultural resources that are eligible to be listed on the National Register of Historic Places (NRHP). The law sets forth criterion that is used to evaluate the eligibility of cultural resources. The NRHP is composed of districts, sites, buildings, structures, objects, architecture, archaeology, engineering, and culture that are significant to American History.

Virtually any physical evidence of past human activity can be considered a cultural resource. Although not all such resources are considered to be significant and eligible for listing, they often provide the only means of reconstructing the human history of a given site or region, particularly where there is no written history of that area or that period. Consequently, their significance is judged largely in terms of their historical or archaeological interpretive values. Along with research values, cultural resources can be significant, in part, for their aesthetic, educational, cultural and religious values.

Section 106 of the National Historic Preservation Act

Specific regulations regarding compliance with Section 106 of the NHPA state that, although the tasks necessary to comply with Section 106 may be delegated to others, the federal agency is ultimately responsible for ensuring that the Section 106 process is completed according to statute. The Section 106 process is a consultation process that involves the State Historic Preservation Officer (SHPO) throughout; the process also calls for including Native American Tribes and interested members of the public, as appropriate, throughout the process. Implementing regulations for Section 106 (36 CFR 800) detail the following five basic steps.

1. Initiate the Section 106 process.
2. Identify and evaluate historic properties.
3. Assess the effects of the undertaking on historic properties within the area of potential effects (APE).
4. If historic properties are subject to adverse effects, the federal agency, the SHPO, and any other consulting parties (including Native American tribes) continue consultation to seek ways to avoid, minimize, or mitigate the adverse effect. A memorandum of agreement (MOA) is usually developed to document the measures agreed upon to resolve the adverse effects.
5. Proceed in accordance with the terms of the MOA.

Department of Transportation Act - Section 4(f)

The Department of Transportation (DOT) Act of 1966, is set forth in Title 49 United States Code (U.S.C.). This law established that it is the policy of the United States Government to make a special effort to preserve historic sites. The Secretary of Transportation may approve a transportation program or project that requires the use of a historic site of national, state, or local significance only if: a) There is no prudent and feasible alternative to using that land; and b) The program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.

STATE

California Register of Historic Resources

The California Register of Historical Resources (CRHR) was established in 1992 and codified in the Public Resource Code §5020, 5024 and 21085. The law creates several categories of properties that may be eligible for the CRHR. Certain properties are included in the program automatically, including: properties listed in the NRHP; properties eligible for listing in the NRHP; and certain classes of State Historical Landmarks. Determining the CRHR eligibility of historic and prehistoric properties is guided by CCR §15064.5(b) and Public Resources Code (PRC) §21083.2 and 21084.1. NRHP eligibility is based on similar criteria outlined in Section 106 of the NHPA (16 U.S. Code [USC] 470).

3.5 CULTURAL RESOURCES

Cultural resources, under CRHR and NRHP guidelines, are defined as buildings, sites, structures, or objects that may have historical, architectural, archaeological, cultural, or scientific importance. A cultural resource may be eligible for listing on the CRHR and/or NRHP if it:

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

If a prehistoric or historic period cultural resource does not meet any of the four CRHR criteria, but does meet the definition of a “unique” site as outlined in PRC §21083.2, it may still be treated as a significant resource if it is: an archaeological artifact, object or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- it contains information needed to answer important scientific research questions and that
- there is a demonstrable public interest in that information,
- it has a special and particular quality such as being the oldest of its type or the best available example of its type, or
- it is directly associated with a scientifically recognized important prehistoric or historic event.

California Environmental Quality Act

CEQA Guidelines §15064.5 provides guidance for determining the significance of impacts to archaeological and historical resources. Demolition or material alteration of a historical resource, including archaeological sites, is generally considered a significant impact. Determining the CRHR eligibility of historic and prehistoric properties is guided by CCR §15064.5(b) and Public Resources Code (PRC) §21083.2 and 21084.1. NRHP eligibility is based on similar criteria outlined in Section 106 of the NHPA (16 U.S. Code [USC] 470).

CEQA also provides for the protection of Native American human remains (CCR §15064.5[d]). Native American human remains are also protected under the Native American Graves Protection and Repatriation Act of 1990 (25 USC 3001 et seq.), which requires federal agencies and certain recipients of federal funds to document Native American human remains and cultural items within their collections, notify Native American groups of their holdings, and provide an opportunity for repatriation of these materials. This act also requires plans for dealing with potential future collections of Native American human remains and associated funerary objects, sacred objects, and objects of cultural patrimony that might be uncovered as a result of development projects overseen or funded by the federal government.

Assembly Bill 978

In 2001, Assembly Bill (AB) 978 expanded the reach of Native American Graves Protection and Repatriation Act of 1990 and established a state commission with statutory powers to assure that federal and state laws regarding the repatriation of Native American human remains and items of patrimony are fully complied with. In addition, AB 978 also included non-federally recognized tribes for repatriation.

LOCAL

Butte County General Plan

The Butte County General Plan establishes the following goals relative to cultural resources in the General Plan:

- Goal COS-14 Preserve important cultural resources.
- Goal COS-15 Ensure that new development does not adversely impact cultural resources.
- Goal COS-16 Respect Native American culture and planning concerns.

City of Biggs General Plan

The Biggs General Plan establishes the following goals relative to cultural resources in the General Plan:

- Goal CE-8: Maintain and enhance the historic resources, qualities, and character of the City of Biggs.

City of Chico General Plan

The Chico General Plan establishes the following goals relative to cultural resources in the General Plan:

- Goal CRHP-1: Protect and preserve archaeological, historical and other cultural resources to serve as significant reminders of the City's heritage and values.
- Goal CRHP-2: Reinvest in the archaeological, historical and other cultural resources that frame Chico's character and identity.
- Goal CRHP-3: Engage in and facilitate preservation efforts with local preservation and cultural entities.

City of Gridley General Plan

The Gridley General Plan establishes the following goals relative to cultural resources in the General Plan:

- Conservation Goal 4: To minimize negative impacts to prehistoric and historic resources.

City of Oroville General Plan

The Oroville General Plan establishes the following goals relative to cultural resources in the General Plan:

- Goal OPS-14 Preserve Oroville’s cultural resources, including archaeological, historic and paleontological resources, for their aesthetic, scientific, educational and cultural values.
- Goal OPS-15 Protect the City of Oroville’s Native American heritage.

Town of Paradise General Plan

The Paradise General Plan establishes the following goals relative to cultural resources in the General Plan:

- OCEG-9 Identify, record, preserve, and protect historical and archaeological resources.

3.5.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project is considered to have a significant impact on cultural resources if it will:

- Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines §15064.5;
- Cause a substantial adverse change in the significance of archaeological resource pursuant to CEQA Guidelines §15064.5;
- Directly or indirectly destroy a unique paleontological resource;
- Disturb any human remains, including those interred outside of formal cemeteries.

IMPACTS AND MITIGATION MEASURES

Impact 3.5-1: Damage to or the Destruction of Archaeological Resources (Less than Significant with Mitigation)

Implementation of improvements and modifications within existing rights-of-way or previously disturbed areas would have less potential to encounter previously unknown archaeological resources relative to projects in undisturbed areas. As individual projects are designed and reviewed by local jurisdictions, the projects will undergo technical analysis to evaluate any potential impacts to cultural resources within their area of potential effect.

Based upon the general planning nature of the proposed project, development of detailed, site-specific information on this impact at this planning level is not feasible. However, damage to or destruction of archaeological resources that are considered significant under local, state, or federal criteria would be a significant impact. Implementation of the following mitigation measure would ensure that all individual projects either avoid known cultural or historical resources, or take

steps to implement amelioration methods to reduce impacts to known cultural or historical resources. This mitigation measure would also require investigations and avoidance methods in the event that a previously undiscovered cultural or historical resource is encountered during construction activities. This mitigation measure would reduce this impact to a **less than significant** level.

MITIGATION MEASURES

Mitigation Measure 3.5-1: *During environmental review of individual projects, the implementing agencies shall:*

- *Consult with the Native American Heritage Commission to determine whether known sacred sites are in the project area, and identify the Native American(s) to contact to obtain information about the project area.*
- *Conduct a records search at the Central California Information Center of the California Historical Resources Information System to determine whether the project area has been previously surveyed and whether resources were identified.*

In the event the records indicate that no previous survey has been conducted, the Central California Information Center will make a recommendation on whether a survey is warranted based on the archaeological sensitivity of the project area. If recommended, a qualified archaeologist shall be retained to conduct archaeological surveys. The significance of any resources that are determined to be in the project area shall be assessed according to the applicable local, state, and federal significance criteria. Implementing agencies shall devise treatment measures to ameliorate “substantial adverse changes” to significant archaeological resources, in consultation with qualified archaeologists and other concerned parties. Such treatment measures may include avoidance through project redesign, data recovery excavation, and public interpretation of the resource.

Implementing agencies and the contractors performing the improvements shall adhere to the following requirements:

- *If a project is located in an area rich with cultural materials, the implementing agency shall retain a qualified archaeologist to monitor any subsurface operations, including but not limited to grading, excavation, trenching, or removal of existing features of the subject property.*
- *If, during the course of construction cultural resources (i.e., prehistoric sites, historic sites, and isolated artifacts and features) are discovered work shall be halted immediately within 50 meters (165 feet) of the discovery, the implementing agency shall be notified, and a qualified archaeologist that meets the Secretary of the Interior’s Professional Qualifications Standards in prehistoric or historical archaeology shall be retained to determine the significance of the discovery.*
- *The implementing agency shall consider mitigation recommendations presented by a professional archaeologist that meets the Secretary of the Interior’s Professional Qualifications Standards in prehistoric or historical archaeology for any unanticipated discoveries and shall carry out the measures deemed feasible and appropriate. Such measures may include avoidance, preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures. The project proponent shall be required to implement any mitigation necessary for the protection of cultural resources.*

Impact 3.5-2: Inadvertent Discovery of Human Remains (Less than Significant with Mitigation)

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. Implementation of the following mitigation measure would ensure that all construction activities that inadvertently discover human remains implement state required consultation methods to determine the disposition and historical significance of any discovered human remains. This mitigation measure would reduce this impact to a *less than significant* level.

MITIGATION MEASURES

Mitigation Measure 3.5-2: 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.*

Impact 3.5-3: Damage to or the Destruction of Paleontological Resources (Less than Significant with Mitigation)

Implementation of improvements and modifications within existing rights-of-way or previously disturbed areas would have less potential to encounter previously unknown paleontological resources relative to projects in undisturbed areas. As individual projects are designed and reviewed by local jurisdictions, the projects will undergo technical analysis to evaluate any potential impacts to cultural resources within their area of potential effect.

Based upon the general planning nature of the proposed project, development of detailed, site-specific information on this impact at this planning level is not feasible. However, damage to or destruction of paleontological resources that are considered significant under local, state, or federal criteria would be a significant impact. Implementation of the following mitigation measure would ensure that all individual projects either avoid known paleontological resources, or take steps to implement amelioration methods to reduce impacts to known paleontological resources. This mitigation measure would reduce this impact to a *less than significant* level.

MITIGATION MEASURES

***Mitigation Measure 3.5-3:** During environmental review of individual projects, the implementing agencies shall retain a qualified paleontologist to identify, survey, and evaluate paleontological resources where potential impacts are considered high. All construction activities shall avoid known paleontological resources, if feasible, especially if the resources in a particular lithologic unit formation have been determined to be unique or likely to contain paleontological resources. If avoidance is not feasible, paleontological resources should be excavated by a qualified paleontologist and given to a local agency, State University, or other applicable institution, where they could be curated and displayed for public education purposes.*

Impact 3.5-4: Damage to or the Destruction of Historical Resources (Significant and Unavoidable)

Implementation of individual projects associated with the MTP/SCS may occur near or in close vicinity to architectural resources (buildings/structures/features) that are 50 years old or older. Given the age of these resources, it is possible they are historically significant and eligible for listing in the California Register of Historic Resources (CRHR) or the National Register of Historic Places (NRHP).

Based upon the general planning nature of the proposed project, development of detailed, site-specific information on this impact at this planning level is not feasible. Nevertheless, the construction of individual projects may lead to physical demolition, destruction, relocation, or alteration of potential historical resources. The impact on architectural resources could be potentially significant and further studies would be required to determine the level of significance of this impact. Implementation of following mitigation measure would reduce potential impacts to historical architectural resources, however, full avoidance of such resources may not be feasible. Therefore, this impact would remain *significant and unavoidable*.

MITIGATION MEASURES

Mitigation Measure 3.5-4: *During environmental review of individual projects, the implementing agencies shall retain a qualified architectural historian to inventory and evaluate architectural resources located in project area using criteria for listing in the California Register of Historic Resources. In addition, the resources would be recorded by the architectural historian on appropriate California Department of Parks and Recreation (DPR) 523 forms, photographed, and mapped. The DPR forms shall be produced and forwarded to the Central California Information Center. If federal funding or approval is required, then the implementing agency shall comply with Section 106 of the National Historic Preservation Act.*

If architectural resources are deemed as potentially eligible for the California Register of Historic Resources or the National Register of Historic Places, the implementing shall consider avoidance through project redesign as feasible. If avoidance is not feasible, the implementing agencies shall ensure that the historic resource is formally documented through the use of large-format photography, measured drawings, written architectural descriptions, and historical narratives. The documentation shall be entered into the Library of Congress, and archived in the California Historical Resources Information System. In the event of building relocation, the implementing agency shall ensure that any alterations to significant buildings or structures conform to the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings.

Nonrenewable energy consumption (gasoline and diesel fuel) associated with the operation of passenger, public transit, and commercial vehicles results in GHG emissions that ultimately contribute to global climate change. Alternative fuels such as natural gas, ethanol, and electricity (unless derived from renewable sources that do not produce carbon emissions) also result in GHG emissions and contribute to global climate change. This section describes the potential impacts associated with energy consumption and climate change from greenhouse gas emissions (GHG) as it relates to implementation of the 2012 MTP/SCS.

An overview of global climate change, the anticipated impacts of climate change to California, and the climate change impacts of the 2012 MTP/SCS are provided in the following section. This section presents the existing conditions and regulatory setting at the federal, state, and local level as it relates to energy consumption and GHG emissions. The analysis provides existing and forecasted energy consumption and GHG emissions estimates, and describes the methodology used to make those estimates. Following this discussion is an assessment of consistency of the proposed project with applicable policies and local plans. No comments were received during the public review period or scoping meeting for the Notice of Preparation regarding this topic.

3.6.1 ENVIRONMENTAL SETTING

ENERGY CONSUMPTION

Oil Consumption

Oil is the main source of energy within the United States. Oil is refined to create a variety of petroleum products including gasoline, diesel, and jet fuel. Oil is a nonrenewable resource and world-wide consumption of petroleum products has grown for several decades. In 2011, world consumption of oil was estimated as 87 million barrels per day. The United States, with approximately five percent of the world's population, accounts for approximately 19 percent of world oil consumption, or approximately 18.6 million barrels per day.

California is ranked fourth in the nation among oil producing states; however, it is a net importer of oil. Petroleum based fuels provide approximately 96 percent of California's transportation energy needs, and this sector is the single largest emitter of greenhouse gases.

The state is developing strategies to reduce petroleum use and to develop alternative transportation fuels to reduce air pollution and greenhouse gas emissions. However, the demand for gasoline and diesel fuel for the transportation sector is expected to rise as a result of continued population growth.

Electricity Consumption

California's massive in-state electricity generation system generates more than 200,000 gigawatt-hours each year and is conveyed throughout the state's 32,000 miles of transmission lines. In 2011, California produced 70% of the electricity it uses; the rest was imported from the Pacific Northwest (10%) and the U.S. Southwest (20%). Natural gas is the main source for electricity generation at 45% of the total in-state electric generation system power.

The state's main challenge is to ensure adequate electricity supplies while reducing greenhouse gas emissions, as directed by AB 32 (33% reduction by 2020). Since 2003, California's energy policy has recognized an electricity "loading order" as the preferred sequence for meeting electricity demands. The loading order lists energy efficiency and demand response first, renewable resources second, and clean and efficient natural gas-fired power plants third.

In addition, under the Renewables Portfolio Standard (RPS), California's goal was to increase the amount of electricity generated from renewable energy resources to 20% by 2010 and in 2011 legislation passed that pushes that goal to 33% by 2020. Currently, California's in-state renewable generation is comprised of biomass, geothermal, small hydro, wind, and solar generation sites that make up approximately 17% of the total in-state generational output.

According to the California Energy Commission (CEC), total statewide electricity consumption increased from 227,586 gigawatt-hours (GWh) in 1990 to 261,381 GWh in 2000, which is an estimated annual growth rate of 1.39 percent. Statewide consumption was 273,103 GWh in 2010, an annual growth rate of 0.44 percent between 2000 and 2010. From 2010 to 2020 statewide electricity consumption is forecast to increase to between 301,535 and 322,760 GWh, which represents an increase of between 1.0 and 1.68 percent annually. Butte County consumed 1,419 GWh in 2010, roughly 0.5 percent of the state total.

Peak electricity demand, expressed in megawatts (MWh), measures the largest electric power requirement during a specified period, usually integrated over one hour. A single MWh is enough power to meet the expected electricity needs of 1,000 typical California homes. Peak demand is important in evaluating system reliability, determining congestion points on the electrical grid, and identifying potential areas where additional transmission, distribution, and generation facilities may be needed. California's peak demand typically occurs in August between 3:00 p.m. and 5:00 p.m. High temperatures lead to increased use of air conditioning, which in combination with industrial loads, commercial lighting, and office equipment comprise the major demand for electricity consumption in the peak demand period in the state. In 2011, peak electricity demand for California was 60,310 MWh. From 2010 to 2020 statewide peak electricity demand is forecast to increase to between 65,884 and 71,701 MWh, which represents an increase of between 1.05 and 1.97 percent annually.

Natural Gas Consumption

Natural gas provides almost one-third of the state's total energy requirements and will continue to be a major fuel in California's supply portfolio. California's supplies of natural gas come from four areas: in-state production, Southwestern United States, Canada and the Rocky Mountain Region. Out-of-state natural gas is delivered into California via the interstate natural gas pipeline system, which consists of five major interstate pipelines: Gas Transmission Northwest Pipeline, Kern River Pipeline, Transwestern Pipeline, El Paso Pipeline, and Mojave Pipeline.

The largest user of natural gas is electricity generation, using about half of all natural gas in the state. The residential sector uses 22 percent of the natural gas. Of that amount, 88 percent is used by space and water heating.

According to the California Energy Commission (CEC), total statewide natural gas consumption increased from 12,893 Therms MM in 1990 to 13,913 Therms MM in 2000, which is an estimated annual growth rate of 0.76 percent. Statewide consumption was 12,774 Therms MM in 2010, an annual growth rate of -0.85 percent between 2000 and 2010. From 2010 to 2020 statewide electricity consumption is forecast to increase to between 13,588 and 13,648 Therms MM, which represents an increase of between 0.62 and 0.66 percent annually. Butte County consumed 47.54 Therms MM in 2010, roughly 0.03 percent of the state total. Natural gas in Butte County is delivered by Pacific Gas and Electric.

Effects of Energy Consumption

The effects of energy consumption depend on the source and use of the fuel, but they can have far reaching consequence. Electricity generation, and the extraction and consumption of fossil fuels affect air emissions, water quality, solid waste, and land resources. Each of these is described in below.

Air Emissions: Fossil fuel related energy production and consumption can lead to sulfur dioxide, nitrogen oxide, and CO₂ emissions. These emissions can be responsible for smog, acid rain, and haze and can increase the risk of climate change.

Water Quality: The production of energy can have an effect on water resources by using water for cooling and the creation of steam, the discharge of water after use, and the discharge of pollutants into natural water sources. The effects vary by the source of energy used, and technologies used in energy creation.

Solid Waste: Certain technologies used in the generation of energy create solid waste. While some of this can be disposed of in landfills, others like nuclear energy rods, oil sludge, and ash from coal and solid waste management require special handling as they may contain toxic materials.

Land Resources: Energy production requires the use of resources and it usually entails the extraction of materials, like natural gas, coal, and oil, and/or the siting of large facilities, like nuclear and hydro-electric. The effects vary from the erosion of land from mining, to the destruction of natural habitat, to contamination and disruption of water systems.

CLIMATE CHANGE

Greenhouse Gases and Climate Change Linkages

Various gases in the Earth's atmosphere, classified as atmospheric greenhouse gases (GHGs), play a critical role in determining the Earth's surface temperature. Solar radiation enters Earth's atmosphere from space, and a portion of the radiation is absorbed by the Earth's surface. The Earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation.

Greenhouse gases, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse

effect. Among the prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO₂), methane (CH₄), ozone (O₃), water vapor, nitrous oxide (N₂O), and chlorofluorocarbons (CFCs).

Human-caused emissions of these GHGs, in excess of natural ambient concentrations, are responsible for enhancing the greenhouse effect (Ahrens 2003). Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors (California Energy Commission 2006a). In California, the transportation sector is the largest emitter of GHGs, followed by electricity generation (California Energy Commission 2006a).

As the name implies, global climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern, respectively. California is the 12th to 16th largest emitter of CO₂ in the world and produced 492 million gross metric tons of carbon dioxide equivalents in 2004 (California Energy Commission 2006a).

Carbon dioxide equivalents are a measurement used to account for the fact that different GHGs have different potential to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. This potential, known as the global warming potential of a GHG, is also dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. Expressing GHG emissions in carbon dioxide equivalents takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO₂ were being emitted.

Consumption of fossil fuels in the transportation sector was the single largest source of California's GHG emissions in 2004, accounting for 40.7% of total GHG emissions in the state (California Energy Commission 2006a). This category was followed by the electric power sector (including both in-state and out of-state sources) (22.2%) and the industrial sector (20.5%) (California Energy Commission 2006a).

Effects of Global Climate Change

The effects of increasing global temperature are far reaching and extremely difficult to quantify. The scientific community continues to study the effects of global climate change and has found that increases in the ambient global temperature as a result of increased GHGs is anticipated to result in rising sea levels, which could threaten coastal areas through accelerated coastal erosion. This also threatens levees and inland water systems and disruption to coastal wetlands and habitat.

If the temperature of the ocean warms, it is anticipated that the winter snow season would be shortened. Snowpack in the Sierra Nevada provides both water supply (runoff) and storage (within the snowpack before melting), which is a major source of supply for the state. According to a California Energy Commission report, the snowpack portion of the supply could potentially decline by 70% to 90% by the end of the 21st century (CEC 2006c). This phenomenon could lead to significant challenges securing an adequate water supply for a growing state population. Further,

the increased ocean temperature could result in increased moisture flux into the state; however, since this could increasingly come in the form of rain rather than snow in the high elevations, increased precipitation could lead to increased potential and severity of flood events, placing more pressure on California's levee/flood control system.

Sea level has risen approximately seven inches during the last century and, according to the CEC report, it is predicted to rise an additional 22 to 35 inches by 2100, depending on the future GHG emissions levels (CEC 2006c). If this occurs, resultant effects could include increased coastal flooding, saltwater intrusion and disruption of wetlands (CEC 2006c). As the existing climate throughout California changes over times, mass migration of species, or failure of species to migrate in time to adapt to the perturbations in climate, could also result. Under the emissions scenarios of the Climate Scenarios report (California Climate Change Center 2006), the impacts of global warming in California are anticipated to include, but are not limited to, the following.

Public Health: Higher temperatures are expected to increase the frequency, duration, and intensity of conditions conducive to air pollution formation. For example, days with weather conducive to ozone formation are projected to increase from 25 to 35 percent under the lower warming range, to 75 to 85 percent under the medium warming range. In addition, if global background ozone levels increase as predicted in some scenarios, it may become impossible to meet local air quality standards. Air quality could be further compromised by increases in wildfires, which emit fine particulate matter that can travel long distances depending on wind conditions. The Climate Scenarios report indicates that large wildfires could become up to 55 percent more frequent if GHG emissions are not significantly reduced.

In addition, under the higher warming scenario, there could be up to 100 more days per year with temperatures above 90°F in Los Angeles and 95°F in Sacramento by 2100. This is a large increase over historical patterns and approximately twice the increase projected if temperatures remain within or below the lower warming range. Rising temperatures will increase the risk of death from dehydration, heat stroke/exhaustion, heart attack, stroke, and respiratory distress caused by extreme heat.

Water Resources: A vast network of man-made reservoirs and aqueducts capture and transport water throughout the state from northern California rivers and the Colorado River. The current distribution system relies on Sierra Nevada snow pack to supply water during the dry spring and summer months. Rising temperatures, potentially compounded by decreases in precipitation, could severely reduce spring snow pack, increasing the risk of summer water shortages.

The state's water supplies are also at risk from rising sea levels. An influx of saltwater would degrade California's estuaries, wetlands, and groundwater aquifers. Saltwater intrusion caused by rising sea levels is a major threat to the quality and reliability of water within the southern edge of the Sacramento/San Joaquin River Delta, a major state fresh water supply. Global warming is also projected to seriously affect agricultural areas, with California farmers projected to lose as much as 25 percent of the water supply they need; and decrease the potential for hydropower production within the state (although the effects on hydropower are uncertain).

If GHG emissions continue unabated, more precipitation will fall as rain instead of snow, and the snow that does fall will melt earlier, reducing the Sierra Nevada spring snow pack by as much as 70 to 90 percent. Under the lower warming scenario, snow pack losses are expected to be only half as large as those expected if temperatures were to rise to the higher warming range. How much snow pack will be lost depends in part on future precipitation patterns, the projections for which remain uncertain. However, even under the wetter climate projections, the loss of snow pack would pose challenges to water managers, and hamper hydropower generation.

Agriculture: Increased GHG emissions are expected to cause widespread changes to the agriculture industry reducing the quantity and quality of agricultural products statewide. Although higher carbon dioxide levels can stimulate plant production and increase plant water-use efficiency, California's farmers will face greater water demand for crops and a less reliable water supply as temperatures rise. Crop growth and development will change, as will the intensity and frequency of pest and disease outbreaks. Rising temperatures could worsen ozone pollution, which makes plants more susceptible to disease and pests and interferes with plant growth.

Plant growth tends to be slow at low temperatures, increasing with rising temperatures up to a threshold. However, faster growth can result in less-than optimal development for many crops, so rising temperatures could worsen the quantity and quality of yield for a number of California's agricultural products. Products that could be most affected include wine grapes, fruits and nuts, and milk.

In addition, continued global warming could shift the ranges of existing invasive plants and weeds and alter competition patterns with native plants. Range expansion is expected in many species while range contractions are less likely in rapidly evolving species with significant populations already established. Should range contractions occur, new or different weed species could fill the emerging gaps. Continued global warming could alter the abundance and types of many pests, lengthen pests' breeding season, and increase pathogen growth rates.

Forests and Landscapes: Global warming is expected to intensify this threat by increasing the risk of wildfire and altering the distribution and character of natural vegetation. If temperatures rise into the medium warming range, the risk of large wildfires in California could increase by as much as 55 percent, which is almost twice the increase expected if temperatures stay in the lower warming range. However, since wildfire risk is determined by a combination of factors, including precipitation, winds, temperature, and landscape and vegetation conditions, future risks will not be uniform throughout the state. For example, if precipitation increases as temperatures rise, wildfires in southern California are expected to increase by approximately 30 percent toward the end of the century. In contrast, precipitation decreases could increase wildfires in northern California by up to 90 percent.

Moreover, continued global warming will alter natural ecosystems and biological diversity within the state. For example, alpine and sub-alpine ecosystems are expected to decline by as much as 60 to 80 percent by the end of the century as a result of increasing temperatures. The productivity of the state's forests is also expected to decrease as a result of global warming.

Rising Sea Levels: Rising sea levels, more intense coastal storms, and warmer water temperatures will increasingly threaten the state's coastal regions. Under the higher warming scenario, sea level is anticipated to rise 22 to 35 inches by 2100. Elevations of this magnitude would inundate coastal areas with saltwater, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats.

3.6.2 REGULATORY SETTING

FEDERAL

Energy Policy and Conservation Act

The Energy Policy and Conservation Act of 1975 sought to ensure that all vehicles sold in the U.S. would meet certain fuel economy goals. Through this Act, Congress established the first fuel economy standards for on-road motor vehicles in the United States (U.S.). Pursuant to the Act, the National Highway Traffic and Safety Administration, which is part of the U.S. Department of Transportation (USDOT), is responsible for establishing additional vehicle standards and for revising existing standards.

Since 1990, the fuel economy standard for new passenger cars has been 27.5 mpg. Since 1996, the fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) has been 20.7 mpg. Heavy-duty vehicles (i.e., vehicles and trucks over 8,500 pounds gross vehicle weight) are not currently subject to fuel economy standards. Compliance with federal fuel economy standards is determined on the basis of each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the U.S. The Corporate Average Fuel Economy (CAFE) program, which is administered by the U.S. Environmental Protection Agency (EPA), was created to determine vehicle manufacturers' compliance with the fuel economy standards. The EPA calculates a CAFE value for each manufacturer based on city and highway fuel economy test results and vehicle sales. Based on the information generated under the CAFE program, the USDOT is authorized to assess penalties for noncompliance.

Energy Policy Act of 1992 (EPAct)

The Energy Policy Act of 1992 (EPAct) was passed to reduce the country's dependence on foreign petroleum and improve air quality. EPAct includes several parts intended to build an inventory of alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas. EPAct requires certain federal, state, and local government and private fleets to purchase a percentage of light duty AFVs capable of running on alternative fuels each year. In addition, financial incentives are included in EPAct. Federal tax deductions will be allowed for businesses and individuals to cover the incremental cost of AFVs. States are also required by the act to consider a variety of incentive programs to help promote AFVs.

Energy Policy Act of 2005

The Energy Policy Act of 2005 was signed into law on August 8, 2005. Generally, the act provides for renewed and expanded tax credits for electricity generated by qualified energy sources, such as

landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for a clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

Federal Climate Change Policy

According to the EPA, “the United States government has established a comprehensive policy to address climate change” that includes slowing the growth of emissions; strengthening science, technology, and institutions; and enhancing international cooperation. To implement this policy, “the Federal government is using voluntary and incentive-based programs to reduce emissions and has established programs to promote climate technology and science.” The federal government’s goal is to reduce the greenhouse gas (GHG) intensity (a measurement of GHG emissions per unit of economic activity) of the American economy by 18 percent over the 10-year period from 2002 to 2012. In addition, the EPA administers multiple programs that encourage voluntary GHG reductions, including “ENERGY STAR”, “Climate Leaders”, and Methane Voluntary Programs. However, as of this writing, there are no adopted federal plans, policies, regulations, or laws directly regulating GHG emissions.

On December 7, 2009, the EPA Administrator signed two distinct findings regarding greenhouse gases under section 202(a) of the Clean Air Act:

- **Endangerment Finding:** The EPA Administrator found that the current and projected concentrations of the six key well-mixed greenhouse gases--carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆)--in the atmosphere threaten the public health and welfare of current and future generations.
- **Cause or Contribute Finding:** The EPA Administrator found that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution which threatens public health and welfare.

These findings do not themselves impose any requirements on industry or other entities. However, this action is a prerequisite to finalizing the EPA's proposed greenhouse gas emission standards for light-duty vehicles, which EPA proposed in a joint proposal including the Department of Transportation's proposed CAFE standards on September 15, 2009.

STATE

California Strategy to Reduce Petroleum Dependence (AB 2076)

In response to the requirements of AB 2076 (Chapter 936, Statutes of 2000), the CEC and the CARB developed a strategy to reduce petroleum dependence in California. The strategy, *Reducing California's Petroleum Dependence*, was adopted by the CEC and CARB in 2003. The strategy recommends that California reduce on-road gasoline and diesel fuel demand to 15 percent below 2003 demand levels by 2020 and maintain that level for the foreseeable future; the Governor and Legislature work to establish national fuel economy standards that double the fuel efficiency of

new cars, light trucks, and sport utility vehicles (SUVs); and increase the use of non-petroleum fuels to 20 percent of on-road fuel consumption by 2020 and 30 percent by 2030.

Assembly Bill 1493

In response to AB 1493, CARB approved amendments to the California Code of Regulations (CCR) adding GHG emission standards to California's existing motor vehicle emission standards. Amendments to CCR Title 13 Sections 1900 (CCR 13 1900) and 1961 (CCR 13 1961), and adoption of Section 1961.1 (CCR 13 1961.1) require automobile manufacturers to meet fleet average GHG emission limits for all passenger cars, light-duty trucks within various weight criteria, and medium-duty passenger vehicle weight classes beginning with the 2009 model year. Emission limits are further reduced each model year through 2016. For passenger cars and light-duty trucks 3,750 pounds or less loaded vehicle weight (LVW), the 2016 GHG emission limits are approximately 37 percent lower than during the first year of the regulations in 2009. For medium-duty passenger vehicles and light-duty trucks 3,751 LVW to 8,500 pounds gross vehicle weight (GVW), GHG emissions are reduced approximately 24 percent between 2009 and 2016.

CARB requested a waiver of federal preemption of California's Greenhouse Gas Emissions Standards. The intent of the waiver is to allow California to enact emissions standards to reduce carbon dioxide and other greenhouse gas emissions from automobiles in accordance with the regulation amendments to the CCRs that fulfill the requirements of AB 1493. The EPA granted a waiver to California to implement its greenhouse gas emissions standards for cars.

California Executive Orders S-3-05 and S-20-06, and Assembly Bill 32

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this Executive Order is to reduce California's GHG emissions to: 1) 2000 levels by 2010, 2) 1990 levels by 2020 and 3) 80% below the 1990 levels by the year 2050.

In 2006, this goal was further reinforced with the passage of Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006. AB 32 sets the same overall GHG emissions reduction goals while further mandating that CARB create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the state's Climate Action Team.

Assembly Bill 1007

Assembly Bill 1007, (Pavley, Chapter 371, Statutes of 2005) directed the CEC to prepare a plan to increase the use of alternative fuels in California. As a result, the CEC prepared the State Alternative Fuels Plan in consultation with the state, federal, and local agencies. The plan presents strategies and actions California must take to increase the use of alternative non-petroleum fuels in a manner that minimizes costs to California and maximizes the economic benefits of in-state production. The Plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuels use, reduce

greenhouse gas emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

Bioenergy Action Plan – Executive Order #S-06-06

Executive Order #S-06-06 establishes targets for the use and production of biofuels and biopower and directs state agencies to work together to advance biomass programs in California while providing environmental protection and mitigation. The executive order establishes the following target to increase the production and use of bioenergy, including ethanol and biodiesel fuels made from renewable resources: produce a minimum of 20 percent of its biofuels within California by 2010, 40 percent by 2020, and 75 percent by 2050. The executive order also calls for the state to meet a target for use of biomass electricity.

Governor’s Low Carbon Fuel Standard (Executive Order #S-01-07)

Executive Order #S-01-07 establishes a statewide goal to reduce the carbon intensity of California’s transportation fuels by at least 10 percent by 2020 through establishment of a Low Carbon Fuel Standard. The Low Carbon Fuel Standard is incorporated into the State Alternative Fuels Plan and is one of the proposed discrete early action GHG reduction measures identified by CARB pursuant to AB 32.

Climate Action Program at Caltrans

The California Department of Transportation, Business, Transportation, and Housing Agency, prepared a Climate Action Program in response to new regulatory directives. The goal of the Climate Action Program is to promote clean and energy efficient transportation, and provide guidance for mainstreaming energy and climate change issues into business operations. The overall approach to lower fuel consumption and CO₂ from transportation is twofold: (1) reduce congestion and improve efficiency of transportation systems through smart land use, operational improvements, and Intelligent Transportation Systems; and (2) institutionalize energy efficiency and GHG emission reduction measures and technology into planning, project development, operations, and maintenance of transportation facilities, fleets, buildings, and equipment.

The reasoning underlying the Climate Action Program is the conclusion that “the most effective approach to addressing GHG reduction, in the short-to-medium term, is strong technology policy and market mechanisms to encourage innovations. Rapid development and availability of alternative fuels and vehicles, increased efficiency in new cars and trucks (light and heavy duty), and super clean fuels are the most direct approach to reducing GHG emissions from motor vehicles (emission performance standards and fuel or carbon performance standards).”

Senate Bill 97 (SB 97)

Senate Bill 97 (Chapter 185, 2007) required the Governor's Office of Planning and Research (OPR) to develop recommended amendments to the State CEQA Guidelines for addressing greenhouse gas emissions. OPR prepared its recommended amendments to the State CEQA Guidelines to provide guidance to public agencies regarding the analysis and mitigation of greenhouse gas

emissions and the effects of greenhouse gas emissions in draft CEQA documents. The Amendments became effective on March 18, 2010.

Senate Bill 375

SB 375 requires the CARB to develop regional greenhouse gas emission reduction targets to be achieved from the automobile and light truck sectors for 2020 and 2035. The 18 MPOs in California will prepare a "sustainable communities strategy" to reduce the amount of greenhouse gas emission in their respective regions and demonstrate the ability for the region to attain CARB's reduction targets. CARB would later determine if each region is on track to meet their reduction targets. In addition, cities would get extra time -- eight years instead of five -- to update housing plans required by the state.

