Tuolumne County Transportation Council

2016 Regional Transportation Plan

Draft Environmental Impact Report

SCH# 2015122039

Volume 2: Appendices A-C

September 2016

rincon

Environmental Scientists Planners Engineers

Appendix A

Notice of Preparation (NOP)
NOP Comments

2015122039

Michael Ayala
Chairman

Darin Grossi
Executive Director

TUOLUMNE COUNTY TRANSPORTATION COUNCIL

NOTICE IS HEREBY GIVEN that the Tuolumne County Transportation Council (TCTC) is the lead agency for the preparation and review of the Program Environmental Impact Report (EIR) for the 2016 Regional Transportation Plan (RTP). Pursuant to section 15082 of the California Environmental Quality Act (CEQA), TCTC is soliciting your comments to assist us in identifying the potential environmental impacts that may result from the proposed project to ensure that the EIR addresses all relevant environmental issues which is relevant to your agency's statutory responsibilities in connection with the proposed project.

The Draft EIR will be a Program EIR and per the CEQA Guidelines, a Program EIR is an EIR that may be prepared on a series of actions that can be characterized as one large project. The purpose of a Program EIR is to allow the lead agency to consider broad policy alternatives and program-wide mitigation measures at an early time when the agency has greater flexibility to deal with basic problems or cumulative impacts.

Project Title
The Program EIR for the Tuolumne County Transportation Council's (TCTC) 2016 Regional Transportation Plan.

Project Location
The geographical extent of the proposed RTP includes the area within the limits of Tuolumne County, California, including the incorporated City of Sonora and all unincorporated areas under the jurisdiction of the Tuolumne County. The attached figure shows the RTP plan area.

Project Description
Tuolumne County Transportation Council (TCTC), is the State-designated regional transportation planning agency (RTPA) for Tuolumne County, is required by both federal and State law to prepare a long-range (at least 20-year) transportation planning document known as a Regional Transportation Plan (RTP). The RTP is an action-oriented document used to achieve a coordinated and balanced regional transportation system. California Government Code §65080 et seq. and Title 23 United States Code (USC) §134 require Regional Transportation Planning Agencies (RTPA) to prepare long-range transportation plans to: 1) establish regional goals, 2) identify present and future needs, deficiencies and constraints, 3) analyze potential solutions, 4) estimate available funding, and 5) propose investments. State Statutes require that the RTP serve as the foundation for the short-range transportation planning documents: the Regional and Federal Transportation Improvement Programs (RTIP and FTIP).

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48 West Yaney Street
Mailing: 2 South Green Street
Sonora, CA 95370
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Fax: 209/533-5699

Issues to be addressed in the EIR

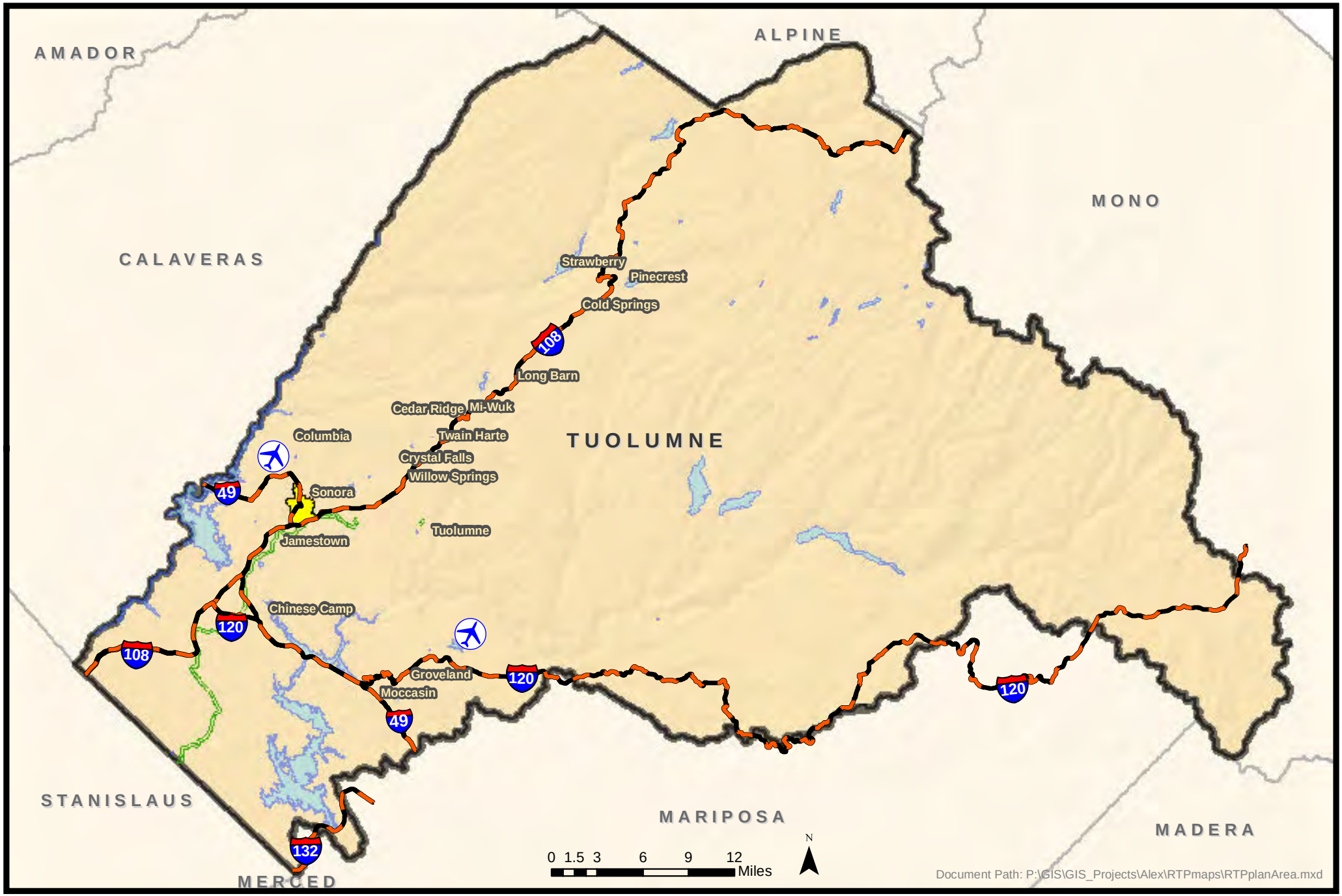
The impact categories listed below have been preliminarily identified for analysis in the 2016 RTP.

- Aesthetics
- Agriculture & Forestry
- Air Quality
- Biological Resources
- Cultural Resources
- Geology, Soils, & Mineral Resources
- Climate Change
- Hazards & Hazardous Materials
- Hydrology & Water Resources
- Land Use & Planning
- Noise
- Population & Housing
- Public Services
- Recreation
- Transportation & Circulation
- Utilities & Service Systems

Please send your written comments to Alex Padilla at the earliest date possible but no later than January 22, 2016. The comment period will commence on December 17, 2015 and conclude on January 22, 2015 at 4:00 p.m. Please provide the name of a contact person for your agency with your comments.

Contact Person: Alex Padilla, Transportation Planner
Tuolumne County Transportation Council
2 South Green Street,
Sonora, CA 95370
apadilla@co.tuolumne.ca.us

Tuolumne County Regional Transportation Plan



RTP Plan Area

Legend

Airport

Railroad

Highway

Sonora City Limits

California Water Boards

Edmund G. Brown Jr.
Governor

Matthew Rodriquez
Secretary for
Environmental Protection

Central Valley Regional Water Quality Control Board

15 January 2016

Alex Padilla
Tuolumne County Transportation Council
2 South Green Street
Sonora, CA 95370

CERTIFIED MAIL
91 7199 9991 7035 8418 1416

COMMENTS TO REQUEST FOR REVIEW FOR THE NOTICE OF PREPARATION FOR THE DRAFT ENVIRONMENTAL IMPACT REPORT, TUOLUMNE COUNTY TRANSPORTATION COUNCIL'S (TCTC) 2016 REGIONAL TRANSPORTATION PLAN PROJECT, SCH# 2015122039, TUOLUMNE COUNTY

Pursuant to the State Clearinghouse's 17 December 2015 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Request for Review for the Notice of Preparation for the Draft Environment Impact Report* for the Tuolumne County Transportation Council's (TCTC) 2016 Regional Transportation Plan Project, located in Tuolumne County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

I. Regulatory Setting

Basin Plan

The Central Valley Water Board is required to formulate and adopt Basin Plans for all areas within the Central Valley region under Section 13240 of the Porter-Cologne Water Quality Control Act. Each Basin Plan must contain water quality objectives to ensure the reasonable protection of beneficial uses, as well as a program of implementation for achieving water quality objectives with the Basin Plans. Federal regulations require each state to adopt water quality standards to protect the public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act. In California, the beneficial uses, water quality objectives, and the Antidegradation Policy are the State's water quality standards. Water quality standards are also contained in the National Toxics Rule, 40 CFR Section 131.36, and the California Toxics Rule, 40 CFR Section 131.38.

The Basin Plan is subject to modification as necessary, considering applicable laws, policies, technologies, water quality conditions and priorities. The original Basin Plans were adopted in 1975, and have been updated and revised periodically as required, using Basin Plan amendments. Once the Central Valley Water Board has adopted a Basin Plan

amendment in noticed public hearings, it must be approved by the State Water Resources Control Board (State Water Board), Office of Administrative Law (OAL) and in some cases, the United States Environmental Protection Agency (USEPA). Basin Plan amendments only become effective after they have been approved by the OAL and in some cases, the USEPA. Every three (3) years, a review of the Basin Plan is completed that assesses the appropriateness of existing standards and evaluates and prioritizes Basin Planning issues.

For more information on the *Water Quality Control Plan for the Sacramento and San Joaquin River Basins*, please visit our website: http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/.

Antidegradation Considerations

All wastewater discharges must comply with the Antidegradation Policy (State Water Board Resolution 68-16) and the Antidegradation Implementation Policy contained in the Basin Plan. The Antidegradation Policy is available on page IV-15.01 at: http://www.waterboards.ca.gov/centralvalleywater_issues/basin_plans/sacsjr.pdf

In part it states:

Any discharge of waste to high quality waters must apply best practicable treatment or control not only to prevent a condition of pollution or nuisance from occurring, but also to maintain the highest water quality possible consistent with the maximum benefit to the people of the State.

This information must be presented as an analysis of the impacts and potential impacts of the discharge on water quality, as measured by background concentrations and applicable water quality objectives.

The antidegradation analysis is a mandatory element in the National Pollutant Discharge Elimination System and land discharge Waste Discharge Requirements (WDRs) permitting processes. The environmental review document should evaluate potential impacts to both surface and groundwater quality.

II. Permitting Requirements

Construction Storm Water General Permit

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit), Construction General Permit Order No. 2009-009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to

restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP).

For more information on the Construction General Permit, visit the State Water Resources Control Board website at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml.

Phase I and II Municipal Separate Storm Sewer System (MS4) Permits[1]

The Phase I and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable (MEP). MS4 Permittees have their own development standards, also known as Low Impact Development (LID)/post-construction standards that include a hydromodification component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process.

For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/municipal_permits/.

For more information on the Phase II MS4 permit and who it applies to, visit the State Water Resources Control Board at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/phase_ii_municipal.shtml

Industrial Storm Water General Permit

Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 2014-0057-DWQ.

For more information on the Industrial Storm Water General Permit, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_permits/index.shtml.

Clean Water Act Section 404 Permit

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACOE). If a Section 404 permit is required by

[1] Municipal Permits = The Phase I Municipal Separate Storm Water System (MS4) Permit covers medium sized Municipalities (serving between 100,000 and 250,000 people) and large sized municipalities (serving over 250,000 people). The Phase II MS4 provides coverage for small municipalities, including non-traditional Small MS4s, which include military bases, public campuses, prisons and hospitals.

the USACOE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements.

If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACOE at (916) 557-5250.

Clean Water Act Section 401 Permit – Water Quality Certification

If an USACOE permit (e.g., Non-Reporting Nationwide Permit, Nationwide Permit, Letter of Permission, Individual Permit, Regional General Permit, Programmatic General Permit), or any other federal permit (e.g., Section 10 of the Rivers and Harbors Act or Section 9 from the United States Coast Guard), is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications.

Waste Discharge Requirements – Discharges to Waters of the State

If USACOE determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the proposed project may require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation.

For more information on the Water Quality Certification and WDR processes, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/help/business_help/permit2.shtml.

Dewatering Permit

If the proposed project includes construction or groundwater dewatering to be discharged to land, the proponent may apply for coverage under State Water Board General Water Quality Order (Low Risk General Order) 2003-0003 or the Central Valley Water Board's Waiver of Report of Waste Discharge and Waste Discharge Requirements (Low Risk Waiver) R5-2013-0145. Small temporary construction dewatering projects are projects that discharge groundwater to land from excavation activities or dewatering of underground utility vaults. Dischargers seeking coverage under the General Order or Waiver must file a Notice of Intent with the Central Valley Water Board prior to beginning discharge.

For more information regarding the Low Risk General Order and the application process, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2003/wqo/wqo2003-0003.pdf

For more information regarding the Low Risk Waiver and the application process, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/waivers/r5-2013-0145_res.pdf

Regulatory Compliance for Commercially Irrigated Agriculture

If the property will be used for commercial irrigated agricultural, the discharger will be required to obtain regulatory coverage under the Irrigated Lands Regulatory Program. There are two options to comply:

1. **Obtain Coverage Under a Coalition Group.** Join the local Coalition Group that supports land owners with the implementation of the Irrigated Lands Regulatory Program. The Coalition Group conducts water quality monitoring and reporting to the Central Valley Water Board on behalf of its growers. The Coalition Groups charge an annual membership fee, which varies by Coalition Group. To find the Coalition Group in your area, visit the Central Valley Water Board's website at: http://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/app_approval/index.shtml; or contact water board staff at (916) 464-4611 or via email at IrrLands@waterboards.ca.gov.

2. **Obtain Coverage Under the General Waste Discharge Requirements for Individual Growers, General Order R5-2013-0100**. Dischargers not participating in a third-party group (Coalition) are regulated individually. Depending on the specific site conditions, growers may be required to monitor runoff from their property, install monitoring wells, and submit a notice of intent, farm plan, and other action plans regarding their actions to comply with their General Order. Yearly costs would include State administrative fees (for example, annual fees for farm sizes from 10-100 acres are currently $1,084 + $6.70/Acre); the cost to prepare annual monitoring reports; and water quality monitoring costs. To enroll as an Individual Discharger under the Irrigated Lands Regulatory Program, call the Central Valley Water Board phone line at (916) 464-4611 or e-mail board staff at IrrLands@waterboards.ca.gov.

Low or Limited Threat General NPDES Permit

If the proposed project includes construction dewatering and it is necessary to discharge the groundwater to waters of the United States, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for *Dewatering and Other Low Threat Discharges to Surface Waters* (Low Threat General Order) or the General Order for *Limited Threat Discharges of Treated/Untreated Groundwater from Cleanup Sites, Wastewater from Superchlorination Projects, and Other Limited Threat Wastewaters to Surface Water*

(Limited Threat General Order). A complete application must be submitted to the Central Valley Water Board to obtain coverage under these General NPDES permits.

For more information regarding the Low Threat General Order and the application process, visit the Central Valley Water Board website at: http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2013-0074.pdf

For more information regarding the Limited Threat General Order and the application process, visit the Central Valley Water Board website at: http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2013-0073.pdf

If you have questions regarding these comments, please contact me at (916) 464-4644 or Stephanie.Tadlock@waterboards.ca.gov.

Stephanie Tadlock

Stephanie Tadlock
Environmental Scientist

cc: State Clearinghouse unit, Governor's Office of Planning and Research, Sacramento

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Central Region
1234 East Shaw Avenue
Fresno, California 93710
(559) 243-4005
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EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

January 21, 2016

Alex Padilla
Tuolumne County Transportation Council
2 South Green Street
Sonora, California 95370
APadilla@co.tuolumne.ca.us

Subject: Notice of Preparation, Tuolumne County Transportation Council's 2016 Regional Transportation Plan (Project)
Tuolumne County
Notice of Preparation, SCH# 2015122039

Dear Alex Padilla:

The California Department of Fish and Wildlife (Department) has reviewed the Notice of Preparation (NOP) for the draft Program Environmental Impact Report (DEIR) for the above Project. The Project includes preparing a long-range transportation-planning document of at least 20 years, known as a Regional Transportation Plan (RTP). The purpose of the Project is to establish regional goals, identify present and future needs, including deficiencies and constraints, analyze potential solutions, estimate available funding, and propose investments. This Project will also serve as the foundation for short-range transportation planning documents. The geographic extent of the Project is within the limits of Tuolumne County, including all incorporated areas, such as the City of Sonora, and all unincorporated areas under the jurisdiction of Tuolumne County.

There are several special status species that occur within Tuolumne County, including but not limited to, the State and Federal Endangered Hartweg's golden sunburst (*Pseudobahia bahiifolia*); State and Federal Threatened Red Hills vervain (*Verbena californica*) and California tiger salamander (*Ambystoma californiense*); the State Endangered and Federal Threatened Chinese Camp brodiaea (*Brodiaea pallida*); the State Threatened and Federal Endangered Sierra Nevada yellow-legged frog (*Rana sierrae*); the State Endangered and Fully Protected bald eagle (*Haliaeetus leucocephalus*); the State Endangered great gray owl (*Strix nebulosa*) and willow flycatcher (*Empidonax traillii*); the State Threatened Sierra Nevada red fox (*Vulpes vulpes necator*); the Federal Endangered vernal pool tadpole shrimp (*Lepidurus packardi*); the Federal Threatened and State Species of Special Concern California red-legged frog (*Rana draytonii*) and Yosemite toad (*Anaxyrus canorus*); the Federal Threatened steelhead - Central Valley Distinct Population (*Oncorhynchus mykiss irideus*), vernal pool fairy shrimp (*Branchinecta lynchi*) and valley elderberry longhorn

beetle (*Desmocerus californicus dimorphus*); the State Rare Tompkins' sedge (*Carex tompkinsii*); the State Candidate and Federal Proposed Threatened fisher (*Pekania pennanti*); and the State Candidate Townsend's big-eared bat (*Corynorhinus townsendii*). For a complete list of all special status species which have been known to occur within Tuolumne County, please visit the Department's California Natural Diversity Database (CNDDB) QuickView Tool at http://www.dfg.ca.gov/biogeodata/cnddb/mapsanddata.asp. Please note that the CNDDB is a positive occurrence database; neither the CNDDB QuickView data, nor the full version of the CNDDB, are to be substituted for pre-project review or for on-site surveys. The Department has concerns with the potential related Project impacts to these and other special status species, special status plants, and potential impacts to waterways, wetland, and riparian resources and the species that depend on them. The Department has the following additional comments:

Department Jurisdiction

Trustee Agency Authority: The Department is a Trustee Agency with responsibility under CEQA for commenting on projects that could impact plant and wildlife resources. Pursuant to Fish and Game Code Section 1802, the Department has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and the habitat necessary for biologically sustainable populations of those species. As a Trustee Agency for fish and wildlife resources, the Department is responsible for providing, as available, biological expertise to review and comment upon environmental documents and impacts arising from project activities, as those terms are used under CEQA (Division 13 [commencing with section 21000] of the Public Resources Code).

Responsible Agency Authority: The Department has regulatory authority over projects that could result in the "take" of any species listed by the State as threatened or endangered, pursuant to Fish and Game Code Section 2081. If the Project could result in the take of any species listed as threatened or endangered under the California Endangered Species Act (CESA), the Department may need to issue an Incidental Take Permit (ITP) for the Project. CEQA requires a mandatory Finding of Significance if a project is likely to substantially impact threatened or endangered species (sections 21001(c), 21083, Guidelines sections 15380, 15064, 15065). Impacts must be avoided or mitigated to less than significant levels unless the CEQA Lead Agency makes and supports a Statement of Overriding Consideration (SOC). The CEQA Lead Agency's SOC does not eliminate the Project proponent's obligation to comply with Fish and Game Code Section 2080. Issuance of an Incidental Take Permit (ITP) is subject to CEQA review. The Department recommends that the CEQA document prepared for this Project describes and addresses the potential impacts to listed species; otherwise, preparation of a supplemental CEQA document would be necessary if issuance of an ITP is necessary.

Unlisted Species: Species of plants and animals need not be officially listed as Endangered, Rare, or Threatened (E, R, or T) on any State or Federal list to be considered E, R, or T under CEQA. If a species can be shown to meet the criteria for E,

R, or T as specified in the CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3, and Section 15380), it ought to be fully considered in the environmental analysis for the Project. If special status animal or plant species may be impacted by the Project, consultation with the Department is warranted to discuss potential avoidance, minimization, and mitigation measures.

Fully Protected Species: The Department has jurisdiction over fully protected species of birds, mammals, amphibians, reptiles, and fish, pursuant to Fish and Game Code sections 3511, 4700, 5050, and 5515. Take of any fully protected species is prohibited, and the Department cannot authorize their take. The bald eagle is a fully protected species that is known to occur in the Project area. The Department recommends the CEQA document for this Project evaluate and address potential Project-related impacts to this species and include appropriate species-specific avoidance and minimization measures.

Bird Projection: The Department has jurisdiction over actions which may result in the disturbance or destruction of active nest sites or the unauthorized take of birds. Fish and Game Code sections that protect birds, their eggs, and nests include sections 3503 (regarding unlawful take, possession or destruction of any birds-of-prey or their nests or eggs), 3503.5 (regarding the take, possession or destruction of any birds-of-prey or their nests or eggs), and 3513 (regarding unlawful take of any migratory non-game bird). Unless the Project-related activities will be conducted outside the bird nesting season, the Department recommends that the lead agency require appropriate avoidance and minimization measures for raptors and other nesting birds in the Project area be included in the CEQA document prepared for this Project.

Lake or Stream Alteration (LSA) Agreement: The Department also has regulatory authority with regard to activities occurring in streams and/or lakes that could adversely affect any fish or wildlife resource, pursuant to Fish and Game Code sections 1600 *et seq.* The Department is required to comply with CEQA in the issuance or the renewal of an LSA. For additional information on notification requirements, please contact the Department's Central Region Lake and Streambed Alteration Program at (559) 243-4593. Notification information including forms, instructions, and fee schedule are available at https://www.wildlife.ca.gov/Conservation/LSA/Forms.

Water Pollution: Pursuant to Fish and Game Code Section 5650, it is unlawful to deposit in, permit to pass into, or place where it can pass into the "Waters of the State" any substance or material deleterious to fish, plant life, or bird life, including non-native species.

General Comments:

At this time, the Department can only provide general recommendations to the Tuolumne County Transportation Council's (TCTC) NOP. The Department recommends the DEIR include species-specific mitigation measures for the listed species identified above, and all other special status species which have been known to

occur within Tuolumne County and may be impacted by the Project. Species-specific mitigation measures may include, but are not limited to: a qualified biologist conducting a site assessment to determine if potential habitat for special status species and/or ecological sensitive habitat may be impacted by project related activities; a qualified biologist conducting protocol level surveys for special status species and submitting complete survey results to the Department for review; establishing limited operating periods to avoid conducting project related activities during critical periods for special status species (i.e. nesting, denning, roosting, or flowering periods); establishing no-disturbance buffers for ecological sensitive areas and special status species when found; and consulting with the Department if special status species, or their habitats, may be impacted by project related activities.

Nesting birds: The trees, shrubs, and grasses within and in the vicinity of future actions (i.e. future transportation projects) likely provide nesting habitat for songbirds and raptors. The Department recommends the DEIR incorporate best management practices and general mitigation measures for nesting birds. The Department encourages transportation projects be implemented during the non-nesting bird season. However, if ground-disturbing activities must occur during the breeding season (February through mid-September), the Project applicant is responsible for ensuring that implementation of the Project does not result in any violation of the Migratory Bird Treaty Act or relevant Fish and Game Codes as referenced above. Prior to work commencing, including staging, clearing, and grubbing, the Department recommends surveys for active nests be conducted by a qualified wildlife biologist no more than 10 days prior to the start of Project commencement and that the surveys be conducted in a sufficient area around the work site to identify any nests that are present and to determine their status. A sufficient area means any nest within an area that could potentially be affected by noise, vibration, odors, and movement of workers or equipment. Identified nests should be continuously surveyed for the first 24 hours prior to any construction related activities to establish a behavioral baseline. Once work commences, all nests should be continuously monitored to detect any behavioral changes as a result of the Project. If behavioral changes are observed, the work causing that change should cease and the Department consulted for additional avoidance and minimization measures.

If continuous monitoring of identified nests by a qualified biologist is not feasible, the Department recommends a minimum no-disturbance buffer of 250 feet around active nests of non-listed bird species, a 500-foot no-disturbance buffer around the nests of unlisted raptors, and a ¼ mile no-disturbance buffer around nest of listed species until the breeding season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival. Variance from these no-disturbance buffers may be implemented when there is compelling biological or ecological reason to do so, such as when the Project area would be concealed from a nest by topography. Any variance from these buffers is advised to be supported by a qualified wildlife biologist and it is recommended the Department be notified in advance of implementation of a no-disturbance buffer.

Wetland and Waterways: Riparian habitat and wetlands are of extreme importance to a wide variety of plant and wildlife species. The Department considers projects that impact these resources as significant if they result in a net loss of acreage or habitat value. The Department has a no net loss policy regarding impacts to wetlands. The Department recommends ecological sensitive areas, such as waterways, riparian and wetland habitats, be discussed and general mitigation measures incorporated into the DEIR, such as delineating all surface waters and wetlands with an appropriate buffer, measured from the high water mark, to protect all surface waters and associated riparian vegetation, and conducting a formal wetland delineation certified by the United States (U.S.) Army Corps of Engineers when needed.

The Department has regulatory authority with regard to activities occurring in streams and lakes that could adversely affect any fish or wildlife resource, pursuant to Fish and Game Code sections 1600 et seq. Site specific Project-related activities may warrant notification to CDFW pursuant to Fish and Game Code section 1600 et seq., which requires an entity to notify CDFW prior to commencing any activity that may (a) substantially divert or obstruct the natural flow of any river, stream, or lake; (b) substantially change or use any material from the bed, bank, or channel of any river, stream, or lake; (c) deposit debris, waste or other materials that could pass into any river, stream, or lake. "Any river, stream, or lake" includes those that are episodic as well as those that are perennial. The Department recommends the DEIR include clear guidance as to when notification to the Department is warranted.

Vehicle Collisions and Wildlife Movement: The Department recommends the DEIR include a discussion and analysis of vehicle-animal collisions and wildlife crossings within the Project area. The Department's Wildlife Investigations Lab collects and tracks fish and wildlife mortality and disease information (https://www.wildlife.ca.gov/Conservation/Laboratories/Wildlife-Investigations/Monitoring/Mortality-Report), and the California Roadkill Observation System, administered by the University of California (UC) Davis, (http://roadecology.ucdavis.edu/) tracks wildlife mortality along roadways. The Department recommends the TCTC consider incorporating reporting wildlife mortalities along roadways to the two above databases.

Identifying areas of high vehicle-animal collisions will allow the TCTC to identify solutions to reduce vehicle-animal collisions within the Project area. The Department recommends the DEIR consider measures to allow for safe wildlife movement across roadways, such as wildlife under-passes and over-passes, established at appropriate wildlife corridors where species are most likely to utilize the crossing(s). Wildlife under-passes should be large enough to accommodate larger wildlife, such as deer, black bear, and mountain lions. Small to medium wildlife, such as fishers (*Martes pennanti*), have been known to utilize culverts to cross roadways. The Department recommends the DEIR also consider measures to retrofit existing structures for wildlife passage. The Department recommends the TCTC use established wildlife crossing guidelines, such as the California Department of Transportation's (Caltrans) Wildlife Crossing Manual

(Meese, 2009) and the U.S. Department of Transportation's (DOT) Wildlife Crossing Structure Handbook (DOT, 2011) when identifying and establishing wildlife crossings.

Lighting: The Department recommends that the DEIR includes an analysis and incorporate mitigation measures to decrease the impacts of artificial outdoor lighting on wildlife species, such as: motion sensitive lighting; mounting light fixtures as low as possible to minimize light trespass; use light fittings that direct and confine the spread of light downward; and use long wavelength light sources. In addition, the Department recommends lighting is not installed in ecological sensitive areas (e.g. streams, wetlands, and habitat used by special status species, such as nesting/roosting sites), and avoid the use of the white/blue wavelengths of the light spectrum.

Federal Endangered Species Act (FESA): The Department recommends the TCTC also consult with the U.S. Fish and Wildlife Service who have jurisdiction for projects with may impact federally listed species and their habitats.

If you have any questions on these issues, please contact Margarita Gordus, Senior Environmental Scientist (Specialist), at the address provided on this letterhead, by telephone at (559) 243-4014, extension 236, or by electronic mail at Margarita.Gordus@wildlife.ca.gov.

Sincerely,

for Julie A. Vance
Regional Manager

cc: United States Fish and Wildlife Service
2800 Cottage Way, Suite W-2605
Sacramento, California 95825

ec: California Department of Fish and Wildlife
Margarita Gordus, Margarita.Gordus@wildlife.ca.gov

Literature Cited

Meese, R.J., F.M. Shilling, and J.F. Quin. March 2009. Wildlife crossing guidance manual. Prepared for the California Department of Transportation (Caltrans).

U.S. Department of Transportation (DOT). March 2011 Wildlife crossing structure handbook design and evaluation in North America. Federal Highway Administration. Publication No. FWHA-CFL/TD-11-003.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Suite W-2605
Sacramento, California 95825-1846

In Reply Refer to:
FF08ESMF00-
2016-TA-0571

December 30, 2015

Mr. Alex Padilla
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2 South Green Street
Sonora, California 95370

Subject: Notice of Preparation for the Draft Environmental Impact Report for the Tuolumne County 2016 Regional Transportation Plan

Dear Mr. Padilla:

This letter responds to your December 22, 2015, Notice of Preparation for the draft program environmental impact report for the 2016 Regional Transportation Plan (DEIR). At issue are the potential effects of this project on federally listed and proposed species, proposed critical habitat, and wildlife. The comments and recommendations of the U.S. Fish and Wildlife Service (Service) are made under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq*), and the Service's Mitigation Policy of 1956. Our comments and recommendations are provided to assist you with your preparation of the draft environmental impact report for the 2016 Regional Transportation Plan and are not intended to preclude future comments from the Service.

The comments and recommendations in this letter are based on: (1) Notice of preparation for the draft program environmental impact report for the 2016 Regional Transportation Plan undated but was accessed from your website on December 28, 2015, that was prepared by the Tuolumne County Transportation Council; and (2) other information available to the Service.

1. We recommend the following two paragraphs be added to the Biological Resources Section of the DEIR:

   Section 9 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*)(Act) prohibits the take of listed animal species by any person subject to the jurisdiction of the United States, unless it is taken during the course of exempted activities as specifically defined in a section 4(d) rule for the species. As defined in the Act, take is defined as "...to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." "Harm has been further defined to include habitat destruction when it injures or kills a listed species by interfering with essential behavioral patterns, such as breeding, foraging, or resting. Thus, not only are listed animals protected from activities such as collecting and hunting, but also from actions that result in their death or injury due to the damage or

destruction of their habitat. The Act prohibits activities that "...remove and reduce to possession any listed plant from areas under Federal jurisdiction; maliciously damage or destroy any such species on any such area; or remove, cut, dig up, or damage or destroy any such species on any other area in knowing violation of any law or regulation of any State or in the course of any violation of a State criminal trespass law." The term "person" is defined as "...an individual, corporation, partnership, trust, association, or any other private entity; or any officer, employee, agent, department, or instrumentality of the Federal government, of any State, municipality, or political subdivision of a State, or any other entity subject to the jurisdiction of the United States."

Take incidental to an otherwise lawful activity may be authorized by one of two procedures under the Act. If a Federal agency is involved with the permitting, funding, or carrying out of the project and a listed species is likely to be adversely affected, then initiation of formal consultation between that agency and the Service pursuant to section 7 of the Act is required. The consultation will result in a biological opinion addressing the anticipated effects of the project to the listed species and it may authorize a limited level of incidental take. If a Federal agency is not involved in the project, and federally listed species may be taken as part of the project, then an incidental take permit pursuant to section 10(a)(1)(B) of the Act should be obtained. The Service may issue such a permit upon completion of a satisfactory habitat conservation plan for the listed species that will be taken by the project.

2. We recommend that the DEIR include measures that require roadway projects that may affect or could result in take of listed species complete section 7 consultation, obtain a section 10(a)(1)(B) permit, or a "no take" letter from the Service, if appropriate, for activities that either "may affect" or could result in take of listed species including, but not limited to the threatened California tiger salamander (*Ambystoma californiese*), threatened valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), threatened California red-legged frog (*Rana draytonii*), endangered Sierra Nevada yellow-legged frog (*Rana sierrae*), threatened Yosemite toad (*Anaxyrus canorus*), endangered San Joaquin kit fox (*Vulpes macrotis mutica*), endangered least Bell's vireo (*Vireo bellii pusillus*), threatened vernal pool fairy shrimp (*Brachinecta lynchii*), endangered vernal pool tadpole shrimp (*Lepidurus packardii*), threatened Chinese Camp broidea (*Brodiaea pallida*), endangered Hartweg's golden sunburst (*Pseudobahia bahiifolia*), endangered Colusa grass (*Neostafia colusana*), fleshy owl's-clover (*Castilleja campestris* ssp. *succulenta*), endangered Greene's tuctoria (*Tuctoria greenei*), endangered hairy orcutt grass (*Orcuttia pilosa*), threatened Hoover's spurge (*Chamaesyce hooveri*), proposed critical habitat for the Sierra Nevada yellow-legged frog, proposed critical habitat for the Yosemite toad, and the proposed threatened West Coast Distinct Population of the fisher (*Pekania* (*Martes*) *pennanti*)(note: section 7 process only for the fisher). We recommend the DEIR include avoidance or mitigation measures, as appropriate, for wildlife including the Sierra Nevada red fox (*Vulpes vulpes necator*), California spotted owl (*Strix occidentalis occidentalis*), black-backed woodpecker (*Picoides arcticus*), and the foothill yellow-legged frog (*Rana boylii*).

3. We recommend the DEIR incorporate the appropriate conservation measures from the Southern Sierra Nevada Fisher Conservation Strategy (Spencer *et al.* 2015) for projects that could affect safe roadway passage by the fisher. The California Department of Fish and Wildlife (2010) summarized several studies that had population estimates ranging from 160-370 individuals in the southern Sierra Nevada, but they noted additional studies are needed.

Vehicle collision is a recognized source of fisher mortality in the southern Sierra Nevada (Naney *et al.* 2012; Service 2014b). Roadways affect fisher through direct injury and mortality caused by vehicles, but also restrictions to their movement. The impacts of these effects on low density carnivores like the fisher are more severe that most other wildlife due to their large home ranges, relatively low fecundity, and low natural population density (Ruediger *et al.* 1999; Service 2014b).

4. The DEIR should discuss the need to ensure culverts or undercrossings do not provide access to predatory fishes, such as non-native rainbow trout, brook trout, and/or brown trout into areas inhabited by or containing suitable habitat for the California red-legged frog, Sierra Nevada yellow-legged frog, Yosemite toad, or proposed critical habitat for the Sierra Nevada yellow-legged frog or the Yosemite toad. The eggs and tadpole stages of these three listed amphibians are at special risk from predation (Service 2002, 2013, 2014a).

5. The DEIR should include a discussion of the issues regarding vehicle-animal collisions and wildlife crossings. In 2002, there were more than 1.5 million deer-automobile collisions in the United States, causing at least $1.1 billion in vehicle damage and killing about 150 humans and at least 1.5 million deer (Curtis and Hedlund 2005). The Nevada Transportation Department has received reports of more than 200 wildlife-vehicle collisions that have occurred on or near Interstate 80 in the Pequop Range of Nevada, including one human fatality, 12 human injuries, two vehicle rollovers, and multiple incidents of property damage resulting from these collisions (Whaley 2015).

   Roadway signage and speed limits are used to modify human behavior to reduce deer-vehicle collisions, however, modifying the behaviour of deer and other large animals may be a more effective method. Wildlife culverts, wildlife under- and over-crossings located in appropriate locations are a good way to ensure safe passage across roadways by black-tailed deer, black bears, mountain lions, smaller wildlife, and listed animals. Culverts and undercrossings large enough to accommodate deer and similarly sized animals, while including suitable substrates for the California red-legged frog, California tiger salamander, fisher, and smaller wildlife, almost certainly will reduce the number of collisions between animals and vehicles. For example, wildlife crossings on the Trans-Canada Highway in Canada's Banff National Park have reduced wildlife road mortality by 80%, and as much as 96% for ungulates (Robbins 2003).

   We recommend that the DEIR include a discussion regarding the placement or replacement of unsuitable culverts for wildlife crossing with properly sized and constructed culverts and undercrossings under roadways for wildlife and listed species where and when appropriate to reduce animal-vehicle collisions. When possible, culverts and undercrossings should be located under roadways where it has been identified that animals are most likely to cross. Fencing may be effective for directing animals to specific culverts, underpasses or other roadway crossings. Signage and rumble-strips may be useful for alerting drivers to specific areas used by black-tailed deer and other wildlife for roadway crossing. The Tuolumne County Transportation Council should consider having County roadcrews enter the specific locations and photographs of roadkilled animals they encounter during their duties into the California Roadkill Observation System run by the University of California at Davis's Road Ecology System (www.roadecology.ucdavis.edu). This information will help to identify areas where the largest numbers of wildlife cross the roadway and may assist in devising measures to reduce animal-

vehicle collisions. We recommend that Southern Sierra Nevada Fisher Conservation Strategy (Spencer *et al.* 2015) be utilized identify areas where it is appropriate to locate culverts or undercrossings to ensure safe roadway passage by fishers.

Please contact the Endangered Species Division (Forest) in this Field Office if you have any questions regarding listed and proposed species, wildlife, or our comments and recommendations on the Notice of Preparation for the Tuolumne County 2016 Regional Transportation Plan at the letterhead address, telephone 916/414-6621 or via email (Chris_Nagano@fws.gov).

Sincerely,

Christopher D. Nagano
Chief, Endangered Species Division (Forest)

cc:
Adam Paszkowski, Office of Environmental Coordinator, Sonora, California
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_____ 2014b. Endangered and threatened wildlife and plants; Threatened species status for West Coast Distinct Population Segment of Fisher; proposed rule. **Federal Register** 79(194): 60419-60443.

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Appendix B

Biological Resources:
Wildlife Habitat Descriptions
Species Tables

Wildlife Habitat Descriptions within Tuolumne County

Tree Dominated Habitats

Aspen Forest. Mature stands of quaking aspen (*Populus tremuloides*) typify this habitat and usually have relatively open canopies, often shared with other deciduous trees and a few conifer species, typically pine. All stands spread by root suckering, resulting in stands comprised of clones of different age classes. Aspen stands in California occur primarily at higher elevations near seeps, streams, and meadows on the eastern slopes of the Sierra Nevada and Cascade Ranges. Aspen forest typically corresponds to the *Populus tremuloides F*orest Alliance as described by Sawyer et al. (2009).

Blue Oak-foothill Pine Woodland. This habitat is typically diverse in structure both vertically and horizontally and is composed primarily of a mix of hardwoods, conifers, and shrubs. Shrub distributions tend to be clumped, with interspersed patches of annual grassland. Woodlands of this type generally tend to only have small accumulations of dead and downed woody material, compared with other tree habitats in California. Blue oak (*Quercus douglassii*) and foothill pine (*Pinus sabiniana*) typically comprise the overstory of this habitat, with blue oak usually most abundant. In the foothills of the Sierra Nevada, other tree species typically associated with this habitat are interior live oak (*Quercus wislizeni*) and California buckeye (*Aesculus californica*). In the Coast Range, associated tree species include coast live oak (*Quercus agrifolia*), valley oak (Q*uercus lobata*), and California buckeye. In rocky areas, interior live oak sometimes dominates the overstory especially on north-facing slopes at higher elevations. At lower elevations, where blue oaks make up most of the canopy, the understory tends to be primarily annual grasses and forbs. At higher elevations where foothill pines and even interior live oaks sometimes comprise the canopy, the understory usually includes patches of shrubs in addition to the annual grasses and forbs. Shrub species that can be associated with this habitat type include various buckbrush (*Ceanothus* spp.) species and manzanita (*Arctostaphylos* spp.). Other species found in this habitat type can include California coffeeberry (*Rhamnus californicus*), poison-oak (*Toxicodendron diversilobum*) and silver lupine (*Lupinus albifrons*). This habitat is generally located in the foothills of the Central Valley, between 500 and 3000 feet (ft) in elevation. Blue oak-foothill pine typically corresponds to the *Quercus douglasii* Woodland Alliance or *Pinus sabiniana* Woodland Alliance as described by Sawyer et al. (2009).

Blue Oak Woodland. Generally these woodlands have an over story of scattered trees, although the canopy can be nearly closed. The canopy is dominated by broad-leaved trees 16 ft to 50 ft tall, commonly forming open savanna-like stands on dry ridges and gentle slopes. Blue oak (*Quercus douglasii*) is typically the dominant tree species. Shrubs such as poison oak (*Toxicodendron diversilobum*), California coffee berry (*Frangula californica*), buckbrush (*Ceanothus cuneatus*), and redberry (*Rhamnus crocea*) are often present but rarely extensive and often occur on rock outcrops. Typical understory is composed of an extension of Annual Grassland vegetation described below. Blue oak woodland typically corresponds to the *Quercus douglasii* Woodland Alliance as described by Sawyer et al. (2009).

Closed-Cone Pine-Cypress Forest. This habitat type is typically dominated by a single species of closed-cone pines (*Pinus* sp.) or cypress (*Cupressus* sp.) and the height and canopy closure of these series are variable depending upon site characteristics including soil type, the

age of the stand and the floristic composition. Closed-cone pine-cypress forests are considered fire climax or fire-dependent vegetation types. This habitat type is typically found within rocky and infertile soils along the extreme coast or on very shallow infertile soils contain stunted, wind-pruned individuals.

Douglas Fir Forest. This habitat typically exhibits a spatial variation due to geologic, topographic, and successional variation typical within its range. Structure within this habitat types typically consists of a lower overstory of dense, sclerophyllous, broad-leaved evergreen trees such as tanoak (*Lithocarpus densiflorus*) and Pacific madrone (*Arbutus menziesii*), with an irregular, often open, higher overstory of tall needle-leaved evergreen trees such as Douglas fir (*Pseudotsuga menziesii*).

Eastside Pine Forest. This habitat type is typically dominated by Ponderosa pine (*Pinus ponderosa*). Other tree species that also occur alongside Ponderosa pine include Jeffrey pine (*Pinus jeffreyi*), lodgepole pine (*Pinus contorta*), white fir (*Abies concolor*), incense-cedar (*Calocedrus decurrens*), Douglas-fir (*Pseudotsuga menziesii*), California black oak (*Quercus kelloggii*) and western juniper (*Juniperus occidentalis*). Understory species vary depending on site conditions, but typically comprised of shrub species, such as big sagebrush (*Artemisia tridentata*), antelope bitterbrush (*Purshia tridentata*), manzanita (*Arctostaphylos* sp.), and Ceanothus (*Ceanothus* sp.). Typical structure consists of an open stand of low shrubs and grass herb layers are typical. Crowns of pines are open, allowing light, wind and rain to penetrate, whereas other associated trees provide more dense foliage. Due to variation that can be found, Eastside Pine Forest can correspond to a number of alliances as described by Sawyer et al. (2009) such as *Pinus ponderosa* Forest Alliance and *Pinus jeffreyi* Forest and Woodland Alliances.

Jeffrey Pine Forest. The structure of the Jeffrey pine forest varies over its distribution. A single tree layer is characteristic of Jeffrey pine stands on moderately dry sites. On moist and mesic sites a second tree layer exists which is composed of deciduous hardwood species. Jeffrey Pine habitats are dominant by Jeffrey pine. A sclerophyllous shrub layer is common to most Jeffrey pine stands except on serpentine soils and extremely xeric sites. Jeffrey pine forests occur in mountainous regions such as the Sierra Nevada and ranges in elevation from 500 to 9,500 ft. Jeffrey pine forest typically corresponds to the *Pinus jeffreyi* Forest Alliance as described by Sawyer et al. (2009).

Juniper Woodland. Juniper habitats are characterized as woodlands of open to dense aggregations of junipers (*Juniperus* sp.) in the form of arborescent shrubs or small trees. Juniper woodlands generally occur at middle elevations forming a transition between habitats at higher elevations. Juniper woodlands occur on virtually all exposures and slopes but are common on level to gently rolling topography. Junipers may be found on soils ranging from rocky and well drained. Slope aspect has a strong influence on the elevational distribution of junipers. On northfacing slopes, junipers range from 4,000 to 6,000 ft; whereas, on southfacing slopes, junipers range from 6,000 to 8,000 ft. Juniper woodland typically corresponds to the *Juniperus californicus* Woodland Alliance or *Juniperus grandis* Woodland Alliance as described by Sawyer et al. (2009).

Lodgepole Pine Forest. Lodgepole pine forests typically form open stands of similarly sized trees in association with few other species and with a sparse understory. Lodgepole pine

overwhelmingly dominates the habitat. Occasional associates include aspen and mountain hemlock (*Tsuga martensiana*). The understory may be virtually absent, consisting of scattered shrubs and herbs, or a rich herbaceous layer at meadow margins. Many lodgepole stands are associated with meadow edges and streams, where the understory consists of grasses, forbs, and sedges. Lodgepole pine forest typically corresponds to the *Pinus contorta* ssp. *murrayana* Forest Alliance as described by Sawyer et al. (2009).

Montane Hardwood Forest. A typical montane hardwood habitat is composed of a pronounced hardwood tree layer, with an infrequent and poorly developed shrub stratum, and a sparse herbaceous layer. In the Coast Range, canyon live oak (*Quercus chrysolepis*) often forms pure stands on steep canyon slopes and rocky ridge tops. It is replaced at higher elevations by scattered huckleberry oak (*Quercus vacciniifolia*) amongst an overstory of various conifers including ponderosa pine, Coulter pine (*Pinus coulteri*), California white fir, and Jeffrey pine. At mid elevations typical associates include Douglas-fir (*Pseudotsuga menziesii*), tanoak (*Notholithocarpus densiflorus*), Pacific madrone (*Arbutus menziesii*), California black oak, and bristlecone fir (*Abies bracteata*). At lower elevations knobcone pine (*Pinus attenuata*), foothill pine, Oregon white oak (*Quercus garryana*), and coast live oak are abundant. Understory vegetation is mostly scattered woody shrubs and a few forbs. Elevations range from 300 feet near the Pacific Ocean up to 9000 ft. Montane hardwood typically corresponds to the *Quercus chrysolepis* Forest Alliance, as described by Sawyer et al. (2009).

Montane Riparian Forest. The vegetation of montane riparian forest habitats is variable and often structurally diverse. Usually, these riparian areas occur as a narrow, often dense grove of broad-leaved, winter deciduous trees with a sparse understory. At high mountain elevations, more shrubs tend to occur in the understory. In the Coast Range, big leaf maple (*Acer macrophyllum*) and California bay laurel (*Umbellularia californica*) are typical dominants of montane riparian habitat. In the Sierra Nevada, characteristic species can include thinleaf alder (*Alnus incana*), black cottonwood (*Populus trichocarpa*), and dogwood (*Cornus* sp.). Montane riparian forest can correspond to the *Acer macrophyllum* Forest Alliance, *Umbellularia californica* Forest Alliance or *Populus trichocarpa* Forest Alliance as described by Sawyer et al. (2009).

Valley Oak Woodland. This habitat can range in structure from savanna-like to forest-like stands. The canopies tend to be partially closed and comprised mostly of winter-deciduous, broad-leaved species such as valley oak. Dense stands typically grow in valley soils along natural drainages and decrease with the transition from lowlands to uplands. Shrubs are also associated with this habitat in lowland areas, especially along drainages. Valley oak stands with little or no grazing tend to develop a partial shrub layer of bird disseminated species, such as poison oak (*Toxicodendron diversilobum*), toyon (*Heteromeles arbutifolia*, and California coffeeberry. Ground cover consists of a well-developed carpet of annual grasses and forbs such as species of wild oat (*Avena* sp.), bromes (*Bromus* sp.), and ryegrass (*Lolium* sp.). Valley oak woodland typically corresponds to the *Quercus lobata* Woodland Alliance as described by Sawyer et al. (2009).

Montane Hardwood-Coniferous Forest. These forests include both conifers and hardwoods, often as a closed forest. To be considered montane hardwood-coniferous forest, at least one-third of the trees must be conifer and at least one-third must be broad-leaved. Species composition varies by geographic region, but in the Central Coast region of California common

tree species include coast live oak (*Quercus agrifolia*), big leaf maple (*Acer macrophyllum*), Pacific madrone (*Arbutus menziesii*), tanoak (*Lithocarpus densiflorus*), canyon live oak (*Quercus chrysolepis*), Coulter pine (*Pinus coulteri*), and coastal redwood (*Sequoia sempervirens*). The habitat often occurs in a mosaic-like pattern with small pure stands of conifers interspersed with small stands of broad-leaved trees. Most of the broad-leaved trees are sclerophyllous evergreen, but winter-deciduous species also occur. Relatively little understory occurs under the dense, bilayered canopy. However, considerable ground and shrub cover can occur in ecotones or following disturbance. Montane hardwood-coniferous forest can correspond to multiple alliances as described by Sawyer et al. (2009) depending upon the species composition. These alliances can include, but are not limited to, *Arbutus menziesii* Forest Alliance, *Pinus coulteri* Forest Alliance, *Lithocarpus densiflorus* Forest Alliance, *Quercus chrysolepis* Forest Alliance, and *Sequoia sempervirens* Forest Alliance.

Pinyon-Juniper Woodland. Pinyon-juniper woodland typically is an open woodland of low, round crowned, bushy trees that are needle-leaved, evergreen, and depending on site suitability, range from less than 30 ft to 50 ft in height. Stand structure varies depending on site quality and elevation. On favorable sites with little disturbance, pinyon-juniper forms dense cover whereas on drier sites, spacing between trees increases. Overstory species composition at lower and mid-level elevations ranges from pure stands of pinyon (*Pinus monophylla*) to stands of pinyon mixed with juniper (*Juniperus*) and oaks (shrub live, California scrub, or canyon live). At higher elevations, ponderosa pine (*Pinus ponderosa*) and Jeffrey pine (*Pinus jeffreyi*) may be found in this habitat. Pinyon-juniper habitats generally are found on slopes that are steep, rocky, dry, and face east. Most pinyon-juniper habitats are found east of the Sierra Nevada from 6,000 to 9,000 ft. Pinyon-juniper woodland typically corresponds to the *Juniperus osteosperma* woodland alliance or *Pinus monophylla* Woodland Alliance as described by Sawyer et al. (2009).

Ponderosa Pine Forest. Tree spacing in ponderosa pine forests varies from open to dense. The ponderosa pine forest includes pure stands of ponderosa pine (*Pinus ponderosa*) as well as stands of mixed species in which at least 50% of the canopy area is ponderosa pine. Associated species vary depending on location in the state and site conditions. Typical tree associates include, but are not limited to white fir (*Abies concolor*), incense-cedar (*Calocedrus decurrens*), Coulter pine (*Pinus coulteri*), Jeffrey pine (*Pinus jeffreyi*), sugar pine (*Pinus lambertiana*), Douglas-fir (*Pseudotsuga menziesii*), bigcone Douglas-fir (*Pseudotsuga macrocarpa*). Associated shrubs include manzanita (*Arctostaphylos* sp.), buckbrush (*Ceanothus* sp.), and Pacific dogwood (*Cornus nuttallii*). This habitat type is found on all aspects, depending on soils and location within the local elevational range. Ponderosa pine forest 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 forest typically corresponds to the *Pinus ponderosa* Forest Alliance as described by Sawyer et al. (2009).

Red Fir Forest. Large expanses of nearly monotypic stands of red fir (*Abies magnifica*) are common throughout its range, with very few other plant species in any layer. Heavy shade and a thick layer of duff tend to inhibit understory vegetation, especially in dense stands. Red fir habitats are found on frigid soils over a wide range of topography exclusive of very wet sites. Red fir is distributed in an elevational band from about 6,000 to 9,000 ft. red fir forest extends from northern Lake County northward through the North Coast Ranges and from Kern County

northward through the Sierra Nevada into the Cascade Range of southwestern Oregon. Red fir forest typically corresponds to the *Abies magnifica* Forest Alliance as described by Sawyer et al. (2009).

Sierran Mixed Conifer Forest. The Sierran mixed conifer forest is an assemblage of conifer and hardwood species that forms a multilayered forest. Five conifers and one hardwood typify the mixed conifer forest white fir (*Abies concolor*), Douglas-fir (*Pseudotsuga menziesii*), ponderosa pine (*Pinus ponderosa*), sugar pine (*Pinus lambertiana*), incense-cedar (*Calocedrus decurrens*), and California black oak (*Quercus kelloggii*). Some species common to the understory of this habitat type include deerbrush (*Ceanothus integerrimus*), manzanita (*Arctostaphylos* sp.), and chinquapin (*Chrysolepis chrysophylla*). The Sierran mixed conifer forest generally forms a vegetation band ranging in elevation from 2,500 to 4,000 ft in the north and 4,000 to 10,000 ft in the southern Sierra Nevada. Sierran mixed conifer forest can correspond to multiple alliances as described by Sawyer et al. (2009) depending upon the species composition.

Subalpine Conifer Forest. Subalpine conifer forests are open forests with needle-leaved evergreen trees of low to medium stature such as Engelmann spruce (*Picea engelmannii*), subalpine fir (*Abies lasiocarpa*), and lodgepole pine (*Pinus contorta*). Stand density and tree height are typically greater at lower limits of its elevational range. These forests typically occupy extremely harsh environments. Stands on exposed sites and windy ridges near tree line are shaped into krummholz stunted, mat-like forms. Shrubby vegetation and herbaceous ground cover are generally sparse or lacking. Soils are generally thin and of low quality coarse sand, gravel, volcanic debris, and rocks derived from decomposing parent material. Subalpine coniferous forest is generally distributed at high elevations in all significant mountain ranges of the State. Subalpine conifer forest can correspond to multiple alliances as described by Sawyer et al. (2009) depending upon the species composition.

White Fir Forest. The white fir forest habitat is characterized by nearly monotypic even aged white fir (*Abies concolor*). This habitat type is found throughout California 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. This habitat type occurs at about 5,500 ft in the Southern Sierra Nevada. White fir forest typically corresponds to the *Abies concolor* Forest Alliance as described by Sawyer et al. (2009).

Shrub Dominated Habitats

Alpine Dwarf-Shrub. This habitat is comprised of primarily low graminoid and forb communities with an admixture of dwarf-shrubs including creambush oceanspray (*Holodiscus discolor*), Greene goldenweed (*Ericameria greenei*) and white mountain heather (*Cassiope martensiana*). The perennial herbs or dwarf shrubs comprising these communities are usually less than 18 inches tall. Coverage may reach 100 percent at lower elevations but becomes increasingly open as elevation increases. On mesic sites, a continuous turf contrasts with patches of bunchgrasses and cushion plants on drier sites. This habitat type is typically found above the timberline in the Sierra Nevadas.

Chamise-Redshank Chaparral. This habitat type can range from nearly pure stands of chamise (*Adenostoma fasciculatum*) or redshank (*A. sparsifolium*) to a mixture of both. Mature Chamise-Redshank Chaparral is single layered, generally lacking well-developed herbaceous ground cover and over story trees. Shrub canopies frequently overlap, producing a nearly impenetrable canopy of interwoven branches. Redshank stands tend to be slightly taller and more open than chamise dominated stands. Fire occurs regularly in Chamise-Redshank Chaparral and influences habitat structure. Chamise-redshank chaparral typically corresponds to the *Adenostoma fasciculatum* Shrubland Alliance and *Adenostoma sparsifolium* Shrubland Alliance as described by Sawyer et al. (2009).

Low Sage Shrubland. This habitat is generally dominated by broad-leaved, evergreen shrubs ranging in height from about 4 to 19 inches, typically averaging about 15 percent cover but sometimes with crowns touching. The habitat may be dominated by low sagebrush (*Artemisia arbuscula*) or black sagebrush (*Artemisia nova*), often in association with antelope bitterbrush (*Purshia tridentata*), or big sagebrush (*Artemisia tridentata*); black sagebrush is also commonly associated with winterfat (*Krascheninnikovia lanata*) and Mormon-tea (*Ephedra viridis*). Low sagebrush communities are generally restricted to elevated arid plains along the eastern flanks of the Sierra Nevada, from Inyo County northward through Modoc and Siskiyou Counties.

Mixed Chaparral. Mixed Chaparral is a structurally homogeneous brushland type dominated by shrubs with thick, stiff, heavily cutinized evergreen leaves. Shrub height and crown cover vary with age since last burn, precipitation, aspect, and soil type. At maturity, cismontane Mixed Chaparral typically is a dense, nearly impenetrable thicket. On poor sites, serpentine soils or transmontane slopes, shrub cover may be considerably reduced and shrubs may be shorter. Leaf litter and standing dead material may accumulate in stands that have not burned for several decades. Mixed chaparral can correspond to multiple alliances as described by Sawyer et al. (2009) depending upon the species composition. These alliances can include, but are not limited to, *Ceanothus cuneatus* Shrubland Alliance and the *Arctostaphylos glauca* Shrubland Alliance.

Montane Chaparral. The growth form of montane chaparral species can vary from treelike (up to 10 ft) to prostrate. Montane chaparral varies markedly throughout California. Species composition changes with elevational and geographical range, soil type, and aspect. Species that usually characterize montane chaparral communities include, but are not limited to, whitethorn Ceanothus (*Ceanothus cordulatus*), snowbrush Ceanothus (*Ceanothus velutinus*), and greenleaf manzanita (*Arctostaphylos patula*). Montane chaparral can be found on shallow to deep soils, on all exposures, and from gentle to relatively steep slopes. Montane chaparral is associated with mountainous terrain from mid to high elevation at 3,000-10,000 ft. Montane chaparral can correspond to multiple alliances as described by Sawyer et al. (2009) depending upon the species composition. These alliances can include, but are not limited to, the *Ceanothus cordulatus* Shrubland Alliance.

Sagebrush Shrubland. Sagebrush stands are typically large, open, discontinuous stands of big sagebrush (*Artimisia tridentata*) of fairly uniform height. Often the habitat is composed of pure stands of big sagebrush, but many stands include other species of sagebrush (*Artimisia* sp.), rabbitbrush (*Ericameria nauseosa*), horsebrush (*Tetradymia canescens*), and gooseberry (*Ribes*

sp.). The Sagebrush habitat is a discontinuous strip along the east and northeast borders of California south to the 37th parallel. It occupies dry slopes and flats from about 1600 ft to 10,500 ft in elevation. Sagebrush shrubland can correspond to multiple alliances as described by Sawyer et al. (2009) depending upon the species composition. These alliances can include, but are not limited to, the *Artimisia tridentata* Shrubland Alliance.

Herbaceous Dominated Habitats

Annual Grasslands. This habitat type is composed primarily of non-native annual herbs and forbs and typically lacks shrub or tree cover. The physiognomy and species composition of annual grasslands is highly variable and also varies considerably on a temporal scale. Grazing is a common land use within this habitat type. Common grass species include wild oats (*Avena* sp.), soft chess brome (*Bromus hordeaceous*), ripgut brome (*Bromus diandrus*), and red brome (*Bromus madritensis*). Common forb species can include species of filaree (*Erodium* sp.), and bur clover (*Medicago* sp.). California poppy can also be quite common in this habitat type. Annual grassland can correspond to multiple alliances as described by Sawyer et al. (2009) depending upon the species composition. These alliances can include, but are not limited to, *Avena (barbata, fatua)* semi-natural stands and *Bromus (diandrus, hordeaceous) – Brachypodium distachyon* semi-natural stands.

Perennial Grassland. Perennial grassland habitats occur in two forms in California: coastal prairie, found in areas of northern California under maritime influence, and relics in habitats now dominated by annual grasses and forbs. Perennial grassland habitats are dominated by perennial grass species such as California oatgrass (*Danthonia californica*), Pacific hairgrass (*Deschampsia holciformis*), and sweet vernalgrass (*Anthoxanthum odoratum*). Perennial grassland habitat typically occurs on ridges and south-facing slopes, alternating with forest and scrub in the valleys and on north-facing slopes. Perennial grassland habitat of the coastal prairie form occurs along the California coast from Monterey County northward. It is found below 3,280 ft in elevation and seldom more than 62 miles from the coast. Relic perennial grasses within annual grassland habitat occur in patches throughout the state. Perrenial grassland can correspond to multiple alliances as described by Sawyer et al. (2009) depending upon the species composition. These alliances can include, but are not limited to, the *Danthonia californica* Herbaceous Alliance.

Wet Meadow. Wet meadows at all elevations generally have a simple structure consisting of a layer of herbaceous plants. Shrub or tree layers are usually absent or very sparse; but may be found along the meadow edge. Within the herbaceous plant community a microstructure is frequently present. Species composition generally differs between sites includes a variety of members of the following Genera: *Agrostis*, *Carex*, *Danthonia*, *Juncus*, *Salix,* and *Scirpus*. Fewer species tend to occur as surface water depth increases during spring runoff. The single most important characteristic of a Wet Meadow is its hydrology. Seasonality and reliability of yearly water inflows and outflows largely determine the vegetational stability of Wet Meadows. In the Sierra Nevada and Cascade ranges, Wet Meadows usually occur above 3,940 feet in the north and above 5,900 feet in the south. Because of the high amount variation in composition, multiple alliances as described by Sawyer et al. (2009) can describe this habitat type.

Developed and Sparsely/Non-Vegetated Habitats

Cropland. This habitat type is characterized by areas in active agriculture and is an entirely man-made habitat. The structure of vegetation can vary in size, shape, and growing pattern. The dominant cropland use is row crops. Typical crops consist of grasses and forbs species.

Decidous Orchard. Deciduous orchards include trees, such as, almonds, apples, apricots, cherries, figs, nectarines, peaches, pears, pecans, pistachios, plums, pomegranates, prunes and walnuts. Trees range in height at maturity for many species from 15 to 30 ft, but may be 10 ft or less in pomegranates and some dwarf varieties, or 60 ft or more in pecans and walnuts. Crowns usually touch, and are usually in a linear pattern. Spacing between trees is uniform depending on desired spread of mature trees. In some orchards cover crops of resident species are present year round or are cultivated in the spring and summer. Many orchards are treated in strips down the tree rows with herbicides. The cover crop can be composed of either natural or planted domesticated herbaceous plants.

Urban. This habitat type is also a completely man-made habitat comprising residential, commercial, and industrial developed areas. Plant species within urban habitats are typically comprised of ornamental and other non-native invasive plant species, with large developed areas lacking vegetation.

Barren. This habitat type is defined by the absence of vegetation. Any habitat with less than 2 percent total vegetation cover and less than 10 percent cover by tree or shrub species is defined as barren. Structure and composition of the substrate is largely determined by the region of the state as well as surrounding environment. Examples of barren habitats include areas of exposed parent rock and talus slopes.

Table 1. Special Status Animal Species Known to Occur or have Potential to Occur within Tuolumne County.

Scientific Name Common Name	Status Federal/State Global Rank/State Rank CDFW	Habitat Requirements
Amphibians		
Ambystoma californiense California tiger salamander	FT/ST G2G3/S2S3 SSC	Vernal and seasonal pools and associated grasslands, oak savanna, woodland, and coastal scrub. Needs underground refuges (i.e., small mammal burrows, pipes) in upland areas such as grassland and scrub habitats.
Anaxyrus canorus Yosemite toad	FT/-- G2G3/S2S3 SSC	Vicinity of wet meadows in central High Sierra, 6,400 to 11,300 ft in elevation. Primarily montane wet meadows; also in seasonal ponds associated with lodgepole pine and subalpine conifer forest.
Hydromantes platycephalus Mount Lyell salamander	--/-- G4/S4 SSC	Massive rock areas in mixed conifer, red fir, lodgepole pine, and subalpine habitats, 4,000 to 11,600 ft in elevation. Active on the surface only when free water is available, in the form of seeps, drips, or spray. Rocky habitat, including cliff faces and cave walls. Occasionally found under woody debris.
Rana boylii Foothill yellow-legged frog	--/-- G3/S2S3 SSC	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Need at least some cobble-sized substrate for egg-laying. Need at least 15 weeks to attain metamorphosis.
Rana draytonii California red-legged frog	FT/-- G2G3/S2S3 SSC	Semi-permanent or permanent water at least 2 ft deep, bordered by emergent or riparian vegetation, and upland grassland, forest or scrub habitats for estivation and dispersal.
Rana sierra Sierra Nevada yellow-legged frog	FE/ST G1/S1 SSC	Always encountered within a few feet of water. Tadpoles may require 2 - 4 years to complete their aquatic development.
Birds		
Accipiter cooperii Cooper's hawk	--/-- G5/S4 WL	Woodland, chiefly of open, interrupted or marginal type. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks.
Accipiter gentilis northern goshawk	--/-- G5/S3 SSC	Within, and in vicinity of, coniferous forest. Uses old nests, and maintains alternate sites. Usually nests on north slopes, near water. Red fir, lodgepole pine, Jeffrey pine, and aspens are typical nest trees.
Accipiter striatus sharp-shinned hawk	--/-- G5/S4 WL	Ponderosa pine, black oak, riparian deciduous, mixed conifer & Jeffrey pine habitats. Prefers riparian areas. North-facing slopes, with plucking perches are critical requirements. Nests usually within 275 ft of water.
Agelaius tricolor Tricolored blackbird	--/-- G2G3/S1S2 SSC	Requires open water, protected nesting substrate, and foraging area with insect prey within a few miles of the colony.
Athene cunicularia Burrowing owl	--/-- G4/S3 SSC	Burrow sites in open dry annual or perennial grasslands, deserts and scrublands characterized by low growing vegetation. Also inhabits anthropogenic habitats such as campuses, golf courses, cemeteries, airports, and grazed pastures.

Table 1. Special Status Animal Species Known to Occur or have Potential to Occur within Tuolumne County.

Scientific Name Common Name	Status Federal/State Global Rank/State Rank CDFW	Habitat Requirements
Coccyzus americanus occidentalis Western yellow-billed cuckoo	FT/SE G5T3Q/S1 --	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.
Empidonax traillii willow flycatcher	--/SE G5/S1S2 --	Inhabits extensive thickets of low, dense willows on edge of wet meadows, ponds, or backwaters; 2,000-8,000 ft elevation. Requires dense willow thickets for nesting/roosting. Low, exposed branches are used for singing posts/hunting perches.
Falco mexicanus prairie falcon	--/-- G5/S4 WL	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Breeding sites located on cliffs. Forages far afield, even to marshlands and ocean shores.
Falco peregrinus anatum American peregrine falcon	FD/CD G4T4/S3S4 FP	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nest consists of a scrape or a depression or ledge in an open site.
Haliaeetus leucocephalus bald eagle	FD/SE G5/S2 FP	Ocean shore, lake margins, & rivers for both nesting and wintering. Most nests within 1 mile of water. Nests in large, old-growth, or dominant live tree w/open branches, especially ponderosa pine. Roosts communally in winter.
Strix nebulosi great gray owl	--/SE G5/S1 --	Resident of mixed conifer or red fir forest habitat, in or on edge of meadows. Requires large diameter snags in a forest with high canopy closure, which provide a cool sub-canopy microclimate.
Fish		
Lavinia symmetricus ssp. 1 San Joaquin roach	--/-- G4T3Q/S3 SSC	Tributaries to the San Joaquin River from the Cosumnes River south.
Lavinia symmetricus ssp. 3 Red Hills roach	--/-- G4T1/S1 SSC	Small streams near Sonora. Found in areas with serpentine soil.
Oncorhynchus clarkii henshawi Lahontan cutthroat trout	FT/-- G4T3/S2 --	Historically in all accessible cold waters of the Lahonton Basin in a wide variety of water temps & conditions. Cannot tolerate presence of other salmonids. Requires gravel riffles in streams for spawning.
Oncorhynchus clarkii seleniris Paiute cutthroat trout	FT/-- G4T1T2/S1S2 --	Cool, well-oxygenated waters Cannot tolerate presence of other salmonids, requires clean gravel for spawning.
Oncorhynchus mykiss irideus Steelhead – Central Valley DPS	FT/-- G5T2Q/S2 --	Fresh water, fast flowing, highly oxygenated, clear, cool stream where riffles tend to predominate pools; small streams with high elevation headwaters close to the ocean that have no impassible barriers; spawning: high elevation headwaters.
Invertebrates		

Table 1. Special Status Animal Species Known to Occur or have Potential to Occur within Tuolumne County.

Scientific Name Common Name	Status Federal/State Global Rank/State Rank CDFW	Habitat Requirements
Branchinecta conservio Conservancy fairy shrimp	FE/-- G1/S1 --	Endemic to the grasslands of the northern two-thirds of the Central Valley; found in large, turbid pools. Endemic to the grasslands of the northern two-thirds of the Central Valley; found in large, turbid pools. Inhabit astatic pools located in swales formed by old, braided alluvium; filled by winter/spring rains, last until June.
Branchinecta lynchi Vernal pool fairy shrimp	FT/-- G3/S2S3 --	Endemic to the grasslands of the Central Valley, Central Coast Mountains, and South Coast Mountains. Inhabits, small clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.
Desmocerus californicus dimorphus valley elderberry longhorn beetle	FT/-- G3T2/S2 --	Occurs only in the Central Valley of California, in association with blue elderberry (*Sambucus mexicana*). Prefers to lay eggs in elderberries 2-8 inches in diameter; some preference shown for "stressed" elderberries.
Lepidurus packardi Vernal pool tadpole shrimp	FE/-- G3/S2S3 --	Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water. Pools commonly found in grass bottomed swales of unplowed grasslands. Some pools are mud-bottomed & highly turbid.
Mammals		
Antrozous pallidus Pallid bat	--/-- G5/S3 SSC	Deserts, grasslands, shrublands, woodlands, and forest. Most common in open, dry, habitats with rocky area for roosting. Roost must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.
Aplodontia rufa californica Sierra Nevada mountain beaver	--/-- G5T3T4/S2S3 SSC	Dense growth of small deciduous trees & shrubs, wet soil, & abundance of forbs in the Sierra Nevada and east slope. Needs dense understory for food & cover. Burrows into soft soil. Needs abundant supply of water.
Corynorhinus townsendii Townsend's big-eared bat	--/CT G3G4/S2 SSC	Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls & ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.
Euderma maculatum spotted bat	--/-- G4/S3 SSC	Occupies a wide variety of habitats from arid deserts and grasslands through mixed conifer forests. Feeds over water and along washes. Feeds almost entirely on moths. Needs rock crevices in cliffs or caves for roosting.
Eumops perotis californicus western mastiff bat	--/-- G5T4/S3S4 SSC	Many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, etc. Roosts in crevices in cliff faces, high buildings, trees and tunnels.
Gulo gulo California wolverine	--/CT G4/S1 FP	Found in the north coast mountains and the Sierra Nevada. Found in a wide variety of high elevation habitats. Needs water source. Uses caves, logs, burrows for cover & den area. Hunts in more open areas. Can travel long distances.
Lasiurus blossevillii Western red bat	--/-- G5/S3 SSC	Roosts primarily in trees. Prefers habitat edges and mosaics with open areas for foraging and trees that are protected from above and open below.