3.6.3 IMPACTS AND MITIGATION MEASURES

METHODOLOGY

BCAG used three models to estimate the GHG emissions for the 2012 MTP/SCS: (1) BCAG Regional Land Use Allocation Model, (2) BCAG Regional Travel Demand Model (a three-step transportation forecasting model), and (3) the latest emission factors (EMFAC) model from ARB.

Modeling

Land Use Allocation Model: The BCAG Land Use Allocation Model was developed by a team of project consultants from the University of California Davis – Information Center for the Environment (ICE), California State University, Chico – Geographical Information Center (GIC), and Fehr & Peers. The model uses UPlan software platform, which has been implemented broadly across the state for various Blueprint planning efforts. UPlan is a rule based model which allocates future residential and employment growth while considering the region's existing land use plans, growth forecasts, and development attractions (e.g. transportation and infrastructure) and discouragements (e.g. resource areas, farmland, and floodplains).

The land use allocation model uses the base year of 2010, which coincides with the latest available validated travel model and existing land use datasets. Land use scenarios were developed for the GHG target years of 2020 and 2035. The model outputs were summarized by traffic analysis zone (TAZ) and used as inputs for the regional travel demand model.

Travel Demand Model: The BCAG Travel Demand Model uses the TransCAD software package to forecast travel activity. The transportation model requires two major inputs. The first input is the forecasted allocation of housing and non-residential land uses from the land use allocation model. The other input is the regional road network. Inputs are prepared for the emissions analysis year of 2005, the model base year (2010), and the GHG target years of 2020 and 2035.

A comprehensive update of the BCAG traffic model was completed in July 2012 and the population, housing, and employment projections identified in BCAGs Butte County Long-Term Regional Growth Forecasts 2010-2035 are the same as those used in the updated model. The updates included:

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- Validating the base year to 2010 consistent with the 2010 California Regional Transportation Guidelines
- Increasing sensitivities for age of head of household, number of workers, income household size, and cost of travel.
- Adding multiple time periods (daily, AM peak period, AM peak hour, PM peak period, PM peak hour, mid-day period, and evening period conditions)
- Implementing the 4D's (density, diversity, design, and destination accessibility)
- Adding a new transit forecasting component.

The travel model provided output vehicle trips (VT), vehicle miles traveled (VMT), vehicle hours of travel (VHT), delay, and congestion, for both on and off peak travel periods and for various trip end types (e.g. II, XX, and IX-XI) for the base and GHG target years (2020 and 2035). A post-processor is then used to prepare the data for the vehicle emissions model (EMFAC). The post-processor divides the VMT into 13 separate speed bins set at 5 mile per hour intervals.

EMFAC: ARB's latest emissions factor model (EMFAC) was used to calculate the greenhouse gas, carbon dioxide (CO₂), emissions output based on the provided VMT and speed bin classification from the travel model and post-processor. This included the utilization of the annual option for CO₂ output as suggested by the RTAC report. Once all trips were run in EMFAC, the total VMT and carbon dioxide (CO₂) emissions for LDA, LDT1, LDT2, and MDV vehicle types were extracted.

Modeling Interregional Trips

For the purpose of preparing the GHG emissions analysis for 2012 MTP/SCS, BCAG subtracted all emissions from through trips and included 50% for trips that are shared trips with neighboring jurisdictions, including the Sacramento Area Association of Governments (SACOG), BCAG's only neighboring Metropolitan Planning Organization (MPO). The percentage of VMT by interregional trip type was calculated for the years 2005, 2020, and 2035. The EMFAC emissions were then adjusted based on the percentages for interregional travel. This methodology is consistent with the recommendations of the Regional Targets Advisory Committee (RTAC).

GHG Emissions in the 2012 MTP/SCS

As prescribed by the final ARB-RTAC report, the GHG analysis quantifies emissions using the modeling methods described above and compares the outputs to the target metric in terms of a percent reduction in per capita greenhouse gas emissions (CO₂) from base year levels. The baseline year for the BCAG GHG forecasts is 2005.

THRESHOLDS OF SIGNIFICANCE

For the purposes of this analysis, a significant impact would occur if:

- Implementation of the proposed MTP/SCS would result in an exceedance of the per capita CO₂ emissions levels allocated to BCAG by CARB and the RTAC. This level is a 1% increase in per capita CO₂ emissions by 2020 and a 1% increase in per capita CO₂ emissions by 2035.
- Implementation of the proposed project would conflict with statewide and regional plans aimed at reducing GHG emissions, including AB 32 and SB 375.

GHG IMPACTS AND MITIGATION MEASURES

Impact 3.6.1: Greenhouse Gas Emissions impacts from Growth and Transportation (less than significant)

Three distinctive land use scenarios were developed for the purpose of illustrating the travel effects of different development patterns on the regional transportation system and the associated greenhouse gas emissions resulting from these patterns. In addition, the scenarios allow the performance of the enhanced regional travel demand model to be tested to assure it is responding appropriately to changes in land use.

Land Use – Growth Areas: A framework was developed for describing the land use growth associated with each scenario that is made up of Growth Area Types. The following is a description of each Growth Area Type.

- **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 which are more supportive of walking and bicycling. Future growth within these areas consists of compact infill developments on underutilized lands, or redevelopment of existing developed lands. Local plans identify these areas as opportunity 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 utilize 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 may well be provided to areas which are directly adjacent to current urban routing and are able to achieve build-out. Pedestrian and bicycle infrastructure are typically required to be incorporated under the local jurisdictions' 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.

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- **Agricultural, 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, or other rural uses.

Land Use Scenarios: All three scenarios were prepared using the same regional employment, population and housing growth projections and regional transportation network. However, the following land use variables were adjusted to create the distinctive scenarios:

- The amount of development occurring within each of the five Growth Areas (i.e., Urban Center and Corridor, Established, New, Rural, and Agricultural).
- The levels of infill and redevelopment occurring within the Urban Center and Corridor and Established Growth Areas.
- The shares of single-family to multi-family development.
- The amount of growth being accommodated within each local jurisdiction.

The land use scenarios were designed by first assembling the “balanced” scenario. The “balanced” scenario (scenario #1) was prepared based on land use information from the recent general plan updates, the latest information regarding planned development, reasonable assumptions regarding infill and redevelopment, regional growth forecasts, and a review of development attractions (i.e., motorized and non-motorized transportation networks, existing development, utility areas, etc.) and discouragements (i.e., resource areas and farmland, public lands, areas exceeding 25% slope, etc.). Secondly, the “dispersed” (scenario #2) and “compact” (scenario #3) scenarios were prepared to represent development occurring at opposite ends of the spectrum from scenario #1. Ultimately it was decided that the Balanced Scenario was the scenario that was preferred for the region because it balanced the growth and transportation needs of the region, while also considering the GHG reduction goals required under AB 32. The Balanced Scenario is described below.

- | | |
|-------------------|--|
| Balanced Scenario | <ul style="list-style-type: none">• Balanced share of new housing within the center, established and new growth areas• Contains reasonable levels of infill and redevelopment• Consistent with local land use plans and draft habitat conservation plan• Consistent with BCAG long-term regional growth forecasts by jurisdiction |
|-------------------|--|

Vehicle Miles of Travel: The basic definition of VMT is one vehicle traveling on a roadway for one mile. VMT is the primary indicator of travel for policy makers and transportation professionals since it is relatively easy to measure using travel models and that it bears a direct relationship to vehicle emissions (lower VMT typically means lower emissions).

The balanced scenario was incorporated, in combination with the forecasted transportation network, into the BCAG regional travel demand model. The travel demand model captures the

amount of average weekday vehicle miles of travel (VMT) occurring as a result of the scenario. In general, the more dispersed the land use pattern, the greater the average vehicle trip length will be, resulting in greater VMT. In turn, the more compact the land use patterns, the shorter the average trip length will be, resulting in less VMT but greater congestion. The VMT results of the balanced scenario model runs are included in **Table 3.6-1**. This VMT summary excludes through trips that originate outside of Butte County and includes only those trips made by passenger vehicles.

TABLE 3.6-1: SUMMARY OF VMT PER CAPITA BY ANALYSIS YEAR

2012 MTP/SCS	2005	2020	2035
VMT	3,668,000	3,950,000	5,681,000
Population	214,582	257,266	332,459
VMT per Capita	17.09	15.35	17.09
Percent Change	--	-10.18%	-0.03%

SOURCE: BCAG, 2012.

Total VMT increases from 3,668,000 in 2005 to 3,950,000 in 2020 and 5,681,000 in 2035. The VMT analysis in Table 3.6-1 shows VMT per capita decreases by 10.18% in 2020 even with an increase in total VMT. This analysis shows that VMT per capita decreases by 0.03% in 2035 for the balanced scenario when compared to 2005 VMT per capita.

Greenhouse Gas Emissions: In addition to measuring the amount of travel occurring as a result of each scenario, BCAG measured the levels of greenhouse gas (GHG) emissions using the California Emissions Factor (EMFAC) model. The purpose of the GHG measurement is to determine how well each land use scenario performs in relation to achieving the GHG targets established for the MTP/SCS as a result of SB 375. As directed by the California Air Resources Board (ARB), the 2035 GHG emission estimates are presented as pounds (lbs.) of Carbon Dioxide (CO₂) per capita. **Table 3.6-2** reflects the amount of CO₂ emissions resulting from each scenario.

TABLE 3.6-2: SUMMARY OF CO₂ PER CAPITA BY ANALYSIS YEAR

2012 MTP/SCS	2005	2020	2035
CO ₂ lbs. per day	3,540,000	3,740,000	5,380,000
Population	214,582	257,266	332,459
CO ₂ lbs. per Capita	16.50	14.54	16.18
Percent Change	--	-11.88%	-1.91%

SOURCE: BCAG, 2012.

Table 3.6-2 shows CO₂ per capita decreases by 11.88% in 2020 and by 1.91% in 2035 for the balanced scenario when compared to 2005 CO₂ per capita.

Consistency with Targets: The GHG emissions presented above illustrate that the Butte County region will meet the per capita CO₂ emissions reduction targets issued by CARB under SB 375 by balancing housing and employment growth within the specified growth areas; protecting sensitive habitat and open space; and investing in a multi-modal transportation system that serves the population of Butte County. The differential between the reduction targets and the GHG emissions

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is approximately 13 percent lower in 2020, and approximately 3 percent lower in 2035. Table 3.6-3 presents a comparison of the GHG reduction targets to the forecasted GHG emissions.

TABLE 3.6-3: COMPARISON OF YEAR 2020/2035 TARGETS TO GHG FORECASTS

TARGET YEAR	ARB TARGET	BCAG MTP/SCS
2020	1% increase	11.88% decrease
2035	1% increase	1.91% decrease

SOURCE: BCAG, 2012

The MTP/SCS GHG targets require no greater than a 1% increase in per capita CO₂ emissions in 2020 and 2035 when compared to 2005 levels. The GHG emissions forecast demonstrate that the MTP/SCS meet the GHG targets for the region in 2020 and 2035. Implementation of the proposed project would have a **less than significant** impact relative to this environmental topic.

Impact 3.6.2: Consistency with AB 32 and SB 375 (less than significant)

CARB established regional on-road GHG per capita emissions reduction targets from light-duty trucks and passenger vehicles pursuant to AB 32 and SB 375. BCAG developed three growth scenarios and a coordinated list of transportation improvements to the regional network in an effort to provide a long-term strategy for the achievement of the reduction targets established by CARB. The regional travel demand model was used to estimate travel for the MTP/SCS for each scenario.

For the BCAG region, the targets set by CARB are one percent above 2005 emissions levels by 2020 and one percent above 2005 levels by 2035. The 2005 GHG per capita emissions were modeled for the plan area to be 15.6 pounds per day. With the MTP/SCS, the 2020 GHG per capita emissions were modeled for Butte County to be 14.54 pounds per day, a reduction of 11.88 percent from 2005. The 2035 emissions levels were modeled to be 16.18 pounds per day, a 1.91 percent reduction from 2005. As demonstrated, the MTP/SCS achieves the AB 32 and SB 375 GHG emissions reduction targets. Implementation of the MTP/SCS would have **less than significant** impact relative to this topic.

Impact 3.6.3: Construction Related Impacts from GHG Emissions (less than significant)

Construction projects would have potentially significant impact on GHG emissions if the individual projects in the MTP/SCS are implemented in a manner that is not consistent with the GHG emissions reduction goals set forth in AB 32. Construction related GHG emissions are correlated to construction energy consumption, which includes operation of equipment, and travel to and from the worksite.

Growth through the MTP/SCS planning horizon of 2035 requires the development of new housing, commercial, industrial, and public uses, as well as the construction of new, and the expansion of existing, transportation facilities. The new development would require new infrastructure such as water, wastewater treatment, and storm water management to be constructed to accommodate this growth. The MTP/SCS provides a balanced growth scenario that embodies elements of

redevelopment and infill, as well as growth in new areas that are contiguous to existing development. This growth pattern would minimize the need for additional infrastructure, which would assist in reducing GHG emissions associated with construction.

Travel energy consumption from construction is captured as part of the regional travel model. The per capita GHG emissions generated from individual projects under the MTP/SCS decreases between 2005 and 2035. The reduction of per capita GHG emissions under the MTP/SCS does not conflict with the achievement of the goals of AB 32. As such, the impacts on construction-related GHG emission related to the MTP/SCS are considered **less than significant**.

Impact 3.6.4: Conflict with applicable local plans designed to reduce GHG (less than significant)

BCAG developed the MTP/SCS in coordination with the local land use agencies. This coordinated effort with the local land use agencies ensured that BCAG considered local General Plans and Climate Action Plans with policies for GHG reductions. These local plans were developed in an effort to comply with the goals set for local governments in the AB 32 Scoping Plan. While the land use growth scenarios and transportation projects of the MTP/SCS are consistent with the goals of AB 32 and SB 375, ultimately it is the local jurisdictions that have authority to determine if projects are consistent with local plans. BCAG, and the MTP/SCS, have no jurisdiction in approval of development within the plan area.

The balanced growth scenario provides each local land use agency with a land use strategy that has been demonstrated to achieve the region's GHG reduction targets. This scenario addresses the largest source of GHG emissions, which are the mobile source emissions. The local land use agency's plans address GHG emission reductions associated with all levels of emissions: mobile source, area source, and stationary source. The MTP/SCS is consistent with local planning efforts to reduce GHG. Implementation of the MTP/SCS would have **less than significant** impact relative to this topic.

Impact 3.6.5: Conflict with the goal of reducing usage of nonrenewable energy resources for transportation purposes (less than significant)

The MTP/SCS has a goal of reducing the region's usage of nonrenewable energy for transportation purposes. The sector with the largest consumption of nonrenewable energy is transportation. The consumption of nonrenewable energy in the transportation section is directly correlated to vehicle miles traveled. Communities with employment closest to housing is generally going to result in the lowest vehicle fuel consumption, while housing that requires commuting will result in the largest fuel consumption. Alternative modes of transportation, such as bike, pedestrian, and transit can also reduce vehicle fuel consumption.

The MTP/SCS accommodates the population and employment growth that is forecast for the region through a balance of housing and jobs located proximate to each other, increased transit opportunities, and utilization of existing infrastructure and building assets. The balanced growth scenario creates a slight shift in the location of new housing and employment compared to the

3.6 GREENHOUSE GASES AND CLIMATE CHANGE

existing condition. Table 3.6-4 presents a summary of housing units and employment by growth area.

TABLE 3.6-4: SUMMARY OF HOUSING UNITS AND EMPLOYEES IN ESTABLISHED GROWTH AREA

GROWTH AREA TYPE	2010 EXISTING CONDITIONS		2010 - 2020 FORECASTED GROWTH		2010 - 2035 FORECASTED GROWTH		2035 FORECASTED EMPLOYEES AND HOUSING	
	EMPLOYEES	HOUSING UNITS	EMPLOYEE GROWTH	HOUSING GROWTH	EMPLOYEE GROWTH	HOUSING GROWTH	TOTAL EMPLOYEES	TOTAL HOUSING
Urban Center and Corridor Areas	30,471	8,375	3,063	838	9,804	2,760	40,275	11,135
Established Areas	37,535	73,639	11,137	10,960	23,573	26,493	61,108	100,131
New Areas	1,277	440	893	1,825	6,229	13,859	7,506	14,299
Rural Areas	950	7,829	429	955	902	2,924	1,852	10,753
Agricultural, Grazing, and Forestry Areas	1,268	6,340	192	613	271	1,289	1,539	7,629
Regional Total	71,501	96,623	15,713	15,190	40,778	40,778	112,279	143,948

SOURCE: BCAG, 2012.

Under the balanced growth scenario the majority of new housing and employment opportunities would be located in the Established and New Areas. Overall, there would be a decrease in the amount of new housing and employment located in rural areas and agricultural, grazing, and forestry areas, which are the areas that have the largest vehicle miles traveled per capita. This growth scenario would result in an improvement in the consumption of nonrenewable energy resources per capita compared to the existing.

The MTP/SCS also established the Chico Transit Priority Area (TPA) covering the Downtown Chico Transit Center and the area surrounding B-Line route 15, which currently operates at the highest frequency in the BCAG region. New development within the Chico TPA consists mainly of infill and redevelopment opportunities. Mixed use, higher density, development, creating both employment and housing, is the primary allocation of new growth within the Chico TPA. Table 3.6-5 provides a summary of housing and employment forecasted to occur with the Chico TPP area.

TABLE 3.6-5: SUMMARY OF MTP/SCS NEW EMPLOYMENT AND HOUSING WITHIN CHICO TPP AREA

LOCATION	2010 - 2035 NEW EMPLOYEES	2010 - 2035 NEW HOUSING	
		SINGLE FAMILY	MULTI-FAMILY
Within Chico TPP Area	14%	4%	15%
Outside Chico TPP Area	86%	96%	85%
Region Total	100%	100%	100%

SOURCE: BCAG, 2012.

The MTP/SCS has a goal of reducing the region's usage of nonrenewable energy for transportation purposes. The balanced growth scenario, the Chico TPA, and the coordinated transportation improvements are designed to reduce the total VMT per capita by strategically growing in areas with the appropriate employment and services available to accommodate the housing. The balanced scenario achieves a reduction in fuel consumption on a per capita basis through the coordination of land use and transportation development. Implementation of the MTP/SCS would have **less than significant** impact relative to this topic.

This section describes the existing land uses in Butte County and its incorporated communities, describes the land use regulations for each jurisdiction, discusses existing and projected population levels and housing units, and evaluates the environmental effects of implementation of the MTP and SCS. No Notice of Preparation comments regarding land use and population were received.

3.7.1 ENVIRONMENTAL SETTING

EXISTING PHYSICAL ENVIRONMENT

The planning area, which is coterminous with the boundaries of Butte County, encompasses approximately 1,665 square miles in north central California (**Figure 2.1-1**). Butte County is bordered by the Sacramento River, Butte Creek, and Glenn and Colusa Counties to the west; Tehama County to the north; Plumas County to the east; and Sutter and Yuba Counties to the south. The western part of the county is located in the northern Sacramento Valley, while the eastern portion extends into the foothills of the Cascade and Sierra Nevada Mountain Ranges. Elevations range from 50 feet above sea level at Butte Sink along the Sacramento River at the southwest portion of the county, to 7,087 feet above sea level at Humboldt Summit near the county's northeastern border.

Butte County has five incorporated cities, Biggs, Chico, Gridley, Oroville, and the Town of Paradise, which range from small farming communities to regional urban centers. Numerous unincorporated communities also located within Butte County. Feather Falls, Berry Creek, and Brush Creek are in the foothills in the southeastern portion of the county, while Paradise Pines, Magalia, Stirling City, Forest Ranch, Cohasset, and Butte Meadows are in the foothills in the northeastern area. The western portion of the valley includes the communities of Dayton, Durham, Nelson, and Richvale, with Palermo, Honcut, Cherokee and Forbestown further to the east (**Figure 2.1-2**).

In Butte County, approximately 44,803 acres are classified as urban and built-up land, while 649,736 acres are classified as agricultural land and 355,896 are classified as other lands under the Farmland Mapping and Monitoring program (see **Table 3.2-6**).

Land use patterns in the county are primarily determined by geographic conditions and political jurisdictions.

Geographic Conditions

Geographically, the county is divided into three areas: a valley area, foothills east of the valley area, and a mountain region east of the foothills. These geographic areas respectively comprise approximately 45, 25, and 30 percent of the county. The attributes of each geographic area support specific industries and development characteristics.

VALLEY

The valley area is predominantly agricultural in character. Most intensive agricultural uses in the county occur in the valley, due to the level topography, prime cultivable soils, and excellent drainage. Agricultural processing facilities are found throughout the valley area.

Most urban areas in the county are located on the valley floor, and were formed as agricultural centers with their locations reflecting the proximity of agricultural lands and access to major transportation corridors (the Union Pacific Railroad and State Routes 70 and 99). The Cities of Biggs and Gridley are located about five miles apart in the valley area in the southwest portion of the county, while the City of Chico is located further north in the western valley area. The City of Oroville, the County seat, is located along the Feather River in the southern portion of the valley.

FOOTHILLS

Land use activities in the foothills are concentrated in three principal industries: “extensive” agriculture, mining, and recreation. Extensive agriculture (irrigated pasture, grazing and animal husbandry) is a major land use in the county. A significant portion of the county is used at least part of the year for grazing cattle, sheep, goats, and other livestock on natural vegetation. Most of the mining activity in the county takes place in the foothills with the greatest concentrations of mines and mining operations located south of Paradise near State Routes 70 and 149. The Palermo and the Honcut-Bangor areas also contain large numbers of mining operations. Sand and gravel, stone, and gold constitute the most important mineral resources in the county.

Recreational uses in the foothills are connected primarily with major water resources such as Lake Oroville, Thermalito Forebay and Afterbay, and the Feather River. These areas are major recreational attractions for both county residents and visitors each year.

Urban uses in the foothills are concentrated in and adjacent to the incorporated Town of Paradise and City of Oroville. The City of Oroville is located in the southern portion of the county, and the Town of Paradise is on a ridge in the foothills near the center of the county (Figure 2.1-2). The slopes east of Oroville have attracted both rural-residential and subdivision development. In the Paradise area, development is dispersed over the ridges within the Town of Paradise and in the unincorporated communities to the north.

MOUNTAIN

Land use in the mountains area reflects the area’s abundance of natural resources, which include forests, minerals, water, and wildlife. The area’s scenic beauty has also created the base for an important tourism and recreation industry.

Lumber and wood-processing uses are associated with the pine and fir forests (timberlands) that cover approximately 341,000 acres in the mountains area of the county. Mining operations (gold lode, placer gold, chromite, and stone) are scattered throughout the mountain areas. The mountains and forests also contain significant wildlife habitats and watershed protection areas.

Sites for outdoor recreation include portions of two national forests (Plumas and Lassen), as well as the Feather Falls Scenic Area and parkland along the Middle Fork of the Feather River. While no urban areas are located in the mountains, smaller communities are distributed throughout the area, including former mining camps that are now centers of rural residential development or are linked to the tourism industry.

POLITICAL JURISDICTIONS

Urban development in Butte County has traditionally been concentrated in the urban areas formed by the County's five incorporated communities, Biggs, Chico, Gridley, Oroville, and Paradise.

City of Biggs

In the southwest portion the county, the City of Biggs is located approximately five miles north of the City of Gridley. State Route 99 runs in a north-south direction east of Biggs, and the Union Pacific Railroad extends through the center of the city.

Historically, the growth of the city has been rooted in agricultural development. Small fruit and field-crop farms and large rice-growing ranches presently occupy a major portion of the immediately surrounding area. The predominant land use in Biggs is residential, with the majority of residential uses in low- and medium-density development (1 to 6 dwelling units per acre, and 7 to 12 dwelling units per acre, respectively). Recent growth has involved primarily single-family home construction. The City has annexed tracts of land to provide areas for new housing. Biggs has a commercial core area; however, commercial and industrial land uses in the city have been experiencing a decline due mainly to large retail stores with more selection and lower prices drawing shoppers away from Biggs. The industrial base in Biggs for many years has been rice processing and handling.

In the southern part of the county, numerous large parcels have been recently purchased near Biggs and Gridley by developers looking to build housing developments catering to entry-level home buyers employed in the Sacramento metropolitan area.

City of Chico

The City of Chico is located in the northwestern area of the county. The city is oriented along the major transportation routes including, State Route 99, which runs north-south, State Route 32, which runs east-west, and the Southern Pacific railroad line, which runs north-south. State Route 99 and 32 intersect near the center of the city.

The city's land use pattern is based upon the guiding policies and Land Use Diagram, as amended. The existing land use pattern is based on guiding policies intended to foster a compact built environment while preserving agricultural and hillside areas, and to promote in-fill development.

The city's northwest-to-southeast growth pattern reflects the location of major transportation routes, and the natural topographical constraints to the east (rolling foothill topography) and the "greenline" or urban growth boundary to the west. Designated manufacturing and warehousing are located on the periphery of the existing city. Community and regional commercial cores are along State Route 99, the primary regional roadway corridor. Community and local-serving commercial and residential areas are generally located in the central portions of the developed city.

Many of the well-established residential neighborhoods are located around the core downtown area with the age of the housing stock generally decreasing outward from the center. With the exception of certain areas surrounding the university, redevelopment areas, and various infill development projects, such as the Avenues, Mansion Park, and the Barber neighborhoods, exemplify this pattern. While some notable exceptions do exist within the city, most of the recent larger-scale residential development has occurred on the periphery of the city where larger undeveloped tracts of land are more readily available. Examples of outward expansion of the city include the Doe Mill neighborhood, the Foothill Ranch East/Hancock Park development, and the now-developing Northwest Chico Specific Plan area.

The City of Chico has several large development projects, including retail, commercial and residential, that are planned for development in the next ten to twenty years. These include a mixed-use project in southeast Chico slated to add over 900,000 square feet of commercial, retail and office uses and over 2,500 housing units. While the development of commercial, retail, and office land uses are a direct result from the population's demand for the services provided within these land uses, an increase in successful businesses that provide salaried positions at or above the median household income for the region could drive population growth and the demand for additional large housing developments in the Chico area.

City of Gridley

The City of Gridley is located in the southwest area of the county, approximately five miles south of the City of Biggs. State Route 99 runs in a north-south direction through the eastern portion of the city, and the Union Pacific Railroad extends through the center of the city.

The city is characterized by its compact development form, composed primarily of low to medium density single family residences. The city's downtown is characterized by commercial, including various service and retail, and government uses.

As discussed, numerous large parcels have been recently purchased near Biggs and Gridley for residential development. There is the potential for the City of Gridley's population of 5,702 to double if these parcels are built out according to submitted subdivision maps.

City of Oroville

The City of Oroville is located in southeastern Butte County along the Feather River, on the southwestern side of Lake Oroville. The city is bisected by State Route 70, which runs in a north-

south direction, and by State Route 162 (Oro Dam Boulevard), which runs in an east-west direction. State Route 99 extends north-south four miles west of the city limits.

Historically, the city has been shaped by diverse economic activities, including gold mining, agriculture, railroads, lumber processing, and the construction and operation of Oroville Dam. The Oroville area is characterized by low-density, scattered development with many vacant parcels. The highest density residential development in the Oroville area is located within the Oroville city limits, although this development is primarily single-family in character with a scattering of apartments, mobile homes, and mobile home parks. The principal centers of commercial development in the city are in the downtown area and along Oro Dam Boulevard between State Route 70 and Olive Highway. Industrial development is mainly limited to a strip extending from downtown Oroville to Ophir Road between State Route 70 and Lincoln Boulevard.

Town of Paradise

The Town of Paradise is located in the eastern area of the county at the juncture of the western slopes of the Cascade and Sierra Nevada mountains. The Paradise area is defined by the West Branch of the Feather River drainage to the east, and by the Butte Creek-Little Butte Creek drainage to the northwest. The Town of Paradise occupies an area identified as the Lower Ridge, which ranges from 2,200 feet in the north to 1,500 feet at the town's southern boundary.

The Town of Paradise is predominately residential in character, with mostly single-family units. Multi-family units are located primarily in central Paradise, near commercial uses and along major arterial streets.

The town has a central business district composed of a narrow band of commercial uses along both sides of the Skyway generally between Black Olive Drive and Maxwell Drive. The town contains relatively little industrial development. Agricultural uses, including vineyards, orchards, and grazing land, are located primarily in the southern third of the town.

Public and Non-Jurisdictional Lands

Public and non-jurisdictional lands are an important factor in land use planning because they are not subject to the County's or City's land use planning decisions. Public lands in Butte County include those of the US Forest Service, California State University, Chico, and other public agencies, such as school districts.

RANCHERIAS

Butte County is home to four local Native American Rancherias. 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.

PUBLIC USES

Public lands in Butte County include those of the U.S. Forest Service, California State University, Chico (CSU Chico), and other public agencies, such as school districts. The U.S. Forest Service is a

major landowner in Butte County, with the 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. The California Department of Fish and Game (CDFG) manages the 9,100-acre Gray Lodge Wildlife Area and the Upper Butte Basin Wildlife Area, which includes 5,521 acres in Butte County. CSU Chico facilities include the 119-acre main campus in central Chico, and an 800-acre agricultural research center and teaching facility approximately two miles south of the main campus.

AIRPORTS AND AVIATION FACILITIES

Aviation facilities in Butte County include both public and private airports, and helipads serving commercial, recreational, medical, law enforcement, fire, and agricultural needs. The region has 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 (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.

REGIONAL BLUEPRINT PLANNING

Because of increasing growth pressures in the Butte County region over the past decade, in 2006, BCAG initiated the Blueprint Planning Program in order to establish a multi-faceted planning process to help provide for a more informed land use and transportation decision-making process, and provide an improved environmental permitting process for future transportation and land use projects in the region.

These planning efforts were, and continue to be, coordinated through the BCAG Planning Directors Group (PDG) which is comprised of planning directors and staff from all the BCAG member jurisdictions, as well as the Local Agency Formation Commission (LAFCO)

The BCAG Blueprint Program resulted in the coordinated development of the 2008 Regional Growth Forecasts, established Regional Guiding Principles, an Ecological Baseline Assessment Report, Landcover Mapping, Biological Constraints Analysis, Butte County Meadowfoam Evaluation, initiated the Butte Regional Conservation Plan, and integrated updates of the region's local general plans both with each other and with the Butte Regional Conservation Plan (BRCP) and Metropolitan Transportation Plan (MTP).

As of 2012, four (4) of the region's six (6) local jurisdictions (Chico, Gridley, Oroville, and Butte County) have completed general plan updates, and the remaining two (2) jurisdictions (Biggs and Paradise) have initiated the update process with Biggs having established a preferred land use alternative. The area's new general plans now provide the framework for the region's SCS.

REGIONAL GROWTH

Regional Growth Forecasts

The MTP/SCS identifies areas within the region sufficient to house all of the forecasted population of the region, including all economic segments of the population over the course of the MTP/SCS planning period. The population, housing, and employment forecasts for the MTP/SCS are based on the “medium scenario” of the Butte County Long-Term Regional Growth Forecasts 2010-2035, developed by BCAG in 2011.

Land Use Forecasts

The land use forecasts, and the process for allocating growth within the region, are affected by federal and state requirements related to the regional transportation plans and the Clean Air Act. In general, federal and state laws require BCAG to develop a forecasted land use pattern, based upon the best available information, in order to, among other things, design specific transportation improvements to serve that land use, and to perform travel modeling to determine the performance of the transportation system and determine whether the plan, including its land use and transportation components, meets federal air quality requirements. Starting with BCAG’s 2012 MTP/SCS, this process is also affected by SB 375, and specifically its requirements to include an SCS, to calculate the greenhouse gas emissions resulting from passenger vehicles, and enable the California Environmental Quality Act (CEQA) streamlining benefits for projects that are consistent with the SCS.

The primary resource in preparing the MTP/SCS land use forecast are the latest local general plans which were developed in coordination with BCAG as part of the Blueprint Program. As the estimated land use forecast was developed, BCAG consulted with local governments and stakeholders as it considered a number of factors throughout the process. The BCAG Planning Directors Group was the primary venue for ongoing coordination between local agency planning staff and BCAG.

SCS Land Use Scenarios

The SCS included the development of land use scenarios that are intended to achieve the reduction targets. These land use scenarios were developed through a cooperative effort between BCAG, each local jurisdiction, and LAFCO. This partnership included the exchange of planning assumptions, review and comments regarding the information to be considered, review of the various documents, and the development of the land use scenarios. Additional public and stakeholder participation, in the development of the SCS and forecasted development pattern, were implemented through the BCAG Public Participation Plan (PPP).

Ultimately, three distinctive land use scenarios were developed for the purpose of illustrating the travel effects of different development patterns on the regional transportation system and the associated greenhouse gas emissions resulting from these patterns. In addition, the scenarios

3.7 LAND USE AND POPULATION

allow BCAG to test the performance of the enhanced regional travel demand model to assure it was responding appropriately to changes in land use.

All three scenarios were prepared using the same regional employment, population and housing growth projections and regional transportation network. However, the following land use variables were adjusted to create the distinctive scenarios:

- The amount of development occurring within each of the five Growth Areas (i.e., Urban Center and Corridor, Established, New, Rural, and Agricultural).
- The levels of infill and redevelopment occurring within the Urban Center and Corridor and Established Growth Areas.
- The shares of single-family to multi-family development.
- The amount of growth accommodated within each local jurisdiction.

The land use scenarios were designed by first assembling the “balanced” scenario. The “balanced” scenario (scenario #1) was prepared based on land use information from the recent general plan updates, the latest information regarding planned development, reasonable assumptions regarding infill and redevelopment, regional growth forecasts, and a review of development attractions (i.e., motorized and non-motorized transportation networks, existing development, utility areas, etc.) and discouragements (i.e., resource areas and farmland, public lands, areas exceeding 25% slope, etc.). Secondly, the “dispersed” (scenario #2) and “compact” (scenario #3) scenarios were prepared to represent development occurring at opposite ends of the spectrum from scenario #1. The scenarios are described in more detail in **Table 3.7-1**. Each land use scenario was analyzed and results were compared for VMT, congested VMT, and CO₂.

TABLE 3.7-1: DESCRIPTION OF MTP/SCS LAND USE SCENARIOS

SCENARIO	LAND USE
Scenario 1 – Balanced	<ul style="list-style-type: none"> • Balanced share of new housing within the center, established and new growth areas • Contains reasonable levels of infill and redevelopment • Consistent with local land use plans and draft habitat conservation plan • Consistent with BCAG long-term regional growth forecasts by jurisdiction
Scenario 2 – Dispersed	<ul style="list-style-type: none"> • Largest share of single-family housing with a greater amount of growth directed to the new, rural, and agricultural growth areas • Minimize the amount of infill and redevelopment • Exceeds the unincorporated areas local land use plans reasonable capacities for growth
Scenario 3 – Compact	<ul style="list-style-type: none"> • Greatest share of infill and redevelopment within the established and center growth areas • Highest share of multi-family housing • Potential incompatibilities with existing infrastructure capacity • Exceeds the incorporated areas local land use plans reasonable capacities for growth

SOURCE: BCAG, 2012.

Growth Area Types

BCAG developed a framework for describing the MTP/SCS that is made up of Growth Area Types. Local land use plans (e.g., adopted and proposed general plans, specific plans, master plans,

corridor plans, etc.) were divided into one of five Growth Area Types based on the location of the plans. The following contains a brief description of each Growth Area Type. **Exhibit 3.7-1** provides an illustration of the Growth Area Types.

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 which are more supportive of walking and bicycling. Future growth within these areas consists of compact infill developments on underutilized lands, or redevelopment of existing developed lands. Local plans identify these areas as opportunity 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 utilizes 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 may be provided to areas which are directly adjacent to current urban routing and are able to achieve build-out. Pedestrian and bicycle infrastructure is typically required to be incorporated under the local jurisdictions' plans.

Rural Areas consist of areas outside existing and planned urban areas with development at low and rural density residential 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.

Agricultural, 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, or other rural uses.

3.7 LAND USE AND POPULATION

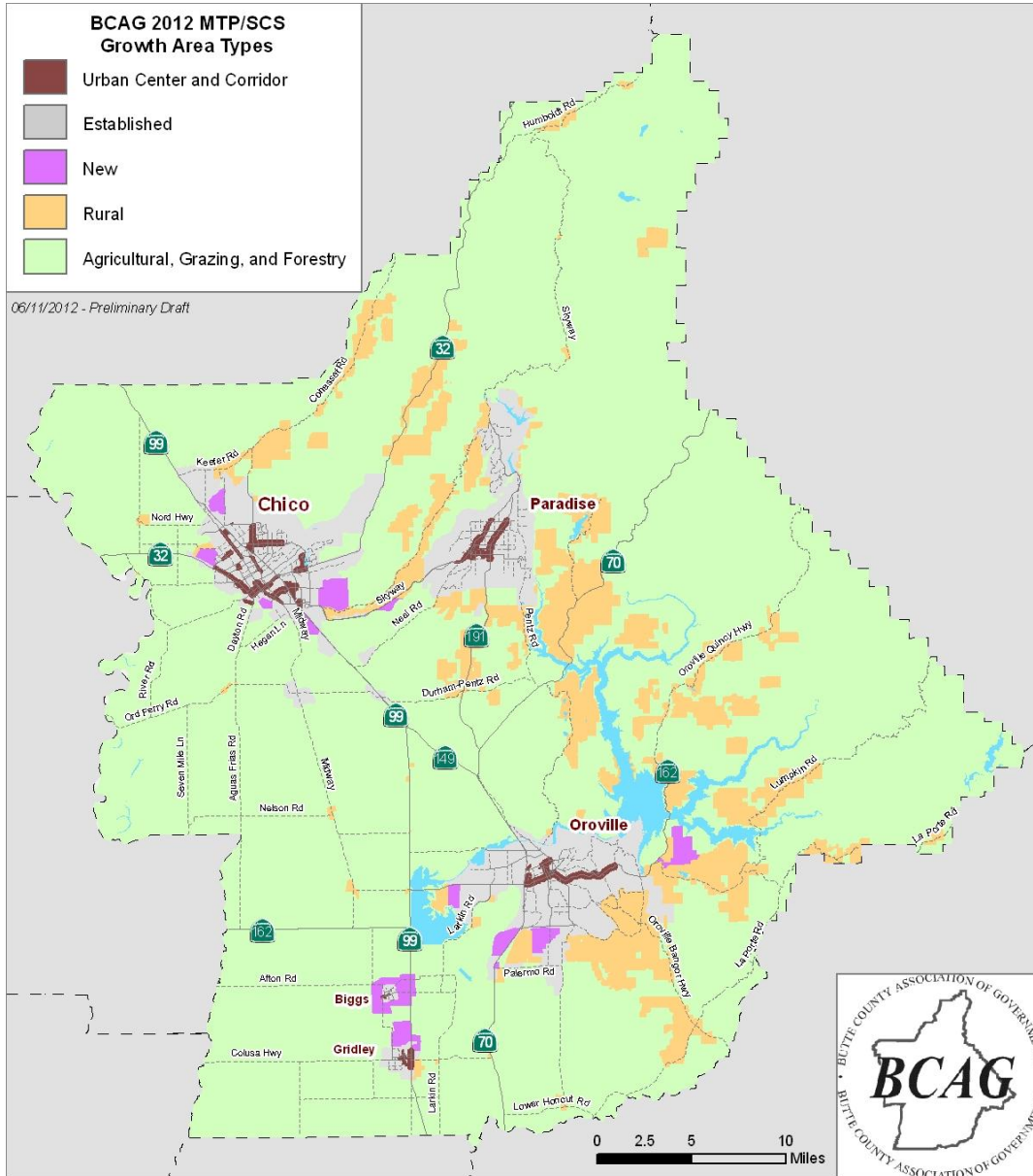


Exhibit 3.7-1 Growth Area Types

Table 3.7-2 summarizes the housing and employment in the MTP/SCS by Growth Area Type based on the “balanced” or preferred land use scenario. The forecasted allocations rely on growth that is consistent with the location, density, and intensity of use in existing or active draft general plans or other local adopted or active draft plans, but does not utilize all available capacity in those plans by 2035.

TABLE 3.7-2: SUMMARY OF HOUSING UNITS AND EMPLOYEES IN ESTABLISHED GROWTH AREA

GROWTH AREA TYPE	2010 EXISTING CONDITIONS		2010 - 2020 FORECASTED GROWTH		2010 - 2035 FORECASTED GROWTH		2035 FORECASTED EMPLOYEES AND HOUSING	
	EMPLOYEES	HOUSING UNITS	EMPLOYEE GROWTH	HOUSING GROWTH	EMPLOYEE GROWTH	HOUSING GROWTH	TOTAL EMPLOYEES	TOTAL HOUSING
Urban Center and Corridor Areas	30,471	8,375	3,063	838	9,804	2,760	40,275	11,135
Established Areas	37,535	73,639	11,137	10,960	23,573	26,493	61,108	100,131
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Agricultural, Grazing, and Forestry Areas	1,268	6,340	192	613	271	1,289	1,539	7,629
Regional Total	71,501	96,623	15,713	15,190	40,778	40,778	112,279	143,948

SOURCE: BCAG, 2012.

Transit Priority Project Area

As established by SB 375, a Transit Priority Project (TPP) area is defined as a location within one-half mile of a major transit stop or an existing or planned high-quality transit corridor included in the MTP/SCS. A high-quality transit corridor is a corridor with fixed route bus service intervals no longer than 15 minutes during peak commute hours. Certain projects within a TPP area are eligible for CEQA streamlining benefits.

The MTP/SCS has identified the Chico Transit Priority Project Area (**Exhibit 3.7-2**) as an area with the greatest potential to meet the TPP definition, within the timeframe of the Plan. The Chico TPP area covers the Downtown Chico Transit Center and the area surrounding B-Line route 15, which currently operates at the highest frequency in the BCAG region. New development within the Chico TPP area consists mainly of infill and redevelopment opportunities. Mixed use, higher density, development, creating both employment and housing, is the primary allocation of new growth within the Chico TPA. **Table 3.7-3** provides a summary of housing and employment forecasted to occur with the Chico TPP area.

TABLE 3.7-3: SUMMARY OF MTP/SCS NEW EMPLOYMENT AND HOUSING WITHIN CHICO TPP AREA

LOCATION	2010 - 2035 NEW EMPLOYEES	2010 - 2035 NEW HOUSING	
		SINGLE FAMILY	MULTI-FAMILY
Within Chico TPP Area	14%	4%	15%
Outside Chico TPP Area	86%	96%	85%
Region Total	100%	100%	100%

SOURCE: BCAG, 2012.

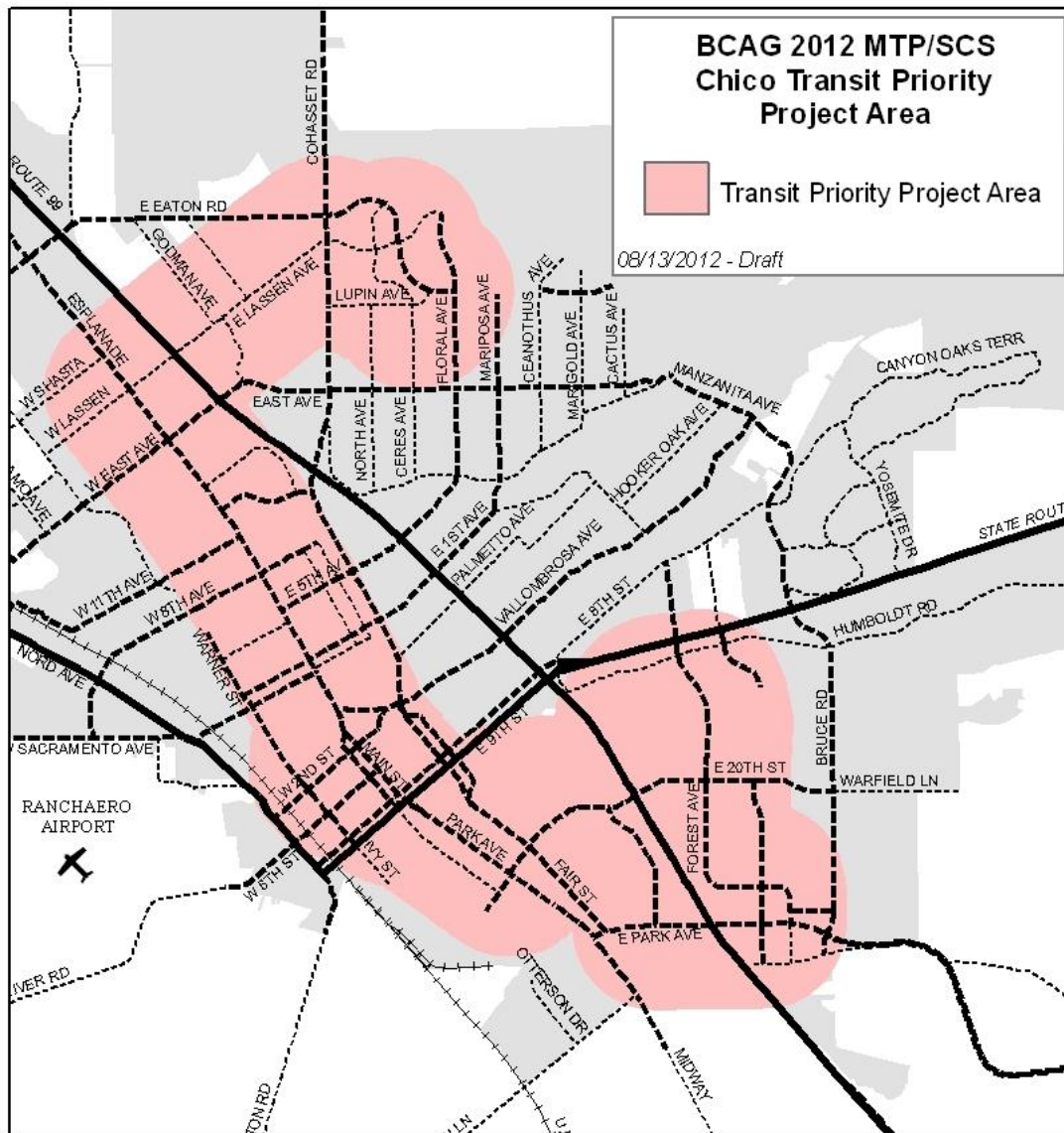


Exhibit 3.7-2 Chico Transit Priority Project Areas

HOUSING

Providing a variety of options for housing, including apartments, townhouses, condominiums, and single family homes, creates opportunities for the variety of people living in the region. For the purpose of preparing the forecasted development pattern of the SCS, BCAG has categorized housing into one of two categories:

- **Single Family** units are detached homes built at densities ranging anywhere from 13 units per acre in the urban areas to 1 unit per 160 acres in timber and agricultural areas.

- **Multi-Family** units are attached or detached homes built at densities ranging from 13 to 50 units per acre. Multi-family homes generally consist of duplexes, triplexes, lofts, apartments, condominiums, townhouses, row houses, etc.

A recent demographic study prepared by the Sacramento Area Council of Governments, “Changing Demographics and Demand for Housing Types, January 2011”, indicates the evolving demographics and preferences held by specific demographic groups, or generational cohorts are driving a change in the existing housing stock. The study finds that on the housing demand side, the aging of the baby boom generation and the preferences of Generation Y (those born between 1978 and 1994) will have the greatest affect. These groups are expected to provide greater demand for apartments and small housing units (i.e. multi-family housing) into the future.

Given the available information on housing, the MTP/SCS estimates that there will be an increased demand for multi-family housing. Regionally, 28% of the new housing in the forecasted development pattern is multi-family and 72% is single family. This demonstrates a moderate shift in the housing mix from the estimated existing mix of 25% multi-family and 75% single family.

The greatest shift in housing mix contained in the forecasted development pattern is within the Urban Center and Corridor Growth Areas and the New Growth Areas. It’s estimated that 74% of the new housing in the Urban Center and Corridor Growth Areas will be multi-family and 32% of the new housing in the New Growth Areas will be multi-family housing, by 2035. The distributions for all growth areas are summarized in **Table 3.7-4**.

TABLE 3.7-4: SUMMARY OF DRAFT HOUSING UNIT MIX BY GROWTH AREA

GROWTH AREA TYPE	2010 EXISTING HOUSING UNITS		2010 - 2020 NEW HOUSING UNITS		2010 - 2035 NEW HOUSING UNITS	
	SINGLE FAMILY	MULTI-FAMILY	SINGLE FAMILY	MULTI-FAMILY	SINGLE FAMILY	MULTI-FAMILY
Urban Center and Corridor Areas	42%	58%	44%	56%	26%	74%
Established Areas	74%	26%	72%	28%	74%	26%
New Areas	99%	1%	74%	26%	68%	32%
Rural Areas	100%	0%	100%	0%	100%	0%
Agricultural, Grazing, and Forestry Areas	97%	3%	100%	0%	100%	0%
Region Total	75%	25%	74%	26%	72%	28%

SOURCE: BCAG, 2012.

JOBS HOUSING BALANCE

At the regional level, a jobs-housing balance can be discussed as a point in which the area’s jobs and households are balanced so that either jobs or housing do not have to be imported or exported. An imbalance in a region’s jobs-housing ratio can increase travel by causing workers to commute out of their residence area, in areas with few jobs, or workers commuting into a region, in areas with more jobs.

3.7 LAND USE AND POPULATION

Traditionally, the Butte County region has been an area in which housing has been greater than employment. With the current downturn in the economy and the increase in the nation's unemployment rates, this separation in housing and jobs has increased.

The MTP/SCS includes a forecasted increase in the existing 2010 ratio of jobs to housing, as included in the Butte County Long-Term Regional Growth Forecasts 2010-2035. In 2010, the area's ratio was 0.74 jobs (non-farm) per housing unit. The long-term forecasts estimate that the region will return to historic levels of 0.78 jobs per housing unit by the years 2020 and 2035.

REGIONAL HOUSING NEED ALLOCATION

BCAG is required by state law to complete a Regional Housing Needs Allocation (RHNA), in consultation with the California Department of Housing and Community Development (HCD), in order to determine the region's housing needs in four income categories - very low, low, moderate, and above moderate. This process occurs before each housing element cycle, which SB 375 changed from a five-year to eight-year cycle, for the Butte County region.

In the past, the RHNA was completed separately from the MTP. SB 375 now links the RHNA and MTP/SCS processes to better integrate housing, land use, and transportation planning. Integrating both processes helps ensure that the state's housing goals are met. BCAG received the RHNA Determination from HCD for the fifth housing element cycle (2014-2022), as shown in **Table 3.7-5** below.

TABLE 3.7-5 REGIONAL DISTRIBUTION OF TOTAL RHNA DETERMINATION BY INCOME GROUP

<i>INCOME GROUP</i>	<i>HOUSING UNITS</i>
Very Low	2,495 (24.2%)
Low	1,720 (16.7%)
Moderate	1,710 (16.6%)
Above Moderate	4,395 (42.5%)
Total	10,320 (100%)

SOURCE: HCD AND BCAG, 2012.

Once the RHNA is determined, each jurisdiction will receive an allocation and each jurisdiction will need to identify adequate sites to address its RHNA numbers in the four income categories when updating its housing element. Housing elements will be due no later than 18 months after the BCAG Board adopts the 2012 MTP/SCS.

SB 375 requires that the RHNA and SCS are consistent with one another – that is, that the SCS land use pattern can accommodate the 8-year RHNA Determination. **Table 3.7-6** demonstrates the capacity of the SCS land use pattern to accommodate the RHNA determination.

TABLE 3.7-6: MTP/SCS 2010-2035 HOUSING UNIT GROWTH FORECAST BY JURISDICTION

JURISDICTION	HOUSING UNIT GROWTH FORECAST (2010 – 2035)	RHNP ALLOCATION*
Biggs	950	184
Chico	19,255	3,963
Gridley	3,405	769
Oroville	6,565	1,793
Paradise	2,975	637
Unincorporated	14,175	2,974
Total Region	47,325	10,320

*DRAFT RHNP ALLOCATION BASED ON ADOPTED METHODOLOGY

3.7.2 REGULATORY SETTING

FEDERAL AND STATE

Department of Transportation Act - Section 4(f)

The Department of Transportation Act of 1966, which was previously discussed in the Biological Resources section of this EIR, is set forth in Title 49 United States Code (U.S.C.). This law established that it is the policy of the United States Government to make a special effort to preserve the natural beauty of the countryside and public parks and recreation lands, wildlife and waterfowl refuges, and historic sites. The Secretary of Transportation may approve a transportation program or project that requires the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or land of a historic site of national, state, or local significance only if: a) There is no prudent and feasible alternative to using that land; and b) The program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.

California Department of Transportation

The jurisdiction of the California Department of Transportation (Caltrans) includes right-of-ways of state and interstate routes within California. Any work within the right-of-way of a federal or state transportation corridor is subject to Caltrans' regulations governing allowable actions and modifications to the right-of-way. Caltrans issues permits to encroach on land within their jurisdiction to ensure encroachment is compatible with the primary uses of the State Highway System, to ensure safety, and to protect the State's investment in the highway facility. The encroachment permit requirement applies to persons, corporations, cities, counties, utilities, and other government agencies.

LOCAL

At the local levels, a number of agencies, including the Local Area Formation Commission, Butte County Airport Land Use Commission, Butte County Association of Governments, Butte County, City of Biggs, City of Chico, City of Gridley, City of Oroville, and Town of Paradise, all participate in land use and planning, typically as a lead agency with the discretionary approval authority.

Local Area Formation Commission

The Butte County Local Agency Formation Commission (LAFCO) is a legislatively established commission responsible for coordinating logical and timely changes in local governmental boundaries, conducting special studies that review ways to reorganize, simplify, and streamline governmental structure, and preparing a sphere of influence for each city and special district within each county. LAFCO is directed to see that services are provided efficiently and economically while agricultural and open-space lands are protected.

Butte County Airport Land Use Commission

Pursuant to state law, each county has an Airport Land Use Commission (ALUC). The ALUC prepared an Airport Land Use Compatibility Plan (ALUCP) which addresses the Chico Municipal Airport, the Oroville Municipal Airport, the Paradise Skypark Airport, and the Ranchoero Airport. The plan provides for the orderly growth of the airports and the areas surrounding the airports, excluding existing land uses. Its primary function is to safeguard the general welfare of the inhabitants within the vicinity of the airports and the public in general. The purpose of the ALUCP is to assure that incompatible development does not occur on lands surrounding the airports. Cities and counties must submit their general and specific plans to the ALUC upon adoption or amendment.

Butte County Association of Governments

The Butte County Association of Governments (BCAG) is an association of all the local governments within Butte County. Its members include the cities of Biggs, Chico, Gridley, Oroville, the Town of Paradise, and Butte County. BCAG has five major areas of authority and responsibility.

- As a Regional Transportation Planning Agency, to administer the requirements of the Federal and State Clean Air Acts;
- To develop a Countywide Nonattainment Plan to satisfy all requirements of the Federal and State Clear Air Acts;
- To develop a Regional Housing Allocation Plan;
- To review the transportation plans and programs of member agencies and endorse them based upon their satisfaction of regional need and their consistency with adopted regional plans and policies;
- To develop a Sustainable Communities Strategy for the region pursuant to the requirements of SB 375 and
- To serve as an area-wide clearinghouse for projects proposed for federal funding assistance.

BCAG's primary responsibility is the development of federal and state transportation plans and programs that secure transportation funding for the region's highways, transit, streets and roads, pedestrian, and other transportation system improvements. BCAG is also the administrative and policymaking agency for the region's public transit service, Butte Regional Transit.

General Plans

California state law requires each city and county to adopt a general plan “for the physical development of the county or city, and any land outside its boundaries which bears relation to its planning” (Government Code §65300). The California Supreme Court has called the general plan the “constitution for future development.” The general plan expresses the community’s development goals and embodies public policy relative to the distribution of future land uses, both public and private.

The policies of the general plan are intended to underlie most land use decisions. Pursuant to state law, subdivisions, capital improvements, development agreements, and many other land use actions must be consistent with the adopted general plan. In counties and general law cities, zoning and specific plans are also required to conform to the general plan.

Butte County and each of the incorporated Cities have adopted general plans that govern the land use decisions within their respective jurisdictions. The general plans include numerous goals, objectives, policies, and implementation measures that control land uses and population growth.

Zoning

The zoning code of the county and each incorporated city/town is the set of detailed requirements that implement the general plan land use designations and policies at the individual parcel level. The zoning code presents standards for different uses and identifies which uses are allowed in the various zoning districts of the jurisdiction. Since 1971, state law has required the city or county zoning code to be consistent with the jurisdiction’s general plan, except in charter cities.

Specific and Community Plans

The county or the incorporated cities/towns may also provide additional specificity in land use planning beyond that identified in their respective General Plans by developing community or specific plans for smaller, more specific areas within their jurisdiction. These more localized plans, which are often referred to as "Master Planned Communities", 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 or county’s general plan.

Butte Regional Conservation Plan

Habitat conservation efforts began in the region in 2007 when BCAG commenced with the development of the Butte Regional Conservation Plan (BRCP). The BRCP is a joint Habitat Conservation Plan/Natural Communities Conservation Plan (HCP/NCCP) and, once completed, will allow for appropriate and compatible growth and development in the Butte County region while ensuring the preservation of aquatic and terrestrial resources and providing habitat for threatened and endangered species through conservation partnerships with local agencies.

3.7.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact on land use and planning and population and housing if it will:

- Physically divide an established community;
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect;
- Conflict with any applicable habitat conservation plan or natural community conservation plan;
- Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure);
- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere; or
- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

IMPACTS AND MITIGATION MEASURES

Impact 3.7-1: SCS - Physical Division of an Established Community (less than significant)

The SCS is a planning document that forecasts the development pattern for the region, and integrates the pattern into the transportation network to provide a framework for land use agencies to reduce greenhouse gas emissions.

The preferred SCS land use scenario is the “Balanced Scenario”, which provides a balanced share of new housing within new growth areas and reasonable level of infill and redevelopment. This scenario focuses growth in growth areas, which are largely within and surrounding established communities. The SCS itself does not include any scenarios that would physically divide an established community. Implementation of the SCS would have a **less than significant** impact relative to this topic.

Impact 3.7-2: MTP - Physical Division of an Established Community (less than significant with mitigation)

The majority of individual MTP projects would involve improvements to existing facilities, which would mostly occur within or in close proximity to existing rights-of-way. Some individual MTP projects will involve new facilities that will occur within or adjacent to existing communities. New facilities may include roadway widening, roadway extensions, bicycle lanes, bicycle/pedestrian

paths, bridges, interchanges, and park-n-ride lots. The MTP provides the existing communities with a complete transportation system that has a broader level of safe transportation choices for the citizens. A complete transportation system with more safe choices and better linkages provides an enhancement to the quality of life within the community.

In many cases, improvements to facilities will occur where communities are already physically divided by existing facilities, including highways, roadways, intersections, interchanges, transit routes, and airports. The MTP is intended to improve inter- and intra-regional connectivity and new or improved land use linkages. There are specific projects, such as multimodal stations, interchange improvements, and rail improvements that have the potential to physically divide existing communities, although they are generally designed with the intent to link two or more existing communities. Additionally, these projects are designed with bike/pedestrian access or crossings such that a physical barrier is not created.

Because the MTP and SCS are planning documents and thus, no physical changes will occur to the environment, adoption of the proposed project would not directly impact the environment. It is assumed that individual projects that affect land uses and transportation facilities present the greatest potential for impacts regarding the division of an established community. In addition, depending on the specific location of rail transit projects, adding tracks and constructing multiple passenger rail stations could also result in physical division of existing communities. The following mitigation measure would ensure that all individual projects are designed to maintain the cohesiveness of the existing communities to the greatest extent feasible. Where full design mitigation is not feasible, measures would be incorporated into the design to minimize the impacts associated with project implementation. Adherence to the requirements of this mitigation measure would reduce the potential for a direct impact on existing communities to a ***less than significant*** level.

MITIGATION MEASURES

Mitigation Measure 3.7.1: *Prior to approval of MTP projects, the implementing agency shall consult with local planning staff to ensure that the project will not physically divide the community. The consultation should include a more detailed project-level analysis of land uses adjacent to proposed improvements to identify specific impacts. The analysis should consider new road widths and specific project locations in relation to existing roads. If it is determined that a project could physically divide a community, the implementing agency shall redesign the project to avoid the impact, if feasible. The measures could include realignment of the improvements to avoid the affected community. Where avoidance is not feasible, the implementing agency shall incorporate minimization measures to reduce the impact. The measures could include: alignment modifications, right-of-way reductions, provisions for bicycle, pedestrian, and vehicle facilities, and enhanced landscaping and architecture.*

Impact 3.7-3: SCS - Conflicts with Applicable Land Use Plan, Policy, or Regulation Adopted to Avoid or Mitigate an Environmental Effect (less than significant)

As stated under Impact 3.7-1, the SCS is a planning document that forecasts the development pattern for the region, and integrates the pattern into the transportation network. The SCS is intended to provide a framework for agencies to meet the passenger vehicle greenhouse gas reduction target for the area while also being consistent with the land use planning efforts of the local jurisdictions throughout Butte County.

CEQA Streamlining: With the passage of SB 375 came the addition of California Environmental Quality Act (CEQA) streamlining incentives to assist and encourage residential and mixed use housing projects consistent with the SCS and Transit Priority Project Areas. The CEQA benefits available under SB 375 are for residential and residential mixed-use projects that are consistent with the general use designation, density, building intensity, and applicable policies specified for the project area in the SCS. The CEQA benefits provided by SB 375 apply to three types of projects. **Table 3.7-7** contains a summary of the types of development projects eligible for these CEQA benefits, specific qualifications for each project, and the types of CEQA streamlining available to each type of project.

TABLE 3.7-7: SB 375 CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) BENEFITS

<i>PROJECT DESIGNATION</i>	<i>QUALIFICATIONS</i>	<i>STREAMLINING BENEFITS</i>
Mixed Use Residential Project	<ul style="list-style-type: none"> At least 75% of total building square footage for residential use Consistent with the use designation, density, building intensity, and applicable policies for the project area of an SCS or APS accepted by ARB; OR A Transit Priority Project as defined below 	Environmental documents are not required to reference, describe or discuss: 1) growth-inducing impacts, 2) impacts on transportation or climate change of increased car and truck VMT induced by project, 3) reduced-density alternative to project.
Transit Priority Project	<ul style="list-style-type: none"> At least 50% of total building square footage for residential use; OR If 26-50% of total building square footage is nonresidential, a minimum FAR of 0.75 Minimum net density of 20 du/acre Within 0.5 miles of major transit stop or high-quality transit corridor included in the regional transportation plan (No parcel more than 25% further, and less than 10% of units or no more than 100 units further than 0.5 miles) Consistent with the use designation, density, building intensity, and applicable policies of an SCS or APS 	<ul style="list-style-type: none"> Benefits described above PLUS: Option to review under a "Sustainable Communities Environmental Assessment" - An Initial Study is prepared identifying significant or potentially significant impacts. Where the lead agency determines that cumulative impacts have been addressed and mitigated in SCS/APS, they will not be "considerable." Off-site alternatives do not need to be addressed. Deferential review standard - the burden of proof for legal challenge is on the petitioner/plaintiff. Traffic control/mitigation may be covered by SCS/APS.

PROJECT	QUALIFICATIONS	STREAMLINING BENEFITS
Sustainable Communities Project	<ul style="list-style-type: none"> • Everything for Transit Priority Project; PLUS: • Served by existing utilities • Does not contain wetlands or riparian areas • Does not have significant value as a wildlife habitat and does not harm any protected species • Not on the Cortese List • Not on developed open space • No impacts to historic resources • No risks from hazardous substances • No wildfire, seismic, flood, public health risk • 15% more energy-efficient than CA requirements and 25% more water-efficient than average for community • No more than 8 acres • No more than 200 units • No building greater than 75,000 square feet • No net loss of affordable housing • Compatible with surrounding industrial uses • Within ½-mile of rail/ferry or ¼-mile of high quality bus line • Meets minimum affordable housing requirements as prescribed in SB 375 OR in-lieu fee paid OR 5 acres of open space per 1,000 residents provided 	<ul style="list-style-type: none"> • Exempt from CEQA

SOURCE: BCAG, 2012.

The streamlining provisions merely provide opportunities for local land use actions and do not prohibit the planning or development of any particular form of housing development. Projects that use the SB 375 CEQA streamlining provisions still must obtain discretionary permits or other approvals from lead and responsible agencies in accordance with local codes and procedures. Moreover, SB 375 does not change how CEQA applies to projects that are inconsistent with the SCS. These CEQA benefits are designed to incentivize development projects consistent with the SCS; however, there is not a disincentive for development projects that are not consistent with the SCS. As noted, CEQA does not mandate that local agencies use the SCS to regulate GHG emissions or for any other purpose. Local government land use authority remains unchanged by SB 375; jurisdictions can consider, review, and approve any land use project by the same process and guidelines they use currently.

Although this SCS has no regulatory authority over local land use decisions, it provides information about the SCS so that local jurisdictions can determine whether a project is consistent with the SCS, and therefore, eligible for the CEQA benefits based on consistency with the SCS. To determine a project’s consistency with the SCS, a jurisdiction must find it consistent with the general land use, density, intensity, and any applicable land use policies of the SCS. Assistance with this determination is provided by BCAG if the local jurisdiction requests such assistance. Implementation of the SCS would have a **less than significant** impact relative to this topic.

Local Conflicts: The SCS was prepared in cooperation with the local land use authorities. It includes a preferred land use scenario that provides a balanced share of new housing within new growth areas and a reasonable level of infill and redevelopment. The SCS is consistent with local land use plans, Butte Regional Conservation Plan, and BCAG's long-term regional growth forecasts for each jurisdiction.

It is duly noted that BCAG does not have the land use authority and the SCS does not prohibit the planning or development of any particular form of housing development. The SCS does not supersede the land use plans of a city or county and does not regulate the use of land. Individual development projects would be designed and engineered in accordance with the local General Plan where the individual project is located. Incentives will be provided for projects that are consistent with the SCS; however, consistency is voluntary. Implementation of the SCS would have a **less than significant** impact relative to this topic.

Impact 3.7-4: MTP - Conflicts with Applicable Land Use Plan, Policy, or Regulation Adopted to Avoid or Mitigate an Environmental Effect (less than significant)

As described above under Regulatory Setting, each of the jurisdictions in Butte County has an adopted General Plan to guide land use and development decisions, including circulation patterns and improvements. The MTP has been planned to address safety and rehabilitation issues necessary to maintain the existing transportation system, as well as accommodate anticipated levels of growth, including growth associated with adopted general plans. The MTP is also intended to enhance mobility primarily within established communities, and provide connectivity between established communities.

The MTP would be generally compatible with existing land uses and policies, and any changes in land uses as a result of investments in alternative modes of transportation, such as a desire for higher densities or land use mixes that emphasize transit use over single-occupancy vehicle use would be at the discretion of the local agency. Specific MTP projects, such as improvements to existing transportation corridors (mainline highway and regional street segments, interchanges, railroad underpasses and overpasses, park-and-ride lots, multimodal stations, airport taxiways, and bike and pedestrian facilities) could conflict with county and city land use policies and designations by encroaching on incompatible land uses. Each individual MTP project will be evaluated by the implementing agency on a project-specific level during the design and engineering stage of the process. Each MTP project will be reviewed for conformance with the general plan of the jurisdiction(s) in which the project will be located, as well as conformance with the policies of the MTP.

The MTP is intended to accommodate growth envisioned by the General Plans of land use agencies within Butte County by providing multimodal circulation infrastructure necessary for orderly growth. The MTP includes policies that ensure consistency with local plans and regulations and a conformance review of individual MTP projects will ensure consistency with adopted policies and

regulations. The MTP would not result in significant conflicts with plans, policies, and regulations adopted to mitigate an environmental effect. Therefore, this impact is considered *less than significant*.

Impact 3.7-5: Conflicts with Any Applicable Habitat Conservation Plan or Natural Community Conservation Plan (less than significant with mitigation)

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 2013. 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.

The MTP and SCS were prepared to be consistent with the BRCP planning efforts to date. After the BRCP is adopted, individual projects that occur in BRCP planning area would need to be coordinated with BCAG to ensure that the individual 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 project and there is the potential for individual projects to conflict with the BRCP. Implementation of Mitigation Measure 3.4.7 in Section 3.4 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.

Impact 3.7-6: Induce Substantial Population Growth in an Area (less than significant)

The MTP/SCS identifies areas within the region sufficient to house all of the forecasted population of the region, including all economic segments of the population over the course of the MTP/SCS planning period. The population, housing, and employment forecasts for the MTP/SCS are based on the “medium scenario” of the Butte County Long-Term Regional Growth Forecasts 2010-2035, developed by BCAG in 2011.

The land use forecasts, and the process for allocating growth within the region, are affected by federal and state requirements related to the regional transportation plans and the Clean Air Act. In general, federal and state laws require BCAG to develop a forecasted land use pattern, based upon the best available information, in order to, among other things, design specific transportation improvements to serve that land use, and to perform travel modeling to determine the performance of the transportation system and determine whether the plan, including its land use and transportation components, meets federal air quality requirements.

Given the historical and current population, housing, and employment trends, growth in the region is inevitable. Two principle factors that account for population growth are natural increase and net migration. The average annual birth rate for California is expected to be 20 births per 1,000 population compared to 10 births per 1,000 population in West Virginia, the state with the lowest projected birth rate. Additionally, California is expected to attract more than one third of the Country’s immigrants. Other factors that affect growth include the cost of housing, the location of jobs, the economy, the climate, and also, transportation.

The MTP/SCS has been planned to accommodate anticipated levels of growth, including growth associated with adopted general plans. The MTP/SCS does not involve approvals associated with any development projects, and does not provide infrastructure that could directly facilitate additional development in the region. The MTP/SCS does not directly induce growth beyond the growth that is forecasted by BCAG and planned or being planned by local jurisdictions both locally and regionally. However, it should be noted that the incentives provided by the SCS and the programed transportation projects included in the MTP may have an indirect impact on the type and location of growth that occurs throughout the region. For example, investments in alternative modes of transportation may indirectly lead to land use developments with higher densities, a mix of land uses and an emphasis on transit use over single-occupancy vehicle use, while investments in capacity increasing roadway improvements may indirectly lead to land use developments that have been historically typical in suburban development with low densities.

BCAG does not make land use approvals associated with projected growth in the region and does not have the authority to make local land use decisions. The SCS does not allow or prohibit development. The SCS does not supersede the land use plans of a city or county and does not regulate the use of land or growth. Implementation of the MTP/SCS would have a **less than significant** impact relative to this topic.

Impact 3.7-7: SCS - Displace Substantial Numbers of People or Existing Housing, Necessitating the Construction of Replacement Housing Elsewhere (less than significant)

The SCS is a planning document that forecasts the development pattern for the region, and integrates the pattern into the transportation network. The preferred land use scenario provides a balanced share of new housing within new growth areas, including a reasonable level of redevelopment. Redevelopment can often result in temporary displacement of people and/or existing housing; however, the redevelopment itself also results in the construction of replacement housing. State and federal law require due compensation for property taken to carry out the redevelopment projects. Also required by law, relocation and assistance must be provided to displaced residents and businesses in accordance with the Federal Uniform Relocation and Real Property Acquisition Policies Act of 1970 and the State of California Relocation Assistance Act.

Redevelopment under the SCS is not considered substantial and is not anticipated to result in the substantial displacement of people or housing. Implementation of the SCS would have a **less than significant** impact relative to this topic.

Impact 3.7-8: MTP - Displace Substantial Numbers of People or Existing Housing, Necessitating the Construction of Replacement Housing Elsewhere (less than significant)

The MTP would not displace substantial numbers of housing units or people. The majority of individual projects involve work within or adjacent to existing rights-of-way and would not involve acquisition of land and displacement of substantial numbers of persons or housing. Most transportation projects will generally not require the displacement of any residences or businesses since the right-of-way has already been acquired.

Some of the MTP projects may involve land acquisition. While most of the additional right-of-way acquisition is anticipated to be vacant or undeveloped land, at a few isolated urban locations the land necessary for the improvement may include existing residential units or businesses. This is anticipated to be rare and involve a limited number of residences or businesses.

State and federal law require due compensation for property taken to carry out the infrastructure projects. Also required by law, relocation and assistance must be provided to displaced residents and businesses in accordance with the Federal Uniform Relocation and Real Property Acquisition Policies Act of 1970 and the State of California Relocation Assistance Act.

As noted above, MTP projects such as new highways, major throughway corridors, rail corridors, airports, or other major transportation corridors would not result in displacement or relocation of a substantial number of homes, businesses, or people. Growth planned in the general plans of the jurisdictions of Butte County would result in additional housing opportunities and would more than offset any units removed in association with the MTP projects. Therefore, impacts related to a substantial displacement of housing units or persons as a result of the MTP are **less than significant**. No mitigation measures are necessary.

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This section provides a discussion of the regulatory setting, a general description of existing noise sources in the planning area and a discussion of the impacts and mitigation measures associated with implementation of the proposed project. No comments were received during the public review period or scoping meeting for the Notice of Preparation regarding this topic.

3.8.1 ENVIRONMENTAL SETTING

ACOUSTIC FUNDAMENTALS

Noise is generally defined as sound that is loud, disagreeable, or unexpected. Sound is mechanical energy transmitted in the form of a wave because of a disturbance or vibration. Sound levels are described in terms of both amplitude and frequency.

Amplitude

Amplitude is defined as the difference between ambient air pressure and the peak pressure of the sound wave. Amplitude is measured in decibels (dB) on a logarithmic scale. For example, a 65 dB source of sound, such as a truck, when joined by another 65 dB source results in a sound amplitude of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by 3 dB). Amplitude is interpreted by the ear as corresponding to different degrees of loudness. Laboratory measurements correlate a 10 dB increase in amplitude with a perceived doubling of loudness and establish a 3 dB change in amplitude as the minimum audible difference perceptible to the average person.