Table 1. Special Status Animal Species Known to Occur or have Potential to Occur within Tuolumne County.

Scientific Name Common Name	Status Federal/State Global Rank/State Rank CDFW	Habitat Requirements
Lepus americanus tahoensis Sierra Nevada snowshoe hare	--/-- G5T3T4Q/S2? SSC	Boreal riparian areas in the Sierra Nevada. Thickets of deciduous trees in riparian areas and thickets of young conifers.
Lepus townsendii townsendii western white-tailed jackrabbit	--/-- G5T5/S3 SSC	Sagebrush, subalpine conifer, juniper, alpine dwarf shrub and perennial grassland. Open areas with scattered shrubs & exposed flat-topped hills with open stands of trees, brush and herbaceous understory.
Pekania pennanti fisher - West Coast DPS	CT/CT G5T2T3Q/S2S3 SSC	Intermediate to large-tree stages of coniferous forests & deciduous-riparian areas with high percent canopy closure. Uses cavities, snags, logs & rocky areas for cover & denning. Needs large areas of mature, dense forest.
Reithrodontomys raviventris Salt-marsh harvest mouse	FE/SE G1G2/S1S2 --	Only in the saline emergent wetlands of San Francisco bay and its tributaries. Pickleweed is primary habitat. Does not burrow, but builds loosely organized nests. Requires higher areas for flood escape.
Taxidea taxus American badger	--/-- G5/S3 SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats with friable soils. Needs sufficient food, friable soils, and open uncultivated ground. Cannot live in frequently plowed fields. Preys on burrowing rodents.
Vulpes macrotis mutica San Joaquin kit fox	FE/ST G4T2/S2 --	Occurs in annual grasslands or open stages with scattered shrubby vegetation. Requires loose sandy textured soils for burrowing.
Vulpes vulpes necator Sierra Nevada red fox	--/ST G5T1T2/S1 --	Historically found from the Cascades down to the Sierra Nevada. Found in a variety of habitats from wet meadows to forested areas. Use dense vegetation and rocky areas for cover & den sites. Prefer forests interspersed w/ meadows or alpine fell-fields.
Reptiles		
Actinemys (=*Emys*) *marmorata* Northern western pond turtle	--/-- G3G4/S3 SSC	Rivers, ponds, freshwater marshes; nests in upland areas (sandy banks or grassy open fields) up to 1,640 ft from water.
Phrynosoma blainvillii Blainvilles (=coast) horned lizard	--/-- G3G4/S3S4 SSC	Frequents a wide variety of habitats including grasslands and shrublands. Most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial and abundant supply of ants and other insects.

Sources: CNDDB (CDFW, 2015); USFWS (2015), CDFW Special Animals List (2015).

FT = Federally Threatened *SE = State Endangered*

FC = Federal Candidate Species *ST = State Threatened*

FE = Federally Endangered *SR = State Rare*

FS = Federally Sensitive *SS = State Sensitive*

DL = Delisted

G-Rank/S-Rank = Global Rank and State Rank as per NatureServe and CDFW's CNDDB RareFind5.

SSC = CDFW Species of Special Concern *FP = Fully Protected* *WL = Watch List*

Table 2. Special Status Plant Species Known to Occur or have Potential to Occur within Tuolumne County.

Scientific Name Common Name	Status Federal/State Global Rank/State Rank CRPR	Habitat Requirements
Plants		
Agrostis hendersonii Henderson's bent grass	--/-- G2Q/S2 3.2	Bloom Period: April – June; Occurs in valley and foothill grassland, vernal pools. Elevation: 230-1,000 feet.
Agrostis humilis Mountain Bent Grass	--/-- G4Q/S2 2B.3	Bloom Period: July-September; Occurs in alpine boulder and rock field, meadows and seeps, subalpine coniferous forest. Elevation: 8,760-10,500 feet.
Allium jepsonii Jepson's onion	--/-- G1/S1 1B.2	Bloom Period: April-August; Occurs in Cismontane woodland, lower montane coniferous forest. On serpentine soils in Sierra foothills, volcanic soil on Table Mountain on slopes and flats; usually in an open area. Elevation: 1,580—3,700 feet
Allium sanbornii var. *congdonii* Congdon's onion	--/-- G3T3/S3 4.3	Bloom Period: April-July; Occurs in serpentinite or volcanic soil and chaparral and cismontane woodland. Elevation: 985-2,953 feet
Allium sanbornii var. *sanbornii* Sanborn's onion	--/-- G3T4?/S4? 4.2	Bloom Period: May-September; Occurs in chaparral, cismontane woodland, lower montane coniferous forest. Usually occurs in serpentinite, gravelly soils. Elevation: 853-4,954 feet
Allium tribracteatum three-bracted onion	--/-- G2/S2 1B.2	Bloom Period: April-August; Occurs in volcanic soils within chaparral, lower montane coniferous forest, and upper montane coniferous forest. Elevation:3,608-9,843 feet
Allium tuolumnense Rawhide Hill onion	--/-- G2/S2 1B.2	Bloom Period: March-May; Occurs in cismontane woodland (serpentinite soils). Elevation: 984-1,969 feet
Allium yosemitense Yosemite onion	--/CR G3/S3 1B.3	Bloom Period: April-July; Occurs in pockets of wet soil or in wet cracks of metamorphic rock; also on slopes and walls. Elevation: 1,755-7,218 feet.
Antennaria pulchella Beautiful pussy-toes	--/-- G3/S3.3 4.3	Bloom Period: June-September; Occurs in alpine boulder and rock field (stream margins) as well as meadows and seeps. Elevations: 1,986-12,139feet.
Arctostaphylos nissenana Nissenan manzanita	--/-- G1/S1 1B.2	Bloom Period: February-March; Occurs usually on metamorphics, associated with other chaparral species. Elevation: 1,476-3,909 feet.
Astragalus hornii var. *hornii* Horn's milk-vetch	--/-- G4G5T2T3/S1 1B.1	Bloom Period: May-October; Occurs at lake margins in alkaline soils within meadows and seeps and playas. Elevations: 196-2,788 feet.
Astragalus kentrophyta var. *danaus* Sweetwater Mountains milk-vetch	--/-- G5T3/S3 4.3	Bloom Period: July-Sept; Occurs in alpine boulder and rock field, subalpine coniferous forest (rocky, talus). Elevations: 9,843-12,008 feet.

Table 2. Special Status Plant Species Known to Occur or have Potential to Occur within Tuolumne County.

Scientific Name Common Name	Status Federal/State Global Rank/State Rank CRPR	Habitat Requirements
Amsinckia grandiflora Large-flowered fiddleneck	FE/CE G1/S1 1B.1	Bloom Period: April-May; Occurs in cismontane woodland as well as valley and foothill grassland. Elevations: 902-1,804 feet.
Balsamorhiza macrolepis big-scale balsamroot	--/-- G2/S2 1B.2	Bloom Period: March-June Chaparral, valley and foothill grassland, cismontane woodland. Sometimes on serpentine. Elevation: 295-5102 feet.
Bolandra californica Sierra bolandra	--/-- G3/S3.3 4.3	Bloom Period: June-July; Occurs in mesic, rocky soils within lower montane coniferous forest and upper montane coniferous forest. Elevations: 3,198-8,036 feet.
Botrychium crenulatum Scalloped moonwort	--/-- G3-S2.2 2.2	Bloom Period: June-September; Occurs in bogs and fens, lower montane coniferous forest, meadows and sweeps, marshes and swamps (freshwater), and upper montane coniferous forest. Elevations: 4,160-10,761feet.
Botrychium lunaria Common moonwort	--/-- G5/S2? 2.3	Bloom Period: August; Occurs in meadows and seeps, subalpine coniferous forest, and upper montane coniferous forest. Elevations: 6,496-11,154 feet.
Botrychium minganense Mingan moonwort	--/-- G4/S2 2.2	Bloom Period: July-September; Occurs in mesic areas within bogs and fens as well as lower and upper montane coniferous forest. Elevations: 4,773-6,906 feet.
Botrychium paradoxum paradox moonwort	--/-- G3G4/S1 2B.1	Bloom Period: August; Occurs in alpine boulder and rock field, upper montane coniferous forest. Found on limestone and marble in the alpine zone; found in moist sites associated with *Calocedrus decurrens* in upper montane coniferours forests. Elevations: 5,742-13,780 feet.
Botrychium pedunculosum stalked moonwort	--/-- G2G3/S1 2B.1	Bloom Period: August; Occurs in granitic, volcanic and and esitic substrates within upper montane coniferous forest as well as meadows and seeps. Elevation: 6,500-8,000 feet.
Botrychium yaaxudakeit giant moonwort	--/-- G3G4/S2 2B.1	Bloom Period: August; Occurs in alpine boulder and rock field (meadows). Limestone and marble. Elevation: 10,499 feet.
Brasenia schreberi Watershield	--/-- G5/S2 2.3	Bloom Period: June-September; Occurs in freshwater marshes and swamps. Elevations: 98-7,217feet.
Brodiaea pallida Chinese camp brodiaea	FT/SE G1/S1 1B.1	Bloom Period: May-June; Occurs in vernal streambeds, often serpentine within cismontane woodland as well as valley and foothill grassland. Elevations: No elevation data available.
Bruchia bolanderi Bolander's bruchia	--/-- G3/S3? 2.2	Bloom Period: N/A (Moss); Occurs in damp soil within lower and upper montane coniferous forest as well as meadows and seeps. Elevations: 5,577-9,186 feet.
Bulbostylis capillaris thread-leaved beakseed	--/-- G5/S3 4.2	Bloom Period: June-August; Occurs in lower montane coniferous forest, meadows and seeps, as well as upper montane coniferous forest. Elevation: 1,296-6,808 feet.

Table 2. Special Status Plant Species Known to Occur or have Potential to Occur within Tuolumne County.

Scientific Name Common Name	Status Federal/State Global Rank/State Rank CRPR	Habitat Requirements
Camissonia sierrae ssp. *sierra* Yosemite evening-primrose	--/-- G3T3/S3 4.2	Bloom Period: April-June; Occurs in cismontane woodland and lower montane coniferous forest. Elevation: 1,640-5,397 feet.
Carex buxbaumii Buxbaum's sedge	--/-- G5/S3.2 4.2	Bloom Period: March-August; Occurs in bogs and fens, meadows and seeps (mesic) as well as marshes and swamps. Elevations: 9-10,826 feet.
Carex congdonii Congdon's sedge	--/-- G3/S3.3 4.3	Bloom Period: July-August; Occurs in alpine boulder and rock field as well as subalpine coniferous forest (rocky). Elevations: 8,530-12,795feet.
Carex davyi Davy's sedge	--/-- G2/S2 1B.3	Bloom Period: May-August; Occurs in subalpine coniferous forest and upper montane coniferous forest. Elevation: 4,921-10,499 feet.
Carex incurviformis Mount Dana sedge	--/-- G3/S3.3 4.3	Bloom Period: July-August; Occurs in alpine boulder and rock field. Elevations: 12,139-13,320feet.
Carex limosa mud sedge	--/-- G5/S3 2B.2	Bloom Period: June-August; Occurs in bogs and fens, lower montane coniferous forest, meadows, marshes and swamps, and upper montane coniferous forest. Elevation: 3,937-9,104 feet.
Carex praticola northern meadow sedge	--/-- G5/S2 2B.2	Bloom Period: May-July; Occurs in moist to wet meadows and seeps. Elevations: 0-10,499 feet.
Carex scirpoidea ssp. *pseudoscirpoidea* western single-spiked sedge	--/-- G5T5/S2 2B.2	Bloom Period: July-September; Occurs in alpine boulder and rock field, meadows and seeps, as well as subalpine coniferous forest. Often on limestone; mesic sites. Elevation: 9,810-12,139 feet.
Carex tahoensis Tahoe sedge	--/-- G5/S4 2B.2	Bloom Period: May-June; Occurs in meadows and seeps. Elevation: 0-10,499 feet.
Carex tompkinsii Tompkins' sedge	--/CR G4/S4 4.3	Bloom Period: June-November; Occurs in Bogs and fens, marshes and swamps (freshwater), and north coast coniferous forest (mesic). Elevation: 0-4,250 feet.
Carex viridula ssp. *viridula* green yellow sedge	--/-- G5T5/S2 2B.3	Bloom Period: May-July; Occurs in bogs and fens, marshes and swamps (freshwater), as well as north coast coniferous forest. Mesic sites. Elevation: 0-4,250 feet
Castilleja campestris var. *succulent* Fleshy Owl's-clover	FT/CE G4?T2/S2 1B.2	Bloom Period: April-May; Occurs in vernal pools (often acidic). Elevation: 164-2,461 feet.
Ceanothus fresnensis Fresno ceanothus	--/-- G4/S4 4.3	Bloom Period: May-June; Occurs in cismontane woodland (openings) and lower montane coniferous forest. Elevation: 2,953-6,900 feet.

Table 2. Special Status Plant Species Known to Occur or have Potential to Occur within Tuolumne County.

Scientific Name Common Name	Status Federal/State Global Rank/State Rank CRPR	Habitat Requirements
Chaenactis douglasii var. *alpine* Alpine dusty maidens	--/-- G5T5/S2.3? 2.3	Bloom Period: July-September; Occurs in alpine boulder and rock field (granitic). Elevations: 9,842-11,154 feet.
Chamaesyce hooveri Hoover's spurge	FT/-- G2/S2 1B.2	Bloom Period: July-October; Occurs in vernal pools. Elevations: 82-820 feet.
Chlorogalum grandiflorum Red Hills soaproot	--/-- G2/S2 1B.2	Bloom Period: May-June; Occurs in cismontane woodland, chaparral, and lower montane coniferous forest. Occurs frequently on serpentine or gabbro, but also on non-ultramafic substrates; often on "historically disturbed" sites. Elevation: 787-2,493 feet.
Clarkia australis Small's southern clarkia	--/-- G2/S2 1B.2	Bloom Period: May-August; Occurs in cismontane woodland and lower montane coniferous forest in open, rocky sites in conifer forest or oak woodland. Elevation: 2,625-6,808 feet.
Clarkia biloba ssp. *australis* Mariposa clarkia	--/-- G2/S2 1B.2	Bloom Period: May-June; Occurs in chaparral and cismontane woodland on serpentine. Elevation: 984-4,790 feet
Clarkia rostrata beaked clarkia	--/-- G2/S2 1B.3	Bloom Period: April-May; Occurs in cismontane woodland, as well as valley and foothill grassland. Elevations: 196-1,640 feet.
Clarkia virgata Sierra clarkia	--/-- G3/S3 4.3	Bloom Period: May-August; Occurs in cismontane woodland and lower montane coniferous forest. Elevation: 1,312-5,299 feet.
Claytonia megarhiza fell-fields claytonia	--/-- G5/S2 2B.3	Bloom Period: July-Sept; Occurs in alpine boulder and rock field as well as subalpine coniferous forest in the crevices between rocks, rocky or gravelly soil. Elevation: 8,530-10,942 feet.
Claytonia parviflora ssp. *grandiflora* Streambank spring beauty	--/-- G5T3/S3.2 4.2	Bloom Period: February-May; Occurs in rocky soils within cismontane woodland. Elevation: 820-3,937 feet.
Colusa Grass Neostapfia colusana	FT/CE G2/S2 1B.1	Bloom Period: May-August; Occurs in vernal pools (adobe, large). Elevations: 17-656 feet.
Cordylanthus eremicus ssp. *kernensis* Kern Plateau bird's-beak	--/-- G3?T2/S2.3 1B.3	Bloom Period: May-September; Occurs within Great Basin scrub, Joshua tree woodland, pinyon and juniper woodland and upper montane coniferous forest. Elevations: 5,495-9,842 feet.
Cordylanthus rigidus ssp. brevibracteatus Short-bracted bird's-beak	--/-- G5T3/S3.3 4.3	Bloom Period: July-October; Occurs in granitic soils in openings within chaparral, lower montane coniferous forest, pinyon and juniper woodland, and upper montane coniferous forest. Elevations: 2,001-8,497 feet.

Table 2. Special Status Plant Species Known to Occur or have Potential to Occur within Tuolumne County.

Scientific Name Common Name	Status Federal/State Global Rank/State Rank CRPR	Habitat Requirements
Coscinodon arctolimnius ssp. *higuchi* Higuchi's sieve-tooth moss	--/-- GUTU/S1S3 4.2	Bloom Period: N/A (Moss); Occurs on rocky, usually dry and exposed alpine boulder and rock field. No elevation data available.
Cryptantha crymophila subalpine cryptantha	--/-- G3/S3 1B.3	Bloom Period: July-August; Occurs in subalpine coniferous forest on dry talus of volcanic formation. Elevation: 8,530-10,499 feet.
Cryptantha glomeriflora Clustered-flower cryptantha	--/-- G3Q/S3.3 4.3	Bloom Period: June-September; Occurs in granitic or volcanic sandy soils within Great Basin scrub, meadows and seeps, subalpine coniferous forest, and upper montane coniferous forest. Elevations: 5,905-12,303 feet.
Cryptantha mariposae Mariposa cryptantha	--/-- G2/S2.3 1B.3	Bloom Period: April-June; Occurs in serpentinite, rocky soils within chaparral. Elevations: 656-2,132 feet.
Cryptantha spithamaea Red Hills cryptantha	--/-- G2/S2 1B.3	Bloom Period: April-May; Occurs in chaparral and cismontane woodland. Usually occurs in serpentinite, sometimes streambeds and sometimes openings. Elevations: 902-1,509 feet.
Cypripedium montanum mountain lady's-slipper	--/-- G4/S4 4.2	Bloom Period: March-August; Occurs in broad-leafed upland forest, cismontane woodland, lower montane coniferous forest, and north coast coniferous forest. Elevations: 607- 7,300 feet.
Draba asterophora var. *asterophora* Tahoe draba	--/-- G2T2/S2 1B.2	Bloom Period: July-September; Occurs in alpine boulder and rock field and subalpine coniferous forest. Usually occurs on open talus slopes, rock outcrops and crevices. Elevations: 8,202-11,500 feet.
Draba praealta tall draba	--/-- G5/S3 1B.2	Bloom Period: July-August; Occurs in meadows and seeps on mesic sites. Elevations: 8,202-11,204 feet.
Elymus scribneri Scribner's wheat grass	--/-- G5/S1S3 2B.3	Bloom Period: July-August; Occurs in alpine boulder and rock fields. Elevations: 9,515-13,780 feet.
Epilobium howellii subalpine fireweed	--/-- G4/S4 4.3	Bloom Period: July-August; Occurs in meadows and seeps, as well as subalpine coniferous forest. Elevations: 6,562- 10,236 feet.
Eriogonum luteolum var. *saltuarium* Jack's wild buckwheat	--/-- G5T1/S1 1B.2	Bloom Period: July-September; Occurs in Great Basin scrub and upper montane coniferous forest on sandy, granitic substrates. Elevations: 5,577-7,874 feet.
Eriogonum microthecum var. *alpinum* northern limestone buckwheat	--/-- G5T4/S4 4.3	Bloom Period: July-September; Occurs in sometimes rocky or gravelly soils within alpine dwarf scrub and Great Basin scrub. Elevations: 8,202-10,827 feet.
Eriogonum tripodum tripod buckwheat	--/-- G4/S4 4.2	Blooming Period: May-July; Occurs often in serpentinite within chaparral, cismontane woodland. Elevations: 656-5,249 feet.

Table 2. Special Status Plant Species Known to Occur or have Potential to Occur within Tuolumne County.

Scientific Name Common Name	Status Federal/State Global Rank/State Rank CRPR	Habitat Requirements
Eriophorum gracile slender cottongrass	--/-- G5/S4 4.3	Bloom Period: May-September; Occurs in acidic soils within bogs and fens, meadows and seeps, as well as upper montane coniferous forest. Elevations: 4,200-9,514 feet.
Eriophyllum nubigenum Yosemite woolly sunflower	--/-- G2/S2 1B.3	Bloom Period: May-August; Occurs in chaparral, lower montane coniferous forest and upper montane coniferous forest. Occurs on south facing slopes on granitic slabs and domes; gravelly soils. Elevations: 5,003-9,022 feet.
Eryngium pinnatisectum Tuolumne button-celery	--/-- G2/S2 1B.2	Bloom Period: May-August; Occurs in vernal pools, cismontane woodland, and lower montane coniferous forest. Elevations: 230-3,002 feet.
Eryngium spinosepalum Spiny-sepaled button-celery	--/-- G2/S2.2 1B.2	Bloom Period: April-May; Occurs in valley and foothill grassland as well as in vernal pools. Elevations: 262-836 feet.
Erythronium taylorii Pilot Ridge fawn lily	--/-- G1/S1 1B.2	Bloom Period: April-May; Occurs on cliffs in lower montane coniferous forest (metamorphic, rocky soils). Elevation: 4,296-4,593 feet.
Erythronium tuolumnense Tuolumne fawn lily	--/-- G2G3/S2S3 1B.2	Bloom Period: March-June; Occurs in broadleaved upland forest, chaparral, cismontane woodland, lower montane coniferous forest. Elevation: 1,673-4,478 feet.
Festuca minutiflora small-flowered fescue	--/-- G5/S2 2B.3	Bloom Period: July; Occurs in alpine boulder and rock field. Elevation: 10,499-13,287 feet.
Fritillaria agrestis Stinkbells	--/-- G3/S3.2 4.2	Bloom Period: March-June; Occurs in clay and sometimes serpentine soils within chaparral, cismontane woodland, pinyon and juniper woodland, and valley and foothill grassland. Elevations: 32-5,101 feet.
Githopsis pulchella ssp. *serpentinicola* serpentine bluecup	--/-- G4T3/S3.3 4.3	Bloom Period: May-June; Occurs in cismontane woodland (serpentinite or lone soils). Elevations: 1,049-2,000 feet.
Githopsis tenella Delicate bluecup	--/-- G2/S2.3 1B.3	Bloom Period: May-June; Occurs in mesic areas within chaparral and cismontane woodland. Elevations: 3,608-6,233 feet.
Helodium blandowii Blandow's bog moss	--/-- G4/S2 2B.3	Bloom Period: N/A (Moss); Occurs in damp soil within meadows and seeps and subalpine coniferous forest. Elevation: 6,109-8,858 feet.
Hulsea brevifolia short-leaved hulsea	--/-- G4/S2 1B.2	Bloom Period: May-August; Occurs in granitic or volcanic soil of forest openings and road cuts within upper montane coniferous forest. Elevation: 4,921-8,858 feet.
Iris hartwegii ssp. *Columbiana* Tuolumne iris	--/-- G4T1/S1 1B.2	Bloom Period: May-June; Occurs in cismontane woodland and lower montane coniferous forest. Elevation: 1,394-4,593 feet.

Table 2. Special Status Plant Species Known to Occur or have Potential to Occur within Tuolumne County.

Scientific Name Common Name	Status Federal/State Global Rank/State Rank CRPR	Habitat Requirements
Ivesia unguiculata Yosemite ivesia	--/-- G3/S3 4.2	Bloom Period: June-September; Occurs in meadows and seeps, subalpine coniferous forest, and upper montane coniferous forest Elevation: 4,921-9,596 feet.
Jensia yosemitana Yosemite tarplant	--/-- G2G3/S2S3 3.2	Bloom Period: April-July; Occurs in lower montane coniferous forest as well as meadows and seeps. Elevations: 3,937-7,545feet.
Jepsonia heterandra foothill jepsonia	--/-- G3/S3.3 4.3	Bloom Period: August-December; Occurs in rocky, metamorphic soils within cismontane woodland and lower montane coniferous forest. Elevations: 164-1,640 feet.
Juncus hemiendytus var. *abjectus* Center Basin rush	--/-- G5T4/S3.3 4.3	Bloom Period: May-July; Occurs in mesic areas within meadows and seeps and subalpine coniferous forest. Elevations: 4,593-11,154 feet
Lewisia disepala Yosemite lewisia	--/-- G2/S2.2 1B.2	Bloom Period: March-June; Occurs in granitic, sandy soils within lower and upper montane coniferous forest as well as pinyon and juniper woodland. Elevations: 3,395-11,482feet.
Lewisia kelloggii ssp. *hutchisonii* Hutchison's lewisia	--/-- G3G4/S2S3 3.2	Bloom Period: April-August; Occurs in openings, ridgetops, often slate, sometimes rhyolite tuff within upper montane coniferous forest. Elevation: 2,510-7,759 feet.
Lewisia kelloggii ssp. *kelloggii* Kellogg's lewisia	--/-- G3G4/S2S3 3.2	Bloom Period: May-August; Occurs in openings, ridgetops, often slate, sometimes rhyolite tuff within upper montane coniferous forest. Elevation: 4,806-7,759 feet.
Lilium humboldtii Humboldt lily	--/-- G4T3/S3 4.2	Bloom Period: May-July; Occurs in openings within chaparral, cismontane woodland, and lower montane coniferous forest. Elevation: 295-4,200 feet.
Lomatium congdoni Congdon's lomatium	--/-- G2/S2 1B.2	Bloom Period: March-June; Occurs in serpentinite within chaparral and cismontane woodland. Elevation: 984-6,890 feet.
Lomatium stebbinsii Stebbins' lomatium	--/-- G2/S2 1B.1	Bloom Period: March-May; Occurs in thin, gravelly volcanic clay within lower montane coniferous forest and chaparral. Elevation: 4,085-6,677 feet.
Lupinus gracilentus slender lupine	--/-- G3/S3 1B.3	Bloom Period: July-August; Occurs in Subalpine coniferous forest. Elevation: 8,202-11,483 feet.
Lupinus spectabilis shaggyhair lupine	--/-- G2/S2 1B.2	Bloom Period: April-May; Occurs in serpentinite soils within chaparral and cismontane woodland. Elevation: 853-2,707 feet.
Lycopus uniflorus northern bugleweed	--/-- G5/S4 4.3	Bloom Period: July-September; Occurs in bogs and fens, as well as marshes and swamps. Elevation: 16-6,562 feet.
Meesia longiseta long seta hump moss	--/-- G5/S2 2B.3	Bloom Period: N/A (Moss); Occurs in moist soil along streams; often carbonate within bogs and fens, meadows and seeps, and upper montane coniferous forest. Elevation: 5,741-9,990 feet.

Table 2. Special Status Plant Species Known to Occur or have Potential to Occur within Tuolumne County.

Scientific Name Common Name	Status Federal/State Global Rank/State Rank CRPR	Habitat Requirements
Microseris sylvatica sylvan microseris	--/-- G3/S3.2 4.2	Bloom Period: March-June; Occurs in chaparral, cismontane woodland, Great Basin scrub, pinyon and juniper woodland, as well as valley and foothill woodland (serpentinite). Elevations: 147-4,920 feet.
Mimulus filicaulis slender-stemmed monkeyflower	--/-- G2/S2 1B.2	Bloom Period: April-August; Occurs in cismontane woodland, lower montane coniferous forest, meadows and seeps, and upper montane coniferous forest. Elevation: 2,953-5,742 feet.
Mimulus grayi Gray's monkeyflower	--/-- G3/S3.3 4.3	Bloom Period: May-July; Occurs in mesic areas within lower montane coniferous forest and upper montane coniferous forest. Elevations: 1,804-9,514 feet.
Mimulus inconspicuus small-flowered monkeyflower	--/-- G4/S4 4.3	Bloom Period: May-June; Occurs in mesic soils within chaparral, cismontane woodland, and lower montane coniferous forest. Elevation: 899-2,493 feet.
Mimulus laciniatus Cut-leaved monkeyflower	--/-- G3/S3.3 4.3	Bloom Period: April-July; Occurs in mesic, granitic soils within chaparral, lower montane coniferous forest and upper montane coniferous forest. Elevations: 1,607-8,694 feet.
Minuartia stricta Bog sandwort	--/-- G5/S2 2.3	Bloom Period: July-September; Occurs alpine and boulder rock fields, alpine dwarf scrub, and meadows and seeps. Elevations: 8,005-12,106feet.
Monardella candicans Sierra monardella	--/-- G3/S3.3 4.3	Bloom Period: April-July; Occurs in sandy or gravelly soil within chaparral, cismontane woodland, and lower montane coniferous forest. Elevations: 492-2,624 feet.
Mimulus pulchellus yellow-lip pansy monkeyflower	--/-- G2G3/S2S3 1B.2	Bloom Period: April-July; Occurs in sandy decomposed granite soils and moist meadows, vernally wet soils within lower montane coniferous forest, meadows and seeps. Elevation: 1,968-6,562 feet.
Minuartia obtusiloba alpine sandwort	--/-- G5/S4 4.3	Bloom Period: July-August; Occurs in granitic, metamorphic soils within alpine boulder and rock field, and alpine dwarf scrub. Elevation: 10,335-12,139 feet.
Monardella venosa veiny monardella	--/-- G4/S4 4.3	Bloom Period: May-July; Occurs in heavy clay within valley and foothill grassland and cismontane woodland. Elevation: 197-1,345 feet.
Myrica hartwegii Sierra sweet bay	--/-- G1/S1 1B.1	Blooming Period: May-June; Occurs in cismontane woodland, lower montane coniferous forest and riparian forest. Elevation: 492-4,742 feet.
Ophioglossum californicum California adder's-tongue	--/-- G4/S3.2 4.2	Bloom Period: December-June; Occurs in mesic soils within chaparral, valley and foothill grassland, and vernal pools (margins). Elevations: 196-1,722 feet.
Orthotrichum holzingeri Holzinger's orthotrichum moss	--/-- G3/S2 1B.3	Bloom Period: N/A (Moss); Occurs usually on rock in and along streams, rarely on tree limbs within cismontane woodland, lower montane coniferous forest, upper montane coniferous forest, and pinyon-juniper woodland. Elevation: 2345-5905 feet.

Table 2. Special Status Plant Species Known to Occur or have Potential to Occur within Tuolumne County.

Scientific Name Common Name	Status Federal/State Global Rank/State Rank CRPR	Habitat Requirements
Orthotrichum spjutii Spjut's bristle moss	--/-- G1/S1 1B.3	Bloom Period: N/A (Moss) Occurs in granitic, rock within lower montane coniferous forest, pinyon and juniper woodland, subalpine coniferous forest, and upper montane coniferous forest. Elevation: 6,890-7,874 feet.
Packera layneae Layne's ragwort	FT/SR G2/S2 1B.2	Bloom Period: April-August; Occurs in ultramafic soil (serpentine or gabbro) within chaparral and cismontane woodland. Elevation: 656-3,560 feet.
Peltigera gowardii western waterfan lichen	--/-- G3G4/S3 4.2	Bloom Period: N/A (Lichen); Occurs in riparian forest on rocks in cold water creeks with little or no sediment or disturbance. Elevation: 3,494-7,792 feet.
Pentachaeta fragilis fragile pentachaeta	--/-- G3/S3 4.3	Bloom Period: March-June; Occurs often in openings within chaparral, and lower montane coniferous forest (sandy). Elevation: 148-6,890 feet.
Perideridia bacigalupii Mother Lode yampah	--/-- G3/S3 4.2	Bloom Period: June-August; Occurs in serpentinite soils within chaparral and lower montane coniferous forest. Elevation: 1,476-3,396 feet.
Pinus albicaulis Whitebark Pine	FC/-- -- --	Bloom Period: N/A (Gymnosperm); Occurs in moderately to poorly developed and well drained, cryochrept soils within subalpine and timberline zones. Elevation: 6,000-12,100 feet.
Piperia colemanii Coleman's rein orchid	--/-- G3/S3.3 4.3	Bloom Period: June-August; Occurs often in sandy soils within chaparral and lower montane coniferous forest. Elevations: 3,937-7,545feet.
Piperia michaelii Michael's rein orchid	--/-- G3/S3.2 4.2	Bloom Period: April-August; Occurs in coastal bluff scrub, closed-cone coniferous forest, chaparral, cismontane woodland, coastal scrub, and lower montane coniferous forest. Elevations: 9-3,001 feet.
Plagiobothrys torreyi var. *torreyi* Yosemite popcornflower	--/-- G4T3Q/S3 1B.2	Bloom Period: April-June; Occurs in lower montane coniferous forest as well as in meadows and seeps. Elevation: 3,937-4,495 feet.
Podistera nevadensis Sierra podistera	--/-- G4/S4 4.3	Bloom Period: July-September; Occurs in alpine boulder and rock field. Elevation: 3,843-13,123 feet.
Pohlia tundra Tundra thread moss	--/-- G2G3/S2S3 2B.3	Bloom Period: N/A (Moss). Occurs in alpine boulder and rock field (gravelly, damp soils). Elevations: 8,858-9,842 feet.
Polystichum kruckebergii Kruckeberg's sword fern	--/-- G4/S4 4.3	Bloom Period: June-August; Occurs in rocky substrate within subalpine coniferous forest and upper montane coniferous forest. Elevation: 6,890-10,499 feet.
Potamogeton epihydrus Nuttall's ribbon-leaved pondweed	--/-- G5/S2S3 2B.2	Bloom Period: June-September; Occurs in marshes and swamps. Elevation: 1,214-7,119 feet.
Potamogeton robbinsii Robbins' pondweed	--/-- G5/S3 2B.3	Bloom Period: July-August; Occurs in marshes and swamps. Elevation: 5,020-10,827 feet.

Table 2. Special Status Plant Species Known to Occur or have Potential to Occur within Tuolumne County.

Scientific Name Common Name	Status Federal/State Global Rank/State Rank CRPR	Habitat Requirements
Pseudobahia bahiifolia Hartweg's golden sunburst	FE/SE G2/S2 1B.1	Bloom Period: March-April; Occurs in clay, often acidic soils within cismontane woodland as well as valley and foothill grassland. Elevations: 49-492 feet.
Pseudostellaria sierra Sierra starwort	--/-- G3G4/S3 4.2	Bloom Period: May-August; Occurs in chaparral, cismontane woodland, lower montane coniferous forest, and upper montane coniferous forest. Elevation: 4,019-7,198 feet.
Salix nivalis snow willow	--/-- G5/S2 2B.3	Bloom Period: July-August; Occurs in alpine dwarf scrub. Elevation: 10,171-11,483 feet.
Schoenoplectus subterminalis water bulrush	--/-- G4G5/S3 2B.3	Bloom Period: June-September; Occurs in marshes and swamps, as well as bogs and fens. Elevation: 2,461-7,382 feet.
Senecio clevelandii var. *heterophyllus* Red Hills ragwort	--/-- G4?T2Q/S2 1B.2	Bloom Period: June-July; Occurs in drying serpentine soils; often along streams within cismontane woodland. Elevation: 853-1,263 feet.
Senecio layneae Layne's Butterweed	FT/CR G2/S2 1B.2	Bloom Period: April-August; Occurs in serpentinite or gabbroic, rocky soils within chaparral, and cismontane woodland. Elevation: 656-3,560 feet.
Silene oregano Oregon campion	--/-- G5/S2 2B.3	Bloom Period: July-September; Occurs in Great Basin scrub and subalpine coniferous forest. Elevation: 4,921-8,202 feet.
Sparganium natans small bur-reed	--/-- G5/S3S4 4.3	Bloom Period: June-September; Occurs in bogs and fens as well as marshes and swamps (lake margins). Elevation: 5,397-8,202 feet.
Stellaria obtuse obtuse starwort	--/-- G5/S4 4.3	Bloom Period: May-October; Occurs in upper montane coniferous forest, lower montane coniferous forest, and riparian woodland. Elevation: 492-7,005 feet.
Streptanthus oliganthus Masonic Mountain jewelflower	--/-- G2G3/S2 1B.2	Bloom Period: June-July; Occurs in volcanic or decomposed granite soils within pinyon and juniper woodland. Elevation: 6,201-10,007 feet.
Subularia aquatica ssp. *Americana* water awlwort	--/-- G5T5/S4 4.3	Bloom Period: July-September; Occurs in lake margins within upper montane coniferous forest. Elevation: 6,235-10,171 feet.
Trichostema rubisepalum Hernandez bluecurls	--/-- G4/S4 4.3	Bloom Period: June-August; Occurs in volcanic or serpentinite, gravelly soils within broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest and vernal pools. Elevation: 984-4,708 feet.
Triglochin palustris Marsh arrow-grass	--/-- G5/S2.3 2B.3	Bloom Period: July-August; Occurs in mesic areas within meadows and seeps and marshes and swamps (freshwater) and subalpine coniferous forest. Elevations: 7,496-12,139feet.
Tuctoria greenei Greene's tuctoria	FE/SR G1/S1 1B.1	Bloom Period: May-September; Occurs in vernal pools. Elevations: 98-3,509 feet.

Table 2. Special Status Plant Species Known to Occur or have Potential to Occur within Tuolumne County.

Scientific Name Common Name	Status Federal/State Global Rank/State Rank CRPR	Habitat Requirements
Utricularia minor Lesser bladderwort	--/-- G5/S3.2 4.2	Bloom Period: July; Occurs in calcium-rich water within bogs and fens as well as marshes and swamps (assorted shallow freshwater). Elevations: 2,624-9,514feet.
Verbena californica Red Hills vervain	FT/ST G2/S2 1B.1	Bloom Period: May-September; Occurs in mesic soils, usually serpentinite seeps or creeks within cismontane woodland as well as valley and foothill grassland. Elevations: 852-1,312 feet.
Veronica cusickii Cusick's speedwell	--/-- G5/S4 4.3	Bloom Period: July-August; Occurs in alpine boulder and rock field. Meadows and seeps, subalpine coniferous forest, and upper montane coniferous forest. Elevation: 7,004-9,843 feet.

Sources: CNDDB (CDFW, 2015); USFWS IPaC (2015), CDFW Special Plants List (2013), and CNPS Rare Plant Inventory (2015).

FE = Federally Endangered *FT = Federally Threatened* *DL = Delisted*

SE = State Endangered *ST = State Threatened* *SR = State Rare*

FC=Federal Candidate

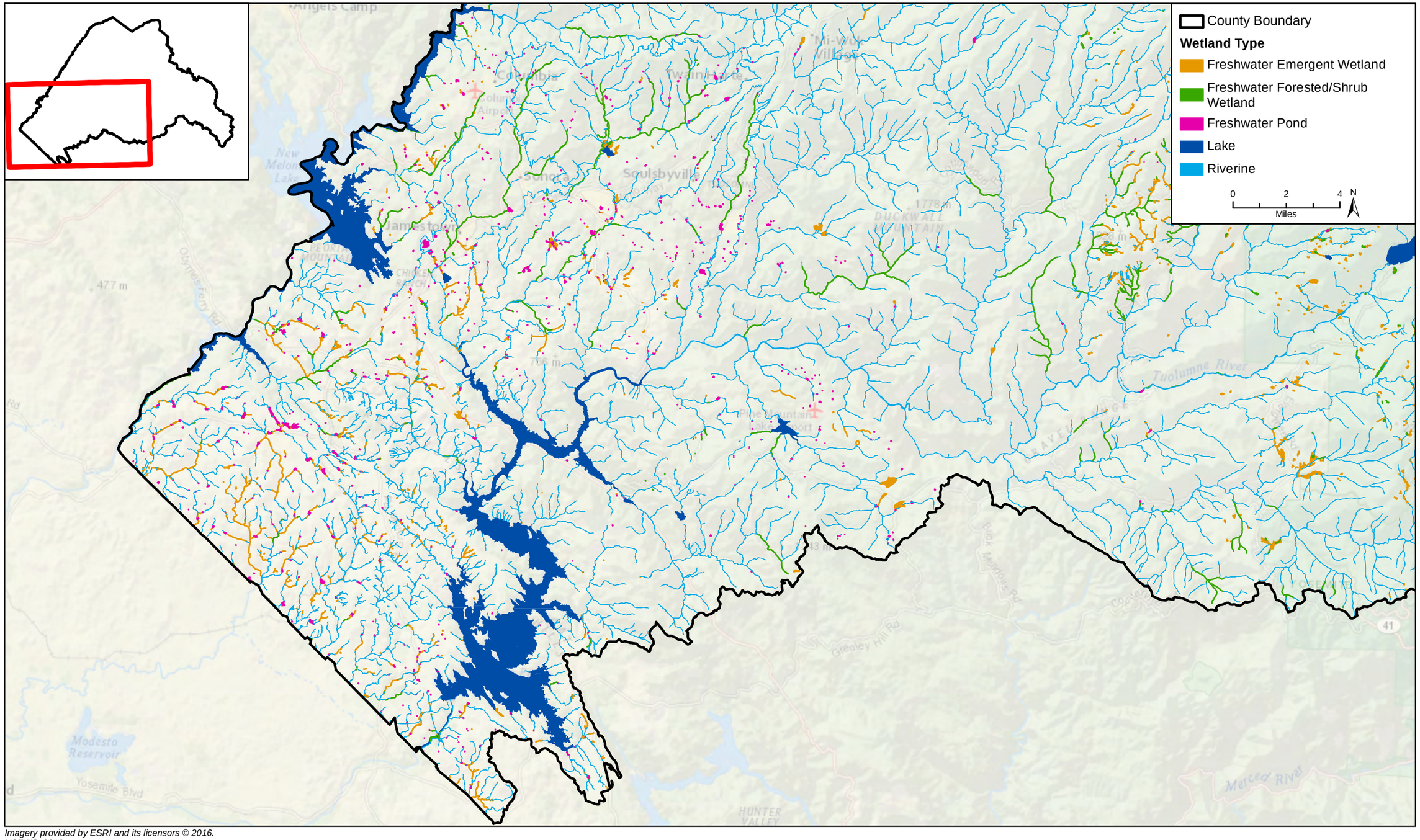
G-Rank/S-Rank = Global Rank and State Rank as per NatureServe and CDFW's CNDDB RareFind5.

CRPR (California Rare Plant Rank):

1A=Presumed Extinct in California
1B=Rare, Threatened, or Endangered in California and elsewhere
2=Rare, Threatened, or Endangered in California, but more common elsewhere
3=Need more information (a Review List)
4=Plants of Limited Distribution (a Watch List)

CRPR Threat Code Extension:

.1=Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2=Fairly endangered in California (20-80% occurrences threatened)
.3=Not very endangered in California (<20% of occurrences threatened)



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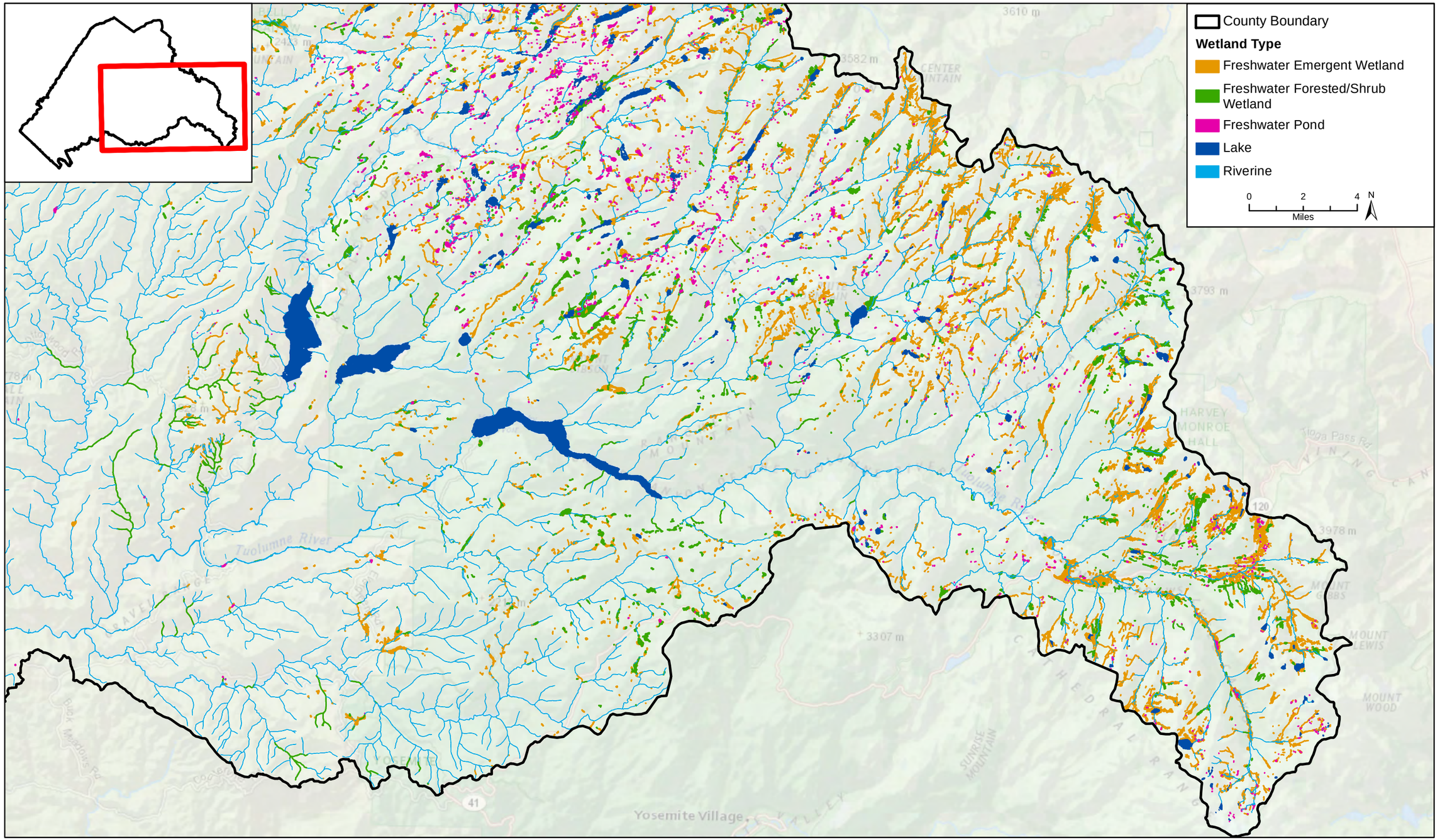
USFWS, 2016.

National Wetlands Inventory Categories
and Drainages within Tuolumne County

Figure B-1



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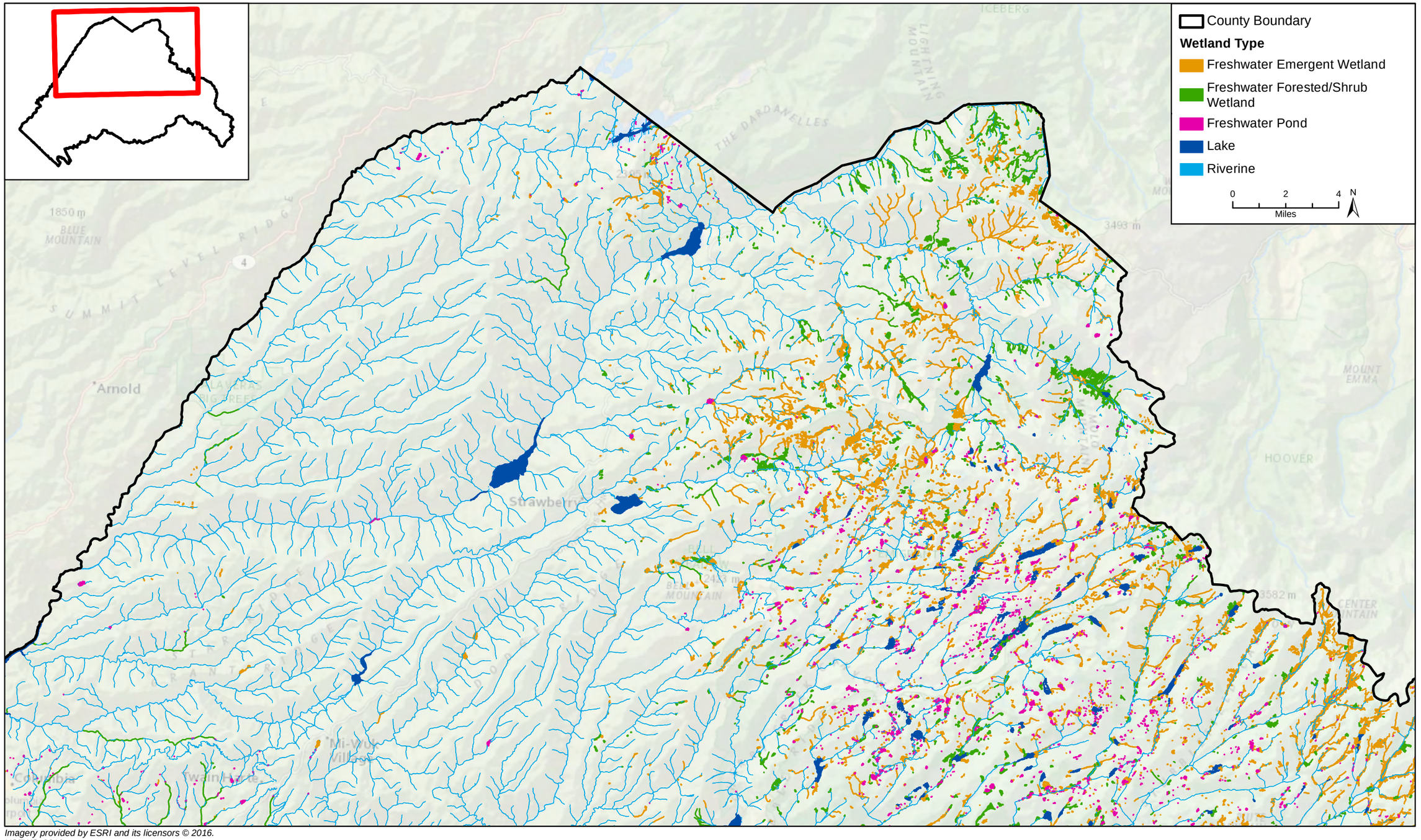
National Wetlands Inventory Categories
and Drainages within Tuolumne County

Figure B-2



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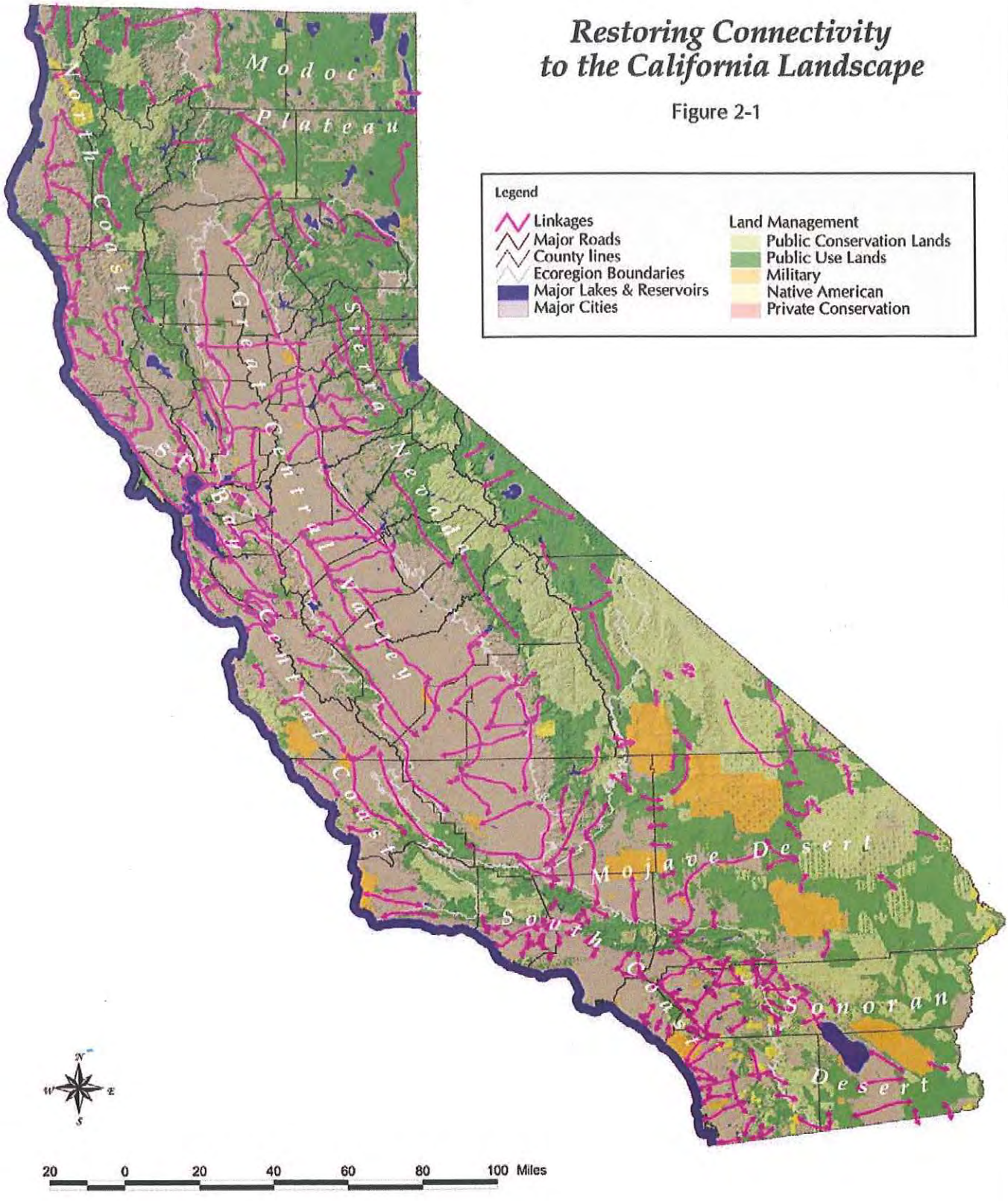
National Wetlands Inventory Categories
and Drainages within Tuolumne County

Figure B-3


CALIFORNIA
ESSENTIAL HABITAT
CONNECTIVITY PROJECT
FIGURE 3.6.
SIERRA NEVADA ECOREGION
Essential Connectivity Areas*
Less Cost
More Cost
Natural Landscape Blocks
Potential Riparian Connections
Interstate Connections
Ecoregion
*Cumulative cost to ecological flows
Redding
Lassen Peak
Truckee
Sacramento
Stockton
Mount Diablo
Monterey
Fresno
Tulare
Bakersfield
Ridgecrest
Barstow
Mount Whitney
SACRAMENTO VALLEY
SIERRA NEVADA
YOSEMITE NATIONAL PARK
SEQUOIA KINGS CANYON NATIONAL PARK
WHITE MTNS
INYO MTNS
DEATH VALLEY
PANAMINT RANGE
GREENHORN MTNS
SAN JOAQUIN VALLEY
COAST RANGES
DIABLO RANGE
SALINAS VALLEY
SANTA LUCIA RANGE
TEHACHAPI MTNS
NEVADA
0 12.5 25 50 75
Kilometers
0 10 20 40 60
Miles
1:3,000,000
The Essential Habitat Connectivity map delineates lands likely important to wildlife movement between large, mostly natural areas at the statewide scale based on available data and assumptions provided in this report. It omits small natural areas and does not reflect movement needs of particular species. It is a decision-support tool to be refined by finer-scale analyses and local linkage designs. DO NOT assume that lands outside Natural Landscape Blocks or Essential Connectivity Areas are unimportant to wildlife populations or movements.

California's Missing Linkages:



Appendix C

Traffic Study
Traffic Study Addendum

Memorandum

WOOD RODGERS
DEVELOPING INNOVATIVE DESIGN SOLUTIONS

To:	*Tuolumne County Transportation Council (TCTC)* – Darin Grossi, Alex Padilla *Rincon Consultants, Inc.* – Matthew Maddox
Cc:	*Wood Rodgers, Inc.* – Mark Rayback, PE
From:	*Wood Rodgers, Inc.* – Nawid Nessar, PE, TE, Mario Tambellini, PE
Date:	08/16/2016
File:	J:\Jobs\8341_Tuolumne_County\008_TCTM_2014_Update\Traffic\Memos\8341-008-TC-EIR_Traffic_Study_Addendum-Memo-20160816.docx
Job No.:	8341.008
RE:	**Tuolumne County GP and RTP Update – EIR Traffic Study Addendum**

INTRODUCTION AND BACKGROUND

Tuolumne County Transportation Council (TCTC) recently completed a comprehensive update of the Tuolumne County Regional Travel Demand Model (TDM), documented in the *Tuolumne County Regional Travel Demand Model Update – Model Development Report* (Wood Rodgers, August 2015), as well as *General Plan and Regional Transportation Plan Update EIR Traffic Study* (Wood Rodgers, August 2015). As part of the TDM update and EIR traffic study, a recalibrated base-year (2014/15) model and future year milestone models for years 2030 and 2040 were developed under four proposed land use growth scenarios.

The TDM and EIR traffic study included short-, mid- (under year 2030) and long-range (under year 2040) Capital Improvement Program (CIP) projects based on the most up to date CIP list at that time. Since then, the CIP project list has been updated to include, modify and/or change the status of certain projects. As part of the ongoing Tuolumne County 2015/16 General Plan (GP) and Regional Transportation Plan (RTP) Update, TCTC desires to establish updated projected Future Year (Years 2030 and 2040) operational performance of critical intersections and roadways throughout the County under the most current Financially Constrained Expenditure Plan Capital Improvement Program (FCEP-CIP) included in the *2016 Draft Regional Transportation Plan* (dated July 2016). This operational performance information will be used in support of the RTP, GP Update, and the associated EIR documents. To that end, this technical memorandum was prepared, that will serve as an addendum to the August 2015 EIR traffic study, to present the following items assuming the most current FCEP-CIP:

- Future year (Years 2030 and 2040) conditions TDM model runs for all four land use growth scenarios.
- Future year (Years 2030 and 2040) conditions Vehicle Miles Traveled (VMT) calculations for all four land use growth scenarios.
- Level of Service (LOS) evaluation of study intersections and roadway segments under the preferred Distinctive Communities (Proposed) land use growth scenario.
- Qualitative analysis of intersections and roadway segments with the FCEP-CIP Tier 2 and Tier 3 projects in place under the preferred Distinctive Communities (Proposed) land use growth scenario.
- Updated Average Daily Traffic (ADT) Level of Service (LOS) brackets for "2-Lane Expressway" as well as including Rolling and Mountainous "2-Lane Minor Arterial with Climbing Lane" LOS brackets

FUTURE YEAR TDM RUNS

Future year 2030 and 2040 land use growth scenarios land use assumptions included in the August 2015 TDM report were retained as part of future year TDM model runs for all four land use growth scenarios including Distinctive Communities (Proposed), Public Services (Proposed), Recent Trends (Existing) and Recent Trends (Proposed). For detailed definitions, land use assumptions and land use forecasts of the growth scenarios, please refer to the August 2015 TDM report.

Years 2030 and 2040 TDM roadway networks were updated based on the current FCEP-CIP list. The short-, mid-, and long-range FCEP-CIPs (as included in the July 2016 study) as well as alternative funding scenario and unfunded projects are shown in **Appendix Exhibit A**. FCEP-CIP projects are categorized in the following Tiers:

- Tier 1a – Programmed projects with dedicated funding (short-range)
- Tier 1b – Plan to fund these projects by Year 2030 (mid-range)
- Tier 1c – Plan to fund these projects by Year 2040 (long-range)
- Tier 2 – Alternative Funding Scenario – If new funds become available
- Tier 3 – Unfunded Projects

Year 2030 TDM roadway network was updated to assume Tier 1a and Tier 1b projects in place and Year 2040 TDM roadway network was updated to assume Tier 1c projects place. These models were used to extract updated VMT estimates and traffic volumes.

VEHICLE MILES TRAVELED

Future year countywide VMT was estimated for each proposed land use growth scenarios using the updated TDMs that assume the current FCEP-CIP. The estimated future year VMTs are shown in **Table 1**, along with estimated Base Year (2015) VMT for comparison purposes.

Table 1. Vehicle Miles Traveled by Alternative Growth Scenario

Year	Base Year (2015)	Alternative Growth Scenarios			
		Distinctive Communities (Proposed)	Public Services (Proposed)	Recent Trends (Existing)	Recent Trends (Proposed)
Year 2015 VMT	1,829,654	-	-	-	-
Year 2030 VMT	-	2,033,692	2,037,605	2,046,484	2,042,255
Year 2040 VMT	-	2,152,846	2,167,632	2,168,520	2,167,134
Note: VMT values estimated with Tuolumne County TDM					

As shown in **Table 1**, the Distinctive Communities (Proposed) scenario is projected to produce the least countywide VMT under both year 2030 and year 2040 conditions. The Recent Trends (Existing) scenario is projected to produce slightly higher VMT under year 2030 and year 2040 conditions, approximately 0.6% and 0.7%, respectively, than the Distinctive Communities (Proposed) scenario. The Public Services (Proposed) scenario is projected to produce slightly higher VMT under year 2040 conditions, approximately 0.7%, than the Distinctive Communities (Proposed) scenario.

All future year alternative growth scenario VMT estimates shown above, which assume the current FCEP-CIP, are approximately 0.6%-1.2% lower than the VMT values estimated in the August 2015 EIR traffic study. The estimated future year VMT decreased because East Sonora Bypass project and roadway widening projects (including SR 49, SR 108, SR 120, Tuolumne Road, Mono way widenings) that were assumed to be funded in the August 2015 EIR traffic study are no longer

assumed funded under the current FCEP-CIP. Without those proposed bypass and widenings, projected future year roadway capacity in Tuolumne County decreased, leading to a decrease in estimated countywide VMT under the alternative growth scenarios.

INTERSECTION AND ROADWAY OPERATIONS

Distinctive Communities (Proposed) year 2030 and year 2040 study intersection and roadway segment Level of Service (LOS) operations were updated using the TDMs that assume the current FCEP-CIP and are summarized in this section.

INTERSECTION OPERATIONS

Similar to future year TDM roadway network updates, *Synchro* intersection operations models were updated to assume FCEP-CIP Tier 1a and Tier 1b projects in place by Year 2030 and Tier 1c projects in place by Year 2040 under the Distinctive Communities (Proposed) land use growth scenario. Study intersection locations are illustrated in **Appendix Figure 1**. Year 2030 and Year 2040 intersection lane geometrics and control are illustrated in **Appendix Figures 2** and **3**, respectively.

The updated TDMs that assume the current FCEP-CIP were utilized to update the Year 2030 and Year 2040 forecasted intersection turning movement traffic volumes. Year 2030 and Year 2040 intersection AM and PM peak hour turning movement volumes are illustrated in **Appendix Figures 4** and **5**, respectively.

Distinctive Communities (Proposed) land use growth scenario intersection Level of Service (LOS) operations quantified under the updated Year 2030 and Year 2040 intersection traffic volumes, and are illustrated in **Appendix Table 1** and **Table 2**, respectively.

Table 2 illustrates intersections that are projected to operate below the minimum LOS standard criteria under Year 2030 and/or 2040 AM and/or PM peak hour conditions.

Table 2. Distinctive Communities (Proposed) Intersections with Unacceptable LOS

#	Intersection	Control Type[1]	LOS Std.	Year 2030				Year 2040			
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
				Delay (Sec/Veh)[2]	LOS	Delay (Sec/Veh)	LOS	Delay (Sec/Veh)	LOS	Delay (Sec/Veh)	LOS
11	SR 49-SR 108/SR 108 & SR 49 (Stockton Rd)	TWSC	D	43.3	E[3]	93.5	F[3]	-	-	-	-
23	S Washington St/SR 49 (S Washington St) & SR 49 (Stockton Rd)	Signal	D	68.6	E	62.5	E	55.6	E	58.1	E
24	S Washington St & Church St	TWSC	D	-	-	54.7	F[3]	-	-	36.1	E[3]
Total Intersection Below LOS Standard:				**3**				**2**			

Notes:
1. TWSC = Two-Way-Stop Control
2. For TWSC intersection, worst-case movement delays (in seconds/vehicle) is indicated. "Average" control delays (in seconds/vehicle) are indicated for signal-controlled intersections. Delays reported in above table are from Synchro 8 software.
3. California MUTCD based Peak Hour Volume Warrant #3 (70% factor) is met

As shown in **Table 2**, the following three intersections are projected to operate below LOS standards under Distinctive Communities (Proposed) Year 2030 AM and/or PM peak hour conditions:

Intx – 11. SR 49-SR 108/SR 108 & SR 49 (Stockton Road)
Intx – 23. South Washington Street/SR 49 (South Washington Street) & SR 49 (Stockton Road)
Intx – 24. South Washington Street & Church Street

As shown in **Table 2**, the following three intersections are projected to operate below LOS standards under Distinctive Communities (Proposed) Year 2040 AM and/or PM peak hour conditions:

Intx – 23. South Washington Street/SR 49 (South Washington Street) & SR 49 (Stockton Road)
Intx – 24. South Washington Street & Church Street).

California MUTCD based peak hour volume warrant number 3 is projected to be met at the following intersections under AM and/or PM peak hour conditions and listed year(s):

Intx – 11. SR 49-SR 108/SR 108 & SR 49 (Stockton Road) – under Year 2030 conditions
Intx – 24. South Washington Street & Church Street – under Year 2030 and Year 2040 conditions

All other study intersections are projected to operate at acceptable Year 2030 and Year 2040 AM and PM peak hour or better conditions. The following signalized study intersection turning movements are projected to operate below acceptable LOS, although the intersections operate at acceptable overall LOS, under listed conditions:

Intx – 25. Bulwer Street / Restano Way – Southbound left-turn under year 2030 AM peak hour conditions
Intx – 29. Greenly Road & Morning Star Drive / Cabezut Road – Northbound left- and southbound left-turn under year 2040 PM peak hour conditions

Some study intersections may potentially experience a change or improvement in LOS as a result of the FCEP-CIP improvements. A list of intersections that may be affected by FCEP-CIP under year 2030 and year 2040 conditions are as follows:

YEAR 2030 CONDITIONS INTERSECTION IMPROVEMENTS:

Intx – 2. SR 120 & SR 108-SR 120/SR 108 (assumed High-T)
Intx – 7. Humbug Street/Rawhide Road & SR 49-SR 108 (as part of Rawhide Road realignment)
Intx – 8. Main Street/Jamestown Road & SR 49-SR 108 (as part of Rawhide Road realignment)
Intx – 9. Signalization of Fifth Avenue & SR 49-SR 108
Intx – 13. Parrotts Ferry Road & Sawmill Flat Road (assumed Signal)
Intx – 14. SR 49 & Parrotts Ferry Road
Intx – 19 & 20. SR 49 (North Washington Street) intersections with Shaws Flat Road/Columbia Way and School Street (assumed Signal, as part of Complete Streets Improvements)
Intx – 27. Lime Kiln Road/South Washington Street & SR 108
Intx – 30. Greenley Road & Mono Way
Intx – 38. Woodham Carne Road/Black Oak Road & Tuolumne Road (assumed Signal)
Intx – 39. Tuolumne Road & Soulsbyville Road (assumed Signal)

YEAR 2040 CONDITIONS FACILITY IMPROVEMENTS

Intx – 5. SR 49-SR 108 & Chicken Ranch Road
Intx – 11. SR 49-SR 108/SR 108 & SR 49 (Stockton Road) (assumed High-T)

As part of North-South Connector – Phase 1 – Greenley Extension to SR 49, the following intersections would be improved (study intersections indirectly affected):
Intx – 28. – 30. Greenly Road intersections with Lyons Bald Mountain Road, Morning Star Drive/Cabezut Road, and Mono Way
Intx – 15. – 27. SR 49 intersections through downtown Sonora, Restano Way intersections with Bulwer Street and Mono Way/South Stewart Street, and Lime Kiln Road/South Washington Street intersection with SR 108

ROADWAY OPERATIONS

Roadway classifications were updated to assume FCEP-CIP Tier 1a and Tier 1b projects in place by

Year 2030 and Tier 1c projects in place by Year 2040 under the Distinctive Communities (Proposed) land use growth scenario.

The County's roadway LOS lookup table was expanded to include Rolling and Mountainous "2-Lane Minor Arterial with Climbing Lane" roadway type LOS brackets and the current "2-Lane Expressway" roadway type LOS brackets were updated. **Appendix Table 3** illustrates the updated ADT-based LOS thresholds.

The updated TDMs that assume the current FCEP-CIP were utilized to update the Year 2030 and Year 2040 roadway ADT traffic volumes. Year 2030 and Year 2040 roadway ADT traffic volumes and LOS are illustrated in **Appendix Figures 6** and **7**, respectively, as well as **Appendix Table 4**.

Table 3 illustrates roadways that are projected to operate below the minimum LOS criteria under Year 2030 and 2040 ADT conditions.

Table 3. Distinctive Communities (Proposed) Roadways with Unacceptable LOS

#	Roadway Segment	2030 Type #	2040 Type #	LOS Std.	Year 2030		Year 2040	
					AADT	LOS	AADT	LOS
3	**SR 108** - b/w O'Byrnes Ferry Rd & SR 120 (Yosemite Junction)	4	12	D	20,764	E	22,306	E
4	**SR 108** - b/w SR 120 (Yosemite Junction) and SR 49 (Montezuma Junction)	4	12	D	19,863	E	21,166	E
5	**SR 108** - b/w SR 49 (Stockton Rd) and S Washington St/Lime Kiln Rd	4	12	D	21,736	E	22,966	E
23	**SR 49** - b/w SR 49 (Montezuma Jct) & Bell Mooney Rd	4	12	D	21,104	E	23,275	E
24	**SR 49** - b/w Bell Mooney Rd and South Jct Main St	210	210	D	21,800	E	24,086	E
27	**SR 49** - b/w Fifth Ave and Stockton Rd/SR108	210	210	D	25,196	E	29,879	E
31	**SR 49** - b/w Stockton Rd and Dodge St	211	211	D	17,414	E	17,924	E
32	**SR 49** - n/o Dodge St	211	211	D	20,283	E	-	-
33	**SR 49** - s/o N Washington St / Columbia Way	211	211	D	17,110	E	-	-
34	**SR 49** - n/o N Washington St / Columbia Way	211	211	D	16,133	E	-	-
35	**SR 49** - e/o Parrotts Ferry Rd (Columbia WYE)	211	211	D	-	-	17,021	E
52	**Mono Wy** - w/o Sanguinetti Rd	210	210	D	22,167	E	22,058	E
69	**Greenly Rd** - b/w Cabezut Rd/ Morning Star Rd & Delnero Dr	212	212	D	-	-	15,939	E
77	**Tuolumne Rd** - b/w Mono Way & Lambert lake Rd	212	212	D	-	-	16,235	E
116	**S Washington St** - b/w Restano Way & Church St	212	212	D	17,700	E	17,706	E
			Total Segments Below LOS Standard:		**12**		**12**	

Notes: AADT = Annual Average Daily Traffic, LOS = Level of Service

As shown in **Table 3**, twelve (12) roadway segments are projected to operate below LOS standard under Year 2030 and twelve (12) roadway segments are projected to operate below LOS standard under Year 2040 Distinctive Communities (Proposed) conditions.