Frequency

The frequency of a sound is defined as the number of fluctuations of the pressure wave per second. The unit of frequency is the Hertz (Hz). One Hz equals one cycle per second. The human ear is not equally sensitive to sound of different frequencies. For instance, the human ear is more sensitive to sound in the higher portion of this range than in the lower and sound waves below 16 Hz or above 20,000 Hz cannot be heard at all. To approximate the sensitivity of the human ear to changes in frequency, environmental sound is usually measured in what is referred to as “A-weighted decibels” (dBA). On this scale, the normal range of human hearing extends from about 10 dBA to about 140 dBA. Common community noise sources and associated noise levels, in dBA, are depicted in **Figure 3.8-1**.

Addition of Decibels

Because decibels are logarithmic units, sound levels cannot be added or subtracted through ordinary arithmetic. Under the decibel scale, a doubling of sound energy corresponds to a 3-dB increase. In other words, when two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dB higher than one source under the same conditions. For example, if one automobile produces a sound level of 70 dB when it passes an observer, two cars passing simultaneously would not produce 140 dB; rather, they would combine to produce 73 dB. Under the decibel scale, three sources of equal loudness together would produce an increase of 5 dB.

FIGURE 3.8-1: COMMON NOISE LEVELS

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Jet Fly-over at 300m (1000 ft)	110	Rock Band
Gas Lawn Mower at 1 m (3 ft)	100	
Diesel Truck at 15 m (50 ft), at 80 km (50 mph)	90	Food Blender at 1 m (3 ft)
Noisy Urban Area, Daytime	80	Garbage Disposal at 1 m (3 ft)
Gas Lawn Mower, 30 m (100 ft)	70	Vacuum Cleaner at 3 m (10 ft)
Commercial Area		Normal Speech at 1 m (3 ft)
Heavy Traffic at 90 m (300 ft)	60	
Quiet Urban Daytime	50	Large Business Office
		Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime		Library
Quiet Rural Nighttime	30	Bedroom at Night, Concert Hall (Background)
	20	Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

SOURCE: CALTRANS 2008

Sound Propagation & Attenuation

GEOMETRIC SPREADING

Sound from a localized source (i.e., a point source) propagates uniformly outward in a spherical pattern. The sound level decreases (attenuates) at a rate of approximately 6 decibels for each doubling of distance from a point source. Highways consist of several localized noise sources on a defined path, and hence can be treated as a line source, which approximates the effect of several point sources. Noise from a line source propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of approximately 3 dB for each doubling of distance from a line source, depending on ground surface characteristics. For acoustically hard sites (i.e., sites with a reflective

surface between the source and the receiver, such as a parking lot or body of water, no excess ground attenuation is assumed. For acoustically absorptive or soft sites (i.e., those sites with an absorptive ground surface between a line source and the receiver, such as soft dirt, grass, or scattered bushes and trees), an excess ground-attenuation value of 1.5 dB per doubling of distance is normally assumed. When added to the cylindrical spreading, the excess ground attenuation for soft surfaces results in an overall attenuation rate of 4.5 dB per doubling of distance from a line source.

ATMOSPHERIC EFFECTS

Receptors located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels. Sound levels can be increased at large distances (e.g., more than 500 feet) from the highway due to atmospheric temperature inversion (i.e., increasing temperature with elevation). Other factors such as air temperature, humidity, and turbulence can also have significant effects.

SHIELDING BY NATURAL OR HUMAN-MADE FEATURES

A large object or barrier in the path between a noise source and a receiver can substantially attenuate noise levels at the receiver. The amount of attenuation provided by shielding depends on the size of the object and the frequency content of the noise source. Natural terrain features (e.g., hills and dense woods) and human-made features (e.g., buildings and walls) can substantially reduce noise levels. Walls are often constructed between a source and a receiver specifically to reduce noise. A barrier that breaks the line of sight between a source and a receiver will typically result in minimum 5 dB of noise reduction. Taller barriers provide increased noise reduction.

Noise Descriptors

The decibel scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on the human response to that sound. Although the intensity (energy per unit area) of the sound is a purely physical quantity, the loudness or human response is determined by the characteristics of the human ear.

Human hearing is limited in the range of audible frequencies as well as in the way it perceives the sound-pressure level in that range. In general, people are most sensitive to the frequency range of 1,000–8,000 Hz, and perceive sounds within that range better than sounds of the same amplitude in higher or lower frequencies. To approximate the response of the human ear, sound levels of individual frequency bands are weighted, depending on the human sensitivity to those frequencies, which is referred to as the “A-weighted” sound level (dBA). The A-weighting network approximates the frequency response of the average young ear when listening to most ordinary sounds. When people make judgments of the relative loudness or annoyance of a sound, their judgments correlate well with the A-weighted noise scale. Other weighting networks have been devised to address high noise levels or other special problems (e.g., B-, C-, and D-scales), but these scales are rarely used in conjunction with environmental noise.

The intensity of environmental noise fluctuates over time, and several descriptors of time-averaged noise levels are typically used. For the evaluation of environmental noise, the most commonly used descriptors are L_{eq} , L_{dn} , CNEL and SEL. The energy-equivalent noise level, L_{eq} , is a measure of the average energy content (intensity) of noise over any given period. Many communities use 24-hour descriptors of noise levels to regulate noise. The day-night average noise level, L_{dn} , is the 24-hour average of the noise intensity, with a 10-dBA “penalty” added for nighttime noise (10 p.m. to 7 a.m.) to account for the greater sensitivity to noise during this period. CNEL, the community equivalent noise level, is similar to L_{dn} but adds an additional 5-dBA penalty for evening noise (7 p.m. to 10 p.m.) Another descriptor that is commonly discussed is the single-event noise exposure level, also referred to as the sound-exposure level, expressed as SEL. The SEL describes a receiver’s cumulative noise exposure from a single noise event, which is defined as an acoustical event of short duration (0.5 second), such as a backup beeper, the sound of an airplane traveling overhead, or a train whistle. Common noise level descriptors are summarized in **Table 3.8-1**.

TABLE 3.8-1: COMMON ACOUSTICAL DESCRIPTORS

<i>DESCRIPTOR</i>	<i>DEFINITION</i>
Energy Equivalent Noise Level (L_{eq})	The energy mean (average) noise level. The instantaneous noise levels during a specific period of time in dBA are converted to relative energy values. From the sum of the relative energy values, an average energy value (in dBA) is calculated.
Minimum Noise Level (L_{min})	The minimum instantaneous noise level during a specific period of time.
Maximum Noise Level (L_{max})	The maximum instantaneous noise level during a specific period of time.
Day-Night Average Noise Level (DNL or L_{dn})	The DNL was first recommended by the U.S. EPA in 1974 as a “simple, uniform and appropriate way” of measuring long term environmental noise. DNL takes into account both the frequency of occurrence and duration of all noise events during a 24-hour period with a 10 dBA “penalty” for noise events that occur between the more noise-sensitive hours of 10:00 p.m. and 7:00 a.m. In other words, 10 dBA is “added” to noise events that occur in the nighttime hours to account for increases sensitivity to noise during these hours.
Community Noise Equivalent Level (CNEL)	The CNEL is similar to the L_{dn} described above, but with an additional 5 dBA “penalty” added to noise events that occur between the hours of 7:00 p.m. to 10:00 p.m. The calculated CNEL is typically approximately 0.5 dBA higher than the calculated L_{dn} .
Single Event Level (SEL)	The level of sound accumulated over a given time interval or event. Technically, the sound exposure level is the level of the time-integrated mean square A-weighted sound for a stated time interval or event, with a reference time of one second.

Human Response to Noise

The human response to environmental noise is subjective and varies considerably from individual to individual. Noise in the community has often been cited as a health problem, not in terms of actual physiological damage, such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities, including sleep, speech, recreation, and tasks that demand concentration or coordination. Hearing loss can occur at the highest noise intensity levels. When

community noise interferes with human activities or contributes to stress, public annoyance with the noise source increases. The acceptability of noise and the threat to public well-being are the basis for land use planning policies preventing exposure to excessive community noise levels.

Unfortunately, there is no completely satisfactory way to measure the subjective effects of noise or of the corresponding reactions of annoyance and dissatisfaction. This is primarily because of the wide variation in individual thresholds of annoyance and habituation to noise over differing individual experiences with noise. Thus, an important way of determining a person's subjective reaction to a new noise is the comparison of it to the existing environment to which one has adapted: the so-called "ambient" environment. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged. Regarding increases in A-weighted noise levels, knowledge of the following relationships will be helpful in understanding this analysis:

- Except in carefully controlled laboratory experiments, a change of 1 dB cannot be perceived by humans;
- Outside of the laboratory, a 3-dB change is considered a just-perceivable difference;
- A change in level of at least 5 dB is required before any noticeable change in community response would be expected. An increase of 5 dB is typically considered substantial;
- A 10-dB change is subjectively heard as an approximate doubling in loudness and would almost certainly cause an adverse change in community response.

SENSITIVE RECEPTORS

Noise-sensitive land uses generally include those uses where exposure to noise would result in adverse effects, as well as, uses where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Other noise-sensitive land uses include hospitals, convalescent facilities, parks, hotels, places of worship, libraries, and other uses where low interior noise levels are essential.

MAJOR NOISE SOURCES IN BUTTE COUNTY

The principal sources of noise in Butte County come from both stationary and mobile sources. Noise sources are classified as mobile sources if they are associated with vehicular traffic, railroad trains, airplanes, and other forms of transportation. Stationary sources refer to noise generated by stationary activities, equipment or site-specific uses.

The major source of mobile noise comes from vehicle traffic on major roadways. Freeways and highways with the largest traffic volumes generate the highest noise levels in the area. Truck routes in particular generate high traffic noise. Other mobile noise sources include train activity on the various railroads that run through the County, and aircraft operations at several public and private airports and airstrips in the area, as well as flyovers throughout most of the agricultural areas for crop dusting.

Mobile Source Noise

TRAFFIC NOISE SOURCES

There are a number of major transportation noise sources within Butte County and incorporated Cities including traffic, railroad noise sources, and airports. Major traffic noise sources include State Routes 99, 70, 32, 149, 162, and 191. Other significant traffic noise sources include arterial roadways, and collector roadways. Generally, traffic noise levels peak in the morning and evening with the peak traffic volume. Highways will generally create the most substantial amount of noise as the traffic volumes, truck volumes, and speeds are much higher when compared to other roadways. **Table 3.8-2** shows the traffic noise contours for the major BCAG roadways.

TABLE 3.8-2: EXISTING TRAFFIC NOISE LEVELS

ROADWAY - SEGMENT	DISTANCE ¹	TRAFFIC NOISE LEVEL, LDN (dBA)	DISTANCE TO TRAFFIC NOISE CONTOURS		
			70 dB LDN	65 dB LDN	60 dB LDN
8th St - SR 99 to Walnut St	100'	61.9	29	62	133
SR 99 - North of Eaton Road	100'	71.8	132	283	611
SR 99 - Eaton Rd to SR 32	100'	74.7	205	442	952
SR 99 - SR 32 to SR 149	100'	70.8	113	244	526
SR 99 - SR 149 to SR 162	100'	69.7	96	206	444
SR 99 - South of SR 162	100'	72.0	137	295	635
SR 70 East of Pentz Rd	100'	63.3	36	77	167
SR 70 - SR 149 to SR 162	100'	70.4	106	229	493
SR 70 - SR 162 to Gridley Rd	100'	69.3	89	192	414
SR 70 - South of Gridley Rd	100'	68.9	85	182	393
SR 32 - West of East Ave	100'	63.5	37	79	171
SR 32 - East Ave to 8th, 9th St	100'	65.9	53	115	248
9th St - Walnut to SR 99	100'	61.4	27	58	125
SR 32 - East of SR 99	100'	63.2	35	76	163
SR 149 - SR 99 to SR 70	100'	67.9	73	157	338
SR 191 - SR 70 to Skyway	100'	63.3	36	77	167
SR 162 - West of SR 99	100'	58.8	18	39	83
SR 162 - SR 99 to SR 70	100'	66.8	61	132	285
SR 162 - East of SR 70	100'	67.8	71	154	331
E Gridley Rd - SR 99 to SR 70	100'	63.8	38	83	179
Skyway - SR 99 to SR 191	100'	68.9	85	183	394

SOURCE: J.C. BRENNAN AND ASSOCIATES, 2008

¹DISTANCES ARE MEASURED FROM THE CENTERLINE OF ROADWAY

RAILROADS

Major railroad lines include 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. The

eastern leg of the UP railroad runs through the City of Oroville before heading through the Feather River Canyon. The lines are used primarily for the movement of freight, although 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 1:55 am (northbound) and 3:50 a.m. (southbound) daily.

Noise contours for the two railroad lines are contained within Butte County General Plan Noise Element and local City General Plan Elements. Specifically, **Table 3.8-3** shows a collection of noise contour data from the Butte County General Plan 2030 Setting and Trends document, and City of Biggs General Plan General Plan Noise Element.

TABLE 3.8-3: RAILROAD NOISE LEVELS

<i>WEST LINE THROUGH GRIDLEY, BIGGS, AND CHICO</i>					
Source	Daily Trains	Noise Level at 100', Ldn	Distance to Railroad Noise Contours (feet)		
			60 dB Ldn	65 dB Ldn	70 dB Ldn
1	18	73 dB (w/out horns)	736'	342'	159'
2	20	78 dB (w/horns)	1590'	738'	343'
	25	79 dB (w/horns)	1845'	856'	397'
	30	80 dB (w/horns)	2083'	967'	449'
<i>EAST LINE THROUGH OROVILLE</i>					
1	19	74 dB (w/out horns)	858'	398'	184'
3	22	70 dB (w/out horns)	464'	215'	100'

SOURCES: BUTTE COUNTY GENERAL PLAN 2030 SETTINGS AND TRENDS NOISE DOCUMENT, PAGE 16-31; CITY OF BIGGS GENERAL PLAN NOISE ELEMENT, PAGE 7-11

AIRPORTS

Aircraft arriving at and departing from airports in the County are the primary source of aircraft noise in the County. Low-flying aircraft associated with crop dusting purposes are also a major source of aircraft noise in the county. The Butte County Airport Lane Use Compatibility Plan identifies areas that are the most affected by airport noise and what types of uses should be allowed within various areas around the County airports.

Airport facilities in the County include Chico Municipal Airport, Oroville Municipal Airport, Paradise Skypark Airport, Ranchoero Airport, Butte Creek Hog Ranch Airport, Jones Airport, and Richvale Airport. Privately owned heliports are located at Enloe Hospital and Oroville Hospital. A publically owned private-use helipad for the Butte County Sheriff’s Department is located at the Sheriff’s jail complex in Oroville. A seaplane landing site is also located on Lake Oroville.

Non-Transportation Noise Sources

There are various non-transportation noise sources located throughout the planning area. Such sources include various commercial and industrial uses. Examples include but are not limited to trucking

operations, agricultural processing facilities, speedways, landfills, aggregate mining, loading docks, lumber mills, athletic fields, and other various facilities.

AGRICULTURAL OPERATIONS NOISE SOURCES

Noise from agricultural operations may be audible at various locations throughout the County. Typically, industrial and commercial uses are not considered noise sensitive uses and agricultural operations would not impose a nuisance. However, other noise sensitive receptors, including residential uses, are more likely to be disturbed by agricultural activities. Butte County has a right to farm ordinance that requires the potential property owner and/or property tenant to be informed of the potential nuisances associated with agricultural uses that are located in the vicinity. After disclosure of the potential nuisance the potential property owner and/or tenant has the right to look elsewhere for land or space or purchase or lease the property with the understanding of the noises generated in the vicinity.

INDUSTRIAL NOISE SOURCES

Many industrial processes produce noise, even when the best available noise control technology is applied. Noise exposures within industrial facilities are controlled by federal and state employee health and safety regulations (i.e., regulations of the Occupational Safety and Health Administration of the U.S. Department of Labor [OSHA] and the California Division of Occupational Safety and Health [Cal-OSHA]). Exterior noise levels that affect neighboring parcels are typically subject to local standards.

COMMERCIAL, RECREATIONAL, PUBLIC FACILITY NOISE SOURCES

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.

Construction

Activities associated with construction represent an additional source of intermittent noise at sites located throughout the County. The construction equipment often generates high levels of noise at these sites; however, this noise is usually short-term. The construction-related noise is often variable and fluctuates depending on the phase of construction, the type of equipment used, the length of use, and the distance of the noise source and the receptor. Typical noise levels of construction equipment are shown in **Table 3.8-4**.

GROUNDBORNE VIBRATION

There are no federal, state, or local regulatory standards for ground-borne vibration. However, various criteria have been established to assist in the evaluation of vibration impacts. However, both the Federal Transit Administration and the California Department of Transportation (Caltrans) have developed vibration criteria based on potential structural damage risks and human annoyance. These criteria

differentiate between transient and continuous/frequent vibration sources. Transient sources of ground-borne vibration include intermittent events, such as blasting; whereas, continuous and frequent events would include the operations of equipment, including construction equipment, and vehicle traffic on roadways (Caltrans 2002(b), 2004).

The ground-borne vibration criteria often used for evaluation of potential structural damage are based on building classifications, which take into account the age and condition of the building. For instance, for residential structures and newer buildings, Caltrans considers a minimum peak-particle velocity (ppv) threshold of 0.25 inches per second (in/sec) for transient sources and 0.04 in/sec for continuous/frequent sources to be sufficient to protect against building damage. Continuous ground-borne vibration levels below approximately 0.02 in/sec ppv are unlikely to cause damage to any structure. In terms of human annoyance, continuous vibrations in excess of 0.04 in/sec ppv and transient sources in excess of 0.25 in/sec ppv are identified by Caltrans as the minimum perceptible level for ground vibration. Short periods of ground vibration in excess of 2.0 in/sec ppv can be expected to result in severe annoyance to people. Short periods of ground vibration in excess of 0.1 in/sec ppv (0.2 in/sec ppv within buildings) can be expected to result in increased levels of annoyance (Caltrans 2002[b], 2004).

TABLE 3.8-4: CONSTRUCTION EQUIPMENT NOISE LEVELS

EQUIPMENT	TYPICAL NOISE LEVEL (dBA) 50 FEET FROM SOURCE		DISTANCE TO NOISE CONTOURS (FEET, dBA L _{EQ})		
	L _{MAX}	L _{EQ}	70 dBA	65 dBA	60 dBA
Air Compressor	80	76	105	187	334
Auger/Rock Drill	85	78	133	236	420
Backhoe/Front End Loader	80	76	105	187	334
Blasting	94	74	83	149	265
Boring Hydraulic Jack/Power Unit	80	77	118	210	374
Compactor (Ground)	80	73	74	133	236
Concrete Batch Plant	83	75	94	167	297
Concrete Mixer Truck	85	81	187	334	594
Concrete Mixer (Vibratory)	80	73	74	133	236
Concrete Pump Truck	82	75	94	167	297
Concrete Saw	90	83	236	420	748
Crane	85	77	118	210	374
Dozer/Grader/Excavator/Scraper	85	81	187	334	594
Drill Rig Truck	84	77	118	210	374
Generator	82	79	149	265	472
Gradall	85	81	187	334	594
Hydraulic Break Ram	90	80	167	297	529
Jack Hammer	85	78	133	236	420
Impact Hammer/Hoe Ram (Mounted)	90	83	236	420	748
Pavement Scarifier/Roller	85	78	133	236	420
Paver	85	82	210	374	667
Pile Driver (Impact/Vibratory)	95	88	420	748	1,330
Pneumatic Tools	85	82	210	374	667
Pumps	77	74	83	149	265
Truck (Dump/Flat Bed)	84	80	167	297	529

SOURCES: FHWA 2006

3.8.2 REGULATORY SETTING

In general, the federal government sets noise standards for transportation noise sources that are related to interstate commerce. These typically include aircraft, railroads, and motor carriers. State governments establish noise standards for those sources not regulated by federal standards such as automobiles, light trucks, motor boats and motorcycles. Other noise sources associated with construction, as well as industrial and commercial activities, are usually regulated by noise ordinances and general plan policies, which are established by local jurisdictions.

FEDERAL

Noise Control Act of 1972

The Noise Control Act (NCA) of 1972 directed the United States Environmental Protection Agency (U.S. EPA) to promote an environment for all Americans free from noise that jeopardizes their health and welfare. The NCA directed that all federal agencies comply with applicable federal, state, interstate, and local noise control regulations. It also required that the U.S. EPA establish criterion for noise level adequate to protect health and welfare with an adequate margin of safety but without regard to cost or feasibility. In addition, the U.S. EPA was also given the responsibility for coordinating federal research and activities related to noise control, and establishing federal noise emission standards for selected products distributed in interstate commerce. The NCA was subsequently amended by the Quiet Communities Act of 1978, which encouraged the development of noise control programs at the State and community level (Caltrans 2002[a]).

U.S. Environmental Protection Agency

A report published in 1974 by the U.S. EPA, Office of Noise Abatement and Control, continues to be a source of useful background information. Entitled *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*, this report is better known as the “Levels Document.” The document is intended to “provide state and local governments as well as the federal government and the private sector with an informational point of departure for the purposes of decision-making.” Using Yearly Day-Night Average Sound Level (DNL) as a measure of noise acceptability, the document states that “undue interference with activity and annoyance” will not occur if outdoor noise levels in residential areas are below DNL 55 dB and indoor levels are below DNL 45 dB. These thresholds include an “adequate margin of safety” as the document title indicates (U.S. EPA 1974).

Department of Housing and Urban Development (HUD)

HUD guidelines for the acceptability of residential land use are set forth in the Code of Federal Regulations (CFR) Title 24, Part 51, “Environmental Criteria and Standards.” These guidelines parallel those suggested in the FICUN report: noise exposure of DNL 65 dB or less is acceptable; between 65 and 75 dB is normally acceptable if appropriate sound attenuation is provided; and above DNL 75 dB is unacceptable. The goal for interior noise levels is DNL 45 dB. These guidelines apply only to new construction supported by HUD grants and are not binding upon local communities (Caltrans 2002[a]).

Federal Aviation Administration

Title 14 of the CFR, Part 150, "Airport Noise Compatibility Planning," prescribes the procedures, standards, and methodology to be applied airport noise compatibility planning activities. Noise levels below 65 L_{dn} are normally considered to be acceptable for noise sensitive land uses (Caltrans 2002[a]).

Federal Highway Administration

Federal Highway Administration (FHWA) regulations (23 CFR 772) specify procedures for evaluating noise impacts associated with federally funded highway projects and for determining whether these impacts are sufficient to justify funding noise abatement actions. The FHWA noise abatement criteria are based on worst hourly Leq sound levels, not L_{dn} or CNEL values. The worst-hour 1-hour L_{eq} criteria for residential, educational, and healthcare facilities are 67 dBA outdoors and 52 dBA indoors. The worst-hour 1-hour L_{eq} criterion for commercial and industrial areas is 72 dB (outdoors).

The FHWA document, *Highway Traffic Noise Analysis and Abatement: Policy and Guidance* (1995), calls for each state highway agency to prepare and adopt written guidelines specific to that state which must demonstrate compliance with 23CFR772. State highway agencies are allowed flexibility to establish their own definitions and quantifications of different criteria and decision items that are used in the guidelines to make noise abatement determinations.

Federal Transit Administration

The Federal Transit Administration (FTA) procedures for the evaluation of noise from transit projects are specified in the document titled, "Transit Noise and Vibration Impact Assessment". The FTA Noise Impact Criteria categorizes noise sensitive land uses as follows (FTA 2006):

- Category 1: buildings or parks where quiet is an essential element of their purpose.
- Category 2: residences and buildings where people normally sleep. This includes residences, hospitals, and hotels where nighttime sensitivity is assumed to be of utmost importance.
- Category 3: institutional land uses with primarily daytime and evening use. This category includes schools, libraries, churches, and active parks. L_{dn} is used to characterize noise exposure for residential areas (Category 2). For other noise sensitive land uses, such as outdoor amphitheaters and school buildings (Categories 1 and 3), the maximum 1-hour Leq during the facility's operating period is used. Noise impacts are identified based on absolute predicted noise levels and increases in noise associated with the Project.

L_{dn} is used to characterize noise exposure for residential areas (Category 2). For other noise sensitive land uses, such as outdoor amphitheaters and school buildings (Categories 1 and 3), the maximum 1-hour Leq during the facility's operating period is used. Noise impacts are identified based on absolute predicted noise levels and increases in noise associated with the Project.

Federal Railroad Administration

Federal Railroad Administration noise standards are the same as those specified by FTA.

STATE

California Motor Vehicle Code

The California Motor Vehicle Code sets standards for light trucks (less than 4.5 gross tons), passenger cars, and other motor vehicles. **Table 3.8-5** lists the noise standards for the sale of new vehicles in California, while **Table 3.8-6** contains noise standards for the operation of vehicles at different speeds.

TABLE 3.8-5: MOTOR VEHICLE NOISE LIMITS

SALES OF NEW VEHICLES	DATE OF MANUFACTURE	DBA VALUE AT 50 FEET
Motorcycles (including all motorcycles other than motor-driven cycles)	Before 1970	92
	After 1969, Before 1973	88
	After 1972, Before 1975	86
	After 1974, Before 1986	83
	After 1985	80
Vehicles with gross vehicle weight of 3 tons or more	After 1967, Before 1973	88
	After 1972, Before 1975	86
	After 1974, Before 1978	83
	After 1977	80
Any other motor vehicle	After 1967, Before 1973	86
	After 1972, Before 1975	84
	After 1974	80
Noise level limits for the operation of off-highway motor vehicles	Before 1973	92
	After 1972, Before 1975	88
	After 1974	86

Source: California Vehicle Code (1992)

TABLE 3.8-6: VEHICLE OPERATION NOISE LIMITS

OPERATION OF VEHICLE	LESS THAN 35 MPH	36 TO 45 MPH	OVER 45 MPH
Any motor vehicle with a manufacturer's gross vehicle weight rating of 6,000 lbs. or more and any combination of vehicles towed by such a motor vehicle.	82 dBA	--	--
Any motor vehicle with a manufacturer's gross vehicle weight rating of 10,000 lbs. or more and any combination of vehicles towed by such a motor vehicle.	--	86 dBA	90 dBA
Any motorcycle other than a motor driven cycle.	77 dBA	82 dBA	86 dBA
Any other motor vehicle and any combination of vehicle towed by such motor vehicle.	74 dBA	76 dBA	82 dBA

SOURCE: CALIFORNIA VEHICLE CODE (1992)

State of California Public Utilities Code

Section 21669, Article 3, Chapter 4, Part 1, Division 9 of the California Public Utilities Code (PUC) (Aeronautics Law) provides the legislative authority to adopt noise standards governing the operation of aircraft and aircraft engines for airports. Caltrans Division of Aeronautics is the agency responsible for compliance with this PUC section. Section 21662.4 (a), Article 3, Chapter 4, Part 1, Division 9 of the PUC exempts emergency service helicopters from local ordinances (Caltrans 2002[a]).

State Aeronautics Act

Chapter 4, Article 3, Section 21669 of the State Aeronautics Act (Division 9, Part 1 of the California Public Utilities Code) requires the State Department of Transportation to adopt— to an extent not prohibited by federal law—noise standards applicable to all airports operating under a state permit (Caltrans 2002[a]).

California Airport Noise Regulations

The airport noise standards promulgated in accordance with the State Aeronautics Act are set forth in Section 5000 et seq. of the California Code of Regulations (Title 21, Division 2.5, Chapter 6). The current version of the regulations became effective in March 1990.

In Section 5006, the regulations state that: “The level of noise acceptable to a reasonable person residing in the vicinity of an airport is established as a community noise equivalent level (CNEL) value of 65 dBA for purposes of these regulations. This criterion level has been chosen for reasonable persons residing in urban residential areas where houses are of typical California construction and may have windows partially open. It has been selected with reference to speech, sleep and community reaction.” In accordance with procedures listed in Section 5020, the county board of supervisors can declare an airport to have a “noise problem.” As specified in Section 5012, no such airport shall operate “with a noise impact area based on the standard of 65 dBA CNEL unless the operator has applied for or received a variance as prescribed in...” the regulations. For designated noise problem airports, the “noise impact area” is the area within the airport’s 65 dB CNEL contour that is composed of incompatible land uses. Four types of land uses are defined as incompatible (Caltrans 2002[a]):

- Residences of all types;
- Public and private schools;
- Hospitals and convalescent homes; and
- Churches, synagogues, temples, and other places of worship.

However, these uses are not deemed incompatible if any of several mitigative actions has been taken as spelled out in Section 5014. Among these measures are airport acquisitions of an aviation easement for aircraft noise and, except for some residential uses, acoustical insulation adequate to ensure that the interior CNEL due to aircraft noise is 45 dBA or less in all habitable rooms (Caltrans 2002[a]).

Caltrans Division of Aeronautics

The California Department of Transportation (Caltrans), Division of Aeronautics, has adopted the Community Noise Equivalent Level (CNEL) as the noise descriptor to be used in describing the noise impact boundary of California airports. The Division of Aeronautics has identified a noise impact criterion of 65 dBA CNEL for noise-sensitive land uses, such as single family dwellings. The CNEL descriptor is typically about 1 dB more than the L_{dn} because it applies an additional penalty for noise sources between the hours of 7:00 p.m. and 10:00 p.m. The L_{dn} descriptor only applies a penalty to noise levels between the hours of 10:00 p.m. and 7:00 a.m. (Caltrans 2002[a]).

California Noise Insulation Standards

Title 24 CCR Part 2, "California Noise Insulation Standards," establishes minimum noise insulation standards to protect persons within new hotels, motels, dormitories, long-term care facilities, apartment houses, and dwellings other than single family residences. Under this regulation interior noise levels attributable to exterior noise sources cannot exceed 45 Ldn in any habitable room. Where such residences are located in an environment where exterior noise is 60 Ldn or greater, an acoustical analysis is required to ensure that interior levels do not exceed the 45 Ldn interior standard.

State of California General Plan Guidelines

Section 65302(f) of the California Government Code (Title 7, Division 1, Chapter 3, Article 5), requires that a noise element be included as part of local general plans. Transportation noise sources are among the noise sources to be analyzed and addressed in general plans. To the extent practical, both current and future noise contours (expressed in terms of either CNEL) are to be included. The noise contours are to be "used as a guide for establishing a pattern of land uses...that minimizes the exposure of community residents to excessive noise (OPR 2003)."

Guidance on the preparation and content of general plan noise elements is provided by the Office of Planning and Research in its General Plan Guidelines (1998). This guidance represents an updated version of guidelines originally published by the State Department of Health Services in 1976. Included in the document are recommended noise compatibility criteria for a variety of land use designations. These standards may be adjusted to reflect noise-source characteristics and to reflect the communities noise control goals and sensitivities to noise pollution (OPR 2003).

LOCAL

General Plan Noise Elements

The County and incorporated Cities each have a Noise Element within their respective General Plans. Each Noise Element is prepared consistent with the requirements of the California Government Code. The Noise Elements address noise associated with transportation sources and they include noise contours for current and future conditions. These noise contours are used as a guide to help identify noise constraints that prohibit certain uses in certain locations, or require noise attenuation to ensure that noise levels are within an allowable level. The Noise Element also identifies the allowable noise

levels associated with specific land uses, noise attenuation recommendations, and construction related noise measures.

3.8.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the project will have a significant impact related to noise if it will result in:

- Exposure of persons or generation of noise levels in excess of standards in the local general plan or noise ordinances 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.
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project
- Expose people residing or working in the project area to excessive noise levels (for a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport).
- Expose people residing or working in the project area to excessive noise levels (for a project within the vicinity of a private airstrip).

The proposed project would not result in any operational changes (e.g., changes in flight patterns) to Butte County Airports or result in the placement of new land uses in the vicinity of any airports. Therefore, exposure to aircraft noise levels would not apply to the proposed project and are not addressed further in this section.

IMPACTS AND MITIGATION MEASURES

Impact 3.8-1: Exposure of Noise-Sensitive Land Uses to Short-Term Construction Noise (less than significant with mitigation)

General Construction Activities: The MTP/SCS does not directly cause a noise impact, although it could indirectly have noise impacts as a result of development and operation of individual projects during both the short and long-term. A majority of the proposed improvements identified in the MTP, with the exception of changes in transit operations, transportation demand management, and regional planning, would require some level of construction. Larger construction-related projects, such as interchange improvements, bridge improvements, and road realignment and widening projects, would be of particular concern given the noise and ground-borne vibration generation potential of these projects. The SCS would not increase development beyond that already planned for under the General Plans for local agencies, as such construction related noise impacts caused by the SCS are not of particular concern.

Noise levels typically associated with construction equipment and distances to predicted noise contours are summarized in Table 3.8-4. As indicated, maximum intermittent noise levels associated with construction equipment typically range from approximately 77 to 95 dBA L_{max} at 50 feet. Pile driving and demolition activities involving the use of pavement breakers and jackhammers, and are among the noisiest of activities associated with transportation improvement and construction projects. Depending on equipment usage and duration, average-hourly noise levels at this same distance typically range from approximately 73 to 88 dBA L_{eq} . Distances to predicted noise contours would, likewise, vary depending on the specific activities conducted and equipment usage. Delivery vehicles, construction employee vehicle trips, and haul truck trips may also contribute to overall construction noise levels.

Increases in ambient noise levels associated with construction projects located near sensitive land uses can result in increased levels of annoyance, as well as potential violation of local noise standards. Construction activities occurring during the more noise-sensitive nighttime hours would be of particular concern, given the potential for increased sleep disruption. Impacts to sensitive receptors resulting from proposed transportation improvement and construction projects would depend on several factors, such as the equipment used, surrounding land uses, shielding provided by intervening structures and terrain, and duration of construction activities.

The following mitigation measure would limit construction to the daytime hours, to the extent feasible, and would require equipment to be properly maintained and muffled. Furthermore, this mitigation measure provides resident notification requirements, and measures to resolve noise complaints. Implementation of Mitigation Measure 3.8-1 would reduce this impact to a **less-than-significant** level.

Groundborne Vibration: Groundborne vibration and noise levels associated with highway traffic is typically considered to pose no threat to buildings and potential annoyance to people would be minimal. Traffic vibration levels are typically highest associated with truck passbys. Automobile traffic normally generates vibration peaks of one-fifth to one-tenth that of trucks. Based on measurements conducted by Caltrans, even the highest truck generated vibrations, which were measured at approximately 16 feet from the centerline of the near travel-lane, were not found to exceed 0.08 in/sec. This level coincides with the maximum recommended “safe level” for ruins and historical structures (Caltrans 2002(b), 2004).

Construction activities would, however, require the use of off-road equipment which could adversely affect nearby land uses. Groundborne vibration levels commonly associated with construction equipment typically associated with transportation projects are summarized in Table 3.8-4. As indicated, the highest groundborne vibration levels would be generated by the use of pile drivers and vibratory rollers. Groundborne vibration levels associated with proposed construction improvement projects could potentially exceed recommended criteria for structural damage and/or human annoyance (0.2 and 0.1 in/sec ppv, respectively) at nearby existing land uses. As a result, exposure to construction-generated groundborne vibration levels would be considered **potentially significant**.

Mitigation Measure 3.8-1 would limit construction to the daytime hours, to the extent feasible, and would require use of equipment with reduced equipment noise/vibration levels, to the extent practical.

The level of mitigation would be project and site specific and would include measures normally required by Caltrans, as well as requirements under the General Plan Noise Elements and Noise Ordinances of the applicable jurisdictions. Implementation of the following mitigation measure would reduce this potential impact to a *less-than-significant* level.

MITIGATION MEASURE

Mitigation Measure 3.8-1: *Subsequent projects under the MTP/SCS shall be designed and implemented to reduce adverse construction noise and vibration impacts to sensitive receptors, as feasible. Measures to reduce noise and vibration effects may include, but are not limited to:*

- *Limit noise-generating construction activities, excluding those that would result in a safety concern to workers or the public, to the least noise-sensitive daytime hours, which is generally 6am to 9pm.*
- *Construction of temporary sound barriers to shield noise-sensitive land uses.*
- *Location of noise-generating stationary equipment (e.g., power generators, compressors, etc.) at the furthest practical distance from nearby noise-sensitive land uses.*
- *Phase demolition, earth-moving and ground-impacting operations so as not to occur in the same time period.*
- *Use of equipment noise-reduction devices (e.g., mufflers, intake silencers, and engine shrouds) in accordance with manufacturers' recommendations.*
- *Substituting noise/vibration-generating equipment with equipment or procedures that would generate lower levels of noise/vibration. For instance, in comparison to impact piles, drilled piles or the use of a sonic or vibratory pile driver are preferred alternatives where geological conditions would permit their use.*
- *Other specific measures as they are deemed appropriate by the implementing agency to maintain consistency with adopted policies and regulations regarding noise.*
- *Comply with all local noise control and noise rules, regulations, and ordinances.*

Impact 3.8-2: Exposure of Noise-Sensitive Land Uses to Increases in Traffic Noise (less than significant with mitigation)

The MTP/SCS does not directly cause a noise impact, although it could indirectly have noise impacts as a result of development and operation of individual projects during both the short and long-term. While many of the MTP projects will likely have no effect on the operational noise generation of the facility, some transportation improvement projects, which involve new facilities or capacity enhancements for existing facilities, could affect noise-sensitive land uses. Noise-sensitive land uses could be exposed to noise in excess of normally acceptable noise levels or increases in noise as a result of the operation of expanded or new transportation facilities (i.e., increased traffic resulting from roadway capacity improvements, new transit facilities, etc.).

The county and incorporated communities have adopted Noise Elements of their General Plans that establish noise-related policies that, when implemented, protect sensitive receptors from significant

noise. The policies that are laid out in the Noise Element(s) are consistent with federal and state regulations designed to protect noise sensitive receptors. During the design process, the implementing agency would be responsible for ensuring that the project is designed consistent with adopted policies and state and federal regulations. Although the policy and regulatory controls for noise-related impacts are in place in the planning area, subsequent improvement projects would result in an increase in traffic noise levels. For most projects, consistency with the adopted policies and established regulations would help to reduce exposure of sensitive receptors to transportation noise levels. In addition, the following mitigation measure would require a project-level noise evaluation for each MTP project that is located near a sensitive receptor. The noise evaluation would identify areas that would have elevated noise levels as a result of the project and require measures to attenuate the noise to an acceptable level. Such measures could include constructing earth berms, sound walls, establishing buffers, or improving acoustical insulation in residential units. Implementation of this mitigation measure would reduce this impact to a **less-than-significant** level.

MITIGATION MEASURE

***Mitigation Measures 3.8-2:** Prior to approval of MTP projects, the implementing agency shall perform a project-level noise evaluation. For projects adjacent to noise-sensitive uses, implementing agencies shall consider the following measures:*

- *Construct vegetative earth berms with mature trees and landscaping to attenuate roadway noise on adjacent residences or other sensitive use, and /or sound walls or other similar sound-attenuating buffers, as appropriate.*
- *Properly zone, buffer, and restrict development to ensure that future development is compatible with transportation facilities.*
- *Design projects to maximize the distance between noise-sensitive land uses and new roadway lanes, roadways, rail lines, transit centers, park-and-ride lots, and other new noise generating facilities.*
- *Improve the acoustical insulation of residential units where setbacks and sound barriers do not sufficiently reduce noise.*
- *Establish speed limits and limits on hours of operation of rail and transit systems.*

This section describes existing and future regional multi-model transportation related conditions associated with implementation of the proposed MTP/SCS. The analysis in this section addresses existing and future transportation conditions both with and without the proposed project. Information in this section is derived from the MTP, the SCS, and from the traffic modeling efforts prepared by Fehr & Peers.

3.9.1 SETTING

REGIONAL ROAD NETWORK

Physical Constraints and Road System

The geography of Butte County constrains transportation and circulation. In the flat valley of the southwestern portion of the county, the circulation system is affected most significantly by the Feather River. The river bisects the lower portion of the county running south. In the foothills and mountains of the eastern part of the county, travel is limited to east-west roadways that run through valleys and canyons. Man-made barriers also constrain automobile traffic. For instance, the circulation system is affected by the railroad tracks running north-south parallel to the state highways. 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 over 2,100 miles of public roadways under the jurisdiction of various government entities. These roadways carry an estimated 1,703 million miles of travel demand annually, according to the 2000 Caltrans California Motor Vehicle Travel Forecast.

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. The resulting hierarchy of roadways, as well as the general characteristics of each type, is described below. 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.

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.

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.

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.

Major Roadways in Butte County

FREEWAYS

Butte County has two segments of four-lane limited-access freeway or expressway. One segment is State Route 70 between 0.4 miles south of SR 162 through Oroville to the junction of SR 149. The other segment is State Route 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 State Route 99 and part of State Route 70 as described below. Because these state routes have only two segments of freeway, the Butte region has one of only two standard metropolitan statistical areas (SMSAs) in the United States that is not served by an interstate freeway.

REGIONAL HIGHWAYS

Six State Highways serve as regional highways in Butte County. These highways, which provide the primary access through the county, are listed in Table 3.9-1.

TABLE 3.9-1: STATE HIGHWAYS IN BUTTE COUNTY

State Route 32	State Route 99	State Route 162
State Route 70	State Route 149	State Route 191

OTHER SIGNIFICANT ROADWAYS

A number of arterial and collector roadways in Butte County are regionally significant in that they serve regional population areas. Most of these are part of the county's roadway network. Figure 3.9-1 presents the major roadways in the network.

Transportation Performance

The following regional-level performance measures are used to evaluate the transportation impacts in this EIR.

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.

3.9 TRANSPORTATION AND CIRCULATION

CONGESTED VEHICLE MILES OF TRAVEL (CVMT)

Congested vehicle miles traveled (CVMT) is the portion of VMT traveling on a roadway that is 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.

Table 3.9-2 summarizes weekday VMT and CVMT for Butte County based on year 2010 estimates from the BCAG TDF model. The 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 in Table 3.9-2 includes all vehicles (including heavy vehicles) and was developed using a boundary 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). While developed using the same approach, VMT reported in this section are different than the VMT reported in the Greenhouse Gases and Climate Change section for comparable scenarios because they exclude VMT from heavy vehicles.

TABLE 3.9-2: BUTTE COUNTY WEEKDAY VMT – 2010 CONDITIONS

POPULATION	VMT	VMT/CAPITA	CVMT	CVMT/CAPITA
221,800	4,321,200	19.48	31,850	0.14

SOURCE: FEHR & PEERS, 2012

BCAG TRAVEL DEMAND FORECASTING MODEL

TRANSIT

Transit Authority

While the automobile is the primary mode of travel in Butte County and all other rural areas in California, this MTP/SCS, the Butte County General Plan, and the general plans of the local jurisdictions support a balanced transportation system that coordinates mass transit, private autos, and other modes.

Public transit service is provided by Butte Regional Transit (B-Line). B-Line provides fixed-route and demand responsive service (Paratransit). Other transit service is provided by Glenn Ride (service between Chico and Glenn County), Plumas County Transit (service between Quincy and Chico), various social service agencies, Greyhound Bus Lines, and other private transportation services including limousines, airport shuttles, taxi service, pedi-cabs, and non-emergency medical transportation.

Fixed Route Public Transit

Butte Region Transit (B-Line) is a countywide public transit systems that provides both inter-city and intra-city transit services. 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 (75 percent) of the ridership of the B-Line system. Ten 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 are specifically designated as student shuttle routes and connect the university and downtown with the major student-housing corridors.

Operating hours are 6:15 a.m. to 8:45 p.m. Monday through Friday with some service as late as 10:00 p.m. Saturday service runs between 8:15 a.m. and 6:15 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, 7:00 a.m. to 6:00 p.m. Weekend service is provided by an intra-city line that serves additional stops on Saturday and Sunday. Local service is not provided on 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 Paradise and Chico is provided by two separate routes that operate 7 days a 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. Operating hours are from 6:20 a.m. to 7:10 p.m. Monday through Friday, except for major holidays. Service on Saturday between Paradise and Magalia is limited to one run at 10:00 a.m. and a second at 5:00 p.m. Sunday service is provided to Paradise between 10:20 a.m. and 5:10 p.m.

Inter-city service to Chico, and Oroville is provided by two routes. Regional service is provided 7 days a week.

AVIATION

Overview of Aviation Facilities

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

This facility is the largest airport in Butte County and the only one having regularly scheduled commercial service. It is owned and operated by the City of Chico. The airport is located to the north of the city, west of Cohasset Road. The airport currently handles about 70,000 aircraft takeoffs and landing annually and is home to approximately 130 aircraft.

The Chico Municipal Airport is served by one commuter airline, United Express, with daily direct flights available to San Francisco. There are daily commercial departures and arrivals. There are also daily Federal Express operations, a charter service, and four cargo carriers. The remainder of takeoffs and landings are other private general aviation aircraft, the California Department of Forestry, US Forest Service, corporate charter flights and medical deliveries.

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).

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 surrounding unincorporated county area includes the community of Thermalito situated northeast of the airport. To the southwest and southeast lie state-owned water project and wildlife refuge lands. 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 California Aviation System Plan for 2001, this airport serves a moderate 36,500 annual operations. Approximately 93 percent of these operations are by single-engine general aviation aircraft and two percent by business jets. There are currently 89 aircraft based at the airport.

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. Aircraft based at Paradise Skypark total 46, including 40 single engine and three multi-engine planes, one glider, and two ultra-light aircraft. Annual operations for the year ending in 1991 were 12,000 and have remained constant.

RANCHAERO AIRPORT

The Ranchaero 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. Flight instruction makes up a large portion of its daily operations. Ranchaero Airport is 23.5 acres in size and is defined as a general aviation airport. 39 aircraft are based there, including 36 single engine and three multi-engine airplanes. Annual aircraft operations were estimated at 5,000 and are projected to remain constant.

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.

GOODS MOVEMENT

Rail Transport

Butte County is served by Union Pacific Railroad. The Union Pacific maintains 100.4 miles of mainline track in Butte County; one, 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 passes through Oroville.

The western track serves 18 to 24 trains a day. The eastern track serves 6 to 26 trains a day. Goods shipped by the railroad include bulky items such as grains, rice, vehicles, lumber, and fuel.

Air Transport

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.

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.

NON-MOTORIZED TRANSPORTATION

Bicycles

Since Butte County has a mild climate, bicycling is popular 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. With statutory requirements for complete streets in California, 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.

Bikeway facilities in Butte County are typically planned to interface with facilities planned by BCAG and as identified in each of the local adopted bicycle plans. Planned facilities include bikeway facilities along River Road, Chico River Road and Old Humboldt Road in the Chico Area. Bikeway facilities are also planned along Skyway, Neal Road, Pentz Road, and Midway to connect Chico with Paradise and Durham. Future County bikeway facilities are also planned along Table Mountain Boulevard, Larkin Road, Gridley-Colusa Highway, Olive Highway, and Miners Ranch Road to highlight some of the major routes.

Pedestrian

The majority 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.

TRANSPORTATION SYSTEMS MANAGEMENT

Intelligent Transportation Systems

Intelligent Transportation Systems (ITS) apply electronics, computers, and technology to more efficiently manage transportation systems and assets. The main purpose of ITS architecture is to help involved transportation agencies plan, develop, and deploy their systems in a coordinated and consistent manner. Other equally important purposes are to eliminate redundant efforts, stretch funding dollars, and ensure that ITS deployment in the North Valley is coordinated with ITS protocols in adjacent regions.

In the fall of 2003, BCAG initiated the development of an ITS Regional Architecture and Strategic Deployment Plan (SPD) conforming to the requirements of 23 CFR Parts 655 and 940 for Butte, Glenn, and Colusa counties. BCAG took the lead in developing a multi-county ITS-SDP in partnership with Glenn County, Colusa County, Caltrans, and FHWA, with the assistance of a qualified consultant to serve as the ITS Coordinator.

A minimal amount of ITS is already in place in the three county region, with further implementation planned for the period covered by the MTP and SCS.

The ITS Plan details how various systems and agencies (transportation and emergency agencies) connect and interconnect. The Plan provides guidance in defining agency roles and responsibilities, system functional requirement project sequencing, and developing required agency agreements.

3.9.2 REGULATORY SETTING

FEDERAL

The primary federal requirements applicable to transportation components of the MTP/SCS relate to transportation planning and funding and conformity with federal air quality requirements. Requirements for MTPs are addressed in the metropolitan transportation planning rules in 23 Code of Federal Regulations (CFR) 450 and 49 CFR 316. These federal regulations incorporate the most recent transportation statute affecting federal funding for transportation projects, i.e., Safe,

Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users or SAFETEA-LU, enacted in 2005. The most recent regulatory changes, which comprehensively updated regulations to reflect the 2005 SAFETEA-LU provisions, were promulgated by the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) and published in the February 14, 2007 Federal Register.

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

- MTPs 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;
- MTPs must be developed at least every four years for non-attainment regions;
- MTPs must have a planning period of at least 20 years into the future;
- MTPs must reflect the most recent assumptions for population, travel, land use, congestion, employment, and economic activity;
- MTPs must have a financially constrained element, and transportation revenue assumptions must be reasonable;
- MTPs 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;
- MTPs must consider eight planning factors and strategies, in the local context; and
- MTPs must provide for the development of accessible pedestrian walkways and bicycle transportation facilities.

National Environmental Policy Act

The National Environment Policy Act of 1969 (NEPA) requires federal agencies to assess the possible environmental consequences of projects which they propose to undertake, fund, or approve. While the MTP is not subject to NEPA, individual federally funded programs or projects requiring federal approval will be subject to a NEPA evaluation.

Recent changes to NEPA requirements and structure are outlined in the MAP-21 bill. One statute allows states that meet applicable criteria to take over the NEPA review process from USDOT. California was one of 5 states that had already been granted control of NEPA review, so this statute only reaffirms the state's authority.

Additional changes include the option to set an upper limit on the length of NEPA review and to penalize federal agencies for missing the deadlines.

STATE

California Transportation Commission: Regional Transportation Plan Guidelines

California law requires preparation of a Regional Transportation Plan (RTP), which is referred to as a Metropolitan Transportation Plan (MTP) in Butte County and other areas of California, as part of

the funding process for transportation projects. State planning guidelines call for the adoption and submittal of an RTP (or MTP) to the California Transportation Commission and Caltrans every four years for regions in non-attainment with air quality standards. The California Government Code requires that the RTP (or MTP) address three distinct elements: a policy element, an action element, and a financial element. SB 375, Statutes of 2008, added a fourth element, the SCS (see below).

In 2010, the California Transportation Commission adopted the *2010 Regional Transportation Plan Guidelines*, which provide additional technical direction for MPOs on a variety of technical topics including travel demand forecasting.

California Air Resources Board: Global Warming Solutions Act (AB 32), and Sustainable Communities and Climate Protection Act (SB 375)

In 2006, the California State Legislature passed Assembly Bill (AB) 32, the Global Warming Solutions Act of 2006, which requires California to reduce GHG emissions to 1990 levels by 2020. This legislation is relevant to MPOs because a large percentage of existing GHG emissions is from the transportation sector. According to ARB, the transportation sector contributes over 40 percent of the GHGs throughout the state.

In 2008, the state of California adopted Senate Bill (SB) 375. This bill is intended as an implementation tool for AB 32 to lower GHG emissions from passenger vehicles and light trucks by reducing VMT through transportation and land use strategies. SB 375 sets greenhouse gas (GHG) reduction targets for all California MPOs and requires the preparation of a Sustainable Communities Strategy (SCS) as part of the current MTP update to explain the transportation and land use strategies that will meet the GHG targets.

The ARB targets are expressed as percent changes in per capita emissions from the 2005 base year to years 2020 and 2035. Below are targets for the BCAG region, approved in 2011:

- 1% maximum increase in per capita emissions by 2020
- 1% maximum increase in per capita emissions by 2035

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 further described below.

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.

An important consideration in the development of the policy update of the General Plan will be consideration of the Airport Compatibility Zones in respect to General Plan land use designations. Where land use conflicts continue to exist between the General Plan and the 2000 ALUCP, the Board of Supervisors may choose to initiate further planning processes with 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 MTP are intended to supplement these local standards by focusing on overall system performance.

3.9.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

The proposed project would result in significant impacts under CEQA if implementation of the plan would cause any of the following to occur:

- An increase in vehicle miles traveled (VMT) per capita above baseline conditions for the region.
- An increase in VMT on congested roadways (CVMT) per capita relative to baseline conditions.
- Disruption or interference with existing or planned public transit facilities.
- Disruption or interference with existing or planned bicycle and pedestrian facilities.

- Disruption with the movement of agricultural products on rural roadways.
- Disruption to goods movement along the regional road system.

IMPACTS AND MITIGATION MEASURES

This section evaluates how changes in land use pattern may impact the transportation environment. Each significance criteria is evaluated at a regional level.

The proposed MTP/SCS has one horizon year, Year 2035 conditions, which represents long-term cumulative conditions and corresponds to the approximately 20-year planning horizon for the Regional Plan Update.

Methods and Assumptions

POPULATION AND LAND USE PROJECTIONS

BCAG prepared three distinctive land use growth scenarios for the purpose of illustrating the travel effects of different development patterns on the regional transportation system to accommodate a population growth of about 111,000. The following framework was developed for describing the land use growth associated with each scenario, which includes the following five distinct Growth Area Types:

- **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

3.9 TRANSPORTATION AND CIRCULATION

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 Action 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.

All three scenarios were prepared using the same regional employment, population and housing growth projections and regional transportation network. The following land use variables were adjusted to create the distinctive scenarios:

- The amount of development occurring in the five growth areas (i.e., Urban Center and Corridor, Established, New, Rural, and Agricultural).
- The levels of infill and redevelopment occurring within the Urban Center and Corridor and Established Growth Areas.
- The shares of single-family to multi-family development.
- The amount of growth being accommodated within each local jurisdiction.

The three scenarios are summarized below.

Scenario 1 - Balanced

- Balanced share of new housing within the center, established and new growth areas
- Contains reasonable levels of infill and redevelopment
- Consistent with local land use plans and draft conservation plan
- Consistent with BCAG long-term regional growth forecasts by jurisdiction

Scenario 2 - Dispersed

- Largest share of single-family housing with a greater amount of growth directed to the new, rural, and agricultural growth areas
- Minimize the amount of infill and redevelopment
- Exceeds the unincorporated areas local land use plans reasonable capacities for growth

Scenario 3 - Compact

- Greatest share of infill and redevelopment within the established and center growth areas
- Highest share of multi-family housing
- Exceeds the incorporated areas local land use plans reasonable capacities for growth

Figures 3.9-2 and 3.9-3 compare the geographic distribution of residential and non-residential land use, respectively, of each land use scenario.

As shown on Figure 3.9-2, as the name implies, the distribution residential land use for Scenario 1 is balanced between Scenario 2 – Dispersed and Scenario 3 – Compact. In general, the more widely dispersed residential land use of Scenario 1 and 2 are in the lower density range. However, there are areas with higher residential densities that are common to all three scenarios that generally occur in the New Growth Areas.

As shown on Figure 3.9-3, the distribution of non-residential land use is similar in all three scenarios with the difference between the scenarios occurring as a result of the intensity of non-residential development in those areas.

Scenario 1 is the preferred scenario and considered the proposed project for the purpose of the environmental analysis.

TRAVEL DEMAND MODELING

BCAG maintains a countywide travel demand forecasting (TDF) model. In response to the requirements and recommendations of the *2010 California Regional Transportation Plan Guidelines*, California Transportation Commission, BCAG conducted a comprehensive update of the regional model for use in developing and evaluating the transportation impacts of the MTP/SCS. The BCAG TDF Model encompasses Butte County, which includes the cities of Chico, Paradise, Oroville, Biggs, and Gridley. The comprehensive update included the following enhancements:

- New 2010 socioeconomic data inputs (e.g., households and employment)
- Updated roadway classifications to be consistent with the 2008 RTP
- New 2010 traffic counts
- Updated TransCAD user interface and additional automated functions
- Enhanced trip generation sub-model to add sensitivity for age of head of household, number of workers, income, household size, and cost of travel
- Addition of multiple time periods – Daily, AM peak period, AM peak hour, PM peak period, PM peak hour, mid-day period, and evening period
- Built Environment Sensitivity – Implementation of the 4D's – Density, Diversity, Design, and Destination
- Fuel Price Sensitivity – added fuel price sensitivity component
- New transit direct ridership forecasting tool
- Updated EMFAC post-processor
- Updated 2020 and 2035 forecast years

To evaluate the suitability of the updated model for developing and evaluating the BCAG MTP/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.

In addition, the BCAG TDF model's estimate of daily vehicle miles of travel (VMT) for Butte County was compared to independent estimates from the Highway Performance Monitoring System (HPMS). VMT values from HPMS are also a model estimate based on a limited set of existing traffic counts. The purpose of comparing these two estimates is to determine whether there is any significant difference that would require further investigation of either estimate.

The results of the static validation were within the criteria for acceptance 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 scenarios outlined above. The analysis period is a typical weekday, representative of non-summer/non-holiday conditions with school in session. Separate models were developed for the three land use scenarios outlined above and shown in Figures 3.9-2 and 3.9-3.

TRANSPORTATION PERFORMANCE MEASURES

The following regional-level performance measures are used to evaluate the transportation impacts of the MTP/SCS. The scenario-specific models were used to develop estimates of VMT and CVMT.

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 a 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.

Consistent with the GHG analysis, the VMT estimates include all vehicles (including heavy vehicles) and was calculated using a boundary method estimation 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). While developed using the same approach, VMT reported in this section are different than the VMT reported in the Greenhouse Gases and Climate Change section for comparable scenarios because they exclude VMT from heavy vehicles.

Impact 3.9-1: Cause an increase in vehicle miles traveled (VMT) per capita above baseline conditions for the region (significant and unavoidable).

Table 3.9-3 compares 2010 baseline countywide weekday VMT to year 2035 conditions for the proposed BCAG MTP/SCS (Scenario 1 – Balanced).

TABLE 3.9-3: COUNTYWIDE WEEKDAY VMT – 2035 CONDITIONS

SCENARIO	POPULATION	VMT	VMT/CAPITA
2010 Baseline	221,800	4,321,200	19.48
Scenario 1 - Balanced	332,500	6,564,900	19.74
Scenario 2 - Dispersed		7,082,500	21.30
Scenario 3 - Compact		6,221,200	18.71

SOURCE: FEHR & PEERS, 2012, BCAG TRAVEL DEMAND FORECASTING MODEL

As identified in Table 3.9-3, the proposed MTP/SCS will result in an increase in weekday VMT of about 2.2 million miles over baseline conditions (i.e., a 52 percent increase) due to travel associated with the projected growth in population of about 110,700 residents over baseline conditions (i.e., a 50 percent increase). Consequently, the percentage growth in VMT is greater than the corresponding growth in population, which is an indication of the general accessibility of planned development. In general, future residents will travel farther for daily activities. This trend is also highlighted by the comparison of per capita VMT, which shows that Scenario 1 would result in about a five percent increase over 2010 conditions, another indication that overall daily travel for new residents in Butte County will be less efficient than baseline conditions.

Compared to Scenario 1, Scenario 2, which has a more dispersed land use pattern and lower development intensity, will result in greater increases in absolute and per capita VMT with a per

capita VMT increase of about 15 percent over baseline conditions. Conversely, Scenario 3's more compact development pattern and increased development intensity would result in a decrease in both absolute and per capita VMT over baseline conditions, with a per capita decrease of about one percent, indicating more efficient travel conditions. Reviewing Figure 3.9-2, these VMT trends are consistent with the area allocated for residential growth.

Since the proposed MTP/SCS results in an increase in per capita VMT compared to baseline conditions, this is a **potentially significant** impact.

Mitigating this impact would require actions that reduce vehicle travel. While various options exist that could accomplish this objective, they tend to include two general categories as listed below.

1. Actions that increase the cost of driving or parking.
2. Actions that reduce distances between origins and destinations such that vehicle trips are shorter in length, and the likelihood of walking, bicycling, or riding transit increases.

As part of the MTP/SCS, Scenario 3 was developed to test the effectiveness of a more compact future land use pattern that relies on the second category strategy above to reduce vehicle travel. Adopting compact development strategies similar to those incorporated into Scenario 3 to achieve similar travel reductions would reduce this impact. As shown in Table 3.9-3, Scenario 3 would result in a decrease in per capita VMT compared to baseline conditions, which would reduce the impact to a less than significant level. BCAG supports compact development strategies through the policy of the MTP related to land use strategy and air quality, which support increased walking, biking, and transit use and includes actions to support local agencies with implementation. However, mitigation of this impact would require modification of existing general plans for local governments for which BCAG has no authority. In addition, some of the required land use changes are not be desirable within those communities. For this reason, the impact would remain **significant and unavoidable**.

Impact 3.9-2: Cause an increase in vehicle miles traveled on congested roadways (CVMT) per capita relative to baseline conditions (significant and unavoidable).

Table 3.9-4 compares 2010 countywide weekday CVMT to year 2035 conditions for the proposed BCAG MTP/SCS (Scenario 1 – Balanced).

TABLE 3.9-4: COUNTYWIDE WEEKDAY CVMT – 2035 CONDITIONS

SCENARIO	POPULATION	CVMT	CVMT/CAPITA
2010	221,800	31,900	0.14
Scenario 1 - Balanced	332,500	333,500	1.00
Scenario 2 - Dispersed		363,700	1.09
Scenario 3 - Compact		314,400	0.95

SOURCE: FEHR & PEERS, 2012

BCAG TRAVEL DEMAND FORECASTING MODEL

As identified in Table 3.9-4, the proposed MTP/SCS will result in an increase in weekday CVMT per capita over baseline conditions. Year 2035 CVMT is substantially higher than baseline conditions and ranges from 6.8 to 7.8 times baseline conditions depending on the land use scenario. CVMT is less sensitive to the distribution of lower density residential land use (i.e., a few number of dwelling units with access to lower volume uncongested roadways), included in Scenarios 1 and 2, and is more directly tied to a few New Growth residential areas that are common to all the scenarios. Residential growth in the following three areas contributes to most of the increase in CVMT shown in Table 3.9-4:

- The area north of Gridley, south of Gridley-Biggs Cemetery, east of the Union Pacific Railroad, and west of SR 99
- The planned Rio d'Oro Specific Plan area generally located south of Oroville west of SR 70, east of Pacific Heights Road, and between Palermo Road and Ophir Road
- The North Chico Specific Plan generally located north of Chico, east of SR 99, south of Keefer Road, and along Garner Lane

The following facilities would be congested:

Gridley/Biggs

- SR 99 – Rio Bonito Road to Standish Lane

Oroville

- Pacific Heights Road – West of SR 70
- Ophir Road – SR 70 to Lincoln Boulevard
- Lower Wyandotte Road – Upper Palermo Road to Alverda Drive
- Olive Highway (SR 162) – Oro Dam Boulevard (SR 162) to Canyon Drive

Chico

- Garner Lane – Keefer Road to SR 99
- SR 99 – Two-lane segment just south of Garner Lane

MITIGATION MEASURE

Mitigating this impact would require increasing the capacity of the roadway system and actions that reduce vehicle travel. While there are various options to reduce vehicle travel, they tend to include two general categories as listed below.

1. Actions that increase the cost of driving or parking.
2. Actions that reduce distances between origins and destinations such that vehicle trips are shorter in length, and the likelihood of walking, bicycling, or riding transit increases.

As part of the MTP/SCS, Scenario 3 was developed to test the effectiveness of a more compact future land use pattern that relies on the second category strategy above to reduce vehicle travel. Adopting compact development strategies similar to those incorporated into Scenario 3 to achieve similar travel reductions would reduce this impact. . As show in Table 3.9-4, Scenario 3 would result in a lower increase in per capita CVMT compared to Scenario 1 but not to a level lower than baseline conditions. Therefore, additional capacity improvements (i.e., roadway widening) of the facilities outlined above would be necessary to mitigate this impact to a less than significant level. BCAG supports compact development strategies through the policy of the MTP related to land use strategy and air quality, which support increased walking, biking, and transit use and includes actions to support local agencies with implementation. However, implementation of this mitigation measure would require modification of existing general plans of local governments for which BCAG has no authority. In addition, some of the required land use changes and roadway capacity increasing projects may not be desirable within those communities. Roadway widening may create inconsistencies with other policy that encourage and support walking, bicycling, and transit use. For these reasons, BCAG is acknowledging that, although the implementation of the mitigation measure would reduce the significance of the impact, the impact would remain **significant and unavoidable**. BCAG also acknowledges the possibility that, despite its own commitment to work with partner agencies, compact development strategies similar to those incorporated into Scenario 3 may not be possible. Consistent with CEQA Guidelines Section 15091 subdivision (a)(2), though, BCAG concludes that other agencies can and should cooperate with the BCAG in implementing the mitigation.

Impact 3.9-3: Disrupt or interfere with existing or planned public transit facilities (less than significant)

The MTP/SCS includes short- and long-range transit goals, policy, actions, and projects to support population growth in Butte County. Short-term actions are focused on supporting transit service, operations, and assisting partner jurisdictions with transit planning and funding. Long range projects include the development of a regional bus center in South Chico, new park-and-ride lots, ITS implementation, B-Line fleet expansion, increased bus stop shelters, and a dedicated B-Line maintenance and operations facility. Implementation of the MTP would have a **less than significant** impact on existing or planned transit facilities. No mitigation measure is required.

Impact 3.9-4: Disrupt or interfere with planned bicycle and pedestrian facilities (less than significant)

The MTP/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. The proposed MTP/SCS is designed to be consistent with adopted regional plans, including non-motorized transportation plans. Implementation of the MTP/SCS would have a **less than significant** impact on existing or planned bicycle and pedestrian facilities. No mitigation measure is required.

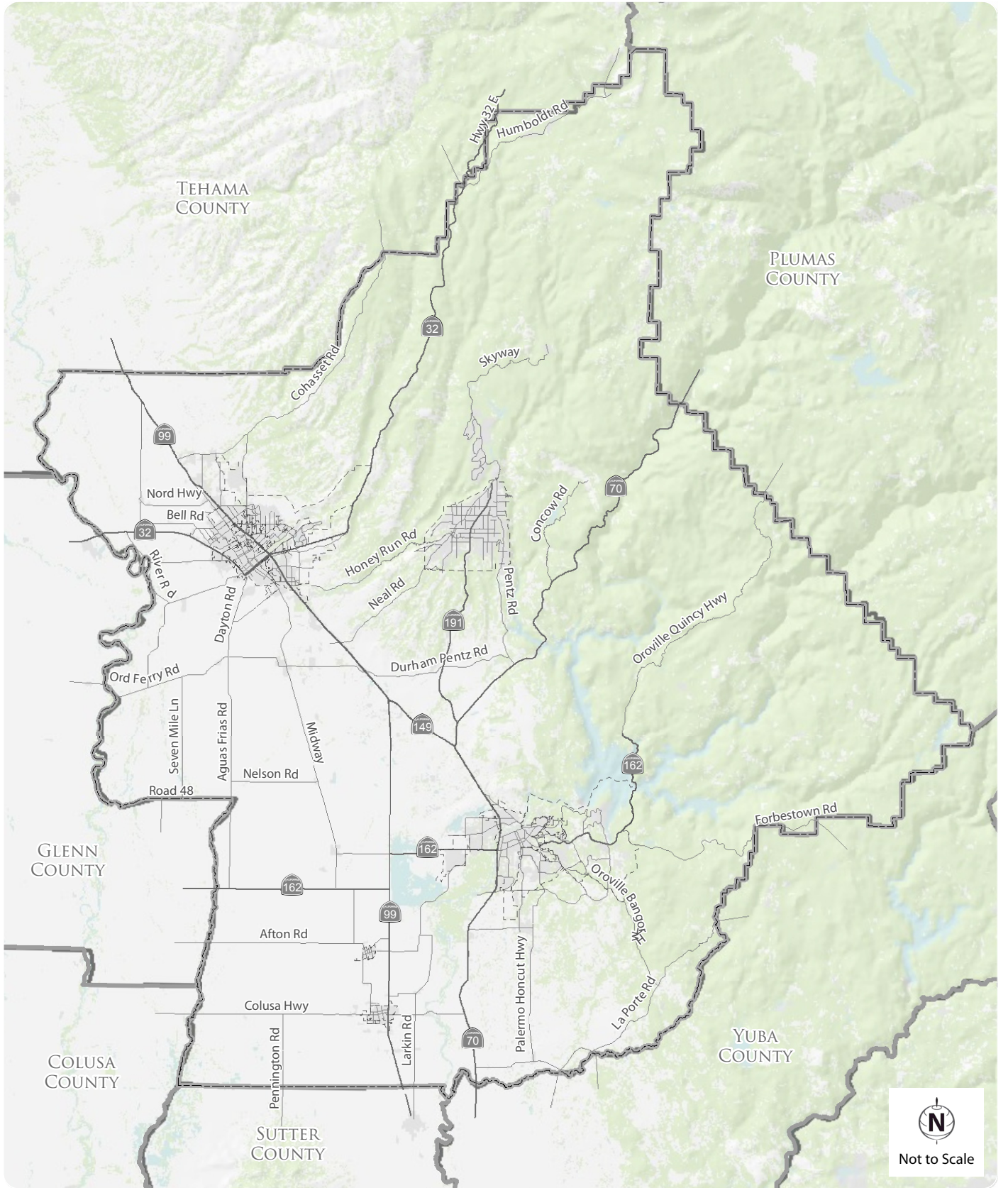
Impact 3.9-5: Disrupt or interfere with the movement of agricultural products on rural roadways (less than significant)

The MTP/SCS includes policy, actions, and projects to support goods movement, including agricultural products on rural roadways in Butte County. Specific to rural roadways, actions include securing, prioritizing, and implementing improvements to the regional roadway system and identifying obstacles that prevent or impede goods movement like eliminating at-grade railroad crossings. This impact is **less than significant**.

Impact 3.9-6: Disrupt goods movement along the regional road system (less than significant)

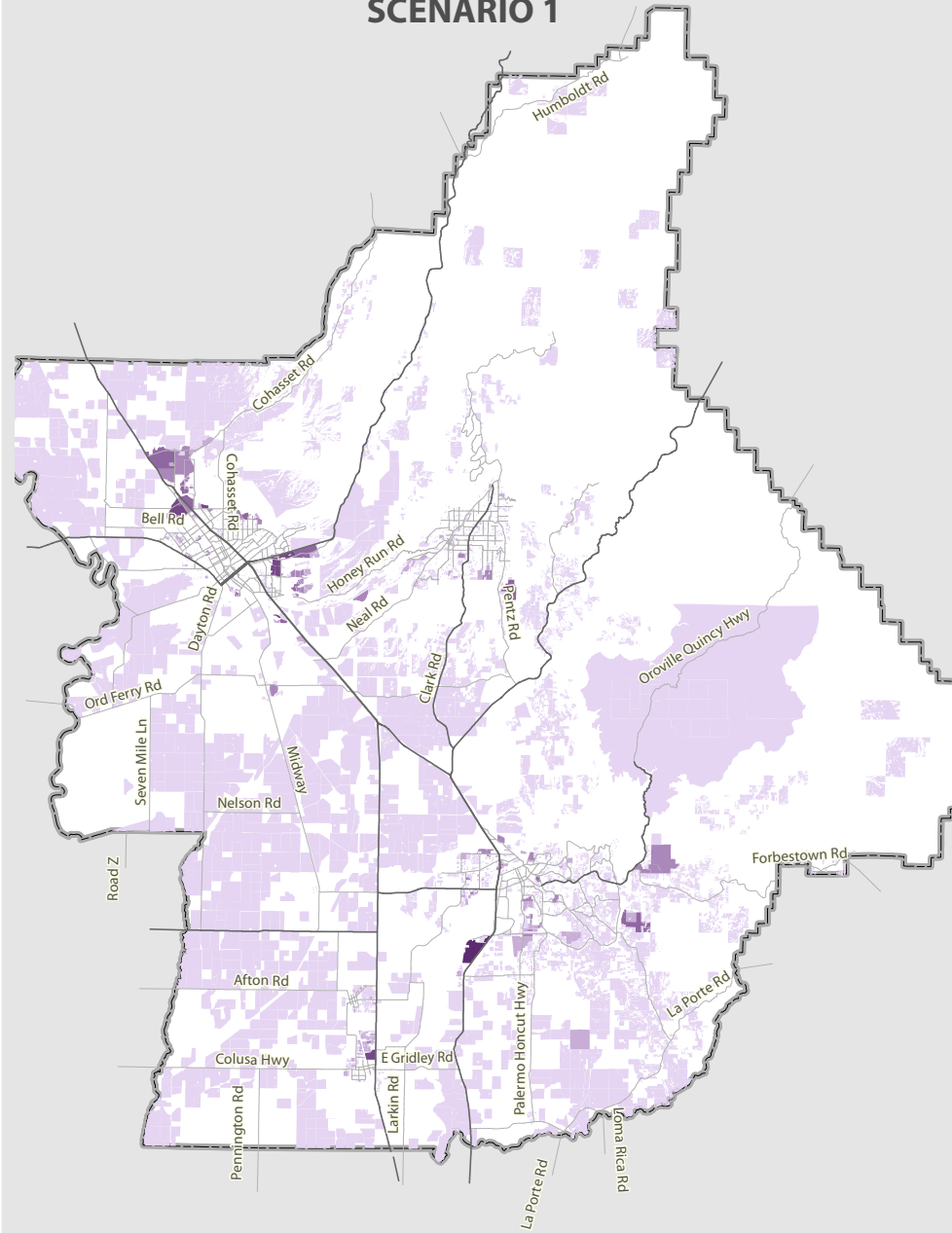
The MTP/SCS includes policy, actions, and projects to support goods movement on the regional road system in Butte County. Actions include working with State and Federal legislators to secure funding for focusing improvement on the SR 70/99 corridor to provide a continuous four-lane highway. In addition, roadway projects are identified that would construct four lanes on portions of the SR70/99 corridor. Therefore, the impact is **less than significant**. No mitigation measure is required.