Some study roadway segments may potentially experience a change or improvement in LOS as a result of FCEP-CIP improvements. A list of roadway segments that may be affected by FCEP-CIP under year 2030 and year 2040 conditions are as follows:

YEAR 2030 CONDITIONS ROADWAY SEGMENT IMPROVEMENTS:

Rdwy – 24 – 26. SR 49/SR 108, between Bell Mooney Road & Fifth Avenue
Rdwy – 77. Tuolumne Road, between Mono Way & Lambert Lake Road
Rdwy – 93. Rawhide Road, north of SR 49/SR 108
Rdwy – 97. Phoenix Lake Road, east of Ridgewood Drive

YEAR 2040 CONDITIONS ROADWAY SEGMENT IMPROVEMENTS:

Rdwy – 2. SR 108/SR 120, between O'Byrnes Ferry Road & La Grange Road
Rdwy – 3. SR 108/SR 120, between La Grange Road & SR 120 (Yosemite Junction)
Rdwy – 4. SR 108, between SR 120 (Yosemite Junction) and SR 49 (Montezuma Junction)
Rdwy – 23. SR 49/SR 108, between SR 49 (Montezuma Junction) & Bell Mooney Road

As part of North-south connector – Phase 1 – Greenley Extension to SR 49, the following roadway segments would be improved:
Rdwy – 28. – 34. SR 49 from SR 108 to north of North Washington Street/Columbia Way (segments of SR 49 through downtown Sonora indirectly affected by the Greenley Road extension)
Rdwy – 52. Mono Way west of Sanguinetti Road
Rdwy – 53. Mono Way b/w Sanguinetti Road & Greenley Road
Rdwy – 68. Greenley Road, b/w Lyons Bald Mountain Road/Lyons Road & Cabezut Road
Rdwy – 115. South Washington Street north of SR 108
Rdwy – 116. South Washington Street between Restano Way & Church Street
Rdwy – 139. Lyons Bald Mountain Road, east of Greenley Road
Rdwy – 140. Lyons Street, west of Greenley Road

All improvements and mitigation measures are discussed in the following section.

IMPACTS AND MITIGATIONS

This section summarizes future year traffic impacts under the Distinctive Communities (Proposed) land use growth scenario, their significance on critical study area transportation facilities, and appropriate improvements and mitigation measures to alleviate those impacts to acceptable levels. A discussion of planned roadway improvements that are assumed constructed by future year conditions is presented in **Appendix Exhibit A**. It should be noted that all improvement/mitigation recommendations contained herein are conceptual planning/program level recommendations only.

YEAR 2030 CONDITIONS

This memorandum is a planning level analysis that quantifies future traffic conditions with proposed improvements. The forecasted LOS traffic impacts and associated improvements should be reevaluated with a thorough operational analysis before any improvements are constructed.

INTERSECTIONS

***Intx – 11. SR 49-SR 108/SR 108 & SR 49 (Stockton Road)*:**

Impact: The SR 49-SR 108/SR 108 & SR 49 (Stockton Road) intersection is projected to operate at unacceptable year 2030 AM and PM peak hour LOS "E" or worse conditions for the worst-case movement. California MUTCD based traffic signal Peak Hour Warrant 3 (70% Factor) is projected to be met at this intersection under year 2030 AM and PM peak hour conditions.

Mitigation: Intersection improvements are listed in FCEP-CIP Tier 1c long-range capital improvement projects. In this study, the long-range capital improvement projects are not assumed to be complete until year 2040. In order to achieve acceptable LOS under year 2030 conditions, it is recommended that this intersection be improved by year 2030. A feasible improvement measure is to improve this intersection to a High-T type intersection or signalize this intersection. With the recommended improvements in place, this intersection is projected to operate at acceptable year 2030 AM and PM peak hour LOS "C" or better conditions.

***Intx – 23. South Washington Street/SR 49 (South Washington Street) and SR 49 (Stockton Road)*:**

Impact: The South Washington Street/SR 49 (South Washington Street) and SR 49 (Stockton Road) intersection is projected to operate at unacceptable year 2030 AM and PM peak hour LOS "E" conditions with most of the movements operating below LOS "D" conditions.

Mitigation: A feasible improvement measure for this intersection is to construct a southbound right turn pocket. With the recommended improvements in place, the South Washington Street/SR 49 (South Washington Street) and SR 49 (Stockton Road) intersection is projected to operate at acceptable year 2030 AM and PM peak hour average intersection LOS "D" conditions with some movements operating at LOS F. The south leg of this intersection appear to have been constructed to their ultimate configuration with buildings, sidewalk, etc. on both east and west sides of the leg. Addition of the recommended turn lanes may not be implementable due to right-of-way and existing buildings. This intersection may continue to operate at unacceptable LOS until other feasible mitigations have been investigated and implemented.

North-South Connector – Phase 1 – Greenley extension to SR 49 is listed in FCEP-CIP Tier 1c long-range capital improvement projects. In this study, the long-range capital improvement projects are not assumed to be complete until year 2040. A feasible improvement measure to achieve acceptable LOS under year 2030 conditions is for the North-South Connector to be in place by year 2030.

Another feasible improvement measure would be to improve alternative modes of transportation along this roadway segment, such as transit service, bicycle and pedestrian infrastructure.

***Intx – 24. South Washington Street and Church Street*:**

Impact: The South Washington Street and Church Street intersection is projected to operate at unacceptable year 2030 PM peak hour LOS "F" conditions. California MUTCD based traffic signal Peak Hour Warrant 3 (70% Factor) is projected to be met at this intersection under year 2030 PM peak hour conditions.

Mitigation: A feasible improvement measure for this intersection is to install a traffic signal. However, due to the close proximity to another signalized intersection, installation of a traffic signal may not be possible. With the recommended signal improvement in place, the South Washington Street and Church Street intersection is projected to operate at acceptable year 2030 AM and PM peak hour LOS "A" conditions.

Another feasible improvement measure is to restrict the westbound approach to right-turn-only during peak hours. The eastbound approach is currently restricted to right-turn-only during peak hours. Changing the westbound approach to right-turn-only would be possible due to the very low westbound left-turn and through movement volumes. With the westbound right-turn-only improvements in place, the South Washington Street and Church Street intersection is projected to operate at acceptable year 2030 AM and PM peak hour LOS "C" conditions under all alternative growth scenarios for the worst case movement.

Individual Turning Movements:

The following study intersection is projected to operate at acceptable LOS "D" or better under Year 2030 conditions, but contain at least one individual movement operating at an unacceptable LOS. The following list summarizes each intersection operating acceptably under Year 2030 conditions, that intersection's failing movement(s) for AM and/or PM peak hours, and the recommended improvements that may alleviate that movement's unacceptable LOS.

- **Intx – 25. Bulwer Street / Restano Way:**
    - Movement(s) Operating Unacceptably: Southbound Left-Turn.
    - Recommended Improvements / Mitigation: Implement the Greenly Road Extension under Year 2030 which would reduce traffic demands at this intersection.

ROADWAY SEGMENTS

***Rdwy – 3 & 4. SR 108 between O'Byrnes Ferry Road and SR 49 (Montezuma Junction)*:**

Impact: The segment of SR 108/SR 120 between O'Byrnes Ferry Road and SR 120, and the segment of SR 108 between SR 120 (Yosemite Junction) and SR 49 (Montezuma Junction) are projected to operate at unacceptable year 2030 ADT-based LOS "E" conditions.

Mitigation: These segments of SR 108 are planned to be improved with climbing lanes and deceleration lanes as part of FCEP-CIP tier 1c by year 2040. Even with the FCEP-CIP tier 1c improvements in place by year 2030, these segments of SR 108 are not projected to provide acceptable LOS. A feasible improvement measure for this roadway segment is to widen the segment to a four lane expressway, consistent with FCEP-CIP Tier 3 project. With the recommended improvements in place, the segments of SR 108 between O'Byrnes Ferry Road and SR 49 (Montezuma Junction) are projected to operate at acceptable year 2030 ADT-based LOS "A" conditions.

***Rdwy – 5. SR 108 between SR 49 (Stockton Road) and South Washington Street/Lime Kiln Road*:**

Impact: The segment of SR 108 between SR 49 (Stockton Road) and South Washington Street/Lime Kiln Road is projected to operate at unacceptable year 2030 ADT-based LOS "E" conditions.

Mitigation: A feasible improvement measure is to widen this segment of SR 108 to a four lane expressway, consistent with FCEP-CIP Tier 3 project. With the recommended improvements in place, the segment of SR 108 between SR 49 (Stockton Road) and South Washington Street/Lime Kiln Road is projected to operate at acceptable year 2030 ADT-based LOS "A" conditions.

***Rdwy – 23, 24, & 27. SR 49 between SR 49 (Montezuma Junction) and South Main Street, and SR 49 between Fifth Avenue and Stockton Road/SR 108*:**

Impact: The segments of SR 49/SR 108 between SR 49 (Montezuma Junction) and Bell Mooney Road, between Bell Moony Road and South Main Junction, and between Fifth Avenue and Stockton Road/SR 108 are projected to operate at unacceptable year 2030 ADT-based LOS "E" conditions.

Mitigation: The segment of SR 49/SR 108 between SR 49 (Montezuma Junction) and Bell Mooney Road is planned to be improved with climbing lanes and deceleration lanes as part of FCEP-CIP tier 1c by year 2040. Even with the FCEP-CIP tier 1c improvements in place by year 2030, this segment of SR 49/SR 108 is not projected to provide acceptable LOS. A feasible improvement measure is to widen this segment to four lane expressway, consistent with FCEP-CIP Tier 3 project. With the recommended improvements in place, the segment of SR 49/SR 108 between SR 49 (Montezuma Junction) and Bell Mooney Road is projected to operate at acceptable year 2030 ADT-based LOS "A" conditions.

The segment of SR 49/SR 108 between Chicken Ranch Road and South Main Street is planned to be improved with continuous two-way-left-turn median lane as part of FCEP-CIP Tier 1b. Although this improvement will provide additional capacity, the added capacity will not be enough and this segment of SR 49/SR 108 is projected to continue to operate at unacceptable LOS.

A feasible improvement for the segments of SR 49/SR 120 between Bell Mooney Road and South Main Street, and between Fifth Street and Stockton Road/SR 108 is to widen these segments to five-lanes, consistent with FCEP-CIP Tier 2 projects. With the recommended improvements, these segments of SR 49/SR 108 are projected to operate at acceptable 2030 ADT-based LOS "C" or better conditions.

***Rdwy – 31, 32, 33, & 34. SR 49 between Stockton Road and north of North Washington Street / Columbia Way*:**

Impact: The segments of SR 49 between Stockton Road and Dodge Street, north of Dodge Street,

south of North Washington Street/Columbia Way, and north of North Washington Street/Columbia Way are projected to operate at unacceptable year 2030 ADT-based LOS "E" conditions.

Mitigation: A feasible improvement for these segments of SR 49 is to construct the North-South Connector – Phase 1 – Greenley Road Extension to SR 49, consistent with FCEP-CIP Tier 1c, by year 2030. With this improvement, a significant amount of traffic would be diverted from these segments of SR 49 to the new Greenley Road Extension.

Construction of the North-South Connector Phase 2 (Fir Drive Extension), consistent with FCEP-CIP Tier 2, that would extend Fir Drive from Mono Way to the Greenley Road Extension, intersecting with Cabezut Road and Lyons Bald Mountain Road in between, may reduce traffic on this segment of SR 49 by up to 5%.

Another feasible improvement measure for this roadway segment is to construct the Western Bypass that would extend from SR 108/49 (south of Jamestown) to Rawhide Road. The Western Bypass is projected to further divert and reduce traffic on this segment of SR 49.

Another feasible improvement measure is to improve alternative modes of transportation along this roadway segment, such as transit service, bicycle and pedestrian infrastructure.

***Rdwy – 52. Mono Way west of Sanguinetti Road*:**

Impact: The segment of Mono Way west of Sanguinetti Road is projected to operate at unacceptable year 2030 ADT-based LOS "E" conditions.

Mitigation: Traffic volumes on the segment of Mono Way west of Sanguinetti Road are projected to decrease with the construction of the proposed FCEP-CIP Tier 1c, Greenley Road Bypass; however, the projected decrease is not substantial enough for the segment of Mono Way west of Sanguinetti Road to operate at acceptable ADT-based peak hour LOS conditions.

A feasible improvement measure for this roadway segment is to construct the North-South Connector Phase 2, consistent with FCEP-CIP Tier 2, that would extend Fir Drive from Mono Way to the Greenley Road Extension, which may reduce traffic on this segment of Mono Way.

Another feasible improvement measure is to improve alternative modes of transportation along this roadway segment, such as transit service, bicycle and pedestrian infrastructure.

***Rdwy – 116. South Washington Street between Restano Way and Church Street*:**

Impact: The segment of South Washington Street between Restano Way and Church Street is projected to operate at unacceptable year 2030 ADT-based LOS "E" conditions.

Mitigation: Traffic volumes on this segment of South Washington Street are projected to decrease with the construction of the proposed FCEP-CIP Tier 1c, Greenley Road Bypass; however, the projected decrease is not substantial enough for this segment of South Washington Street to operate at acceptable Year 2030 AM and PM peak hour LOS conditions.

A feasible improvement measure for this roadway segment is to construct the North-South Connector Phase 2, consistent with FCEP-CIP Tier 2, that would extend Fir Drive from Mono Way to the Greenly Road Extension, which may reduce traffic on this segment of Mono Way.

Another feasible improvement measure is to improve alternative modes of transportation along this roadway segment, such as transit service or bicycle and pedestrian infrastructure.

YEAR 2040 CONDITIONS

This memorandum is a planning level analysis that quantifies future traffic conditions with proposed improvements. The forecasted LOS traffic impacts and associated improvements should be reevaluated with a thorough operational analysis before any improvements are constructed.

INTERSECTIONS

***Intx – 22. SR 49 (North Washington Street) & Bradford Street*:**

Impact: The SR 49 (North Washington Street) & Bradford Street intersection is projected to operate at unacceptable year 2040 PM peak hour LOS "E" conditions. California MUTCD based traffic signal Peak Hour Warrant 3 (70% Factor) is not projected to be met at this intersection under year 2040 AM or PM peak hour conditions.

Mitigation: A feasible improvement measure for this intersection is to install a traffic signal. However, since California MUTCD based traffic signal warrant is not projected to be met at this location, installation of a traffic signal is not recommended. With the signal improvement in place, the South Washington Street and Bradford Street intersection is projected to operate at acceptable year 2040 AM and PM peak hour LOS "A" conditions.

Another feasible improvement measure is to restrict the eastbound and westbound approach to right-turn-only during peak hours. Changing the eastbound and westbound approach to right-turn-only would be possible due to the very low left-turn and through movements. With the right-turn-only improvements in place, the SR 49 (North Washington Street) & Bradford Street intersection is projected to operate at acceptable year 2040 AM and PM peak hour LOS "C" conditions for the worst case movement.

***Intx – 23. South Washington Street/SR 49 (South Washington Street) and SR 49 (Stockton Road)*:**

Impact: The South Washington Street/SR 49 (South Washington Street) and SR 49 (Stockton Road) intersection is projected to operate at unacceptable year 2040 AM and PM peak hour LOS "E" conditions with most of the movements operating below LOS "D" conditions.

Mitigation: A feasible improvement measure for this intersection is to construct a southbound right turn pocket. With the recommended improvements in place, the South Washington Street/SR 49 (South Washington Street) and SR 49 (Stockton Road) intersection is projected to operate at acceptable year 2040 AM and PM peak hour LOS "D" conditions with some movements operating at LOS F. The north and leg of this intersection appear to have been constructed to their ultimate configuration with buildings, sidewalk, etc. on both east and west sides of the legs. Addition of the recommended turn lane may not be implementable due to right-of-way and existing buildings. This intersection may continue to operate at unacceptable LOS until other feasible mitigations have been investigated and implemented.

Construction of the North-South Connector Phase 2 (Fir Drive Extension), consistent with FCEP-CIP Tier 2, that would extend Fir Drive from Mono Way to the Greenley Road Extension, intersecting with Cabezut Road and Lyons Bald Mountain Road in between, may reduce traffic on this segment of SR 49 by up to 5%.

Another feasible improvement measure for this roadway segment is to construct the Western Bypass that would extend from SR 108/49 (south of Jamestown) to Rawhide Road, consistent with FCEP-CIP Tier 3 project. The Western Bypass is projected to divert traffic away from downtown Sonora and may reduce traffic on at this intersection.

Another feasible improvement measure would is to improve alternative modes of transportation along this roadway segment, such as transit service, bicycle and pedestrian infrastructure.

***Intx – 24. South Washington Street and Church Street*:**

Impact: The South Washington Street and Church Street intersection is projected to operate at unacceptable year 2040 AM and PM peak hour LOS "F" conditions. California MUTCD based traffic signal Peak Hour Warrant 3 (70% Factor) is projected to be met at this intersection under year 2040 PM peak hour conditions.

Mitigation: A feasible improvement measure for this intersection is to install a traffic signal. However, due to the close proximity to another signalized intersection, installation of a traffic signal may not be possible. With the signal improvement in place, the South Washington Street and Church Street intersection is projected to operate at acceptable year 2040 AM and PM peak hour LOS "A" conditions.

Another feasible improvement measure is to restrict the westbound approach to right-turn-only during peak hours. The eastbound approach is currently restricted to right-turn-only during peak hours. Changing the westbound approach to right-turn-only would be possible due to the very low westbound left-turn and through movements. With the westbound right-turn-only improvements in place, the South Washington Street and Church Street intersection is projected to operate at acceptable year 2040 AM and PM peak hour LOS "C" conditions for the worst case movement.

Individual Turning Movements:

The following study intersection is projected to operate at acceptable LOS "D" or better under Year 2040 conditions, but contain at least one individual movement operating at an unacceptable LOS. The following list summarizes each intersection operating acceptably under Year 2040 conditions, that intersection's failing movement(s) for AM and/or PM peak hours, and the recommended improvements that may alleviate that movement's unacceptable LOS.

- **Intx – 29. Greenley Road and Morning Star Drive / Cabezut Road:**
    - Movement(s) Operating Unacceptably: Northbound Left and Southbound Left.
    - Recommended Improvements / Mitigation: Add northbound right-turn lane, overlap northbound right-turn and southbound right-turn.

ROADWAY SEGMENTS

***Rdwy – 3 & 4. SR 108 between O'Byrnes Ferry Road and SR 49(Montezuma Junction)*:**

Impact: The segment of SR 108/SR 120 between O'Byrnes Ferry Road and SR 120, and the segment of SR 108 between SR 120 and SR 49 (Montezuma Junction) are projected to operate at unacceptable year 2040 ADT-based LOS "E" conditions.

Mitigation: These segments of SR 108 are planned to be improved with climbing lanes and deceleration lanes as part of FCEP-CIP tier 1c by year 2040. Even with the FCEP-CIP tier 1c improvements, these segments of SR 108 are not projected to provide acceptable LOS. A feasible improvement measure for this roadway segment is to widen these segments to a four lane expressway, consistent with FCEP-CIP Tier 3 project. With the recommended improvements in place, the segments of SR 108 between O'Byrnes Ferry Road and West Junction SR 49 are projected to operate at acceptable year 2040 ADT-based LOS "A" conditions.

***Rdwy – 5. SR 108 between SR 49 (Stockton Road) and South Washington Street/Lime Kiln Road*:**

Impact: The segment of SR 108 between SR 49 (Stockton Road) and South Washington Street/Lime Kiln Road is projected to operate at unacceptable year 2040 ADT-based LOS "E" conditions.

Mitigation: A feasible improvement measure for this roadway segment is to widen the segment to a four lane expressway, consistent with FCEP-CIP Tier 3 project. With the recommended improvements in place, the segment of SR 108 between SR 49 (Stockton Road) and South Washington Street/Lime Kiln Road is projected to operate at acceptable year 2040 ADT-based LOS "A" conditions.

***Rdwy – 23, 24, & 27. SR 49 between SR 49 (Montezuma Junction) and South Main Street, and SR 49 between Fifth Avenue and Stockton Road/SR 108*:**

Impact: The segments of SR 49/SR 108 between SR 49 (Montezuma Junction) and Bell Mooney

Road, between Bell Mooney Road and South Main Junction, and the between Fifth Avenue and Stockton Road/SR 108 are projected to operate at unacceptable year 2040 ADT-based LOS "E" conditions.

Mitigation: The segment of SR 49/SR 108 between SR 49 (Montezuma Junction) and Bell Moony Road is planned to be improved with climbing lanes and deceleration lanes as part of FCEP-CIP tier 1c by year 2040. Even with the FCEP-CIP tier 1c improvements, this segment of SR 49/SR 108 is not projected to provide acceptable LOS. A feasible improvement is to widen the segment to a four lane expressway, consistent with FCEP-CIP Tier 3 project. With the recommended improvements in place, the segment of SR 49/SR 108 between SR 49 (Montezuma Junction) and Bell Mooney Road is projected to operate at acceptable year 2040 ADT-based LOS "A" conditions.

The segment of SR 49/SR 108 between Chicken Ranch Road and South Main Street is planned to be improved with continuous two-way-left-turn median lane as part of FCEP-CIP tier 1b. Although this improvement will provide additional capacity, the added capacity will not be enough and this segment of SR 49/SR 108 is projected to continue to operate at unacceptable LOS.

A feasible improvement for the segments of SR 49/SR 120 between Bell Mooney Road and South Main Street and between Fifth Street and Stockton Road/SR 108 is to widen these segments to five-lanes, consistent with FCEP-CIP Tier 2 projects. With the recommended improvements, these segments of SR 49/SR 108 are projected to operate at acceptable 2040 ADT-based LOS "C" or better conditions.

***Rdwy – 31. SR 49 between Stockton Road and Dodge Street*:**

Impact: The segment of SR 49 between Stockton Road and Dodge Street is projected to operate at unacceptable year 2040 ADT-based LOS "E" conditions.

Mitigation: Construction of the North-South Connector Phase 2 (Fir Drive Extension), consistent with FCEP-CIP Tier 2, that would extend Fir Drive from Mono Way to the Greenley Road Extension, intersecting with Cabezut Road and Lyons Bald Mountain Road in between, may reduce traffic on this segment of SR 49 by up to 5%.

Another feasible improvement measure for this roadway segment is to construct the Western Bypass that would extend from SR 108/49 (south of Jamestown) to Rawhide Road, consistent with FCEP-CIP Tier 3 project, and may reduce traffic on this segment of SR 49.

Another feasible improvement measure is to improve alternative modes of transportation along this roadway segment, such as transit service, bicycle and pedestrian infrastructure.

***Rdwy – 35. SR 49 east of Parrotts Ferry Road (Columbia WYE)*:**

Impact: The segment of SR 49 east of Parrotts Ferry Road (Columbia WYE) is projected to operate at unacceptable year 2040 ADT-based LOS "E" conditions.

Mitigation: A feasible improvement measure for this roadway segment is to construct a continuous two-way-left-turn median lane. With the recommended improvements in place, the segment of SR 49 east of Parrotts Ferry Road (Columbia WYE) is projected to operate at acceptable year 2040 ADT-based LOS "D" conditions.

Another feasible improvement measure for this roadway segment is to widen the segment to five lanes, consistent with FCEP-CIP Tier 2 project. With the recommended improvements in place, the segment of SR 49 east of Parrotts Ferry Road (Columbia WYE) is projected to operate at acceptable year 2040 ADT-based LOS "A" conditions.

Another feasible improvement measure is to improve alternative modes of transportation along this roadway segment, such as transit service or bicycle and pedestrian infrastructure.

***Rdwy – 52. Mono Way west of Sanguinetti Road*:**

Impact: The segment of Mono Way west of Sanguinetti Road is projected to operate at unacceptable year 2040 ADT-based LOS "E" conditions.

Mitigation: Traffic volumes on the segment of Mono Way west of Sanguinetti Road are projected to decrease with the construction of the proposed FCEP-CIP Tier 1c Greenley Road Bypass; however, the projected decrease is not substantial enough for the segment of Mono Way west of Sanguinetti Road to operate at acceptable Year 2040 ADT-based LOS conditions.

A feasible improvement measure for this roadway segment is to construct the North-South Connector Phase 2, consistent with FCEP-CIP Tier 2, that would extend Fir Drive from Mono Way to the Greenley Road Extension, which may reduce traffic on this segment of Mono Way.

Another feasible improvement measure is to improve alternative modes of transportation along this roadway segment, such as transit service or bicycle and pedestrian infrastructure.

***Rdwy – 69. Greenley Road between Cabezut Road/Morning Star Road and Delnero Drive*:**

Impact: The segment of Greenley Road between Cabezut Road/Morning Star Road and Delnero Drive is projected to operate at unacceptable year 2040 ADT-based LOS "E" conditions.

Mitigation: One feasible improvement measure for this roadway segment is to construct the North-South Connector Phase 2 (Fir Drive Extension), consistent with FCEP-CIP Tier 2, that would extend Fir Drive from Mono Way to the Greenley Road Extension, intersecting with Cabezut Road and Lyons Bald Mountain Road in between. With the construction of the North-South Connector Phase 2, traffic volumes on this segment of Greenley Road are projected to decrease by approximately 20%, and this segment of Greenley Road is projected to operate at acceptable year 2040 ADT-based LOS "D" or better conditions.

Another feasible improvement measure is to construct the Cabezut Road Extension from the Fir Drive Road Extension to Phoenix Lake Road, which may reduce volumes on this segment of Greenley Road.

***Rdwy – 77. Tuolumne Road between Mono Way and Lambert Lake Road*:**

Impact: The segment of Tuolumne Road between Mono Way and Lambert Lake Road is projected to operate at unacceptable year 2040 ADT-based LOS "E" conditions.

Mitigation: A feasible improvement measure is to widen Tuolumne Road to five lanes from Mono Way to Lambert Lake Road With the recommended improvements in place, the segment of Tuolumne Road between Mono Way and Lambert Lake Road is projected to operate at acceptable year 2040 ADT-based LOS "D" conditions.

Another feasible improvement measure is to improve alternative modes of transportation along this roadway segment, such as transit service or bicycle and pedestrian infrastructure.

***Rdwy – 116. South Washington Street between Restano Way and Church Street*:**

Impact: The segment of South Washington Street between Restano Way and Church Street is projected to operate at unacceptable year 2040 ADT-based LOS "E" conditions.

Mitigation: A feasible improvement measure for this roadway segment is to construct the North-South Connector Phase 2, consistent with FCEP-CIP Tier 2, that would extend Fir Drive from Mono Way to the Greenly Road Extension, which may reduce traffic on this segment of Mono Way.

Another feasible improvement measure is to improve alternative modes of transportation along this roadway segment, such as transit service or bicycle and pedestrian infrastructure.

TIER 2 AND TIER 3 PROJECTS

Qualitative analysis of intersections and roadway segments with the FCEP-CIP Tier 2 and Tier 3 (Local Streets and State Highways) projects in place under the preferred Distinctive Communities (Proposed) land use growth scenario is included in **Appendix Exhibit A**. **Appendix Exhibit A** have been updated to include an additional column that summarizes study intersection and/or roadway operation improvements associated with Tier 2 and Tier 3 projects on local streets roads and state highways. Some of the Tier 2 and Tier 3 projects were recommended to be moved to Tier 1a, 1b, and/or 1c in prior a section of this memorandum.

OTHER LAND USE GROWTH SCENARIOS

Based on the August 2015 EIR traffic study and the analysis included in this memorandum, traffic volumes between the four land use growth scenarios vary slightly at some locations. These traffic volumes are not projected to vary significantly or to a level where additional or fewer impacts are triggered than those that have been identified under the Distinctive Communities (Proposed) land use growth scenario analyzed in this memorandum. Thus, it can be concluded that intersection and roadway improvements and mitigation measures identified under the Distinctive Communities (Proposed) land use growth scenario in this memorandum could be considered representative of improvements and mitigation measures that would be identified under the other land use growth scenarios, including Recent Trends (Existing), Recent Trends (Proposed), and Public Service (Proposed).

Appendix Table 2 – Tuolumne County – LOS Look up Table

FHWA FC#	Roadway Type	Type #	Area Type	Maximum Two-way Average Daily Traffic (ADT) Volume-carrying Capacity for each LOS Designation				
				LOS "A"	LOS "B"	LOS "C"	LOS "D"	LOS "E"
4	Rural Arterial (4-lane) Divided	1	ROLLING	6,240	12,480	18,720	26,520	31,200
4	Rural Arterial (4-lane) Undivided	2		4,820	9,640	14,460	20,485	24,100
4	Rural Minor Arterial (4-lane)	3		6,080	12,160	18,240	25,840	30,400
4	Rural Minor Arterial (with left-turn Lane)	4		4,600	9,200	13,800	19,550	23,000
4	Rural Minor Arterial (2-lane)	5		3,120	6,240	9,360	13,260	15,600
5	Major Collector (34 ft. - 36 ft.)	6		3,420	6,840	10,260	14,535	17,100
5	Major/Minor Collector (23 ft.- 32 ft.)	7		2,900	5,800	8,700	12,325	14,500
5	Major/Minor Collector (20 ft.- 23 ft.)	8		2,590	5,180	7,770	11,008	12,950
5	Major/Minor Collector (18 ft.- 20 ft.)	9		2,300	4,600	6,900	9,775	11,500
5	Major/Minor Collector (Less than 18 ft.)	10		1,920	3,840	5,760	8,160	9,600
6	Local Road	11		1,920	3,840	5,760	8,160	9,600
4	Rural Minor Arterial (with Climbing Lane)	12		2,900	7,400	13,800	19,700	28,800
4	Rural Arterial (4-lane) Divided	101	MOUNTANEOUS	5,810	11,610	17,410	24,670	29,020
4	Rural Arterial (4-lane) Undivided	102		4,490	8,970	13,450	19,060	22,420
4	Rural Minor Arterial (4-lane)	103		5,660	11,310	16,970	24,040	28,280
4	Rural Minor Arterial (with left-turn Lane)	104		4,280	8,560	12,840	18,190	21,390
4	Rural Minor Arterial (2-lane)	105		2,910	5,810	8,710	12,340	14,510
5	Major Collector (34 ft. - 36 ft.)	106		3,190	6,370	9,550	13,520	15,910
5	Major/Minor Collector (23 ft.- 32 ft.)	107		2,700	5,400	8,100	11,470	13,490
5	Major/Minor Collector (20 ft.- 23 ft.)	108		2,410	4,820	7,230	10,240	12,050
5	Major/Minor Collector (18 ft.- 20 ft.)	109		2,140	4,280	6,420	9,100	10,700
5	Major/Minor Collector (Less than 18 ft.)	110		1,790	3,580	5,360	7,590	8,930
6	Local Road	111		1,790	3,580	5,360	7,590	8,930
4	Rural Minor Arterial (with Climbing Lane)	112		2,700	6,890	12,840	18,330	26,790
2	4-Lane Freeway	201	URBAN	28,000	43,200	61,600	74,400	80,000
2	3-Lane Freeway	202		10,100	20,200	30,300	42,925	50,500
2	2-Lane Freeway + Auxiliary Lanes	203		8,392	16,784	25,176	35,666	41,960
2	2-Lane Freeway	204		6,680	13,360	20,040	28,390	33,400
2	4-Lane Expressway	205		24,000	28,000	32,000	36,000	40,000
2	2-Lane Expressway	206		5,700	11,300	17,000	24,100	28,400
3	6-Lane Divided Arterial (with left-turn lane)	207		32,000	38,000	43,000	49,000	54,000
3	4-Lane Divided Arterial (with left-turn lane)	208		22,000	25,000	29,000	32,500	36,000
3	4-Lane Undivided Arterial (no left-turn lane)	209		18,000	21,000	24,000	27,000	30,000
4	2-Lane Principal/Minor Arterial (with left-turn lane)	210		2,900	7,700	14,300	20,100	31,300
4	2-Lane Principal/Minor Arterial (no left-turn lane)	211		2,900	7,200	11,900	16,100	24,200
5	2-Lane Major/Minor Collector (with left-turn lane)	212		3,400	6,900	11,600	15,800	29,400
5	2-Lane Major/Minor Collector (no left-turn lane)	213		2,700	5,600	9,200	12,800	23,500
6	2-Lane Local Street	214		2,300	4,900	8,400	11,400	21,200

Notes:
1. Values shown corresponding to LOS A through E are roadway ADT traffic volumes
2. Collector width is measured from the edge of pavement to the edge of pavement
3. Roadways with continuous grade steeper than 6% or above 4,000 ft. elevation should use mountainous train LOS thresholds
4. Site Specific LOS maybe necessary
5. Peak Hour LOS threshold is assumed to be 10% of the daily traffic volume unless site specific analysis shows a different peak hour to daily traffic ratio
6. Examples LOS A (0.20 of capacity), LOS B (0.21 to 0.40 of capacity), LOS C (0.41 to 0.60 of capacity), LOS D (0.61 to 0.85 of capacity), LOS E (0.86 to 0.92 of capacity)

All volumes thresholds are approximate and assumes average roadway characteristics. Actual threshold volume for each Level of Service listed above may vary depending on variety of factors including (but not limited to) roadway curvature and grade, intersection or interchange spacing, driveway spacing, percentage of trucks, RVs, and other heavy vehicles, travel lane widths, speed limits, signal timing characteristics, on-street parking, volume of cross traffic and pedestrians, etc.

APPENDIX EXHIBIT A

Financially Constrained Expenditure Plan

State Highway Projects

Tier 1a - Short-Range Capital Improvement Program (0-5 years)

Project Name	Priority	Funding Source	Agency	Location	Description	Cost ($1,000)	Construct Year	Purpose & Need
SR 120 - New Priest Grade - Turnouts	Tier 1a	Minor SHOPP	Caltrans	Groveland	Construct eastbound turnouts at 3 locations for slow moving vehicles and to allow other vehicles to pass to reduce queues and improve traffic flow.	945	2017	Safety, Operational
Signalization @ Fifth Avenue at State Route 108 & Shoulder Improvements to Fifth Ave & Jamestown Rd	Tier 1a	TIMF	Tuolumne County	Jamestown	Construct a new signal at Fifth Avenue and Highway 108 in Jamestown. Construct additional right turn lanes on 5th Avenue in the northbound and southbound directions. Widen SR 108/49 for a right lane turn pocket.	2,800	2017	Capacity
Peaceful Oak Road/SR 108 Off Ramps Project	Tier 1a	RTIP, local	Caltrans	East Sonora	Construct two off ramps at the Peaceful Oak Rd/State Route 108 interchange that were eliminated from the original scope of the East Sonora Bypass Stage II project.	10,195	2018	Operational
Parrotts Ferry Rd @ SR 49 Intersection Improvements	Tier 1a	HSIP, local	Tuolumne County	Columbia	Construct geometric improvements at the intersection of SR 49 and Parrotts Ferry Road. Construct wider shoulders from SR 49 to Union Hill Rd.	1,111	2018	Safety
Mono Way Operational and Safety Project	Tier 1a	RTIP	Tuolumne County	East Sonora	A segment of SR 108 from Peaceful Oak Rd to Via Este will be relinquished to the County and become a County maintained road. Improvements to the roadway geometry will accommodate pedestrian traffic, improve drainage, realign the intersection and install left turn pockets.	1,860	2019	Operational & Safety
SR 108/120 - Safety Improvements at the Yosemite Junction Intersection	Tier 1a	SHOPP	Caltrans	Jamestown	Construct safety improvements at the intersection of SR 108 and SR 120 also called the Yosemite Junction.	2,450	2020	Safety
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Tier Projects Table Summary

Tier 1a - Programmed Projects with dedicated funding
Tier 1b – Plan to fund these projects by 2030

Tier 1c – Plan to fund these projects by 2040

Tier 2 - Alternative Funding Scenario - If new funds become available

Tier 3 - Unfunded Projects

Financially Constrained Expenditure Plan

State Highway Projects

Tier 1b - Mid-Range Capital Improvement Program (6-15 years)

Project Name	Priority	Funding Source	Agency	Location	Description	Cost ($1,000)	Construct Year	Purpose & Need
SR 108/49 - Chicken Ranch Rd to South Main St - Continuous Left Turn Lane	Tier 1b	SHOPP	Caltrans	Jamestown	Construct an continuous left turn lane from the Chicken Ranch Rd to South Main St.	1,300	2022	Safety
Intersection Improvements at SR 49/Columbia Way - Complete Streets Improvements	Tier 1b	RTIP/SHOPP/ TIMF	Caltrans	Sonora	Construct intersection improvements at SR 49/North Washington St/Columbia Way/School St. The intersection improvements would include ADA crossings, pedestrian, and bicycle improvements.	3,000	2022	Operational Safety, ADA
SR 49 Left Turn Channelization Shaws Flat Road	Tier 1b	Minor SHOPP	Caltrans	Columbia	Construct a continuous left turn lane from at the intersection of Shaws Flat Rd/Jamestown Rd.	900	2022	Safety
SR 120 & Old Priest Grade Top Grade - Left Turn Channelization	Tier 1b	Minor SHOPP	Caltrans	Groveland	Construct a left turn lane along SR 120 and Old Priest Grade Rd at the top of the grade.	900	2025	Safety
SR-108/SR-49 - Stage 1 - Widen to Five Lanes - from South Main St to Fifth Ave	Tier 1b	RTIP, ITIP, local, SHOPP	Caltrans	Jamestown	Widen SR-49/SR-108 to 5-lanes in Jamestown from west of South Main Street to Fifth Ave. Construct Complete Streets improvements.	13,037	2025	Capacity
South Washington Rd/SR 108/Lime Kiln Road Intersection - Operational Improvements	Tier 1b	RTIP, TIMF, SHOPP	City of Sonora	Sonora	Construct a southbound right turn lane and construct a southbound 2nd left turn lane along South Washington Road at the intersection of SR 108/Lime Kiln Road.	1,168	2025	Operational, Safety, ADA
SR-120/SR-49 Moccasin - Left Turn Channelization	Tier 1b	Minor SHOPP	Caltrans	Moccasin	Construct a left turn lane along SR 120 & SR 49 near Moccasin.	900	2025	Safety
SR 49 Realignment of Curve from Jack Ass Hill Rd to Tim Horne Mine Rd	Tier 1b	SHOPP	Caltrans	Tuttletown	Construct curve realignments between Tim Horn Mine Rd and Jack Ass Hill Rd.	3,287	2030	Safety
SR 108/120 Eastbound Realignment of Rockhouse Curve	Tier 1b	SHOPP	Caltrans	Western Tuolumne County	Construct curve realignments for SR 108/120 eastbound for the Rockhouse Curve which is 2.6 miles east of Tulloch Rd.	3,500	2030	Safety
SR 120 Install Guardrails from Old Priest Grade to Coulterville Rd	Tier 1b	Minor SHOPP	Caltrans	Groveland	Install guardrails along SR 120 from Old Priest Grade Rd to Coulterville Rd where appropriate.	900	2030	Safety
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Financially Constrained Expenditure Plan

State Highway Projects

Tier 1c - Long-Range Capital Improvement Program (15-25 years)

Project Name	Priority	Funding Source	Agency	Location	Description	Cost ($1,000)	Construct Year	Purpose & Need
Install Bicycle Signs along State Highways	Tier 1c	SHOPP	Caltrans	Tuolumne County	Install new "Share the Road" Signs along designated Class II facilities.	50	TBD	Safety
SR-108/49 & Chicken Ranch Rd - Intersection Improvements	Tier 1c	SHOPP	Caltrans	Jamestown	Construct geometroc improvements at the intersection of Chicken Ranch Rd & SR 108/49.	1,500	TBD	Operational
SR-108 & SR 49 Stockton Rd Intersection Improvements	Tier 1c	SHOPP	Caltrans	Sonora	Construct geometric improvements at the intersection of SR 49 (Stockton Rd) & SR 108/49 & SR 108.	2,500	TBD	Operational
SR 108 - Chicken Ranch Rd to SR 49 - Climbing, Acceleration, De-acceleration Lanes	Tier 1c	SHOPP	Caltrans	Jamestown	Construct an acceleration, deacceleration, and climbing lanes from Chicken Ranch Rd to the SR 49 exit Montezuma Junction.	2,500	TBD	Safety & Operational
SR 108 - SR 49 to SR 120 - Climbing Lanes	Tier 1c	SHOPP	Caltrans	Jamestown	Construct eastbound climbing lanes from Montezuma Junction/SR 49 to Yosemite Junction/SR 120.	2,000	2030	Safety & Operational
SR 108/120 - La Grange Rd to O'Byrnes Ferry Rd - Climbing Lanes	Tier 1c	SHOPP	Caltrans	Western Tuolumne County	Construct westbound and eastbound climbing and deacceleration lanes between west of La Grange Rd to SR O'Brynes Ferry Rd.	3,500	2035	Safety & Operational
SR 120 - New Priest Grade - Widen Road, install and Add Climbing Lanes	Tier 1c	SHOPP	Caltrans	Groveland	Construct a turnout and climbing lanes on SR 120 @ New Priest Grade	2,100	2020	Safety & Operational
								State Highways - 79

Expenditure Plan
State Highways Projects
Tier 2 - Financial Alternative C

Project Name	Priority	Funding Source	Agency	Location	Description	Cost ($1,000)	Construct Year	Purpose & Need	**Projected Operations Improvement**
SR-108/SR-49 - Stage 2 Widen to Five Lanes from Chicken Ranch Rd to South Main Street	Tier 2	Local, ITIP, Cap & Trade, TIMF	Caltrans	Jamestown	Widen SR-49 to 5-lanes from Chicken Ranch Rd to South Main Street. Construct Complete Streets improvements.	9,750	TBD	Capacity	**Improve roadway operations from unacceptable Year 2030 and Year 2040 LOS "E" conditions to acceptable LOS "B" conitions.**
SR-108/SR-49 - Stage 3 Widen to Five Lanes from Fifth Ave to Stockton Street	Tier 2	Local, ITIP, Cap & Trade, TIMF	Caltrans	Jamestown, Sonora	Widen SR-49/SR-108 to 5-lanes from Fifth Ave to SR-49 junction south of Sonora (Stockton St). Construct Complete Streets improvements.	22,735	TBD	Capacity	**Improve roadway operations from unacceptable Year 2030 and Year 2040 LOS "E" conditions to acceptable LOS "D" conditions.**
East Sonora Bypass Stage III	Tier 2	Local, ITIP, Cap & Trade, TIMF	Caltrans	East Sonora	Construct a new 2 lane expressway from Mono Way/Argyle Rd to N. Sunshine Rd/Mono Vista Rd.	44,000	TBD	Capacity	**Aleviate traffic on adjacent parallel roadways, including SR 49.**
SR-49 Widen to Five Lanes from Parrotts Ferry Rd to the New Greenley Rd Intersection	Tier 2	Local, ITIP, Cap & Trade, TIMF	Caltrans	Sonora, Columbia	Widen SR-49 to 5-lanes from Parrotts Ferry Rd to the Greenley Rd intersection. Construct Complete Streets improvements.	9,316	TBD	Capacity	**Improve intersecton and roadway operations along this segment.**
								State Highways - 80	

Expenditure Plan

State Highways Projects

Tier 3 - Unfunded Capital Improvement Projects

Project Name	Priority	Funding Source	Agency	Location	Description	Cost ($1,000)	Construct Year	Purpose & Need	Projected Operations Improvement
SR-120/SR-108 - Widen to a Four Lane Expressway from La Grange Rd to O'Brynes Ferry Rd	Tier 3	TBD	Caltrans	Western Tuolumne County	Construct a four lane expressway along SR-108/SR-120 to west of La Grange Rd to O'Brynes Ferry Rd.	20,601	TBD	Capacity	**Improve roadway operations from unacceptable Year 2030 and Year 2040 LOS "E" conditions to acceptable LOS "A" conitions.**
Intersection Improvements - Ferretti Rd @ SR 120	Tier 3	TBD	Tuolumne County	Groveland	Construct geometric improvements to the intersection of SR 108 and SR 120. (Western Most Intersection).	900	TBD	Safety	**Improve operations at this intersection.**
SR 108 - New freeway alignmenet from (west) Twain Harte Drive to Long Barn Road	Tier 3	TBD	Caltrans	Twain Harte	Construct an alternative 2 lane expressway on a new alignment between Twain Harte Drive and Long Barn Road.	37,000	TBD	Capacity	**Aleviate traffic on adjacent parallel roadways.**
SR-108/49 New Signal intersection - Mackey Ranch Rd & Sierra Rock Rd	Tier 3	TBD	Tuolumne County	Jamestown	Construct a new signal intersection at the intersection of Mackey Ranch Rd/Sierra Rock Rd & SR 108/49.	1,500	TBD	Capacity & Safety	**Improve operations at this intersection.**
SR 108 Widening to 5 lanes from Mono Way/Via Este to N. Sunshine/Mono Vista Rd	Tier 3	TBD	Caltrans	East Sonora	Widen SR 108 to five lanes from Mono Way/Via Este to N. Sunshine Rd/Mono Vista Rd.	24,000	TBD	Capacity	**Improve intersecton and roadway operations along this segment.**
SR 108 Widen to a Four lane Expressway from SR 49(Stockton Rd to S Washington St/Lime Kiln	Tier 3	TBD	Caltrans	Sonora	Widen SR 108 to a Four Lane Expressway from SR 49(Stockton Rd to South Washington St./Lime Kiln.	27,000	TBD	Capacity	**Improve roadway operations from unacceptable Year 2030 and Year 2040 LOS "E" conditions to acceptable LOS "A" conitions.**
SR 49 and Southgate Drive Intersection Improvements	Tier 3	TBD	City of Sonora	Sonora	Construct intersection improvements at Southgate Drive/Woods Creek Drive, and South Forest Drive and SR 49.	2,500	TBD	Safety	**Improve operations at this intersection.**
SR 49 Realignment of curve from Fraguero Rd to Mormon Creek Rd	Tier 3	TBD	Caltrans	Tuttletown	Construct curve realignments from Fraguero Rd to Morman Creek Road.	3,287	TBD	Safety	**Improve intersecton and roadway operations along this segment.**
SR-108/SR-120/SR-49 Widen to a Four Lane Expressway from O'Byrnes Ferry to Chicken Ranch Rd	Tier 3	TBD	Caltrans	Jamestown	Construct a four lane expressway along SR-108/SR-120/SR-49 from O'Byrnes Ferry Road to Chicken Ranch Road	18,767	TBD	Capacity	**Improve roadway operations from unacceptable Year 2030 and Year 2040 LOS "E" conditions to acceptable LOS "A" conitions.**
SR-49 Continuous Left Turn Lane from Parrotts Ferry Rd to Columbia Way	Tier 3	TBD	Caltrans	Sonora, Columbia	Construct a continuous left turn lane from Parrotts Ferry Rd to Columbia Way.	3,500	TBD	Capacity	**Improve intersecton and roadway operations along this segment.**
						State Highways - 81			

Expenditure Plan
State Highways Projects
Tier 3 - Unfunded Capital Improvement Projects

Project Name	Priority	Funding Source	Agency	Location	Description	Cost ($1,000)	Construct Year	Purpose & Need	Projected Operations Improvement
Changeable Message Signs	Tier 3	TBD	Caltrans	Tuolumne County	Construct several Changeable Message Signs along SR 108/120 Corridor	900	TBD	ITS, TMS	**Not projected to have a significant impact on traffic operations.**
Intersection Improvements Twain Harte Drive (North) & SR 108	Tier 3	TBD	Caltrans	Twain Harte	Construct geometric improvments to the intersection of Twain Harte Drive (north) and SR 108.	1,500	TBD	Safety	**Improve operations at this intersection.**
Intersection Improvements Twain Harte Drive (South) & SR 108	Tier 3	TBD	Caltrans	Twain Harte	Construct geometric improvments to the intersection of Twain Harte Drive (south) and SR 108.	885	TBD	Safety	**Improve operations at this intersection.**
Plan & Design SR 49 Western Bypass of Sonora	Tier 3	TBD	Caltrans	Jamestown	Plan and study potential alternative scenarios for a SR 49 Western Bypass of Sonora.	1,500	TBD	Bypass	**Aleviate traffic on adjacent parallel roadways, including SR 49 through Sonora.**
Signalize SR 108/49 & Chabroullian Rd	Tier 3	TBD	Caltrans	Jamestown	Signalize the intersection of SR 108/49 and Chabroullian Rd.	1,500	TBD	Safety	**Improve operations at this intersection.**
SR 108/49 & Bell Mooney Rd/Harvard Mine Rd Intersection Improvements	Tier 3	TBD	Caltrans	Jamestown	Construct intersection improvements at SR 108/49 and Harvard Mine Rd/Bell Mooney Rd.	1,500	TBD	Safety	**Improve operations at this intersection.**
SR 108 - On Ramps - Acceleration Lanes - @ Mono Way	Tier 3	TBD	Caltrans	Sonora	Construct acceleration lanes for the SR 108 On-ramps for west and eastbound directions.	3,000	TBD	Operational	**Improve roadway operations and safety.**
SR 120 & 49 near Chinese Camp - Left Turn Channelization	Tier 3	TBD	Caltrans	Chinese Camp	Construct a new left turn channelization to improve safety and improve traffic flow.	900	TBD	Safety	**Improve intersecton and roadway operations along this segment.**
SR 120/49 & Red Hills Rd Left Turn Channelization	Tier 3	TBD	Caltrans	Chinese Camp	Construct a new left turn channelization to improve safety and improve traffic flow.	900	TBD	Safety	**Improve intersecton and roadway operations along this segment.**
SR 120/49 & Jacksonville Rd - Left Turn Channelization	Tier 3	TBD	Caltrans	Chinese Camp	Construct a new left turn channelization to improve safety and improve traffic flow.	900	TBD	Safety	**Improve intersecton and roadway operations along this segment.**
SR 120 & Old Priest Grade Bottom of Grade- Left Turn Channelization	Tier 3	TBD	Caltrans	Groveland	Construct a new left turn channelization to improve safety and improve traffic flow.	900	TBD	Safety	**Improve intersecton and roadway operations along this segment.**
SR 49 Western Bypass	Tier 3	TBD	Caltrans	Jamestown	Construct a State Highway bypass from SR 108/49 near Jamestown to Rawhide Rd.	50,000	TBD	Capacity	**Aleviate traffic on adjacent parallel roadways, including SR 49 through Sonora.**
						State Highways - 82			

Financially Constrained Expenditure Plan

County, City, and Community Sponsored Local Streets & Road Projects

Tier 1a - Short Range Capital Improvement Program

Project Name	Priority	Funding Source	Agency	Location	Description	Cost ($1,000)	Construct Year	Purpose & Need
Signalization @ Standard Rd at Tuolumne Rd & Adding Geometric Improvements	Tier 1a	TIMF, Tribal Fees	Tuolumne County	East Sonora	Construct a new signal at Tuolumne Rd and Standard Rd. Constructing a new left and right turn lane on Standard Rd and construct a new left and right turn lane on Tuolumne.	1,246	2016	Operational & Capacity
Construct a Park N- Ride Facility - Sonora	Tier 1a	CMAQ, local	City of Sonora	Sonora	Construct a new park and ride facility project to serve users of public transit and commuters traveling outside the City.	220	2016	Reduce Congestion
Law & Justice Center Drive	Tier 1a	RSTP, local	Tuolumne County	Sonora	Construct an extension of Justice Center Drive to the new Law & Justice Center Bus Transfer Facility.	198	2016	New road
Tuolumne Road Improvements from Terrace Dr to Lambert Lake Rd	Tier 1a	HSIP, Local	Tuolumne County	East Sonora	Widen and realign Tuolumne Road from Terrace Dr to Lambert Lake Rd.	1,609	2018	Safety
Phoenix Lake Rd from Ridgewood to Paseo de Los Portales Rd	Tier 1a	HSIP, local	Tuolumne County	Phoenix Lake	Widen and realign Phoenix Lake Road from Ridgewood Rd to Paseo de Los Portales Rd.	1,578	2018	Safety
New Rawhide Bridge and Rawhide Rd Realignment with SR 108/49	Tier 1a	HBP, TIMF	Tuolumne County	Jamestown	Construct a new concrete bridge with two through lanes and a left turn lane east of the existing single lane bridge. The new bridge will realign with Main Street and SR 108/49 in	6,878	2018	Capacity
Rehab & Reconstruct Buchanan Road	Tier 1a	FLAP, local	FHWA	Tuolumne County	Rehabilitate and reconstruct 2.5 miles of Buchanan Road from Carter Road to the Buchanan Mine Road Bridge. Construct a new Buchanan Mine Road Bridge.	18,107	2018	Maintenance
Reconstruction of Evergreen Road	Tier 1a	FLAP, local	FHWA	Tuolumne County	Reconstruct 7 miles of Evergreen Road from State Highway 120 to Hetch Hetchy Road.	14,643	2019	Maintenance
Greenley Rd & Mono Way Intersection - Capacity Improvements	Tier 1a	TIMF, local	City of Sonora	Sonora	Construct capacity improvments at the intersection of Greenley Rd & Mono Way.	3,437	2020	Capacity
Tier 1a - Programmed Projects with dedicated funding								Local Streets - 112

Tier 1b – Plan to fund these projects by 2030

Tier 1c – Plan to fund these projects by 2040

Tier 2 - Alternative Funding Scenario - If new funds become available

Tier 3 - Unfunded Projects

Financially Constrained Expenditure Plan

County, City, and Community Sponsored Local Streets & Roads Projects

Tier 1b - Mid-Range - Capital Improvement Program (6-15 years)

Project Name	Priority	Funding Source	Agency	Location	Description	Cost ($1,000)	Construct Year	Purpose & Need
Safety Improvements @ Tuolumne Rd & Soulsbyville Rd	Tier 1b	Tribal, local	Tuolumne County	Tuolumne	Construct safety improvements at the intersection of Tuolumne Rd and Soulsbyville Rd.	1,000	2021	Safety
Construct a Park N- Ride Facility - Tuolumne City	Tier 1b	CMAQ, Local	Tuolumne County	Tuolumne	Construct a 56 parking spot Park and Ride facility in Tuolumne.	319	2025	Reduce Congestion
Extend Gardella Ranch Rd to Justice Center Drive	Tier 1b	Local	Tuolumne County	Sonora	Construct a new roadway connecting Gardella Ranch Rd with Justice Center Drive.	2,500	2025	New road
Intersection Improvements @ Sanguinetti Rd	Tier 1b	EIR Fees, local	Tuolumne County	Sonora	Construct a new Roundabout on Sanguinetti Road & Sanguinetti Loop Rd.	3,000	2025	Deficiency
Safety Improvements @ Tuolumne Rd & Woodham Carne/Black Oak Rd including Possible Realignment	Tier 1b	Tribal, local	Tuolumne County	Tuolumne	Construct safety improvements at Tuolumne Rd & Woodham Carne/Black Oak Rd. Include a realignment of Woodham Carne Rd.	1,300	2025	Safety
Install Bicycle Signs along Various Roads	Tier 1b	Local	City of Sonora, Tuolumne County	Tuolumne County	Install new "Share the Road" Signs along designated Class III facilities.	50	TBD	Safety
Parrotts Ferry Road Signalization @ Sawmill Flat Road	Tier 1b	TIMF, Local	Tuolumne County	Columbia	Construct a new signalized intersection at the Parrotts Ferry Rd & Sawmill Flat Rd.	2,100	2040	Safety
								Local Streets - 113

Financially Constrained Expenditure Plan

County, City, and Community Sponsored Local Streets & Roads Projects

Tier 1c Long- Range - Capital Improvement Program (16-25 years)

Project Name	Priority	Funding Source	Agency	Location	Description	Cost ($1,000)	Construct Year	Purpose & Need
North-South Connector - Phase 1 - Greenley Extension to SR 49	Tier 1c	RTIP, TIMF	Tuolumne County & City of Sonora	Sonora	Construct a new collector road from the intersection of Greenley Rd/Lyons Bald Mountain Rd/Lyons St to SR 49 in between Jack Hage Rd/Old Sonora Columbia Rd & Pesce Way. Construct a new signal at the intersection of Greenley Rd & Lyons/Lyons Bald Mt Rd. Construct a new signal at the intersection of SR 49 & new Greenley Extension.	23,164	2040	Bypass
								Local Streets - 114

Tier Projects Table Summary
Tier 1a - Programmed Projects with dedicated funding
Tier 1b – Plan to fund these projects by 2030
Tier 1c – Plan to fund these projects by 2040
Tier 2 - Alternative Funding Scenario - If new funds become available
Tier 3 - Unfunded Projects

Expenditure Plan

County, City, and Community Sponsored Local Streets & Roads Projects

Tier 2 - Financial Alternative C

Project Name	Priority	Funding Source	Agency	Location	Description	Cost ($1,000)	Construct Year	Purpose & Need	**Projected Operations Improvement**
North-South Connector - Phase 1 - Greenley Extension to SR 49	Tier 1c to Tier 1b	Local, Cap & Trade, TIMF	Tuolumne County & City of Sonora	Sonora	Construct a new collector road from the intersection of Greenley Rd/Lyons Bald Mountain Rd/Lyons St to SR 49 in between Jack Hage Rd/Old Sonora Columbia Rd & Pesce Way. Construct a new signal at the intersection of Greenley Rd & Lyons/Lyons Bald Mt Rd. Construct a new signal at the intersection of SR 49 & new Greenley Extension.	17,253	2025	Bypass	**Assumed under Year 2040**
North South Connector - Phase 2 - Fir Drive Extension - from Mono Way/SR 108 to Cabezut Rd	Tier 2	Local, Cap & Trade, TIMF	Tuolumne County	Sonora	Construct a new collector road by extending Fir Drive from the intersection of Mono Way & SR 108 to Cabezut Road.	20,045	TBD	Capacity	**Aleviate traffic on adjacent parallel roadways, including SR 49.**
Parrotts Ferry Rd Capacity Improvements from SR 49 to Sawmill Flat Rd	Tier 2	Local, Cap & Trade, TIMF	Tuolumne County	Columbia	Construct road capacity improvements include Complete Streets improvements along Parrotts Ferry Road from SR 49 to Sawmill Flat Road.	3,500	TBD	Capacity	**Improve roadway operations**
Tuolumne Road Capacity Improvements from Mono Way to Hess Ave	Tier 2	Local, Cap & Trade, TIMF	Tuolumne County	East Sonora	Construct road capacity improvements from Mono Way to Hess Ave. Construct Complete Streets improvements.	5,158	TBD	Capacity	**Improve roadway operations**
Tuolumne Road Capacity Improvements from Hess Ave to Standard Rd	Tier 2	Local, Cap & Trade, TIMF	Tuolumne County	East Sonora	Construct road capacity improvements from Hess Ave to Standard Road. Construct Complete Streets improvements.	7,500	TBD	Capacity	**Improve roadway operations**
								Local Streets - 115	

Expenditure Plan
Tuolumne County - Local Streets & Road Projects
Tier 3 - Unfunded Capital Improvement Projects

Project Name	Priority	Funding Source	Agency	Location	Description	Cost ($1,000)	Construct Year	Purpose & Need	**Projected Operations Improvement**
Jamestown Road - Capacity Improvements	Tier 3	TBD	Tuolumne County	Sonora, Jamestown	Construct road capacity improvements with complete streets improvements along Jamestown Road from 5th Ave to Shaws Flat Rd.	3,000	TBD	Safety & Operational	**Improve roadway operations**
Jamestown Park-N- Ride Facility	Tier 3	TBD	Tuolumne County	Jamestown	Construct a new Park-N-Ride Facility in Jamestown.	600	TBD	Reduce Congestion	**Improve Carpool/vanpool**
Intersection Improvements La Grange Road and Bonds Flat Road	Tier 3	TBD	Tuolumne County	Don Pedro	Construct intersection improvements at La Grange Rd & Bonds Flat Rd.	750	TBD	Safety & Operational	**Improve intersection operations**
Longeway Road Continuous LTL	Tier 3	TBD	Tuolumne County	Mono Vista	Widen Longeway Rd and add continuous left turn lane from Soulbyville Rd to Hunts Rd.	850	TBD	Capacity & Operational	**Improve roadway operations**
Parrotts Ferry Rd - Continuous LTL from Sawmill Flat Rd to Airport Rd	Tier 3	TBD	Tuolumne County	Columbia	Widen Parrotts Ferry Rd by adding a continuous left turn lane from Sawmill Flat Rd to Airport Rd.	4,500	TBD	Capacity	**Improve roadway operations**
Racetrack Rd Widening From Jamestown Rd to Leland Dr	Tier 3	TBD	Tuolumne County	Sonora	Widen Racetrack Rd by adding a continuous left turn lane from Jamestown Road to Leland Road and realign the intersection with Jamestown Rd.	3,400	TBD	Capacity & Operational	**Improve roadway operations**
Rawhide Road - Capacity Improvements	Tier 3	TBD	Tuolumne County	Jamestown	Construct road capacity and complete streets improvements along along Rawhide Road from SR 108/49 in Jamestown to SR 49 in Tuttletown.	3,000	TBD	Safety & Operational	**Improve roadway operations**
Signalization of Soulsbyville/ Crestview & N.Sunshine Rd/Longeway	Tier 3	TBD	Tuolumne County	Mono Vista	Install a Traffic Signal at the intersection of Soulsbyville Rd/Crestview Dr and Longeway/N Sunshine Rd.	2,000	TBD	Safety & Operational	**Improve intersection operations**
Twain Harte Drive - Left Turn Channelization	Tier 3	TBD	Tuolumne County	Twain Harte	Construct a left turn pockets on Twain Harte Drive and Joaquin Gully Rd.	3,000	TBD	Safety & Operational	**Improve roadway operations**
Twain Harte Drive - Capacity Improvements	Tier 3	TBD	Tuolumne County	Twain Harte	Construct road capacity and complete streets improvements where appropriate along along Twain Harte Drive.	1,500	TBD	Safety & Operational	**Improve roadway operations**
								Local Streets - 116	

Expenditure Plan

East Sonora & Tuolumne - Local Streets & Road Projects

Tier 3 - Unfunded Capital Improvement Projects

Project Name	Priority	Funding Source	Agency	Location	Description	Cost ($1,000)	Construct Year	Purpose & Need	**Projected Operations Improvement**
East Sonora Park & Ride Facility	Tier 3	TBD	Tuolumne County	East Sonora	Construct a new Park & Ride Facility in East Sonora.	700	TBD	Reduce Congestion	**Improve Carpool/vanpool**
Emergency Access Roads Improvements	Tier 3	TBD	Tuolumne County	-	Emergency Access Roads Improvements thoughout Tuolumne County - See Appendix H	39,000	TBD	Safety	**Improve Emergency response**
Intersection Improvements Tuolumne Rd and Carter St	Tier 3	TBD	Tuolumne County	Tuolumne	Re-design Carter Street and Tuolumne Road intersection to improve safety.	900	TBD	Safety	**Improve intersection operations**
Intersection Improvements Tuolumne Rd and Cherokee Rd	Tier 3	TBD	Tuolumne County	Tuolumne	Construct safety improvements at the intersection of Tuolumne Rd and Cherokee Rd.	900	TBD	Safety	**Improve intersection operations**
Left Turn lane Channelization along Tuolumne Rd at the Tuolumne Shopping Center	Tier 3	TBD	Tuolumne County	Tuolumne	Install an east bound left turn lane into the Tuolumne Square Shopping Center.	900	TBD	Safety & operational	**Improve roadway operations**
Mono Way Widening to Five Lanes from Hess Ave to Standard Rd/Peaceful Oak Dr	Tier 3	TBD	Tuolumne County	East Sonora	Construct a road widening to five lanes from Hess Ave to Standard/Peaceful Oak Road.	4,029	TBD	Capacity	**Improve roadway operations**
Standard Road Widen to Five Lanes from Mono Way to Standard Townsite	Tier 3	TBD	Tuolumne County	East Sonora	Construct a five lane road widening along Standard Road from Mono Way to Standard Townsite.	5,500	TBD	Capacity	**Improve roadway operations**
Tuolumne Road Widening to Five Lanes from Standard Rd to Woodham Carne Rd	Tier 3	TBD	Tuolumne County	East Sonora	Construct a road widening to five lanes from Standard Rd to Woodham Carne Rd/Black Oak Rd.	7,500	TBD	Capacity	**Improve roadway operations**
Tuolumne Rd - Passing Lanes -	Tier 3	TBD	Tuolumne County	Tuolumne	Construct climbing lanes in both directions along Tuolumne Rd Woodham Carne/Black Oak Rd to Tuolumne Rd North.	2,500	TBD	Safety & operational	**Improve roadway operations**
Tuolumne Rd North - Passing Lanes	Tier 3	TBD	Tuolumne County	Tuolumne	Construct climbing lanes in both directions along Tuolumne Rd North from Tuolumne Rd to Black Oak Casino.	2,500	TBD	Safety & operational	**Improve roadway operations**
								Local Streets - 117	

Expenditure Plan

City of Sonora - Local Streets & Road Projects

Tier 3 - Unfunded Capital Improvement Projects

Project Name	Priority	Funding Source	Agency	Location	Description	Cost ($1,000)	Construct Year	Purpose & Need	**Projected Operations Improvement**
Church Street Extension	Tier 3	TBD	City of Sonora	Sonora	Extend Church Street to SR 49(Stockton Road) and Southgate Drive.	TBD	TBD	New road	**Improve roadway operations**
Child Road Extension	Tier 3	TBD	City of Sonora	Sonora	Extend Child Drive to Delnero Drive.	TBD	TBD	New road	**Improve roadway operations**
Intersection Improvements Greenley Road and Morning Star Drive/Cabezut Road	Tier 3	TBD	Tuolumne County	Sonora	Construct capacity improvements at the intersection of Greenley Road and Morning Star Drive/Cabezut Road	900	TBD	Capacity	**Improve intersection operations**
Delnero Extension to Truckenmiller	Tier 3	TBD	City of Sonora	Sonora	Connect Mono Way to Delnero Drive via Truckenmiller.	TBD	TBD	New road	**Improve roadway operations**
Delnero Drive to Cemetery Road	Tier 3	TBD	City of Sonora	Sonora	Extend Delnero Drive to Cemetery Road.	TBD	TBD	New road	**Improve roadway operations**
New Road - South Washington St to Old Wards Ferry Rd	Tier 3	TBD	City of Sonora	Sonora	Construct a new roadway segment that would connect Old Wards Ferry Road to South Washington Street near the Lowe's Shopping Center.	TBD	TBD	New road	**Improve roadway operations**
Signalization @South Washington & Church St	Tier 3	TBD	City of Sonora	Sonora	Install a traffic signal at the intersection with South Washington Rd & Church St.	TBD	TBD	Deficiency	**Improve intersection operations**
West Lytton Road Extension	Tier 3	TBD	City of Sonora	Sonora	Construct an extension of West Lytton Road to SR 49 and Southgate Drive.	TBD	TBD	New road	**Improve roadway operations**
								Local Streets - 118	

Expenditure Plan
Tuolumne County - Local Streets & Road Projects
Tier 3 - Unfunded Capital Improvement Projects

Project Name	Priority	Funding Source	Agency	Location	Description	Cost ($1,000)	Construct Year	Purpose & Need	**Projected Operations Improvement**
Cabezut Road Capacity Improvements	Tier 3	TBD	Tuolumne County	Sonora	Construct road capacity improvement where appropriate with Complete Streets improvements along Cabezut Road from Greenley Rd to the end of Cabezut Road.	9,000	TBD	Operational, Capacity	**Improve roadway operations**
Greenley Road - Capacity Improvements from Lyons Rd to Morning Star Dr.	Tier 3	TBD	Tuolumne County	Sonora	Construct road capacity improvements with Complete Streets improvements where appropriate along Greenley Rd from Lyons/Lyons Bald Mountain Road to Morning Star Drive/Cabezut Road.	2,000	TBD	Operational, Capacity	**Improve roadway operations**
Greenley Road - Capacity Improvements from Cabezut Rd to Delnero Dr	Tier 3	TBD	Tuolumne County	Sonora	Construct road capacity improvements with Complete Streets improvements where appropriate along Greenley Road from Cabezut Rd/Morning Star Drive to Delnero Drive.	2,000	TBD	Operational, Capacity	**Improve roadway operations**
North South Connector - Phase 3 - Fir Drive Extension from Cabezut Rd to Lyons Bald Mountain Rd	Tier 3	TBD	Tuolumne County	Sonora	Construct a new collector road by extending Fir Drive from the intersection of Cabezut Road to Lyons Bald Mountain Road.	15,000	TBD	Bypass	**Aleviate traffic on adjacent parallel roadways, including SR 49.**
North South Connector - Phase 4 - Fir Drive Extension- Greenley Rd Extension to Lyons Bald Mt Rd.	Tier 3	TBD	Tuolumne County	Sonora	Construct a new major collector by extending Fir Drive from Lyons Bald Mountain Rd to the Greenley Road Extension.	12,000	TBD	Bypass	**Aleviate traffic on adjacent parallel roadways, including SR 49.**
North South Connector - Phase 5 - Cabezut Rd Extension to Phoenix Lake Rd	Tier 3	TBD	Tuolumne County	Sonora	Construct a new major collector by extending Cabezut Road to Phoenix Lake Road/Hess Ave and the SR 108 Off Ramps.	9,426	TBD	Bypass	**Aleviate traffic on adjacent parallel roadways, including SR 49.**
Peaceful Oak Rd Extension from SR 108 to Phoenix Lake Rd.	Tier 3	TBD	Tuolumne County	Phoenix Lake	Extent Peaceful Oak Rd from SR 108 to Phoenix Lake Rd.	17,000	TBD	Bypass	**Improve roadway operations**
Sommette Drive ROW and Pavement Project	Tier 3	TBD	Tuolumne County	Phoenix Lake	Purchase the ROW of the existing gravel Sommette Drive. Construct a paved road connecting the gravel road with the paved portions.	6,000	TBD	Capacity	**Improve roadway operations**
Columbia Bypass	Tier 3	TBD	Tuolumne County	Columbia	Construct a new collector road that would bypass Columbia and connect with Parrotts Ferry Road.	17,000	TBD	Bypass	**Aleviate traffic on adjacent parallel roadways**
								Local Streets - 119	

Financially Constrained Expenditure Plan

County, City, and Community Sponsored Bicycle and Pedestrian Projects

Tier 1a - Short & Long Range Capital Improvement Projects (0-25 years)

Project Name	Priority	Funding Source	Agency	Location	Description	Cost ($1,000)	Construct Year	Purpose & Need
Stockton - Washington Corridor - Transit & Accessibility Project	Tier 1a	RTIP, CMAQ, ATP, PTMISEA	City of Sonora	Sonora	Construct pedestrian, bicycle, ADA, landscape, and transit improvements, along with assoicated amenities included bulb-outs lighting, gateway signage, bicycle racks, and security cameras.	1,990	2018	Safety, ADA
Intersection Improvements at SR 49/Columbia Way - Complete Streets Improvements	Tier 1b	RTIP, SHOPP, TIMF	City of Sonora	Sonora	Construct intersection improvements at SR 49/North Washington St/Columbia Way/School St. The intersection improvements would include ADA crossings, pedestrian, and bicycle improvements.	3,000	2020	Operational, Safe Routes to School, ADA
SR 120 ADA Improvements in Groveland	Tier 1b	SHOPP	Caltrans	Groveland	Construct ADA compliant walkways in downtown Groveland that is consistent with the Groveland Circulation Plan.	2,000	2020	Safe Routes to School, Safety & ADA
SR 49 ADA Improvements in Sonora	Tier 1b	SHOPP	Caltrans	Sonora	Construct ADA compliant walkways in downtown Sonora that is consistent with the Vision Sonora Plan.	3,000	2025	Safety & ADA
SR 49-108 ADA Improvements in Jamestown	Tier 1b	SHOPP	Caltrans	Jamestown	Construct ADA compliant walkways that support Caltrans Complete Streets policies.	2,000	2025	Safety & ADA
								Non-Motorized -169

Tier Projects Table Summary

Tier 1a - Programmed Projects with dedicated funding

Tier 1b – Plan to fund these projects by 2030

Tier 1c – Plan to fund these projects by 2040

Tier 2 - Alternative Funding Scenario - If new funds become available

Tier 3 - Unfunded Projects

Expenditure Plan

County, City, and Community Sponsored Bicycle and Pedestrian Projects

Tier 2 - Financial Alternative B (0-15 years)