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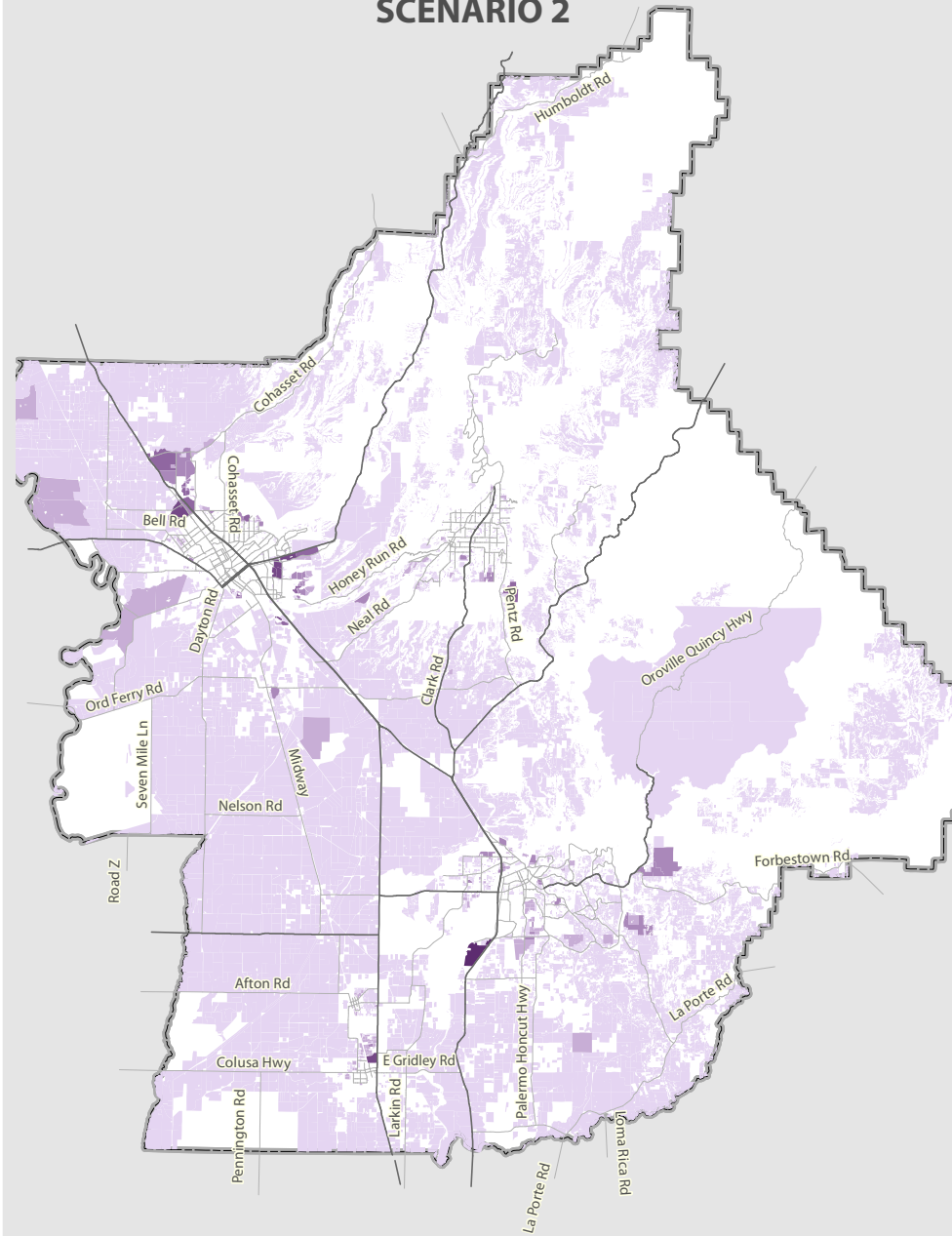


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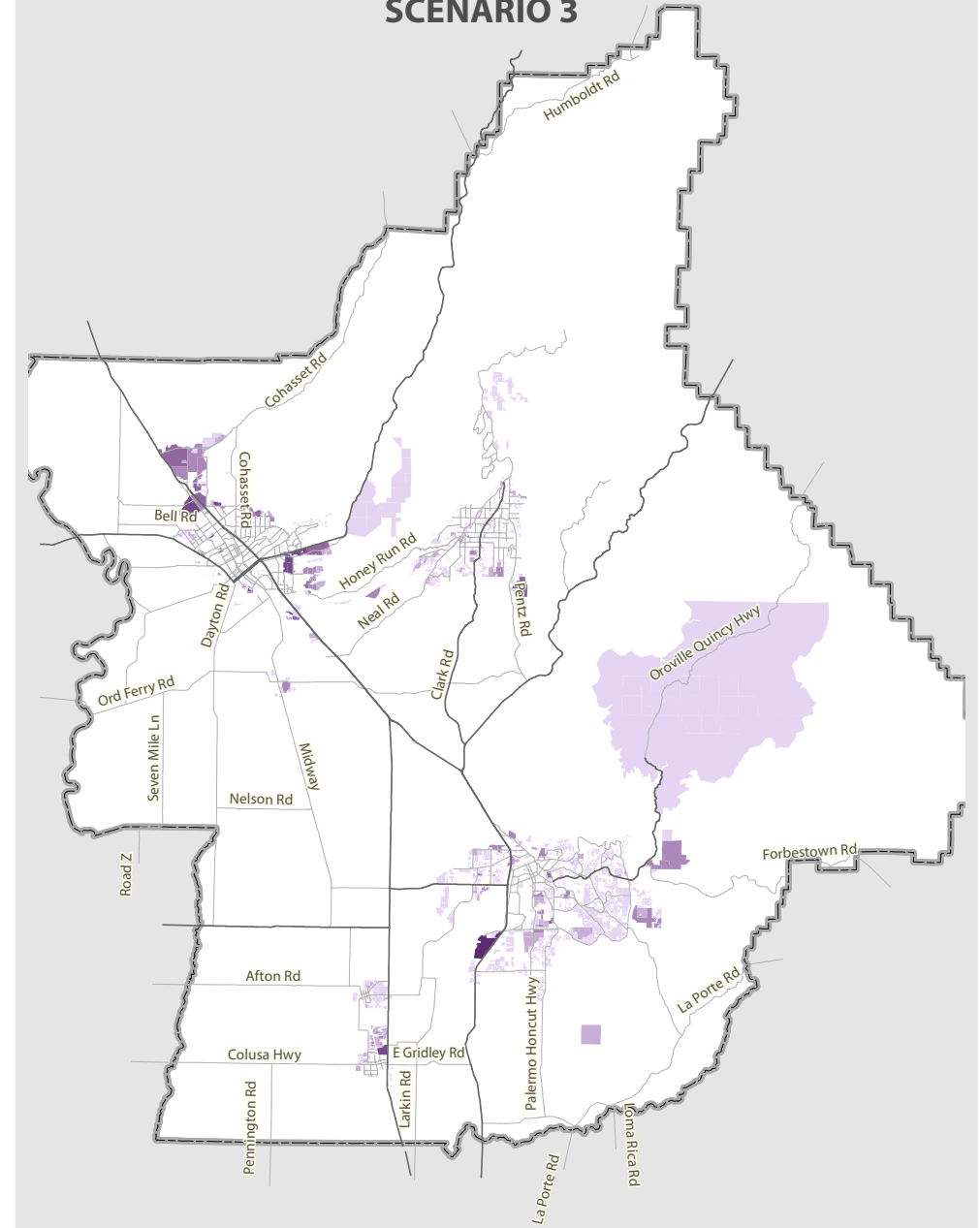
SCENARIO 1



SCENARIO 2




SCENARIO 3



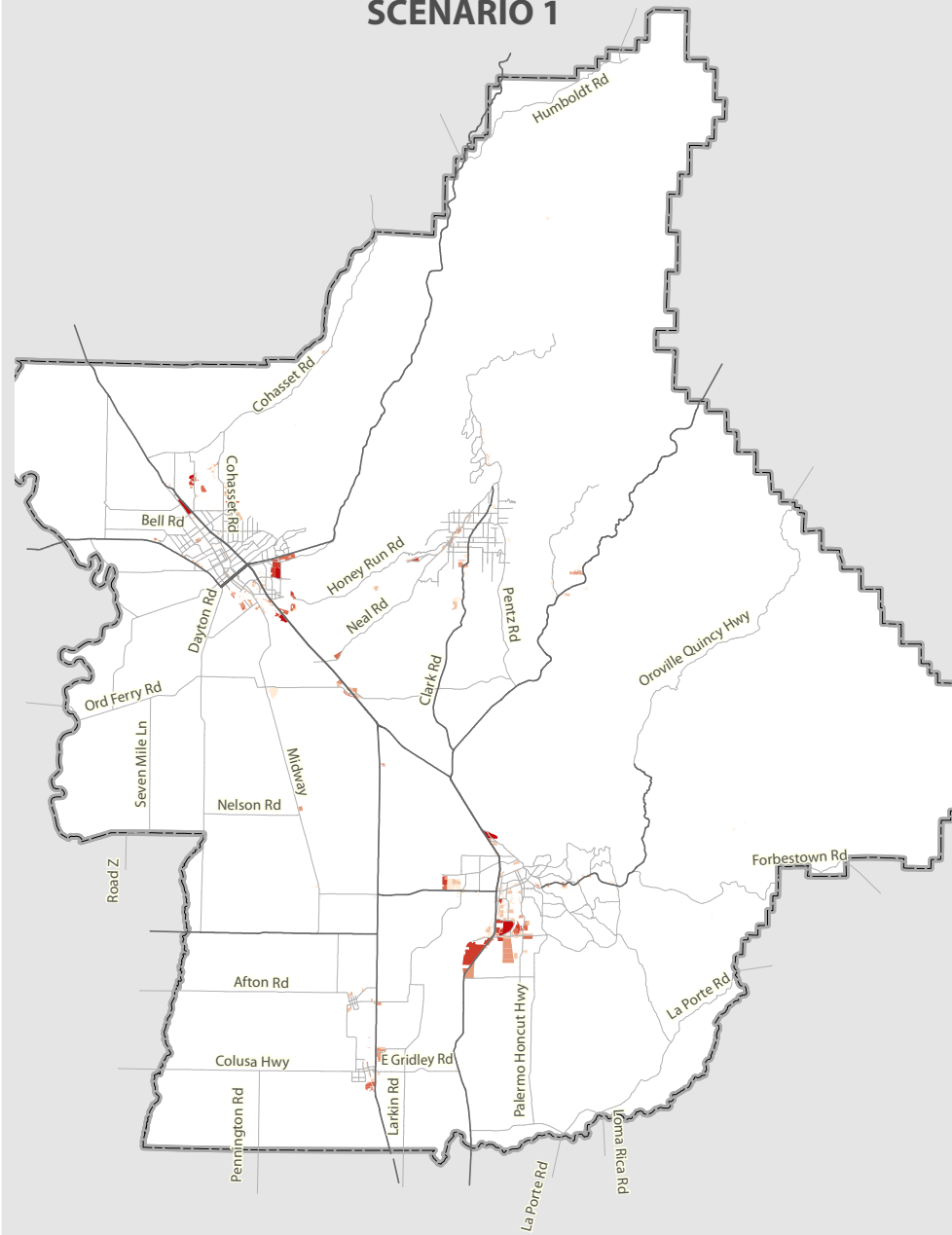
LEGEND

Residential Land Use (du)	251 - 475
1 - 25	476 - 1175
26 - 110	1176 - 2700
111 - 250	

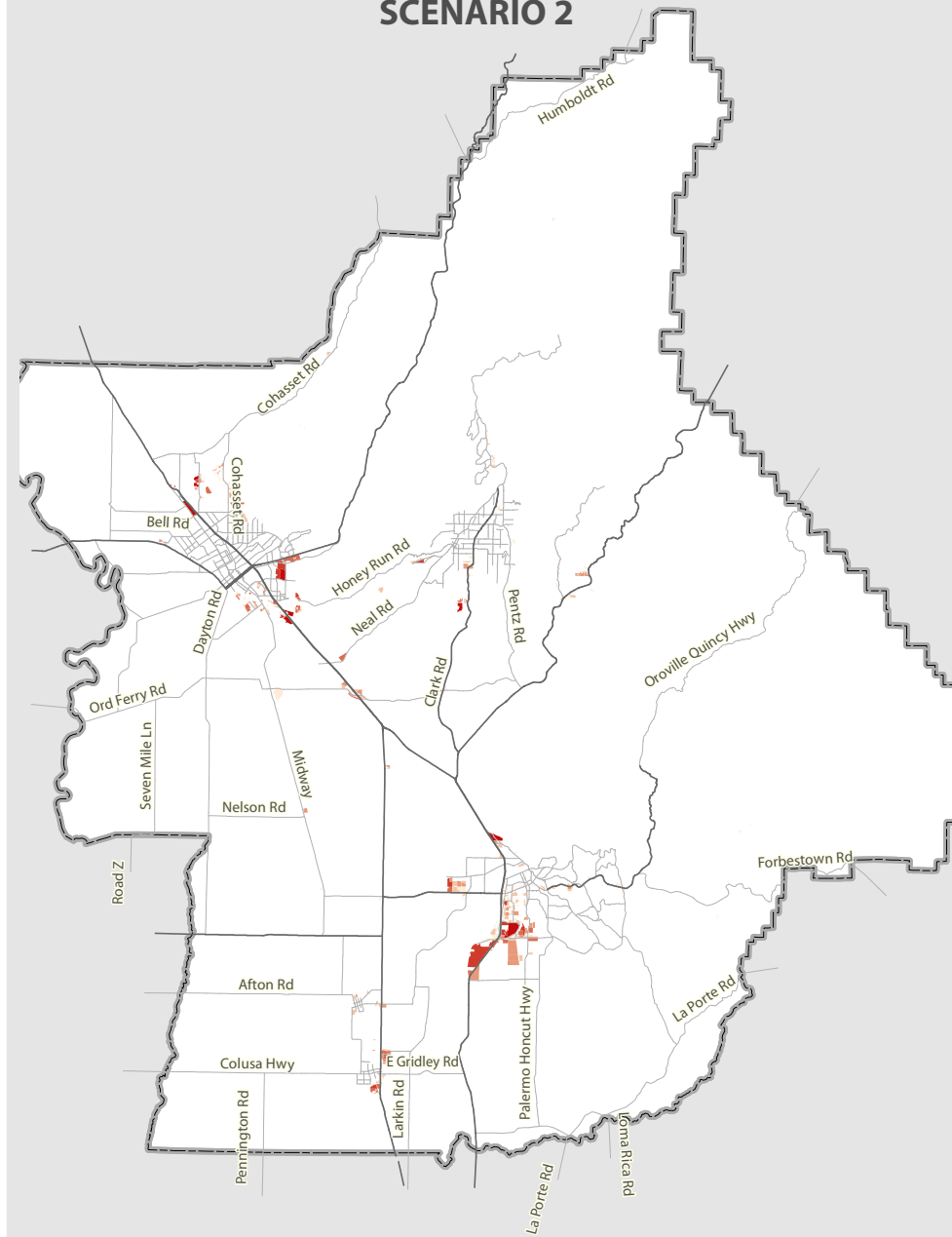

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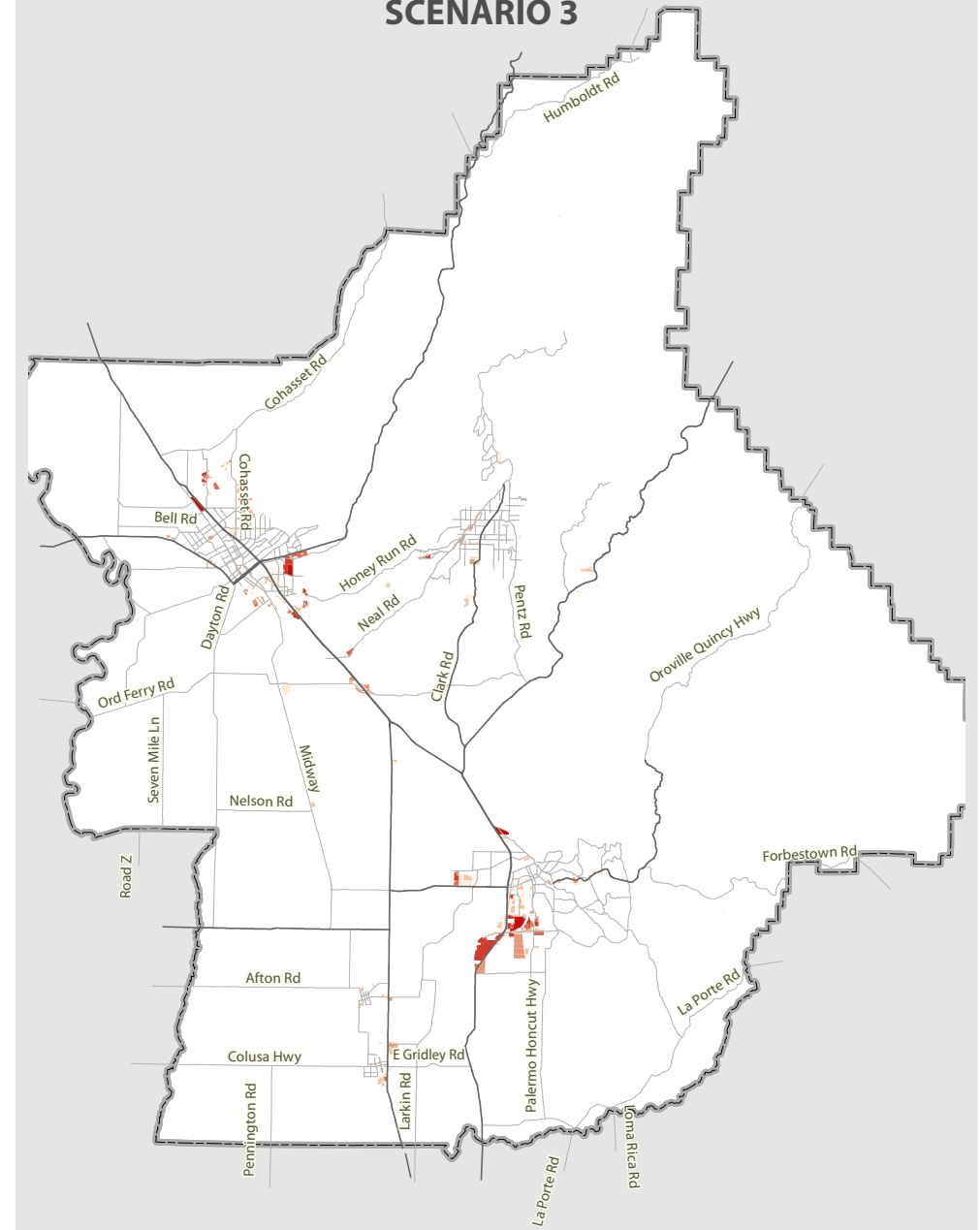
SCENARIO 1



SCENARIO 2




SCENARIO 3



LEGEND

Non-Residential Land Use (KSF)	71 - 140
1 - 10	141 - 250
11 - 30	251 - 430
31 - 70	


 Not to Scale

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CEQA requires an EIR to evaluate a project's effects in relationship to broader changes occurring, or that are foreseeable to occur, in the surrounding environment. Accordingly, this chapter presents discussion of CEQA-mandated analysis for cumulative impacts, irreversible impacts, and growth inducement associated with the 2012 Butte County MTP and SCS.

4.1 CUMULATIVE SETTING AND IMPACT ANALYSIS

CUMULATIVE SETTING

Under CEQA, the discussion of cumulative impacts should focus on the severity of the impacts and the likelihood of their occurrence. The cumulative scenario for the 2012 Butte County MTP and SCS includes growth planned for Butte County and incorporated communities. The analysis of cumulative effects considered the cumulative projected general plan buildout throughout Butte County. Some sections within chapter three include individual cumulative analyses.

Population, Housing, Employment - 2010-2035

Over the next 25 years, the population in Butte region will continue to grow from 221,800 (2010) to 332,500 (2035). The employment is forecast to grow from 71,501 (2010) to 112,279 (2035) and housing is forecast to grow from 96,623 (2010) to 143,948 (2035) units.

IMPACT ANALYSIS

Method of Analysis

Although the environmental effects of an individual project may not be significant when that project is considered separately, the combined effects of several projects may be significant when considered collectively. State CEQA Guidelines 15130 requires a reasonable analysis of a project's cumulative impacts, which are defined as "two or more individual effects which, when considered together are considerable or which compound or increase other environmental impacts." The cumulative impact that results from several closely related projects is: the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonable foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (State CEQA Guidelines 15355[b]). Cumulative impact analysis may be less detailed than the analysis of the Project's individual effects (State CEQA Guidelines 15130[b]).

There are two approaches to identifying cumulative projects and the associated impacts. The list approach identifies individual projects known to be occurring or proposed in the surrounding area in order to identify potential cumulative impacts. The projection approach uses a summary of projections in adopted General Plans or related planning documents to identify potential cumulative impacts. Because of the programmatic and county-wide nature of the 2012 Butte County MTP and SCS, this EIR uses the projection approach for the cumulative analysis and considers the development plans of Butte County as well as its incorporated communities.

Cumulative Impacts

Effects associated with hazards, hydrology and water quality, mineral resources, public services, recreation, and utilities were discussed in the Initial Study and determined to not have an impact, have a less than significant impact, or have a less than significant impact with mitigation. The analysis in the Initial Study has identified that these impacts will not contribute any substantial incremental effects, no comments were received in response to the NOP regarding these issues, and the analysis performed for preparation of this Draft EIR did not indicate that the project would have a considerable contribution to significant cumulative effects in these issue areas. As such, the project is determined to have a less than considerable contribution to cumulative impacts associated with hazards, hydrology and water quality, mineral resources, public services, recreation, and utilities.

Cumulative impacts for most issue areas are not quantifiable and are therefore discussed in general terms as they pertain to development patterns in the surrounding region. Exceptions to this are traffic and air quality (the latter of which is associated with traffic volumes), which may be quantified by estimating future traffic patterns, pollutant emitters, etc. and determining the combined effects that may result. In consideration of the cumulative scenario described above, the 2012 Butte County MTP and SCS, improvements may result in the following cumulative impacts.

AESTHETICS

Impact 4.1: Cumulative Degradation of the Existing Visual Character of the Region (Less than Cumulatively Considerable)

The existing regional setting, which includes Butte County and the viewsheds that can be seen from Butte County, is composed primarily of large tracts of agricultural, grazing, and timber land with urban-scale development in the five incorporated communities and rural population centers located in communities throughout the County. While growth is anticipated to occur in Butte County, the majority of growth is anticipated to occur in and around the incorporated communities. Development of residential, office, commercial, recreational, and associated infrastructure development is currently occurring and is planned to occur in the coming years to accommodate growth envisioned in the adopted general plans and in the proposed land use diagrams/vision statements of those general plans being updated.

Regional growth has and will continue to result in a cumulative aesthetic effect by converting undeveloped land into developed and occupied areas and increasing overall levels of nighttime lighting. Cumulative development entails grading/landform alteration, the development of structures, and the installation of roadways and other infrastructure that has altered and will continue to permanently alter the region's existing visual character. Individual projects implemented under the 2012 Butte County MTP and SCS, would be required to be consistent with the general plan and adopted regulations pertaining to aesthetics and lighting of the implementing jurisdiction(s). Chapter 3.1 identifies mitigation measures to reduce project-level impacts on visual resources. Implementation of the 2012 Butte County MTP and SCS would result in a **less than cumulatively considerable** impact.

AGRICULTURE

Impact 4.2: Cumulative Impact on Agricultural and Forest Resources (Considerable Contribution and Significant and Unavoidable)

The cumulative setting for agricultural resources includes Butte County and the greater Sacramento Valley agricultural region as well as the forest resources of the Sierra Nevada range. Cumulative development anticipated in Butte County, including growth projected by adopted general plans and those being updated will result in the permanent loss of agricultural land and forest resources. Transportation facilities associated with the proposed project could have potentially significant impacts associated with conversion of agricultural and forest resources, as well as conflicts with agricultural and timber production zones as discussed in Chapter 3.2. While most transportation projects would occur within or adjacent to existing rights-of way, development of new and/or extended facilities or development may require conversion of agricultural or forest land, and may convert prime farmlands, as well as lands under Williamson Act contracts. Agricultural land is a limited resources and the cumulative loss of this land is considered significant. Implementation of mitigation measures identified in this EIR would minimize the amount of farmland and forest land converted. While this mitigation measure would minimize impacts on agricultural and forest land, the potential remains for a net reduction in the overall amount of these resources in the County as a result of the proposed project. Therefore, this is considered a **cumulatively considerable and significant and unavoidable** impact.

AIR QUALITY

Impact 4.3: Cumulative Impact on the Region's Air Quality (Less than Cumulatively Considerable)

The cumulative setting for air quality impacts is the Sacramento Valley Air Basin. As discussed under Section 3.3, the 2012 Butte County MTP and SCS passes conformity for ozone precursors, carbon monoxide, and particulate matter. The results of the emission model reflects the fact that the state and federal EPA's vehicle and fuel regulations that are being phased into place over the study horizon will bring about significantly lower emission levels, which is particularly important for the reduction of emissions in nonattainment areas.

Construction activities associated with construction and implementation of individual projects would result in temporary short-term emissions associated with vehicle trips from construction workers, operation of construction equipment, and the dust generated during construction activities. These temporary and short-term emissions would generate additional ozone precursors (ROG and NO_x) as well as PM₁₀; however, because of the temporary nature of these emissions, they are not considered cumulatively considerable.

Implementation of the 2012 Butte County MTP and SCS will not conflict with the Air Quality Plan, cause a violation of Air Quality Standards, contribute substantially to an existing air quality violation, or result in a cumulatively considerable net increase of a criteria pollutant in a nonattainment area. Based on the conformity analysis, the 2012 Butte County MTP conforms to the applicable State Implementation Plan (SIP) and all applicable sections of the EPA's

4.0 OTHER CEQA-REQUIRED TOPICS

Transportation Conformity Rule. Implementation of the 2012 Butte County MTP and SCS would result in a **less than cumulatively considerable** impact.

BIOLOGICAL RESOURCES

Impact 4.4: Cumulative Loss of Biological Resources Including Habitats and Special Status Species (Less than Cumulatively Considerable)

The cumulative setting for biological resources includes the entirety of Butte County. Cumulative development anticipated in Butte County, including growth projected by adopted general plans and those being updated, will result in the permanent loss of habitat for special-status species, corridor fragmentation, direct and indirect impacts to special-status species, and reduction and degradation of sensitive habitat. Compliance with the Butte Regional Conservation Plan (BRCP) would reduce the project-level and cumulative biological impacts associated with the 2012 Butte County MTP and SCS to a less than significant level. Implementation of the 2012 Butte County MTP and SCS would result in a **less than cumulatively considerable** impact.

CULTURAL RESOURCES

Impact 4.5: Cumulative Impacts on Known and Undiscovered Cultural Resources (Considerable Contribution and Significant and Unavoidable)

The cumulative setting for cultural resources includes the entirety of Butte County. Cumulative development anticipated in Butte County, including growth projected by adopted general plans and those being updated, may result in the discovery and removal of cultural resources, including archaeological, paleontological, historical, and Native American resources and human remains. Mitigation measures provided in Chapter 3.5 would require the proposed project to survey for potential resources and to evaluate any resources discovered during construction activities. However, adherence to these regulations and implementation of mitigation may not prevent a future cumulative loss of these important resources. Because site-specific surveys have yet to be conducted for the individual projects, it is not known whether recognized cultural resources would be disturbed. Furthermore, the potential exists for the discovery of previously unknown resource sites during the construction of individual projects. In combination with the future scenario, any disturbance or destruction of known and unknown cultural resources would be significant cumulative impact. Therefore, this is considered a **cumulatively considerable and significant and unavoidable** impact.

GREENHOUSE GASES AND CLIMATE CHANGE

Impact 4.6: Greenhouse Gas Emissions May Contribute to Climate Change (Less than Cumulatively Considerable)

The GHG targets established for Butte County by CARB require no greater than a 1% increase in per capita CO² emissions in 2020 and 2035 when compared to 2005 levels. BCAG measured vehicle miles traveled and the levels of greenhouse gas (GHG) emissions for the MTP/SCS using the regions travel demand model and the California Emissions Factor (EMFAC) model. The VMT analysis shows VMT per capita decreases by 10.18% in 2020 even with an increase in total VMT. This analysis shows that VMT per capita decreases by 0.03% in 2035 for the balanced scenario

when compared to 2005 VMT per capita. Similar to the results of the VMT analysis, the GHG emissions analysis showed CO² per capita decreases by 11.88% in 2020 and by 1.91% in 2035 for the balanced scenario when compared to 2005 CO² per capita.

These GHG emissions demonstrate that the Butte County region will meet the greenhouse gas reduction targets by balancing housing and employment growth within the specified growth areas; protecting sensitive habitat and open space; and investing in a multi-modal transportation system that serves the population of Butte County. The differential between the reduction targets and the GHG emissions is approximately 13 percent lower in 2020, and approximately 3 percent lower in 2035. The MTP/SCS is consistent with AB 32 and SB 375, as well as local plans designed to reduce GHGs. Implementation of the MTP/SCS would result in a **less than cumulatively considerable** impact.

LAND USE AND PLANNING/POPULATION AND HOUSING

Impact 4.7: Cumulative Impact on Communities and Local Land Uses (Less than Considerable Contribution)

The cumulative setting for land use and planning impacts includes Butte County, its incorporated communities, and the jurisdictions bordering Butte County. Cumulative land use and planning impacts, such as the potential for conflicts with adjacent land uses and consistency with adopted plans and regulations, are typically site- and project-specific. Construction of MTP projects may require removal of homes and result in the displacement of people and housing. Additionally, the SCS provides incentives for redevelopment, which may require the removal of homes and result in the temporary displacement of people and housing during the construction of a redevelopment project. The effects of the displacement of people and housing units are mitigated through laws that require relocation of residents that must be displaced, even if it is just temporarily. Additionally, there is adequate replacement housing within the current housing stock in Butte County.

The programmatic nature of the MTP/SCS requires consideration of the overall planning and land use setting under cumulative conditions. As cumulative development occurs, there is the potential for development to occur that is not consistent with adopted plans and regulations and the potential for land use conflicts to occur between communities or jurisdictions. Under cumulative conditions, the majority of MTP/SCS projects would involve work within an existing right-of-way or extension of an existing right-of-way to widen or lengthen existing facilities. These uses would generally be compatible with adjacent uses as the MTP/SCS projects are the continuation/extension of existing uses and would not add new land use conflicts.

The MTP/SCS considers the adopted and planned land uses in Butte County and its incorporated communities. Projects included in the MTP/SCS are intended to primarily address safety and operational deficiencies and will also assist in improving linkages between existing communities. Growth under the MTP/SCS would be consistent with growth envisioned by local agencies and the proposed project is not anticipated to result in growth at greater levels than already anticipated. As projects are designed and engineered they will be reviewed and evaluated for consistency with

the MTP/SCS as well as consistency with the adopted plans and regulations of the implementing agency(ies). As a result, the MTP/SCS would result in development that is generally compatible and consistent with existing land uses and policies. Therefore, the MTP/SCS would have a **less than considerable** contribution to cumulative land use and planning impacts.

NOISE

Impact 4.8: Cumulative Noise Impacts (Considerable Contribution and Significant and Unavoidable)

The cumulative setting for noise impacts includes Butte County as well as regional highways and roadways connecting Butte County to other population centers. Under cumulative conditions, the increase in development is anticipated to result in increased traffic congestion on local and regional roadways, and a corresponding increase in roadway noise.

Regionally, the 2012 Butte County MTP and SCS would not have a significant impact on noise or vibration. However, the extent of development in the region would cause some areas to experience greater construction and operational noise disturbances relative to others. This would result as noise sensitive development becomes more clustered near noise producing land uses, including roadways. Although the 2012 Butte County MTP and SCS itself is not a direct generator of noise during operations, it indirectly increases noise levels by accommodating additional traffic capacity on roadways. Coupled with the increase in regional growth, the 2012 Butte County MTP and SCS would cumulatively increase noise.

The County and incorporated cities have adopted Noise Elements of their General Plans that establish noise-related policies that, when implemented, protect sensitive receptors from significant noise. The policies that are laid out in the Noise Element(s) are consistent with federal and state regulations designed to protect noise sensitive receptors. During the design process, the implementing agency would be responsible for ensuring that the project is designed consistent with adopted policies and state and federal regulations. Although the policy and regulatory controls for noise-related impacts are in place in the planning area, subsequent improvement projects would result in an increase in traffic noise levels. For most projects, consistency with the adopted policies and established regulations would help to reduce exposure of sensitive receptors to transportation noise levels. However, it may not be feasible to mitigate this impact to a less-than-significant level in all instances, particularly in areas where existing development is located near proposed projects. Although the policy and regulatory controls for noise related impacts are in place in the planning area, subsequent improvement projects may result in an increase in ambient noise levels at specific project locations, which may subject surrounding land uses to increases in ambient noise levels. Therefore, this is considered a **cumulatively considerable and significant and unavoidable** impact.

TRANSPORTATION AND CIRCULATION

Impact 4.9: Cumulative Impact on the Transportation Network (Less than Cumulatively Considerable)

The cumulative setting for transportation and circulation impacts includes Butte County as well as regional roadways and highways connecting Butte County to other population centers. Under cumulative conditions, the increase in development is anticipated to result in increased traffic congestion on local and regional roadways, as well as result in increased demand for transit, bicycle/pedestrian, rail, and aviation facilities and infrastructure.

Without the MTP/SCS, the use of alternative modes of transportation including transit, bicycle, and pedestrian, would be limited. Lack of funding for transit system improvements, bicycle/pedestrian routes and facilities, and rail improvements could hamper the use of these transit modes by an increasing population. This is anticipated to result in more trips and more automobiles and trucks on the road. The conditions without the MTP/SCS would also represent greater safety risks, particularly under cumulative conditions, there will be an increase of vehicles on roadways throughout the county regardless of the MTP/SCS, but safety and maintenance improvements identified in the MTP/SCS would not be implemented. Bicycle routes would not be expanded nor would railroad grade separations be constructed. The potential for adverse interactions between trains, vehicles, pedestrians, and/or bicyclists would increase.

The MTP/SCS would result in projects that would improve traffic and circulation conditions compared with the 2035 conditions without the project. Without the MTP/SCS, there would be an overall worsening of LOS on County and City roadways. Without the proposed project, there would not necessarily be fewer vehicle miles travelled, but as some of the proposed roadway improvements would not be carried out, the county would experience an overall increase in vehicle hours of delay.

Implementation of the MTP/SCS will have a beneficial effect on cumulative transportation and circulation traffic conditions in the region. Therefore, the MTP/SCS would have a **less than considerable** contribution to cumulative transportation and circulation impacts.

4.2 GROWTH-INDUCING EFFECTS

INTRODUCTION

Section 15126.2(d) of the CEQA Guidelines requires that an EIR evaluate the growth-inducing impacts of a proposed action. A growth-inducing impact is defined by the CEQA Guidelines as:

The way in which a proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth...It is not assumed that growth in an area is necessarily beneficial, detrimental, or of little significance to the environment.

Based on the CEQA Guidelines, growth inducement is any growth that exceeds planned growth of an area and results in new development that would not have taken place without implementation of the project. A project can have direct and/or indirect growth inducement potential. Direct growth inducement would result if a project, for example, involved construction of new housing. A project would have indirect growth inducement potential if it established substantial new permanent employment opportunities (e.g., commercial, industrial, or governmental enterprises) or if it would involve a construction effort with substantial short-term employment opportunities that would indirectly stimulate the need for additional housing and services to support the new employment demand (*Napa Citizens for Honest Government v. Napa County Board of Supervisors*). Similarly, a project would indirectly induce growth if it would remove an obstacle to additional growth and development, such as removing a constraint on a required public service. A project providing an increased water supply in an area where water service historically limited growth could be considered growth-inducing.

The State CEQA Guidelines further explain that the environmental effects of induced growth are considered indirect impacts of the proposed action. These indirect impacts or secondary effects of growth may result in significant, adverse environmental impacts. Potential secondary effects of growth include increased demand on other community and public services and infrastructure, increased traffic and noise, and adverse environmental impacts such as degradation of air and water quality, degradation or loss of plant and animal habitat, and conversion of agricultural and open space land to developed uses.

Growth inducement may constitute an adverse impact if the growth is not consistent with or accommodated by the land use plans and growth management plans and policies for the area affected. Local land use plans provide for land use development patterns and growth policies that allow for the orderly expansion of urban development supported by adequate urban public services, such as water supply, roadway infrastructure, sewer service, and solid waste service.

Components of Growth

The timing, magnitude, and location of land development and population growth in a region are based on various interrelated land use and economic variables. Key variables include regional economic trends, market demand for residential and non-residential uses, land availability and cost, the availability and quality of transportation facilities and public services, proximity to employment centers, the supply and cost of housing, and regulatory policies or conditions. Since the general plan of a community defines the location, type, and intensity of growth, it is the primary means of regulating development and growth in California.

GROWTH EFFECTS OF THE PROJECT

The proposed MTP/SCS is intended provide efficient and effective regional road, transit, rail, bicycle, pedestrian, and aviation systems that are coordinated with land use planning efforts that accommodates the demand for safe movement of people and goods, while reducing usage of nonrenewable energy resources for transportation purposes and achieving federal and state air quality standards.

The MTP/SCS has been planned to accommodate forecasted levels of growth, including growth associated with adopted general plans. BCAG does not have the authority to make local land use decisions. The SCS provides incentives for the local land use agencies to develop consistent with the SCS. The MTP/SCS does not increase the amount of growth that could occur under the adopted and draft General Plans of the County and incorporated communities, nor does it provide infrastructure that would accommodate growth in excess of planned levels. The MTP does not include any provisions requiring the oversizing of infrastructure facilities to serve growth not currently planned. It is anticipated that Butte County and the incorporated areas would grow at rates governed by market influences (the demand for housing as influenced by interest rates, employment rates, etc) as regulated by adopted general plans and local regulations regardless of approval of the MTP/SCS.

The MTP/SCS also includes provisions to increase alternative modes of transportation, (transit, bicycle, and pedestrian), including increasing transit ridership at a rate that maintains pace with population growth, and thus, would not provide roadway improvements that could improve vehicle levels of service at the detriment of transit, pedestrian and bicycle uses. The physical environmental effects of the proposed roadway improvements within the county and any offsite impacts that could result from the proposed roadway improvements have been disclosed in this Draft EIR.

Environmental Effects of Growth

As described above, the 2012 Butte County MTP and SCS is not considered to be growth-inducing. The following environmental effects could be experienced due to growth throughout the county, although this is not a direct result of the 2012 Butte County MTP and SCS:

Aesthetics – Changes to views from scenic corridors, small areas where views of scenic resources may be obstructed, removal and/or relocation of scenic resources, such as trees, and increases in daytime glare and nighttime lighting.

Agricultural Resources – Loss of important and significant farmlands, including lands under Williamson Act contract, and conflicts with agricultural activities on lands zoned or planned for agricultural uses

Air Quality – Increases in air pollutant emissions potentially conflicting with air quality attainment efforts under state and federal Clean Air Acts, greenhouse gas emissions, and increased potential for the exposure to toxic air contaminants.

Biological Resources – Adverse effects to special-status plant, fish, and wildlife species associated with habitat reduction and take, and loss or degradation of sensitive communities, including wetlands.

Cultural and Historic Resources – Loss and degradation of cultural resources, including prehistoric and archaeological artifacts, paleontologic resources, and historic resources, including structures and districts of historic significance.

4.0 OTHER CEQA-REQUIRED TOPICS

Geology and Hazards – Increased development in areas prone to slope failure, erosion, effects of seismic activity, unstable soils, increased risk of release of hazardous materials.

Hydrology and Water Quality – Increased development in areas prone to flooding and reduction in water quality.

Noise – Increased transportation noise levels from increased traffic volumes and exposure of sensitive receptors to excessive noise levels.

Public Services and Utilities – Increased demand for public services and utilities, including water supply, wastewater treatment and disposal, solid waste removal and disposal, energy, and telecommunications.

Traffic and Circulation – Increased traffic volumes on the region's highways and regional roadways resulting in deficient levels of service of operation.

It is noted that these effects of growth are anticipated to occur regardless of adoption of the proposed 2012 Butte County MTP and SCS as development and other growth projects could continue to be approved and implemented by the County and incorporated communities.

4.3 SIGNIFICANT IRREVERSIBLE EFFECTS

CEQA requires that EIRs prepared for the adoption of a plan, policy, or ordinance of a public agency must include a discussion of significant irreversible environmental changes of project implementation. CEQA Guidelines Section 15126.2(c) describes irreversible environmental changes as:

Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

Implementation of the 2012 Butte County MTP and SCS could result in the conversion of undeveloped agricultural and open space land areas to developed uses, including roadway, transit, bicycle, pedestrian, aviation, other transportation facilities, and/or land uses. These improvements would be long-term and would constitute a long-term commitment to transportation infrastructure within the context of regional land uses. It is unlikely that circumstances would arise that would justify the return of the land to its original condition.

Development of transportation infrastructure and facilities or land use developments would irretrievably commit building materials and energy to the construction and maintenance of buildings and infrastructure. Renewable, nonrenewable, and limited resources that would likely be

consumed as part of transportation infrastructure and facilities would include, but are not limited to, oil, gasoline, lumber, sand and gravel, asphalt, water, steel, and similar materials.

4.4 SIGNIFICANT AND UNAVOIDABLE IMPACTS

CEQA Guidelines Section 15126.2(b) requires an EIR to discuss unavoidable significant environmental effects, including those that can be mitigated but not reduced to a level of insignificance. The following significant and unavoidable impacts of the 2012 Butte County MTP and SCS are discussed in Chapters 3 (program-level) and previously in this chapter (cumulative-level). Refer to those discussions for further details and analysis of the significant and unavoidable impact identified below:

- Impact 3.2-1: Conversion of Farmlands, including Prime Farmland, Unique Farmland, and Farmland of Statewide Importance, to Non-Agricultural Uses
- Impact 3.2-2: Conflict with Existing Zoning for Agricultural Use or a Williamson Act Contract
- Impact 3.2-3: Conflict with Existing Zoning of Forest or Timber Production or Result in the Loss or Conversion of Forest Land
- Impact 3.5-4: Damage to or the Destruction of Historical Resources
- Impact 3.9-1: Cause an increase in vehicle miles traveled (VMT) per capita above baseline conditions for the region
- Impact 3.9-2: Cause an increase in vehicle miles traveled on congested roadways (CVMT) per capita relative to baseline conditions
- Impact 4.2: Cumulative Impact on Agricultural and Forest Resources
- Impact 4.5: Cumulative Impacts on Known and Undiscovered Cultural Resources
- Impact 4.8: Cumulative Noise Impacts

4.5 ISSUES DETERMINED TO BE LESS THAN SIGNIFICANT

An Initial Study was prepared at the onset of the proposed project. It was determined that there are six environmental topics where the proposed project would result in a less than significant or no impact. These include: Hydrology and Water Quality, Mineral Resources, Public Services, Recreation, and Utilities and Service Systems.

The Initial Study was circulated with the Notice of Preparation (NOP) on January 17, 2012 to trustee and responsible agencies, the State Clearinghouse, and the public. A scoping meeting was held on Wednesday February 8th 4-6pm, Butte County Library in Oroville and on Thursday February 9th 4-6pm, Butte County Library in Chico. There were no concerns raised in public comment regarding this determination.

Below is a brief discussion of each environmental topic that was previously determined to be less than significant.

HAZARDS AND HAZARDOUS MATERIALS

Hazardous Materials

A “hazardous material” is a substance or combination of substances that, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may pose a potential hazard to human health or the environment when handled improperly.

Hazardous Minerals

Asbestos is a term applied to several types of naturally occurring fibrous materials found in rock formations throughout California. Asbestos is commonly found in ultramafic rock, including serpentine, which is abundant in the foothills of the Sierra Nevada. Asbestos has been mined in several localities throughout the Sierra Nevada.

Serpentine rock, which often contains asbestos, has also been used extensively as base material in the construction of new roads. Exposure and disturbance of rock and soil that contains asbestos can result in the release of fibers to the air and consequent exposure to the public. All types of asbestos are now considered hazardous and pose public health risks. The use of asbestos-containing materials is regulated by the California Air Resources Board (CARB).

The California Department of Conservation (DOC) has developed a map of “Areas More Likely to Contain Naturally Occurring Asbestos” based on the location of Ultramafic Rocks in California. The map suggests that asbestos may be present in some of the foothill regions of Butte County; although the information has not been field verified in its entirety.

Fire Hazards

Wild fires are a major hazard in the State of California. Wild fires burn natural vegetation on developed and undeveloped lands and include timber, brush, woodland, and grass fires. While low intensity wild fires have a role in the County’s ecosystem, wild fires put human health and safety, structures (e.g., homes, schools, businesses, etc.), air quality, recreation areas, water quality, wildlife habitat and ecosystem health, and forest resources at risk.

Wildland fire hazards exist in varying degrees over approximately 70 percent of Butte County. The highest wild fire risk to human health and safety occurs in the foothill communities that are considered urban-wildland interface areas. Fires that occur within the urban-wildland interface areas affect natural resources as well as life and property. During the past decade, Butte County has experienced several large and damaging wildfires in and around the wildland urban interface areas. There are 23 communities within Butte County that are on the National Registry as fire threatened communities and have a Moderate to High Fire Hazard Rating.

Regulations and Programs

HAZARDOUS MATERIALS TRANSPORTATION ACT OF 1975. The Hazardous Materials Transportation Act, as amended, is the basic statute regulating hazardous materials transportation in the United States. The purpose of the law is to provide adequate protection against the risks to life and property inherent in transporting hazardous materials in interstate commerce. This law gives the

U.S. Department of Transportation (USDOT) and other agencies the authority to issue and enforce rules and regulations governing the safe transportation of hazardous materials (DOE 2002).

Impact 4.5.1: Potential to create a significant hazard through the routine transport, use, or disposal of hazardous materials or be located on a hazardous site.

As of November 9, 2011, there were 76 locations in the County that were registered with the Department of Toxic Substances Control. Of these sites, as a Cleanup Program Site, Lust Cleanup Site, Land Disposal Site, and Military Base. Of these, 18 locations are placed on the Cortese list.

Table 4.5-1 lists all Hazardous Waste and Substances Sites” (Cortese Sites) located in Butte County.

TABLE 4.5-1: CORTESE LIST

<i>SITE/FACILITY NAME</i>	<i>SITE TYPE</i>	<i>STATUS</i>	<i>ADDRESS</i>	<i>CITY</i>
Victor Industries – 20th St.	State Response	Active – Land Use Restr.	365 E 20th St.	Chico
Nor Cal Recycling	State Response	Active	1855 Kusel Rd.	Oroville
Esplanade Cleaners	State Response	Backlog	164 E 2nd Ave.	Chico
First Avenue Cleaners	State Response	Active	1082 East 1st Ave.	Chico
Flair Custom Cleaners	State Response	Backlog	660 Mangrove Ave.	Chico
Norge Village Cleaners	State Response	Backlog	254 East First St.	Chico
North Valley Plaza Cleaners	State Response	Active	801 East Ave.	Chico
World Radiator & AC	State Response	Active	8336 Skyway	Paradise
Chico Groundwater – Skyway Subdivision Plume	State Response	Active	Hagen Ln./Skyway Ave.	Chico
Chico Groundwater – SW Plume	State Response	Active – Land Use Restr.	Chico Groundwater	Chico
Chico Groundwater – Cent.Plume	State Response	Active	Chico Groundwater	Chico
Koppers Industries Inc (Oroville)	Federal Superfund	Certified / O&M – Land Use Restr.	Baggett/Marysville Rd.	Oroville
Louisiana Pacific Corp - Chico	State Response	Certified /O&M – Land Use Restr.	West 16th Street	Chico
Sierra Pacific Oroville	State Response	Backlog	1980 Kusel Road	Oroville
Ophir Road Property	State Response	Active	APNS 078-010-006, - 038	Oroville
Chico Scrap Metal – 20th Street	State Response	Active	878 East 20th St.	Chico
Chico Scrap Metal – South	State Response	Active	766 Oro Chico Hwy.	Durham
Chico Municipal Airport	State Response	Active – Land Use Restr.	651/681 Liberator	Chico

SOURCE: DEPARTMENT OF TOXIC SUBSTANCES CONTROL 2011

The strategies provided in the SCS are intended to minimize greenhouse gas emissions to the extent possible by way of coordinating land use and transportation planning regionally. The MTP provides for improvements to transportation systems that are currently used for transport of hazardous materials. All transportation of hazardous materials is regulated by federal and state laws and local ordinances. Neither components of the proposed project would cause or require routine transport, use, or disposal of hazardous materials. Nor is any of the individual improvements located on a site which is included on a list of hazardous materials site that would create a significant hazard to the public or the environment. Implementation of the following standard measure will ensure that the proposed project will have a **less than significant impact**.

Mitigation Measure 4.5.1: *Implement site-specific analysis for hazardous materials, remediation, and clean-up. Implementing agencies shall investigate potential for projects to be located at or near areas that are reasonably expected to contain hazardous materials, DTSC sites, areas containing ADL or naturally occurring asbestos, or at any structure that may contain asbestos. Site-specific evaluation should include an assessment of historical use of the area and soil sampling should be conducted as necessary. If a project site is found to be contaminated, clean up measures in accordance with the appropriate regulatory agency procedures will be implemented. Additionally, appropriate remediation measures will be employed to ensure worker safety during construction. All measures will be submitted to the DTSC for review and approval prior to project construction.*

Impact 4.5.2: Potential to create a significant hazard through reasonably foreseeable upset and accident conditions involving the release or emission of hazardous materials.

There are 94 schools within Butte County. It is possible that one, or more, of the individual improvements is located within ¼ mile of a school. Hazardous materials used in construction of a project in the vicinity of a school could be accidentally released. In the event of a hazardous materials spill or release, notification and cleanup operations would be performed in compliance with federal and state regulations to mitigate hazards to people and the environment.

Implementation of individual improvements would require construction activities, including grading, which has the potential to release naturally occurring asbestos into the air. This is a potentially significant impact to construction workers and citizens in the region. However, each improvement project will require a geotechnical study to be performed. The study will identify the soil types and the presence of soils and rock types, including those that could contain naturally occurring asbestos. If asbestos is deemed present, an Asbestos Hazard Dust Mitigation Plan would be prepared to ensure that adequate dust control and asbestos hazard mitigation measures are implemented during project construction. With the implementation of the Mitigation Measure 4.5.1, the proposed project would result in a **less-than-significant** impact.

Impact 4.5.3: For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of an airport or airstrip, would the project result in a safety hazard for people residing or working in the project area.

The proposed project includes proposed improvements to aviation facilities. This includes improvements to taxi-ways, aprons, and aviation structures. Though these improvements will all take place within an Airport Land Use Plan area, they will comply with the guidelines provided in the plan. Therefore, neither improvements to adjacent roads nor improvements to the airports themselves will result in hazardous conditions for people residing or working in the area. The strategies provided in the SCS are intended to minimize greenhouse gas emissions to the extent possible by way of coordinating land use and transportation planning regionally. These strategies will not conflict the Airport Land Use Plan. Implementation of the proposed project would result in a **less-than-significant** impact.

Impact 4.5.4: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Construction of individual projects may result in temporary road closures, traffic detours, or congestion, which may hinder the emergency vehicle access or evacuation in the event of an emergency. The following measure requires projects to prepare a Transportation Management Plan (TMP) if such a plan is deemed necessary by the implementing agency. Implementation of the following standard measure would ensure the proposed project would result in a *less-than-significant* impact.

Mitigation Measure 4.5.2: *The implementing agencies shall assess the necessity of a Transportation Management Plan (TMP) on a project-by-project basis. If the individual project will result in road closures, traffic detours, or congestion on main thoroughfares or roads that provide primary access to populated areas, a TMP shall be prepared prior to the initiation of project construction. The TMP will be provided to all emergency service providers in the construction area and will notify them of anticipated dates and hours of construction, as well as any anticipated limits on access. Notice will be provided at least 5 days before construction begins.*

Impact 4.5.5: Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

The strategies provided in the SCS are intended to minimize greenhouse gas emissions to the extent possible by way of coordinating land use and transportation planning regionally. These strategies would not result in exposure of people or structures to a significant risk involving wild fires. Implementation of these strategies would be done in coordination with the General Plan for each respective jurisdiction.

The transportation improvements identified in the MTP would not result in the construction of structures that would be occupied by humans; therefore, it would not expose people or structures to a significant risk involving wild fires. The MTP provides for improvements to transportation systems throughout the County, which is expected to improve the ability for fire protection services to access areas that have a high wild fire risk rating. Implementation of the proposed project would result in a *less-than-significant* impact.

HYDROLOGY AND WATER QUALITY

Butte County encompasses approximately 1,665 square miles in north central California. The western part of the county is located in the northern Sacramento Valley, while the eastern portion extends into the foothills of the Cascade and Sierra Nevada Mountain Ranges. Elevations range from 50 feet above sea level at Butte Sink along the Sacramento River at the southwest portion of the county, to 7,087 feet above sea level at Humboldt Summit near the county's northeastern border. The climate is Mediterranean, with cool, wet winters and hot, dry summers. Precipitation

is normally in the form of rain, with snow in the higher elevations, and ranges from approximately 20 to 80 inches per year.

Watersheds

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 at Butte Meadows. Big Chico Creek 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. Closest to Big Chico Creek is Sycamore Creek, which originates at approximately 1,600 feet and is a tributary to Mud Creek. Mud and Rock Creek, further north, originate between 3,600-3,800 feet. Mud Creek drains off of Cohasset Ridge to the south, flowing 26 miles to its confluence with Big Chico Creek. Rock Creek drains the north side of Cohasset Ridge and flows 28.5 miles before it joins Mud 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 and through the valley, entering the floor near Chico. The northern Sierra and southern Cascade mountain ranges divide the valley section from the mountainous region of the watershed in Butte County. 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 1950's by the USACOE. 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, and Gold Run and Cottonwood Creek join the Cherokee Canal upstream of the Richvale Road crossing. Cherokee Canal eventually 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 join together and the main channel ends 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 offpeak periods. Other smaller creeks in the watershed flow into

Lake Oroville, including Cirby and Concow creeks, which initially join to flow 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, as well as Rock Creek and Keefer Slough (which are located in the Big Chico Creek watershed), drain part of the northern region of the Big Chico Creek watershed and eventually drain into the Sacramento River.

Flooding

Flood hazards can result from intense rain, snowmelt, cloudbursts, or a combination of the three, or from failure of a water impoundment structure, such as a dam. Floods from rainstorms generally occur between November and April and are characterized by high peak flows of moderate duration. Snowmelt floods combined with rain have larger volumes and last longer than rain flooding.

Dam Failure

A dam failure can occur as the result of an earthquake, as an isolated incident because of structural instability, or during heavy runoff that exceeds spillway design capacity. Butte County has two dams that are identified by the Division of Safety of Dams as Major Dams; the Oroville and the Sly Creek Dams. The Oroville Dam, owned and operated by the State Department of Water Resources, is an earthen dam built in 1962 at a height of 742 feet with a reservoir capacity of 3,537,577 acre-feet. The Sly Creek Dam is owned and operated by the South Feather Water and Power Agency. This earthen dam was built in 1961 at a height of 271 feet tall and has a reservoir capacity of 65,050 acre-feet.

Butte County does not have a history of dam failure; however, the Oroville Dam is identified as having the potential of inundating habitable portions of the County in the unlikely event of dam failure. The City of Oroville actively works with and encourages the Department of Water Resources to manage the Oroville Dam water regime to reduce risk related to dam failure and inundation.

Stormwater Runoff

Human activities have an effect on water quality when chemicals, salting of roads (to melt snow) heavy metals, hydrocarbons (auto emissions and car crank case oil), and other materials are

transported with stormwater into drainage systems. Construction activities can increase sediment runoff, including concrete waste and other pollutants.

Butte County implements Storm Water Runoff Controls as a Best Management Practice to reduce the discharge of storm water pollutants to the maximum extent practicable by: (1) requiring construction sites to reduce sediment in site runoff; and (2) requiring construction sites to reduce other pollutants such as litter and concrete wastes through good housekeeping procedures and proper waste management.

Regulations

Federal Clean Water Act of 1972. The federal Clean Water Act establishes the basic structure for regulating discharges of pollutants into waters of the United States and setting water quality standards for all contaminants in surface waters. The Clean Water Act defines water quality standards as “provisions of state or federal law which consist of a designated use or uses for the waters of the United States and water quality criteria for such waters based upon such uses. Water quality standards are to protect the public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act.”

National Pollutant Discharge Elimination System (NPDES). In 1972, the Clean Water Act was amended to provide that the discharge of pollutants to waters of the United States from any point source is unlawful unless the discharge is in compliance with an NPDES permit. In California, the State Water Resources Control Board (SWRCB) and Regional Water Quality Control Boards (RWQCB) are authorized to implement this program. The NPDES permits cover industrial and municipal discharges, discharges from storm sewer systems in larger cities, storm water associated with numerous kinds of industrial activity, and runoff from construction sites disturbing more than one acre of soil.

Porter-Cologne Water Quality Control Act. Porter-Cologne regulates the discharge of waste into waters of the state, which are defined as “any water, surface or underground, including saline waters, within the boundaries of the state.” Permits issued to control pollution (i.e. waste-discharge requirements and NPDES permits) must implement Basin Plan requirements (i.e. water quality standards), taking into consideration beneficial uses to be protected. Regional Boards regulate all pollutant or nuisance discharges that may affect either surface water or groundwater. Any person proposing to discharge waste within any region must file a report of waste discharge with the appropriate regional board.

Flood Ordinance No. 3598. The Director of Butte County Public Works is appointed as the “Floodplain Administrator.” According to Butte County’s Flood Ordinance, any new construction, substantial improvements, or other developments in the FEMA-designated flood hazard areas in Butte County must be permitted, elevation certificates obtained, and submitted for review to the Butte County Department of Development Services for compliance with the NFIP. All structures must be built to at least one foot above the BFE. Flood ordinances within the incorporated cities of Butte County may equal or exceed the Butte County requirements.

Butte County Storm Water Management Program. The Butte County Storm Water Management Program is a comprehensive program comprised of various elements and activities designed to reduce storm water pollution to the maximum extent practicable and eliminate prohibited non-storm water discharges in accordance with federal and state laws and regulations. These laws and regulations are implemented through National Pollutant Discharge Elimination System (NPDES) municipal storm water discharge permits.

Butte County Flood Hazard Mitigation Plan. The Butte County Office of Emergency Services drafted a Butte County Flood Hazard Mitigation Plan. The Butte County FMP provides a comprehensive evaluation of the flooding hazards within the Butte County watersheds, as well as elements recommended by FEMA for a Flood Mitigation Plan. Butte County adopted FEMA's Flood Insurance Study (FIS), and the accompanying Flood Insurance Rate Maps (FIRMs).

Butte Creek Watershed Floodplain Management Plan. The overall purpose of the Butte Creek Watershed Floodplain Management Plan is to provide guidance to agencies and the public responsible for and interested in protecting life, property, and livestock, involved in land use planning, responsible for administering the Federal Emergency Management Agency (FEMA) National Flood Insurance Program (NFIP), and responsible for responding to flood emergencies within the Butte Creek watershed. The Butte Creek Watershed Floodplain Management Plan is intended to be a tool to characterize and mitigate hazards related to flooding within the Butte Creek watershed.

Impact 4.5.6: Violate any water quality or waste discharge requirements or depletion of groundwater supplies or recharge.

Implementation of individual improvements identified in the MTP, as well as the SCS strategies, would not violate any waste discharge requirements, substantially deplete groundwater supplies, or interfere with groundwater recharge such that there would be a net deficit in an aquifer volume. The construction phase of the projects could cause storm water runoff that could carry topsoil into downstream waterways and ultimately waters of the U.S.

As required by the Clean Water Act, each specific improvement project will require an approved Storm Water Pollution Prevention Plan (SWPPP) that includes best management practices for grading, and preservation of topsoil. A SWPPP is not required if the project will disturb less than one acre. SWPPPs are designed to control storm water quality degradation to the extent practicable using best management practices during and after construction.

The lead agency that approves and implements a specific project will submit the SWPPP with a Notice of Intent to the Regional Water Quality Control Board (RWQCB) to obtain a General Permit. The strategies provided in the SCS will be implemented by the lead agency in each respective jurisdiction in accordance with the General Plan for that jurisdiction. The lead agency for MTP projects is not yet known, as funding, designs, and approvals have not been made. The lead agencies could include state or local agencies.

4.0 OTHER CEQA-REQUIRED TOPICS

The RWQCB is an agency responsible for reviewing the SWPPP with the Notice of Intent, prior to issuance of a General Permit for the discharge of storm water during construction activities. The RWQCB accepts General Permit applications (with the SWPPP and Notice of Intent) after specific projects have been approved by the lead agency. The lead agency for each specific project that is larger than one acre is required to obtain a General Permit for discharge of storm water during construction activities prior to commencing construction (per the Clean Water Act). Mitigation Measure 4.5.3 provides a requirement to comply with NPDES General Construction Permit requirements to reduce or eliminate construction-related water quality effects. This measure requires the preparation, implementation, and maintenance of a SWPPP during construction. With the implementation of the following standard measure the proposed project would have a **less-than-significant** impact.

Mitigation Measure 4.5.3: *Prior to construction, the implementing agency shall:*

- *Design new bridges or bridge replacement in accordance with the Butte County Flood Mitigation Plan, which includes provisions for adequate clearance, proper design, and debris walls, where needed, to reduce damage caused by tree logs and excessive debris accumulation.*
- *Develop and implement a spill prevention and control program to minimize the potential for, and effects from, spills of hazardous, toxic, or petroleum substances during all construction activities.*
- *Comply with NPDES and Waste Discharge Requirements when dewatering is required.*

Mitigation Measure 4.5.4: *After construction, the implementing agency shall:*

- *Implement source and treatment control measures that minimize the volume and rate of stormwater runoff discharge from the project site. General site design control measures incorporated into the project design can include:*
 - *conserving natural areas;*
 - *protecting slopes and channels;*
 - *minimizing impervious areas;*
 - *storm drain identification, and appropriate messaging and signing; and*
 - *minimizing effective imperviousness through the use of turf buffers and/or grass-lined channels, if feasible.*
- *Implement treatment control measures, if possible and when feasible, to remove pollutants from stormwater runoff prior to discharge to the storm drain system or receiving water. Treatment control measures may include, but not be limited to, the following:*
 - *Vegetated buffer strip*
 - *Vegetated swale*
 - *Extended detention basin*
 - *Wet pond*
 - *Constructed wetland*
 - *Detention basin/sand filter*
 - *Porous pavement detention*
 - *Porous landscape detention*
 - *Infiltration basin*
 - *Infiltration trench*
 - *Media filter*

- *Retention/irrigation*
- *Proprietary control device*

Selection and implementation of these measures would be based on a project-by-project basis depending on project size and stormwater treatment needs.

Impact 4.5.7: Alter the existing drainage pattern in a manner which would result in substantial erosion, siltation, flooding, or polluted runoff

The strategies provided in the SCS are intended to minimize greenhouse gas emissions to the extent possible by way of coordinating land use and transportation planning regionally. These strategies are not expected to result in significant impacts to hydrologic features, or cause erosion or flooding.

Implementation of individual MTP improvements may alter the existing drainage pattern in specific areas, including the alteration of a course of a stream or river, which could result in erosion, siltation, or flooding on- or off-site. The improvement projects are not funded or approved at this point and no project specific plans are available. Each improvement project would require a specific level of design review to ensure that the engineering does not result in substantial alterations in the natural drainage systems.

The U.S. Army Corps of Engineers (USACE) is responsible for issuing permits for the placement of fill, or discharge of material into, waters of the United States. These permits are required under Sections 401 and 404 of the Clean Water Act. Individual projects that involve instream construction, such as bridges, trigger the need for these permits and related environmental reviews by USACE. Subsequent environmental review, design review, and the Clean Water Act permitting requirements would ensure that the impacts are reduced to a reasonable level. Implementation of the following standard measure would ensure that the proposed project would have a ***less-than-significant*** impact.

Mitigation Measure 4.5.5: *Implementing agencies shall conduct project-level drainage studies. This study shall address the following topics:*

- *A calculation of pre-development runoff conditions and post-development runoff scenarios using appropriate engineering methods. This analysis will evaluate potential changes to runoff through specific design criteria, and account for increased surface runoff.*
- *An assessment of existing drainage facilities within the project area, and an inventory of necessary upgrades, replacements, redesigns, and/or rehabilitation, including the sizing of on-site stormwater detention features and pump stations.*
- *A description of the proposed maintenance program for the onsite drainage system.*
- *Standards for drainage systems to be installed on a project/parcel-specific basis.*
- *Proposed design measures to ensure structures are not located within 100-year floodplain areas.*

Drainage systems will be designed in accordance with applicable flood control design criteria. As a performance standard, measures to be implemented from those studies will provide for no net increase in peak stormwater discharge relative to current conditions, ensure that 100-year flooding and its potential

impacts are maintained at or below current levels, and that people and structures are not exposed to additional flood risk.

Mitigation Measure 4.5.6: Avoid restriction of flood flows. Proposed projects requiring federal approval or funding will comply with Executive Order 11988 for floodplain management. Projects will avoid incompatible floodplain development designs, they will restore and preserve the natural and beneficial floodplain values, and they will maintain consistency with the standards and criteria of the National Flood Insurance Program. In addition, a Letter of Map Revision (LOMR) will be prepared and submitted to FEMA where unavoidable construction would occur within 100-year floodplains. The LOMR will include revised local base flood elevations for projects constructed within flood prone areas. Potential impacts due to flooding as a result of MTP projects are assumed to be alleviated through the FEMA LOMR approval process.

Mitigation Measure 4.5.7: Avoid project dewatering. Project designs that require continual de-watering activities for the life of the projects will be avoided if possible. Due to the potential for flooding and destabilizing conditions, project implementing agencies should choose project designs that do not require continual dewatering, if suitable project alternatives exist. Project alternatives may include construction of overpasses, as opposed to below-grade underpasses, which would avoid interception with groundwater.

Impact 4.5.8: Place housing or structures within a 100-year flood hazard area or 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, seiche, tsunami, or mudflow.

Implementation of individual improvements and SCS strategies would not place housing within a 100-year flood hazard area, place structures which would impede or redirect flood flows within a 100-year flood hazard area, nor would it 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, or inundation by seiche, tsunami, or mudflow). Therefore, implementation of the proposed project would have a **less-than-significant** impact on these environmental issues.

MINERAL RESOURCES

Mineral Resource Classification

Pursuant to the Surface Mining and Reclamation Act of 1975 (SMARA), the California State Mining and Geology Board oversees the Mineral Resource Zone (MRZ) classification system. The MRZ system characterizes both the location and known/presumed economic value of underlying mineral resources. The mineral resource classification system uses four main MRZs based on the degree of available geologic information, the likelihood of significant mineral resource occurrence, and the known or inferred quantity of significant mineral resources. The four classifications are described in Table 4.5-2 below.

TABLE 4.5-2: MINERAL RESOURCE CLASSIFICATION SYSTEM

CLASSIFICATION	DESCRIPTIONS
MRZ-1	Areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.

MRZ-2	Areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence.
MRZ-3	Areas containing mineral deposits, the significance of which cannot be evaluated.
MRZ-4	Areas where available information is inadequate for assignment to any other MRZ classification.

SOURCE: CALIFORNIA DEPARTMENT OF CONSERVATION DIVISION OF MINES AND GEOLOGY, 2000.

Mineral Resources

Mineral resources within Butte County consist primarily of sand and gravel aggregate, with limited mining of gold.

Gold Resources. The 1849 California “Gold Rush” originated from gold discovered in El Dorado County, located to the south of Butte County. As people populated the gold epicenter, they quickly moved to the north and south along the Sierra range in search of new mining opportunities. The most recognized gold mining regions in the county include: Bangor, Bidwell Bar, Butte Creek, Cherokee, Clipper Mills, Concow, Forbestown, Honcut, Inskip, Kimshew, Magalia, Morris Ravine, Oroville, Wyandotte, and Yankee Hill. Some of the most valuable gold deposits were located in the river and creek channels in the Magalia, Cherokee, and Bangor-Wyandotte districts.

Aggregate Resources. The communities that now exist in many parts of the County are a direct result of gold mining; however, the era of gold being the major mineral resource in Butte County has shifted. Sand and gravel mining has a higher economic return than gold mining. Most of the aggregates are deposited along the Sacramento River. There is also a strip of aggregate deposits that run in a north to south direction in the central portion of the county. This is the most actively mined region in the County. Gravel and sand is the most common mineral extracted from these deposits, although silica and gold are also extracted. The aggregates are used predominately as materials in cement or asphalt production.

Location of Mineral Resources

The Office of Mine Reclamation periodically publishes a list of mines regulated under SMARA that is generally referred to as the AB 3098 List. The Public Contract Code precludes mining operations that are not on the AB 3098 List from selling sand, gravel, aggregates or other mined materials to state or local agencies. As of July 5, 201, there are 15 mines on the AB 3098 list in Butte County. Table 4.5-3 identifies the active mines located in the county.

TABLE 4.5-3: AB 3098 LIST – ACTIVE MINES IN BUTTE COUNTY

MINE ID	MINE NAME	MINE OPERATOR
91-04-0001	Pentz Plant	Knife River Construction
91-04-0004	Wildlife Area	Granite Construction Company
91-04-0006	Bangor Rock Quarry Site A	Roy E. Ladd, Inc.
91-04-0007	Vance Avenue Pit #1	Mathews Readymix, Inc.
91-04-0008	Mathews Readymix – State Land	Mathews Readymix, Inc.
91-04-0011	Table Mountain Quarry	Triangle Rock Products
91-04-0012	Franklin Aggregate Plant	Franklin Construction Company, Inc.
91-04-0014	Lucky 7	Duke Sherwood Contracting, Inc.

4.0 OTHER CEQA-REQUIRED TOPICS

91-04-0015	Morris Ravine Mine	Mineral Resources, LLC
91-04-0018	Almond Avenue Mine	Granite Construction
91-04-0019	Dunstone Rock Quarry	Bob Hammett
91-04-0021	Permit # 92-43 Vance Avenue, Pit #2	Mathews Readymix, Inc.
91-04-0022	Ron Harmon Mine	TRI-R-Tractor Service
91-04-0025	Pine Creek	Anderson Brothers Corporation
91-04-0030	Little Chico Creek	Franklin Construction Company, Inc.

SOURCE: CALIFORNIA DEPARTMENT OF CONSERVATION DIVISION OF MINES AND GEOLOGY, 2011.

Mineral Regulations and Programs

The California Surface Mining and Reclamation Act (SMARA). The California Surface Mining and Reclamation Act (SMARA of 1975 requires classification of land into Mineral Resources Zones (MRZs), according to the known or inferred mineral potential of that area. SMARA is set forth in the California Public Resources Code (PRC), Division 2, Chapter 9, Sections 2710, et seq.

The State requires each County to implement SMARA policies. These policies apply to the surface mining operations as well as specific measures to be employed in grading, backfilling, resoiling, revegetation, soil compaction, soil erosion control, water quality and watershed control, waste disposal, and flood control.

State policies do not include aspects of regulating surface mining operations that are solely of local concern, and not of statewide or regional concern, such as hours of operation, noise, dust, fencing, and aesthetics. These factors are normally administered and regulated by the local lead agency. The Butte County Department of Development Services regulates mining activities pursuant to SMARA through the issuance of Conditional Use Permits (CUP). CUPs set out specific time limits and conditions for both exploration and extraction activities.

Impact 4.5.9: Potential to result in the loss of availability of a mineral resource of value to the region or state.

Some improvements identified in the MTP are located in the vicinity of land that is used for mineral resource extraction. Additionally, the strategies provided in the SCS cover the entirety of the County, which is inclusive of land used for mineral resource extraction. Implementation of the improvements identified in the MTP, and the strategies outlined in the SCS, would not cause land use changes resulting in conversion of any mineral extraction operations into a different use. Implementation of the proposed project will have a **less than significant** impact on land classified as mineral resource districts.

There are currently 15 mineral resource sites in Butte County according to the July 2011 AB 3098 list. The proposed project will not result in the loss of availability of any of these sites. Implementation of the proposed project will therefore have **no adverse impact** with regards to this topic and no mitigation is required.

PUBLIC SERVICES

Fire Protection

Butte County Fire Department. The California Department of Forestry and Fire Protection (CDF) operates the Butte County Fire Department (BCFD) under a cooperative agreement with the County. The service area covers over 1,600 square miles, including several municipalities. The BCFD provides services to the entire county, with the exception of Chico, Oroville, Paradise and the El Medio Fire Protection District near Oroville.

The BCFD operates from 42 fire stations with full-time CDF officers and fire fighters, as well as a large volunteer staff of fire fighters. Their services include fire control for structural, wildland and vehicular fires, emergency medical service, including water and heavy rescues, hazardous materials response, flood control assistance, fire prevention and education, fire law enforcement, and vegetation management. In addition, the BCFD operates countywide dispatch services, coordinates major emergency response teams within the county, and provides training for the local volunteer fire companies.

Chico Fire Department. The City of Chico Fire Department has 75 full-time personnel and 25 volunteer firefighters who are used on large scale emergencies. The Department operates six fire stations, a Fire Training Center and maintains 30 emergency apparatus in their effort to serve a population of approximately 84,396 people over 31 square miles. The Department has specialized teams for technical rescues, drowning accidents, and hazardous materials response, as well as paramedics support services.

Oroville Fire Department. The Oroville Fire Department has 21 full-time fire fighters 10 paid call fire fighters. The Department operates one fire station with administrative offices, and maintains a fleet of emergency apparatus in their effort to serve a population of approximately 15,000 people over 13 square miles.

Paradise Fire Department. The Paradise Fire Department has 21 fire fighters, 2 Division Chiefs, 1 Fire Marshall, and 1 Fire Chief. The Department staffs three engines from three fire stations providing fire suppression, technical rescues, hazardous materials response, vehicle extraction, and emergency medical response.