Project Name	Priority	Funding Source	Agency	Location	Description	Cost ($1,000)	ConstructYear	Purpose & Need
Columbia Pedestrian Facility	Tier 2	ATP local	Tuolumne County	Columbia	Construct a Safe Routes to School project by adding new sidewalks along Parrotts Ferry Rd.	1,870	TBD	Safe Routes to School
Dragoon Gulch Trail - Expansion	Tier 2	ATP, local	City of Sonora	Sonora	Construct a new pedestrian and bicycle path that will connect the West Sonora neighborhood to Sonora and to the existing Dragoon Gulch trail system.	992	TBD	Healthy Communities
Melones Water Line Trail Improvement Project	Tier 2	ATP, local	Tuolumne County	Columbia	Construct a ten foot wide two direction Class I bicycle and pedestrian facility along the existing Melones Waterline from Sawmill Flat Road to Columbia College.	540	TBD	Regional Trail
Old Rawhide Bridge Trail	Tier 2	TIMF	Tuolumne County	Jamestown	Reuse the soon to be abandoned bridge and use the right of way for part of the Angels Spur Trail.	500	TBD	Healthy Communities
Racetrack Pedestrian & Bicycle Project	Tier 2	ATP, TIMF, local	Tuolumne County	Sonora	Construct sidewalk improvements along Racetrack Road in West Sonora from Jamestown Road to future entrance of Dragoon Gulch Trail.	1,553	TBD	Safe Routes to School
Summerville Trail Project	Tier 2	ATP, local	Tuolumne County	Tuolumne	Construct a Safe Routes to School Project that includes a pedestrian and bicycle path improvements along Tuolumne Road from Summerville Rd to North Tuolumne Rd/Cherry Valley Rd.	1,445	TBD	Safe Routes to School
Sugarpine RR Trail - Twain Harte	Tier 2	ATP, local	Tuolumne County	Twain Harte	Construct a Class I trail from SR 108/Lava Rd to East Ave.	1,044	TBD	Regional Trail
Tuolumne Alleyways	Tier 2	CMAQ, local	Tuolumne County	Tuolumne	Construct a paved pedestrian alleyway project.	700	TBD	Safety
Washington Street Corridor Red Church Pedestrian Improvements	Tier 2	ATP, local	City of Sonora	Sonora	Construct a new landscaped pedestrian bulb outs and replace sidewalk and curb ramps along North Washington St/Highway 49 at the intersection of Snell St & Elkin St.	615	TBD	Safe Routes to School
								Non-Motorized - 170

Expenditure Plan

County, City, and Community Sponsored Bicycle and Pedestrian Projects

Tier 2 - Financial Alternative B - (16-25 years)

Project Name	Priority	Funding Source	Agency	Location	Description	Cost ($1,000)	Construction Year	Purpose & Need
Columbia to Sonora Regional Trail	Tier 2	ATP, local	City of Sonora	Sonora, Columbia	Construct a bicycle and pedestrian path and a Class II bicycle lane from Sonora High to Columbia College.	5,044	TBD	Safety, Regional Trail
Dragoon Gulch Connector Trail	Tier 2	ATP, local	City of Sonora	Sonora	Construct a new pedestrian and bicycle path that connects Dragoon Gulch Trail with Sonora High, Downtown Sonora, and the Fairgrounds. This trail would follow Woods Creek/Bonanza Road/Snell Steet, and School Street.	1,250	TBD	Regional Trail, Safe Routes to School
Jamestown to Sonora Regional Trail	Tier 2	ATP, local	Tuolumne County	Sonora, Jamestown	Construct a bicycle and a pedestrian path and a Class II bicycle path from the Fairgrounds to Jamestown.	6,165	TBD	Safety, Regional Trail
Greenley Trail Project	Tier 2	RTP, local	Tuolumne County	Sonora	Construct a pedestrian and bicycle trail at the Tuolumne County Main Library and Senior Center off of Greenley Rd.	450	TBD	Healthy Communities
Groveland Sidewalks Project	Tier 2	ATP, SHOPP, local	Caltrans, Tuolumne County	Groveland	Construct a Safe Routes to School project by adding new sidewalk and improving existing pedestrian walkways along SR 120 in Groveland.	2,880	TBD	Safe Routes to School
Sierra RR Trail - Sonora Section	Tier 2	ATP, local	City of Sonora	Sonora	Construct a regional pedestrian and bicycle path from South Washington St. to Sanguinetti Rd in Sonora.	2,165	TBD	Regional Trail
SR 49 - Stockton Rd Complete Streets Project	Tier 2	ATP, SHOPP, local	City of Sonora	Jamestown	Construct new sidewalks and add pedestrian and bicycle path improvements that help connect Downtown Sonora with the Motherlode Fairgrounds.	3,570	TBD	Regional Trail
Snell Road Sidewalk Improvements	Tier 2	Cap & Trade, local	City of Sonora	Sonora	Construct sidewalk improvements along the Snell Rd from Racetrack Road to east of School Street.	1,200	TBD	Safety
								Non-Motorized - 171

Expenditure Plan
County, City, and Community Sponsored Bicycle and Pedestrian Projects
Tier 2 - Financial Alternative B - (16-25 years)

Project Name	Priority	Funding Source	Agency	Location	Description	Cost ($1,000)	Construction Year	Purpose & Need
Jamestown Sidewalk Project Phase 2	Tier 2	ATP, local	Tuolumne County	Jamestown	Construct new sidewalk improvements along Fifth Ave in Jamestown to from Willow St to SR 108/49.	2,200	TBD	Safe Routes to School
Hetch Hetchy Railroad Trail	Tier 2	Cap & Trade , local	Tuolumne County	Groveland	Construct a regional trail on the former railroad ROW from Big Oak Flat to east of Groveland.	5,150	TBD	Regional Trail
Linoberg Paseo	Tier 2	Cap & Trade, local	City of Sonora	Sonora	Construct new pedestrian and bicycle access only Improvements on Linoberg Street between North Washington (SR 49) & Shepherd St.	850	TBD	Safety
Sierra Railroad Regional Trail - East Sonora Section	Tier 2	ATP, local	Sierra Railroad, Tuolumne County	East Sonora	Construct a regional pedestrian and bicycle trail along the Sierra RR (Rails with Trails) from Sanguinetti Rd to Hess Ave.	3,140	TBD	Regional Trail
South Washington Street Improvements	Tier 2	ATP, local	Tuolumne County	Sonora	Construct a new pedestrian and bicycle improvement along South Washington St from Church St to Restano Way.	1,590	TBD	Safety
Standard Mill Bypass Trail	Tier 2	Cap & Trade, local	Tuolumne County	East Sonora	This proposed trail would bypass the Sierra Pacific Industries mill site and create a new non-motorized trail connecting standard township with East Sonora.	5,690	TBD	Regional Trail
Sugarpine Railroad Regional Trail	Tier 2	ATP, local	Tuolumne County	Twain Harte	Construct a regional pedestrian and bicycle trail on the former railroad ROW from Twain Harte to Tuolumne Road.	3,450	TBD	Regional Trail
Westside Trail	Tier 2	Cap & Trade, local	Tuolumne County	Tuolumne	Construct a bicycle and pedestrian path along the Westside RR right of way from Mira Monte Road to the intersection of Tuolumne Rd & Cherry Valley Blvd.	1,150	TBD	Regional Trail
Shaws Flat Road Sidewalk Improvements	Tier 2	Cap & Trade, local	City of Sonora	Sonora	Construct sidewalk improvements along Shaws Flat Rd from Sonora High School to Roble Road.	1,200	TBD	Safety
								Non-Motorized - 172

Expenditure Plan

County, City and Community Sponsored Bicycle and Pedestrian Projects

Tier 3 - Unfunded Projects - Regional Projects

Project Name	Priority	Funding Source	Agency	Location	Description	Cost ($1,000)	Construction Year	Purpose & Need
Sonora to Columbia Regional Trail	Tier 3	TBD	City of Sonora, Tuolumne County	Sonora, Columbia	Construct a Class I bicycle path and a Class II bicycle lane from Sonora High to Columbia College.	5,044	TBD	Regional Trail
Sonora to Jamestown Regional Trail	Tier 3	TBD	City of Sonora, Tuolumne County	Sonora, Jamestown	Construct a Class I and a Class II trail from Sonora High to Jamestown.	6,165	TBD	Regional Trail
Sierra Railroad Regional Trail	Tier 3	TBD	Sierra Railroad, Tuolumne County	East Sonora, Sonora	Construct a regional Class I trail along the Sierra RR (Rails with Trails) from Standard Townsite to the Tuolumne County Boundary line with Stanislaus County.	10,165	TBD	Regional Trail
Sierra Railroad Regional Trail Standard to Tuolumne Trail	Tier 3	TBD	Mi Wuk Tribe, Tuolumne County	Tuolumne	Construct a regional Class I trail on the fomer Sierra Railroad ROW (Rails to Trails) from Standard Townsite to the Tuolomne City.	10,835	TBD	Regional Trail
Woods Creek Regional Trail	Tier 3	TBD	City of Sonora & Tuolumne County	Sonora, Jamestown	Construct a regional trail from Sonora High School to Lake Don Pedro.	6,165	TBD	Regional Trail
Sugarpine Railroad Regional Trail	Tier 3	TBD	Tuolumne County	Twain Harte	Construct a regional trail on the former railroad ROW from Twain Harte to Tuolumne Road.	7,161	TBD	Regional Trail
Hetch Hetchy Railroad Trail	Tier 3	TBD	Tuolumne County	Groveland	Construct a regional trail on the former railroad ROW from Moccasin to east of Groveland.	5,150	TBD	Regional Trail
						Non-Motorized - 173		

Expenditure Plan

Bicycle and Pedestrian Projects

Tier 3 - Unfunded Projects - City Sonora

Project Name	Priority	Funding Source	Agency	Location	Description	Cost ($1,000)	Construction Year	Purpose & Need
Sonora Creek Trail	Tier 3	TBD	City of Sonora	Sonora	Construct a pedestrian and bicycle trail from Lyons Bald Mountain Rd to Downtown Sonora.	TBD	TBD	Healthy Communities
Southgate Drive Trail	Tier 3	TBD	City of Sonora	Sonora	Construct a bicycle and pedestrian path along Southgate Dr to Crooked Ln.	TBD	TBD	Healthy Communities
Dragoon Gulch Trail - Expansion Phase II	Tier 3	TBD	City of Sonora	Sonora	Construct a new pedestrian and bicycle trail on a future expansion of the Dragoon Gulch trail system.	TBD	TBD	Healthy Communities
Stockton Street West Gateway Corridor	Tier 3	TBD	City of Sonora	Sonora	Construct sidewalk improvements along Stockton Street (SR 49) from SR 108 to the Fairgrounds and install new signage, planters, landscaping, and street trees.	TBD	TBD	Safety, ADA
Steward Street Sidewalk Improvements	Tier 3	TBD	City of Sonora	Sonora	Construct sidewalk improvements along Steward Street between Bradford St and Theall St.	TBD	TBD	Safety, ADA
North Washington North Gateway Corridor	Tier 3	TBD	City of Sonora	Sonora	Construct sidewalk improvements along North Washington St (SR 49) from Snell Street to Columbia Way.	TBD	TBD	Safety, ADA
Washington Street Improvements in the Downtown Core	Tier 3	TBD	City of Sonora	Sonora	Construct sidewalk improvements from Snell St to Stockton St. Add parklets, add mid-block pop-outs with street trees, add corner pop-outs, provide additional crosswalk markings, add pedestrian-scaled street lighting.	TBD	TBD	Safety, ADA
South Washington South Gateway Corridor	Tier 3	TBD	City of Sonora	Sonora	Construct a new pedestrian and bicycle improvements along South Washington St from Restano Way to SR 108 & Lime Kiln Rd.	TBD	TBD	Safety, ADA
								Non-Motorized - 174

Expenditure Plan

Bicycle and Pedestrian Projects

Tier 3 Unfunded Projects - Columbia

Project Name	Priority	Funding Source	Agency	Location	Description	Cost ($1,000)	Construction Year	Purpose & Need
Columbia College Drive - Class II Bicycle Facilities	Tier 3	TBD	Tuolumne County	Columbia	Construct a Class II bicycle facilities from Parrots Ferry Road to Columbia College.	TBD	TBD	Safety
Ben Hur Trail	Tier 3	TBD	Tuolumne County	Columbia	Construct a non-motorized trail from Yankee Hill Road to Columbia College.	TBD	TBD	Safety
Maiden Lane or Howser Lane/Columbia Emergency Access Road	Tier 3	TBD	Tuolumne County	Columbia	Construct a non-motorized trail from these two routes to Columbia College.	TBD	TBD	Safety
Bald Mountain Road Trail	Tier 3	TBD	Tuolumne County	Columbia	Construct a new pedestrian and bicycle trail along N Bald Mountain Rd. that connects Sonora to Big Hill Rd.	TBD	TBD	Healthy Communities
								Non-Motorized - 175

Expenditure Plan

County and Community Sponsored Bicycle and Pedestrian Projects

Tier 3 - Unfunded Projects - East Sonora

Project Name	Priority	Funding Source	Agency	Location	Description	Cost ($1,000)	Construction Year	Purpose & Need
Sullivan Creek Regional Trail	Tier 3	TBD	Tuolumne County	East Sonora	Construct a pedestrian and bicycle trail along Sullivan Creek from Phoenix Lake Rd to Lake Don Pedro.	TBD	TBD	Regional Trail
Curtis Creek Trail	Tier 3	TBD	Tuolumne County	East Sonora	Construct a pedestrian and bicycle trail along Sullivan Creek from Phoenix Lake Rd to Lake Don Pedro.	TBD	TBD	Healthy Communities
								Non-Motorized - 175

Expenditure Plan

Bicycle and Pedestrian Projects

Tier 3 - Unfunded Projects - Jamestown

Project Name	Priority	Funding Source	Agency	Location	Description	Cost ($1,000)	Construction Year	Purpose & Need
Main Street Pedestrian Improvements	Tier 3	TBD	Tuolumne County	Jamestown	Construct new and improved sidewalks along Main Street	TBD	TBD	Safety, ADA
Sierra RR Trail - Jamestown Section	Tier 3	TBD	Tuolumne County	Jamestown	Construct a regional Class I bicycle path from South Washington St/Lime Kiln St to Bell Mooney Rd in Jamestown.	TBD	TBD	Regional Trail
Woods Creek Trail	Tier 3	TBD	Tuolumne County	Jamestown	Construct a pedestrian and bicycle trail from Stockton Rd to Bell Mooney Rd in Jamestown.	TBD	TBD	Regional Trail
Angels Spur Trail	Tier 3	TBD	Tuolumne County	Jamestown	Construct a pedestrian and bicycle trail along the former RR right of way from Railtown/Sierra RR to SR 108/49.	TBD	TBD	Healthy Communities
								Non-Motorized - 176

Expenditure Plan

County and Community Sponsored Bicycle and Pedestrian Projects

Tier 3 Unfunded Projects - Groveland

Project Name	Priority	Funding Source	Agency	Location	Description	Cost ($1,000)	Construction Year	Purpose & Need
Big Creek Trail (Hetch Hetchy RR)	Tier 3	TBD	Tuolumne County	Groveland	Construct a pedestrian and bicycle trail from Pine Mountain Drive (PML subdivision) to Sandean Lane.	TBD	TBD	Regional Trail
Groveland - Ferretti Road Trail	Tier 3	TBD	Tuolumne County	Groveland	Construct a pedestrian and bicycle trail along Ferretti Road that will connect with Tioga High School.	TBD	TBD	Healthy Communities
State Road 120 Complete Streets Improvements	Tier 3	TBD	Tuolumne County	Groveland	Widen the shoulders for bicycle and pedestrian access along Highway 120 from Highway 49/120 to Big Oak Flat Road.	TBD	TBD	Safety & ADA
								Non-Motorized - 177

Expenditure Plan

Bicycle and Pedestrian Projects

Tier 3 - Unfunded Projects - Tuolumne City

Project Name	Priority	Funding Source	Agency	Location	Description	Cost ($1,000)	Construction Year	Purpose & Need
Sierra RR Trail (Rails to Trails)	Tier 3	TBD	Tuolumne County	Tuolumne	Construct a Class I bicycle and pedestrian trail from Standard to Cherry Valley Blvd	TBD	TBD	Railroad Trails
Sugarpine RR Trail	Tier 3	TBD	Tuolumne County	Tuolumne	Construct a Class I bicycle path and a Class II bicycle lane from Sonora High to Columbia College.	TBD	TBD	Railroad Trails
Tuolumne Sidewalks Project	Tier 3	TBD	Tuolumne County	Tuolumne	Construct new sidewalks in the Tuolumne Townsite.	TBD	TBD	Safety, ADA
								Non-Motorized - 177

Expenditure Plan

Bicycle and Pedestrian Projects

Tier 3 - Unfunded Projects - Twain Harte

Project Name	Priority	Funding Source	Agency	Distance (Miles)	Description	Cost ($1,000)	Construction Year	Purpose & Need
Twain Harte Sidewalks Project	Tier 3	TBD	Tuolumne County	0.9	Construct new sidewalks in Downtown Twain Harte.	TBD	TBD	Safety, ADA
Sugarpine Railroad Regional Trail	Tier 3	TBD	Tuolumne County	4	Construct a regional trail on the former railroad ROW from Twain Harte to Strawberry.	TBD	TBD	Regional
TUD Mainline Ditch Trail	Tier 3	TBD	Tuolumne County, TUD	3	Construct a Class I bicycle and pedestrian path along the TUD Mainline Ditch in Twain Harte.	TBD	TBD	Regional
								Non-Motorized - 178

Expenditure Plan

Bicycle and Pedestrian Projects

Tier 3 - Unfunded Projects - Tuolumne County

Project Name	Priority	Funding Source	Agency	Location	Description	Cost ($1,000)	Construction Year	Purpose & Need
Soulsbyville Road Sidewalks Project	Tier 3	TBD	Tuolumne County	Soulsbyville	Construct sidewalks and bicycle improvments on both sides of the street from Longeway/North Sunshine Road to SR 108	TBD	TBD	Safety
Soulsbyville Road Sidewalks Project	Tier 3	TBD	Tuolumne County	Soulsbyville	Construct sidewalks and bicycle improvments on both sides of the street from SR 108 to the townsite of Soulsbyville.	TBD	TBD	Safe Routes to School
State Road 120/49	Tier 3	TBD	Caltrans	Western Tuolumne County	Widen the shoulders for bicycle and pedestrian access along Highway 120/49 from Chinese Camp to Priest Grade in Moccasin.	TBD	TBD	Safety
State Road 132	Tier 3	TBD	Caltrans	Western Tuolumne County	Widen the shoulders for bicycle and pedestrian access along Highway 132 in the Tuolumne County section.	TBD	TBD	Safety
Soulsbyville Road Class II Bicycle Facility	Tier 3	TBD	Tuolumne County	Soulsbyville	Widen the shoulders for bicycle and pedestrian access along Soulsbyville Road from Soulsbyville School to Tuolumne Road.	TBD	TBD	Safe Routes to School
								Non-Motorized - 178

Financially Constrained Expenditure Plan
Tuolumne County Transit Projects
Short-Range & Long Range Capital Improvement Program (0-25 years)

Project Name	Priority	Funding Source	Location	Description	Cost ($1,000)	Construction Year
Standard - Tuolumne Rd	Tier 1a	LTF	East Sonora	Construct a new Bus Stop Shelter.	50	2016
Law & Justice Center Bus Transfer Facility	Tier 1a	PTMISEA, LTF	Sonora	Construct a new regional bus transfer facility.	1,339	2017
Transit Maintenance Facility Improvements - Phase 1 & 2	Tier 1a	PTMISEA, Cal OES, LTF	East Sonora	Install a generator and fueling capability at the Transit Maintenance Facility.	100	2018
Stockton - Washington Corridor - Transit & Accessibility Project	Tier 1a	RTIP/CMAQ/ATP/ PTMISEA	Sonora	Construct pedestrian, bicycle, ADA, landscape, and transit improvements, along with associated amenities included bulb-outs lighting, gateway signage, bicycle racks, and security cameras.	1,990	2018
Restano Way/South Washington/Mono Way	Tier 1b	LTF	Sonora	Construct a New Bus Stop Shelter.	50	TBD
Dragoon Gulch/Racetrack Rd	Tier 1b	LTF	Sonora	Construct a New Bus Stop Shelter.	50	TBD
Sierra Village	Tier 1b	LTF	Sierra Village	Construct a New Bus Stop Shelter.	50	TBD
Mono Village Center	Tier 1c	LTF	East Sonora	Replace the existing Bus Stop Shelter.	50	TBD
Courthouse Park	Tier 1c	LTF	Sonora	Rehabilitate the existing bus stop shelter and rehabilitate Jackson Street to a complete streets corridor with ADA improvements.	250	TBD
MiWuk Village	Tier 1c	LTF	Miwuk Village	Construct a New Bus Stop Shelter.	50	TBD
Existing Bus Stops	Tier 1c	PTMISEA, LTF	Countywide	Existing Bus Stop Shelter Improvements such as installing transit stop lighting, security cameras, and etc.	100	On-Going
					Public Transportation - 213	

Expenditure Plan

Tuolumne County Transit Projects

Tier 2 - Financial Alternative B (16-25 years)

Project Name	Priority	Funding Source	Location	Description	Cost ($1,000)	Construction Year
Columbia Inter-County Transfer Point	Tier 2	TBD	Columbia	New Bus Stop Shelter and bus transfer facility.	840	TBD
Northern Yosemite Regional Transit Access Center	Tier 2	PTMISEA, LTF, TBD	Sonora	Purchase and make improvements for a Regional Transit Access Center building.	3,250	TBD
Groveland Transit Stop Improvements	Tier 2	PTMISEA, LTF, TBD	Groveland	Construct bus stop improvements in Groveland.	1,500	TBD
					Public Transportation - 214	

Tier Projects Table Summary

Tier 1a - Programmed Projects with dedicated funding

Tier 1b – Plan to fund these projects by 2030

Tier 1c – Plan to fund these projects by 2040

Tier 2 - Alternative Funding Scenario - If new funds become available

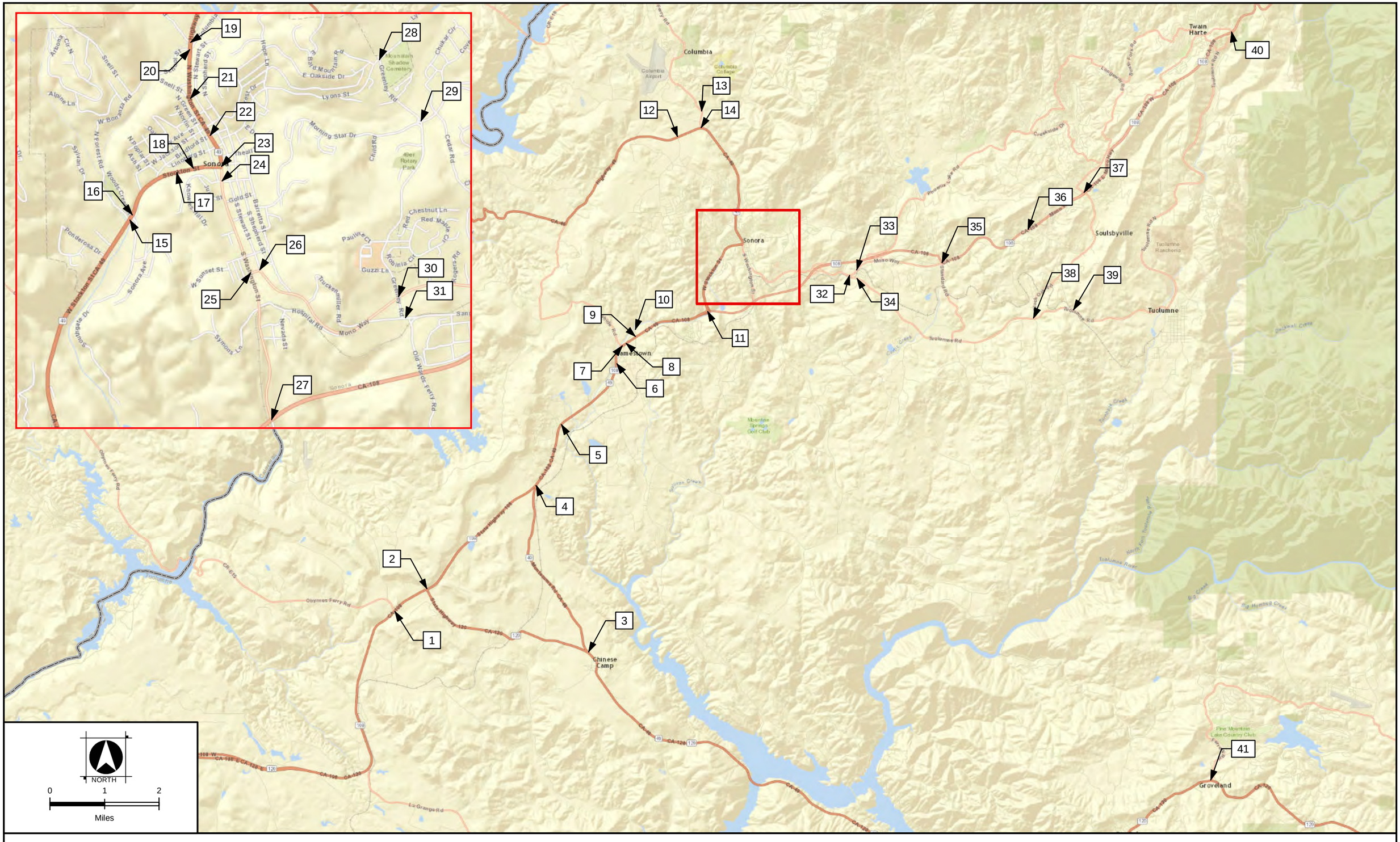
Tier 3 - Unfunded Projects

Financially Constrained Expenditure Plan

Public Transportation Service Expansions

Tier 1, 2, 3 Program

Project Name	Priority	Funding Source	Location	Description	Annual Cost ($1,000)	Service Year
Service to Pinecrest	Tier 1a	LCTOP, Local	Pinecrest	A seasonal transit service similarly to the SkiBus, only differing in its season of operation. The service would likely operate during the summer time, on the weekends and holidays.	52	2017
YARTS - Increase Existing Service	Tier 1a	National Park Service	Tuolumne County	This would provide additional transit service runs to Yosemite National Park from Tuolumne County. This would help reduce environmental impacts associated with vehicle and parking congestion in Yosemite Valley and be consistent with the Merced River Plan.	50	2018
Foothill to Valley Service (Out of County Service)	Tier 2	5311(f), Cap & Trade	Out of County	This transit service would focus on transporting Tuolumne County residents to and from Central Valley destinations.	300	2025
Service to Groveland/SR 120 Expansion	Tier 3	TBD	Groveland	This transit service would focus on Groveland residents who are seeking transportation options to the Sonora area.	TBD	TBD
Serve night classes at Columbia College	Tier 3	TBD	Columbia	This transit service would focus on targeting students/teachers who are attending late night classes at Columbia College.	TBD	TBD
Service to Merced High Speed Rail Station	Tier 3	TBD	Out of County	The California High Speed Rail project is currently building the Bakersfield to Merced rail section in the Central Valley. The first trains are proposed to be operational from the Central Valley to the Bay Area by 2025.	TBD	TBD
					Public Transportation - 215	



Study Intersection Locations

Tuolumne County TDM and RTP Update - EIR Traffic Study Addendum

APPENDIX FIGURE 1

WOOD RODGERS
DEVELOPING INNOVATIVE DESIGN SOLUTIONS

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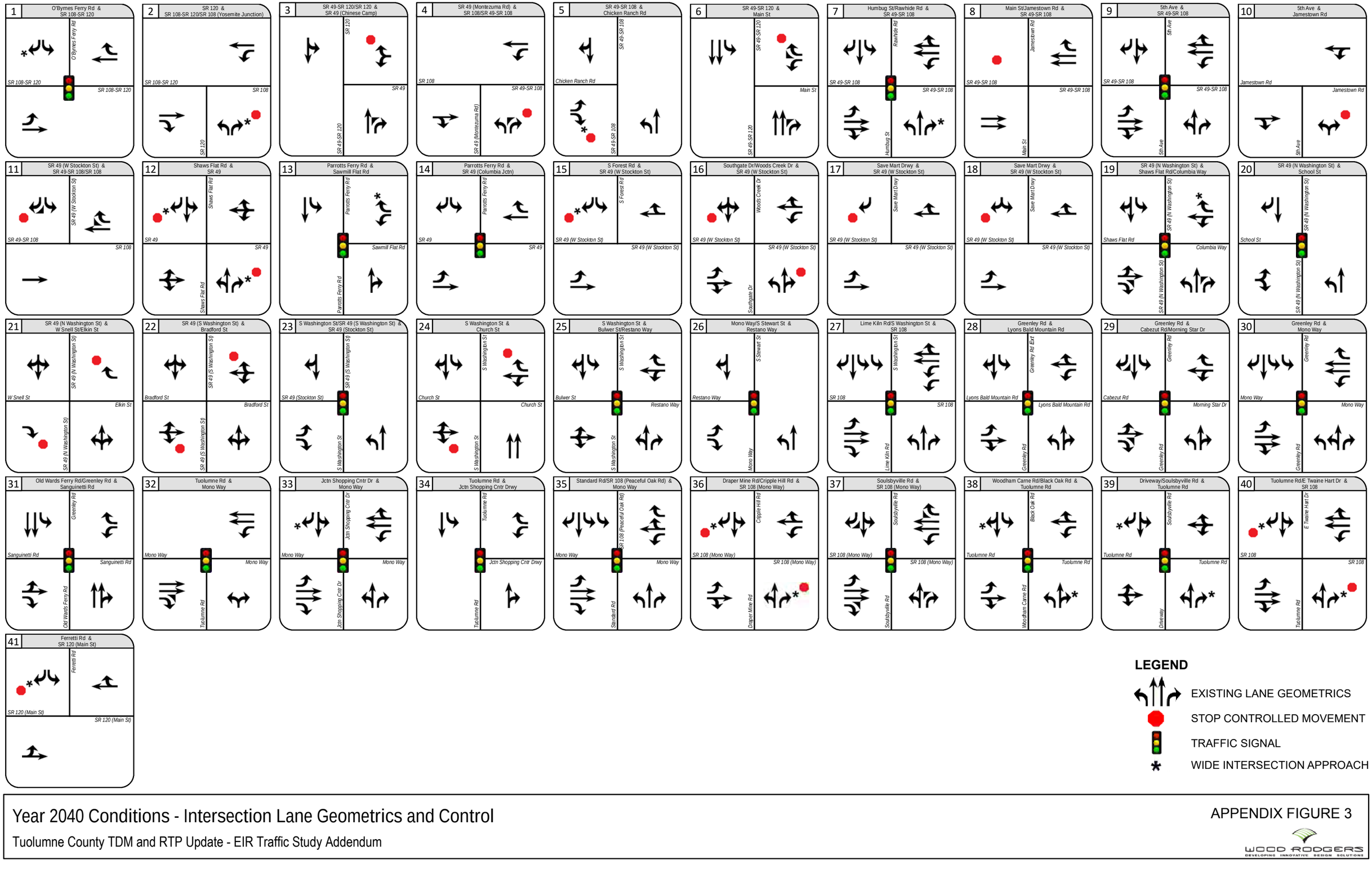
Year 2030 Conditions - Intersection Lane Geometrics and Control

Tuolumne County TDM and RTP Update - EIR Traffic Study Addendum

APPENDIX FIGURE 2

WOOD RODGERS
DEVELOPING INNOVATIVE DESIGN SOLUTIONS



Year 2040 Conditions - Intersection Lane Geometrics and Control

Tuolumne County TDM and RTP Update - EIR Traffic Study Addendum

APPENDIX FIGURE 3

WOOD RODGERS
DEVELOPING INNOVATIVE DESIGN SOLUTIONS

Legend

XXX (XXX) = AM (PM)
Peak Hour Volumes

Year 2030 Intersection Turning Movement Volumes - Distinctive Communities (Proposed)

Tuolomne County TDM and RTP Update - EIR Traffic Study Addendum

APPENDIX FIGURE 4

WOOD RODGERS
DEVELOPING INNOVATIVE DESIGN SOLUTIONS

Legend

XXX (XXX) = AM (PM)
Peak Hour Volumes

Year 2040 Intersection Turning Movement Volumes - Distinctive Communities (Proposed)

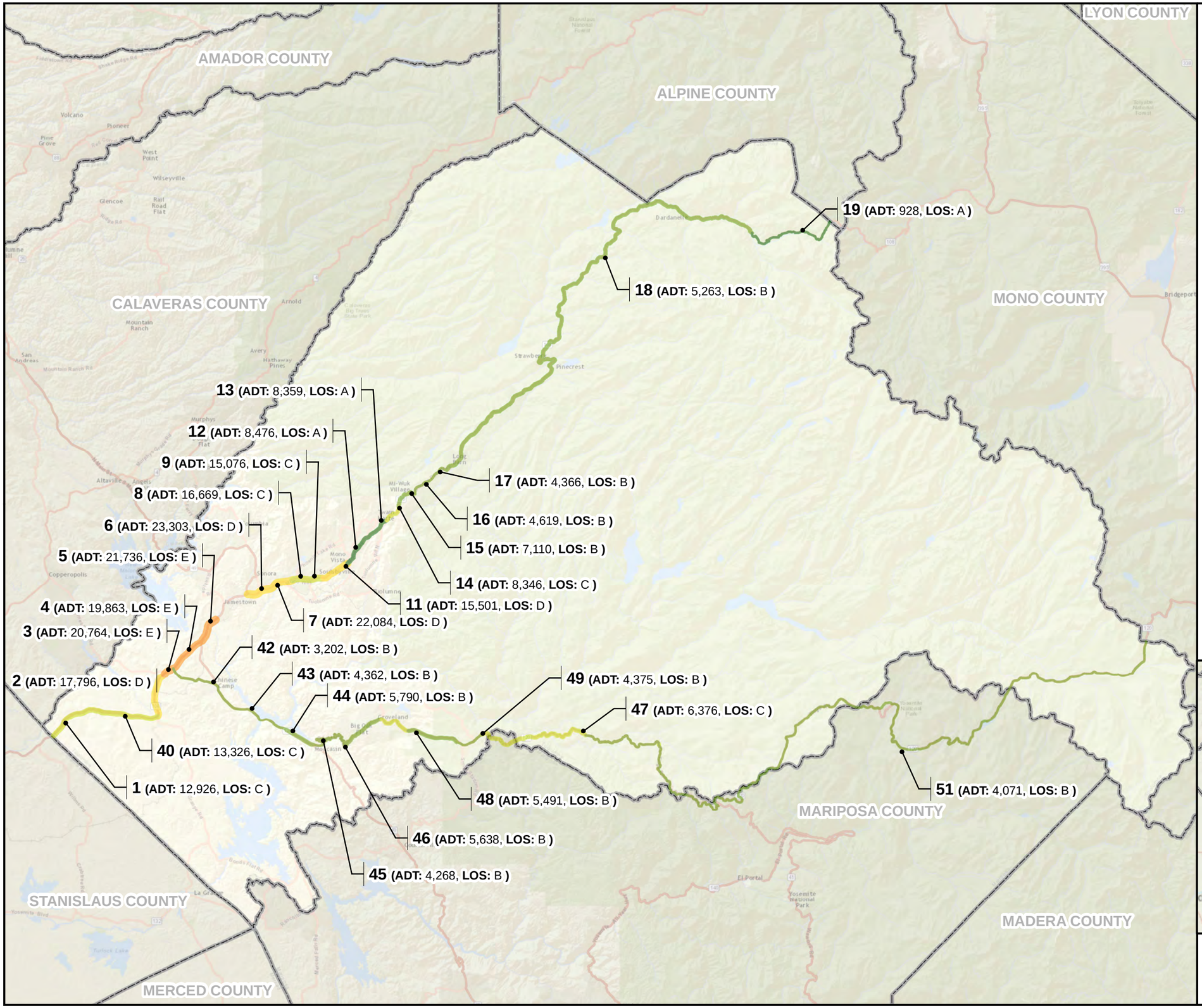
Tuolumne County TDM and RTP Update - EIR Traffic Study Addendum

APPENDIX FIGURE 5

WOOD RODGERS
DEVELOPING INNOVATIVE DESIGN SOLUTIONS

APPENDIX FIGURE 6-A: YEAR 2030 DEFICIENCIES
DISTINCTIVE COMMUNITIES PROPOSED SR 108 AND SR 120

TUOLUMNE COUNTY TDM AND RTP UPDATE - EIR TRAFFIC STUDY ADDENDUM
TUOLUMNE COUNTY, CA
AUGUST 2016



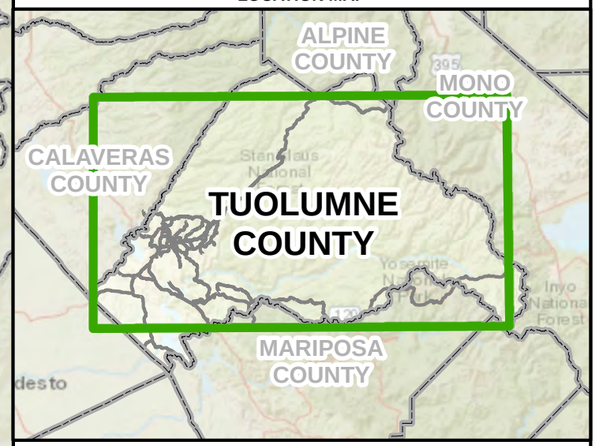
NORTH

0 17,500 35,000
Feet

Level of Service - Color Range
- A
- B
- C
- D
- E
- F

ADT Values - Proportional
- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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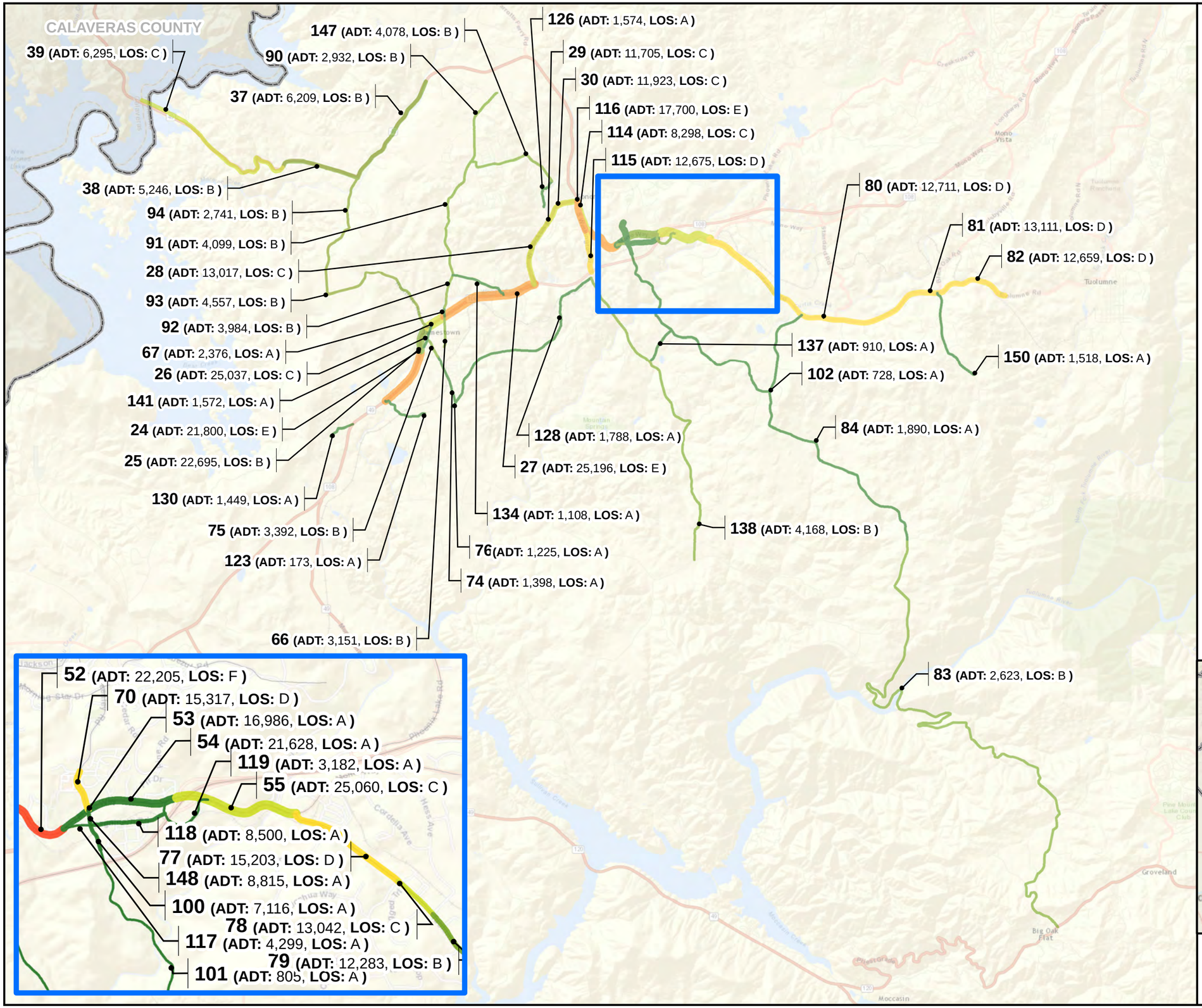
APPENDIX FIGURE 6-B: YEAR 2030 DEFICIENCIES
DISTINCTIVE COMMUNITIES PROPOSED SOUTHERN SONORA AREA
TUOLUMNE COUNTY TDM AND RTP UPDATE - EIR TRAFFIC STUDY ADDENDUM
TUOLUMNE COUNTY, CA
AUGUST 2016



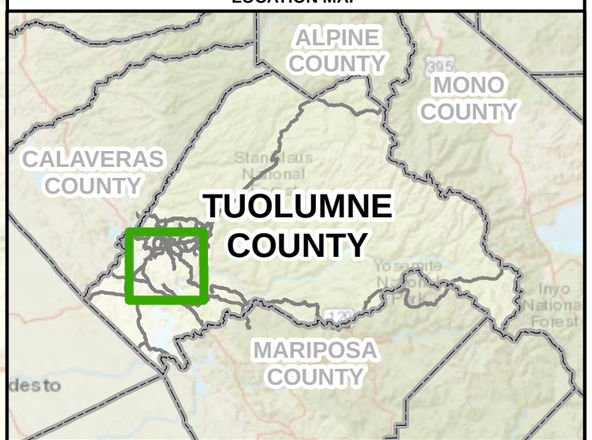
NORTH

0 3,750 7,500
Feet

Level of Service - Color Range
- A
- B
- C
- D
- E
- F

ADT Values - Proportional
- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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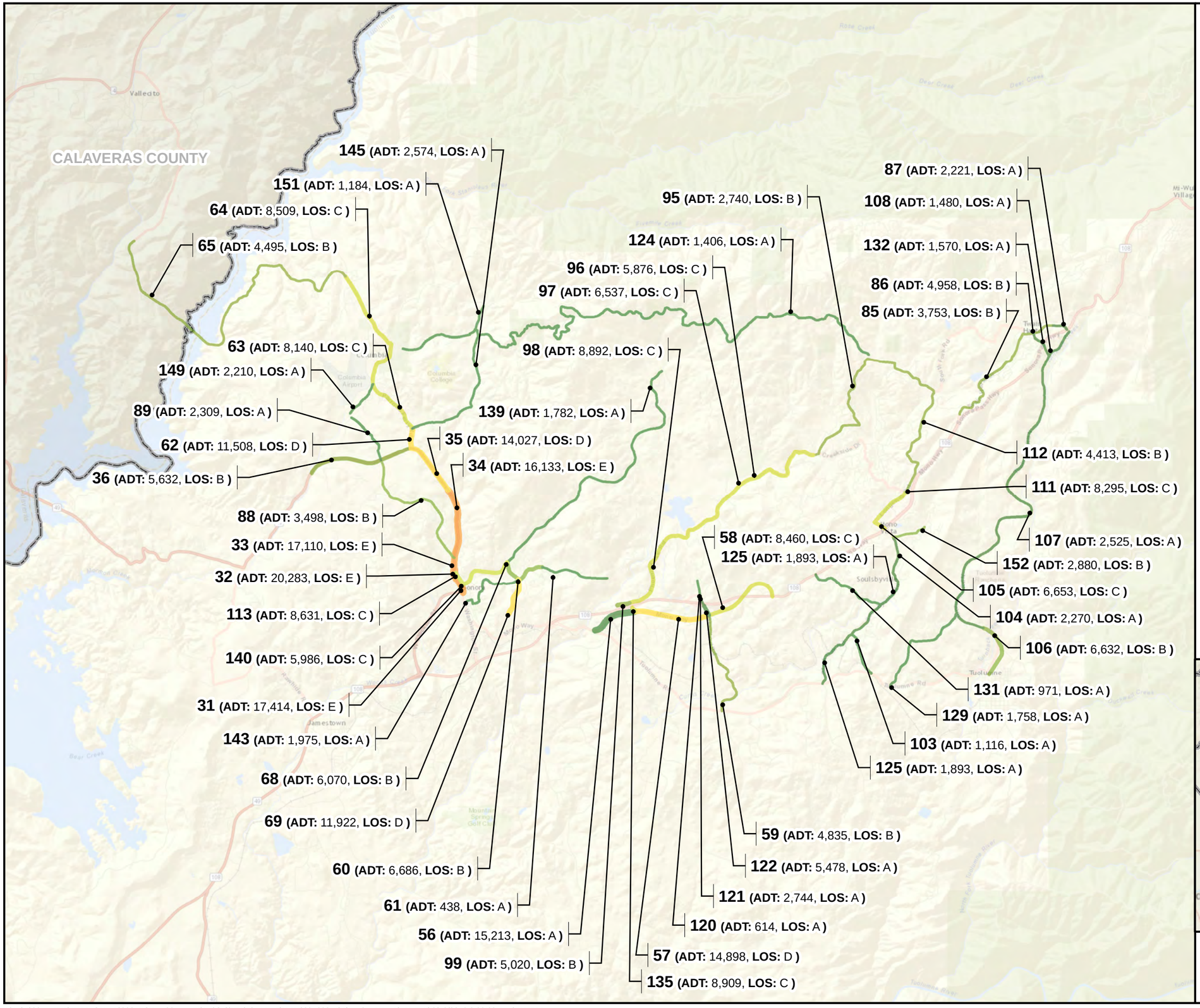
APPENDIX FIGURE 6-C: YEAR 2030 DEFICIENCIES
DISTINCTIVE COMMUNITIES PROPOSED NORTHERN SONORA AREA

TUOLUMNE COUNTY TDM AND RTP UPDATE - EIR TRAFFIC STUDY ADDENDUM
TUOLUMNE COUNTY, CA
AUGUST 2016



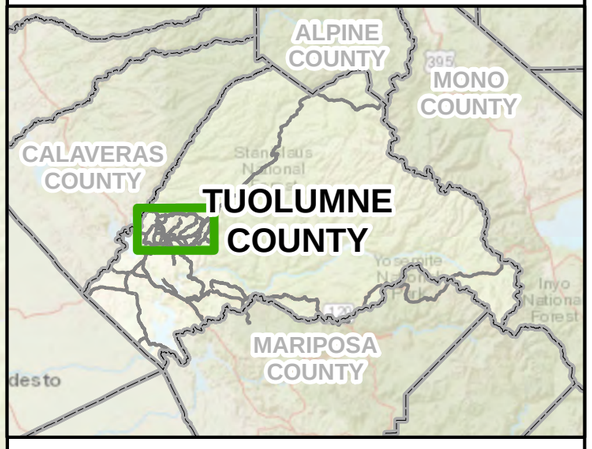
NORTH

0 3,750 7,500
Feet

Level of Service - Color Range
- A
- B
- C
- D
- E
- F

ADT Values - Proportional
- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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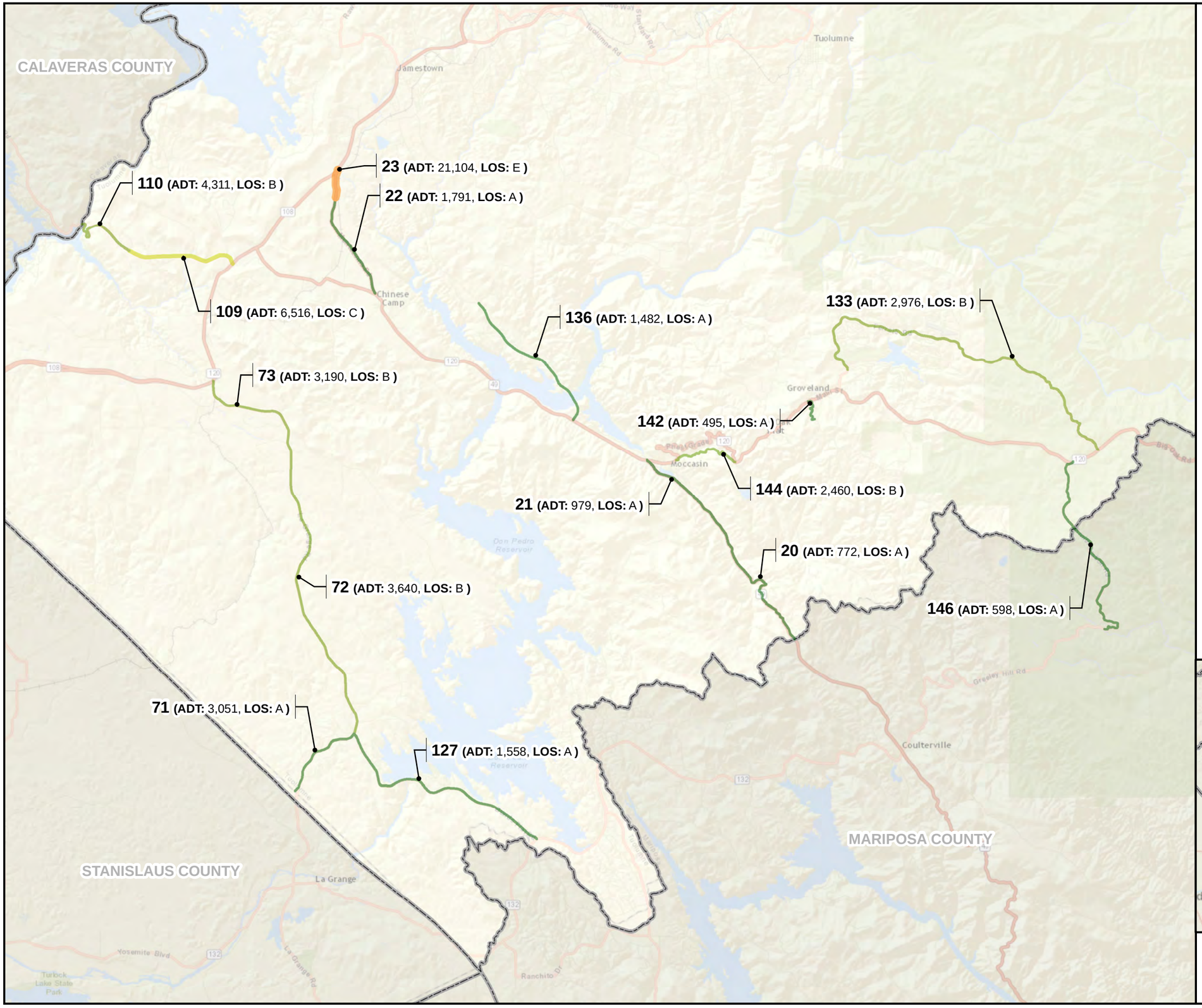
APPENDIX FIGURE 6-D: YEAR 2030 DEFICIENCIES
DISTINCTIVE COMMUNITIES PROPOSED GROVELAND AREA

TUOLUMNE COUNTY TDM AND RTP UPDATE - EIR TRAFFIC STUDY ADDENDUM

TUOLUMNE COUNTY, CA

AUGUST 2016



NORTH

0 6,250 12,500

Feet

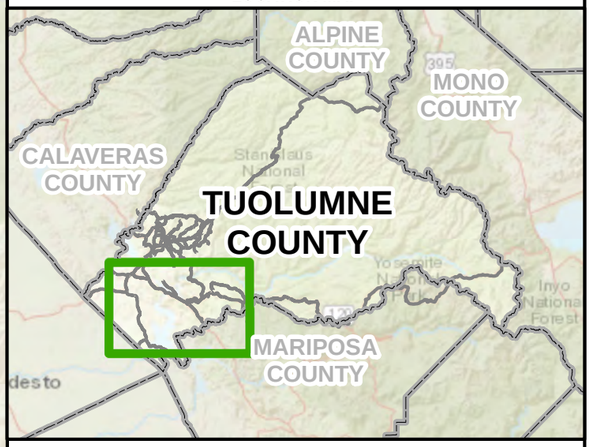
Level of Service - Color Range

- A
- B
- C
- D
- E
- F

ADT Values - Proportional

- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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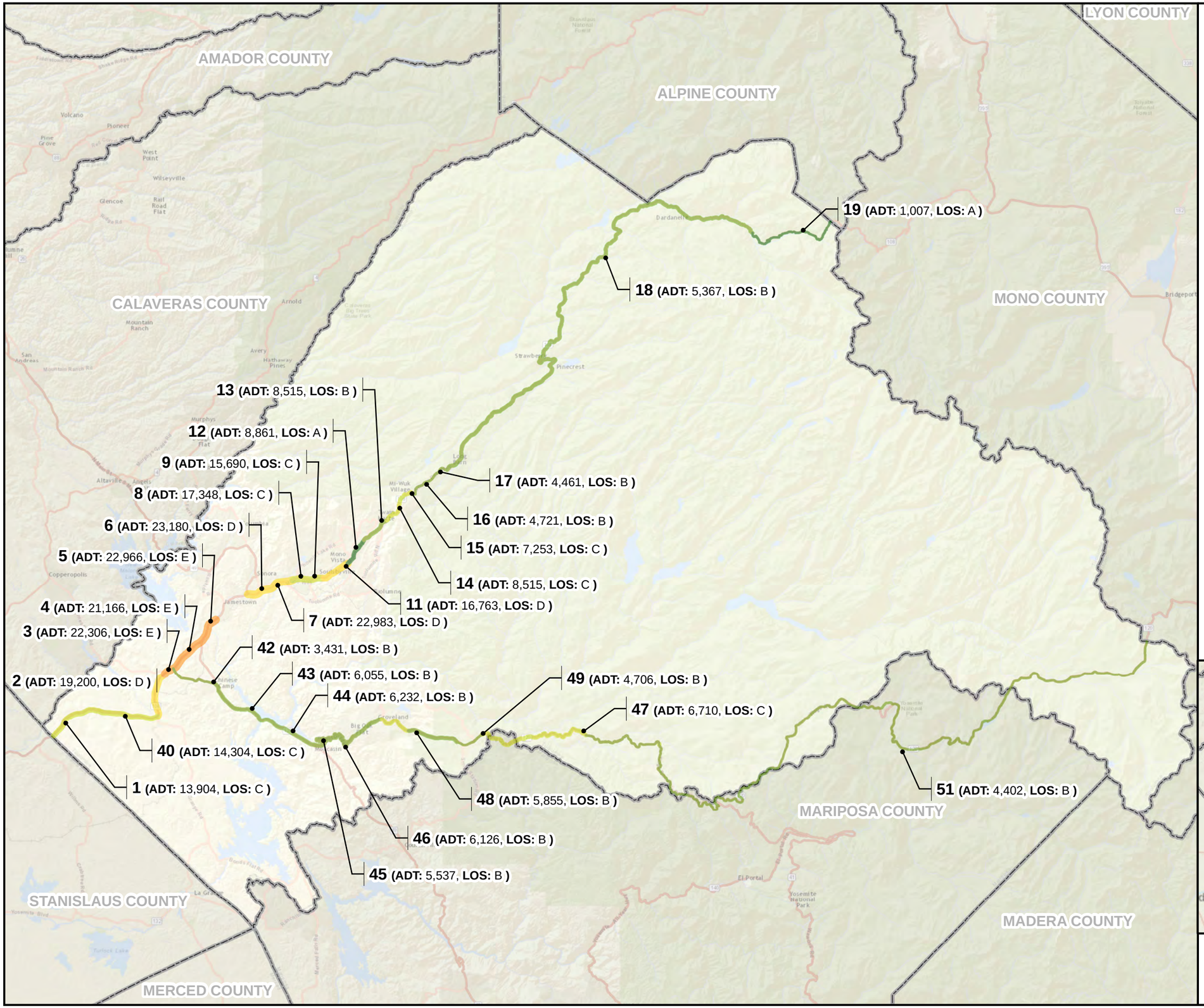
APPENDIX FIGURE 7-A: YEAR 2040 DEFICIENCIES
DISTINCTIVE COMMUNITIES PROPOSED SR 108 AND SR 120
TUOLUMNE COUNTY TDM AND RTP UPDATE - EIR TRAFFIC STUDY ADDENDUM
TUOLUMNE COUNTY, CA
AUGUST 2016



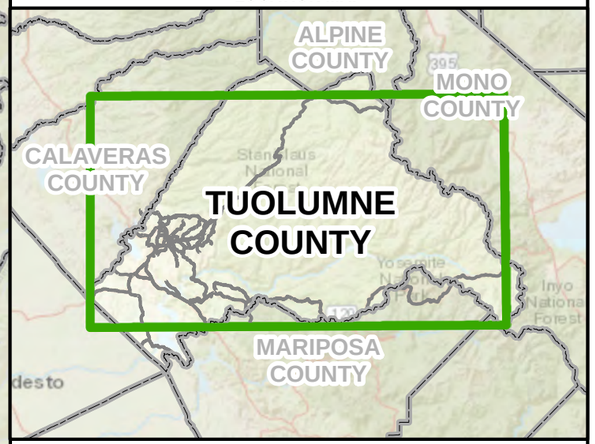
NORTH

0 17,500 35,000
Feet

Level of Service - Color Range
- A
- B
- C
- D
- E
- F

ADT Values - Proportional
- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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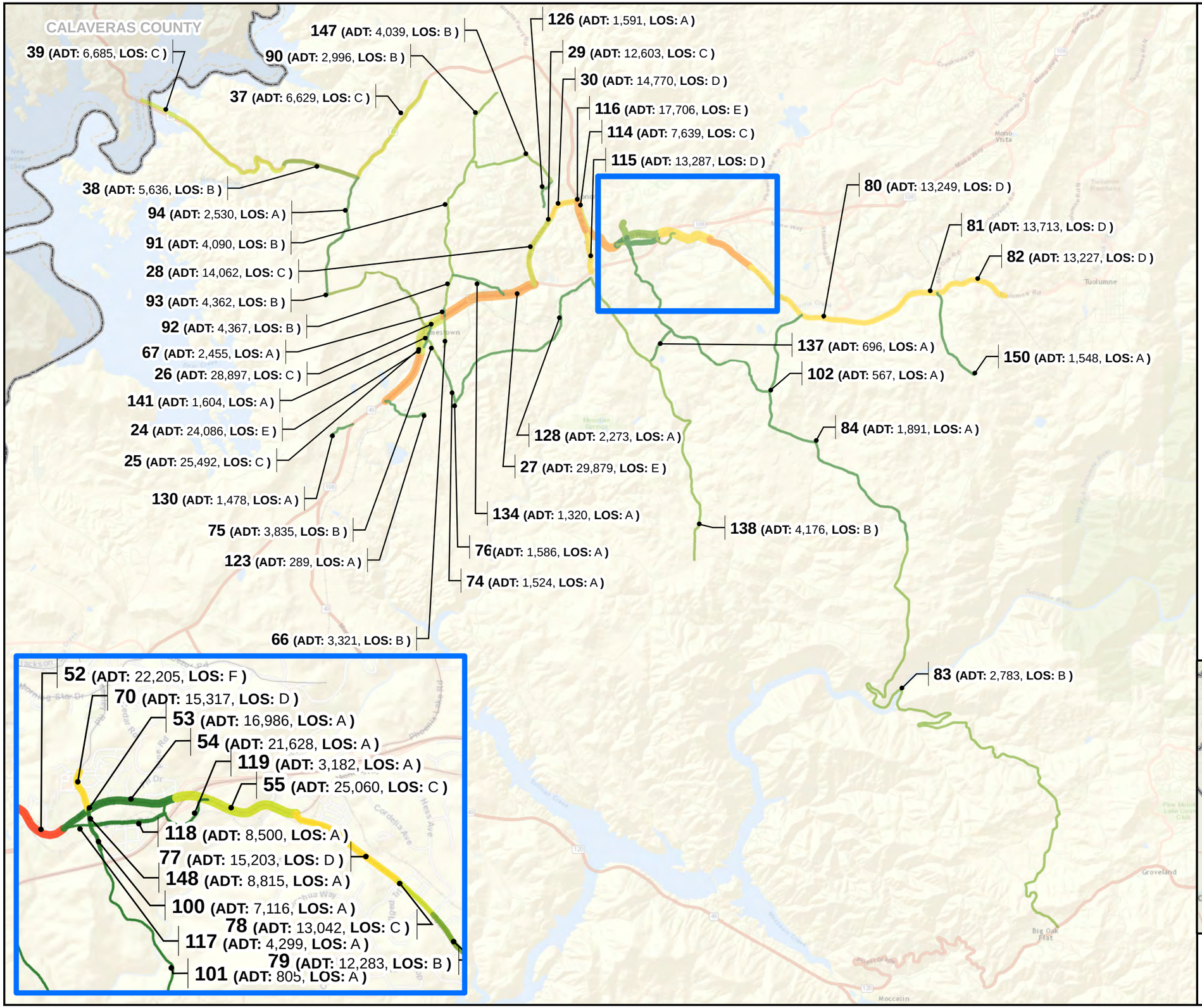


APPENDIX FIGURE 7-B: YEAR 2040 DEFICIENCIES DISTINCTIVE COMMUNITIES PROPOSED SOUTHERN SONORA AREA

TUOLUMNE COUNTY TDM AND RTP UPDATE - EIR TRAFFIC STUDY ADDENDUM
TUOLUMNE COUNTY, CA
AUGUST 2016

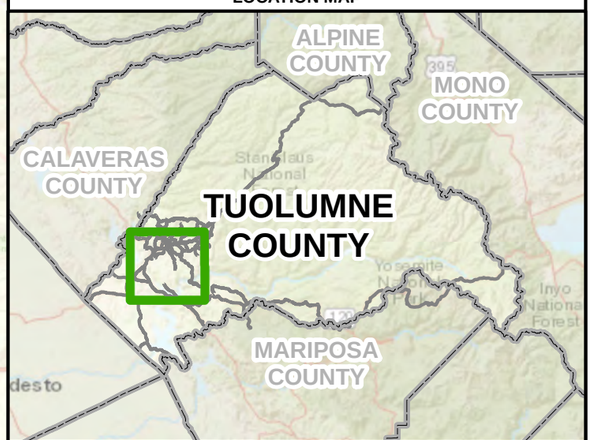
NORTH

0 3,750 7,500
Feet

Level of Service - Color Range
- A
- B
- C
- D
- E
- F

ADT Values - Proportional
- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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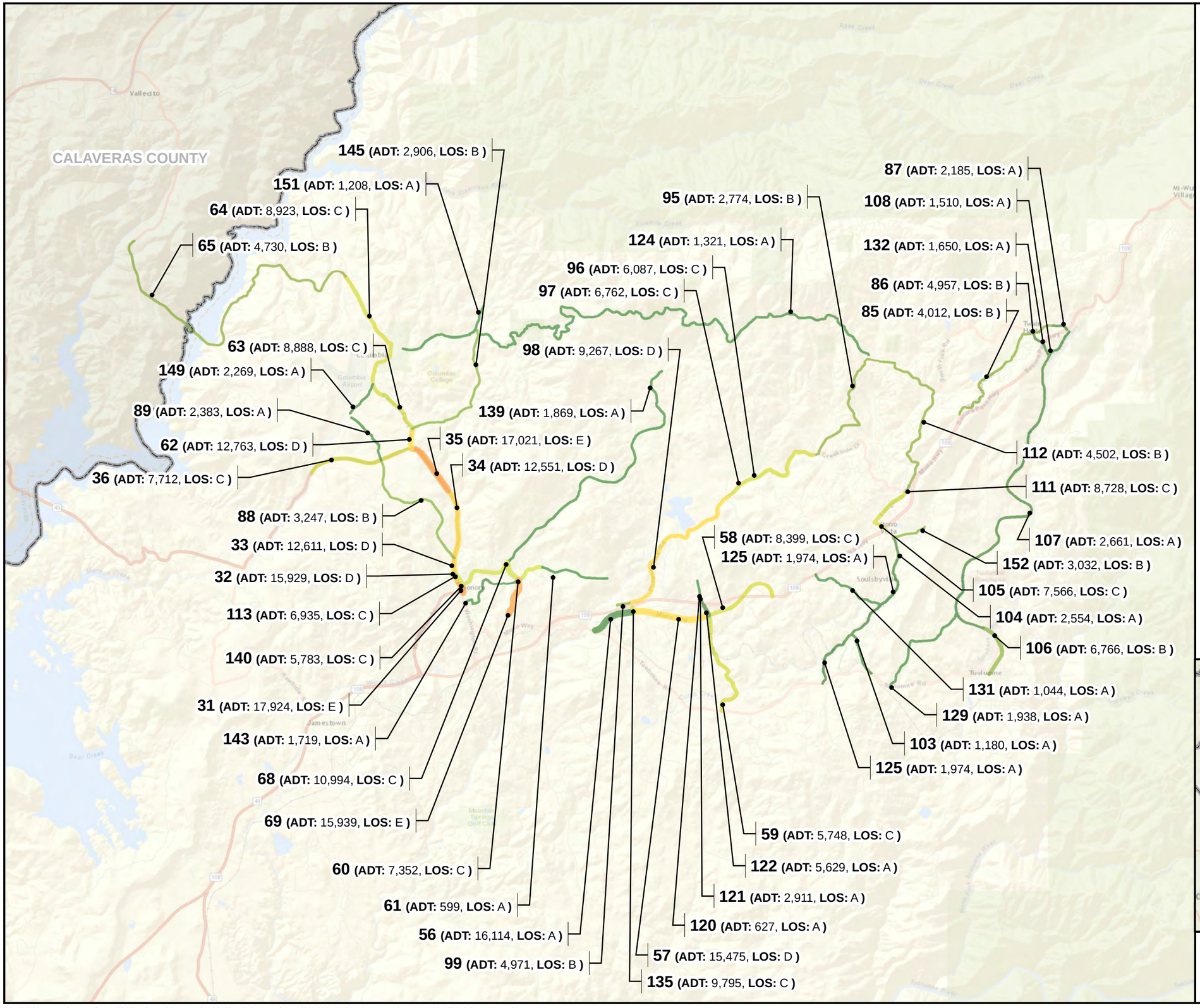
APPENDIX FIGURE 7-C: YEAR 2040 DEFICIENCIES
DISTINCTIVE COMMUNITIES PROPOSED NORTHERN SONORA AREA
TUOLUMNE COUNTY TDM AND RTP UPDATE - EIR TRAFFIC STUDY ADDENDUM
TUOLUMNE COUNTY, CA
AUGUST 2016



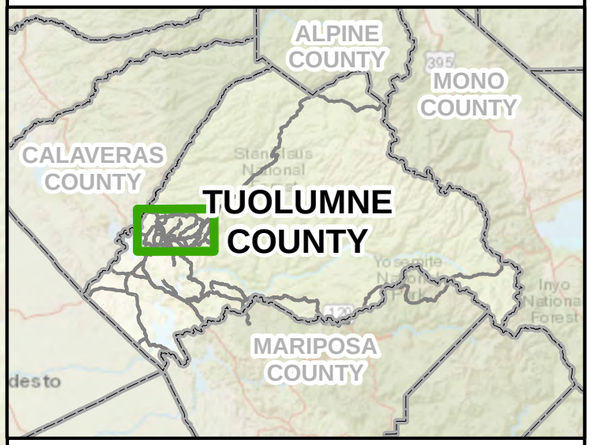
NORTH

0 3,750 7,500
Feet

Level of Service - Color Range
- A
- B
- C
- D
- E
- F

ADT Values - Proportional
- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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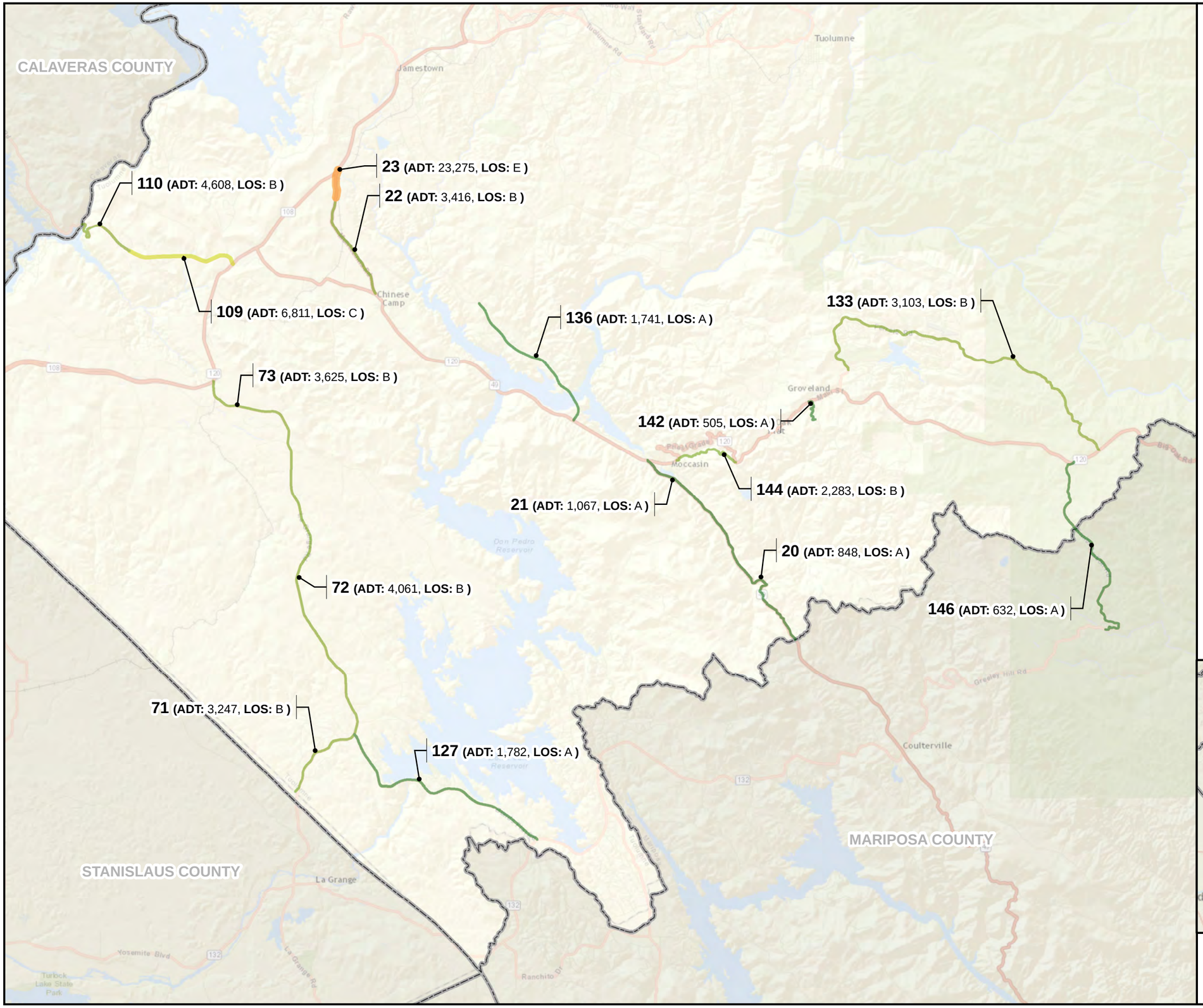
APPENDIX FIGURE 7-D: YEAR 2040 DEFICIENCIES
DISTINCTIVE COMMUNITIES PROPOSED GROVELAND AREA

TUOLUMNE COUNTY TDM AND RTP UPDATE - EIR TRAFFIC STUDY ADDENDUM
TUOLUMNE COUNTY, CA
AUGUST 2016



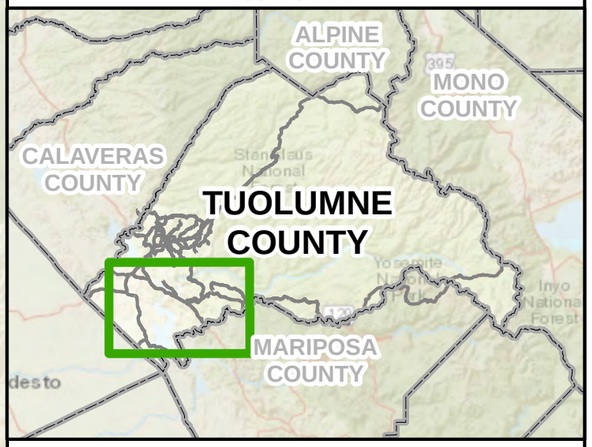
NORTH

0 6,250 12,500
Feet

Level of Service - Color Range
- A
- B
- C
- D
- E
- F

ADT Values - Proportional
- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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Appendix Table 1 - Year 2030 DCP (Proposed) Intersection LOS

No.	Intersection Name	Control	Urban / Rural	Min. LOS	AM Peak Hour		PM Peak Hour	
					Delay	LOS	Delay	LOS
1	SR 108-SR 120 & O'Byrnes Ferry Rd	Signal	Rural	D	10.6	B	10.1	B
2	SR 120 & SR 108-SR 120/SR 108	TWSC	Rural	D	13.2	B	15.9	C
3	SR 49-SR 120/SR 120 & SR 49	TWSC	Rural	D	9.5	A	10.0	B
4	SR 49 (Montezuna Rd) & SR 120/SR 49-SR 120	TWSC	Rural	D	23.6	C	29.5	D
5	SR 49-SR 108 & Chicken Ranch Rd	TWSC	Urban	D	17.7	C	25.0	D
6	SR 49-SR 108 & Main St	TWSC	Urban	D	17.2	C	21.3	C
7	Main St/Rawhide Rd & SR 49-SR 108	Signal	Urban	D	18.6	B	19.0	B
8	Does Not Exist	-	Urban	D				
9	5th Ave & SR 49-SR 108	Signal	Urban	D	13.1	B	13.7	B
10	5th Ave & Jamestown Rd	TWSC	Urban	D	10.6	B	10.9	B
11	SR 49-SR 108/SR 108 & SR 49 (W Stockton St)	TWSC	Urban	D	43.3	E	93.5	F
12	Shaws Flat Rd & SR 49	TWSC	Urban	D	17.7	C	23.7	C
13	Parrotts Ferry Rd & Sawmill Flat Rd	Signal	Urban	D	8.5	A	17.8	B
14	SR 49 & Parrotts Ferry Rd (Columbia Jctn)	Signal	Urban	D	21.3	C	16.2	B
15	SR 49 (West Stockton St) & S Forest Rd	TWSC	Urban	D	13.2	B	13.7	B
16	Southgate Dr/Woods Creek Dr & SR 49 (West Stockton St)	TWSC	Urban	D	12.7	B	12.5	B
17	SR 49 (West Stockton St) & W. Savemart Drwy	TWSC	Urban	D	9.7	A	10.4	B
18	SR 49 (West Stockton St) & E. Savemart Drwy	TWSC	Urban	D	11.8	B	16.3	C
19	SR 49 (N Washington St)/SR 49 & N Washington St/Columbia Way	Signal	Urban	D	11.5	B	20.1	C
20	SR 49 (N Washington St) & School St	Signal	Urban	D	24.6	C	35.2	D
21	SR 49 (N Washington St) & W Snell St/Elkin St	TWSC	Urban	D	24.9	C	27.2	D
22	SR 49 (N Washington St) & Bradford St	TWSC	Urban	D	31.8	D	34.8	D
23	S Washington St/SR 49 (S Washington St) & SR 49 (West Stockton St)	Signal	Urban	D	68.6	E	62.5	E
24	S Washington St & Church St	TWSC	Urban	D	34.8	D	54.7	F
25	Bulwer St/Restano Way	Signal	Urban	D	34.4*	C	17.2	B
26	Mono Way/S Stewart St & Restano Way	Signal	Urban	D	12.7	B	14.9	B
27	Lime Kiln Rd/S Washington St & SR 108	Signal	Urban	D	35.4	D	27.7	C
28	Greenly Rd & Lyons Bald Mountain Rd	AWSC	Urban	D	22.5	C	22.5	C
29	Greenly Rd & Morning Star Dr/Cabezut Rd	Signal	Urban	D	25.0	C	26.1	C
30	Greenly Rd & Mono Way	Signal	Urban	D	26.6	C	28.0	C
31	Old Wards Ferry Rd/Greenly Rd & Sanguinetti Rd	Signal	Urban	D	19.8	B	23.9	C
32	Tuolumne Rd & Mono Way	Signal	Urban	D	12.2	B	10.5	B
33	Jctn Shopping Cntr Dr & Mono Way	Signal	Urban	D	13.6	B	18.4	B
34	Tuolumne Rd & Jctn Shopping Cntr	Signal	Urban	D	9.3	A	17.0	B
35	Standard Rd/Peaceful Oak Rd & Mono Way	Signal	Urban	D	25.0	C	17.0	B
36	Draper Mine Rd/Cripple Hill Rd & SR 108 (Mono Way)	TWSC	Urban	D	29.0	D	21.3	C
37	Soulsbyville Rd & SR 108 (Mono Way)	Signal	Urban	D	14.2	B	10.5	B
38	Woodham Carne Rd/Black Oak Rd & Tuolumne Rd	Signal	Rural	C	27.2	C	28.1	C
39	Tuolumne Rd & Soulsbyville Rd	Signal	Rural	C	18.2	B	18.1	B
40	Tuolumne Rd/E Twaine Hart Dr & SR 108	TWSC	Urban	D	14.8	B	14.8	B
41	SR 120 (Main St) & Ferretti Rd	TWSC	Rural	C	12.8	B	18.3	C
					Number of intersections operating under minimum acceptale LOS:			3

Notes: 1. For TWSC (Two-Way-Stop-Control) intersections, worst-case movement delay (in seconds/vehicle) are indicated. "Average" control delays (in seconds/vehicle) are indicated for AWSC (All -Way -Stop-Control) and Signal-Control intersections.