El Medio Fire District. The El Medio Fire Protection District covers approximately seven square miles just south of Oroville. The District has 10 sworn personnel and is supported by volunteers. The District operates from one station with one staffed engine.

Police Protection

Butte County Sheriff's Office. The Butte County Sheriff's Office (BCSO) is responsible for law enforcement, criminal investigation, and crime prevention in the unincorporated areas of the county. The BCSO is also the countywide coordinator for mutual aid situations and maintains mutual aid agreements with the California Highway Patrol and the municipal police departments. The BCSO has its main office in Oroville, with sub-stations in Chico and Magalia. The BCSO is responsible for operating the County Jail, which is utilized by all law enforcement agencies within Butte County.

4.0 OTHER CEQA-REQUIRED TOPICS

The BCSO has divided the county into north and south service areas. Twenty-four hour patrol service is provided. Typically, one deputy is assigned per car. Patrol teams operate in response to specific incidents. The department encourages preventative patrol or non-directed activity with a target of 20 to 25 percent of each deputy's shift devoted to self-initiated activity.

California Highway Patrol. The California Highway Patrol (CHP) provides law enforcement services, primarily traffic control, for roads and highways within the unincorporated portions of the county. These services include traffic control, accident investigation, and licensing of vehicles. The CHP maintains two offices that service Butte County. The Chico office has 28 peace officers, with a fleet of 12 vehicles in operation. This office also serves as the dispatch center for the region. The Oroville office has 29 peace officers with a fleet of 10 vehicles in operation.

City of Chico Police Department. The Chico Police Department provides police services to the City of Chico. The Department is authorized for 149 personnel (97 sworn officers). Sworn officers are responsible for emergency and law enforcement-related activities, while non-sworn employees are responsible for animal control, dispatch, record maintenance, parking enforcement, jail management, and clerical tasks. There are also approximately 100 volunteers within the Department.

Gridley-Biggs Police Department. The Gridley-Biggs Police Department is responsible for providing 24-hour law enforcement service throughout the incorporated areas of the Gridley and Biggs. Their service includes the protection of life and property, the maintenance of order, the control and prevention of crime, and the enforcement of motor vehicle laws and regulations. Primary activities related to these responsibilities include enforcement of the laws of the State and the City; investigation of crimes; apprehension of criminals, and maintenance of a crime prevention program.

City of Oroville Police Department. The Oroville Police Department provides service to a 13-square-mile area from a single central police station. The Department consists of an Administration and Operations Department, which includes Patrol and Traffic division, Parking Enforcement, School Resource Officer, CREDO officer, K-9 Unit, and Community Service Officers.

Schools

Butte County has fifteen local school districts, a County Office of Education, a community college district, and a California State University.

Butte County School Districts. The local school districts range in size from a single school to 26 schools. Five of the districts (Biggs, Chico, Durham, Gridley and Paradise) are unified school districts, serving students from kindergarten through high school. Eight districts (Bangor, Feather Falls, Golden Feather, Manzanita, Oroville, Palermo, Pioneer and Thermalito) provide elementary education throughout the rest of the county. Oroville Union High School District and Gridley Unified provide secondary education. Approximately 35,000 students are enrolled in schools in Butte County.

Butte County Office of Education. The Butte County Office of Education provides local and regional educational programs, services, and support to the individual school districts within the county. The office provides help to establish and maintain a consistent level of educational quality among the various school districts and serves as a link between the local districts and the requirements of state and federal education programs.

Butte College. Butte College is a two-year community college that serves the residents of Butte and Glenn Counties. The college offers a range of liberal arts and career/technical classes through full-time, part-time, and evening programs. The main campus is located approximately 15 miles northwest of Oroville. There are also two satellite centers in Chico and Orland. Approximately 11,000 full-time equivalent students are enrolled.

California State University – Chico. California State University, Chico is a residential campus with seven colleges, six schools and 14 centers. Approximately 14,000 full-time equivalent students are enrolled.

Parks

The responsibility of local park planning and development in Butte County generally falls under the jurisdiction of five special independent districts, including: a) The Chico Area Recreation and Park District, serving Chico and the surrounding vicinity; b) The Feather River Recreation and Park District, serving the Oroville area and surrounding vicinity; c) The Paradise Recreation and Park District, serving the Paradise Ridge area; d) The Durham Recreation and Park District, serving the Durham community and surrounding area; and e). The Richvale Recreation and Park District, serving the small rural town of Richvale. Each of these park districts is described in more detail in the Recreation section of this Initial Study.

Other Public Facilities

The Butte County Library provides library services to county residents from its headquarters in Oroville and branches in Biggs, Chico, Durham, Gridley and Paradise. The library offers basic services for adults and limited programming for children. In addition, the library operates the local California Literacy Campaign.

Impact 4.5.10: Potential to result in adverse impacts associated with the provision of public services including: fire, police, schools, parks, or other public services.

The improvements identified in the MTP include a variety of transportation improvements that will not result in an increased need for any public services or facilities. The strategies provided in the SCS are intended to minimize greenhouse gas emissions to the extent possible by way of coordinating land use and transportation planning regionally. Neither components of the proposed project would result in an increased demand, or require the need for expansion of the existing recreational facilities beyond what is planned in the General Plan for each respective jurisdiction. Implementation of the proposed project will have a *less than significant impact* on public services.

RECREATION

Recreation of Federal Lands

Butte County contains approximately 131,000 acres of lands owned by the U.S. Forest Service. The Plumas National Forest and Lassen National Forest are the primary Forest Service recreational areas. The Mendocino National Forest operates a 209-acre research center just outside of Chico. The forests provide residents and non-residents with a wide variety of recreation experiences in the natural environment. The U.S. Bureau of Land Management owns 18,600 acres in Butte County, consisting primarily of scattered foothill lands. These federal lands provide hiking, fishing, tubing, kayaking, picnicking and camping, among other activities on natural lakes, man-made reservoirs, trails, and campgrounds.

Recreation on State Lands

The State of California administers the Lake Oroville State Recreation Area, encompassing 47,000 acres. Other existing state recreational areas include Oroville State Wildlife Area, Grey Lodge State Waterfowl Management Area, and Bidwell Mansion State Historic Park.

Local Recreation

The responsibility of local park planning and development in Butte County generally falls under the jurisdiction of five special independent districts.

Chico Area Recreation and Park District. The Chico Area Recreation and Park District encompasses approximately 225 square miles within the City of Chico and extending to Tehama County in the north. The District includes city, community, neighborhood, and school parks and recreation areas. The District's land area is characterized mostly by an urban population and they operate the largest number of park facilities in the county. They operate a wide range of urban, suburban, and rural park and recreation areas. It also operates an extensive recreation program that includes a variety of athletic, education, crafts, and senior programs.

Durham Recreation and Park District. The Durham Recreation and Park District service area encompasses 220 square miles located south of Chico in the communities of Durham, Dayton, and Nelson. The District provides limited recreation programs and operates and maintains both community and neighborhood recreation facilities.

Feather River Recreation and Park District. The Feather River District located in the Oroville area includes parks and recreation facilities that are under the jurisdiction and management of federal, state, and city governments, as well as schools and community clubs.

Paradise Recreation and Park District. The Paradise Recreation and Park District encompasses approximately 169 square miles primarily centered on the Town of Paradise. The District provides a comprehensive recreation program and manages 432 acres of park land and recreational facilities, including undeveloped land, and partially or fully developed facilities. Facilities within the

District are owned and operated by the District, Pacific Gas and Energy, Paradise Irrigation District, Bureau of Land Management, and the School Districts.

Richvale Recreation and Park District. The Richvale Recreation and Park District represents the smallest district in terms of land acreage and recreational facilities. The District serves the community of Richvale and its surrounding area.

Impact 4.5.11: Potential to increase the use of recreational facilities.

The improvements identified in the MTP include a variety of transportation improvements that will not result in an increased need for any recreational facilities. The strategies provided in the SCS are intended to minimize greenhouse gas emissions to the extent possible by way of coordinating land use and transportation planning regionally. Neither components of the proposed project would result in an increased demand, or require the need for expansion of the existing recreational facilities. Furthermore, the improved roadway infrastructure will not require a need for new recreational facilities. Implementation of the proposed project will have a ***less than significant impact*** on recreational facilities.

UTILITIES AND SERVICE SYSTEMS

Wastewater Treatment

Wastewater treatment system capacities are commensurate with the local population. The collection, treatment, and disposal of wastewater in Butte county occurs in one of the two primary ways: Community Collection/Treatment Systems and Individual On-Site Treatment Systems. Each of the wastewater systems within Butte County utilizes gravity collection methods. Three of the Districts are permitted by the RWQCB to discharge to surface watercourses. Four Districts are prohibited from surface water discharge; therefore they use evaporation or percolation or a combined evaporation/percolation disposal method. Many rural areas rely on septic systems.

Storm Drainage

Butte County encompasses approximately 1,670 square miles in north central California. The western part of the county is located in the northern Sacramento Valley, while the eastern portion extends into the foothills of the Cascade and Sierra Nevada Mountain Ranges. Elevations range from 50 feet above sea level at Butte Sink along the Sacramento River at the southwest portion of the county, to 7,087 feet above sea level at Humboldt Summit near the county's northeastern border. The region is broken up into seven watersheds: Big Chico Creek Watershed, Butte Creek Watershed, Cherokee Watershed, Feather River/Lower Honcut Creek Watershed, Lake Oroville/Upper Feather River Watershed, Little Chico Creek Watershed, and Pine Creek Watershed.

Water Supply

The County's water supply needs are provided through twenty different agencies. Domestic water supply in the county is managed by local water companies and water districts. This water supply

includes water for drinking, residential, and commercial uses. A significant portion of domestic water is obtained through private residential wells. Mutual water companies, such as Cal Water Service Company, are private corporations that perform water supply and distribution functions in Butte County that are similar to public water districts. Irrigation districts provide water supplies primarily to agricultural uses, though they serve some residential and commercial uses.

Impact 4.5.12: Potential to impact wastewater treatment, water supply, landfill or solid waste facilities or requirements.

The County has an elaborate network of public utilities and services, such as water, wastewater treatment, and storm drainage. It has been a goal of the County and local municipalities to maintain an adequate level of services for all public utilities and services provides to the community. Utility infrastructure exists in various parts of the incorporated and unincorporated county. The proposed project does not require the use of utilities or infrastructure and would not result in the expansion of utilities or infrastructure. The SCS strategies and individual improvements will not result in an increased need for any utilities. Implementation of the proposed project will have a *less than significant* impact.

Impact 4.5.13: Potential to result in the construction of new storm water drainage facilities.

Each individual improvement project would result in additional impervious services and increased stormwater runoff. Each improvement would be engineered with storm drainage infrastructure (i.e. culverts, pipes, detention/retention ponds, biofilters, etc.) to control runoff and prevent erosion and sedimentation. Each improvement would require a Storm Water Pollution Prevention Plan that would be submitted to the Regional Water Quality Control Board for review and approval prior to issuance of a General Permit for storm water discharge. The MTP does not provide detailed engineering and drainage plans for any of the potential improvements because they will be completed at a project specific level at a later date once they are funded and up for approval. The MTP and SCS collectively would have a *less than significant* impact on storm drainage.

5.1 CEQA REQUIREMENTS

CEQA requires that an EIR analyze a reasonable range of feasible alternatives that meet most or all project objectives while reducing or avoiding one or more significant environmental effects of the project. The range of alternatives required in an EIR is governed by a “rule of reason” that requires an EIR to set forth only those alternatives necessary to permit a reasoned choice (CEQA Guidelines Section 15126.6[f]). Where a potential alternative was examined but not chosen as one of the range of alternatives, the CEQA Guidelines require that the EIR briefly discuss the reasons the alternative was dismissed.

PROJECT GOALS AND OBJECTIVES

The alternatives to the proposed project selected for analysis in the EIR were developed to minimize significant environmental impacts while fulfilling the basic objectives of the project. As described in Chapter 2, Project Description, the following goals and objectives have been identified for the MTP/SCS.

The purpose of the MTP is to provide a clear vision of the regional transportation goals, objectives, and policies in Butte County. The MTP 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 2012 MTP/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 maintain a Level of Service “D” on all regionally significant roads
- 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 transportationally disadvantaged persons.

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.

5.0 ALTERNATIVES

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.

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.
- 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.

5.0 ALTERNATIVES

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.

ALTERNATIVES NOT SELECTED FOR FURTHER ANALYSIS

A Notice of Preparation was circulated to the public to solicit recommendations for a reasonable range of alternatives to the proposed project. Additionally, a scoping meeting was held during the public review period to solicit recommendations for a reasonable range of alternatives to the proposed project. No specific alternatives were recommended by commenting agencies or the general public during the NOP public review process.

5.2 ALTERNATIVES CONSIDERED IN THIS EIR

Three alternatives to the proposed project were developed based on public input and the technical analysis performed to identify the environmental effects of the proposed project. Due to the nature of the proposed project, there are elements common to each of the alternatives, with each alternative having the same approach and investment associated with goods movement, aviation, energy, land use strategies, and outreach and coordination objectives. The alternatives analyzed in this EIR include the following three regional alternatives in addition to the MTP/SCS.

- No Project Alternative
- Financially Unconstrained Alternative
- Transit Investment Alternative

NO PROJECT ALTERNATIVE

The CEQA Guidelines (Section 15126.6[e]) require consideration of a no project alternative that represents the existing conditions, as well as what would reasonably be expected to occur in the foreseeable future if the project were not approved. When a project involves the revision of an existing plan, the no-project alternative should reflect continuation of the existing plan. For purposes of this analysis, the No Project Alternative is the continuation of BCAG's adopted 2008 RTP into the future. It should be noted that funding of 2008 RTP projects would not be available because of the lapse of an approved RTP. However, for this alternative analysis we assume that this alternative would carry out the transportation projects in the 2008 RTP. This alternative also anticipates that the land uses and population estimates that were the basis for the 2008 RTP are extrapolated to the planning horizon year 2035. Under this alternative, the Tier I projects included in the 2012 MTP would not be implemented. Lastly, the SCS would not be approved. Development would continue under the authority of the local land use agencies in a manner consistent with their General Plans regardless of the SCS, but BCAG would be in violation of SB 375 and AB 32.

FINANCIALLY UNCONSTRAINED ALTERNATIVE

The Financially Unconstrained Alternative includes \$468,725,000 for all Tier I projects under the proposed project. This alternative would leverage Caltrans funding for the Tier I road network projects while also emphasizing transit and multi-modal systems and networks. This alternative would continue to support Tier I bicycle and pedestrian projects. In addition to the Tier I projects, this alternative would include \$450,000,000 million for Tier II projects. This alternative

5.0 ALTERNATIVES

includes the SCS and all projects identified in the MTP without regard to whether or not they can be funded. This alternative focuses on decreasing traffic congestion through a combination of capacity and operational roadway improvements, and investments in the regional transit and bike and pedestrian facilities.

TRANSIT INVESTMENT ALTERNATIVE

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 also funding the Tier I transportation improvements. This alternative would remove \$450,000,000 million from Tier II roadway improvement projects and would shift \$450,000,000 million to transit capital improvements. An overall reduction in funding would result from the shift as some of the funding is not under BCAG's control and most likely would not be able to be retained locally for elective projects. Also, BCAG does not have the funding necessary for the operational costs that would result from the transit capital improvements proposed under this alternative so either the Tier II funds would be reduced in order to provide a level of capital improvements for which BCAG can fund the operation and maintenance or new legislation would be necessary to allow the use of capital funds for operational costs. BCAG's transit maintenance/refueling/management facility would need to be extensively expanded or relocated in order to accommodate any significant capital purchases, such as a large increase in the transit fleet. It is noted 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.

5.3 ENVIRONMENTAL ANALYSIS

The alternatives analysis provides a summary of the relative impact level of significance associated with each alternative for each of the environmental issue areas analyzed in this EIR. Following the analysis of each alternative, Table 5.4-1 summarizes the comparative effects of each alternative.

NO PROJECT ALTERNATIVE

Aesthetics

The No Project Alternative would not result in an SCS for the region and would implement fewer transportation improvement projects when compared to the other alternatives. Development of land uses would occur regardless of the SCS. This alternative would reduce the potential for visual impacts as there would be less roadway widening/extensions, interchanges, and bicycle/pedestrian path improvement projects. This alternative would have a better effect on aesthetics in comparison to the other alternatives and is considered superior to the other alternatives.

Agricultural and Forest Resources

The No Project Alternative would not result in an SCS for the region and would implement fewer transportation improvement projects when compared to the other alternatives. Development of land uses would occur regardless of the SCS. This alternative would reduce the amount of farmland and forest land converted to other uses as there would be fewer roadway widening/extensions, interchanges, and bicycle/pedestrian path improvement projects. This alternative would have a better effect on farmland and forest land in comparison to the other alternatives and is considered superior to the other alternatives.

Air Quality

The No Project Alternative would not result in an SCS for the region and would implement fewer transportation improvement projects when compared to the other alternatives. Development of land uses would occur regardless of the SCS. This alternative would reduce the amount of construction-related emissions. The No Project Alternative would result in increased congestion on area roadways since operational improvements needed to improve traffic flows and decrease idling times would not occur under this alternative. As a result VHD would be higher than the other alternatives. The increase in VHD would potentially create CO hot spots in select locations at select times. These CO hotspots would not otherwise exist. This alternative would have less of an adverse effect on short term air quality impacts, but a greater effect on long-term operational air quality impacts. This alternative is considered inferior to the other alternatives.

Biological Resources

The No Project Alternative would implement fewer transportation improvement projects than the other alternatives, and would reduce the potential to disturb or impact biological resources. The SCS would not be implemented and development would continue to occur. This alternative would have a reduced effect on biological resources in comparison to the other alternatives and is considered superior to the other alternatives.

Cultural Resources

The No Project Alternative would not result in an SCS for the region and would implement fewer transportation improvement projects when compared to the other alternatives. Development of land uses would occur regardless of the SCS. This alternative would reduce the potential to disturb or destroy cultural, historic, and archaeological resources, as well as paleontological resources. This alternative would have a reduced effect on cultural resources in comparison to the other alternatives and is considered superior to the other alternatives.

Greenhouse Gases and Climate Change

The No Project Alternative would not result in an SCS for the region and would implement fewer transportation improvement projects when compared to the other alternatives. Development of land uses would occur regardless of the SCS. The region would not have a planned roadway network that is coordinated with land uses in a way that enable the achievement of GHG

reductions pursuant to AB 32 and SB 375. The No Project Alternative would result in conflicts with SB 375 and would result in an infrastructure system not consistent with current growth and population projections for the county and its communities. This alternative would reduce the amount of construction-related greenhouse gas emissions because there would be fewer projects. Overall, this alternative is considered inferior to the other alternatives.

Land Use and Population

The No Project Alternative would not reflect changes in land uses that have been approved since the 2008 RTP was adopted and it would also not be consistent with planning efforts that are currently underway, including general plan updates. The SCS would not be implemented and development would continue to occur regardless of the SCS. The region would not have a planned roadway network that is coordinated with land uses in a way that enable the achievement of GHG reductions pursuant to AB 32 and SB 375. The No Project Alternative would result in conflicts with SB 375 and would result in an infrastructure system not consistent with current growth and population projections for the county and its communities. Therefore, this alternative would have a worse effect on land use and population than the other alternatives and is considered inferior to the other alternatives.

Noise

The No Project alternative would not result in an SCS, but development would continue to occur. This alternative would have fewer improvement projects when compared to the other alternatives, and would have less short-term noise impacts associated with construction activities. All alternatives would result in similar overall levels of noise as a result of an increase in traffic noise levels along the roadway. However, the No Project Alternative would have the lowest noise levels. Therefore, this alternative would be considered superior to the other alternatives.

Traffic/Circulation

The No Project alternative would not result in an SCS, but development would continue to occur. The region would not have a planned roadway network that is coordinated with land uses in a way that enables the achievement of acceptable LOS. The No Project Alternative would result in conflicts with SB 375 and would result in an infrastructure system that is not consistent with current growth and population projections for the county and its communities. Additional VHD would occur and there would be more portions of the roadway network that would operate at an unacceptable LOS under this alternative in comparison to the Financially Constrained and Unconstrained alternatives, as well as the Transit Investment alternative. Overall, the No Project Alternative is inferior to the other alternatives.

FINANCIALLY UNCONSTRAINED ALTERNATIVE

Aesthetics

This alternative would result in an SCS consistent with the proposed project. However, this alternative would result in the construction of more improvement projects than the proposed

project and other alternatives, thus creating the greatest potential for adverse impacts on aesthetics compared to the other alternatives. This alternative would increase the potential for loss or degradation of scenic views and resources, change in visual character, and increased light and glare. This alternative is inferior to the proposed project and other alternatives with regard to aesthetics.

Agricultural and Forest Resources

The Fiscally Unconstrained Alternative would result in a greater chance of disturbing important and significant farmlands and forest resources due to the increase in grading and other land disturbance associated with roadway and transportation infrastructure projects associated with this alternative. This alternative would include implementation of the SCS, although this component is not expected to result in increased impacts to agricultural and forest resources. This alternative is inferior to the other alternatives with regard to agricultural and forest resources.

Air Quality

This alternative would result in an SCS consistent with the proposed project. The SCS component is expected to result in decreased impacts to air quality as a result of a coordinated and more balance growth strategy for the region. The Tier I improvements are designed to facilitate growth consistent with the SCS, General Plans, and planning activities of the county and incorporated communities. This alternative would result in more construction-related emissions than the proposed project and other alternatives as a result of the increased number of improvement projects (Tier II projects). This alternative will allow for greater traffic capacity and it will also result in less traffic congestion and associated pollutant emissions (CO hotspots). This alternative will allow for increased use of public transit and other transportation alternatives that reduce pollutant emissions. This alternative is superior to the proposed project and No Project Alternative in regards to air quality and is comparable to the Transit Investment Alternative.

Biological Resources

The proposed project and all alternatives are expected to be developed consistent with established policies and regulations that protect biological resources. However, the Fiscally Unconstrained Alternative would result in the construction of more improvement projects resulting in a greater risk of impact to biological resources. This alternative would include implementation of the SCS, although this component is not expected to result in increased impacts to biological resources. This alternative is inferior to the proposed project and other alternatives with regard to biological resources.

Cultural Resources

The Fiscally Unconstrained Alternative would result in a greater chance of disturbing cultural and historical resources due to the increase in grading and other land disturbance associated with roadway and transportation infrastructure projects associated with this alternative. This alternative would include implementation of the SCS, although this component is not expected

to result in increased impacts to cultural resources. This alternative is inferior to the other alternatives with regard to cultural resources.

Greenhouse Gases and Climate Change

The Fiscally Unconstrained Alternative would result in an SCS consistent with the proposed project. The SCS component is expected to result in a more balance growth strategy for the region that is coordinated with the transportation network. The Tier I improvements are designed to facilitate growth consistent with the SCS, General Plans, and planning activities of the county and incorporated communities. With this balanced growth strategy and coordinated Tier I projects long-term greenhouse gas emissions on a per capita basis would be reduced to target levels. The SCS would enable the region to achieve compliance with SB 375 and AB 32. This alternative would allow for Tier II improvement projects that are needed to maintain acceptable levels of service and roadway safety to be constructed, including roadway and transit projects. This alternative would result in increased trips and vehicle miles traveled as a result of the increased infrastructure. This would also increase greenhouse gas emissions compared to the other alternatives. This alternative is inferior to the other alternatives relative to this topic.

Land Use and Population

The Fiscally Unconstrained Alternative would result in the construction of more transportation improvement projects when compared to the other alternatives. This alternative would include implementation of the SCS, although this component is not expected to result in increased impacts to land use and population. These improvements are designed to facilitate growth consistent with the General Plans and planning activities of the county and incorporated communities. This alternative would implement planned roadway improvements. The other alternatives would not result in the development of needed capacity improvements that would facilitate planned growth. This alternative is superior to the other alternative with regard to land use and planning.

Noise

The Fiscally Unconstrained Alternative would result in the construction of more improvement projects than the other alternatives, which would result in greater short-term construction related noise impacts. This alternative would also include implementation of the SCS, although this component is not expected to result in increased impacts to noise above what would occur without the SCS. This alternative would have similar traffic noise levels as the proposed project, but would reduce traffic noise on several roadways as a result of less congestion. This alternative would have reduced long-term operational noise impacts compared to the proposed project. This alternative would be slightly better than the proposed project and the Transit Investment Alternative in terms of noise impacts, but is worse than the No Project Alternative.

Transportation/Traffic

The Financially Unconstrained Alternative would result in an SCS consistent with the proposed project. The SCS component is expected to result in a more balance growth strategy for the region that is coordinated with the transportation network. The Financially Unconstrained

Alternative would reduce impacts to roadway LOS on more lane miles, and would result in fewer roadway LOS impacts than the other alternatives. This alternative would result in increased traffic safety in comparison to the proposed project and other alternatives. While additional trips would occur under this alternative, VHD would decrease in comparison to the proposed project and other alternatives. This alternative would allow for more improvement projects that are needed to maintain acceptable levels of service and roadway safety to be constructed, including roadway and transit projects. Overall, this alternative is superior to the proposed project, No Project Alternative, and Transit Investment Alternative with regard to traffic.

TRANSIT INVESTMENT ALTERNATIVE

Aesthetics

The Transit Investment Alternative would result in significant new investments in transit capital, operational, and maintenance improvements, as well as bike and pedestrian facilities in addition to the projects under the Financially Constrained Alternative. This alternative would result in less physical development compared to the Financially Constrained and Unconstrained alternatives. This project would, however, have significantly more physical development when compared to the No Project alternative. This alternative would include implementation of the SCS, although this component is not expected to result in increased impacts to aesthetics. This alternative would be inferior to the No Project alternative, equal to the Financially Constrained alternative, and superior to the Financially Unconstrained alternative.

Agricultural and Forest Resources

The Transit Investment Alternative would result in the construction of new improvement projects resulting in the impacts to agricultural and forest lands. This alternative would result in less physical development compared to the Financially Constrained and Unconstrained alternatives, while it would have significantly more physical development when compared to the No Project alternative. This alternative would include implementation of the SCS, although this component is not expected to result in increased impacts to agricultural and forest resources. This alternative would be inferior to the No Project alternative, equal to the Financially Constrained alternative, and superior to the Financially Unconstrained alternative.

Air Quality

The Transit Investment Alternative would result in an SCS consistent with the proposed project. The SCS component is expected to result in decreased impacts to air quality as a result of a coordinated and more balance growth strategy for the region. The MTP improvements are designed to facilitate growth consistent with the SCS, General Plans, and planning activities of the county and incorporated communities. This alternative would result in more construction-related emissions from the construction of new projects; however, this alternative will allow for greater traffic capacity from new roadway project and a switch to alternative modes for some citizens. This will result in less traffic congestion and associated pollutant emissions (CO hotspots). This alternative will allow for increased use of public transit and other transportation alternatives that reduce pollutant emissions. This alternative is considered superior to the No

Project and Financially Constrained alternatives, and equal to the Financially Constrained alternative.

Biological Resources

The Transit Investment Alternative would result in the construction of new improvement projects resulting in a greater risk of impact to biological resources. This alternative would result in less physical development compared to the Financially Constrained and Unconstrained alternatives, while it would have significantly more physical development when compared to the No Project alternative. This alternative would include implementation of the SCS, although this component is not expected to result in increased impacts to biological resources. This alternative would be inferior to the No Project alternative, equal to the Financially Constrained alternative, and superior to the Financially Unconstrained alternative.

Cultural Resources

The Transit Investment Alternative would result in the construction of new improvement projects resulting in a greater chance of disturbing cultural and historical resources due to the increase in grading and other land disturbance associated with infrastructure projects. This alternative would result in less physical development compared to the Financially Constrained and Financially Unconstrained alternatives, while it would have significantly more physical development when compared to the No Project alternative. This alternative would include implementation of the SCS, although this component is not expected to result in increased impacts to cultural resources. This alternative would be inferior to the No Project alternative, equal to the Financially Constrained alternative, and superior to the Financially Unconstrained alternative.

Greenhouse Gases and Climate Change

The Transit Investment Alternative would result in an SCS consistent with the proposed project. The SCS component is expected to result in a more balanced growth strategy for the region that is coordinated with the transportation network. The MTP improvements are designed to facilitate growth consistent with the SCS, General Plans, and planning activities of the county and incorporated communities. With this balanced growth strategy and coordinated MTP projects long-term greenhouse gas emissions on a per capita basis would be reduced to target levels. The SCS would enable the region to achieve compliance with SB 375 and AB 32. The Transit Investment Alternative would add significant new investments in transit capital, operational, and maintenance improvements, as well as bike and pedestrian facilities in addition to most of the projects under the Financially Constrained Alternative. This alternative would enhance the GHG emissions benefits provided by the SCS. This alternative is considered superior to the other alternatives.

Land Use and Population

The Transit Investment Alternative would result in significant new investments in transit capital, operational, and maintenance improvements, as well as bike and pedestrian facilities in addition to most of the projects under the Financially Constrained Alternative. The improvements under

the Financially Constrained Alternative are designed to facilitate growth consistent with the General Plans and planning activities of the county and incorporated communities. This alternative would implement most of those planned roadway improvements plus provide significant funding for transit projects. This alternative would include implementation of the SCS, although this component is not expected to result in increased impacts to land use and population. This alternative would enhance the GHG emissions benefits provided by the SCS. Overall, this alternative is superior to the No Project and Financially Unconstrained alternatives, and inferior to the Financially Constrained alternative with regard to land use and population.

Noise

The Transit Investment alternative would have new improvement projects and would therefore have new short-term noise impacts associated with construction activities. This alternative would also include implementation of the SCS, although this component is not expected to result in increased impacts to noise above what would occur without the SCS. All alternatives would result in similar overall levels of noise impact as a result of an increase in traffic noise levels along the roadway. However, the Transit Investment Alternative would have the second highest VHD, which would increase noise associated with idling. This alternative would be inferior to the No Project alternative, equal to the Financially Constrained alternative, and superior to the Financially Unconstrained alternative.

Transportation/Traffic

The Transit Investment Alternative would result in an SCS consistent with the proposed project. The SCS component is expected to result in a more balance growth strategy for the region that is coordinated with the transportation network. The MTP improvements are designed to facilitate growth consistent with the SCS, General Plans, and planning activities of the county and incorporated communities. The Transit Investment Alternative would reduce impacts to roadway LOS on less lane miles in comparison to the Financially Constrained and Unconstrained alternatives. Additional VHD would occur and there would be more portions of the roadway network that would operate at an unacceptable LOS under this alternative in comparison to the Financially Constrained and Unconstrained alternatives. This alternative would allow for some improvement projects that are needed to maintain acceptable levels of service and roadway safety to be constructed, while also focusing on shifting some trips to alternative modes of transportation. Overall, this alternative is inferior to the Financially Constrained and Unconstrained alternatives, and superior to the No Project with regard to traffic.

5.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires that an environmentally superior alternative be identified among the alternatives that are analyzed in the EIR. If the No Project Alternative is the environmentally superior alternative, an EIR must also identify an environmentally superior alternative among the other alternatives (CEQA Guidelines Section 15126.6(e)(2)). The environmentally superior alternative is that alternative with the least adverse environmental impacts when compared to the proposed project.

5.0 ALTERNATIVES

Table 5.4-1 provides a comparison of the alternatives using a qualitative matrix that quantifies the impacts of each alternative relative to the other alternatives. As shown in Table 5.4-1 below, the Financially Constrained Alternative has the lowest overall impact (score of 16) and is deemed the environmentally superior alternative because it provides the greatest reduction of potential impacts in comparison to the other alternatives, while also achieving the project goals and objectives.

The Transit Investment Alternative ranks second with a score of 18, the No Project Alternative ranks third with a score of 20, and the Financially Unconstrained Alternative ranks fourth with a score of 31.

TABLE 5.4-1: COMPARISON SUMMARY OF ALTERNATIVES

<i>ENVIRONMENTAL ISSUE</i>	<i>NO PROJECT</i>	<i>FINANCIALLY CONSTRAINED (PROPOSED PROJECT)</i>	<i>FINANCIALLY UNCONSTRAINED</i>	<i>TRANSIT INVESTMENT</i>
Aesthetics	1 (Best)	2 (Equal)	4 (Worst)	2 (Equal)
	The No Project Alternative would result in the lowest potential for adverse impacts on aesthetics. Development would still occur without the SCS; however, as roadway infrastructure improvement projects would decrease under this alternative, the potential for development of roadway infrastructure to degrade scenic views, remove scenic resources, change visual character, and result in increased light and glare would be less under the No Project Alternative when compared to the other alternatives.			
Agricultural Resources	1 (Best)	2 (Equal)	4 (Worst)	2 (Equal)
	The No Project Alternative would result in the lowest potential for adverse impacts on agricultural resources. Development would still occur without the SCS; however, as roadway infrastructure improvement projects would decrease under this alternative, the potential for development of roadway infrastructure to convert agricultural lands to non-agricultural uses as well as the potential for conflicts with agricultural lands would be less under the No Project Alternative when compared to the other alternatives.			
Air Quality	4 (Worst)	1 (Equal)	3 (Medium)	1 (Equal)
	The Financially Constrained and Transit Investment Alternative would equally result in the lowest potential for adverse impacts on air quality. Development would still occur without the SCS; however, as roadway infrastructure improvement projects would increase to alleviate LOS deficiencies and transit service and bike/pedestrian use would increase under these alternatives, the total VMT per capita would decrease, which would result in a corresponding decrease of vehicle related air quality emissions.			
Biological Resources	1 (Best)	2 (Equal)	4 (Worst)	2 (Equal)
	The No Project Alternative would result in the lowest potential for adverse impacts on biological resources. Development would still occur without the SCS; however, as roadway infrastructure improvement projects would decrease there would be fewer construction and infrastructure development projects that would negatively impact special-status species, their habitat, sensitive habitat, migration corridors, and wetlands/riparian resources under the No Project Alternative when compared to the other alternatives.			
Cultural Resources	1 (Best)	2 (Equal)	4 (Worst)	2 (Equal)
	The No Project Alternative would result in the lowest potential for adverse impacts on cultural resources. Development would still occur without the SCS; however, as roadway infrastructure improvement projects would decrease under this alternative, there would be fewer construction and infrastructure development projects that would have the potential to degrade or destroy cultural resources, including archaeological, paleontological, historic, and human remains, under the No Project Alternative when compared to the other alternatives.			

<i>ENVIRONMENTAL ISSUE</i>	<i>NO PROJECT</i>	<i>FINANCIALLY CONSTRAINED (PROPOSED PROJECT)</i>	<i>FINANCIALLY UNCONSTRAINED</i>	<i>TRANSIT INVESTMENT</i>
Greenhouse Gases and Climate Change	3 (Medium)	2 (Better)	4 (Worst)	1 (Best)
	<p>The Transit Investment Alternative would result in the greatest improvement to Greenhouse Gases and Climate Change. Roadway infrastructure improvement projects would increase under this alternative to alleviate short-term LOS deficiencies. Alternatives modes of transportation, such as transit service and bike/pedestrian use, would increase under this alternative. The total VMT per capita would decrease in the long-term, although to the detriment of LOS conditions on roadways. The corresponding effect would be a decrease of vehicle related greenhouse gas emissions. The effect of the SCS on greenhouse gas emissions would be similar for the Transit Investment, Financially Unconstrained, and Financially Constrained Alternatives, while the No Project Alternative would not have the long-term greenhouse gas emissions benefits from the SCS.</p>			
Land Use and Population	4 (Worst)	1 (Best)	3 (Medium)	2 (Better)
	<p>The Financially Constrained Alternative would result in the lowest potential for adverse impacts associated with land use and population. The SCS would be implemented. This alternative would be the most consistent with land use planning activities in the county and its jurisdictions. This alternative would provide a growth strategy that is coordinated with the long range planning of transportation improvements necessary to serve new development. The Financially Unconstrained Alternatives would result in implementation of the SCS growth strategy; however, it would provide more transportation projects which could induce growth. The Financially Constrained Alternative would have less of an impact on land use and population than other alternatives.</p>			
Noise	1 (Best)	2 (Equal)	4 (Worst)	2 (Equal)
	<p>The No Project alternative would have less short-term noise impacts associated with construction activities as a result of fewer transportation projects. Construction noise associated with development would be similar with and without the SCS. Long-term noise associated development would also be similar with and without the SCS. This alternative would have less noise impacts compared to the other alternatives.</p>			
Transportation / Traffic	4 (Worst)	2 (Better)	1 (Best)	3 (Medium)
	<p>The Financially Unconstrained Alternative would have a greater effect at reducing roadway LOS and improving roadway safety when compared to the other alternatives. This alternative would involve additional improvements to the roadway system to increase capacity and roadway safety, improve LOS, and reduce VHD in comparison with the proposed project and other alternatives. The SCS would have a similar effect on VMT for the Financially Unconstrained, Financially Constrained, and Transit Investment Alternatives, while the No Project Alternative would not have the long-term VMT benefits from the SCS.</p>			

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