Appendix Table 2 - Year 2040 DCP (Proposed) Intersection LOS

No.	Intersection Name	Control	Urban / Rural	Min. LOS	AM Peak Hour		PM Peak Hour	
					Delay	LOS	Delay	LOS
1	SR 108-SR 120 & O'Byrnes Ferry Rd	Signal	Rural	D	11.0	B	10.4	B
2	SR 120 & SR 108-SR 120/SR 108	TWSC	Rural	D	13.7	B	17.2	C
3	SR 49-SR 120/SR 120 & SR 49	TWSC	Rural	D	9.5	A	10.0	B
4	SR 49 (Montezuna Rd) & SR 120/SR 49-SR 120	TWSC	Rural	D	25.0	D	32.3	D
5	SR 49-SR 108 & Chicken Ranch Rd	TWSC	Urban	D	18.3	C	26.8	D
6	SR 49-SR 108 & Main St	TWSC	Urban	D	17.5	C	21.8	C
7	Main St/Rawhide Rd & SR 49-SR 108	Signal	Urban	D	18.6	B	19.7	B
8	Does Not Exist	-	Urban	D				
9	5th Ave & SR 49-SR 108	Signal	Urban	D	16.3	B	12.7	B
10	5th Ave & Jamestown Rd	TWSC	Urban	D	10.7	B	11.1	B
11	SR 49-SR 108/SR 108 & SR 49 (W Stockton St)	TWSC	Urban	D	14.7	B	18.5	C
12	Shaws Flat Rd & SR 49	TWSC	Urban	D	20.0	C	28.8	D
13	Parrotts Ferry Rd & Sawmill Flat Rd	Signal	Urban	D	8.8	A	17.6	B
14	SR 49 & Parrotts Ferry Rd (Columbia Jctn)	Signal	Urban	D	21.0	C	16.1	B
15	SR 49 (West Stockton St) & S Forest Rd	TWSC	Urban	D	13.3	B	13.9	B
16	Southgate Dr/Woods Creek Dr & SR 49 (West Stockton St)	TWSC	Urban	D	13.2	B	14.2	B
17	SR 49 (West Stockton St) & W. Savemart Drwy	TWSC	Urban	D	9.8	A	10.5	B
18	SR 49 (West Stockton St) & E. Savemart Drwy	TWSC	Urban	D	12.2	B	17.5	C
19	SR 49 (N Washington St)/SR 49 & N Washington St/Columbia Way	Signal	Urban	D	6.5	A	6.7	A
20	SR 49 (N Washington St) & School St	Signal	Urban	D	7.2	A	8.2	A
21	SR 49 (N Washington St) & W Snell St/Elkin St	TWSC	Urban	D	17.7	C	18.6	C
22	SR 49 (N Washington St) & Bradford St	TWSC	Urban	D	28.9	D	29.9	D
23	S Washington St/SR 49 (S Washington St) & SR 49 (West Stockton St)	Signal	Urban	D	55.6	E	58.1	E
24	S Washington St & Church St	TWSC	Urban	D	26.3	D	36.1	E
25	Bulwer St/Restano Way	Signal	Urban	D	7.7	A	11.8	B
26	Mono Way/S Stewart St & Restano Way	Signal	Urban	D	12.3	B	12.2	B
27	Lime Kiln Rd/S Washington St & SR 108	Signal	Urban	D	31.4	C	26.6	C
28	Greenly Rd/Sonora Bypass & Lyons Bald Mountain Rd	Signal	Urban	D	22.3	C	27.2	C
29	Greenly Rd & Morning Star Dr/Cabezut Rd	Signal	Urban	D	37.6	D	44.0*	D
30	Greenly Rd & Mono Way	Signal	Urban	D	31.4	C	29.4	C
31	Old Wards Ferry Rd/Greenly Rd & Sanguinetti Rd	Signal	Urban	D	20.2	C	26.1	C
32	Tuolumne Rd & Mono Way	Signal	Urban	D	12.1	B	11.1	B
33	Jctn Shopping Cntr Dr & Mono Way	Signal	Urban	D	13.9	B	19.7	B
34	Tuolumne Rd & Jctn Shopping Cntr	Signal	Urban	D	14.4	B	25.3	C
35	Standard Rd/Peaceful Oak Rd & Mono Way	Signal	Urban	D	25.5	C	17.2	B
36	Draper Mine Rd/Cripple Hill Rd & SR 108 (Mono Way)	TWSC	Urban	D	31.5	D	21.9	C
37	Soulsbyville Rd & SR 108 (Mono Way)	Signal	Urban	D	15.9	B	10.8	B
38	Woodham Carne Rd/Black Oak Rd & Tuolumne Rd	Signal	Rural	C	31.9	C	30.0	C
39	Tuolumne Rd & Soulsbyville Rd	Signal	Rural	C	14.0	B	16.3	B
40	Tuolumne Rd/E Twaine Hart Dr & SR 108	TWSC	Urban	D	15.3	C	15.1	C
41	SR 120 (Main St) & Ferretti Rd	TWSC	Rural	C	13.4	B	20.1	C
					Number of intersections operating under minimum acceptale LOS:			2

Notes: 1. For TWSC (Two-Way-Stop-Control) intersections, worst-case movement delay (in seconds/vehicle) are indicated. "Average" control delays (in seconds/vehicle) are indicated for AWSC (All -Way -Stop-Control) and Signal-Control intersections.

Appendix Table 3 - Future Year Roadway Level of Service (LOS)

#		Roadway/Highway Segment	2015 Type #	2030 Type #	2040 Type #	Minimum LOS Standard*	Existing (2015) Volumes	Existing (2015) LOS	Year 2030 - Distinctive Communities Proposed Volumes	Year 2030 - Distinctive Communities Proposed LOS	Year 2040 - Distinctive Communities Proposed Volumes	Year 2040 - Distinctive Communities Proposed LOS
1		w/o Tulloch rd	1	1	1	D	11,200	B	12,926	C	13,904	C
2		b/w O'Byrnes Ferry Rd & La Grange Rd	4	4	12	D	15,300	D	17,796	D	19,200	D
3		b/w La Grange Rd & SR 120 (Yosemite Junction)	4	4	12	D	18,000	D	20,764	E	22,306	E
4		b/w SR 120 (Yosemite Junction) and SR 49 (Montezuma Junction)	4	4	12	D	17,600	D	19,863	E	21,166	E
5		b/w SR 49 (Stockton Rd) and S Washington St/Lime Kiln Rd	210	210	210	D	19,900	D	21,736	E	22,966	E
6		w/o Mono Way	204	204	204	D	20,500	D	23,303	D	23,180	D
7		b/w Mono Way and Hess Ave	204	204	204	D	20,800	D	22,084	D	22,983	D
8		b/w Hess Ave and Peaceful Oak Rd	204	204	204	D	15,700	C	16,669	C	17,348	C
9	**SR 108 Corridor**	b/w Peaceful Oak Rd and Mono Way	204	204	204	D	14,200	C	15,076	C	15,690	C
11		b/w Mono Way and Soulsbyville Rd	210	210	210	D	14,600	D	15,501	D	16,763	D
12		b/w Soulsbyville Rd and W Conn. Twain Harte Dr	208	208	208	D	8,100	A	8,476	A	8,861	A
13		b/w W & E Conn Twain Harte Dr	203	203	203	D	8,000	A	8,359	A	8,515	B
14		e/o East Conn. Twain Hart Rd	211	211	211	D	8,100	C	8,346	C	8,515	C
15		w/o Chief Fuller Rd	211	211	211	D	6,900	B	7,110	B	7,253	C
16		e/o Chief Fuller Rd	211	211	211	D	4,450	B	4,619	B	4,721	B
17		w/o West Long Barn Conn.	5	5	5	D	4,200	B	4,366	B	4,461	B
18		b/w West Long Barn Conn. and East Long Barn Conn.	5	5	5	D	5,100	B	5,263	B	5,367	B
19		b/w Kennedy Meadows Rd and Tuolumne/Mono Countyline	5	5	5	D	790	A	928	A	1,007	A
20		n/o Tuolumne/Mariposa County Line	5	5	5	D	630	A	772	A	848	A
21		s/o South Jct SR 120	5	5	5	D	820	A	979	A	1,067	A
22		n/o North SR 120 Jct	5	5	5	D	1,550	A	1,791	A	3,416	B
23		b/w SR 49 (Montezuma Jct) & Bell Mooney Rd	4	4	12	D	18,600	D	21,104	E	23,275	E
24		b/w Bell Mooney Rd and South Jct Main St	211	210	210	D	19,300	E	21,800	E	24,086	E
25		b/w South Jct Main St and Rawhide Rd	210	208	208	D	19,300	D	22,695	B	25,492	C
26		b/w Rawhide Rd and Fifth Ave	210	208	208	D	19,700	D	25,037	C	28,897	C
27		b/w Fifth Ave and Stockton Rd/SR 108	210	210	210	D	23,500	E	25,196	E	29,879	E
28		btn SR 108 and Fairview Lane (Ponderosa)	210	210	210	D	11,900	C	13,017	C	14,062	C
29		b/w Fairview Lane and Southgate Dr	210	210	210	D	10,700	C	11,705	C	12,603	C
30	**SR 49 Corridor**	b/w Southgate Dr and Washington St	210	210	210	D	10,900	C	11,923	C	14,770	D
31		b/w Stockton Rd and Dodge St	211	211	211	D	18,500	E	17,414	E	17,924	E
32		n/o Dodge St	211	211	211	D	19,400	E	20,283	E	15,929	D
33		s/o N Washington St / Columbia Way	211	211	211	D	16,100	E	17,110	E	12,611	D
34		n/o N Washington St / Columbia Way	211	211	211	D	15,400	D	16,133	E	12,551	D
35		e/o Parrotts Ferry Rd (Columbia WYE)	211	211	211	D	13,300	D	14,027	D	17,021	E
36		w/o Parrotts Ferry Rd (Columbia WYE)	211	211	211	D	5,050	B	5,632	B	7,712	C
37		e/o Rawhide Rd	5	5	5	D	5,500	B	6,209	B	6,629	C
38		b/w Rawhide Rd and Turttletown	5	5	5	D	4,550	B	5,246	B	5,636	B
39		b/w Tuttletown and Tuolumne / Calveras County Line	5	5	5	D	5,600	B	6,295	C	6,685	C
40		b/w Tulloch Rd and La Grange Rd	1	1	1	D	11,600	B	13,326	C	14,304	C
42		b/w East Jct 108 and North Jct SR 49	5	5	5	D	2,700	A	3,202	B	3,431	B
43		b/w North Jct SR 49 and Jacksonville Rd	5	5	5	D	3,750	B	4,362	B	6,055	B
44		b/w Jacksonville Rd and South Jct SR 49	5	5	5	D	5,000	B	5,790	B	6,232	B
45		b/w South Jct SR 49 and Priest-Coulterville Rd	5	5	5	D	3,900	B	4,268	B	5,537	B
46	**SR 120 Corridor**	w/o Ferretti Rd (Groveland Townsite)	5	5	5	D	4,800	B	5,638	B	6,126	B
47		e/o Ferretti Rd (Groveland Townsite)	5	5	5	D	5,800	B	6,376	C	6,710	C
48		w/o Hells Hollow Rd	5	5	5	D	4,850	B	5,491	B	5,855	B
49		e/o Smiths Station Rd	5	5	5	D	3,800	B	4,375	B	4,706	B
50		w/o Cherry Valley/Lake Rd	5	5	5	D	3,600	B	4,176	B	4,510	B
51		w/oYosemite Park West Boundary	5	5	5	D	3,500	B	4,071	B	4,402	B
52		w/o Sanguinetti Rd	210	210	210	D	22,205	E	22,167	E	22,058	E
53		b/W Sanguinetti Rd & Greenley Rd	208	208	208	D	16,986	A	17,673	A	17,601	A
54		b/w Greenley Rd & Fir Dr	208	208	208	D	21,628	A	22,864	B	24,928	B
55	**Mono Way**	b/w Fir Dr & Tuolumne Rd	208	208	208	D	25,060	C	28,558	C	30,070	D
56		b/w Tuolumne Rd & Hess Ave	208	208	208	D	12,327	A	15,213	A	16,114	A
57		b/w Hess Ave & Standard Rd / Peaceful Oak Dr	210	210	210	D	12,076	C	14,898	D	15,475	D
58		b/w Standard Rd/Peaceful Oak Dr & SR 108	211	211	211	D	7,435	C	8,460	C	8,399	C

Appendix Table 3 - Future Year Roadway Level of Service (LOS)

#	Roadway/Highway Segment		2015 Type #	2030 Type #	2040 Type #	Minimum LOS Standard*	Existing (2015) Volumes	Existing (2015) LOS	Year 2030 - Distinctive Communities Proposed Volumes	Year 2030 - Distinctive Communities Proposed LOS	Year 2040 - Distinctive Communities Proposed Volumes	Year 2040 - Distinctive Communities Proposed LOS
59	**Standard Road**	b/w Tuolumne Rd & Mono Way	213	213	213	D	3,391	B	4,835	B	5,748	C
60	**Cabezut Road**	b/w Greenly Rd and Shannon Dr	212	212	212	D	5,775	B	6,686	B	7,352	C
61		e/o Shannon Dr	213	213	213	D	260	A	438	A	599	A
62	**Parrotts Ferry Road**	b/w SR 49 & Sawmill Flat Rd	213	213	213	D	11,100	D	11,508	D	12,763	D
63		b/w Sawmill Flat Rd & Springfield Dr	213	213	213	D	7,900	C	8,140	C	8,888	C
64		n/o Springfield Dr	213	213	213	D	8,066	C	8,509	C	8,923	C
65		s/o Calaveras County Line	5	5	5	D	4,071	B	4,495	B	4,730	B
66	**Fifth Avenue**	s/o SR 108 / 49	213	213	213	D	2,640	A	3,151	B	3,321	B
67		n/o SR 108 / 49	213	213	213	D	792	A	2,376	A	2,455	A
68	**Greenley Road**	b/wLyons Bald Mt Rd/Lyons Rd & Cabezut Rd	212	212	212	D	5,868	B	6,070	B	10,994	C
69		b/w Cabezut Rd/ Morning Star Rd & Delnero Dr	212	212	212	D	11,332	C	11,922	D	15,939	E
70		b/w Delnero Dr & Mono Way	209	209	209	D	15,317	A	15,985	A	19,903	B
71	**La Grange Road**	b/w County Line & Bonds Flat Rd	5	5	5	D	2,703	A	3,051	A	3,247	B
72		b/w Bonds Flat Rd & Red Hills Rd	5	5	5	D	2,868	A	3,640	B	4,061	B
73		b/wRed Hills Rd & SR 108-SR 120	5	5	5	D	2,399	A	3,190	B	3,625	B
74	**Seco Street**	b/w Camp Seco Rd & 3rd Ave	213	213	213	D	1,050	A	1,398	A	1,524	A
75		b/w 3rd Ave & Main St	213	213	213	D	2,902	B	3,392	B	3,835	B
76		s/o Campo Seco Rd	213	213	213	D	1,036	A	1,225	A	1,586	A
77	**Tuolumne Road**	b/w Mono Way & Lambert lake Rd	212	212	212	D	15,203	D	15,689	D	16,235	E
78		b/w Lambert Lake Rd & Hess Ave	212	212	212	D	13,042	D	13,775	D	14,528	D
79		b/w Hess Ave & Wards Ferry Rd	212	212	212	D	12,283	D	13,003	D	13,669	D
80		b/w Wards Ferry Rd & Standard Rd	212	212	212	D	11,745	D	12,711	D	13,249	D
81		b/w Standard Rd & Woodhams Carne	6	6	6	D	11,955	D	13,111	D	13,713	D
82		b/w Woodhams Carne & Cherokee Rd	6	6	6	D	11,848	D	12,659	D	13,227	D
83	**Wards Ferry Road**	s/o Yosemite Rd	9	9	9	D	2,399	B	2,623	B	2,783	B
84		s/o Tuolumne Rd	213	213	213	D	1,799	A	1,890	A	1,891	A
85	**Twain Harte Drive**	n/o Hunts Rd	213	213	213	D	3,642	B	3,753	B	4,012	B
86		w/o East Ave	213	213	213	D	4,466	B	4,958	B	4,957	B
87		e/o Tiffeni Dr (eastern Most)	213	213	213	D	1,914	A	2,221	A	2,185	A
88	**Shaws Flat Road**	s/o SR 49	213	213	213	D	3,057	B	3,498	B	3,247	B
89		n/o SR 49	213	213	213	D	1,989	A	2,309	A	2,383	A
90	**Jamestown Road**	s/o Shaws Flat Rd	213	213	213	D	2,486	A	2,932	B	2,996	B
91		s/o Racetrack Rd	213	213	213	D	3,134	B	4,099	B	4,090	B
92		b/w Golf links & Fifth Ave	213	213	213	D	2,798	B	3,984	B	4,367	B
93	**Rawhide Road**	n/o SR 49 & 108 (by the Bridge)	213	213	213	D	4,149	B	4,557	B	4,362	B
94		s/o SR 49 (near Tuttletown)	8	8	8	D	2,407	A	2,741	B	2,530	A
95	**Phoenix Lake Road**	e/o Creekside Dr	213	213	213	D	2,095	A	2,740	B	2,774	B
96		e/o Paseo de Los Portales	213	213	213	D	4,796	B	5,876	C	6,087	C
97		e/o Ridgewood	213	213	213	D	5,495	B	6,537	C	6,762	C
98		e/o Hess Ave	213	213	213	D	7,746	C	8,892	C	9,267	D
99		w/o Hess Ave	213	213	213	D	4,729	B	5,020	B	4,971	B
100	**Old Wards Ferry Road**	s/o Sanguinetti Rd (n/o of Walmart & Lowes Driveway)	209	209	209	D	7,116	A	7,392	A	7,763	A
101		1/4 mile s/o Sanguinetti Rd (over Highway 108)	213	213	213	D	805	A	927	A	916	A
102		s/o Jacobs Rd	8	8	8	D	502	A	728	A	567	A
103	**Soulsbyville Road**	s/o Black Oak Dr	7	7	7	D	1,033	A	1,116	A	1,180	A
104		s/o Willow Springs Dr	213	213	213	D	1,817	A	2,270	A	2,554	A
105		n/o of SR 108	213	213	213	D	6,457	C	6,653	C	7,566	C
106	**Tuolumne Rd North**	b/w Tuolumne Rd & Black Oak Casino Entrance St	6	6	6	D	6,436	B	6,632	B	6,766	B
107		n/o Mi Wu St	7	7	7	D	2,391	A	2,525	A	2,661	A
108		n/o East Ave	213	213	213	D	1,436	A	1,480	A	1,510	A
109	**O'Byrnes Ferry Rd**	n/o SR 108	7	7	7	D	5,998	C	6,516	C	6,811	C
110		n/o Prison/Calaveras County Line	7	7	7	D	3,796	B	4,311	B	4,608	B
111	**Longeway Rd**	e/o Soulsbyville Rd	213	213	213	D	8,050	C	8,295	C	8,728	C
112		e/o Crystal Falls Dr	213	213	213	D	4,283	B	4,413	B	4,502	B
113	**Stewart St**	b/w Lyons St & Elkin St	213	213	213	D	6,597	C	8,631	C	6,935	C
114		b/w Mono wWay/Restano Way & Church St	213	213	213	D	5,905	C	8,298	C	7,639	C

Appendix Table 3 - Future Year Roadway Level of Service (LOS)

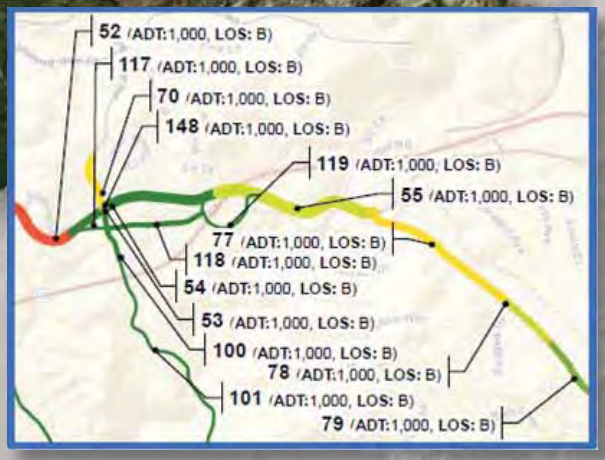
#		Roadway/Highway Segment	2015 Type #	2030 Type #	2040 Type #	Minimum LOS Standard*	Existing (2015) Volumes	Existing (2015) LOS	Year 2030 - Distinctive Communities Proposed Volumes	Year 2030 - Distinctive Communities Proposed LOS	Year 2040 - Distinctive Communities Proposed Volumes	Year 2040 - Distinctive Communities Proposed LOS
115	**S Washington St**	n/o SR 108	212	212	212	D	10,859	C	12,675	D	13,287	D
116		b/w Restano Way & Church St	212	212	212	D	18,595	E	17,700	E	17,706	E
117	**Sanguinetti Rd**	b/w Mono Way & S Greenley Rd (eb one-way)	213	213	213	D	4,299	B	4,430	B	4,519	B
118		b/w S Greenley Rd & Fir Dr	209	209	209	D	8,500	A	10,988	A	11,627	A
119		b/w Fir Dr & Mono Way	213	213	213	D	3,182	B	3,792	B	4,302	B
120	**Peaceful Oak Dr**	n/o SR 108 Bypass	213	213	213	D	596	A	614	A	627	A
121		b/w SR 108 Ramps	212	212	212	D	2,663	A	2,744	A	2,911	A
122		b/w Mono Way and SR 108	208	208	208	D	5,316	A	5,478	A	5,629	A
123	**Other Roads**	Bell Mooney Rd, w/o Jacksonville Rd	213	213	213	D	148	A	173	A	289	A
124		Big Hill Rd, b/w Sawmill Flat Rd & N Bald Mountain Rd	107	107	107	D	1,169	A	1,406	A	1,321	A
125		Black Oak Rd, n/o Tuolumne Rd	9	9	9	D	1,586	A	1,893	A	1,974	A
126		Bonanza Rd, w/o Snell Rd	213	213	213	D	1,330	A	1,574	A	1,591	A
127		Bonds Flat Rd, e/o La Grange Rd	6	6	6	D	1,113	A	1,558	A	1,782	A
128		Campo Seco Rd, e/o Seco Rd	213	213	213	D	1,454	A	1,788	A	2,273	A
129		Cherokee Rd, w/o Tuolumne Rd North	8	8	8	D	1,656	A	1,758	A	1,938	A
130		Chicken Ranch Rd, w/o SR 108	11	11	11	C	1,406	A	1,449	A	1,478	A
131		Draper Mine Rd, e/o SR 108 & SR 49	213	213	213	D	942	A	971	A	1,044	A
132		East Ave, s/o Twain Harte Dr	213	213	213	D	1,392	A	1,570	A	1,650	A
133		Ferretti Road, s/o Pine Mt Dr	7	7	7	D	2,870	A	2,976	B	3,103	B
134		Golf Links Rd, n/o SR 108	213	213	213	D	1,032	A	1,108	A	1,320	A
135		Hess Ave, b/w SR 108 & Mono Way	212	212	212	D	8,137	C	8,909	C	9,795	C
136		Jacksonville Rd, s/o Twist Ave	6	6	6	D	1,301	A	1,482	A	1,741	A
137		Jacobs Rd, w/o Old Wards Ferry Rd	8	8	8	D	596	A	910	A	696	A
138		Lime Kiln Rd, s/o Campo Seco Rd & SR 108	213	213	213	D	3,973	B	4,168	B	4,176	B
139		Lyons Bald Mt.Rd, e/o Greenley Rd	213	213	213	D	1,709	A	1,782	A	1,869	A
140		Lyons St, w/o Greenley Rd	213	213	213	D	5,501	B	5,986	C	5,783	C
141		Main St (Jamestown), n/o Donovan St	213	213	213	D	1,526	A	1,572	A	1,604	A
142		Merrell Rd, s/o SR 120	9	9	9	D	480	A	495	A	505	A
143		Moringstar Dr, w/o Greenley Rd	213	213	213	D	1,517	A	1,975	A	1,719	A
144		Old Priest Grade, 1/2 Mile e/o SR 120	109	109	109	D	2,172	B	2,460	B	2,283	B
145		Sawmill Flat Rd, e/o Parrots Ferry Rd	213	213	213	D	2,300	A	2,574	A	2,906	B
146		Smith Station Rd, s/o SR 120	6	6	6	D	537	A	598	A	632	A
147		Snell Rd-Racetrack Rd, n/o Bonanza Rd	213	213	213	D	3,586	B	4,078	B	4,039	B
148		South Greenley Rd, b/w Mono Way & Sanguinetti Rd	208	208	208	D	8,815	A	12,410	A	13,608	A
149		Springfield Rd, n/o Horseshoe Bend Rd	213	213	213	D	1,892	A	2,210	A	2,269	A
150		Woodhams Carne Rd, s/o Tuolumne Rd	9	9	9	D	1,473	A	1,518	A	1,548	A
151		Yankee Hill Rd, e/o Bigler St	213	213	213	D	1,149	A	1,184	A	1,208	A
152		Willow Springs Dr, e/o Bonnie St	11	11	11	C	2,707	B	2,880	B	3,032	B
		Total Segments Below LOS Standard:						**7**		**12**		**12**

**Minimum acceptable LOS for Tuolumne County facilities (other than Local Roads) is LOS "D"(as defined by Tuolumne County Transportation Council). Minimum acceptable LOS for all Local Roads is LOS "C".*
Minimum acceptable LOS for Caltrans facilities is LOS "D" (as defined by Caltrans and TCTC).

E = *Operating Below LOS Standard.*
= *Improved under 2030 conditions.*
= *Improved under 2040 conditions.*

Tuolumne County General Plan and Regional Transportation Plan Update

EIR Traffic Study



August 2015

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DEVELOPING INNOVATIVE DESIGN SOLUTIONS

TUOLUMNE COUNTY GENERAL PLAN AND REGIONAL TRANSPORTATION PLAN UPDATE

ENVIRONMENTAL IMPACT REPORT TRAFFIC STUDY

FINAL REPORT

Prepared For:
Tuolumne County Transportation Council

Prepared By

WOOD RODGERS
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August 2015

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Appendix Attachments (Available Upon Request, Under Separate Cover)

Level of Service Worksheets
Signal Warrant Worksheets

EXECUTIVE SUMMARY

This technical report has been prepared in order to present the results of an Environmental Impact Report (EIR) Traffic Study completed by Wood Rodgers, Inc. in support of the proposed Tuolumne County General Plan (GP) and Regional Transportation Plan (RTP) update EIR documents. The analyses contained in this traffic study essentially focus on quantifying traffic operating conditions at study intersections and roadway segments under various scenarios/alternatives, including existing conditions, year 2030 alternative growth scenarios, and year 2040 alternative growth scenarios. Additionally, parts of the Tuolumne County Transportation Council's (TCTC's) Roadway Average Daily Traffic (ADT) Level of Service (LOS) Lookup Table was updated as a part of this EIR traffic study effort.

Based on collaboration with TCTC, 41 intersections and 150 roadway segments throughout the County were selected for analysis. These critical locations include both County and Caltrans facilities throughout the County's transportation network. TCTC and Wood Rodgers recently completed new AM and PM peak hour turning movement and Average Daily Traffic (ADT) count data collection at several study intersections and roadways. The new traffic counts were supplemented with traffic counts collected as part of prior studies prepared for Tuolumne County as well Caltrans traffic volumes published on the Caltrans website. A minimum acceptable LOS standard of LOS "D" was used in this study for all County and Caltrans facilities besides local roads, which have a LOS "C" standard.

The Traffic Study Report is a planning level analysis that quantifies existing and future traffic conditions with proposed improvements. The forecasted LOS traffic impacts and associated improvements will be reconsidered on a project by project basis with a thorough operational analysis.

Existing Conditions:

11 of the 41 study intersections are currently operating below acceptable peak hour LOS standards. The remaining unsignalized and signalized study intersections are currently operating at acceptable LOS criteria under the existing AM and PM peak hour conditions.

Seven (7) of the 150 study roadway segments are currently operating below acceptable LOS conditions. The remaining roadway segments are currently operating at acceptable LOS criteria under the existing ADT conditions.

Alternative Growth Scenarios:

Future year conditions were analyzed under four alternative growth scenarios that represent different ways growth can be concentrated and distributed in Tuolumne County:

Distinctive Communities (Proposed): *Within the Distinctive Communities Alternative Growth Scenario, each community contains a well-defined, cohesive, and compact community built around an appropriately-scaled urban core and community gathering places. By having compact communities, auto dependency is greatly reduced and walking, bicycling, and transit use becomes an increasing form of transportation.*

Public Services (Proposed): *In the Public Services Alternative Growth Scenario, growth is located where multiple services, such as major transportation corridors, transit lines, and public water and sewer, are located. Development will continue to grow within defined communities, however development will radiate outward along a select number of arterials, major collectors, and transit corridors where public water and sewer exist, creating linear communities containing a mix of multi-family housing, townhouses, neighborhood commercial and traditional neighborhoods.*

Recent Trends (Existing): *The Recent Trends Scenario is based on the existing City's and County's General Plan land use designations and assumes no change in market demand for housing types. This scenario continues the existing pattern of development, in which Residential Medium (Single-Family*

Residential, R-1, District) is the primary demand choice for residential development.

Recent Trends (Proposed): *The Recent Trends Scenario is based on the proposed City's and County's General Plan land use designations and assumes no change in market demand for housing types. This scenario continues the existing pattern of development, in which Residential Medium (Single-Family Residential, R-1, District) is the primary demand choice for residential development.*

Year 2030 Conditions:

A number of Tier 1b and capital improvement projects are assumed to be constructed by year 2030 conditions.

A total of five (5) intersections are projected to operate below acceptable peak hour LOS standards under year 2030 AM and/or PM peak hour conditions under at least three alternative growth scenarios. All alternative growth scenarios are projected to have similar intersection operations. 13 total intersections are projected to meet California MUTCD based traffic signal Peak Hour Warrant 3 under year 2030 AM and/or PM peak hour conditions under all alternative growth scenarios (with one exception). All other study intersections are projected to operate at acceptable year 2030 AM and PM peak hour LOS or better conditions under all four alternative growth scenarios.

A total of five (5) roadway segments are projected to operate below acceptable LOS standards under Year 2030 ADT conditions under most or all alternative growth scenarios. All alternative growth scenarios are projected to have similar intersection operations. The remaining roadway segments are projected to operate at acceptable LOS or better criteria under year 2030 ADT conditions under all four alternative growth scenarios.

Year 2040 Conditions:

A number of long-term capital improvement projects are assumed to be complete by year 2040 conditions in addition to those improvements assumed complete by year 2030.

A total of five (5) intersections are projected to operate below acceptable peak hour LOS standards under year 2040 AM and/or PM peak hour conditions under at least one alternative growth scenario. All alternative growth scenarios are projected to have similar intersection operations. 12 total intersections are projected to meet California MUTCD based traffic signal Peak Hour Warrant 3 under year 2040 AM and/or PM peak hour conditions under all alternative growth scenarios. All other study intersections are projected to operate at acceptable year 2040 AM and PM peak hour LOS or better conditions under all four alternative growth scenarios.

A total of seven (7) roadway segments are projected to operate below acceptable LOS standards under Year 2030 ADT conditions under at least one alternative growth scenario. All alternative growth scenarios are projected to have similar intersection operations. The remaining roadway segments are projected to operate at acceptable LOS or better criteria under year 2040 ADT conditions under all four alternative growth scenarios.

Impacts and Mitigation Measures:

This report summarizes future year traffic impacts, their significance on critical study area transportation facilities, and recommended improvements and mitigation measures to alleviate those impacts to acceptable levels under year 2030 and 2040 conditions. With the recommended intersection and roadway improvements described in this report, all study facilities are projected to operate at acceptable year 2030 or 2040 AM and PM peak hour LOS conditions under all alternative growth scenarios.

Vehicle Miles Traveled (VMT): The Distinctive Communities (Proposed) scenario is projected to produce the least VMT overall, while the Recent Trends (Existing) and Public Services (Proposed) scenarios are projected to produce slightly higher VMT under year 2030 and 2040 conditions, respectively.

CHAPTER 1 – INTRODUCTION

STUDY AREA

Tuolumne County (County) is located along the western slope of the Sierra Nevada mountain range and is bordered on the north by Calaveras County, on the south by Mariposa County, on the west by Stanislaus County, and on the east by Mono and Alpine Counties. The County is largely rural with a population of approximately 54,000 and includes several census-designated places and unincorporated communities. The only incorporated city in the County is the City of Sonora. State Routes 49, 108, and 120 are the main highways that serve Tuolumne County. The Tuolumne County regional vicinity map is illustrated in **Figure 1**.

BACKGROUND

The Tuolumne County General Plan (GP) and Regional Transportation Plan (RTP) outline the long-term growth and development of Tuolumne County. Tuolumne County Transportation Council (TCTC) is currently in the process of updating their Regional Transportation Plan and Tuolumne County Community Resources Agency (CRA) is concurrently preparing a Countywide General Plan Update. The current Tuolumne County General Plan was adopted in 1996 and projected a population of 97,100 residents by the year 2020. The Tuolumne County RTP was last updated in 2005. The proposed updates to the General Plan and RTP will be based on a population projection of 63,243 residents by the year 2040. Subsequent to these updates, TCTC also anticipates completion of a comprehensive update to their Regional Transportation Impact Fee (RTIF) program.

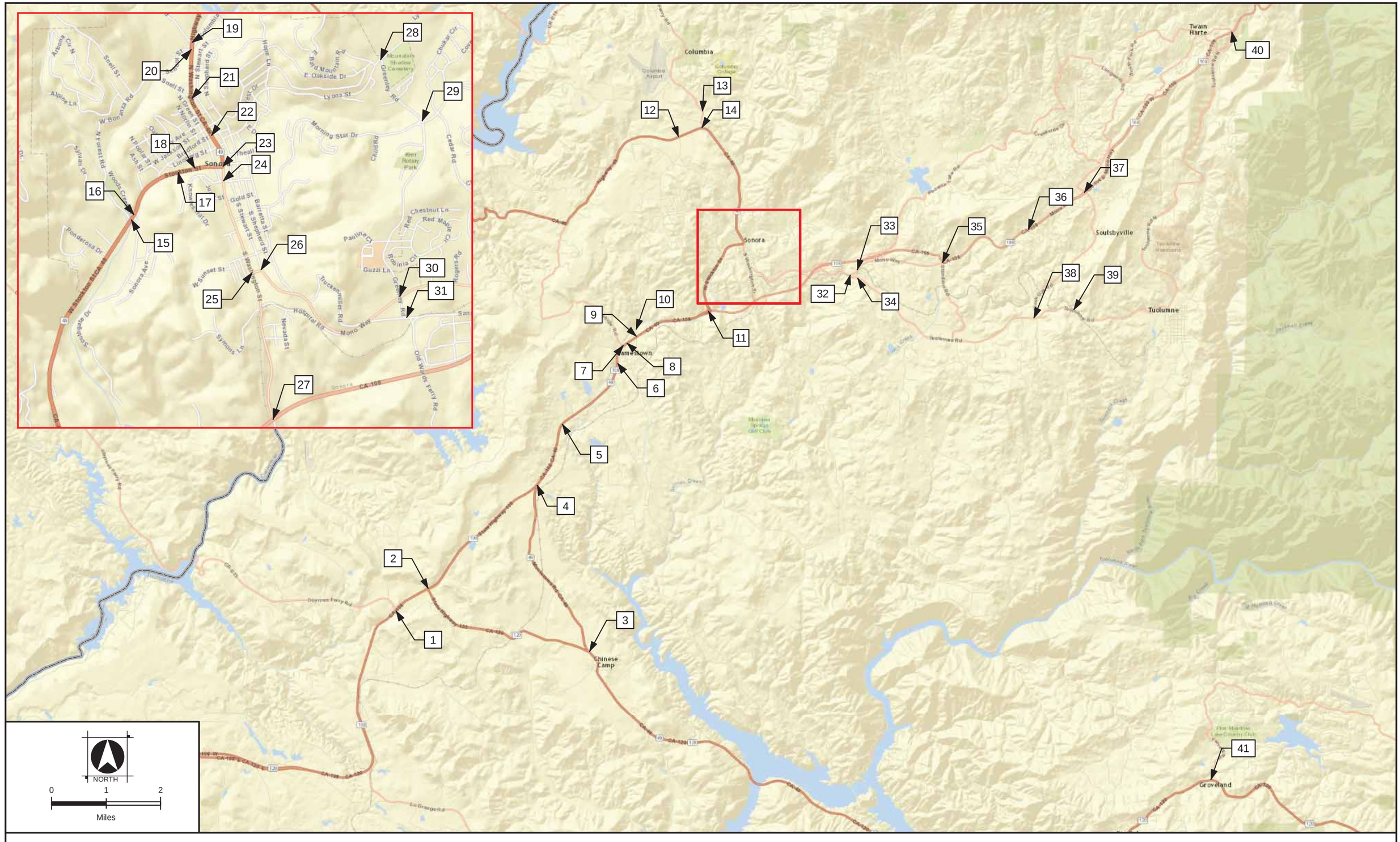
At the present time, Tuolumne County and TCTC have initiated the preparation of two Environmental Impact Reports (EIRs), one for the General Plan update and one for the RTP update. The two EIR documents require the preparation of CEQA-compliant technical Traffic Studies in support of their corresponding Transportation/Circulation chapters. While separate EIR documents are being prepared for the updated General Plan and RTP, the supporting Traffic Studies would contain mostly identical/overlapping content; therefore, it was decided that a single traffic study should be prepared in support of both EIRs. This technical report has been prepared in order to present the results of an EIR Traffic Study completed by Wood Rodgers in support of the proposed General Plan and RTP update EIR documents.

REPORT ORGANIZATION

This traffic study has been prepared consistent with CEQA requirements for the General Plan and RTP EIR Transportation/Circulation chapters, as well as structured to meet and address County and Caltrans traffic study guidelines. The analyses contained in this traffic study essentially focus on quantifying traffic operating conditions at study intersections and roadway segments (as identified by TCTC staff) under various scenarios/alternatives, including existing conditions, year 2030 alternative growth scenarios, and year 2040 alternative growth scenarios. This traffic study identifies transportation impacts and recommended improvements resulting from planning horizon years (2030 and 2040) traffic volume demands anticipated under the four alternative growth scenarios.

This report is organized into the chapters listed below:

- Chapter 1 – Introduction and Background
- Chapter 2 – Existing Conditions Analysis
    - A description of existing transportation/circulation setting and critical facilities within and through the County.
    - Analysis of existing traffic operating conditions.
- Chapter 3 – Alternative Growth Scenarios
    - A description of the four Alternative Growth Scenario conditions analyzed in this traffic study.
- Chapter 4 – Future Conditions Analysis
    - A description of the proposed alternative growth scenarios to be analyzed.
    - A description of planned future roadway improvements.
    - Analysis of traffic operations under year 2030 alternative growth scenarios.
    - Analysis of traffic operations under year 2040 alternative growth scenarios.
- Chapter 5 – Recommended Improvements and Mitigation Measures
    - A discussion of significance of project impacts for critical local and regional transportation facilities.
    - Recommendations on future year transportation improvements and mitigation measures/strategies needed under each alternative growth scenario.
    - Analysis of roadway safety including existing crash data on state highway facilities.
    - Analysis of estimated future year Vehicle Miles Traveled (VMT) under the alternative growth scenarios.



Study Area Vicinity Map and Study Intersection Locations

Tuolumne County EIR Traffic Study

Figure 1

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CHAPTER 2 – EXISTING CONDITIONS ANALYSIS

A. EXISTING TRANSPORTATION SETTING

Roadways that currently provide primary circulation in/through Tuolumne County are described as follows:

State Route 49 (SR 49) is a north-south state highway that traverses the eastern portion of northern California from Madera County to Plumas County. SR 49 extends through the western and most populated portion of Tuolumne County, linking the communities of Moccasin, Chinese Camp, Jamestown, Tuttletown, and the City of Sonora. SR 49 runs concurrent with SR 120 between the communities of Moccasin and Chinese Camp and runs concurrent with SR 108 through Jamestown. SR 49 runs directly through downtown Sonora and serves as the main street through northern half of the city. SR 49 is generally a two-lane highway throughout the County.

State Route 108 (SR 108) is a state highway that runs northeast from the city of Modesto in the California Central Valley to US Route 395 in Mono County. SR 108 runs concurrent with SR 49 and SR 120 near Jamestown and the City of Sonora in Tuolumne County. Throughout the County, SR 108 is generally a two-lane highway, with four-lane divided segments in more mountainous areas. SR 108 provides the City of Sonora with an important link to the Central Valley as well as to smaller communities in the eastern portion of the County.

State Route 120 (SR 120) is an east-west state highway in Northern California that runs from San Joaquin County to US Route 6 in Mono County. In Tuolumne County, SR 120 runs concurrent with SR 49 near Chinese Camp, and with SR 108 from Yosemite Junction to the western County line. SR 120 has a route break in Tuolumne County when it reaches Yosemite National Park; thereafter, the route becomes a park service road under the jurisdiction of the National Park Service. In Tuolumne County, SR 120 alternates between a two-lane expressway and a two-lane conventional highway.

EXISTING PEDESTRIAN, BICYCLE, AND TRANSIT FACILITIES

The steep terrain and rural setting of Tuolumne County has limited the number of pedestrian and bicycle facilities in the County. Typical sidewalks exist intermittently along business fronts in community centers and a designated bicycle path fronts the Crossroads Shopping Center in Sonora. The *Tuolumne County Transportation Council Bikeways and Trails Plan* notes that construction of Class I and Class II bicycle facilities is encouraged to allow for bicycle and pedestrian safety.

Tuolumne County is served by Tuolumne County Transit, which includes a Monday-Friday fixed route service, dial-a-ride service Monday-Saturday, and a seasonal SkiBUS service to winter destinations. Tuolumne County Transit also provides connections to Yosemite Area Regional Transportation Systems (YARTS), a service that delivers access to popular destinations within the Yosemite Valley.

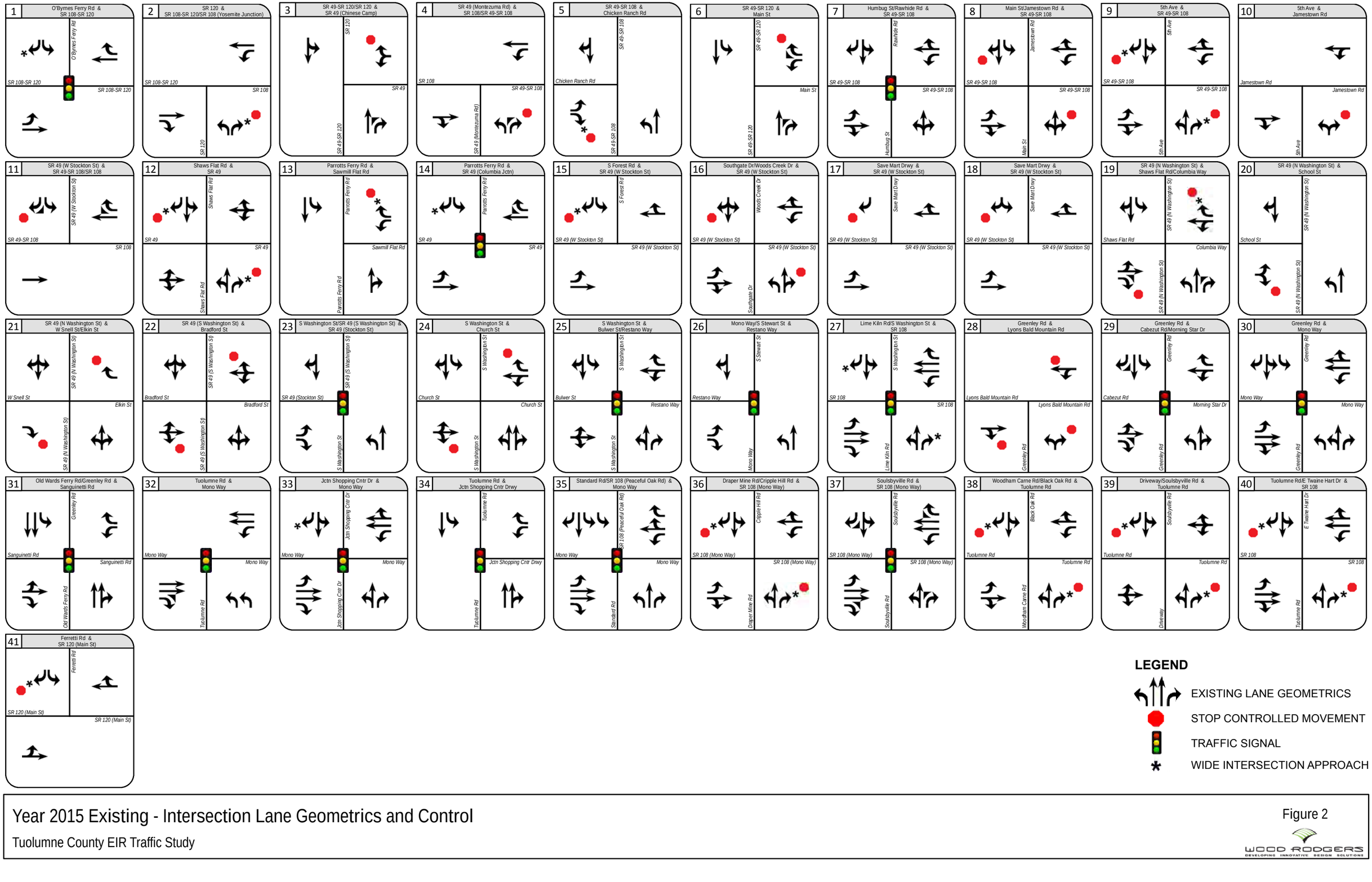
STUDY AREA FACILITIES

Based on direction from TCTC, 41 intersections and 150 roadway segments throughout the County were selected for analysis. These critical locations include both County and Caltrans facilities throughout the County's roadway network. Study area intersections are listed in **Appendix Table 1** and study area roadway segments are listed in **Appendix Table 2**. Existing intersection locations are shown in **Figure 1** and existing lane geometrics and control are shown in **Figure 2**.

EXISTING TRAFFIC COUNTS

TCTC and Wood Rodgers recently completed new AM and PM peak hour traffic count data collection at several study intersections and roadways. The new traffic counts were supplemented with traffic counts collected as part of prior studies prepared for Tuolumne County as well Caltrans traffic volumes published on the Caltrans website. The AM peak hour is defined as the highest one hour of traffic flow counted between 7:00 AM and 9:00 AM on a typical weekday while the PM peak hour is defined as the highest one hour of traffic flow counted between 4:00 PM and 6:00 PM on a typical weekday. "Existing" conditions study intersection AM and PM peak hour traffic volumes are shown in **Appendix Figure 2**. Existing conditions study roadway segment Annual Average Daily Traffic (AADT) volumes are shown in **Appendix Table 4**.

Note: this study does not include seasonal analysis (peak summer month) impacts and mitigation measures.



Year 2015 Existing - Intersection Lane Geometrics and Control

Tuolumne County EIR Traffic Study

Figure 2

WOOD RODGERS
DEVELOPING INNOVATIVE DESIGN SOLUTIONS

LEVEL-OF-SERVICE METHODOLOGY

Traffic operations have been quantified through the determination of "Level of Service" (LOS). Level of Service is a qualitative measure of traffic operating conditions, whereby a letter grade "A" through "F" is assigned to an intersection or roadway segment, representing progressively worsening traffic operations.

Levels of Service have been calculated for all intersection control types using methods documented in the Transportation Research Board (TRB) Publication *Highway Capacity Manual, 2010* (HCM-2010). For two-way-stop-controlled (TWSC) intersections, the "worst-case" movement delays and LOS have been reported, computed based on HCM-2010. For signalized and all-way-stop-controlled (AWSC) intersections, the intersection delays and LOS reported are the average values for the whole intersection, computed based on HCM-2010. *Synchro/SimTraffic 8* software was used for LOS calculations for unsignalized and signalized intersections. The delay-based HCM-2010 LOS criteria for different types of intersection controls are outlined in **Table 1.**

Table 1. Level of Service Definitions and Criteria for Intersections

Level of Service	Flow Type	Operational Characteristics	Intersection Control Delay (seconds/vehicle)	
			Signal Control	2-Way-Stop or All-Way Stop Control
"A"	Stable Flow	Free-flow conditions with negligible to minimal delays. Excellent progression with most vehicles arriving during the green phase and not having to stop at all. Nearly all drivers find freedom of operation.	≤ 10	0 – 10
"B"	Stable Flow	Good progression with slight delays. Short cycle-lengths typical. Relatively more vehicles stop than under LOS "A". Vehicle platoons are formed. Drivers begin to feel somewhat restricted within groups of vehicles.	> 10 – 20	> 10 – 15
"C"	Stable Flow	Relatively higher delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear. The number of vehicles stopping is significant, although many still pass through without stopping. Most drivers feel somewhat restricted.	> 20 – 35	> 15 – 25
"D"	Approaching Unstable Flow	Somewhat congested conditions. Longer but tolerable delays may result from unfavorable progression, long cycle lengths, and/or high volume-to-capacity ratios. Many vehicles are stopped. Individual cycle failures may be noticeable. Drivers feel restricted during short periods due to temporary back-ups.	> 35 – 55	> 25 – 35
"E"	Unstable Flow	Congested conditions. Significant delays result from poor progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures occur frequently. There are typically long queues of vehicles waiting upstream of the intersection. Driver maneuverability is very restricted.	> 55 – 80	> 35 – 50
"F"	Forced Flow	Jammed or grid-lock type operating conditions. Generally considered to be unacceptable for most drivers. Zero or very poor progression, with over-saturation or high volume-to-capacity ratios. Several individual cycle failures occur. Queue spillovers from other locations restrict or prevent movement.	> 80	> 50

Source: HCM-2000/2010, Exhibits 16-2, 17-2 and 17-22

The field-observed "peak hour factors" from the actual traffic counts were utilized (where available) to evaluate existing conditions' LOS. Heavy vehicle percentages of 2-10% for State highways (obtained from Caltrans website) and 2% for local roadways were generally used in this analysis.

Generally, the HCM-2010 recommended suburban traffic default signal cycle length of 90-120 seconds was used, with 4 seconds of "lost time" per critical signal phase.

Some of TCTC's Roadway ADT LOS Lookup Table was updated as a part of this EIR traffic study. New generalized estimates of maximum two-way ADT volume carrying capacities for each LOS designation (A-F) were calculated using HCM 2010 based *High Plan 2012* software for the five urban roadway types listed below:

2-lane Principle/Minor Arterial roadways (*with* left turn lanes)
2-lane Principle/Minor Arterial roadways (*no* left turn lanes)
2-lane Major/Minor Collector roadways (*with* left turn lanes)
2-lane Major/Minor Collector roadways (*no* left turn lanes)
2-lane Local Streets

The updated TCTC Roadway ADT LOS Lookup Table is shown in **Table 2**.

All study roadways were classified as urban or rural, and all rural roadways were further classified as rolling or mountainous. **Appendix Figure 1** illustrates the Tuolumne County Urban Area Boundaries. Roadway segment LOS was calculated by comparing study roadway Average Daily Traffic (ADT) volumes, obtained from recent traffic counts, recently completed traffic studies, and the most recent Caltrans count book, to the updated Tuolumne County Roadway ADT LOS thresholds.

Based on direction from County Staff, the minimum LOS standard for Minor Collectors, Major Collectors, Rural Arterials and Urban Streets (County facilities) shall be LOS "D", unless an exception is made by the County. The minimum LOS standard for local and residential roads shall be LOS "C"**.** The minimum peak hour LOS standard for all County intersections shall be LOS "D".

The Project study area includes State Routes 49, 108, and 120. The Caltrans published *Guide for* the *Preparation of Traffic Impact Studies (dated December 2002)* states the following:

> *"Caltrans endeavors to maintain a target LOS at the transition between LOS "C" and LOS "D" on State highway facilities, however, Caltrans acknowledges that this may not be always feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS".*

Based on direction from Caltrans and County staff, the minimum LOS standard for all Caltrans facilities (roadways and intersections) shall be LOS "D".

In order to determine whether "significance" should be associated with unsignalized intersection operating conditions, supplemental traffic signal warrant analyses were also completed. The term "signal warrants" refers to the list of established criteria used by Caltrans and other public agencies to quantitatively justify or ascertain the need for installation of a traffic signal at an unsignalized intersection location. This study generally employs signal warrant criteria presented in the *California Manual on Uniform Traffic Control Devices* (California MUTCD, last updated January 2012). The California MUTCD signal warrant criteria are based upon several factors including volume of vehicular and pedestrian traffic, location of school areas, frequency of accidents, etc. The peak-hour-volume warrant 3 (urban/rural areas) analysis was completed in this study as a representative warrant analysis. California MUTCD indicates that "the satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal."

Table 2. TCTC Generalized Roadway ADT LOS Lookup Table

FHWA FC#	Roadway Type	Type #	Area Type	Maximum Two-way Average Daily Traffic (ADT) Volume-carrying Capacity for each LOS Designation				
				LOS "A"	LOS "B"	LOS "C"	LOS "D"	LOS "E"
4	Rural Arterial (4-lane) Divided	1	ROLLING	6,240	12,480	18,720	26,520	31,200
4	Rural Arterial (4-lane) Undivided	2		4,820	9,640	14,460	20,485	24,100
4	Rural Minor Arterial (4-lane)	3		6,080	12,160	18,240	25,840	30,400
4	Rural Minor Arterial (with left-turn Lane)	4		4,600	9,200	13,800	19,550	23,000
4	Rural Minor Arterial (2-lane)	5		3,120	6,240	9,360	13,260	15,600
5	Major Collector (34 ft. - 36 ft.)	6		3,420	6,840	10,260	14,535	17,100
5	Major/Minor Collector (23 ft.- 32 ft.)	7		2,900	5,800	8,700	12,325	14,500
5	Major/Minor Collector (20 ft.- 23 ft.)	8		2,590	5,180	7,770	11,008	12,950
5	Major/Minor Collector (18 ft.- 20 ft.)	9		2,300	4,600	6,900	9,775	11,500
5	Major/Minor Collector (Less than 18 ft.)	10		1,920	3,840	5,760	8,160	9,600
6	Local Road	11		1,920	3,840	5,760	8,160	9,600
4	Rural Arterial (4-lane) Divided	101	MOUNTANEOUS	5,810	11,610	17,410	24,670	29,020
4	Rural Arterial (4-lane) Undivided	102		4,490	8,970	13,450	19,060	22,420
4	Rural Minor Arterial (4-lane)	103		5,660	11,310	16,970	24,040	28,280
4	Rural Minor Arterial (with left-turn Lane)	104		4,280	8,560	12,840	18,190	21,390
4	Rural Minor Arterial (2-lane)	105		2,910	5,810	8,710	12,340	14,510
5	Major Collector (34 ft. - 36 ft.)	106		3,190	6,370	9,550	13,520	15,910
5	Major/Minor Collector (23 ft.- 32 ft.)	107		2,700	5,400	8,100	11,470	13,490
5	Major/Minor Collector (20 ft.- 23 ft.)	108		2,410	4,820	7,230	10,240	12,050
5	Major/Minor Collector (18 ft.- 20 ft.)	109		2,140	4,280	6,420	9,100	10,700
5	Major/Minor Collector (Less than 18 ft.)	110		1,790	3,580	5,360	7,590	8,930
6	Local Road	111		1,790	3,580	5,360	7,590	8,930
2	4-Lane Freeway	201	URBAN	28,000	43,200	61,600	74,400	80,000
2	3-Lane Freeway	202		10,100	20,200	30,300	42,925	50,500
2	2-Lane Freeway + Auxiliary Lanes	203		8,392	16,784	25,176	35,666	41,960
2	2-Lane Freeway	204		6,680	13,360	20,040	28,390	33,400
2	4-Lane Expressway	205		24,000	28,000	32,000	36,000	40,000
2	2-Lane Expressway	206		12,000	14,000	16,000	18,000	20,000
3	6-Lane Divided Arterial (with left-turn lane)	207		32,000	38,000	43,000	49,000	54,000
3	4-Lane Divided Arterial (with left-turn lane)	208		22,000	25,000	29,000	32,500	36,000
3	4-Lane Undivided Arterial (no left-turn lane)	209		18,000	21,000	24,000	27,000	30,000
4	2-Lane Principal/Minor Arterial (with left-turn lane)	210		2,900	7,700	14,300	20,100	31,300
4	2-Lane Principal/Minor Arterial (no left-turn lane)	211		2,900	7,200	11,900	16,100	24,200
5	2-Lane Major/Minor Collector (with left-turn lane)	212		3,400	6,900	11,600	15,800	29,400
5	2-Lane Major/Minor Collector (no left-turn lane)	213		2,700	5,600	9,200	12,800	23,500
6	2-Lane Local Street	214		2,300	4,900	8,400	11,400	21,200

Notes:
1. Values shown corresponding to LOS A through E are roadway ADT traffic volumes
2. Collector width is measured from the edge of pavement to the edge of pavement
3. Roadways with continuous grade steeper than 6% or above 4,000 ft. elevation should use mountainous train LOS thresholds
4. Site Specific LOS maybe necessary
5. Peak Hour LOS threshold is assumed to be 10% of the daily traffic volume unless site specific analysis shows a different peak hour to daily traffic ratio
6. Examples LOS A (0.20 of capacity), LOS B (0.21 to 0.40 of capacity), LOS C (0.41 to 0.60 of capacity), LOS D (0.61 to 0.85 of capacity), LOS E (0.86 to 0.92 of capacity)

All volumes thresholds are approximate and assumes average roadway characteristics. Actual threshold volume for each Level of Service listed above may vary depending on a variety of factors including (but not limited to) roadway curvature and grade, intersection or interchange spacing, driveway spacing, percentage of trucks, RVs and other heavy vehicles, travel lane widths, speed limits, signal timing characteristics, on-street parking, volume of cross traffic and pedestrians, etc.

B. EXISTING CONDITIONS' TRAFFIC OPERATIONS

INTERSECTIONS

Appendix Table 3 summarizes Existing traffic intersection operations, quantified using the existing traffic volumes (shown on **Appendix Figure 2**) and existing intersection lane geometrics and control (shown on **Figure 2**). **Table 3** shows the existing intersections that are currently operating below the minimum LOS criteria under the existing AM and/or PM peak hour conditions.

Table 3. Existing Intersections with Unacceptable Peak Hour LOS

#	Intersection	Control Type	LOS Std.	AM Peak Hour		PM Peak Hour	
				Delay (Sec/Veh)	LOS	Delay (Sec/Veh)	LOS
5	SR 49-SR 108 & Chicken Ranch Rd	TWSC	D	24.5	C	**47.2**	**E**
8	Main St/Jamestown Rd & SR 49-SR 108	TWSC	D	**93.5**	**F**	**125.1**	**F**
9	5th Ave & SR 49-SR 108	TWSC	D	**232.2**	**F**	**429.6**	**F**
11	SR 49-SR 108/SR 108 & SR 49 (Stockton Rd)	TWSC	D	**36.9**	**E**	**69.6**	**F**
13	Parrotts Ferry Rd & Sawmill Flat Rd	TWSC	D	**41.0**	**E**	**54.3**	**F**
19	SR 49 (N Washington St)/SR 49 & N Washington St/Columbia Way	TWSC	D	**134.4**	**F**	**160.5**	**F**
20	SR 49 (N Washington St) & School St	TWSC	D	**43.5**	**E**	**44.1**	**E**
23	S Washington St/SR 49 (N Washington St) & SR 49 (Stockton Rd)	Signal	D	**63.1**	**E**	**58.1**	**E**
24	S Washington St & Church St	TWSC	D	**64.1**	**F**	**101.4**	**F**
38	Woodham Carne Rd/Black Oak Rd & Tuolumne Rd	TWSC	D	**43.0**	**E**	28.9	D
39	Tuolumne Rd & Soulsbyville Rd	TWSC	D	**52.9**	**F**	23.7	C

Notes:
1. TWSC = Two-Way-Stop Control, AWSC = All-Way-Stop Control
2. For TWSC intersection, worst-case movement delays (in seconds/vehicle) is indicated. "Average" control delays (in seconds/vehicle) are indicated for AWSC and signal-controlled intersections. Delays reported in above table are from Synchro 8 software.
3. Bold numbers and letters represent condition where intersection does not meet minimum acceptable standards.

As shown in **Table 3**, 11 of the 41 study intersections are currently operating below acceptable peak hour LOS standards. The remaining unsignalized and signalized study intersections are currently operating at acceptable LOS criteria under the existing AM and PM peak hour conditions.

All unsignalized intersections projected to meet signal warrants under Existing AM and PM peak hour conditions are shown in **Table 4**.

Table 4. Existing Intersections that Meet Signal Warrants

#	Intersection	Control Type	AM Peak Hour	PM Peak Hour
			Warrant Met?	Warrant Met?
2	SR 120 & SR 108-SR 120/SR 108	TWSC	NO	**YES**
4	SR 49 (Montezuma Rd) & SR 120/SR 49-SR 120	TWSC	**YES**	**YES**
5	SR 49-SR 108 & Chicken Ranch Rd	TWSC	NO	**YES**
6	SR 49-SR 108 & Main St	TWSC	**YES**	**YES**
8	Main St/Jamestown Rd & SR 49-SR 108	TWSC	**YES**	**YES**
9	5th Ave & SR 49-SR 108	TWSC	**YES**	**YES**
11	SR 49-SR 108/SR 108 & SR 49 (Stockton Rd)	TWSC	**YES**	**YES**
13	Parrotts Ferry Rd & Sawmill Flat Rd	TWSC	**YES**	**YES**
18	SR 49 (Stockton Rd) & E. Savemart Drwy	TWSC	NO	**YES**
19	SR 49 (N Washington St)/SR 49 & N Washington St/Columbia Way	TWSC	**YES**	**YES**
21	SR 49 (N Washington St) & W Snell St/Elkin St	TWSC	**YES**	**YES**
24	S Washington St & Church St	TWSC	NO	**YES**
28	Greenly Rd & Lyons Bald Mountain Rd	TWSC	NO	**YES**
37	Soulsbyville Rd & SR 108 (Mono Way)	TWSC	**YES**	**YES**
39	Tuolumne Rd & Soulsbyville Rd	TWSC	**YES**	NO

Notes: Warrant = California MUTCD 2012 based Peak-hour-Volume Warrant #3 (70% Factor).

As shown in **Table 4**, California MUTCD based traffic signal Peak Hour Warrant 3 (70%-Factor) is projected to be met at 15 unsignalized study intersections under Existing AM and/or PM peak hour conditions.

The *Synchro* based LOS outputs and California MUTCD based Traffic Signal Peak hour Warrant 3 (70% Factor) worksheets for existing conditions are included in **Appendix Attachments 1 and 2**, respectively.

All improvements and mitigation measures are discussed in a subsequent section of this report.

ROADWAY SEGMENTS

Similar to minimum acceptable intersection LOS, a minimum acceptable LOS standard of either LOS "C", for all local roads, or LOS "D", for all remaining County and Caltrans facilities, is used in this report. **Appendix Table 4** and **Appendix Figure 11** illustrate "Existing" Roadway ADT operations quantified under existing roadway functional classifications and existing ADT volumes. **Table 5** shows the existing roadway segments that are currently operating below the minimum LOS criteria under ADT conditions.

Table 5. Existing Roadways with Unacceptable LOS

#	Roadway Segment	Type #	LOS Std.	AADT	LOS
24	SR 49 b/w Bell Mooney Rd and South Jct Main St	211	D	**19,300**	**E**
27	SR 49 b/w Fifth Ave and East Jct SR 108	210	D	**23,500**	**E**
31	SR 49 b/w Stockton Rd and Dodge St	211	D	**18,500**	**E**
32	SR 49 n/o Dodge St	211	D	**19,400**	**E**
33	SR 49 s/o N Washington St / Columbia Way	211	D	**16,100**	**E**
52	Mono Way w/o Sanguinetti Rd	210	D	**22,205**	**E**
116	S Washington St b/w Restano Way & Church St	212	D	**18,595**	**E**
Notes: AADT = Annual Average Daily Traffic, LOS = Level of Service					

As shown in **Table 5**, seven (7) of the 150 study roadway segments are currently operating below acceptable LOS conditions. The remaining study roadway segments are currently operating at acceptable LOS conditions.

All improvements and mitigation measures are discussed in a subsequent section of this report.

CHAPTER 3 – ALTERNATIVE GROWTH SCENARIOS

Tuolumne County traffic operations are analyzed under four alternative growth scenarios, three defined in the *Tuolumne Tomorrow: Tuolumne County Regional Blueprint Project Report (August 2012)* and a fourth based on the old general plan map, under two future years, 2030 and 2040, in this EIR Traffic Study. The alternative growth scenarios represent different ways growth can be concentrated and distributed in Tuolumne County. The four alternative growth scenarios are defined as follows (taken from their descriptions in the Tuolumne Tomorrow Report):

Distinctive Communities (Proposed): *Within the Distinctive Communities alternative growth scenario, each community contains a well-defined, cohesive, and compact community built around an appropriately-scaled urban core and community gathering places….The existing urban development boundaries may be expanded to allow dense growth to occur near existing community nodes. Infill, redevelopment, and mixed-use are used to take advantage of existing public infrastructure and services. Residential and commercial areas become more compact within new urban development boundaries promoting mixed-use and higher density residential development to supply housing demand….By having compact communities, auto dependency is greatly reduced and walking, bicycling, and transit use becomes an increasing form of transportation.*

Public Services (Proposed): *In the Public Services alternative growth scenario, growth is located where multiple services, such as major transportation corridors, transit lines, and public water and sewer, are located. Development will continue to grow within defined communities, however development will radiate outward along a select number of arterials, major collectors, and transit corridors where public water and sewer exist, creating linear communities containing a mix of multi-family housing, townhouses, neighborhood commercial and traditional neighborhoods….This scenario will result in some auto dependency for residents residing beyond transit corridors and community cores. The amount of Mixed-Use land uses will increase by placing these uses in close proximity to transit stations and community cores, thereby increasing walkability in these areas.*

Recent Trends (Existing): *The Recent Trends Scenario is based on the existing City's and County's General Plan land use designations and assumes no change in market demand for housing types. This scenario continues the existing pattern of development, in which Residential Medium (Single-Family Residential, R-1, District) is the primary demand choice for residential development….This scenario will require auto dependency for many parts of Tuolumne County, because walkable communities, defined as a 5-minute walk (1/4) mile between home and the core of a community, shopping, jobs, recreation, community facilities and transit, would exist only within community cores.*

Recent Trends (Proposed): *The Recent Trends Scenario is based on the proposed City's and County's General Plan land use designations and assumes no change in market demand for housing types. This scenario continues the existing pattern of development, in which Residential Medium (Single-Family Residential, R-1, District) is the primary demand choice for residential development….This scenario will require auto dependency for many parts of Tuolumne County, because walkable communities, defined as a 5-minute walk (1/4) mile between home and the core of a community, shopping, jobs, recreation, community facilities and transit, would exist only within community cores.*

A summary of the alternative growth scenarios' land uses is shown in **Table 6**.

Table 6. Alternative Growth Scenarios Land Use Differences

No.	Model Land Use Category (Units used by the model)	Base Year 2015	2030 Alt Growth Scenarios				2040 Alt Growth Scenarios			
			DC(P)	PS(P)	RT(E)	RT(P)	DC(P)	PS(P)	RT(E)	RT(P)
1	Single Family Residential (DUs)	19,435	22,172	22,316	22,602	22,602	23,767	24,347	24,453	24,459
3	Multi-Family Residential (DUs)	1,805	2,326	2,199	1,905	1,900	2,632	2,474	1,962	1,956
12	Minor Commercial (KSF)	1,888	2,281	2,281	2,281	2,281	2,510	2,561	2,510	2,510
13	Major Commercial (KSF)	2,736	2,934	2,928	2,934	2,934	3,052	3,064	3,052	3,052
18	Industrial (KSF)	1,718	1,840	1,837	1,841	1,840	1,914	1,925	1,915	1,914
19	Public Lands (Acres)	10,999	11,026	11,025	11,026	11,028	11,041	11,046	11,042	11,044

Notes: DUs = Dwelling Units, KSF = 1,000 square feet
DC(P) = Distinctive Communities (Proposed), PS(P) = Public Services (Proposed), RT(E) = Recent Trends (Existing), RT(P) = Recent Trends (Proposed)

Future forecasts have been developed for the four alternative growth scenarios under years 2030 and 2040 utilizing the updated Tuolumne County Regional Travel Demand Model. This process was documented in the *Tuolumne County Regional Travel Demand Model Update – Model Development Report* (Wood Rodgers, May 2015). The forecasted future year roadway ADT volumes for all scenarios are shown in **Appendix Table 10**. The forecasted future year intersection turning movement volumes for all scenarios can be found in **Appendix Figures 3-10**.

CHAPTER 4 – FUTURE CONDITIONS ANALYSIS

A. YEAR 2030 CONDITIONS

As stated in a prior section of this report, this traffic study analyzes year 2030 traffic conditions under four alternative growth scenarios: Distinctive Communities (Proposed), Public Services (Proposed), Recent Trends (Existing), and Recent Trends (Proposed).

ASSUMED YEAR 2030 IMPROVEMENTS

Based on discussion with TCTC, a number of intersection and roadway improvement projects are assumed to be complete by year 2030 conditions. These improvements include Tier 1a improvement projects as well as short-term and mid-term capital improvement projects. A list of intersection and roadway improvement projects assumed complete by year 2030, along with their descriptions, is included as **Appendix Table 5**. Intersection lane geometrics and control for year 2030 conditions are shown in **Figure 3**.

Study roadway segments and intersections may potentially experience a change in LOS as a result of a planned Capital Improvement Project (CIP). A list of study roadway segments and intersections that may be affected by each relevant planned improvement for year 2030 conditions is as follows:

CIP #1 Signalization of Fifth Avenue at State Route 108, construction of right turn lanes on Fifth Avenue in the northbound and southbound directions, widening of SR 108/49 for a right lane turn pocket:
Roadways:

- 5. SR 108, e/o East Jct SR 49

CIP #2 Parrotts Ferry Road intersection improvements:
Intersections:

- 14. SR 49 & Parrotts Ferry Road (Columbia Jctn)

CIP #3 Widening and realignment of Tuolumne Road between Lambert Lake Road and Terrance Drive:
Roadways:

- 77. Tuolumne Road, b/w Mono Way & Lambert Lake Road

CIP #4 Widening and realignment of Phoenix Lake Road from Ridgewood Road to Paseo de Los Portales Road:
Roadways:

- 97. Phoenix Lake Road, e/o Ridgewood Drive

CIP #6 Construction of a new Rawhide Road bridge and Rawhide Road realignment with Main Street & SR 108/49:
Roadways:

- 93. Rawhide Road, n/o SR 49/108

Intersections:

- 7. Humbug Street/Rawhide Road & SR 49-SR 108
- 8. Main Street/Jamestown Road & SR 49-SR 108

CIP #23 Construction of a new major collector road from the intersection of Greenley Road/Lyons Bald Moutain Road/Lyons Street to SR 49:
Roadways:

- 68. Greenley Road, b/w Lyons Bald Mountain Road/Lyons Road & Cabezut Road
- 139. Lyons Bald Mountian Road, e/o Greenley Road
- 140. Lyons Street, w/o Greenley Road
- 28. – 34. SR 49 from SR 108 to n/o North Washington Street/Columbia Way; 52. Mono Way w/o Sanguinetti Road, 53. Mono Way b/w Sanguinetti Road & Greenley Road; 115. South Washington Street n/o SR 108, 116. South Washington Street b/w Restano Way & Church Street (segments of SR 49 through downtown Sonora indirectly affected by the Greenley Road extension)

Intersections:

- 28. – 30. Greenly Road intersections with Lyons Bald Mountain Road, Morning Star/Cabezut Road, and Mono Way
- 15. – 27. SR 49 intersections through downtown Sonora, Restano Way intersections with Bulwer Street and Mono Way/South Stewart Street, and Lime Kiln Road/South Washington Street intersection with SR 108 (study intersections indirectly affected by the Sonora Bypass)

CIP #24 – #26 Widening of SR 49/SR 108 to five lanes between the SR 49 (Stockton Road) junction to Chicken Ranch Road:
Roadways:

- 24. – 27. SR 49 from Bell Mooney Road to East Jct SR 108

Intersections:

- 5. – 9., 11. SR 49-SR 108 intersections from Chicken Ranch Road to SR 49 (Stockton Road)

CIP #27 Widening of SR 108/SR49 to a four-lane Expressway between Chicken Ranch Road to Green Springs Road/La Grange Road:
Roadways:

- 2. – 4. SR 108 from La Grange Road to West Jct SR 49

Intersections:

- 1. SR 108-SR 120 & O'Byrnes Ferry Road, 2. SR 120 & SR 108-SR 120/SR 108
- 4. SR 49 (Montezuma Road) & SR 120/SR 49-SR 120, 5. SR 49-SR 108 & Chicken Ranch Road

CIP #28 Widening of SR 49 to five lanes from Parrotts Ferry Road to the new SR 49/Greenley Road intersection:
Roadways:

- 34. SR 49 Corridor, n/o North Washington Street / Columbia Way
- 35. SR 49 Corridor, e/o Parrots Ferry Road (Columbia WYE)

Intersections:

- 14. SR 49 & Parrotts Ferry Road (Columbia Jctn)

CIP #29 Construction of capacity improvements at the Greenley Road & Mono Way intersection:
Intersections:

- 30. Greenly Road & Mono Way

CIP #30 Construction of capacity improvements at the Lime Kiln Road/South Washington Street & SR 108 intersection:
Intersections:

- 27. Lime Kiln Road/South Washington Street & SR 108

CIP #31 Construction of a new High T intersection at the Yosemite Junction (SR 108/SR 120):
Intersections:

- 2. SR 120 & SR 108-SR 120/SR 108

INTERSECTIONS

Traffic operations for all 41 study intersections under year 2030 AM and PM peak hour conditions, all four alternative growth scenarios, and year 2030 lane geometrics and control are shown in **Appendix Tables 7** and **8.** Operations for all intersections projected to operate below acceptable standards under Year 2030 AM peak hour conditions are shown in **Table 7**.

Table 7. Year 2030 Intersections with Unacceptable LOS – AM Peak Hour

#	Intersection	Control Type	LOS Std.	Distinctive Communities (Proposed)		Public Services (Proposed)		Recent Trends (Existing)		Recent Trends (Proposed)	
				Delay (Sec/Veh)	LOS	Delay (Sec/Veh)	LOS	Delay (Sec/Veh)	LOS	Delay (Sec/Veh)	LOS
13	Parrotts Ferry Rd & Sawmill Flat Rd	TWSC	D	**76.9**	**F**	**81.4**	**F**	**86.5**	**F**	**86.5**	**F**
19	SR 49 (N Washington St)/SR 49 & N Washington St/Columbia Way	TWSC	D	**56.0**	**F**	**58.2**	**F**	**59.0**	**F**	**47.1**	**E**
24	S Washington St & Church St	TWSC	D	**49.0**	**E**	**48.5**	**E**	**49.0**	**E**	**47.5**	**E**
38	Woodham Carne Rd/Black Oak Rd & Tuolumne Rd	TWSC	D	**225.9**	**F**	**196.4**	**F**	**219.2**	**F**	**212.6**	**F**
39	Tuolumne Rd & Soulsbyville Rd	TWSC	D	**73.2**	**F**	**76.3**	**F**	**74.2**	**F**	**73.2**	**F**

Notes:
1. TWSC = Two-Way-Stop Control, AWSC = All-Way-Stop Control
2. For TWSC intersection, worst-case movement delays (in seconds/vehicle) is indicated. "Average" control delays (in seconds/vehicle) are indicated for AWSC and signal-controlled intersections. Delays reported in above table are from Synchro 8 software.
3. Bold numbers and letters represent condition where intersection does not meet minimum acceptable standards.

As shown in **Table 7**, the Parrotts Ferry Road and Sawmill Flat Road, SR 49 (North Washington Street)/SR 49 and North Washington Street/Columbia Way, South Washington Street and Church Street, Woodham Carne Road/Black Oak Road and Tuolumne Road, and Tuolumne Road and Soulsbyville Road intersections are projected to operate at year 2030 AM peak hour LOS "E/F" conditions under all four alternative growth scenarios. All other study intersections are projected to operate at acceptable year 2030 AM peak hour or better conditions under all four alternative growth scenarios.

Year 2030 Conditions - Intersection Lane Geometrics and Control

Tuolumne County EIR Traffic Study

Figure 3

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All unsignalized intersections projected to meet signal warrants under Year 2030 AM peak hour conditions are shown in **Table 8**.

Table 8. Year 2030 Intersections that Meet Signal Warrants – AM Peak Hour

#	Intersection	Control Type	Distinctive Communities (Proposed)	Public Services (Proposed)	Recent Trends (Existing)	Recent Trends (Proposed)
			Warrant Met?	Warrant Met?	Warrant Met?	Warrant Met?
4	SR 49 (Montezuma Rd) & SR 120/SR 49-SR 120	TWSC	**YES**	**YES**	**YES**	**YES**
6	SR 49-SR 108 & Main St	TWSC	**YES**	**YES**	**YES**	**YES**
11	SR 49-SR 108/SR 108 & SR 49 (Stockton Rd)	TWSC	**YES**	**YES**	**YES**	**YES**
13	Parrotts Ferry Rd & Sawmill Flat Rd	TWSC	**YES**	**YES**	**YES**	**YES**
19	SR 49 (N Washington St)/SR 49 & N Washington St/Columbia Way	TWSC	**YES**	**YES**	**YES**	**YES**
21	SR 49 (N Washington St) & W Snell St/Elkin St	TWSC	**YES**	**YES**	**YES**	**YES**
22	SR 49 (N Washington St) & Bradford St	TWSC	**YES**	**YES**	**YES**	NO
38	Woodham Carne Rd/Black Oak Rd & Tuolumne Rd	TWSC	**YES**	**YES**	**YES**	**YES**
39	Tuolumne Rd & Soulsbyville Rd	TWSC	**YES**	**YES**	**YES**	**YES**

Notes:
Warrant = California MUTCD 2012 based Peak-hour-Volume Warrant #3 (70% Factor).

As shown in **Table 8**, California MUTCD based traffic signal Peak Hour Warrant 3 (70%-Factor) is projected to be met at nine (9) unsignalized study intersections under year 2030 AM peak hour conditions. Eight of the nine intersections are projected to meet the signal warrant under all four alternative growth scenarios, while the Tuolumne Road and Soulsbyville Road intersection is projected to meet the signal warrant under the Distinctive Communities (Proposed), Public Services (Proposed), and Recent Trends (Existing) scenarios.

All intersections projected to operate below acceptable standards under Year 2030 PM peak hour conditions are shown in **Table 9**.

Table 9. Year 2030 Intersections with Unacceptable LOS – PM Peak Hour

#	Intersection	Control Type	LOS std.	Distinctive Communities (Proposed)		Public Services (Proposed)		Recent Trends (Existing)		Recent Trends (Proposed)	
				Delay (Sec/Veh)	LOS	Delay (Sec/Veh)	LOS	Delay (Sec/Veh)	LOS	Delay (Sec/Veh)	LOS
13	Parrotts Ferry Rd & Sawmill Flat Rd	TWSC	D	**113.8**	**F**	**118.8**	**F**	**128.9**	**F**	**130.3**	**F**
19	SR 49 (N Washington St)/SR 49 & N Washington St/Columbia Way	TWSC	D	**61.9**	**F**	**41.4**	**E**	**64.7**	**F**	**51.6**	**F**
24	S Washington St & Church St	TWSC	D	**71.1**	**F**	**72.3**	**F**	**72.3**	**F**	**69.9**	**F**
38	Woodham Carne Rd/Black Oak Rd & Tuolumne Rd	TWSC	D	**48.3**	**E**	**45.0**	**E**	**46.8**	**E**	**45.9**	**E**

Notes:
1. TWSC = Two-Way-Stop Control, AWSC = All-Way-Stop Control
2. For TWSC intersection, worst-case movement delays (in seconds/vehicle) is indicated. "Average" control delays (in seconds/vehicle) are indicated for AWSC and signal-controlled intersections. Delays reported in above table are from Synchro 8 software.
3. Bold numbers and letters represent condition where intersection does not meet minimum acceptable standards.

As shown in **Table 9**, the Parrotts Ferry Road and Sawmill Flat Road, SR 49 (North Washington Street)/SR 49 and North Washington Street/Columbia Way, South Washington Street and Church Street, and Woodham Carne Road/Black Oak Road and Tuolumne Road intersections are projected

to operate at unacceptable year 2030 PM peak hour LOS "E/F" conditions under all four alternative growth scenarios. All other study intersections are projected to operate at acceptable year 2030 PM peak hour conditions under all four alternative growth scenarios.

All unsignalized intersections projected to meet signal warrants under Year 2030 PM peak hour conditions are shown in **Table 10.**

Table 10. Year 2030 Intersections that Meet Signal Warrants – PM Peak Hour

#	Intersection	Control Type	Distinctive Communities (Proposed)	Public Services (Proposed)	Recent Trends (Existing)	Recent Trends (Proposed)
			Warrant Met?	Warrant Met?	Warrant Met?	Warrant Met?
2	SR 120 & SR 108-SR 120/SR 108	TWSC	**YES**	**YES**	**YES**	**YES**
4	SR 49 (Montezuma Rd) & SR 120/SR 49-SR 120	TWSC	**YES**	**YES**	**YES**	**YES**
5	SR 49-SR 108 & Chicken Ranch Rd	TWSC	**YES**	**YES**	**YES**	**YES**
6	SR 49-SR 108 & Main St	TWSC	**YES**	**YES**	**YES**	**YES**
11	SR 49-SR 108/SR 108 & SR 49 (Stockton Rd)	TWSC	**YES**	**YES**	**YES**	**YES**
13	Parrotts Ferry Rd & Sawmill Flat Rd	TWSC	**YES**	**YES**	**YES**	**YES**
18	SR 49 (Stockton Rd) & E. Savemart Drwy	TWSC	**YES**	**YES**	**YES**	**YES**
19	SR 49 (N Washington St)/SR 49 & N Washington St/Columbia Way	TWSC	**YES**	**YES**	**YES**	**YES**
21	SR 49 (N Washington St) & W Snell St/Elkin St	TWSC	**YES**	**YES**	**YES**	**YES**
24	S Washington St & Church St	TWSC	**YES**	**YES**	**YES**	**YES**
38	Woodham Carne Rd/Black Oak Rd & Tuolumne Rd	TWSC	**YES**	**YES**	**YES**	**YES**
39	Tuolumne Rd & Soulsbyville Rd	TWSC	**YES**	**YES**	**YES**	**YES**

Notes:
Warrant = California MUTCD 2012 based Peak-hour-Volume Warrant #3 (70% Factor).

As shown in **Table 10**, California MUTCD based traffic signal Peak Hour Warrant 3 (70%-Factor) is projected to be met at 12 unsignalized study intersections under year 2030 PM peak hour conditions under all four alternative growth scenarios.

All improvements and mitigation measures are discussed in a subsequent section of this report.

ROADWAY SEGMENTS

Roadway operations for all 150 study roadway segments under year 2030 average daily conditions, all four alternative growth scenarios, and year 2030 roadway capacity configurations were quantified utilizing roadway ADT-based LOS thresholds presented in **Table 2.** The results are summarized in **Appendix Tables 10 and 11** and **Appendix Figures 12-19.** Operations for all roadway segments projected to operate below acceptable standards under Year 2030 average daily conditions are shown in **Table 11**.

Table 11. Year 2030 Roadways with Unacceptable LOS

#	Roadway Segment	Type #	LOS Std.	Distinctive Communities (Proposed)		Public Services (Proposed)		Recent Trends (Existing)		Recent Trends (Proposed)	
				AADT	LOS	AADT	LOS	AADT	LOS	AADT	LOS
5	SR 108 b/w SR 49 (Stockton Rd) and S Washington St/Lime Kiln Rd	210	D	**22,067**	**E**	**22,071**	**E**	**22,294**	**E**	**22,186**	**E**
31	SR 49 b/w Stockton Rd and Dodge St	211	D	**16,833**	**E**	**16,923**	**E**	**17,015**	**E**	**16,749**	**E**
52	Mono Way w/o Sanguinetti Rd	210	D	**20,777**	**E**	**20,611**	**E**	20,019	D	19,628	D
77	Tuolumne Rd b/w Mono Way & Lambert Lake Rd	212	D	15,768	D	**15,802**	**E**	**15,884**	**E**	15,783	D
116	S Washington St b/w Restano Way & Church St	212	D	**16,678**	**E**	**16,600**	**E**	**16,687**	**E**	**16,497**	**E**

Notes: AADT = Annual Average Daily Traffic, LOS = Level of Service

As shown in **Table 11**, the following roadway segments are projected to operate at unacceptable Year 2030 LOS "E" conditions on an AADT basis under all four alternative growth scenarios: SR 108 between SR 49 (Stockton Road) and South Washington St/Lime Kiln Road, SR 49 between Stockton Road and Dodge Street, and South Washington Street between Restano Way and Church Street. The segment of Mono Way west of Sanguinetti Road is projected to operate at unacceptable Year 2030 LOS "E" conditions on an AADT basis under the Distinctive Communities (Proposed) and Public Services (Proposed) scenarios. The segment of Tuolumne Road between Mono Way and Lambert Lake Road is projected to operate at unacceptable Year 2030 LOS "E" conditions on an AADT basis under the Public Services (Proposed) and Recent Trends (Existing) scenarios. Note that the projected Year 2030 AADT volumes for roadway segments 52 and 77 are very close to the LOS "D/E" border under all four alternative growth scenarios. All other study roadway segments are projected to operate at acceptable year 2030 AADT LOS or better conditions under all four alternative growth scenarios.

All improvements and mitigation measures are discussed in a subsequent section of this report.

B. YEAR 2040 CONDITIONS

As stated in a prior section of this report, this traffic study analyzes year 2040 traffic conditions under four Alternative Growth Scenarios: Distinctive Communities (Proposed), Public Services (Proposed), Recent Trends (Existing), and Recent Trends (Proposed).

ASSUMED YEAR 2040 IMPROVEMENTS

Based on discussion with TCTC, a number of intersection and roadway improvement projects are assumed to be complete by year 2040 conditions in addition to those improvements assumed complete by year 2030. These improvements primarily include long-term capital improvement projects. A list of intersection and roadway improvement projects assumed complete by year 2040, along with their descriptions, is included as **Appendix Table 6**. Intersection lane geometrics and control for year 2040 conditions are shown in **Figure 4**.

Study roadway segments and intersections may potentially experience a change in LOS as a result of a planned Capital Improvement Project (CIP). A list of study roadway segments and intersections that may be affected by each relevant planned improvement for year 2040 conditions is as follows:

CIP #1 Widening of SR 108 to five lanes from Mono Way/Via Este to North Sunshine Road/Mono Vista Road:
Roadways:

- 11. SR 108 Corridor, b/w Mono Way and Soulsbyville Road

Intersections:

- 36. Draper Mine Road/Cripple Hill Road & SR 108 (Mono Way)

CIP #2 Widening of Tuolumne Road to five lanes from Mono Way to Hess Avenue:
Roadways:

- 77. Tuolumne Road, b/w Mono Way & Lambert lake Road, 78. Tuolumne Road, b/w Lambert Lake Road & Hess Avenue

Intersections:

- 32. Tuolumne Road & Mono Way
- 34. Tuolumne Road & Jctn Shopping Center

CIP #3 Widening of Mono Way to five lanes from Hess Avenue to Standard Road/Peaceful Oak Road:
Roadways:

- 57. Mono Way, b/w Hess Avenue & Standard Road / Peaceful Oak Drive

Intersections:

- 35. Standard Road/Peaceful Oak Road & Mono Way

CIP #4 Signalization of the Parrotts Ferry Road & Sawmill Flat Road intersection
Intersections:

- 13. Parrotts Ferry Road & Sawmill Flat Road

CIP #5 Signalization of the Tuolumne Road & Woodham Carne Road/Black Oak Road and realignment of Woodham Carne Road:
Intersections:

- 38. Woodham Carne Road/Black Oak Road & Tuolumne Road

Year 2040 Conditions - Intersection Lane Geometrics and Control

Tuolumne County EIR Traffic Study

Figure 4

WOOD RODGERS
DEVELOPING INNOVATIVE DESIGN SOLUTIONS

INTERSECTIONS

Traffic operations for all 41 study intersections under year 2040 AM and PM peak hour conditions, all four alternative growth scenarios, and year 2040 lane geometrics and control are shown in **Appendix Tables 7** and **8.** Operations for all intersections projected to operate below acceptable standards under Year 2040 AM peak hour conditions are shown in **Table 12**.

Table 12. Year 2040 Intersections with Unacceptable LOS – AM Peak Hour

#	Intersection	Control Type	LOS Std.	Distinctive Communities (Proposed)		Public Services (Proposed)		Recent Trends (Existing)		Recent Trends (Proposed)	
				Delay (Sec/Veh)	LOS	Delay (Sec/Veh)	LOS	Delay (Sec/Veh)	LOS	Delay (Sec/Veh)	LOS
19	SR 49 (N Washington St)/SR 49 & N Washington St/Columbia Way	TWSC	D	**59.9**	**F**	**64.3**	**F**	**68.4**	**F**	**56.8**	**F**
23	S Washington St/SR 49 (S Washington St) & SR 49 (Stockton Rd)	Signal	D	**56.1**	**E**	**55.1**	**E**	**59.6**	**E**	52.6	D
24	S Washington St & Church St	TWSC	D	**57.3**	**F**	**57.3**	**F**	**57.3**	**F**	**56.6**	**F**
39	Tuolumne Rd & Soulsbyville Rd	TWSC	D	**89.7**	**F**	**93.7**	**F**	**96.2**	**F**	**87.3**	**F**

Notes:
1. TWSC = Two-Way-Stop Control, AWSC = All-Way-Stop Control
2. For TWSC intersection, worst-case movement delays (in seconds/vehicle) is indicated. "Average" control delays (in seconds/vehicle) are indicated for AWSC and signal-controlled intersections. Delays reported in above table are from Synchro 8 software.
3. Bold numbers and letters represent condition where intersection does not meet minimum acceptable standards.

As shown in **Table 12**, the SR 49 (North Washington Street)/SR 49 and North Washington Street/Columbia Way, South Washington Street and Church Street, and Tuolumne Road and Soulsbyville Road intersections are projected to operate at year 2040 AM peak hour LOS "F" conditions under all four alternative growth scenarios. The South Washington Street/SR 49 (South Washington Street) and SR 49 (Stockton Road) intersection is projected to operate at year 2040 AM peak hour LOS "E" conditions under the Distinctive Communities (Proposed), Public Services (Proposed), and Recent Trends (Existing) scenarios. All other study intersections are projected to operate at acceptable year 2040 AM peak hour or better conditions under all four alternative growth scenarios.

All unsignalized intersections projected to meet signal warrants under Year 2040 AM peak hour conditions are shown in **Table 13**.

Table 13. Year 2040 Intersections that Meet Signal Warrants – AM Peak Hour

#	Intersection	Control Type	Distinctive Communities (Proposed)	Public Services (Proposed)	Recent Trends (Existing)	Recent Trends (Proposed)
			Warrant Met?	Warrant Met?	Warrant Met?	Warrant Met?
4	SR 49 (Montezuma Rd) & SR 120/SR 49-SR 120	TWSC	**YES**	**YES**	**YES**	**YES**
6	SR 49-SR 108 & Main St	TWSC	**YES**	**YES**	**YES**	**YES**
11	SR 49-SR 108/SR 108 & SR 49 (Stockton Rd)	TWSC	**YES**	**YES**	**YES**	**YES**
19	SR 49 (N Washington St)/SR 49 & N Washington St/Columbia Way	TWSC	**YES**	**YES**	**YES**	**YES**
21	SR 49 (N Washington St) & W Snell St/Elkin St	TWSC	**YES**	**YES**	**YES**	**YES**
22	SR 49 (N Washington St) & Bradford St	TWSC	**YES**	**YES**	**YES**	**YES**
39	Tuolumne Rd & Soulsbyville Rd	TWSC	**YES**	**YES**	**YES**	**YES**

Notes:
Warrant = California MUTCD 2012 based Peak-hour-Volume Warrant #3 (70% Factor).

As shown in **Table 13**, California MUTCD based traffic signal Peak Hour Warrant 3 (70%-Factor) is projected to be met at seven (7) unsignalized study intersections under year 2040 AM peak hour conditions under all four alternative growth scenarios.

All intersections projected to operate below acceptable standards under Year 2040 PM peak hour conditions are shown in **Table 14**.

Table 14. Year 2040 Intersections with Unacceptable LOS – PM Peak Hour

#	Intersection	Control Type	LOS Std.	Distinctive Communities (Proposed)		Public Services (Proposed)		Recent Trends (Existing)		Recent Trends (Proposed)	
				Delay (Sec/Veh)	LOS	Delay (Sec/Veh)	LOS	Delay (Sec/Veh)	LOS	Delay (Sec/Veh)	LOS
12	Shaws Flat Rd & SR 49	TWSC	D	30.6	D	34.6	D	**35.6**	**E**	34.4	D
19	SR 49 (N Washington St)/SR 49 & N Washington St/Columbia Way	TWSC	D	**67.9**	**F**	**73.8**	**F**	**79.4**	**F**	**65.7**	**F**
24	S Washington St & Church St	TWSC	D	**91.2**	**F**	**89.2**	**F**	**91.2**	**F**	**73.5**	**F**

Notes:
1. TWSC = Two-Way-Stop Control, AWSC = All-Way-Stop Control
2. For TWSC intersection, worst-case movement delays (in seconds/vehicle) is indicated. "Average" control delays (in seconds/vehicle) are indicated for AWSC and signal-controlled intersections. Delays reported in above table are from Synchro 8 software.
3. Bold numbers and letters represent condition where intersection does not meet minimum acceptable standards.

As shown in **Table 14**, the SR 49 (North Washington Street)/SR 49 and North Washington Street/Columbia Way and South Washington Street and Church Street intersections are projected to operate at year 2040 PM peak hour LOS "F" conditions under all four alternative growth scenarios. The Shaws Flat Road and SR 49 intersection is projected to operate at year 2040 PM peak hour LOS "E" conditions under the "Recent Trends (Existing)" growth scenario. All other study intersections are projected to operate at acceptable year 2040 AM peak hour conditions under all four alternative growth scenarios.

All unsignalized intersections projected to meet signal warrants under Year 2040 PM peak hour conditions are shown in **Table 15**.

Table 15. Year 2040 Intersections that Meet Signal Warrants – PM Peak Hour

#	Intersection	Control Type	Distinctive Communities (Proposed)	Public Services (Proposed)	Recent Trends (Existing)	Recent Trends (Proposed)
			Warrant Met?	Warrant Met?	Warrant Met?	Warrant Met?
2	SR 120 & SR 108-SR 120/SR 108	TWSC	**YES**	**YES**	**YES**	**YES**
4	SR 49 (Montezuma Rd) & SR 120/SR 49-SR 120	TWSC	**YES**	**YES**	**YES**	**YES**
5	SR 49-SR 108 & Chicken Ranch Rd	TWSC	**YES**	**YES**	**YES**	**YES**
6	SR 49-SR 108 & Main St	TWSC	**YES**	**YES**	**YES**	**YES**
11	SR 49-SR 108/SR 108 & SR 49 (Stockton Rd)	TWSC	**YES**	**YES**	**YES**	**YES**
18	SR 49 (Stockton Rd) & E. Savemart Drwy	TWSC	**YES**	**YES**	**YES**	**YES**
19	SR 49 (N Washington St)/SR 49 & N Washington St/Columbia Way	TWSC	**YES**	**YES**	**YES**	**YES**
21	SR 49 (N Washington St) & W Snell St/Elkin St	TWSC	**YES**	**YES**	**YES**	**YES**
24	S Washington St & Church St	TWSC	**YES**	**YES**	**YES**	**YES**
39	Tuolumne Rd & Soulsbyville Rd	TWSC	**YES**	**YES**	**YES**	**YES**
41	SR 120 (Main St) & Ferretti Rd	TWSC	**YES**	**YES**	**YES**	**YES**

Notes: Warrant = California MUTCD 2012 based Peak-hour-Volume Warrant #3 (70% Factor).

As shown in **Table 15**, California MUTCD based traffic signal Peak Hour Warrant 3 (70%-Factor) is projected to be met at 11 unsignalized study intersections under year 2040 PM peak hour conditions under all four alternative growth scenarios.

All improvements and mitigation measures are discussed in a subsequent section of this report.

ROADWAY SEGMENTS

Roadway operations for all 150 study roadway segments under year 2040 average daily conditions, all four alternative growth scenarios, and year 2040 roadway capacity configurations were quantified utilizing roadway ADT-based LOS thresholds presented in **Table 2.** The results are summarized in **Appendix Tables 10 and 11** and **Appendix Figures 12-19.** Operations for all roadway segments projected to operate below acceptable standards under Year 2040 average daily conditions are shown in **Table 16**.

Table 16. Year 2040 Roadways with Unacceptable LOS

#	Roadway Segment	Type #	LOS Std.	Distinctive Communities (Proposed)		Public Services (Proposed)		Recent Trends (Existing)		Recent Trends (Proposed)	
				AADT	LOS	AADT	LOS	AADT	LOS	AADT	LOS
5	SR 108 b/w SR 49 (Stockton Rd) and S Washington St/Lime Kiln Rd	210	D	**22,966**	**E**	**22,970**	**E**	**23,202**	**E**	**23,090**	**E**
31	SR 49 b/w Stockton Rd and Dodge St	211	D	**17,924**	**E**	**17,966**	**E**	**18,064**	**E**	**17,782**	**E**
32	SR 49 n/o Dodge St	211	D	15,929	D	15,967	D	**16,127**	**E**	15,946	D
52	Mono Way w/o Sanguinetti Rd	210	D	**22,416**	**E**	**22,258**	**E**	**21,708**	**E**	**22,211**	**E**
62	Parrotts Ferry Rd b/w SR 49 & Sawmill Flat Rd	213	D	12,763	D	12,799	D	**12,985**	**E**	**12,914**	**E**
69	Greenley Rd b/w Cabezut Rd/ Morning Star Rd & Delnero Dr	212	D	**15,932**	**E**	**16,585**	**E**	**16,132**	**E**	**16,221**	**E**
116	S Washington St b/w Restano Way & Church St	212	D	**17,706**	**E**	**17,623**	**E**	**17,716**	**E**	**17,514**	**E**

Notes: AADT = Annual Average Daily Traffic, LOS = Level of Service

As shown in **Table 16**, the following roadway segments are projected to operate at unacceptable Year 2040 LOS "E" conditions on an AADT basis under all four alternative growth scenarios: SR 108 between SR 49 (Stockton Road) and South Washington St/Lime Kiln Road, SR 49 between Stockton Road and Dodge Street, Mono Way west of Sanguinetti Road, Greenley Road between Cabezut Road/Morning Star Road and Delnero Drive, and South Washington Street between Restano Way and Church Street. The segment of SR 49 north of Dodge Street is projected to operate at unacceptable Year 2040 LOS "E" conditions on an AADT basis under the Recent Trends (Existing) scenario. The segment of Parrotts Ferry Road between SR 49 and Sawmill Flat Road is projected to operate at unacceptable Year 2040 LOS "E" conditions on an AADT basis under the Recent Trends (Existing) and Recent Trends (Proposed) scenarios. Note that the projected Year 2040 AADT volumes for roadway segments 32 and 62 are very close to the LOS D/E border under all four alternative growth scenarios. All other study roadway segments are projected to operate at acceptable year 2040 AADT LOS or better conditions under all four alternative growth scenarios.

All improvements and mitigation measures are discussed in a subsequent section of this report.

The *Synchro* based LOS outputs and California MUTCD based Traffic Signal Peak hour Warrant 3 (70% Factor) worksheets for all future years and alternative growth scenarios are included in **Appendix Attachments 1** and **2**, respectively.

CHAPTER 5 –IMPACTS AND MITIGATION MEASURES

This section summarizes future year traffic impacts, their significance on critical study area transportation facilities, and appropriate improvements and mitigation measures to alleviate those impacts to acceptable levels. A discussion of planned roadway improvements that are assumed constructed by future year conditions were presented in the preceding sections of this report. It should be noted that all improvement/mitigation recommendations contained herein are conceptual planning/program level recommendations only.

EXISTING CONDITIONS

The Traffic Study Report is a planning level analysis that quantifies existing and future traffic conditions with proposed improvements. The forecasted LOS traffic impacts and associated improvements will be reconsidered on a project by project basis with a thorough operational analysis.

INTERSECTIONS

***Intx – 5. SR 49-SR 108 and Chicken Ranch Road*:**

Impact: The SR 49–SR 108 and Chicken Ranch Road intersection is currently operating at unacceptable PM peak hour LOS "E" conditions for the worst-case movement. California MUTCD based traffic signal Peak Hour Warrant 3 (70% Factor) is currently met at this intersection under PM peak hour conditions.

Mitigation: SR 49-SR 108 near Chicken Ranch Road is planned (according to TCTC's current list of mid-range capital improvement projects) to be widened to five lanes by year 2030. With the planned widening in place, the SR 49-SR 108 and Chicken Ranch Road intersection is projected to operate at acceptable AM and PM peak hour LOS "C" or better conditions.

***Intx – 8. Main Street/Jamestown Road and SR 49–SR 108*:**

Impact: The Main Street/Jamestown Road and SR 49–SR 108 intersection is currently operating at unacceptable AM and PM peak hour LOS "F" conditions for the worst-case movement. California MUTCD based traffic signal Peak Hour Warrant 3 (70% Factor) is currently met at this intersection under AM and PM peak hour conditions.

Mitigation: The Main Street/Jamestown Road and SR 49–SR 108 intersection is planned (according to TCTC's current list of mid-range capital improvement projects) to be realigned/eliminated by year 2030. The realigned Jamestown Road and SR 49-SR 108 intersection would only allow right-turn-in movements and no out movements to/from Jamestown Road. With the planned improvements in place, there would no longer be any conflicting movements at this intersection.

***Intx – 9. Fifth Avenue and SR 49-SR 108*:**

Impact: The Fifth Avenue and SR 49-SR 108 intersection is currently operating at unacceptable AM and PM peak hour LOS "F" conditions for the worst-case movement. California MUTCD based traffic signal Peak Hour Warrant 3 (70% Factor) is currently met at this intersection under AM and PM peak hour conditions.

Mitigation: The Fifth Avenue and SR 49-SR 108 intersection is planned (according to TCTC's current list of mid-range capital improvement projects) to be realigned and signalized by year 2030. With the planned signalization in place, the Fifth Avenue and SR 49-SR 108 intersection is projected to operate at acceptable AM and PM peak hour LOS "B" or better conditions.

***Intx – 11. SR 49-SR 108 and SR 49 (Stockton Road)*:**

Impact: The SR 49-SR 108 and SR 49 (Stockton Road) intersection is currently operating at unacceptable AM and PM peak hour LOS "E/F" conditions for the worst-case movement. California MUTCD based traffic signal Peak Hour Warrant 3 (70% Factor) is currently met at this intersection under AM and PM peak hour conditions.

Mitigation: SR 108-SR 49 is planned (according to TCTC's current list of mid-range capital improvement projects) to be widened to five lanes through the SR 49-SR 108 and SR 49 (Stockton Road) intersection by year 2030. With the planned widening in place, the SR 49-SR 108 and SR 49 (Stockton Road) intersection is projected to operate at AM and PM peak hour LOS "D" or better conditions.

Alternatively, Caltrans could consider initiating a safety study and moving forward with a Project Initiation Document to determine what type of capital improvements are needed at this intersection.

***Intx – 13. Parrotts Ferry Road and Sawmill Flat Road*:**

Impact: The Parrotts Ferry Road and Sawmill Flat Road intersection is currently operating at unacceptable AM and PM peak hour LOS "E/F" conditions for the worst-case movement. California MUTCD based traffic signal Peak Hour Warrant 3 (70% Factor) is currently met at this intersection under AM and PM peak hour conditions.

Mitigation: Signalization of the Parrotts Ferry Road and Sawmill Flat Road intersection is listed in TCTC's list of long-range capital improvement projects. In this study, the long-range capital improvement projects are not assumed to be complete until year 2040. In order to achieve acceptable LOS under Existing conditions, it is recommended that the Parrotts Ferry Road and Sawmill Flat Road intersection be signalized by 2030. With the recommended improvements in place, Parrotts Ferry Road and Sawmill Flat Road intersection is projected to operate at acceptable Existing AM and PM peak hour LOS "B" or better conditions.

Intx – 19 and 20. SR 49 (North Washington Street)/SR 49 intersections with North Washington Street/Columbia Way and School Street:

Impact: The SR 49 (North Washington Street)/SR 49 intersections with North Washington Street/Columbia Way and School Street are currently operating at unacceptable AM and PM peak hour LOS "E/F" conditions. California MUTCD based traffic signal Peak Hour Warrant 3 (70% Factor) is currently met at this intersection under AM and PM peak hour conditions.

Mitigation: Delay at these intersections is projected to decrease with the construction of the planned Greenley Road Extension (listed in TCTC's list of Capital Improvement Projects). However, while the SR 49 (North Washington Street)/SR 49 intersection with School Street is projected to operate at acceptable AM and PM peak hour LOS conditions with the construction of the Greenley Extension, the SR 49 (North Washington Street)/SR 49 intersection with North Washington Street/Columbia Way intersection is still projected to operate at unacceptable peak hour LOS conditions.

A feasible improvement measure for this intersection is to install a traffic signal at the SR 49 (North Washington Street)/SR 49 and North Washington Street/Columbia Way intersection. With the recommended improvements in place, the SR 49 (North Washington Street)/SR 49 and North Washington Street/Columbia Way intersection is projected to operate at acceptable AM and PM peak hour LOS "A" conditions.

Another feasible improvement measure is to construct a roundabout at both intersections 19 and 20. With this proposed CIP, the SR 49 (North Washington Street)/SR 49 and North Washington Street/Columbia Way and School Street intersection is projected to operate at acceptable AM and PM peak hour LOS "B" or better conditions.

***Intx – 23. South Washington Street/SR 49 (South Washington Street) and SR 49 (Stockton Road)*:**

Impact: The South Washington Street/SR 49 (South Washington Street) and SR 49 (Stockton Road) intersection is currently operating at unacceptable AM and PM peak hour average intersection LOS "E" conditions.

Mitigation: Delay at this intersection is projected to decrease with the construction of the planned Greenley Road Bypass (listed in TCTC's list of Capital Improvement Projects). As a result, the South Washington Street/SR 49 (South Washington Street) and SR 49 (Stockton Road) intersection is projected to operate at acceptable LOS "D" or better conditions with the above planned bypass.

***Intx – 24. South Washington Street and Church Street*:**

Impact: The South Washington Street and Church Street intersection is currently operating at unacceptable PM peak hour LOS "E" conditions. California MUTCD based traffic signal Peak Hour Warrant 3 (70% Factor) is currently met at this intersection under PM peak hour conditions.

Mitigation: A feasible improvement measure for this intersection is to install a traffic signal. However, due to the close proximity to another signalized intersection, installation of a traffic signal may not be possible. With the recommended signal improvement in place, the South Washington Street and Church Street intersection is projected to operate at acceptable AM and PM peak hour LOS "A" conditions.

Another feasible improvement measure is to restrict the westbound approach to right-turn-only during peak hours. The eastbound approach is currently restricted to right-turn-only during peak hours. Changing the westbound approach to right-turn-only would be possible due to the very low westbound left-turn and through movements. With the westbound right-turn-only improvements in place, the South Washington Street and Church Street intersection is projected to operate at acceptable AM and PM peak hour LOS "C" or better conditions for the worst case movement.

***Intx – 38. Woodham Carne Road/Black Oak Road and Tuolumne Road*:**

Impact: The Woodham Carne Road/Black Oak Road and Tuolumne Road intersection is currently operating at unacceptable AM peak hour LOS "E" conditions for the worst-case movement. California MUTCD based traffic signal Peak Hour Warrant 3 (70% Factor) is currently not met at this intersection under AM and PM peak hour conditions.

Mitigation: Signalization of the Woodham Carne Road/Black Oak Road and Tuolumne Road intersection is listed in TCTC's list of long-range capital improvement projects. In this study, the long-range capital improvement projects are not assumed to be complete until year 2040. In order to achieve acceptable LOS under Existing conditions, a feasible option is to signalize the Woodham Carne Road/Black Oak Road and Tuolumne Road intersection sooner than the currently planned 2040. With this improvement in place, the Woodham Carne Road/Black Oak Road and Tuolumne Road intersection is projected to operate at acceptable AM and PM peak hour LOS "B" or better conditions.

***Intx – 39. Tuolumne Road and Soulsbyville Road*:**

Impact: The Tuolumne Road and Soulsbyville Road intersection is currently operating at unacceptable AM peak hour LOS "F" conditions for the worst-case movement. California MUTCD based traffic signal Peak Hour Warrant 3 (70% Factor) is currently met at this intersection under AM peak hour conditions.

Mitigation: A feasible improvement measure for this intersection is to construct a two-way left-turn median on Tuolumne Road, allowing the southbound left movement to have two-stage gap-acceptance. With the recommended two-way left-turn median improvement, the Tuolumne Road

and Soulsbyville Road intersection is projected to operate at acceptable AM and PM peak hour LOS "D" or better conditions for the worst-case movement.

Since MUTCD Signal Warrant #3 is met for this intersection, another feasible improvement measure for this intersection is to install a signal. With the recommended signalization improvement, the Tuolumne Road and Soulsbyville Road intersection is projected to operate at acceptable AM and PM peak hour LOS "C" or better conditions.

Individual Turning Movements:

A number of study intersections are currently operating at acceptable LOS "D" or better under Existing conditions, but contain at least one individual movement operating at an unacceptable LOS. The following list summarizes each intersection operating acceptably under Existing conditions, that intersection's failing movement(s) for both AM and PM peak hours, and the recommended improvements that may alleviate that movement's unacceptable LOS. A detailed list of the below intersections can be found in **Appendix Table 9**.

- **Intx – 27. Lime Kiln Road / South Washington Street and SR 108:**
    - Movement(s) Operating Unacceptably: Southbound Through.
    - Recommended Improvements / Mitigation: This intersection is planned to be improved (according to TCTC's current list of mid-range capital improvement projects). The planned improvement is to add a southbound left-turn lane and dedicated southbound right-turn lane (Year 2030 Planned Improvement Project). With this planned improvement in place, the formerly deficient turning movement is projected to operate at acceptable LOS "D" or better conditions.

ROADWAY SEGMENTS

***Rdwy – 24. SR 49 between Bell Mooney Road and South Junction Main Street*:**

Impact: The segment of SR 49 between Bell Mooney Road and South Junction Main Street is currently operating at unacceptable ADT-based LOS "E" conditions.

Mitigation: The segment of SR 49 between Bell Mooney Road and South Junction Main Street is currently planned to be widened to five lanes (according to TCTC's current list of mid-range capital improvement projects). With this planned improvement in place, the segment of SR 49 between Bell Mooney Road and South Junction Main Street is projected to operate at acceptable LOS "B" or better conditions.

***Rdwy – 27. SR 49 between Fifth Avenue and East Junction SR 108*:**

Impact: The segment of SR 49 between Fifth Avenue and East Junction SR 108 is currently operating at unacceptable ADT-based LOS "E" conditions.

Mitigation: The segment of SR 49 between Fifth Avenue and East Junction SR 108 is currently planned to be widened to five lanes (according to TCTC's current list of mid-range capital improvement projects). With this planned improvement in place, the segment of SR 49 between Fifth Avenue and East Junction SR 108 is projected to operate at acceptable LOS "B" or better conditions.

***Rdwy – 31. SR 49 between Stockton Road and Dodge Street*:**

Impact: The segment of SR 49 between Stockton Road and Dodge Street is currently operating at unacceptable ADT-based LOS "E" conditions.

Mitigation: Traffic volumes on the segment of SR 49 between Stockton Road and Dodge Street are projected to decrease with the construction of the proposed Greenley Road Bypass (listed in TCTC's list of Capital Improvement Projects); however, the projected decrease is not substantial enough for

the segment of SR 49 between Stockton Road and Dodge Street to operate at acceptable AM and PM peak hour LOS conditions.

A feasible improvement measure for this roadway segment is to construct the Western Bypass that would extend from SR 108/49 (south of Jamestown) to Rawhide Road and may reduce traffic on this segment of SR 49.

Another feasible improvement measure is to improve alternative modes of transportation along this roadway segment, such as transit service or bicycle and pedestrian infrastructure.

***Rdwy – 32. SR 49 north of Dodge Street*:**

Impact: The segment of SR 49 north of Dodge Street is currently operating at unacceptable ADT-based LOS "E" conditions.

Mitigation: Traffic volumes on the segment of SR 49 north of Dodge Street are projected to decrease with the construction of the proposed Greenley Road Bypass (listed in TCTC's list of Capital Improvement Projects). As a result, the segment of SR 49 north of Dodge Street is projected to operate at acceptable LOS "D" or better conditions with the above planned bypass.

***Rdwy – 33. SR 49 south of North Washington Street / Columbia Way*:**

Impact: The segment of SR 49 south of North Washington Street / Columbia Way is currently operating at unacceptable ADT-based LOS "E" conditions.

Mitigation: Traffic volumes on the segment of SR 49 south of North Washington Street / Columbia Way are projected to decrease with the construction of the proposed Greenley Road Bypass (listed in TCTC's list of Capital Improvement Projects). As a result, the segment of SR 49 south of North Washington Street / Columbia Way is projected to operate at acceptable LOS "D" or better conditions with the above planned bypass.

***Rdwy – 52. Mono Way west of Sanguinetti Road*:**

Impact: The segment of Mono Way west of Sanguinetti Road is currently operating at unacceptable ADT-based LOS "E" conditions.

Mitigation: Traffic volumes on the segment of Mono Way west of Sanguinetti Road are projected to decrease with the construction of the proposed Greenley Road Bypass (listed in TCTC's list of Capital Improvement Projects); however, the projected decrease is not substantial enough for the segment of Mono Way west of Sanguinetti Road to operate at acceptable AM and PM peak hour LOS conditions.

A feasible improvement measure for this roadway segment is to construct the North-South Connector Phase 2 that would extend Fir Drive from Mono Way to the Greenly Road Extension, which may reduce traffic on this segment of Mono Way.

Another feasible improvement measure is to improve alternative modes of transportation along this roadway segment, such as transit service or bicycle and pedestrian infrastructure.

***Rdwy – 116. South Washington Street between Restano Way and Church Street*:**

Impact: The segment of South Washington Street between Restano Way and Church Street is currently operating at unacceptable ADT-based LOS "E" conditions.

Mitigation: Traffic volumes on the segment of South Washington Street between Restano Way and Church Street are projected to decrease with the construction of the proposed Greenley Road Bypass (listed in TCTC's list of Capital Improvement Projects); however, the projected decrease is not substantial enough for the segment of South Washington Street between Restano Way and Church Street to operate at acceptable AM and PM peak hour LOS conditions.

A feasible improvement measure for this roadway segment is to construct the North-South Connector Phase 2 that would extend Fir Drive from Mono Way to the Greenly Road Extension, which may reduce traffic on this segment of Mono Way.

Another feasible improvement measure is to improve alternative modes of transportation along this roadway segment, such as transit service or bicycle and pedestrian infrastructure.

YEAR 2030 CONDITIONS

The Traffic Study Report is a planning level analysis that quantifies existing and future traffic conditions with proposed improvements. The forecasted LOS traffic impacts and associated improvements will be reconsidered on a project by project basis with a thorough operational analysis.

INTERSECTIONS

***Intx – 13. Parrotts Ferry Road and Sawmill Flat Road*:**

Impact: The Parrotts Ferry Road and Sawmill Flat Road intersection is projected to operate at unacceptable year 2030 AM and PM peak hour LOS "F" conditions under all alternative growth scenarios for the worst-case movement. California MUTCD based traffic signal Peak Hour Warrant 3 (70% Factor) is projected to be met at this intersection under year 2030 AM and PM peak hour conditions under all alternative growth scenarios.

Mitigation: Signalization of the Parrotts Ferry Road and Sawmill Flat Road intersection is listed in TCTC's list of long-range capital improvement projects. In this study, the long-range capital improvement projects are not assumed to be complete until year 2040. In order to achieve acceptable LOS under year 2030 conditions, it is recommended that the Parrotts Ferry Road and Sawmill Flat Road intersection be signalized by year 2030. With the recommended improvements in place, Parrotts Ferry Road and Sawmill Flat Road intersection is projected to operate at acceptable year 2030 AM and PM peak hour LOS "B" or better conditions under all alternative growth scenarios.

Intx – 19. SR 49 (North Washington Street)/SR 49 and North Washington Street/Columbia Way:

Impact: The SR 49 (North Washington Street)/SR 49 and North Washington Street/Columbia Way intersection is projected to operate at unacceptable year 2030 AM and PM peak hour LOS "E/F" conditions under all alternative growth scenarios for the worst-case movement. California MUTCD based traffic signal Peak Hour Warrant 3 (70% Factor) is projected to be met at this intersection under year 2030 AM and PM peak hour conditions under all alternative growth scenarios.

Mitigation: A feasible improvement measure for this intersection is to install a traffic signal. With the recommended improvements in place, the SR 49 (North Washington Street)/SR 49 and North Washington Street/Columbia Way intersection is projected to operate at acceptable year 2030 AM and PM peak hour LOS "A" conditions under all alternative growth scenarios.

Another feasible improvement measure is to construct a roundabout at this intersection. With the proposed improvement, the SR 49 (North Washington Street)/SR 49 and North Washington Street/Columbia Way intersection is projected to operate at acceptable AM and PM peak hour LOS "B" or better conditions.

***Intx – 24. South Washington Street and Church Street*:**

Impact: The South Washington Street and Church Street intersection is projected to operate at unacceptable year 2030 AM and PM peak hour LOS "E" and "F" conditions, respectively, under all alternative growth scenarios. California MUTCD based traffic signal Peak Hour Warrant 3 (70% Factor) is projected to be met at this intersection under year 2030 PM peak hour conditions under all alternative growth scenarios.

Mitigation: A feasible improvement measure for this intersection is to install a traffic signal. However, due to the close proximity to another signalized intersection, installation of a traffic signal may not be possible. With the recommended signal improvement in place, the South Washington Street and Church Street intersection is projected to operate at acceptable year 2030 AM and PM peak hour LOS "A" conditions under all alternative growth scenarios.

Another feasible improvement measure is to restrict the westbound approach to right-turn-only during peak hours. The eastbound approach is currently restricted to right-turn-only during peak hours. Changing the westbound approach to right-turn-only would be possible due to the very low westbound left-turn and through movements. With the westbound right-turn-only improvements in place, the South Washington Street and Church Street intersection is projected to operate at acceptable year 2030 AM and PM peak hour LOS "C" conditions under all alternative growth scenarios for the worst case movement.

***Intx – 38. Woodham Carne Road/Black Oak Road and Tuolumne Road*:**

Impact: The Woodham Carne Road/Black Oak Road and Tuolumne Road intersection is projected to operate at unacceptable year 2030 AM and PM peak hour LOS "E/F" conditions under all alternative growth scenarios for the worst-case movement. California MUTCD based traffic signal Peak Hour Warrant 3 (70% Factor) is projected to be met at this intersection under year 2030 AM and PM peak hour conditions under all alternative growth scenarios.

Mitigation: Signalization of the Woodham Carne Road/Black Oak Road and Tuolumne Road intersection is listed in TCTC's list of long-range capital improvement projects. In this study, the long-range capital improvement projects are not assumed to be complete until year 2040. In order to achieve acceptable LOS under year 2030 conditions, it is recommended that the Woodham Carne Road/Black Oak Road and Tuolumne Road intersection be signalized by year 2030. With the recommended improvements in place, Woodham Carne Road/Black Oak Road and Tuolumne Road intersection is projected to operate at acceptable year 2030 AM and PM peak hour LOS "B" or better conditions under all alternative growth scenarios.

***Intx – 39. Tuolumne Road and Soulsbyville Road*:**

Impact: The Tuolumne Road and Soulsbyville Road intersection is projected to operate at unacceptable year 2030 AM peak hour LOS "F" conditions under all alternative growth scenarios for the worst-case movement. California MUTCD based traffic signal Peak Hour Warrant 3 (70% Factor) is projected to be met at this intersection under year 2030 AM and PM peak hour conditions under all alternative growth scenarios.

Mitigation: A feasible improvement measure for this intersection is to construct a two-way left-turn median on Tuolumne Road, allowing the southbound left movement to have two-stage gap-acceptance. With the recommended two-way left-turn median improvement, the Tuolumne Road and Soulsbyville Road intersection is projected to operate at acceptable year 2030 AM and PM peak hour LOS "D" or better conditions under all alternative growth scenarios for the worst-case movement.

Since MUTCD Signal Warrant #3 is met for this intersection, another feasible improvement measure for this intersection is to install a signal. With the recommended signalization improvement, the Tuolumne Road and Soulsbyville Road intersection is projected to operate at acceptable year 2030 AM and PM peak hour LOS "C" or better conditions under all alternative growth scenarios.

Individual Turning Movements:

A number of study intersections are currently operating at acceptable LOS "D" or better under Year 2030 conditions, but contain at least one individual movement operating at an unacceptable LOS. The following list summarizes each intersection operating acceptably under Year 2030 conditions, that intersection's failing movement(s) for both AM and PM peak hours, and the recommended

improvements that may alleviate that movement's unacceptable LOS. A detailed list of the below intersections can be found in **Appendix Table 9**.

- **Intx – 9. 5th Avenue and SR 49-SR 108:**
  - Movement(s) Operating Unacceptably: Westbound Left.
  - Recommended Improvements / Mitigation: Protected eastbound and westbound left-turn.
- **Intx – 23. South Washington Street / SR 49 (South Washington Street) and SR 49 (Stockton Road):**
  - Movement(s) Operating Unacceptably: Northbound Left, Southbound Through.
  - Recommended Improvements / Mitigation: Add northbound left-turn lane, southbound right-turn lane, overlap eastbound right-turn.
- **Intx – 28. Greenley Road and Lyons Bald Mountain Road:**
  - Movement(s) Operating Unacceptably: Westbound Left.
  - Recommended Improvements / Mitigation: Signal timing.
- **Intx – 29. Greenley Road and Morning Star Drive / Cabezut Road:**
  - Movement(s) Operating Unacceptably: Northbound Left, Southbound Left.
  - Recommended Improvements / Mitigation: Add northbound right-turn lane, overlap northbound right-turn and southbound right-turn.

ROADWAY SEGMENTS

***Rdwy – 5. SR 108 between SR 49 (Stockton Road) and South Washington Street/Lime Kiln Road*:**

Impact: The segment of SR 108 between SR 49 (Stockton Road) and South Washington Street/Lime Kiln Road is projected to operate at unacceptable year 2030 ADT-based LOS "E" conditions under all alternative growth scenarios.

Mitigation: A feasible improvement measure for this roadway segment is to widen the segment to four lanes. With the recommended improvements in place, the segment of SR 108 between SR 49 (Stockton Road) and South Washington Street/Lime Kiln Road is projected to operate at acceptable year 2030 ADT-based LOS "C" conditions under all alternative growth scenarios.

***Rdwy – 31. SR 49 between Stockton Road and Dodge Street*:**

Impact: The segment of SR 49 between Stockton Road and Dodge Street is projected to operate at unacceptable year 2030 ADT-based LOS "E" conditions under all alternative growth scenarios.

Mitigation: Construction of the North-South Connector Phase 2 (Fir Drive Extension) that would extend Fir Drive from Mono Way to the Greenley Road Extension, intersecting with Cabezut Road and Lyons Bald Mountain Road in between, may reduce traffic on this segment of SR 49 by up to 5%.

A feasible improvement measure for this roadway segment is to construct the Western Bypass that would extend from SR 108/49 (south of Jamestown) to Rawhide Road and may reduce traffic on this segment of SR 49.

Another feasible improvement measure is to improve alternative modes of transportation along this roadway segment, such as transit service or bicycle and pedestrian infrastructure.

***Rdwy – 52. Mono Way west of Sanguinetti Road*:**

Impact: The segment of Mono Way west of Sanguinetti Road is projected to operate at unacceptable year 2030 ADT-based LOS "E" conditions under the Distinctive Communities (Proposed) and Public Services (Proposed) alternative growth scenarios. Note that the projected Year 2030 AADT volumes for this segment are very close to the LOS "D/E" border for a 2-Lane Principal/Minor Arterial (with left-turn lane) under all four alternative growth scenarios.

Mitigation: Traffic volumes on the segment of Mono Way west of Sanguinetti Road are projected to decrease with the construction of the proposed Greenley Road Bypass (listed in TCTC's list of Capital Improvement Projects); however, the projected decrease is not substantial enough for the segment of Mono Way west of Sanguinetti Road to operate at acceptable AM and PM peak hour LOS conditions.

A feasible improvement measure for this roadway segment is to construct the North-South Connector Phase 2 that would extend Fir Drive from Mono Way to the Greenly Road Extension, which may reduce traffic on this segment of Mono Way.

Another feasible improvement measure is to improve alternative modes of transportation along this roadway segment, such as transit service or bicycle and pedestrian infrastructure.

***Rdwy – 77. Tuolumne Road between Mono Way and Lambert Lake Road*:**

Impact: The segment of Tuolumne Road between Mono Way and Lambert Lake Road is projected to operate at unacceptable year 2030 ADT-based LOS "E" conditions under the Public Services (Proposed) and Recent Trends (Existing) alternative growth scenarios. Note that the projected Year 2030 AADT volumes for this segment are very close to the LOS "D/E" border for a 2-Lane Major/Minor Collector (with left-turn lane) under all four alternative growth scenarios.

Mitigation: The segment of Tuolumne Road between Mono Way and Lambert Lake Road is currently planned to be widened to five lanes (according to TCTC's current list of mid-range capital improvement projects). With this planned improvement in place, the segment of Tuolumne Road between Mono Way and Lambert Lake Road is projected to operate at acceptable LOS "A" conditions.

***Rdwy – 116. South Washington Street between Restano Way and Church Street*:**

Impact: The segment of South Washington Street between Restano Way and Church Street is projected to operate at unacceptable year 2030 ADT-based LOS "E" conditions under all alternative growth scenarios.

Mitigation: A feasible improvement measure for this roadway segment is to construct the North-South Connector Phase 2 that would extend Fir Drive from Mono Way to the Greenly Road Extension, which may reduce traffic on this segment of Mono Way.

Another feasible improvement measure is to improve alternative modes of transportation along this roadway segment, such as transit service or bicycle and pedestrian infrastructure.

YEAR 2040 CONDITIONS

"The Traffic Study Report is a planning level analysis that quantifies existing and future traffic conditions with proposed improvements. The forecasted LOS traffic impacts and associated improvements will be reconsidered on a project by project basis with a thorough operational analysis."

INTERSECTIONS

***Intx – 12. Shaws Flat Road and SR 49*:**

Impact: The Shaws Flat Road and SR 49 intersection is projected to operate at unacceptable year 2040 PM peak hour LOS "E" conditions under the Recent Trends (Existing) growth scenario for the worst-case movement.

Mitigation: A feasible improvement measure for this intersection is construction of a westbound left-turn pocket. With the recommended improvements in place, the Shaws Flat Road and SR 49 intersection is projected to operate at acceptable year 2040 PM peak hour LOS "D" or better conditions under all alternative growth scenarios.

Intx – 19. SR 49 (North Washington Street)/SR 49 and North Washington Street/Columbia Way:

Impact: The SR 49 (North Washington Street)/SR 49 and North Washington Street/Columbia Way intersection is projected to operate at unacceptable year 2040 AM and PM peak hour LOS "E/F" conditions under all alternative growth scenarios for the worst-case movement. California MUTCD based traffic signal Peak Hour Warrant 3 (70% Factor) is projected to be met at this intersection under year 2040 AM and PM peak hour conditions under all alternative growth scenarios.

Mitigation: A feasible improvement measure for this intersection is to install a traffic signal. With the recommended improvements in place, the SR 49 (North Washington Street)/SR 49 and North Washington Street/Columbia Way intersection is projected to operate at acceptable year 2040 AM and PM peak hour LOS "A" conditions under all alternative growth scenarios.

Another feasible improvement measure is to construct a roundabout at this intersection. With the proposed improvement, the SR 49 (North Washington Street)/SR 49 and North Washington Street/Columbia Way intersection is projected to operate at acceptable AM and PM peak hour LOS "B" or better conditions.

***Intx – 23. South Washington Street/SR 49 (South Washington Street) and SR 49 (Stockton Road)*:**

Impact: The South Washington Street/SR 49 (South Washington Street) and SR 49 (Stockton Road) intersection is projected to operate at unacceptable year 2040 AM peak hour average intersection LOS "E" conditions under the Distinctive Communities (Proposed), Public Services (Proposed), and Recent Trends (Existing) scenarios. Note that the intersection is operating within a second of the LOS "D/E" border under Recent Trends (Proposed) AM peak hour conditions. The northbound left-turn and southbound through movements are projected to operate below LOS "D" conditions under Recent Trends (Proposed) Year 2040 AM and PM peak hour conditions.

Mitigation: A feasible improvement measure for this intersection is to construct a southbound right turn pocket. With the recommended improvements in place, the South Washington Street/SR 49 (South Washington Street) and SR 49 (Stockton Road) intersection is projected to operate at acceptable year 2040 AM and PM peak hour LOS "D" conditions under all alternative growth scenarios. The north leg of this intersection appears to have been constructed to its ultimate configuration with buildings, sidewalk, etc. on both east and west sides of the leg. Addition of the recommended southbound right-turn lane may not be implementable due to right-of-way and current buildings. This intersection may continue to operate at unacceptable LOS until other feasible mitigations have been investigated and implemented.

Another feasible improvement measure for this roadway segment is to construct the Western Bypass that would extend from SR 108/49 (south of Jamestown) to Rawhide Road and may reduce traffic on this segment of SR 49.

Another feasible improvement measure would is to improve alternative modes of transportation along this roadway segment, such as transit service or bicycle and pedestrian infrastructure.

***Intx – 24. South Washington Street and Church Street*:**

Impact: The South Washington Street and Church Street intersection is projected to operate at unacceptable year 2040 AM and PM peak hour LOS "F" conditions under all alternative growth scenarios. California MUTCD based traffic signal Peak Hour Warrant 3 (70% Factor) is projected to be met at this intersection under year 2030 PM peak hour conditions under all alternative growth scenarios.

Mitigation: A feasible improvement measure for this intersection is to install a traffic signal. However, due to the close proximity to another signalized intersection, installation of a traffic signal may not be possible. With the recommended signal improvement in place, the South Washington Street and Church Street intersection is projected to operate at acceptable year 2040 AM and PM peak hour LOS "A" conditions under all alternative growth scenarios.

Another feasible improvement measure is to restrict the westbound approach to right-turn-only during peak hours. The eastbound approach is currently restricted to right-turn-only during peak hours. Changing the westbound approach to right-turn-only would be possible due to the very low westbound left-turn and through movements. With the westbound right-turn-only improvements in place, the South Washington Street and Church Street intersection is projected to operate at acceptable year 2040 AM and PM peak hour LOS "C" conditions under all alternative growth scenarios for the worst case movement.

***Intx – 39. Tuolumne Road and Soulsbyville Road*:**

Impact: The Tuolumne Road and Soulsbyville Road intersection is projected to operate at unacceptable year 2040 AM peak hour LOS "F" conditions under all alternative growth scenarios for the worst-case movement. California MUTCD based traffic signal Peak Hour Warrant 3 (70% Factor) is projected to be met at this intersection under year 2030 AM and PM peak hour conditions under all alternative growth scenarios.

Mitigation: A feasible improvement measure for this intersection is to construct a two-way left-turn median on Tuolumne Road, allowing the southbound left movement to have two-stage gap-acceptance. With the recommended two-way left-turn median improvement, the Tuolumne Road and Soulsbyville Road intersection is projected to operate at acceptable year 2040 AM and PM peak hour LOS "D" or better conditions under all alternative growth scenarios for the worst-case movement.

Since MUTCD Signal Warrant #3 is met for this intersection, another feasible improvement measure for this intersection is to install a signal. With the recommended signalization improvement, the Tuolumne Road and Soulsbyville Road intersection is projected to operate at acceptable year 2040 AM and PM peak hour LOS "C" or better conditions under all alternative growth scenarios.

Individual Turning Movements:

A number of study intersections are currently operating at acceptable LOS "D" or better under Year 2040 conditions, but contain at least one individual movement operating at an unacceptable LOS. The following list summarizes each intersection operating acceptably under Year 2040 conditions, that intersection's failing movement(s) for both AM and PM peak hours, and the recommended improvements that may alleviate that movement's unacceptable LOS. A detailed list of the below intersections can be found in **Appendix Table 9**.

- **Intx – 9. 5th Avenue and SR 49-SR 108:**
    - Movement(s) Operating Unacceptably: Westbound Left.
    - Recommended Improvements / Mitigation: Protected eastbound and westbound left-turn.

- **Intx – 28. Greenley Road and Lyons Bald Mountain Road:**
    - Movement(s) Operating Unacceptably: Westbound Left.
    - Recommended Improvements / Mitigation: Signal timing.
- **Intx – 29. Greenley Road and Morning Star Drive / Cabezut Road:**
    - Movement(s) Operating Unacceptably: Northbound Left, Northbound Through, Southbound Left.
    - Recommended Improvements / Mitigation: Add northbound right-turn lane, overlap northbound right-turn and southbound right-turn.
- **Intx – 30. Greenley Road and Mono Way:**
    - Movement(s) Operating Unacceptably: Southbound Left, Southbound Through.
    - Recommended Improvements / Mitigation: Add westbound right-turn lane.

ROADWAY SEGMENTS

***Rdwy – 5. SR 108 between SR 49 (Stockton Road) and South Washington Street/Lime Kiln Road*:**

Impact: The segment of SR 108 between SR 49 (Stockton Road) and South Washington Street/Lime Kiln Road is projected to operate at unacceptable year 2040 ADT-based LOS "E" conditions under all alternative growth scenarios.

Mitigation: A feasible improvement measure for this roadway segment is to widen the segment to four lanes. With the recommended improvements in place, the segment of SR 108 between SR 49 (Stockton Road) and South Washington Street/Lime Kiln Road is projected to operate at acceptable year 2040 ADT-based LOS "C" conditions under all alternative growth scenarios.

***Rdwy – 31. SR 49 between Stockton Road and Dodge Street*:**

Impact: The segment of SR 49 between Stockton Road and Dodge Street is projected to operate at unacceptable year 2040 ADT-based LOS "E" conditions under all alternative growth scenarios.

Mitigation: Construction of the North-South Connector Phase 2 (Fir Drive Extension) that would extend Fir Drive from Mono Way to the Greenley Road Extension, intersecting with Cabezut Road and Lyons Bald Mountain Road in between, may reduce traffic on this segment of SR 49 by up to 5%.

Another feasible improvement measure for this roadway segment is to construct the Western Bypass that would extend from SR 108/49 (south of Jamestown) to Rawhide Road and may reduce traffic on this segment of SR 49.

Another feasible improvement measure is to improve alternative modes of transportation along this roadway segment, such as transit service or bicycle and pedestrian infrastructure.

***Rdwy – 32. SR 49 north of Dodge Street*:**

Impact: The segment of SR 49 north of Dodge Street is projected to operate at unacceptable year 2040 ADT-based LOS "E" conditions under the Recent Trends (Existing) scenario. Note that the projected Year 2040 AADT volumes for this segment are very close to the LOS "D/E" border for a 2-Lane Principal/Minor Arterial (no left-turn lane) under all four alternative growth scenarios.

Mitigation: A feasible improvement measure for this roadway segment is to construct the Western Bypass that would extend from SR 108/49 (south of Jamestown) to Rawhide Road and may reduce traffic on this segment of SR 49.

Another feasible improvement measure is to improve alternative modes of transportation along this

roadway segment, such as transit service or bicycle and pedestrian infrastructure.

***Rdwy – 52. Mono Way west of Sanguinetti Road*:**

Impact: The segment of Mono Way west of Sanguinetti Road is projected to operate at unacceptable year 2040 ADT-based LOS "E" conditions under all alternative growth scenarios.

Mitigation: A feasible improvement measure for this roadway segment is to construct the North-South Connector Phase 2 that would extend Fir Drive from Mono Way to the Greenly Road Extension, which may reduce traffic on this segment of Mono Way.

Another feasible improvement measure is to improve alternative modes of transportation along this roadway segment, such as transit service or bicycle and pedestrian infrastructure.

***Rdwy – 62. Parrotts Ferry Road between SR 49 and Sawmill Flat Road*:**

Impact: The segment of Parrotts Ferry Road between SR 49 and Sawmill Flat Road is projected to operate at unacceptable year 2040 ADT-based LOS "E" conditions under the Recent Trends (Existing) and Recent Trends (Proposed) alternative growth scenarios. Note that the projected Year 2040 AADT volumes for this segment are very close to the LOS "D/E" border for a 2-Lane Major/Minor Collector (no left-turn lane) under all four alternative growth scenarios.

Mitigation: A feasible improvement measure for this roadway segment is to add a two-way left-turn median. With the recommended improvements in place, the segment of Mono Way west of Sanguinetti Road is projected to operate at acceptable year 2040 ADT-based LOS "D" conditions under all alternative growth scenarios.

Another feasible improvement measure is to widen Parrotts Ferry Road to five lanes from SR 49 to Sawmill Flat Road.

***Rdwy – 69. Greenley Road between Cabezut Road/Morning Star Road and Delnero Drive*:**

Impact: The segment of Greenley Road between Cabezut Road/Morning Star Road and Delnero Drive is projected to operate at unacceptable year 2040 ADT-based LOS "E" conditions under all alternative growth scenarios.

Mitigation: One feasible improvement measure for this roadway segment is to construct the North-South Connector Phase 2 (Fir Drive Extension) that would extend Fir Drive from Mono Way to the Greenley Road Extension, intersecting with Cabezut Road and Lyons Bald Mountain Road in between. With the construction of the North-South Connector Phase 2, traffic volumes on this segment of Greenley Road are projected to decrease by approximately 20%, and this segment of Greenley Road is projected to operate at acceptable year 2040 ADT-based LOS "D" or better conditions under all alternative growth scenarios.

Another feasible improvement measure for this roadway segment is to improve the segment to a 2-Lane Principal/Minor Arterial (with left-turn lane). With the recommended improvements in place, the segment of Greenley Road between Cabezut Road/Morning Star Road and Delnero Drive is projected to operate at acceptable year 2040 ADT-based LOS "D" conditions under all alternative growth scenarios.

Another feasible improvement measure is to construct the Cabezut Road Extension from the Fir Drive Road Extension to Phoenix Lake Road, which may reduce volumes on this segment of Greenley Road.

***Rdwy – 116. South Washington Street between Restano Way and Church Street*:**

Impact: The segment of South Washington Street between Restano Way and Church Street is

projected to operate at unacceptable year 2040 ADT-based LOS "E" conditions under all alternative growth scenarios.

Mitigation: A feasible improvement measure for this roadway segment is to construct the North-South Connector Phase 2 that would extend Fir Drive from Mono Way to the Greenly Road Extension, which may reduce traffic on this segment of Mono Way.

Another feasible improvement measure is to improve alternative modes of transportation along this roadway segment, such as transit service or bicycle and pedestrian infrastructure.

FUTURE YEAR IMPACTS ON PUBLIC TRANSIT AND NON-MOTORIZED MODES

Pedestrian and Bicycle Impacts:

Tuolumne County's RTP includes complete streets capital improvements in the City of Sonora and Tuolumne County. The RTP listed compete streets projects include, but are not limited to, the capital improvement projects listed in **Appendix Table 12**.

Future year alternative growth scenario conditions are not projected to have any significant impacts on Tuolumne County's existing plus planned projects pedestrian and bicycle system.

Public Transit Impacts:

Tuolumne County's RTP includes transit stop improvements in the City of Sonora and Tuolumne County. The RTP listed transit stop projects include, but are not limited to, the capital improvement projects listed in **Appendix Table 13**Error! Reference source not found..

Future year alternative growth scenario conditions are not projected to have any significant impacts on Tuolumne County's existing transit system.

ACCIDENT DATA ANALYSIS

Wood Rodgers reviewed available TSAR traffic accident data records and TASAS accident data summaries provided by Caltrans District 10 for the most recent three-year data period (April 1, 2010 through March 31, 2013) for segments of SR 49, SR 108, and SR 120 in the study area. The data is summarized in **Table 17**.

Table 17. Study Area Accident Data Summary

Segment Location (Post Mile)	Number of Accidents							Persons		Actual Accident Rates (# of accidents/ MVM)			Average Accident Rates (# of accidents/ MVM)		
	Tot	Fat	Inj	F+I	Multi Veh	Wet	Dark	Kld	Inj	Fat	F+I	Tot	Fat	F+I	Tot
SR 49															
PM 0.000 to PM 6.467 (Cnty Line to S Jctn 120)	23	0	15	15	7	2	4	0	21	0.000	**2.92**	**4.48**	0.043	0.98	1.96
PM 8.779 to PM 11.586 (N Jctn 120 to W Jctn 108)	12	1	5	6	5	4	3	1	8	**0.076**	**0.46**	**0.91**	0.018	0.30	0.68
PM 11.587 to PM 16.479 (W Jctn 108 to E Jctn 108)	102	1	44	45	80	9	18	1	60	0.011	**0.48**	1.08	0.015	0.47	1.12
PM 16.480 to PM 17.964 (E Jctn 108 to S Washington)	50	0	13	13	40	2	11	0	22	0.000	0.61	**2.33**	0.017	0.75	1.90
PM 17.965 to PM 18.489 (S Washington to Columbia)	64	0	15	15	57	2	5	0	27	0.000	**1.44**	**6.15**	0.018	0.83	2.21
PM 18.490 to PM 20.349 (Columbia to Parrotts Ferry)	44	0	15	15	29	6	4	0	22	0.000	0.51	**1.50**	0.016	0.61	1.46
PM 20.350 to PM 27.520 (Parrotts Ferry to Cnty Line)	40	0	20	20	13	8	8	0	24	0.000	0.48	0.96	0.028	0.66	1.38
SR 108															
PM 0.000 to PM 2.789 (E 120 Jctn to W 49 Jctn)	20	1	14	15	14	4	4	1	24	**0.022**	**0.32**	0.43	0.017	0.21	0.51
PM 0.000 to PM 4.199 (W Jctn 49 to Peaceful Oak)	44	0	19	19	25	5	15	0	26	0.000	0.22	0.50	0.019	0.43	0.97
PM 5.623 to PM 11.751 Peaceful Oak to Twain Harte)	67	4	28	32	33	4	19	4	60	**0.068**	**0.55**	**1.14**	0.009	0.30	0.74
PM 11.752 to PM 66.971 (Twain Harte to Cnty Line)	129	0	61	61	37	4	25	0	72	0.000	0.40	0.85	0.033	0.75	1.55
SR 120															
Combined PM 0.00 to PM 12.077 (Cnty Line to Jctn 108)	85	1	38	39	30	22	25	3	58	0.005	0.18	0.40	0.010	0.19	0.47
PM 12.077 to PM 15.515 (Jctn 108 to N Jctn 49)	17	0	8	8	11	1	3	0	13	0.000	**0.79**	**1.67**	0.027	0.59	1.26
PM 15.516 to PM 23.896 (N Jctn 49 to S Jctn 49)	23	1	12	13	9	0	4	1	20	**0.027**	**0.35**	**0.63**	0.017	0.24	0.56
PM 23.897 to PM 56.509 (S Jctn 49 to Yosemite Park)	114	3	52	55	42	7	25	4	80	0.021	0.39	0.80	0.027	0.51	1.11

Note: *MVM = Million Vehicle Miles, PM = Post Mile, Fat = Fatalities, Inj = Injuries, Veh = Vehicle, Kld = Killed, F+I = Fatalities + Injuries, Tot = Total*
Source: Caltrans District 10

As shown in **Table 17**, for SR 49, actual accident rates are less than that of average accident rates for "fatal" accidents for all segments with the exception of the segment of PM 8.779 to PM 11.586. The "total" actual accident rates for SR 49 are higher than total average accidents rates for all segments of SR 49 except those of PM 11.587 to PM 16.479 and PM 20.350 to PM 27.520. For SR 108, the actual accident rates for "fatal" and "fatal plus injury" are higher than that of average accident rates for segments of SR 108 between PM 0.000 to PM 2.789 and PM 5.623 to PM 11.751. Additionally, for the segment between PM 5.623 to PM 11.751, the "total" actual accident rate is higher than the total average accident rate. For SR 120, the "total" and "fatal plus injury" actual accident rates are higher than that of average accident rates for the segments between PM 12.077 to PM 15.515 and PM 15.516 to PM 23.896. The segment of SR 120 between PM 15.516 to PM 23.896 also has an actual accident rate for "fatal" accidents higher than the average accident rate. All actual accident rates for PM 23.897 to PM 56.509 on SR 120 are lower than the statewide average rates.

VEHICLE MILES TRAVELED (VMT)

Future year countywide Vehicle Miles Traveled (VMT) was estimated for each proposed alternative growth scenario using the recently updated Tuolumne County Travel Demand Model. The estimated VMTs are shown in **Table 18**.

Table 18. Vehicle Miles Traveled by Alternative Growth Scenario

Future Year	Alternative Growth Scenarios			
	Distinctive Communities (Proposed)	Public Services (Proposed)	Recent Trends (Existing)	Recent Trends (Proposed)
Year 2030 VMT	2,047,374	2,049,255	2,060,500	2,057,534
Year 2040 VMT	2,170,502	2,193,926	2,188,733	2,184,566
Note: VMT values estimated with Tuolumne County TDM				

As shown in **Table 18**, the Distinctive Communities (Proposed) scenario is projected to produce the least countywide VMT under both year 2030 and year 2040 conditions. The Recent Trends (Existing) scenario is projected to produce slightly higher VMT under year 2030 conditions, approximately 0.6% more than the Distinctive Communities (Proposed) scenario. The Public Services (Proposed) scenario is projected to produce slightly higher VMT under year 2040 conditions, approximately 1.1% more than the Distinctive Communities (Proposed) scenario.

APPENDIX TABLES

Appendix Table 1 - Study Area Intersections

#	Study Intersection
1	SR 108-SR 120 & O'Byrnes Ferry Rd
2	SR 120 & SR 108-SR 120/SR 108
3	SR 49-SR 120/SR 120 & SR 49
4	SR 49 (Montezuma Rd) & SR 120/SR 49-SR 120
5	SR 49-SR 108 & Chicken Ranch Rd
6	SR 49-SR 108 & Main St
7	Humbug St/Rawhide Rd & SR 49-SR 108
8	Main St/Jamestown Rd & SR 49-SR 108
9	5th Ave & SR 49-SR 108
10	5th Ave & Jamestown Rd
11	SR 49-SR 108/SR 108 & SR 49 (Stockton Rd)
12	Shaws Flat Rd & SR 49
13	Parrotts Ferry Rd & Sawmill Flat Rd
14	SR 49 & Parrotts Ferry Rd (Columbia Jctn)
15	SR 49 (Stockton Rd) & S Forest Rd
16	Southgate Dr/Woods Creek Dr & SR 49 (Stockton Rd)
17	SR 49 (Stockton Rd) & W. Savemart Drwy
18	SR 49 (Stockton Rd) & E. Savemart Drwy
19	SR 49 (N Washington St)/SR 49 & N Washington St/Columbia Way
20	SR 49 (N Washington St) & School St
21	SR 49 (N Washington St) & W Snell St/Elkin St
22	SR 49 (N Washington St) & Bradford St
23	S Washington St/SR 49 (S Washington St) & SR 49 (Stockton Rd)
24	S Washington St & Church St
25	Bulwer St/Restano Way
26	Mono Way/S Stewart St & Restano Way
27	Lime Kiln Rd/S Washington St & SR 108
28	Greenly Rd & Lyons Bald Mountain Rd
29	Greenly Rd & Morning Star Dr/Cabezut Rd
30	Greenly Rd & Mono Way
31	Old Wards Ferry Rd/Greenly Rd & Sanguinetti Rd
32	Tuolumne Rd & Mono Way
33	Jctn Shopping Cntr Dr & Mono Way
34	Tuolumne Rd & Jctn Shopping Cntr
35	Standard Rd/Peaceful Oak Rd & Mono Way
36	Draper Mine Rd/Cripple Hill Rd & SR 108 (Mono Way)
37	Soulsbyville Rd & SR 108 (Mono Way)
38	Woodham Carne Rd/Black Oak Rd & Tuolumne Rd
39	Tuolumne Rd & Soulsbyville Rd
40	Tuolumne Rd/E Twaine Hart Dr & SR 108
41	SR 120 (Main St) & Ferretti Rd

Appendix Table 2 - Study Area Roadway Segments

#	Roadway Segment	#	Roadway Segment
1	SR 108 Corridor w/o Tulloch rd	63	Parrotts Ferry Road b/w Sawmill Flat Rd & Springfield Dr
2	SR 108 Corridor b/w O'Byrnes Ferry Rd & La Grange Rd	64	Parrotts Ferry Road n/o Springfield Dr
3	SR 108 Corridor b/w O'Byrnes Ferry Rd & SR 120	65	Parrotts Ferry Road s/o Calaveras County Line
4	SR 108 Corridor b/w East Jct SR 120 and West Jct SR 49	66	Fifth Avenue s/o SR 108 / 49
5	SR 108 Corridor b/w SR 49 (Stockton Rd) and S Washington St/Lime Kiln Rd	67	Fifth Avenue n/o SR 108 / 49
6	SR 108 Corridor w/o Mono Way	68	Greenley Road b/wLyons Bald Mt Rd/Lyons Rd & Cabezut Rd
7	SR 108 Corridor b/w Mono Way and Hess Ave	69	Greenley Road b/w Cabezut Rd/ Morning Star Rd & Delnero Dr
8	SR 108 Corridor b/w Hess Ave and Peaceful Oak Rd	70	Greenley Road b/w Delnero Dr & Mono Way
9	SR 108 Corridor b/w Peaceful Oak Rd and Mono Way	71	La Grange Road b/w County Line & Bonds Flat Rd
11	SR 108 Corridor b/w Mono Way and Soulsbyville Rd	72	La Grange Road b/w Bonds Flat Rd & Red Hills Rd
12	SR 108 Corridor b/w Soulsbyville Rd and W Conn. Twain Harte Dr	73	La Grange Road b/wRed Hills Rd & SR 108-SR 120
13	SR 108 Corridor b/w W & E Conn Twain Harte Dr	74	Seco Street b/w Camp Seco Rd & 3rd Ave
14	SR 108 Corridor e/o East Conn. Twain Hart Rd	75	Seco Street b/w 3rd Ave & Main St
15	SR 108 Corridor w/o Chief Fuller Rd	76	Seco Street s/o Campo Seco Rd
16	SR 108 Corridor e/o Chief Fuller Rd	77	Tuolumne Road b/w Mono Way & Lambert lake Rd
17	SR 108 Corridor w/o West Long Barn Conn.	78	Tuolumne Road b/w Lambert Lake Rd & Hess Ave
18	SR 108 Corridor b/w West Long Barn Conn. and East Long Barn Conn.	79	Tuolumne Road b/w Hess Ave & Wards Ferry Rd
19	SR 108 Corridor b/w Kennedy Meadows Rd and Tuolumne/ Mono Countyline	80	Tuolumne Road b/w Wards Ferry Rd & Standard Rd
20	SR 49 Corridor n/o Tuolumne/Mariposa County Line	81	Tuolumne Road b/w Standard Rd & Woodhams Carne
21	SR 49 Corridor s/o South Jct SR 120	82	Tuolumne Road b/w Woodhams Carne & Cherokee Rd
22	SR 49 Corridor n/o North SR 120 Jct	83	Wards Ferry Road s/o Yosemite Rd
23	SR 49 Corridor b/w SR 49 (Montezuma Jct) & Bell Mooney Rd	84	Wards Ferry Road s/o Tuolumne Rd
24	SR 49 Corridor b/w Bell Mooney Rd and South Jct Main St	85	Twain Harte Drive n/o Hunts Rd
25	SR 49 Corridor b/w South Jct Main St and Rawhide Rd	86	Twain Harte Drive w/o East Ave
26	SR 49 Corridor b/w Rawhide Rd and Fifth Ave	87	Twain Harte Drive e/o Tiffeni Dr (eastern Most)
27	SR 49 Corridor b/w Fifth Ave and East Jct SR 108	88	Shaws Flat Road s/o SR 49
28	SR 49 Corridor btn SR 108 and Fairview Lane (Ponderosa)	89	Shaws Flat Road n/o SR 49
29	SR 49 Corridor b/w Fairview Lane and Southgate Dr	90	Jamestown Road s/o Shaws Flat Rd
30	SR 49 Corridor b/w Southgate Dr and Washington St	91	Jamestown Road s/o Racetrack Rd
31	SR 49 Corridor b/w Stockton Rd and Dodge St	92	Jamestown Road b/w Golf links & Fifth Ave
32	SR 49 Corridor n/o Dodge St	93	Rawhide Road n/o SR 49 & 108 (by the Bridge)
33	SR 49 Corridor s/o N Washington St / Columbia Way	94	Rawhide Road s/o SR 49 (near Tuttletown)
34	SR 49 Corridor n/o N Washington St / Columbia Way	95	Phoenix Lake Road e/o Creekside Dr
35	SR 49 Corridor e/o Parrotts Ferry Rd (Columbia WYE)	96	Phoenix Lake Road e/o Paseo de Los Portales
36	SR 49 Corridor w/o Parrotts Ferry Rd (Columbia WYE)	97	Phoenix Lake Road e/o Ridgewood
37	SR 49 Corridor e/o Rawhide Rd	98	Phoenix Lake Road e/o Hess Ave
38	SR 49 Corridor b/w Rawhide Rd and Turttletown	99	Phoenix Lake Road w/o Hess Ave
39	SR 49 Corridor b/w Tuttletown and Tuolumne / Calveras County Line	100	Old Wards Ferry Road s/o Sanguinetti Rd (n/o of Walmart & Lowes Driveway)
40	SR 120 Corridor b/w Tulloch Rd and La Grange Rd	101	Old Wards Ferry Road 1/4 mile s/o Sanguinetti Rd (over Highway 108)
42	SR 120 Corridor b/w East Jct 108 and North Jct SR 49	102	Old Wards Ferry Road s/o Jacobs Rd
43	SR 120 Corridor b/w North Jct SR 49 and Jacksonville Rd	103	Soulsbyville Road s/o Black Oak Dr
44	SR 120 Corridor b/w Jacksonville Rd and South Jct SR 49	104	Soulsbyville Road s/o Willow Springs Dr
45	SR 120 Corridor b/w South Jct SR 49 and Priest-Coulterville Rd	105	Soulsbyville Road n/o of SR 108
46	SR 120 Corridor w/o Ferretti Rd (Groveland Townsite)	106	Tuolumne Rd North b/w Tuolumne Rd & Black Oak Casino Entrance St
47	SR 120 Corridor e/o Ferretti Rd (Groveland Townsite)	107	Tuolumne Rd North n/o Mi Wu St
48	SR 120 Corridor w/o Hells Hollow Rd	108	Tuolumne Rd North n/o East Ave
49	SR 120 Corridor e/o Smiths Station Rd	109	O'Byrnes Ferry Rd n/o SR 108
50	SR 120 Corridor w/o Cherry Valley/Lake Rd	110	O'Byrnes Ferry Rd n/o Prison/Calaveras County Line
51	SR 120 Corridor w/oYosemite Park West Boundary	111	Longeway Rd e/o Soulsbyville Rd
52	Mono Way w/o Sanguinetti Rd	112	Longeway Rd e/o Crystal Falls Dr
53	Mono Way b/W Sanguinetti Rd & Greenley Rd	113	Stewart St b/w Lyons St & Elkin St
54	Mono Way b/w Greenley Rd & Fir Dr	114	Stewart St b/w Mono wWay/Restano Way & Church St
55	Mono Way b/w Fir Dr & Tuolumne Rd	115	S Washington St n/o SR 108
56	Mono Way b/w Tuolumne Rd & Hess Ave	116	S Washington St b/w Restano Way & Church St
57	Mono Way b/w Hess Ave & Standard Rd / Peaceful Oak Dr	117	Sanguinetti Rd b/w Mono Way & S Greenley Rd (eb one-way)
58	Mono Way b/w Standard Rd/Peaceful Oak Dr & SR 108	118	Sanguinetti Rd b/w S Greenley Rd & Fir Dr
59	Standard Road b/w Tuolumne Rd & Mono Way	119	Sanguinetti Rd b/w Fir Dr & Mono Way
60	Cabezut Road b/w Greenly Rd and Shannon Dr	120	Peaceful Oak Dr n/o SR 108 Bypass
61	Cabezut Road e/o Shannon Dr	121	Peaceful Oak Dr b/w SR 108 Ramps
62	Parrotts Ferry Road b/w SR 49 & Sawmill Flat Rd	122	Peaceful Oak Dr b/w Mono Way and SR 108

Appendix Table 2 - Study Area Roadway Segments

#	Roadway Segment	#	Roadway Segment
123	Bell Mooney Rd, w/o Jacksonville Rd	138	Lime Kiln Rd, s/o Campo Seco Rd & SR 108
124	Big Hill Rd, b/w Sawmill Flat Rd & N Bald Mountain Rd	139	Lyons Bald Mt.Rd, e/o Greenley Rd
125	Black Oak Rd, n/o Tuolumne Rd	140	Lyons St, w/o Greenley Rd
126	Bonanza Rd, w/o Snell Rd	141	Main St (Jamestown), n/o Donovan St
127	Bonds Flat Rd, e/o La Grange Rd	142	Merrell Rd, s/o SR 120
128	Campo Seco Rd, e/o Seco Rd	143	Moringstar Dr, w/o Greenley Rd
129	Cherokee Rd, w/o Tuolumne Rd North	144	Old Priest Grade, 1/2 Mile e/o SR 120
130	Chicken Ranch Rd, w/o SR 108	145	Sawmill Flat Rd, e/o Parrots Ferry Rd
131	Draper Mine Rd, e/o SR 108 & SR 49	146	Smith Station Rd, s/o SR 120
132	East Ave, s/o Twain Harte Dr	147	Snell Rd-Racetrack Rd, n/o Bonanza Rd
133	Ferretti Road, s/o Pine Mt Dr	148	South Greenley Rd, b/w Mono Way & Sanguinetti Rd
134	Golf Links Rd, n/o SR 108	149	Springfield Rd, n/o Horseshoe Bend Rd
135	Hess Ave, b/w SR 108 & Mono Way	150	Woodhams Carne Rd, s/o Tuolumne Rd
136	Jacksonville Rd, s/o Twist Ave	151	Yankee Hill Rd, e/o Bigler St
137	Jacobs Rd, w/o Old Wards Ferry Rd	152	Willow Springs Dr, e/o Bonnie St

Appendix Table 3 - Existing Intersection LOS

No.	Intersection Name	Control	Urban / Rural	Min. LOS	AM Peak Hour		PM Peak Hour	
					Delay	LOS	Delay	LOS
1	SR 108-SR 120 & O'Byrnes Ferry Rd	Signal	Rural	D	8.0	A	8.7	A
2	SR 120 & SR 108-SR 120/SR 108	TWSC	Rural	D	13.4	B	17.0	C
3	SR 49-SR 120/SR 120 & SR 49	TWSC	Rural	D	9.3	A	9.8	A
4	SR 49 (Montezuma Rd) & SR 120/SR 49-SR 120	TWSC	Rural	D	20.3	C	24.7	C
5	SR 49-SR 108 & Chicken Ranch Rd	TWSC	Urban	D	24.5	C	47.2	E
6	SR 49-SR 108 & Main St	TWSC	Urban	D	14.2	B	17.4	C
7	Humbug St/Rawhide Rd & SR 49-SR 108	Signal	Urban	D	25.5	C	38.1	D
8	Main St/Jamestown Rd & SR 49-SR 108	TWSC	Urban	D	93.5	F	125.1	F
9	5th Ave & SR 49-SR 108	TWSC	Urban	D	232.2	F	429.6	F
10	5th Ave & Jamestown Rd	TWSC	Urban	D	9.5	A	9.7	A
11	SR 49-SR 108/SR 108 & SR 49 (Stockton Rd)	TWSC	Urban	D	36.9	E	69.6	F
12	Shaws Flat Rd & SR 49	TWSC	Urban	D	14.9	B	17.7	C
13	Parrotts Ferry Rd & Sawmill Flat Rd	TWSC	Urban	D	41.0	E	54.3	F
14	SR 49 & Parrotts Ferry Rd (Columbia Jctn)	Signal	Urban	D	17.4	B	19.2	B
15	SR 49 (Stockton Rd) & S Forest Rd	TWSC	Urban	D	12.1	B	12.3	B
16	Southgate Dr/Woods Creek Dr & SR 49 (Stockton Rd)	TWSC	Urban	D	12.4	B	12.2	B
17	SR 49 (Stockton Rd) & W. Savemart Drwy	TWSC	Urban	D	9.6	A	10.3	B
18	SR 49 (Stockton Rd) & E. Savemart Drwy	TWSC	Urban	D	11.0	B	14.0	B
19	SR 49 (N Washington St)/SR 49 & N Washington St/Columbia Way	TWSC	Urban	D	134.4	F	160.5	F
20	SR 49 (N Washington St) & School St	TWSC	Urban	D	43.5	E	44.1	E
21	SR 49 (N Washington St) & W Snell St/Elkin St	TWSC	Urban	D	20.9	C	22.6	C
22	SR 49 (N Washington St) & Bradford St	TWSC	Urban	D	28.6	D	30.0	D
23	S Washington St/SR 49 (S Washington St) & SR 49 (Stockton Rd)	Signal	Urban	D	63.1	E	58.1	E
24	S Washington St & Church St	TWSC	Urban	D	64.1	F	101.4	F
25	Bulwer St/Restano Way	Signal	Urban	D	10.8	B	10.7	B
26	Mono Way/S Stewart St & Restano Way	Signal	Urban	D	15.4	B	11.2	B
27	Lime Kiln Rd/S Washington St & SR 108	Signal	Urban	D	42.9*	D	33.5*	C
28	Greenly Rd & Lyons Bald Mountain Rd	AWSC	Urban	D	10.7	B	28.5	D
29	Greenly Rd & Morning Star Dr/Cabezut Rd	Signal	Urban	D	23.0	C	24.0	C
30	Greenly Rd & Mono Way	Signal	Urban	D	27.2	C	35.5	D
31	Old Wards Ferry Rd/Greenly Rd & Sanguinetti Rd	Signal	Urban	D	19.1	B	23.5	C
32	Tuolumne Rd & Mono Way	Signal	Urban	D	12.7	B	10.6	B
33	Jctn Shopping Cntr Dr & Mono Way	Signal	Urban	D	12.7	B	19.7	B
34	Tuolumne Rd & Jctn Shopping Cntr	Signal	Urban	D	9.4	A	16.6	B
35	Standard Rd/Peaceful Oak Rd & Mono Way	Signal	Urban	D	23.6	C	14.5	B
36	Draper Mine Rd/Cripple Hill Rd & SR 108 (Mono Way)	TWSC	Urban	D	27.9	D	20.3	C
37	Soulsbyville Rd & SR 108 (Mono Way)	Signal	Urban	D	11.5	B	9.8	A
38	Woodham Carne Rd/Black Oak Rd & Tuolumne Rd	TWSC	Rural	D	43.0	E	28.9	D
39	Tuolumne Rd & Soulsbyville Rd	TWSC	Rural	D	52.9	F	23.7	C
40	Tuolumne Rd/E Twaine Hart Dr & SR 108	TWSC	Urban	D	14.7	B	14.2	B
41	SR 120 (Main St) & Ferretti Rd	TWSC	Rural	D	12.0	B	16.0	C
					Number of intersections operating under minimum acceptale LOS:		11	

Notes: 1. For TWSC (Two-Way-Stop-Control) intersections, worst-case movement delay (in seconds/vehicle) are indicated. "Average" control delays (in seconds/vehicle) are indicated for AWSC (All-Way-Stop-Control) and Signal-Control intersections.

* = Although the intersection is operating at an "Average" LOS D or better, some movements of this intersection are operating below LOS D threshold. Those movements and their associated improvements are identified in a subsequent table.

Appendix Table 4 - Existing Roadway ADTs and LOS

#	Roadway Name	Roadway/Highway Segment	LOS Area Type	Roadway Type	LOS Type#	Minimum LOS Policy	Existing (2014) ADT	LOS*	Acceptable?
1	SR 108 Corridor	w/o Tulloch rd	Rolling	Rural Arterial (4-lane) Divided	1	D	11,200	B	Yes
2		b/w O'Byrnes Ferry Rd & La Grange Rd	Rolling	Rural Minor Arterial (2-lane)	4	D	15,300	D	Yes
3		b/w O'Byrnes Ferry Rd & SR 120	Rolling	Rural Minor Arterial (2-lane)	4	D	18,000	D	Yes
4		b/w East Jct SR 120 and West Jct SR 49	Rolling	Rural Minor Arterial (2-lane)	4	D	17,600	D	Yes
5		b/w SR 49 (Stockton Rd) and S Washington St/Lime Kiln Rd	Urban	Rural Minor Arterial (2-lane)	210	D	19,900	D	Yes
6		w/o Mono Way	Urban	2-Lane Freeway	204	D	20,500	D	Yes
7		b/w Mono Way and Hess Ave	Urban	2-Lane Freeway	204	D	20,800	D	Yes
8		b/w Hess Ave and Peaceful Oak Rd	Urban	2-Lane Freeway	204	D	15,700	C	Yes
9		b/w Peaceful Oak Rd and Mono Way	Urban	2-Lane Freeway	204	D	14,200	C	Yes
11		b/w Mono Way and Soulsbyville Rd	Urban	2-Lane Principal/Minor Arterial (with left-turn lane)	210	D	14,600	D	Yes
12		b/w Soulsbyville Rd and W Conn. Twain Harte Dr	Urban	4-Lane Divided Arterial (with left-turn lane)	208	D	8,100	A	Yes
13		b/w W & E Conn Twain Harte Dr	Urban	2-Lane Freeway + Auxiliary Lane	203	D	8,000	A	Yes
14		e/o East Conn. Twain Hart Rd	Urban	2-Lane Principal/Minor Arterial (no left-turn lane)	211	D	8,100	C	Yes
15		w/o Chief Fuller Rd	Urban	2-Lane Principal/Minor Arterial (no left-turn lane)	211	D	6,900	B	Yes
16		e/o Chief Fuller Rd	Urban	2-Lane Principal/Minor Arterial (no left-turn lane)	211	D	4,450	B	Yes
17		w/o West Long Barn Conn.	Rolling	Rural Minor Arterial (2-lane)	5	D	4,200	B	Yes
18		b/w West Long Barn Conn. and East Long Barn Conn.	Rolling	Rural Minor Arterial (2-lane)	5	D	5,100	B	Yes
19		b/w Kennedy Meadows Rd and Tuolumne/ Mono Countyline	Rolling	Rural Minor Arterial (2-lane)	5	D	790	A	Yes
20	SR 49 Corridor	n/o Tuolumne/Mariposa County Line	Rolling	Rural Minor Arterial (2-lane)	5	D	630	A	Yes
21		s/o South Jct SR 120	Rolling	Rural Minor Arterial (2-lane)	5	D	820	A	Yes
22		n/o North SR 120 Jct	Rolling	Rural Minor Arterial (2-lane)	5	D	1,550	A	Yes
23		b/w SR 49 (Montezuma Jct) & Bell Mooney Rd	Rolling	Rural Minor Arterial (2-lane)	4	D	18,600	D	Yes
24		b/w Bell Mooney Rd and South Jct Main St	Urban	2-Lane Principal/Minor Arterial (with left-turn lane)	211	D	19,300	**E**	No
25		b/w South Jct Main St and Rawhide Rd	Urban	2-Lane Principal/Minor Arterial (with left-turn lane)	210	D	19,300	D	Yes
26		b/w Rawhide Rd and Fifth Ave	Urban	2-Lane Principal/Minor Arterial (with left-turn lane)	210	D	19,700	D	Yes
27		b/w Fifth Ave and East Jct SR 108	Urban	2-Lane Principal/Minor Arterial (with left-turn lane)	210	D	23,500	**E**	No
28		btn SR 108 and Fairview Lane (Ponderosa)	Urban	2-Lane Principal/Minor Arterial (with left-turn lane)	210	D	11,900	C	Yes
29		b/w Fairview Lane and Southgate Dr	Urban	2-Lane Principal/Minor Arterial (with left-turn lane)	210	D	10,700	C	Yes
30		b/w Southgate Dr and Washington St	Urban	2-Lane Principal/Minor Arterial (with left-turn lane)	210	D	10,900	C	Yes
31		b/w Stockton Rd and Dodge St	Urban	2-Lane Principal/Minor Arterial (no left-turn lane)	211	D	18,500	**E**	No
32		n/o Dodge St	Urban	2-Lane Principal/Minor Arterial (no left-turn lane)	211	D	19,400	**E**	No
33		s/o N Washington St / Columbia Way	Urban	2-Lane Principal/Minor Arterial (with left-turn lane)	211	D	16,100	**E**	No
34		n/o N Washington St / Columbia Way	Urban	2-Lane Principal/Minor Arterial (with left-turn lane)	210	D	15,400	D	Yes
35		e/o Parrotts Ferry Rd (Columbia WYE)	Urban	2-Lane Principal/Minor Arterial (no left-turn lane)	211	D	13,300	D	Yes
36		w/o Parrotts Ferry Rd (Columbia WYE)	Urban	2-Lane Principal/Minor Arterial (no left-turn lane)	211	D	5,050	B	Yes
37		e/o Rawhide Rd	Rolling	Rural Minor Arterial (2-lane)	5	D	5,500	B	Yes
38		b/w Rawhide Rd and Turttletown	Rolling	Rural Minor Arterial (2-lane)	5	D	4,550	B	Yes
39		b/w Tuttletown and Tuolumne / Calveras County Line	Rolling	Rural Minor Arterial (2-lane)	5	D	5,600	B	Yes
40	SR 120 Corridor	b/w Tulloch Rd and La Grange Rd	Rolling	Rural Arterial (4-lane) Divided	1	D	11,600	B	Yes
42		b/w East Jct 108 and North Jct SR 49	Rolling	Rural Minor Arterial (2-lane)	5	D	2,700	A	Yes
43		b/w North Jct SR 49 and Jacksonville Rd	Rolling	Rural Minor Arterial (2-lane)	5	D	3,750	B	Yes
44		b/w Jacksonville Rd and South Jct SR 49	Rolling	Rural Minor Arterial (2-lane)	5	D	5,000	B	Yes
45		b/w South Jct SR 49 and Priest-Coulterville Rd	Rolling	Rural Minor Arterial (2-lane)	5	D	3,900	B	Yes
46		w/o Ferretti Rd (Groveland Townsite)	Rolling	Rural Minor Arterial (2-lane)	5	D	4,800	B	Yes
47		e/o Ferretti Rd (Groveland Townsite)	Rolling	Rural Minor Arterial (2-lane)	5	D	5,800	B	Yes

Appendix Table 4 - Existing Roadway ADTs and LOS

#	Roadway Name	Roadway/Highway Segment	LOS Area Type	Roadway Type	LOS Type#	Minimum LOS Policy	Existing (2014) ADT	LOS*	Acceptable?
48	SR 120 (Cont.)	w/o Hells Hollow Rd	Rolling	Rural Minor Arterial (2-lane)	5	D	4,850	B	Yes
49		e/o Smiths Station Rd	Rolling	Rural Minor Arterial (2-lane)	5	D	3,800	B	Yes
50		w/o Cherry Valley/Lake Rd	Rolling	Rural Minor Arterial (2-lane)	5	D	3,600	B	Yes
51		w/oYosemite Park West Boundary	Rolling	Rural Minor Arterial (2-lane)	5	D	3,500	B	Yes
52	Mono Way	w/o Sanguinetti Rd	Urban	2-Lane Principal/Minor Arterial (with left-turn lane)	210	D	22,205	E	No
53		b/W Sanguinetti Rd & Greenley Rd	Urban	4-Lane Divided Arterial (with left-turn lane)	208	D	16,986	A	Yes
54		b/w Greenley Rd & Fir Dr	Urban	4-Lane Divided Arterial (with left-turn lane)	208	D	21,628	A	Yes
55		b/w Fir Dr & Tuolumne Rd	Urban	4-Lane Divided Arterial (with left-turn lane)	208	D	25,060	C	Yes
56		b/w Tuolumne Rd & Hess Ave	Urban	4-Lane Divided Arterial (with left-turn lane)	208	D	12,327	A	Yes
57		b/w Hess Ave & Standard Rd / Peaceful Oak Dr	Urban	2-Lane Principal/Minor Arterial (with left-turn lane)	210	D	12,076	C	Yes
58		b/w Standard Rd/Peaceful Oak Dr & SR 108	Urban	2-Lane Principal/Minor Arterial (no left-turn lane)	211	D	7,435	C	Yes
59	Standard Road	b/w Tuolumne Rd & Mono Way	Urban	2-Lane Major/Minor Collector (no left-turn lane)	213	D	3,391	B	Yes
60	Cabezut Road	b/w Greenly Rd and Shannon Dr	Urban	2-Lane Major/Minor Collector (with left-turn lane)	212	D	5,775	B	Yes
61		e/o Shannon Dr	Urban	2-Lane Major/Minor Collector (no left-turn lane)	213	D	260	A	Yes
62	Parrots Ferry Road	b/w SR 49 & Sawmill Flat Rd	Urban	2-Lane Principal/Minor Arterial (no left-turn lane)	213	D	11,100	D	Yes
63		b/w Sawmill Flat Rd & Springfield Dr	Urban	2-Lane Principal/Minor Arterial (no left-turn lane)	213	D	7,900	C	Yes
64		n/o Springfield Dr	Urban	2-Lane Principal/Minor Arterial (no left-turn lane)	213	D	8,066	C	Yes
65		s/o Calaveras County Line	Rolling	Rural Minor Arterial (2-lane)	5	D	4,071	B	Yes
66	Fifth Avenue	s/o SR 108 / 49	Urban	2-Lane Major/Minor Collector (no left-turn lane)	213	D	2,640	A	Yes
67		n/o SR 108 / 49	Urban	2-Lane Major/Minor Collector (no left-turn lane)	213	D	792	A	Yes
68	Greenley Road	b/wLyons Bald Mt Rd/Lyons Rd & Cabezut Rd	Urban	2-Lane Principal/Minor Arterial (with left-turn lane)	212	D	5,868	B	Yes
69		b/w Cabezut Rd/ Morning Star Rd & Delnero Dr	Urban	2-Lane Principal/Minor Arterial (with left-turn lane)	212	D	11,332	C	Yes
70		b/w Delnero Dr & Mono Way	Urban	4-Lane Undivided Arterial (no left-turn lane)	209	D	15,317	A	Yes
71	La Grange Road	b/w County Line & Bonds Flat Rd	Rolling	Rural Minor Arterial (2-lane)	5	D	2,703	A	Yes
72		b/w Bonds Flat Rd & Red Hills Rd	Rolling	Rural Minor Arterial (2-lane)	5	D	2,868	A	Yes
73		b/wRed Hills Rd & SR 108-SR 120	Rolling	Rural Minor Arterial (2-lane)	5	D	2,399	A	Yes
74	Seco Street	b/w Camp Seco Rd & 3rd Ave	Urban	2-Lane Major/Minor Collector (no left-turn lane)	213	D	1,050	A	Yes
75		b/w 3rd Ave & Main St	Urban	2-Lane Major/Minor Collector (no left-turn lane)	213	D	2,902	B	Yes
76		s/o Campo Seco Rd	Urban	2-Lane Major/Minor Collector (no left-turn lane)	213	D	1,036	A	Yes
77	Tuolumne Road	b/w Mono Way & Lambert lake Rd	Urban	2-Lane Principal/Minor Arterial (with left-turn lane)	212	D	15,203	D	Yes
78		b/w Lambert Lake Rd & Hess Ave	Urban	2-Lane Principal/Minor Arterial (with left-turn lane)	212	D	13,042	D	Yes
79		b/w Hess Ave & Wards Ferry Rd	Urban	2-Lane Principal/Minor Arterial (with left-turn lane)	212	D	12,283	D	Yes
80		b/w Wards Ferry Rd & Standard Rd	Urban	2-Lane Principal/Minor Arterial (with left-turn lane)	212	D	11,745	D	Yes
81		b/w Standard Rd & Woodhams Carne	Rolling	Major Collector (34 ft. - 36 ft.)	6	D	11,955	D	Yes
82		b/w Woodhams Carne & Cherokee Rd	Rolling	Major Collector (34 ft. - 36 ft.)	6	D	11,848	D	Yes
83	Wards Ferry Road	s/o Yosemite Rd	Rolling	Major/Minor Collector (18 ft.- 20 ft.)	9	D	2,399	B	Yes
84		s/o Tuolumne Rd	Urban	2-Lane Major/Minor Collector (no left-turn lane)	213	D	1,799	A	Yes
85	Twain Harte Drive	n/o Hunts Rd	Urban	2-Lane Major/Minor Collector (no left-turn lane)	213	D	3,642	B	Yes
86		w/o East Ave	Urban	2-Lane Major/Minor Collector (no left-turn lane)	213	D	4,466	B	Yes
87		e/o Tiffeni Dr (eastern Most)	Urban	2-Lane Major/Minor Collector (no left-turn lane)	213	D	1,914	A	Yes
88	Shaws Flat Road	s/o SR 49	Urban	2-Lane Major/Minor Collector (no left-turn lane)	213	D	3,057	B	Yes
89		n/o SR 49	Urban	2-Lane Major/Minor Collector (no left-turn lane)	213	D	1,989	A	Yes
90	Jamestown Road	s/o Shaws Flat Rd	Urban	2-Lane Major/Minor Collector (no left-turn lane)	213	D	2,486	A	Yes
91		s/o Racetrack Rd	Urban	2-Lane Major/Minor Collector (no left-turn lane)	213	D	3,134	B	Yes
92		b/w Golf links & Fifth Ave	Urban	2-Lane Major/Minor Collector (no left-turn lane)	213	D	2,798	B	Yes

Appendix Table 4 - Existing Roadway ADTs and LOS

#	Roadway Name	Roadway/Highway Segment	LOS Area Type	Roadway Type	LOS Type#	Minimum LOS Policy	Existing (2014) ADT	LOS*	Acceptable?
93	**Rawhide Road**	n/o SR 49 & 108 (by the Bridge)	**Urban**	2-Lane Major/Minor Collector (no left-turn lane)	213	D	4,149	B	Yes
94		s/o SR 49 (near Tuttletown)	Rolling	Major/Minor Collector (20 ft.- 23 ft.)	8	D	2,407	A	Yes
95	**Phoenix Lake Road**	e/o Creekside Dr	**Urban**	2-Lane Major/Minor Collector (no left-turn lane)	213	D	2,095	A	Yes
96		e/o Paseo de Los Portales	**Urban**	2-Lane Major/Minor Collector (no left-turn lane)	213	D	4,796	B	Yes
97		e/o Ridgewood	**Urban**	2-Lane Major/Minor Collector (no left-turn lane)	213	D	5,495	B	Yes
98		e/o Hess Ave	**Urban**	2-Lane Major/Minor Collector (no left-turn lane)	213	D	7,746	C	Yes
99		w/o Hess Ave	**Urban**	2-Lane Major/Minor Collector (no left-turn lane)	213	D	4,729	B	Yes
100	**Old Wards Ferry Road**	s/o Sanguinetti Rd (n/o of Walmart & Lowes Driveway)	**Urban**	4-Lane Undivided Arterial (no left-turn lane)	209	D	7,116	A	Yes
101		1/4 mile s/o Sanguinetti Rd (over Highway 108)	**Urban**	2-Lane Principal/Minor Arterial (no left-turn lane)	213	D	805	A	Yes
102		s/o Jacobs Rd	Rolling	Major/Minor Collector (20 ft.- 23 ft.)	8	D	502	A	Yes
103	**Soulsbyville Road**	s/o Black Oak Dr	Rolling	Major/Minor Collector (23 ft.- 32 ft.)	7	D	1,033	A	Yes
104		s/o Willow Springs Dr	**Urban**	2-Lane Major/Minor Collector (no left-turn lane)	213	D	1,817	A	Yes
105		n/o of SR 108	**Urban**	2-Lane Major/Minor Collector (no left-turn lane)	213	D	6,457	C	Yes
106	**Tuolumne Rd North**	b/w Tuolumne Rd & Black Oak Casino Entrance St	Rolling	Major Collector (34 ft. - 36 ft.)	6	D	6,436	B	Yes
107		n/o Mi Wu St	Rolling	Major/Minor Collector (23 ft.- 32 ft.)	7	D	2,391	A	Yes
108		n/o East Ave	**Urban**	2-Lane Major/Minor Collector (no left-turn lane)	213	D	1,436	A	Yes
109	**O'Byrnes Ferry Rd**	n/o SR 108	Rolling	Major/Minor Collector (23 ft.- 32 ft.)	7	D	5,998	C	Yes
110		n/o Prison/Calaveras County Line	Rolling	Major/Minor Collector (23 ft.- 32 ft.)	7	D	3,796	B	Yes
111	**Longeway Rd**	e/o Soulsbyville Rd	**Urban**	2-Lane Major/Minor Collector (no left-turn lane)	213	D	8,050	C	Yes
112		e/o Crystal Falls Dr	**Urban**	2-Lane Major/Minor Collector (no left-turn lane)	213	D	4,283	B	Yes
113	**Stewart St**	b/w Lyons St & Elkin St	**Urban**	2-Lane Major/Minor Collector (no left-turn lane)	213	D	6,597	C	Yes
114		b/w Mono wWay/Restano Way & Church St	**Urban**	2-Lane Major/Minor Collector (no left-turn lane)	213	D	5,905	C	Yes
115	**S Washington St**	n/o SR 108	**Urban**	2-Lane Principal/Minor Arterial (with left-turn lane)	212	D	10,859	C	Yes
116		b/w Restano Way & Church St	**Urban**	2-Lane Principal/Minor Arterial (with left-turn lane)	212	D	18,595	**E**	No
117	**Sanguinetti Rd**	b/w Mono Way & S Greenley Rd (eb one-way)	**Urban**	2-Lane Principal/Minor Arterial (no left-turn lane)	213	D	4,299	B	Yes
118		b/w S Greenley Rd & Fir Dr	**Urban**	4-Lane Undivided Arterial (no left-turn lane)	209	D	8,500	A	Yes
119		b/w Fir Dr & Mono Way	**Urban**	2-Lane Principal/Minor Arterial (no left-turn lane)	213	D	3,182	B	Yes
120	**Peaceful Oak Dr**	n/o SR 108 Bypass	**Urban**	2-Lane Major/Minor Collector (no left-turn lane)	213	D	596	A	Yes
121		b/w SR 108 Ramps	**Urban**	2-Lane Principal/Minor Arterial (with left-turn lane)	212	D	2,663	A	Yes
122		b/w Mono Way and SR 108	**Urban**	4-Lane Divided Arterial (with left-turn lane)	208	D	5,316	A	Yes
123	**Other Roads**	Bell Mooney Rd, w/o Jacksonville Rd	**Urban**	2-Lane Major/Minor Collector (no left-turn lane)	213	D	148	A	Yes
124		Big Hill Rd, b/w Sawmill Flat Rd & N Bald Mountain Rd	Mountainous	Major/Minor Collector (23 ft.- 32 ft.)	107	D	1,169	A	Yes
125		Black Oak Rd, n/o Tuolumne Rd	Rolling	Major/Minor Collector (18 ft.- 20 ft.)	9	D	1,586	A	Yes
126		Bonanza Rd, w/o Snell Rd	**Urban**	2-Lane Major/Minor Collector (no left-turn lane)	213	D	1,330	A	Yes
127		Bonds Flat Rd, e/o La Grange Rd	Rolling	Major Collector (34 ft. - 36 ft.)	6	D	1,113	A	Yes
128		Campo Seco Rd, e/o Seco Rd	**Urban**	2-Lane Major/Minor Collector (no left-turn lane)	213	D	1,454	A	Yes
129		Cherokee Rd, w/o Tuolumne Rd North	Rolling	Major/Minor Collector (20 ft.- 23 ft.)	8	D	1,656	A	Yes
130		Chicken Ranch Rd, w/o SR 108	Rolling	Local Road	11	C	1,406	A	Yes
131		Draper Mine Rd, e/o SR 108 & SR 49	**Urban**	2-Lane Major/Minor Collector (no left-turn lane)	213	D	942	A	Yes
132		East Ave, s/o Twain Harte Dr	**Urban**	2-Lane Major/Minor Collector (no left-turn lane)	213	D	1,392	A	Yes
133		Ferretti Road, s/o Pine Mt Dr	Rolling	Major/Minor Collector (23 ft.- 32 ft.)	7	D	2,870	A	Yes
134		Golf Links Rd, n/o SR 108	**Urban**	2-Lane Major/Minor Collector (no left-turn lane)	213	D	1,032	A	Yes
135		Hess Ave, b/w SR 108 & Mono Way	**Urban**	2-Lane Major/Minor Collector (with left-turn lane)	212	D	8,137	C	Yes
136		Jacksonville Rd, s/o Twist Ave	Rolling	Major Collector (34 ft. - 36 ft.)	6	D	1,301	A	Yes
137		Jacobs Rd, w/o Old Wards Ferry Rd	Rolling	Major/Minor Collector (20 ft.- 23 ft.)	8	D	596	A	Yes
138		Lime Kiln Rd, s/o Campo Seco Rd & SR 108	**Urban**	2-Lane Major/Minor Collector (no left-turn lane)	213	D	3,973	B	Yes
139		Lyons Bald Mt.Rd, e/o Greenley Rd	**Urban**	2-Lane Major/Minor Collector (no left-turn lane)	213	D	1,709	A	Yes

Appendix Table 4 - Existing Roadway ADTs and LOS

#	Roadway Name	Roadway/Highway Segment	LOS Area Type	Roadway Type	LOS Type#	Minimum LOS Policy	Existing (2014) ADT	LOS*	Acceptable?
140	Other Roads (cont.)	Lyons St, w/o Greenley Rd	Urban	2-Lane Major/Minor Collector (no left-turn lane)	213	D	5,501	B	Yes
141		Main St (Jamestown), n/o Donovan St	Urban	2-Lane Major/Minor Collector (no left-turn lane)	213	D	1,526	A	Yes
142		Merrell Rd, s/o SR 120	Rolling	Major/Minor Collector (18 ft.- 20 ft.)	9	D	480	A	Yes
143		Moringstar Dr, w/o Greenley Rd	Urban	2-Lane Major/Minor Collector (no left-turn lane)	213	D	1,517	A	Yes
144		Old Priest Grade, 1/2 Mile e/o SR 120	Mountainous	Major/Minor Collector (18 ft.- 20 ft.)	109	D	2,172	B	Yes
145		Sawmill Flat Rd, e/o Parrots Ferry Rd	Urban	2-Lane Major/Minor Collector (no left-turn lane)	213	D	2,300	A	Yes
146		Smith Station Rd, s/o SR 120	Rolling	Major Collector (34 ft. - 36 ft.)	6	D	537	A	Yes
147		Snell Rd-Racetrack Rd, n/o Bonanza Rd	Urban	2-Lane Major/Minor Collector (no left-turn lane)	213	D	3,586	B	Yes
148		South Greenley Rd, b/w Mono Way & Sanguinetti Rd	Urban	4-Lane Divided Arterial (with left-turn lane)	208	D	8,815	A	Yes
149		Springfield Rd, n/o Horseshoe Bend Rd	Urban	2-Lane Major/Minor Collector (no left-turn lane)	213	D	1,892	A	Yes
150		Woodhams Carne Rd, s/o Tuolumne Rd	Rolling	Major/Minor Collector (18 ft.- 20 ft.)	9	D	1,473	A	Yes
151		Yankee Hill Rd, e/o Bigler St	Urban	2-Lane Major/Minor Collector (no left-turn lane)	213	D	1,149	A	Yes
152		Willow Springs Dr, e/o Bonnie St	Rolling	Local Road	11	C	2,707	B	Yes
								Number of roadway segments operating below minimum acceptale LOS:	7

Note: FC # = Functional Classification Number, ADT = Average Daily Traffic, n/o = north of. s/o = south of, w/o = west of, e/o = east of, LOS = Level of Service, Rolling or Mountainous = rural roadways.
*Minimum Acceptable Roadway LOS for All Roadways = LOS "D"

Appendix Table 5 - Summary of Future Year (2030) Planned Improvements

ID	Improvement Project	Type	Description
1	Signalization of Fifth Avenue at State Route 108 & Geometric Improvements	Tier 1a – Short Range CIP	Construct a new signal at Fifth Avenue and Highway 108 in Jamestown. Construct additional right turn lanes on 5th Avenue in the northbound and southbound directions. Widen SR 108/49 for a right lane turn pocket, construct a cul-de-sac at the south end of Jamestown Road, and creating a "right in only" access from westbound SR 108/49 to Jamestown Road.
2	Parrotts Ferry Rd and SR 49 Intersection Improvements	Tier 1a – Short Range CIP	Construct geometric improvements at the intersection of SR 49 and Parrots Ferry Road. Construct wider shoulders from SR 49 to Union Hill Rd.
3	Tuolumne Road Improvements between Lambert Lake Rd & Terrance Dr.	Tier 1a – Short Range CIP	Widen and realign Tuolumne Road from Lambert Lake Rd & Terrance Dr.
4	Phoenix Lake Rd from Ridgewood to Paseo de Los Portales Rd	Tier 1a – Short Range CIP	Widen and realign Phoenix Lake Road from Ridgewood Rd to Paseo de Los Portales Rd.
5	Signalization of Tuolumne Rd and Standard Rd & adding Geometric Improvements	Tier 1a – Short Range CIP	Construct a new signal at Tuolumne Rd and Standard Rd. Constructing a new left and right turn lane on Standard Rd and construct a new left and right turn lane for Tuolumne Rd.
6	New Rawhide Bridge and Rawhide Rd Realignment	Tier 1a – Short Range CIP	Construct a new concrete bridge with two through lanes and a left turn lane east of the existing single lane bridge. The new bridge will realign with Main Street and SR 108/49 in Jamestown.
7	Mono Way Operational Safety Project	Tier 1a – Short Range CIP	A segment of SR 108 from Peaceful Oak Rd to Via Este will be relinquished to the County and become a County maintained road. Improve the current roadway geometry to accommodate pedestrian traffic, improve drainage, realign skewed intersection and install left turn pockets.
8	Peaceful Oak Road/SR 108 Off Ramps Project	Tier 1a – Short Range CIP	Construct two off ramps at the Peaceful Oak Rd/State Route 108 interchange that were eliminated from the original scope of the East Sonora Bypass Stage II project.
9	Old Wards Ferry Road - Crossing Curtis Creek Bridge	Tier 1a – Short Range CIP	Replace the existing one lane concrete slab bridge.
10	Hardin Flat Road - Crossing South Fork Tuolumne River Bridge	Tier 1a – Short Range CIP	Replace the wood post and beam bridge with reinforced concrete slab bridge. The abutment and stringers of the existing bridge suffered burn damage during the RIM Fire in 2013.
11	Lime Kiln Road Crossing Curtis Creek Bridge Replacement	Tier 1a – Short Range CIP	Replace the existing one lane bridge with a two lane concrete bridge and realign Lime Kiln Road.
12	Lime Kiln Road Crossing Sullivan Bridge Replacement	Tier 1a – Short Range CIP	Replace the existing bridge and realign Lime Kiln Road to eliminate the tight "U" curve in the road alignment.
13	Jacksonville Road - Crossing Tuolumne River Bridge	Tier 1a – Short Range CIP	Rehabilitate or replace the existing concrete slab bridge.
14	Simms Road Bridge- Crossing Six Bit Creek Ford	Tier 1a – Short Range CIP	Replace the existing one lane concrete ford with a two lane bridge.
15	Algerine Road - Crossing Algerine Creek Bridge Replacement	Tier 1a – Short Range CIP	Rehabilitate the existing bridge by widening the bridge and constructing new railing that meets current standards.
16	Algerine Road - Crossing Blanket Creek Bridge Replacement	Tier 1a – Short Range CIP	Replace the existing bridge with a one span reinforced concrete slab.
17	Crystal Falls Drive - Crossing Sullivan Creek Bridge Replacement Project	Tier 1a – Short Range CIP	Rehabilitate or replace the existing concrete slab bridge.
18	Buchanan Road Reconstruction and Right of Way Acquisitions	Tier 1a – Short Range CIP	The County is the project sponsor for the right of way phase of the project.
19	Bridge Preventive Maintence Program - 10 Bridges	Tier 1a – Short Range CIP	Bridge preventive maintenance for various bridges in Tuolumne County. The program concentrates on preservation of bridges before rehabilitation or replacement are necessary.
20	Big Creek Shaft Road - Crossing Big Creek Bridge Replacement	Tier 1a – Short Range CIP	Replace the existing bridge and realign the roadway to eliminate the 90 degree turns on both sides of the bridge.
21	Italian Bar Road - Crossing Rose Creek Bridge Replacement	Tier 1a – Short Range CIP	Replace the existing concrete two span bridge with a concrete single span bridge.
22	Draper Mine Road - Crossing Curtis Creek Bridge Replacement	Tier 1a – Short Range CIP	Removal of the existing bridge and construction of a new bridge. Draper Mine Road will be realigned so the "S" curve in the existing road will be eliminated.
23	North-South Connector - Greenley Rd Extension to SR 49	Mid Range CIP	Construct a new major collector road from the intersection of Greenley Rd/Lyons Bald Moutain Rd/Lyons St to SR 49 in between Jack Page Rd/Old Sonora Columbia Rd & Pesce Way. Construct a new signal at the intersection of Greenley Rd & Lyons/Lyons Bald Mt Rd. Construct a new signal at the intersection of SR 49 & Greenley Rd.
24	SR-108/49 Widen to five lanes b/w SR 49 (Stockton Rd) to Fifth Ave	Mid Range CIP	Widen SR-49/SR-108 to 5-lanes junction south of Sonora (Stockton Rd) to Fifth Ave. Construct a portion of the Sonora to Jamestown Trail.
25	SR-108/49 Widen to five lanes b/w Fifth Ave to South Main St	Mid Range CIP	Widen SR-49/SR-108 to 5-lanes from Fifth Ave to SR-49 junction south Main St.
26	SR-108/49 Widen to five lanes b/w South Main St to Chicken Ranch Rd	Mid Range CIP	Widen SR-49/SR-108 to 5-lanes from South Main St to Chicken Ranch Rd.
27	SR-108/120/49 Construct a 4 lane Expressway b/w Chicken Ranch Rd to Green Springs Rd/La Grange Rd	Mid Range CIP	Construct a 4 lane expressway from Chicken Ranch Rd to Green Springs Rd/La Grange Rd.
28	SR-49 Widen to five lanes from Parrotts Ferry Rd to the new Greenley Rd intersection	Mid Range CIP	Widen SR-49 to 5-lanes from Parrots Ferry Rd to the new Greenley Intersection. This new intersection would be between Jack Hage Rd/Old Sonora Columbia Rd & Pesce Way.
29	Greenley Rd & Mono Way Intersection - Capacity Improvements	Mid Range CIP	Construct capacity improvments at the intersection of Greenley Rd & Mono Way.
30	South Washington Rd/SR 108/Lime Kiln Intersection - Capacity Improvements	Mid Range CIP	Add capacity improvements to the intersection of South Washington/SR 108/Lime Kiln Road
31	High T-Intersection - Yosemite Junction -SR 108 & SR 120	Mid Range CIP	Construct a new high T intersection at Yosemite Junction.

Source: Tuolume County Transportation Council

Appendix Table 6 - Summary of Future Year (2040) Planned Improvements

ID	Improvement Project	Type	Description
1	East Sonora Bypass Stage III Alternative - Widen SR 108 to five lanes	Long Range CIP	Widen SR 108 to five lanes from Mono Way/Via Este to N. Sunshine Rd/Mono Vista Rd.
2	Tuolumne Road Widen to Five Lanes from Mono Way to Hess Ave	Long Range CIP	Widen Tuolumne Rd to five lanes from Mono Way to Hess Ave.
3	Mono Way Widening to Five Lanes from Hess Ave to Standard Rd/Peaceful Oak Dr	Long Range CIP	Widen Mono Way to five lanes from Hess Ave to Standard/Peaceful Oak Road.
4	Signalization @Parrotts Ferry Rd & Sawmill Flat Road	Long Range CIP	Construct a new signal at Parrots Ferry Rd & Sawmill Flat Rd.
5	Signalization @ Tuolumne Rd & Woodham Carne/Black Oak Rd including Realignment	Long Range CIP	Construct a new signal at Tuolumne Rd & Woodham Carne/Black Oak Rd. Include a realignment of Woodham Carne Rd.
Source: Tuolume County Transportation Council			

Appendix Table 7 - Future Year Intersection LOS Comparison - AM Peak Hour

No.	Intersection Name	Urban / Rural	Min. LOS	2015 Control	Year 2015 Existing		2030 Control	Year 2030 DCP		Year 2030 PSP		Year 2030 RTE		Year 2030 RTP		2040 Control	Year 2040 DCP		Year 2040 PSP		Year 2040 RTE		Year 2040 RTP	
					AM Peak Hour			AM Peak Hour		AM Peak Hour		AM Peak Hour		AM Peak Hour			AM Peak Hour		AM Peak Hour		AM Peak Hour		AM Peak Hour	
					Delay (s)	LOS		Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS		Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS
1	SR 108-SR 120 & O'Byrnes Ferry Rd	Rural	D	Signal	8.0	A	Signal	9.0	A	9.0	A	9.0	A	9.0	A	Signal	9.2	A	9.2	A	9.2	A	9.2	A
2	SR 120 & SR 108-SR 120/SR 108	Rural	D	TWSC	13.4	B	TWSC	14.0	B	14.0	B	14.0	B	14.1	B	TWSC	14.6	B	14.7	B	14.6	B	14.7	B
3	SR 49-SR 120/SR 120 & SR 49	Rural	D	TWSC	9.3	A	TWSC	9.8	A	9.8	A	9.8	A	9.8	A	TWSC	9.9	A	9.9	A	9.9	A	9.8	A
4	SR 49 (Montezuma Rd) & SR 120/SR 49-SR 120	Rural	D	TWSC	20.3	C	TWSC	20.9	C	21.1	C	21.3	C	21.3	C	TWSC	22.4	C	22.8	C	23.0	C	23.0	C
5	SR 49-SR 108 & Chicken Ranch Rd	Urban	D	TWSC	24.5	C	TWSC	14.1	B	14.1	B	14.3	B	14.2	B	TWSC	14.5	B	14.7	B	14.8	B	14.8	B
6	SR 49-SR 108 & South Main St	Urban	D	TWSC	14.2	B	TWSC	16.2	C	16.2	C	16.3	C	16.3	C	TWSC	16.8	C	17.1	C	17.4	C	17.1	C
7a	Humbug St/Rawhide Rd & SR 49-SR 108	Urban	D	Signal	25.5	C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7b	North Main St/Rawhide Rd & SR 49-SR 108	Urban	D	-	-	-	Signal	18.6	B	18.7	B	18.7	B	19.7	B	Signal	20.0	C	21.1	C	20.0	B	21.2	C
8	North Main St/Jamestown Rd & SR 49-SR 108	Urban	D	TWSC	93.5	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	5th Ave & SR 49-SR 108	Urban	D	TWSC	232.2	F	Signal	14.4*	B	14.2*	B	15.3*	B	14.4*	B	Signal	17.2*	B	17.1*	B	15.6*	B	16.6*	B
10	5th Ave & Jamestown Rd	Urban	D	TWSC	9.5	A	TWSC	10.2	B	10.2	B	10.2	B	10.2	B	TWSC	10.4	B	10.4	B	10.4	B	10.4	B
11	SR 49-SR 108/SR 108 & SR 49 (Stockton Rd)	Urban	D	TWSC	36.9	E	TWSC	15.8	C	15.9	C	16.0	C	15.9	C	TWSC	16.2	C	16.4	C	16.4	C	16.3	C
12	Shaws Flat Rd & SR 49	Urban	D	TWSC	14.9	B	TWSC	18.1	C	18.3	C	18.1	C	17.7	C	TWSC	19.8	C	21.1	C	21.1	C	20.5	C
13	Parrotts Ferry Rd & Sawmill Flat Rd	Urban	D	TWSC	41.0	E	TWSC	76.9	F	81.4	F	86.5	F	86.5	F	Signal	8.7	A	8.8	A	9.1	A	9.1	A
14	SR 49 & Parrotts Ferry Rd (Columbia Jctn)	Urban	D	Signal	17.4	B	Signal	21.7	C	21.7	C	22.0	C	22.7	C	Signal	21.5	C	21.4	C	20.9	C	21.3	C
15	SR 49 (Stockton Rd) & S Forest Rd	Urban	D	TWSC	12.1	B	TWSC	13.0	B	13.0	B	13.0	B	13.0	B	TWSC	13.1	B	13.1	B	13.2	B	13.1	B
16	Southgate Dr/Woods Creek Dr & SR 49 (Stockton Rd)	Urban	D	TWSC	12.4	B	TWSC	14.1	B	14.1	B	14.1	B	14.4	B	TWSC	14.7	B	14.8	B	14.7	B	14.5	B
17	SR 49 (Stockton Rd) & W. Savemart Drwy	Urban	D	TWSC	9.6	A	TWSC	10.0	B	10.0	B	10.0	B	10.0	B	TWSC	10.1	B	10.1	B	10.1	B	10.1	B
18	SR 49 (Stockton Rd) & E. Savemart Drwy	Urban	D	TWSC	11.0	B	TWSC	12.0	B	12.0	B	11.9	B	12.0	B	TWSC	12.1	B	12.1	B	12.1	B	12.1	B
19	SR 49 (N Washington St)/SR 49 & N Washington St/Columbia Way	Urban	D	TWSC	134.4	F	TWSC	56.0	F	58.2	F	59.0	F	47.1	E	TWSC	59.9	F	64.3	F	68.4	F	56.8	F
20	SR 49 (N Washington St) & School St	Urban	D	TWSC	43.5	E	TWSC	22.1	C	22.4	C	22.5	C	20.0	C	TWSC	22.8	C	23.4	C	24.5	C	21.8	C
21	SR 49 (N Washington St) & W Snell St/Elkin St	Urban	D	TWSC	20.9	C	TWSC	17.2	C	17.2	C	17.0	C	16.7	C	TWSC	17.7	C	18.3	C	18.4	C	18.2	C
22	SR 49 (N Washington St) & Bradford St	Urban	D	TWSC	28.6	D	TWSC	25.8	D	25.9	D	26.3	D	24.1	C	TWSC	29.3	D	29.3	D	29.8	D	28.6	D
23	S Washington St/SR 49 (S Washington St) & SR 49 (Stockton Rd)	Urban	D	Signal	63.1	E	Signal	46.7*	D	45.9*	D	47.2*	D	44.6*	D	Signal	56.1	E	55.1	E	59.6	E	52.6*	D
24	S Washington St & Church St	Urban	D	TWSC	64.1	F	TWSC	49.0	E	48.5	E	49.0	E	47.5	E	TWSC	57.3	F	57.3	F	57.3	F	56.6	F
25	Bulwer St/Restano Way	Urban	D	Signal	10.8	B	Signal	8.6	A	8.1	A	8.4	A	7.3	A	Signal	7.9	A	10.9	B	8.6	A	9.3	A
26	Mono Way/S Stewart St & Restano Way	Urban	D	Signal	15.4	B	Signal	12.4	B	12.4	B	12.3	B	12.3	B	Signal	12.5	B	13.2	B	12.8	B	13.1	B
27	Lime Kiln Rd/S Washington St & SR 108	Urban	D	Signal	42.9*	D	Signal	29.8	C	30.1	C	30.5	C	30.5	C	Signal	31.2	C	32.7	C	32.5	C	31.9	C
28	Greenly Rd & Lyons Bald Mountain Rd	Urban	D	AWSC	10.7	B	Signal	22.9	C	23.2	C	23.1	C	23.5	C	Signal	23.2	C	24.9	C	24.4	C	24.3	C
29	Greenly Rd & Morning Star Dr/Cabezut Rd	Urban	D	Signal	23.0	C	Signal	31.7*	C	33.5*	C	32.1*	C	35.3*	D	Signal	40.5*	D	35.7*	D	35.7*	D	39.4*	D
30	Greenly Rd & Mono Way	Urban	D	Signal	27.2	C	Signal	25.8	C	25.5	C	25.7	C	27.7	C	Signal	31.4	C	28.2	C	35.3	D	39.5*	D
31	Old Wards Ferry Rd/Greenly Rd & Sanguinetti Rd	Urban	D	Signal	19.1	B	Signal	19.9	B	19.6	B	19.5	B	19.5	B	Signal	20.1	C	20.4	C	20.2	C	20.2	C
32	Tuolumne Rd & Mono Way	Urban	D	Signal	12.7	B	Signal	12.5	B	11.9	B	11.8	B	12.1	B	Signal	12.9	B	14.6	B	13.4	B	13.5	B
33	Jctn Shopping Cntr Dr & Mono Way	Urban	D	Signal	12.7	B	Signal	14.2	B	13.8	B	13.2	B	13.5	B	Signal	13.9	B	12.6	B	14.2	B	12.4	B
34	Tuolumne Rd & Jctn Shopping Cntr	Urban	D	Signal	9.4	A	Signal	9.3	A	9.3	A	9.3	A	9.3	A	Signal	10.9	B	11.0	B	11.1	B	10.9	B
35	Standard Rd/Peaceful Oak Rd & Mono Way	Urban	D	Signal	23.6	C	Signal	24.7	C	24.8	C	24.3	C	24.7	C	Signal	28.3	C	30.0	C	28.2	C	27.8	C
36	Draper Mine Rd/Cripple Hill Rd & SR 108 (Mono Way)	Urban	D	TWSC	27.9	D	TWSC	31.0	D	30.5	D	30.5	D	30.5	D	TWSC	27.7	D	28.7	D	28.1	D	28.0	D
37	Soulsbyville Rd & SR 108 (Mono Way)	Urban	D	Signal	11.5	B	Signal	15.0	B	15.0	B	14.4	B	14.9	B	Signal	16.3	B	16.6	B	16.0	B	16.4	B
38	Woodham Carne Rd/Black Oak Rd & Tuolumne Rd	Rural	D	TWSC	43.0	E	TWSC	225.9	F	196.4	F	219.2	F	212.6	F	Signal	30.3	C	27.8	C	30.6	C	28.5	C
39	Tuolumne Rd & Soulsbyville Rd	Rural	D	TWSC	52.9	F	TWSC	73.2	F	76.3	F	74.2	F	73.2	F	TWSC	89.7	F	93.7	F	96.2	F	87.3	F
40	Tuolumne Rd/E Twaine Hart Dr & SR 108	Urban	D	TWSC	14.7	B	TWSC	15.6	C	15.5	C	15.6	C	15.5	C	TWSC	16.3	C	16.2	C	16.4	C	16.3	C
41	SR 120 (Main St) & Ferretti Rd	Rural	D	TWSC	12.0	B	TWSC	12.8	B	12.7	B	12.7	B	12.8	B	TWSC	13.4	B	13.5	B	13.3	B	13.4	B
	Number of intersections operating under minimum acceptale LOS:					**10**			**5**		**5**		**5**		**5**			**4**		**4**		**4**		**3**

Notes: For TWSC (Two-Way-Stop-Control) intersections, worst-case movement delay (in seconds/vehicle) are indicated. "Average" control delays (in seconds/vehicle) are indicated for AWSC (All -Way -Stop-Control) and Signal-Control intersections.

** = Although the intersection is operating at an "Average" LOS D or better, some movements of this intersection are operating below LOS D threshold. Those movements and their associated improvements are identified in a subsequent table.*

Appendix Table 8 - Future Year Intersection LOS Comparison - PM Peak Hour

No.	Intersection Name	Urban / Rural	Min. LOS	2015 Control	Year 2015 Existing		2030 Control	Year 2030 DCP		Year 2030 PSP		Year 2030 RTE		Year 2030 RTP		2040 Control	Year 2040 DCP		Year 2040 PSP		Year 2040 RTE		Year 2040 RTP	
					PM Peak Hour			PM Peak Hour		PM Peak Hour		PM Peak Hour		PM Peak Hour			PM Peak Hour		PM Peak Hour		PM Peak Hour		PM Peak Hour	
					Delay (s)	LOS		Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS		Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS
1	SR 108-SR 120 & O'Byrnes Ferry Rd	Rural	D	Signal	8.7	A	Signal	7.3	A	7.3	A	7.3	A	7.2	A	Signal	7.4	A	7.5	A	7.5	A	7.4	A
2	SR 120 & SR 108-SR 120/SR 108	Rural	D	TWSC	17.0	C	TWSC	18.1	C	18.1	C	18.2	C	18.4	C	TWSC	20.0	C	20.3	C	20.2	C	20.4	C
3	SR 49-SR 120/SR 120 & SR 49	Rural	D	TWSC	9.8	A	TWSC	10.5	B	10.5	B	10.5	B	10.5	B	TWSC	10.7	B	10.7	B	10.7	B	10.7	B
4	SR 49 (Montezuma Rd) & SR 120/SR 49-SR 120	Rural	D	TWSC	24.7	C	TWSC	24.8	C	25.1	D	25.6	D	25.3	D	TWSC	26.8	D	27.5	D	27.8	D	27.8	D
5	SR 49-SR 108 & Chicken Ranch Rd	Urban	D	TWSC	47.2	E	TWSC	18.8	C	19.0	C	19.3	C	19.2	C	TWSC	20.0	C	20.4	C	20.9	C	21.0	C
6	SR 49-SR 108 & Main St	Urban	D	TWSC	17.4	C	TWSC	19.6	C	19.6	C	19.8	C	19.8	C	TWSC	20.7	C	21.0	C	21.5	C	21.1	C
7a	Humbug St/Rawhide Rd & SR 49-SR 108	Urban	D	Signal	38.1	D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7b	North Main St/Rawhide Rd & SR 49-SR 108	Urban	D	-	-	-	Signal	21.2	C	21.1	C	26.3	C	22.5	C	Signal	24.1	C	25.5	C	24.0	C	30.0	C
8	North Main St/Jamestown Rd & SR 49-SR 108	Urban	D	TWSC	125.1	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	5th Ave & SR 49-SR 108	Urban	D	TWSC	429.6	F	Signal	13.5*	B	13.2*	B	12.9*	B	12.8*	B	Signal	14.7*	B	15.4*	B	14.2*	B	13.9*	B
10	5th Ave & Jamestown Rd	Urban	D	TWSC	9.7	A	TWSC	10.5	B	10.5	B	10.5	B	10.5	B	TWSC	10.7	B	10.7	B	10.7	B	10.7	B
11	SR 49-SR 108/SR 108 & SR 49 (Stockton Rd)	Urban	D	TWSC	69.6	F	TWSC	20.8	C	21.2	C	21.4	C	21.1	C	TWSC	21.7	C	22.0	C	22.2	C	21.8	C
12	Shaws Flat Rd & SR 49	Urban	D	TWSC	17.7	C	TWSC	25.7	D	26.4	D	25.6	D	25.2	D	TWSC	30.6	D	34.6	D	35.6	E	34.4	D
13	Parrotts Ferry Rd & Sawmill Flat Rd	Urban	D	TWSC	54.3	F	TWSC	113.8	F	118.8	F	128.9	F	130.3	F	Signal	17.2	B	17.6	B	17.8	B	17.8	B
14	SR 49 & Parrotts Ferry Rd (Columbia Jctn)	Urban	D	Signal	19.2	B	Signal	19.3	B	19.3	B	19.5	B	19.4	B	Signal	16.2	B	16.0	B	16.6	B	16.7	B
15	SR 49 (Stockton Rd) & S Forest Rd	Urban	D	TWSC	12.3	B	TWSC	13.2	B	13.3	B	13.3	B	13.3	B	TWSC	13.4	B	13.5	B	13.5	B	13.4	B
16	Southgate Dr/Woods Creek Dr & SR 49 (Stockton Rd)	Urban	D	TWSC	12.2	B	TWSC	13.8	B	13.8	B	13.6	B	14.0	B	TWSC	15.8	C	15.7	C	15.7	C	14.1	B
17	SR 49 (Stockton Rd) & W. Savemart Drwy	Urban	D	TWSC	10.3	B	TWSC	10.9	B	10.9	B	10.9	B	10.9	B	TWSC	11.0	B	11.1	B	11.0	B	11.0	B
18	SR 49 (Stockton Rd) & E. Savemart Drwy	Urban	D	TWSC	14.0	B	TWSC	16.8	C	16.8	C	16.7	C	17.1	C	TWSC	17.3	C	17.5	C	17.4	C	17.5	C
19	SR 49 (N Washington St)/SR 49 & N Washington St/Columbia Way	Urban	D	TWSC	160.5	F	TWSC	61.9	F	63.7	F	64.7	F	51.6	F	TWSC	67.9	F	73.8	F	79.4	F	65.7	F
20	SR 49 (N Washington St) & School St	Urban	D	TWSC	44.1	E	TWSC	23.1	C	23.3	C	23.2	C	20.8	C	TWSC	23.9	C	24.7	C	25.8	D	23.2	C
21	SR 49 (N Washington St) & W Snell St/Elkin St	Urban	D	TWSC	22.6	C	TWSC	17.8	C	18.0	C	17.6	C	17.4	C	TWSC	18.4	C	19.1	C	19.4	C	19.2	C
22	SR 49 (N Washington St) & Bradford St	Urban	D	TWSC	30.0	D	TWSC	24.3	C	24.4	C	24.7	C	23.5	C	TWSC	27.4	D	27.7	D	27.4	D	26.7	D
23	S Washington St/SR 49 (S Washington St) & SR 49 (Stockton Rd)	Urban	D	Signal	58.1	E	Signal	40.7*	D	40.2*	D	42.7*	D	40.7*	D	Signal	48.5	D	48.2	D	52.1	D	48.2*	D
24	S Washington St & Church St	Urban	D	TWSC	101.4	F	TWSC	71.1	F	72.3	F	72.3	F	69.9	F	TWSC	91.2	F	89.2	F	91.2	F	73.5	F
25	Bulwer St/Restano Way	Urban	D	Signal	10.7	B	Signal	11.6	B	12.1	B	11.3	B	10.3	B	Signal	11.8	B	12.7	B	13.9	B	10.9	B
26	Mono Way/S Stewart St & Restano Way	Urban	D	Signal	11.2	B	Signal	13.3	B	13.3	B	13.3	B	12.8	B	Signal	13.2	B	13.4	B	13.0	B	12.9	B
27	Lime Kiln Rd/S Washington St & SR 108	Urban	D	Signal	33.5*	C	Signal	25.8	C	26.1	C	24.5	C	26.1	C	Signal	25.8	C	27.7	C	28.8	C	24.8	C
28	Greenly Rd & Lyons Bald Mountain Rd	Urban	D	AWSC	28.5	D	Signal	23.7	C	24.2	C	23.8	C	23.8*	C	Signal	24.2*	C	24.8*	C	25.0*	C	25.6*	C
29	Greenly Rd & Morning Star Dr/Cabezut Rd	Urban	D	Signal	24.0	C	Signal	32.3*	C	32.0*	C	33.3*	C	37.7*	D	Signal	51.3*	D	47.0*	D	42.5*	D	54.6*	D
30	Greenly Rd & Mono Way	Urban	D	Signal	35.5	D	Signal	27.2	C	27.6	C	27.5	C	27.9	C	Signal	29.6	C	29.8	C	29.9	C	29.9	C
31	Old Wards Ferry Rd/Greenly Rd & Sanguinetti Rd	Urban	D	Signal	23.5	C	Signal	23.9	C	24.0	C	23.6	C	23.7	C	Signal	25.1	C	25.4	C	25.2	C	25.4	C
32	Tuolumne Rd & Mono Way	Urban	D	Signal	10.6	B	Signal	10.6	B	10.4	B	10.5	B	10.5	B	Signal	12.6	B	12.1	B	11.9	B	12.3	B
33	Jctn Shopping Cntr Dr & Mono Way	Urban	D	Signal	19.7	B	Signal	19.4	B	19.4	B	19.3	B	19.0	B	Signal	20.8	C	23.6	C	23.2	C	22.4	C
34	Tuolumne Rd & Jctn Shopping Cntr	Urban	D	Signal	16.6	B	Signal	17.0	B	17.0	B	17.0	B	17.0	B	Signal	19.9	B	20.6	C	20.8	C	20.4	C
35	Standard Rd/Peaceful Oak Rd & Mono Way	Urban	D	Signal	14.5	B	Signal	15.2	B	15.5	B	15.5	B	15.9	B	Signal	17.1	B	18.6	B	18.7	B	18.6	B
36	Draper Mine Rd/Cripple Hill Rd & SR 108 (Mono Way)	Urban	D	TWSC	20.3	C	TWSC	21.5	C	21.2	C	21.2	C	21.2	C	TWSC	28.5	D	27.8	D	28.4	D	27.4	D
37	Soulsbyville Rd & SR 108 (Mono Way)	Urban	D	Signal	9.8	A	Signal	11.1	B	11.1	B	10.5	B	11.1	B	Signal	11.3	B	11.5	B	11.3	B	11.4	B
38	Woodham Carne Rd/Black Oak Rd & Tuolumne Rd	Rural	D	TWSC	28.9	D	TWSC	48.3	E	45.0	E	46.8	E	45.9	E	Signal	25.2	C	24.8	C	25.7	C	25.7	C
39	Tuolumne Rd & Soulsbyville Rd	Rural	D	TWSC	23.7	C	TWSC	26.6	D	26.8	D	26.6	D	26.6	D	TWSC	28.6	D	28.8	D	29.1	D	28.3	D
40	Tuolumne Rd/E Twaine Hart Dr & SR 108	Urban	D	TWSC	14.2	B	TWSC	15.4	C	15.3	C	15.2	C	15.2	C	TWSC	16.3	C	16.0	C	16.4	C	16.1	C
41	SR 120 (Main St) & Ferretti Rd	Rural	D	TWSC	16.0	C	TWSC	18.3	C	18.2	C	18.1	C	18.4	C	TWSC	20.0	C	20.4	C	19.8	C	20.2	C
	Number of intersections operating under minimum acceptale LOS:					**9**			**4**		**4**		**4**		**4**			**2**		**2**		**3**		**2**

Notes: For TWSC (Two-Way-Stop-Control) intersections, worst-case movement delay (in seconds/vehicle) are indicated. "Average" control delays (in seconds/vehicle) are indicated for AWSC (All -Way -Stop-Control) and Signal-Control intersections. Minimum Acceptable LOS = LOS" D"

** = Although the intersection is operating at an "Average" LOS D or better, some movements of this intersection are operating below LOS D threshold. Those movements and their associated improvements are identified in a subsequent table.*

Appendix Table 9 - Intersections Operating at LOS D or better, but Movement(s) Operating Below LOS D

No.	Intersection Name	Urban / Rural	Min. LOS	2015 Control	Year 2015 Existing		Improvements
					AM Pk Hr	PM Pk Hr	
27	Lime Kiln Rd/S Washington St & SR 108	Urban	D	Signal	SBT,	SBT,	Add SBL and SBR
	Number of intersections with movements operationg below LOS D:				**1**	**1**	

Notes: Although the intersection is operating at an "Average" LOS D or better, the above movements of the intersection are operating/projected-to-operate below LOS D threshold.

No.	Intersection Name	Urban / Rural	Min. LOS	2030 Control	Year 2030 DCP		Year 2030 PSP		Year 2030 RTE		Year 2030 RTP		Improvements
					AM Pk Hr	PM Pk Hr	AM Pk Hr	PM Pk Hr	AM Pk Hr	PM Pk Hr	AM Pk Hr	PM Pk Hr	
9	5th Ave & SR 49-SR 108	Urban	D	Signal	WBL,	WBL,	WBL,	WBL,	WBL,	WBL,	WBL,	WBL,	Protected EB and WB Left-Turn
23	S Washington St/SR 49 (S Washington St) & SR 49 (Stockton Rd)	Urban	D	Signal	NBL, SBT,	NBL, SBT,	NBL, SBT,	NBL, SBT,	NBL, SBT,	NBL, SBT,	NBL, SBT,	NBL, SBT,	Add NBL, SBR, Overlap EBR
28	Greenly Rd & Lyons Bald Mountain Rd	Urban	D	Signal								WBL,	Signal Timing
29	Greenly Rd & Morning Star Dr/Cabezut Rd	Urban	D	Signal	NBL,	SBL,	NBL, SBL,	SBL,	NBL, SBL,	SBL,	NBL, SBL,	NBL, SBL,	Add NBR, Overlap NBR and SBR
	Number of intersections with movements operationg below LOS D:				**3**	**3**	**3**	**3**	**3**	**3**	**3**	**4**	

Notes: Although the intersection is operating at an "Average" LOS D or better, the above movements of the intersection are operating/projected-to-operate below LOS D threshold.

No.	Intersection Name	Urban / Rural	Min. LOS	2040 Control	Year 2040 DCP		Year 2040 PSP		Year 2040 RTE		Year 2040 RTP		Improvements
					AM Pk Hr	PM Pk Hr	AM Pk Hr	PM Pk Hr	AM Pk Hr	PM Pk Hr	AM Pk Hr	PM Pk Hr	
9	5th Ave & SR 49-SR 108	Urban	D	Signal	WBL,	WBL,	WBL,	WBL,	WBL,	WBL,	WBL,	WBL,	Protected EB and WB Left-Turn
23	S Washington St/SR 49 (S Washington St) & SR 49 (Stockton Rd)	Urban	D	Signal							NBL, SBT,	NBL, SBT,	Add NBL, SBR, Overlap EBR
28	Greenly Rd & Lyons Bald Mountain Rd	Urban	D	Signal		WBL,		WBL,		WBL,		WBL,	Signal Timing
29	Greenly Rd & Morning Star Dr/Cabezut Rd	Urban	D	Signal	NBL, SBL,	NBL, NBT, SBL,	NBL, SBL,	NBL, NBT, SBL,	NBL, SBL,	NBL, NBT, SBL,	NBL, SBL,	NBL, NBT, SBL,	Add NBR, Overlap NBR and SBR
30	Greenly Rd & Mono Way	Urban	D	Signal							SBL, SBT,		Add WBR
	Number of intersections with movements operationg below LOS D:				**2**	**3**	**2**	**3**	**2**	**3**	**4**	**4**	

Notes: Although the intersection is operating at an "Average" LOS D or better, the above movements of the intersection are operating/projected-to-operate below LOS D threshold.

Appendix Table 10 - Future Year Average Daily Traffic (ADT) Volume Forecasts

#		Roadway/Highway Segment	2015 Type #	2030 Type #	2040 Type #	Existing (2015) ADT	Year 2030 - Distinctive Communities Proposed	Year 2030 - Public Services Proposed	Year 2030 - Recent Trends Existing	Year 2030 - Recent Trends Proposed	Year 2040 - Distinctive Communities Proposed	Year 2040 - Public Services Proposed	Year 2040 - Recent Trends Existing	Year 2040 - Recent Trends Proposed
1		w/o Tulloch rd	1	1	1	11,200	12,926	12,902	12,910	12,882	13,904	13,984	13,877	13,847
2		b/w O'Byrnes Ferry Rd & La Grange Rd	4	1	1	15,300	17,837	17,983	18,322	18,385	19,258	19,743	19,825	19,959
3		b/w O'Byrnes Ferry Rd & SR 120	4	1	1	18,000	20,828	20,958	21,293	21,336	22,394	22,893	22,947	23,058
4		b/w East Jct SR 120 and West Jct SR 49	4	1	1	17,600	20,017	20,175	20,490	20,478	21,344	21,810	21,887	21,957
5		b/w SR 49 (Stockton Rd) and S Washington St/Lime Kiln Rd	210	210	210	19,900	22,067	22,071	22,294	22,186	22,966	22,970	23,202	23,090
6		w/o Mono Way	204	204	204	20,500	22,273	22,360	23,057	23,139	23,180	23,271	23,996	24,081
7		b/w Mono Way and Hess Ave	204	204	204	20,800	22,084	22,100	22,084	22,084	22,983	23,000	22,983	22,983
8		b/w Hess Ave and Peaceful Oak Rd	204	204	204	15,700	16,669	16,669	16,669	16,669	17,348	17,348	17,348	17,348
9		b/w Peaceful Oak Rd and Mono Way	204	204	204	14,200	15,076	15,076	15,076	15,076	15,690	15,690	15,690	15,690
11	**SR 108 Corridor**	b/w Mono Way and Soulsbyville Rd	210	210	208	14,600	16,107	15,875	15,661	15,718	17,392	18,643	18,020	17,303
12		b/w Soulsbyville Rd and W Conn. Twain Harte Dr	208	208	208	8,100	8,635	8,518	8,519	8,558	9,206	9,233	9,084	9,139
13		b/w W & E Conn Twain Harte Dr	203	203	203	8,000	8,347	8,261	8,271	8,281	8,849	8,628	8,971	8,789
14		e/o East Conn. Twain Hart Rd	211	211	211	8,100	8,346	8,346	8,346	8,346	8,515	8,515	8,515	8,515
15		w/o Chief Fuller Rd	211	211	211	6,900	7,110	7,110	7,110	7,110	7,253	7,253	7,253	7,253
16		e/o Chief Fuller Rd	211	211	211	4,450	4,617	4,618	4,623	4,619	4,726	4,746	4,750	4,744
17		w/o West Long Barn Conn.	5	5	5	4,200	4,364	4,365	4,363	4,360	4,463	4,481	4,467	4,467
18		b/w West Long Barn Conn. and East Long Barn Conn.	5	5	5	5,100	5,261	5,262	5,261	5,258	5,367	5,368	5,367	5,364
19		b/w Kennedy Meadows Rd and Tuolumne/ Mono Countyline	5	5	5	790	928	928	928	928	1,007	1,008	1,006	1,006
20		n/o Tuolumne/Mariposa County Line	5	5	5	630	772	770	771	769	848	853	846	844
21		s/o South Jct SR 120	5	5	5	820	979	976	979	982	1,067	1,075	1,074	1,066
22		n/o North SR 120 Jct	5	5	5	1,550	3,348	3,383	3,261	3,261	3,416	3,451	3,327	3,327
23		b/w SR 49 (Montezuma Jct) & Bell Mooney Rd	4	1	1	18,600	22,815	23,008	23,201	23,190	23,873	24,288	24,472	24,494
24		b/w Bell Mooney Rd and South Jct Main St	211	208	208	19,300	23,610	23,794	23,997	23,978	24,673	25,083	25,267	25,282
25		b/w South Jct Main St and Rawhide Rd	210	208	208	19,300	24,988	25,241	25,249	25,309	26,011	26,419	26,596	26,536
26		b/w Rawhide Rd and Fifth Ave	210	208	208	19,700	28,325	28,298	28,655	28,606	29,756	29,905	30,022	30,078
27		b/w Fifth Ave and East Jct SR 108	210	208	208	23,500	29,288	29,313	29,447	29,478	30,157	30,166	30,148	30,167
28		btn SR 108 and Fairview Lane (Ponderosa)	210	210	210	11,900	13,245	13,346	13,251	13,017	14,062	14,169	14,068	13,820
29	**SR 49 Corridor**	b/w Fairview Lane and Southgate Dr	210	210	210	10,700	11,871	12,043	11,850	11,705	12,603	12,785	12,581	12,426
30		b/w Southgate Dr and Washington St	210	210	210	10,900	13,912	13,812	13,734	13,985	14,770	14,663	14,581	14,847
31		b/w Stockton Rd and Dodge St	211	211	211	18,500	16,883	16,923	17,015	16,749	17,924	17,966	18,064	17,782
32		n/o Dodge St	211	211	211	19,400	15,004	15,040	15,191	15,020	15,929	15,967	16,127	15,946
33		s/o N Washington St / Columbia Way	211	211	211	16,100	11,879	11,917	12,086	11,741	12,611	12,652	12,831	12,465
34		n/o N Washington St / Columbia Way	210	208	208	15,400	11,822	11,912	12,118	11,742	12,551	12,646	12,865	12,466
35		e/o Parrotts Ferry Rd (Columbia WYE)	211	208	208	13,300	16,684	16,720	16,913	16,612	17,021	17,110	17,525	17,190
36		w/o Parrotts Ferry Rd (Columbia WYE)	211	211	211	5,050	6,312	6,348	6,469	6,234	6,439	6,704	6,891	6,761
37		e/o Rawhide Rd	5	5	5	5,500	6,221	6,234	6,273	6,251	6,635	6,698	6,716	6,687
38		b/w Rawhide Rd and Turttletown	5	5	5	4,550	5,246	5,233	5,237	5,222	5,636	5,678	5,622	5,606
39		b/w Tuttletown and Tuolumne / Calveras County Line	5	5	5	5,600	6,295	6,282	6,286	6,271	6,685	6,728	6,671	6,655
40		b/w Tulloch Rd and La Grange Rd	1	1	1	11,600	13,326	13,302	13,310	13,282	14,304	14,384	14,277	14,247
42		b/w East Jct 108 and North Jct SR 49	5	5	5	2,700	3,135	3,102	3,115	3,163	3,370	3,394	3,373	3,407
43		b/w North Jct SR 49 and Jacksonville Rd	5	5	5	3,750	5,935	5,944	5,819	5,879	6,055	6,064	5,936	5,998
44		b/w Jacksonville Rd and South Jct SR 49	5	5	5	5,000	5,957	6,006	5,967	5,983	6,497	6,593	6,525	6,546
45		b/w South Jct SR 49 and Priest-Coulterville Rd	5	5	5	3,900	5,427	5,481	5,529	5,532	5,537	6,847	5,641	5,644
46	**SR 120 Corridor**	w/o Ferretti Rd (Groveland Townsite)	5	5	5	4,800	5,627	5,634	5,604	5,630	6,115	6,188	6,100	6,136
47		e/o Ferretti Rd (Groveland Townsite)	5	5	5	5,800	6,374	6,370	6,371	6,364	6,707	6,728	6,703	6,695
48		w/o Hells Hollow Rd	5	5	5	4,850	5,487	5,484	5,501	5,489	5,851	5,884	5,873	5,864
49		e/o Smiths Station Rd	5	5	5	3,800	4,372	4,370	4,378	4,369	4,703	4,726	4,710	4,702
50		w/o Cherry Valley/Lake Rd	5	5	5	3,600	4,174	4,170	4,171	4,164	4,507	4,528	4,503	4,495
51		w/oYosemite Park West Boundary	5	5	5	3,500	4,070	4,064	4,066	4,059	4,401	4,421	4,395	4,387
52		w/o Sanguinetti Rd	210	210	210	22,205	20,777	20,611	20,019	19,628	22,416	22,258	21,708	22,211
53		b/W Sanguinetti Rd & Greenley Rd	208	208	208	16,986	16,579	16,334	14,842	14,634	18,531	18,166	17,742	18,186
54		b/w Greenley Rd & Fir Dr	208	208	208	21,628	23,759	23,340	22,286	22,286	24,238	24,625	23,824	24,118
55	**Mono Way**	b/w Fir Dr & Tuolumne Rd	208	208	208	25,060	28,307	27,749	29,174	29,020	32,142	32,036	32,141	31,448
56		b/w Tuolumne Rd & Hess Ave	208	208	208	12,327	14,501	14,238	15,463	15,418	18,426	18,346	18,332	17,833
57		b/w Hess Ave & Standard Rd / Peaceful Oak Dr	210	210	208	12,076	14,067	14,135	15,448	15,250	18,588	18,603	17,863	18,200
58		b/w Standard Rd/Peaceful Oak Dr & SR 108	211	211	211	7,435	7,691	8,193	8,996	9,356	11,368	11,798	11,680	11,526

Appendix Table 10 - Future Year Average Daily Traffic (ADT) Volume Forecasts

#	Roadway/Highway Segment		2015 Type #	2030 Type #	2040 Type #	Existing (2015) ADT	Year 2030 - Distinctive Communities Proposed	Year 2030 - Public Services Proposed	Year 2030 - Recent Trends Existing	Year 2030 - Recent Trends Proposed	Year 2040 - Distinctive Communities Proposed	Year 2040 - Public Services Proposed	Year 2040 - Recent Trends Existing	Year 2040 - Recent Trends Proposed
59	**Standard Road**	b/w Tuolumne Rd & Mono Way	213	213	213	3,391	4,805	4,279	4,853	4,202	6,176	5,828	5,828	5,721
60	**Cabezut Road**	b/w Greenly Rd and Shannon Dr	212	212	212	5,775	6,680	6,598	6,845	6,773	7,362	7,407	6,983	7,391
61		e/o Shannon Dr	213	213	213	260	432	438	497	444	599	645	562	646
62	**Parrotts Ferry Road**	b/w SR 49 & Sawmill Flat Rd	213	213	213	11,100	12,511	12,546	12,728	12,659	12,763	12,799	12,985	12,914
63		b/w Sawmill Flat Rd & Springfield Dr	213	213	213	7,900	8,712	8,747	8,794	8,754	8,888	8,924	8,971	8,931
64		n/o Springfield Dr	213	213	213	8,066	8,665	8,695	8,798	8,744	9,036	9,139	9,279	9,163
65		s/o Calaveras County Line	5	5	5	4,071	4,495	4,497	4,547	4,539	4,730	4,799	4,786	4,777
66	**Fifth Avenue**	s/o SR 108 / 49	213	213	213	2,640	3,212	3,212	3,090	3,075	3,503	3,461	3,215	3,348
67		n/o SR 108 / 49	213	213	213	792	2,376	2,376	2,376	2,376	2,455	2,455	2,455	2,455
68	**Greenley Road**	b/wLyons Bald Mt Rd/Lyons Rd & Cabezut Rd	212	212	212	5,868	10,591	10,651	10,456	10,598	11,091	11,724	11,213	11,430
69		b/w Cabezut Rd/ Morning Star Rd & Delnero Dr	212	212	212	11,332	15,500	15,505	15,383	15,539	15,932	16,585	16,132	16,221
70		b/w Delnero Dr & Mono Way	209	209	209	15,317	19,432	19,405	19,207	19,362	19,873	20,461	19,979	20,060
71	**La Grange Road**	b/w County Line & Bonds Flat Rd	5	5	5	2,703	3,051	3,046	3,048	3,042	3,247	3,265	3,241	3,235
72		b/w Bonds Flat Rd & Red Hills Rd	5	5	5	2,868	3,650	3,818	4,191	4,268	4,073	4,503	4,736	4,867
73		b/wRed Hills Rd & SR 108-SR 120	5	5	5	2,399	3,201	3,369	3,740	3,818	3,639	4,068	4,297	4,426
74	**Seco Street**	b/w Camp Seco Rd & 3rd Ave	213	213	213	1,050	1,122	1,107	1,175	1,174	1,193	1,221	1,226	1,273
75		b/w 3rd Ave & Main St	213	213	213	2,902	3,590	3,541	4,118	3,684	3,979	3,859	4,399	3,919
76		s/o Campo Seco Rd	213	213	213	1,036	1,068	1,068	1,068	1,068	1,089	1,089	1,089	1,089
77	**Tuolumne Road**	b/w Mono Way & Lambert lake Rd	212	212	208	15,203	15,768	15,802	15,884	15,783	19,553	19,397	19,627	19,175
78		b/w Lambert Lake Rd & Hess Ave	212	212	208	13,042	14,055	13,741	13,930	13,741	14,466	14,331	14,476	14,110
79		b/w Hess Ave & Wards Ferry Rd	212	212	212	12,283	13,115	12,913	13,085	12,853	13,733	13,582	13,697	13,335
80		b/w Wards Ferry Rd & Standard Rd	212	212	212	11,745	12,651	12,398	12,590	12,300	13,129	12,934	13,059	12,670
81		b/w Standard Rd & Woodhams Carne	6	6	6	11,955	13,115	12,918	13,002	12,715	13,380	13,179	13,264	12,972
82		b/w Woodhams Carne & Cherokee Rd	6	6	6	11,848	12,803	12,624	12,704	12,459	13,399	13,214	13,200	12,818
83	**Wards Ferry Road**	s/o Yosemite Rd	9	9	9	2,399	2,472	2,472	2,472	2,472	2,522	2,522	2,522	2,522
84		s/o Tuolumne Rd	213	213	213	1,799	1,854	1,854	1,854	1,854	1,891	1,891	1,891	1,891
85	**Twain Harte Drive**	n/o Hunts Rd	213	213	213	3,642	3,894	3,845	3,851	3,863	3,973	4,179	3,929	3,941
86		w/o East Ave	213	213	213	4,466	4,859	4,822	4,784	4,845	5,149	5,005	5,244	5,128
87		e/o Tiffeni Dr (eastern Most)	213	213	213	1,914	2,142	2,096	2,072	2,112	2,382	2,224	2,481	2,376
88	**Shaws Flat Road**	s/o SR 49	213	213	213	3,057	3,150	3,150	3,150	3,150	3,214	3,214	3,214	3,214
89		n/o SR 49	213	213	213	1,989	2,050	2,050	2,050	2,050	2,351	2,387	2,447	2,442
90	**Jamestown Road**	s/o Shaws Flat Rd	213	213	213	2,486	2,562	2,562	2,562	2,562	2,613	2,665	2,694	2,713
91		s/o Racetrack Rd	213	213	213	3,134	3,229	3,229	3,229	3,229	3,362	3,457	3,506	3,519
92		b/w Golf links & Fifth Ave	213	213	213	2,798	2,883	2,883	2,883	2,883	3,307	3,440	3,452	3,459
93	**Rawhide Road**	n/o SR 49 & 108 (by the Bridge)	213	213	213	4,149	4,275	4,275	4,321	4,558	4,609	4,513	4,511	4,685
94		s/o SR 49 (near Tuttletown)	8	8	8	2,407	2,480	2,480	2,480	2,671	2,715	2,609	2,530	2,725
95	**Phoenix Lake Road**	e/o Creekside Dr	213	213	213	2,095	2,534	2,703	2,647	2,654	2,585	2,758	2,700	2,708
96		e/o Paseo de Los Portales	213	213	213	4,796	5,798	6,068	5,778	5,949	5,915	6,190	5,895	6,069
97		e/o Ridgewood	213	213	213	5,495	6,448	6,775	6,492	6,650	6,578	6,912	6,623	6,784
98		e/o Hess Ave	213	213	213	7,746	8,803	9,250	9,026	9,131	8,981	9,437	9,208	9,315
99		w/o Hess Ave	213	213	213	4,729	4,873	5,129	5,028	5,143	4,971	5,233	5,129	5,247
100	**Old Wards Ferry Road**	s/o Sanguinetti Rd (n/o of Walmart & Lowes Driveway)	209	209	209	7,116	7,389	7,332	7,524	7,423	7,538	7,480	7,676	7,573
101		1/4 mile s/o Sanguinetti Rd (over Highway 108)	213	213	213	805	829	829	829	829	846	846	850	846
102		s/o Jacobs Rd	8	8	8	502	556	551	602	576	567	562	614	588
103	**Soulsbyville Road**	s/o Black Oak Dr	7	7	7	1,033	1,139	1,174	1,140	1,170	1,162	1,198	1,221	1,194
104		s/o Willow Springs Dr	213	213	213	1,817	2,203	2,256	2,119	2,169	2,247	2,302	2,162	2,213
105		n/o of SR 108	213	213	213	6,457	7,416	7,348	7,117	7,219	7,566	8,492	7,824	7,365
106	**Tuolumne Rd North**	b/w Tuolumne Rd & Black Oak Casino Entrance St	6	6	6	6,436	6,632	6,632	6,632	6,632	6,766	6,766	6,797	6,766
107		n/o Mi Wu St	7	7	7	2,391	2,511	2,548	2,563	2,576	2,737	2,705	2,739	2,642
108		n/o East Ave	213	213	213	1,436	1,480	1,480	1,480	1,480	1,616	1,603	1,659	1,560
109	**O'Byrnes Ferry Rd**	n/o SR 108	7	7	7	5,998	6,529	6,521	6,533	6,517	6,828	6,861	6,844	6,828
110		n/o Prison/Calaveras County Line	7	7	7	3,796	4,311	4,302	4,305	4,295	4,608	4,636	4,598	4,587
111	**Longeway Rd**	e/o Soulsbyville Rd	213	213	213	8,050	8,295	8,295	8,295	8,295	9,722	9,898	9,685	9,516
112		e/o Crystal Falls Dr	213	213	213	4,283	4,413	4,413	4,413	4,413	4,740	4,760	4,748	4,661
113	**Stewart St**	b/w Lyons St & Elkin St	213	213	213	6,597	6,798	6,798	6,798	6,798	6,935	6,935	6,935	6,935
114		b/w Mono wWay/Restano Way & Church St	213	213	213	5,905	6,827	6,716	6,875	6,849	7,590	7,362	7,705	7,497

Appendix Table 10 - Future Year Average Daily Traffic (ADT) Volume Forecasts

#		Roadway/Highway Segment	2015 Type #	2030 Type #	2040 Type #	Existing (2015) ADT	Year 2030 - Distinctive Communities Proposed	Year 2030 - Public Services Proposed	Year 2030 - Recent Trends Existing	Year 2030 - Recent Trends Proposed	Year 2040 - Distinctive Communities Proposed	Year 2040 - Public Services Proposed	Year 2040 - Recent Trends Existing	Year 2040 - Recent Trends Proposed
115	**S Washington St**	n/o SR 108	212	212	212	10,859	11,977	11,982	13,191	13,022	12,715	12,721	14,004	13,825
116		b/w Restano Way & Church St	212	212	212	18,595	16,678	16,600	16,687	16,497	17,706	17,623	17,716	17,514
117	**Sanguinetti Rd**	b/w Mono Way & S Greenley Rd (eb one-way)	213	213	213	4,299	4,430	4,430	4,437	4,430	4,519	4,519	4,527	4,519
118		b/w S Greenley Rd & Fir Dr	209	209	209	8,500	11,397	11,282	11,542	11,532	12,932	13,136	13,231	12,364
119		b/w Fir Dr & Mono Way	213	213	213	3,182	4,217	4,274	5,013	4,646	7,289	6,305	5,952	6,097
120	**Peaceful Oak Dr**	n/o SR 108 Bypass	213	213	213	596	614	614	614	614	627	627	627	627
121		b/w SR 108 Ramps	212	212	212	2,663	2,850	2,829	2,872	2,849	2,908	2,886	2,930	2,906
122		b/w Mono Way and SR 108	208	208	208	5,316	5,510	5,503	5,578	5,549	6,128	6,075	5,691	6,072
123	**Other Roads**	Bell Mooney Rd, w/o Jacksonville Rd	213	213	213	148	153	153	153	153	156	156	156	156
124		Big Hill Rd, b/w Sawmill Flat Rd & N Bald Mountain Rd	107	107	107	1,169	1,205	1,205	1,205	1,205	1,229	1,229	1,229	1,229
125		Black Oak Rd, n/o Tuolumne Rd	9	9	9	1,586	1,743	1,739	1,725	1,713	1,778	1,774	1,760	1,748
126		Bonanza Rd, w/o Snell Rd	213	213	213	1,330	1,560	1,549	1,441	1,370	1,591	1,580	1,470	1,521
127		Bonds Flat Rd, e/o La Grange Rd	6	6	6	1,113	1,561	1,690	2,082	2,140	1,784	2,207	2,466	2,547
128		Campo Seco Rd, e/o Seco Rd	213	213	213	1,454	1,498	1,498	1,498	1,498	1,528	1,528	1,528	1,528
129		Cherokee Rd, w/o Tuolumne Rd North	8	8	8	1,656	1,746	1,706	1,752	1,706	1,889	1,807	1,863	1,741
130		Chicken Ranch Rd, w/o SR 108	11	11	11	1,406	1,449	1,449	1,450	1,449	1,478	1,478	1,479	1,478
131		Draper Mine Rd, e/o SR 108 & SR 49	213	213	213	942	992	992	1,040	994	1,084	1,107	1,160	1,140
132		East Ave, s/o Twain Harte Dr	213	213	213	1,392	1,554	1,559	1,566	1,589	1,648	1,738	1,697	1,686
133		Ferretti Road, s/o Pine Mt Dr	7	7	7	2,870	2,973	2,973	2,957	3,026	3,099	3,213	3,072	3,160
134		Golf Links Rd, n/o SR 108	213	213	213	1,032	1,294	1,374	1,334	1,314	1,358	1,450	1,386	1,369
135		Hess Ave, b/w SR 108 & Mono Way	212	212	212	8,137	9,296	9,263	9,048	9,034	9,484	9,450	9,231	9,216
136		Jacksonville Rd, s/o Twist Ave	6	6	6	1,301	1,341	1,341	1,341	1,341	1,368	1,368	1,368	1,368
137		Jacobs Rd, w/o Old Wards Ferry Rd	8	8	8	596	614	614	614	614	627	627	627	627
138		Lime Kiln Rd, s/o Campo Seco Rd & SR 108	213	213	213	3,973	4,094	4,094	4,125	4,099	4,176	4,245	4,208	4,201
139		Lyons Bald Mt.Rd, e/o Greenley Rd	213	213	213	1,709	1,790	1,864	1,914	1,956	1,871	1,909	2,010	2,105
140		Lyons St, w/o Greenley Rd	213	213	213	5,501	5,668	5,668	5,668	5,668	5,783	5,783	5,783	5,783
141		Main St (Jamestown), n/o Donovan St	213	213	213	1,526	1,572	1,572	1,572	1,572	1,604	1,604	1,604	1,604
142		Merrell Rd, s/o SR 120	9	9	9	480	495	495	495	495	505	505	505	505
143		Moringstar Dr, w/o Greenley Rd	213	213	213	1,517	1,563	1,563	1,563	1,563	1,625	1,598	1,631	1,603
144		Old Priest Grade, 1/2 Mile e/o SR 120	109	109	109	2,172	2,238	2,238	2,238	2,238	2,283	2,283	2,283	2,283
145		Sawmill Flat Rd, e/o Parrots Ferry Rd	213	213	213	2,300	2,849	2,850	2,993	2,963	2,962	3,029	3,226	3,158
146		Smith Station Rd, s/o SR 120	6	6	6	537	598	597	597	596	632	637	631	629
147		Snell Rd-Racetrack Rd, n/o Bonanza Rd	213	213	213	3,586	3,695	3,695	3,695	3,695	3,770	3,770	3,770	3,770
148		South Greenley Rd, b/w Mono Way & Sanguinetti Rd	208	208	208	8,815	13,025	12,842	12,323	12,363	14,812	14,950	14,931	14,163
149		Springfield Rd, n/o Horseshoe Bend Rd	213	213	213	1,892	1,950	1,950	1,950	1,950	2,213	2,246	2,314	2,293
150		Woodhams Carne Rd, s/o Tuolumne Rd	9	9	9	1,473	1,518	1,518	1,518	1,518	1,548	1,548	1,548	1,548
151		Yankee Hill Rd, e/o Bigler St	213	213	213	1,149	1,184	1,184	1,184	1,184	1,208	1,208	1,208	1,208
152		Willow Springs Dr, e/o Bonnie St	11	11	11	2,707	2,881	2,991	2,789	2,872	3,037	3,051	2,973	3,066
					Sum:	**1,031,505**	**1,150,560**	**1,150,568**	**1,159,095**	**1,155,043**	**1,231,094**	**1,242,058**	**1,239,333**	**1,233,488**

Note: All volumes shown are Average Daily Traffic (ADT).

= *Improved under 2030 conditions.*

= *Improved under 2040 conditions.*

Appendix Table 11 - Future Year Roadway Level of Service (LOS)

#		Roadway/Highway Segment	2015 Type #	2030 Type #	2040 Type #	Minimum LOS Standard*	Existing (2015) LOS	Year 2030 - Distinctive Communities Proposed	Year 2030 - Public Services Proposed	Year 2030 - Recent Trends Existing	Year 2030 - Recent Trends Proposed	Year 2040 - Distinctive Communities Proposed	Year 2040 - Public Services Proposed	Year 2040 - Recent Trends Existing	Year 2040 - Recent Trends Proposed
1	SR 108 Corridor	w/o Tulloch rd	1	1	1	D	B	C	C	C	C	C	C	C	C
2		b/w O'Byrnes Ferry Rd & La Grange Rd	4	1	1	D	D	C	C	C	C	D	D	D	D
3		b/w O'Byrnes Ferry Rd & SR 120	4	1	1	D	D	D	D	D	D	D	D	D	D
4		b/w East Jct SR 120 and West Jct SR 49	4	1	1	D	D	D	D	D	D	D	D	D	D
5		b/w SR 49 (Stockton Rd) and S Washington St/Lime Kiln Rd	210	210	210	D	D	E	E	E	E	E	E	E	E
6		w/o Mono Way	204	204	204	D	D	D	D	D	D	D	D	D	D
7		b/w Mono Way and Hess Ave	204	204	204	D	D	D	D	D	D	D	D	D	D
8		b/w Hess Ave and Peaceful Oak Rd	204	204	204	D	C	C	C	C	C	C	C	C	C
9		b/w Peaceful Oak Rd and Mono Way	204	204	204	D	C	C	C	C	C	C	C	C	C
11		b/w Mono Way and Soulsbyville Rd	210	210	208	D	D	D	D	D	D	A	A	A	A
12		b/w Soulsbyville Rd and W Conn. Twain Harte Dr	208	208	208	D	A	A	A	A	A	A	A	A	A
13		b/w W & E Conn Twain Harte Dr	203	203	203	D	A	A	A	A	A	B	B	B	B
14		e/o East Conn. Twain Hart Rd	211	211	211	D	C	C	C	C	C	C	C	C	C
15		w/o Chief Fuller Rd	211	211	211	D	B	B	B	B	B	C	C	C	C
16		e/o Chief Fuller Rd	211	211	211	D	B	B	B	B	B	B	B	B	B
17		w/o West Long Barn Conn.	5	5	5	D	B	B	B	B	B	B	B	B	B
18		b/w West Long Barn Conn. and East Long Barn Conn.	5	5	5	D	B	B	B	B	B	B	B	B	B
19		b/w Kennedy Meadows Rd and Tuolumne/ Mono Countyline	5	5	5	D	A	A	A	A	A	A	A	A	A
20	SR 49 Corridor	n/o Tuolumne/Mariposa County Line	5	5	5	D	A	A	A	A	A	A	A	A	A
21		s/o South Jct SR 120	5	5	5	D	A	A	A	A	A	A	A	A	A
22		n/o North SR 120 Jct	5	5	5	D	A	B	B	B	B	B	B	B	B
23		b/w SR 49 (Montezuma Jct) & Bell Mooney Rd	4	1	1	D	D	D	D	D	D	D	D	D	D
24		b/w Bell Mooney Rd and South Jct Main St	211	208	208	D	E	B	B	B	B	B	C	C	C
25		b/w South Jct Main St and Rawhide Rd	210	208	208	D	D	B	C	C	C	C	C	C	C
26		b/w Rawhide Rd and Fifth Ave	210	208	208	D	D	C	C	C	C	D	D	D	D
27		b/w Fifth Ave and East Jct SR 108	210	208	208	D	E	D	D	D	D	D	D	D	D
28		btn SR 108 and Fairview Lane (Ponderosa)	210	210	210	D	C	C	C	C	C	C	C	C	C
29		b/w Fairview Lane and Southgate Dr	210	210	210	D	C	C	C	C	C	C	C	C	C
30		b/w Southgate Dr and Washington St	210	210	210	D	C	C	C	C	C	D	D	D	D
31		b/w Stockton Rd and Dodge St	211	211	211	D	E	E	E	E	E	E	E	E	E
32		n/o Dodge St	211	211	211	D	E	D	D	D	D	D	D	E	D
33		s/o N Washington St / Columbia Way	211	211	211	D	E	C	D	D	C	D	D	D	D
34		n/o N Washington St / Columbia Way	210	208	208	D	D	A	A	A	A	A	A	A	A
35		e/o Parrotts Ferry Rd (Columbia WYE)	211	208	208	D	D	A	A	A	A	A	A	A	A
36		w/o Parrotts Ferry Rd (Columbia WYE)	211	211	211	D	B	B	B	B	B	B	B	B	B
37		e/o Rawhide Rd	5	5	5	D	B	B	B	C	C	C	C	C	C
38		b/w Rawhide Rd and Turttletown	5	5	5	D	B	B	B	B	B	B	B	B	B
39		b/w Tuttletown and Tuolumne / Calveras County Line	5	5	5	D	B	C	C	C	C	C	C	C	C
40	SR 120 Corridor	b/w Tulloch Rd and La Grange Rd	1	1	1	D	B	C	C	C	C	C	C	C	C
42		b/w East Jct 108 and North Jct SR 49	5	5	5	D	A	B	A	A	B	B	B	B	B
43		b/w North Jct SR 49 and Jacksonville Rd	5	5	5	D	B	B	B	B	B	B	B	B	B
44		b/w Jacksonville Rd and South Jct SR 49	5	5	5	D	B	B	B	B	B	C	C	C	C
45		b/w South Jct SR 49 and Priest-Coulterville Rd	5	5	5	D	B	B	B	B	B	B	C	B	B
46		w/o Ferretti Rd (Groveland Townsite)	5	5	5	D	B	B	B	B	B	B	B	B	B
47		e/o Ferretti Rd (Groveland Townsite)	5	5	5	D	B	C	C	C	C	C	C	C	C
48		w/o Hells Hollow Rd	5	5	5	D	B	B	B	B	B	B	B	B	B
49		e/o Smiths Station Rd	5	5	5	D	B	B	B	B	B	B	B	B	B
50		w/o Cherry Valley/Lake Rd	5	5	5	D	B	B	B	B	B	B	B	B	B
51		w/oYosemite Park West Boundary	5	5	5	D	B	B	B	B	B	B	B	B	B
52	Mono Way	w/o Sanguinetti Rd	210	210	210	D	E	E	E	D	D	E	E	E	E
53		b/W Sanguinetti Rd & Greenley Rd	208	208	208	D	A	A	A	A	A	A	A	A	A
54		b/w Greenley Rd & Fir Dr	208	208	208	D	A	B	B	B	B	B	B	B	B
55		b/w Fir Dr & Tuolumne Rd	208	208	208	D	C	C	C	D	D	D	D	D	D
56		b/w Tuolumne Rd & Hess Ave	208	208	208	D	A	A	A	A	A	A	A	A	A
57		b/w Hess Ave & Standard Rd / Peaceful Oak Dr	210	210	208	D	C	C	C	D	D	A	A	A	A
58		b/w Standard Rd/Peaceful Oak Dr & SR 108	211	211	211	D	C	C	C	C	C	C	C	C	C

Appendix Table 11 - Future Year Roadway Level of Service (LOS)

#	Roadway/Highway Segment		2015 Type #	2030 Type #	2040 Type #	Minimum LOS Standard*	Existing (2015) LOS	Year 2030 - Distinctive Communities Proposed	Year 2030 - Public Services Proposed	Year 2030 - Recent Trends Existing	Year 2030 - Recent Trends Proposed	Year 2040 - Distinctive Communities Proposed	Year 2040 - Public Services Proposed	Year 2040 - Recent Trends Existing	Year 2040 - Recent Trends Proposed
59	**Standard Road**	b/w Tuolumne Rd & Mono Way	213	213	213	D	B	B	B	B	B	C	C	C	C
60	**Cabezut Road**	b/w Greenly Rd and Shannon Dr	212	212	212	D	B	B	B	B	B	C	C	C	C
61		e/o Shannon Dr	213	213	213	D	A	A	A	A	A	A	A	A	A
62	**Parrotts Ferry Road**	b/w SR 49 & Sawmill Flat Rd	213	213	213	D	D	D	D	D	D	D	D	E	E
63		b/w Sawmill Flat Rd & Springfield Dr	213	213	213	D	C	C	C	C	C	C	C	C	C
64		n/o Springfield Dr	213	213	213	D	C	C	C	C	C	C	C	D	C
65		s/o Calaveras County Line	5	5	5	D	B	B	B	B	B	B	B	B	B
66	**Fifth Avenue**	s/o SR 108 / 49	213	213	213	D	A	B	B	B	B	B	B	B	B
67		n/o SR 108 / 49	213	213	213	D	A	A	A	A	A	A	A	A	A
68	**Greenley Road**	b/wLyons Bald Mt Rd/Lyons Rd & Cabezut Rd	212	212	212	D	B	C	C	C	C	C	D	C	C
69		b/w Cabezut Rd/ Morning Star Rd & Delnero Dr	212	212	212	D	C	D	D	D	D	E	E	E	E
70		b/w Delnero Dr & Mono Way	209	209	209	D	A	B	B	B	B	B	B	B	B
71	**La Grange Road**	b/w County Line & Bonds Flat Rd	5	5	5	D	A	A	A	A	A	B	B	B	B
72		b/w Bonds Flat Rd & Red Hills Rd	5	5	5	D	A	B	B	B	B	B	B	B	B
73		b/wRed Hills Rd & SR 108-SR 120	5	5	5	D	A	B	B	B	B	B	B	B	B
74	**Seco Street**	b/w Camp Seco Rd & 3rd Ave	213	213	213	D	A	A	A	A	A	A	A	A	A
75		b/w 3rd Ave & Main St	213	213	213	D	B	B	B	B	B	B	B	B	B
76		s/o Campo Seco Rd	213	213	213	D	A	A	A	A	A	A	A	A	A
77	**Tuolumne Road**	b/w Mono Way & Lambert lake Rd	212	212	208	D	D	D	E	E	D	A	A	A	A
78		b/w Lambert Lake Rd & Hess Ave	212	212	208	D	D	D	D	D	D	A	A	A	A
79		b/w Hess Ave & Wards Ferry Rd	212	212	212	D	D	D	D	D	D	D	D	D	D
80		b/w Wards Ferry Rd & Standard Rd	212	212	212	D	D	D	D	D	D	D	D	D	D
81		b/w Standard Rd & Woodhams Carne	6	6	6	D	D	D	D	D	D	D	D	D	D
82		b/w Woodhams Carne & Cherokee Rd	6	6	6	D	D	D	D	D	D	D	D	D	D
83	**Wards Ferry Road**	s/o Yosemite Rd	9	9	9	D	B	B	B	B	B	B	B	B	B
84		s/o Tuolumne Rd	213	213	213	D	A	A	A	A	A	A	A	A	A
85	**Twain Harte Drive**	n/o Hunts Rd	213	213	213	D	B	B	B	B	B	B	B	B	B
86		w/o East Ave	213	213	213	D	B	B	B	B	B	B	B	B	B
87		e/o Tiffeni Dr (eastern Most)	213	213	213	D	A	A	A	A	A	A	A	A	A
88	**Shaws Flat Road**	s/o SR 49	213	213	213	D	B	B	B	B	B	B	B	B	B
89		n/o SR 49	213	213	213	D	A	A	A	A	A	A	A	A	A
90	**Jamestown Road**	s/o Shaws Flat Rd	213	213	213	D	A	A	A	A	A	A	A	A	B
91		s/o Racetrack Rd	213	213	213	D	B	B	B	B	B	B	B	B	B
92		b/w Golf links & Fifth Ave	213	213	213	D	B	B	B	B	B	B	B	B	B
93	**Rawhide Road**	n/o SR 49 & 108 (by the Bridge)	213	213	213	D	B	B	B	B	B	B	B	B	B
94		s/o SR 49 (near Tuttletown)	8	8	8	D	A	A	A	A	B	B	B	A	B
95	**Phoenix Lake Road**	e/o Creekside Dr	213	213	213	D	A	A	B	A	A	A	B	B	B
96		e/o Paseo de Los Portales	213	213	213	D	B	C	C	C	C	C	C	C	C
97		e/o Ridgewood	213	213	213	D	B	C	C	C	C	C	C	C	C
98		e/o Hess Ave	213	213	213	D	C	C	D	C	C	C	D	D	D
99		w/o Hess Ave	213	213	213	D	B	B	B	B	B	B	B	B	B
100	**Old Wards Ferry Road**	s/o Sanguinetti Rd (n/o of Walmart & Lowes Driveway)	209	209	209	D	A	A	A	A	A	A	A	A	A
101		1/4 mile s/o Sanguinetti Rd (over Highway 108)	213	213	213	D	A	A	A	A	A	A	A	A	A
102		s/o Jacobs Rd	8	8	8	D	A	A	A	A	A	A	A	A	A
103	**Soulsbyville Road**	s/o Black Oak Dr	7	7	7	D	A	A	A	A	A	A	A	A	A
104		s/o Willow Springs Dr	213	213	213	D	A	A	A	A	A	A	A	A	A
105		n/o of SR 108	213	213	213	D	C	C	C	C	C	C	C	C	C
106	**Tuolumne Rd North**	b/w Tuolumne Rd & Black Oak Casino Entrance St	6	6	6	D	B	B	B	B	B	B	B	B	B
107		n/o Mi Wu St	7	7	7	D	A	A	A	A	A	A	A	A	A
108		n/o East Ave	213	213	213	D	A	A	A	A	A	A	A	A	A
109	**O'Byrnes Ferry Rd**	n/o SR 108	7	7	7	D	C	C	C	C	C	C	C	C	C
110		n/o Prison/Calaveras County Line	7	7	7	D	B	B	B	B	B	B	B	B	B
111	**Longeway Rd**	e/o Soulsbyville Rd	213	213	213	D	C	C	C	C	C	D	D	D	D
112		e/o Crystal Falls Dr	213	213	213	D	B	B	B	B	B	B	B	B	B
113	**Stewart St**	b/w Lyons St & Elkin St	213	213	213	D	C	C	C	C	C	C	C	C	C
114		b/w Mono wWay/Restano Way & Church St	213	213	213	D	C	C	C	C	C	C	C	C	C

Appendix Table 11 - Future Year Roadway Level of Service (LOS)

#		Roadway/Highway Segment	2015 Type #	2030 Type #	2040 Type #	Minimum LOS Standard*	Existing (2015) LOS	Year 2030 - Distinctive Communities Proposed	Year 2030 - Public Services Proposed	Year 2030 - Recent Trends Existing	Year 2030 - Recent Trends Proposed	Year 2040 - Distinctive Communities Proposed	Year 2040 - Public Services Proposed	Year 2040 - Recent Trends Existing	Year 2040 - Recent Trends Proposed
115	**S Washington St**	n/o SR 108	212	212	212	D	C	D	D	D	D	D	D	D	D
116		b/w Restano Way & Church St	212	212	212	D	E	E	E	E	E	E	E	E	E
117	**Sanguinetti Rd**	b/w Mono Way & S Greenley Rd (eb one-way)	213	213	213	D	B	B	B	B	B	B	B	B	B
118		b/w S Greenley Rd & Fir Dr	209	209	209	D	A	A	A	A	A	A	A	A	A
119		b/w Fir Dr & Mono Way	213	213	213	D	B	B	B	B	B	C	C	C	C
120	**Peaceful Oak Dr**	n/o SR 108 Bypass	213	213	213	D	A	A	A	A	A	A	A	A	A
121		b/w SR 108 Ramps	212	212	212	D	A	A	A	A	A	A	A	A	A
122		b/w Mono Way and SR 108	208	208	208	D	A	A	A	A	A	A	A	A	A
123	**Other Roads**	Bell Mooney Rd, w/o Jacksonville Rd	213	213	213	D	A	A	A	A	A	A	A	A	A
124		Big Hill Rd, b/w Sawmill Flat Rd & N Bald Mountain Rd	107	107	107	D	A	A	A	A	A	A	A	A	A
125		Black Oak Rd, n/o Tuolumne Rd	9	9	9	D	A	A	A	A	A	A	A	A	A
126		Bonanza Rd, w/o Snell Rd	213	213	213	D	A	A	A	A	A	A	A	A	A
127		Bonds Flat Rd, e/o La Grange Rd	6	6	6	D	A	A	A	A	A	A	A	A	A
128		Campo Seco Rd, e/o Seco Rd	213	213	213	D	A	A	A	A	A	A	A	A	A
129		Cherokee Rd, w/o Tuolumne Rd North	8	8	8	D	A	A	A	A	A	A	A	A	A
130		Chicken Ranch Rd, w/o SR 108	11	11	11	C	A	A	A	A	A	A	A	A	A
131		Draper Mine Rd, e/o SR 108 & SR 49	213	213	213	D	A	A	A	A	A	A	A	A	A
132		East Ave, s/o Twain Harte Dr	213	213	213	D	A	A	A	A	A	A	A	A	A
133		Ferretti Road, s/o Pine Mt Dr	7	7	7	D	A	B	B	B	B	B	B	B	B
134		Golf Links Rd, n/o SR 108	213	213	213	D	A	A	A	A	A	A	A	A	A
135		Hess Ave, b/w SR 108 & Mono Way	212	212	212	D	C	C	C	C	C	C	C	C	C
136		Jacksonville Rd, s/o Twist Ave	6	6	6	D	A	A	A	A	A	A	A	A	A
137		Jacobs Rd, w/o Old Wards Ferry Rd	8	8	8	D	A	A	A	A	A	A	A	A	A
138		Lime Kiln Rd, s/o Campo Seco Rd & SR 108	213	213	213	D	B	B	B	B	B	B	B	B	B
139		Lyons Bald Mt.Rd, e/o Greenley Rd	213	213	213	D	A	A	A	A	A	A	A	A	A
140		Lyons St, w/o Greenley Rd	213	213	213	D	B	C	C	C	C	C	C	C	C
141		Main St (Jamestown), n/o Donovan St	213	213	213	D	A	A	A	A	A	A	A	A	A
142		Merrell Rd, s/o SR 120	9	9	9	D	A	A	A	A	A	A	A	A	A
143		Moringstar Dr, w/o Greenley Rd	213	213	213	D	A	A	A	A	A	A	A	A	A
144		Old Priest Grade, 1/2 Mile e/o SR 120	109	109	109	D	B	B	B	B	B	B	B	B	B
145		Sawmill Flat Rd, e/o Parrots Ferry Rd	213	213	213	D	A	B	B	B	B	B	B	B	B
146		Smith Station Rd, s/o SR 120	6	6	6	D	A	A	A	A	A	A	A	A	A
147		Snell Rd-Racetrack Rd, n/o Bonanza Rd	213	213	213	D	B	B	B	B	B	B	B	B	B
148		South Greenley Rd, b/w Mono Way & Sanguinetti Rd	208	208	208	D	A	A	A	A	A	A	A	A	A
149		Springfield Rd, n/o Horseshoe Bend Rd	213	213	213	D	A	A	A	A	A	A	A	A	A
150		Woodhams Carne Rd, s/o Tuolumne Rd	9	9	9	D	A	A	A	A	A	A	A	A	A
151		Yankee Hill Rd, e/o Bigler St	213	213	213	D	A	A	A	A	A	A	A	A	A
152		Willow Springs Dr, e/o Bonnie St	11	11	11	C	B	B	B	B	B	B	B	B	B
		Total Segments Below LOS Standard:					**7**	**4**	**5**	**4**	**3**	**5**	**5**	**7**	**6**

**Minimum acceptable LOS for Tuolumne County facilities (other than Local Roads) is LOS "D"(as defined by Tuolumne County Transportation Council). Minimum acceptable LOS for all Local Roads is LOS "C".*
Minimum acceptable LOS for Caltrans facilities is LOS "D" (as defined by Caltrans and TCTC).

E = *Operating Below LOS Standard.*
= *Improved under 2030 conditions.*
= *Improved under 2040 conditions.*

Appendix Table 12 - County, City, and Community Sponsored Bicycle and Pedestrian Projects

ID	Project Name	Priority	Description	Construction Year
1	Dragoon Gulch Trail - Expansion Phase I	Tier 1b	Construct a new pedestrian, bicycle, and recreational facilities. This non-motorized trail will connect the West Sonora Community to Sonora and to the existing Dragoon Gulch trail system.	2030
2	Sugar Pine Railroad Regional Trail	Tier 2	Construct a regional trail on the former railroad ROW from Twain Harte to Tuolumne Road.	2040
3	Sonora to Columbia Regional Trail	Tier 1b	Construct a Class I bicycle path and a Class II bicycle lane from Sonora High to Columbia College.	2030
4	SR 108/49 Complete Streets Project	Tier 1b	Construct complete streets along SR 108/49 as part of the 5 lane widening from Bell Money Ave to Stockton Rd.	2040
5	Greenley Rd Extension Complete Streets Project	Tier 1b	Construct complete streets improvements as part of the future Greenley Road Extension.	2030
6	Columbia Pedestrian Facility	Tier 1b	Construct a Safe Routes to School project by adding new sidewalks along Parrotts Ferry Rd.	2030
7	Highway 49/Shaws Flat Gateway Project	Tier 1b	Construct a new roundabout or new signal with Safe Routes to School sidewalk crossing improvements at the intersection with Shaws Flat Rd, School Street, and Columbia Way.	2030
8	Southgate D & SR 49/Stockton Rd Intersection Improvements	Tier 1c	Construct geometric improvements to pedestrian crossings, at the intersection of SR 49 & Southgate Dr/Forest Drive/Wood Creek Park Dr.	2040
9	Groveland Sidewalks Project	Tier 1c	Construct a Safe Routes to School project by adding new sidewalk and improving existing pedestrian walkways along SR 120 in Groveland.	2040
10	Tuolumne Trail Project	Tier 1c	Construct a Safe Routes to School Project by adding a Class I Trail improvements along Tuolumne Road from Summerville Rd to North Tuolumne Rd/Cherry Valley Rd.	2040
11	Sonora to Jamestown Regional Trail	Tier 2	Construct a Class I and a Class II trail from Sonora High to Jamestown.	2040
12	Sierra Railroad Regional Trail	Tier 2	Construct a regional Class I trail along the Sierra RR (Rails with Trails) from Standard Townsite to the Tuolumne County Boundary line with Stanislaus County.	2040
13	Stockton Rd Complete Streets Project	Tier 2	Construct a sidewalk improvements and construct a new bicycle trail along Stockton Road. Connect Downtown Sonora with the Motherlode Fairgrounds.	2040
14	North Washington Complete Streets Project	Tier 2	Construct complete streets improvements along North Washington Street. Connect Downtown Sonora with North Sonora.	2040
15	South Washington Complete Streets Project	Tier 2	Construct complete streets improvements and construct a new bicycle trail along South Washington Street. Connect Downtown Sonora with the Innovation Lab.	2040
16	Dragoon Gulch Connector Trail	Tier 2	Construct a new class I pedestrian and bicycle trail that connects Dragoon Gulch with Sonora High, Downtown Sonora, and the Wood Creek Park.	2040

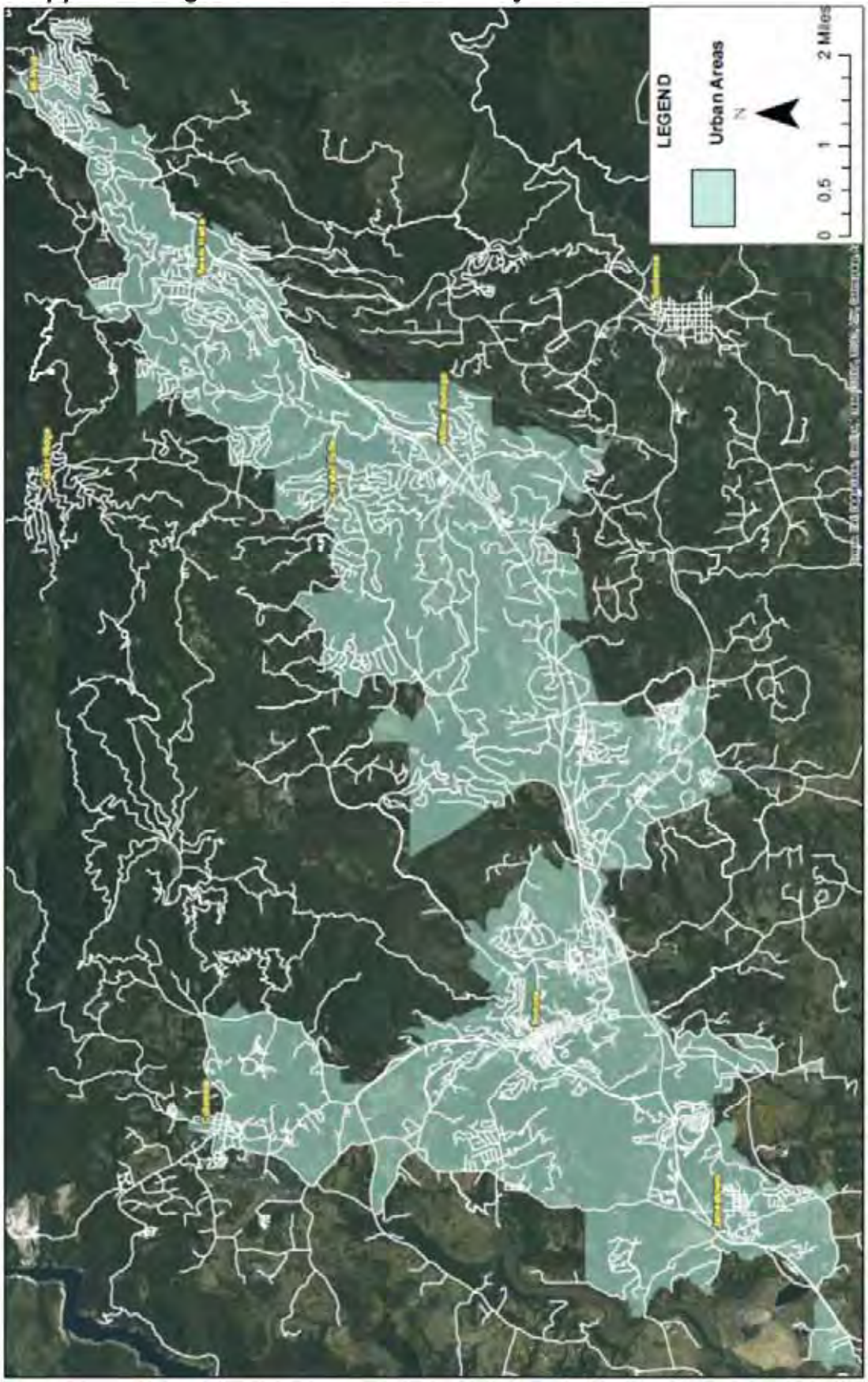
Appendix Table 13 - Tuolumne County Transit Projects

ID	Project Name	Priority	Description	Construction Year
1	Law & Justice Center Bus Transfer Facility	Tier 1a	Construct a new regional bus transfer facility along with road and cul de sac improvements for bus access.	2017
2	Transit Maintenance Facility Improvements - Phase 1 & 2	Tier 1a	Install a generator and fueling capability at the Transit Maintenance Facility.	2017
3	Existing Bus Stops	Tier 1a	Existing Bus Stop Shelter Improvements such as installing transit stop lighting, security cameras, and etc.	On-Going
4	Standard - Tuolumne Rd	Tier 1a	New Bus Stop Shelter.	2015
5	South Washington/Stockton Rd Bus Stop Facilities	Tier 1a	Two new bus stop shelters for Downtown Sonora along Stockton Rd/ South Washington St.	2018
6	Restano Way/South Washington/Mono Way	Tier 1b	New Bus Stop Shelter.	TBD
7	Dragoon Gulch/Racetrack Rd	Tier 1b	New Bus Stop Shelter.	TBD
8	Sierra Village	Tier 1b	New Bus Stop Shelter.	TBD
9	Mono Village Center	Tier 1c	Replace existing Bus Stop Shelter.	TBD
10	MiWuk Village	Tier 1c	New Bus Stop Shelter.	TBD
11	Columbia Inter-County Transfer Point	Tier 2	New Bus Stop Shelter and bus transfer facility.	2030
12	Northern Yosemite Regional Transit Access Center	Tier 2	Purchase and make improvements for a Regional Transit Access Center building.	2030
13	Groveland Transit Stop Improvements	Tier 2	Construct bus stop improvements in Groveland.	2040
14	Sonora Plaza/Mono Way/Greenley Rd	Tier 2	New Bus Stop Shelter.	2040

Source: Tuolume County Transportation Council

APPENDIX FIGURES

Appendix Figure 1 – Tuolumne County Urban Area Boundaries



Legend

XXX (XXX) = AM (PM)
Peak Hour Volumes

Year 2015 Existing Intersection Turning Movement Volumes (TMVs)

Tuolomne County EIR Traffic Study

APPENDIX FIGURE 2

WOOD RODGERS
DEVELOPING INNOVATIVE DESIGN SOLUTIONS

Legend

XXX (XXX) = AM (PM)
Peak Hour Volumes

Year 2030 Intersection Turning Movement Volumes - Distinctive Communities (Proposed)

Tuolomne County EIR Traffic Study

APPENDIX FIGURE 3

WOOD RODGERS

Legend

XXX (XXX) = AM (PM)
Peak Hour Volumes

Year 2030 Intersection Turning Movement Volumes - Public Services (Proposed)

Tuolomne County EIR Traffic Study

APPENDIX FIGURE 4

WOOD RODGERS

Legend

XXX (XXX) = AM (PM)
Peak Hour Volumes

Year 2030 Intersection Turning Movement Volumes - Recent Trends (Existing)

Tuolomne County EIR Traffic Study

APPENDIX FIGURE 5

WOOD RODGERS

Legend

XXX (XXX) = AM (PM)
Peak Hour Volumes

Year 2030 Intersection Turning Movement Volumes - Recent Trends (Proposed)

Tuolomne County EIR Traffic Study

APPENDIX FIGURE 6

WOOD RODGERS

Legend

XXX (XXX) = AM (PM)
Peak Hour Volumes

Year 2040 Intersection Turning Movement Volumes - Distinctive Communities (Proposed)

Tuolumne County EIR Traffic Study

APPENDIX FIGURE 7

WOOD RODGERS

Year 2040 Intersection Turning Movement Volumes - Public Services (Proposed)

Tuolomne County EIR Traffic Study

APPENDIX FIGURE 8

WOOD RODGERS

Legend

XXX (XXX) = AM (PM)
Peak Hour Volumes

Year 2040 Intersection Turning Movement Volumes - Recent Trends (Existing)

Tuolomne County EIR Traffic Study

APPENDIX FIGURE 9

WOOD RODGERS

Legend

XXX (XXX) = AM (PM)
Peak Hour Volumes

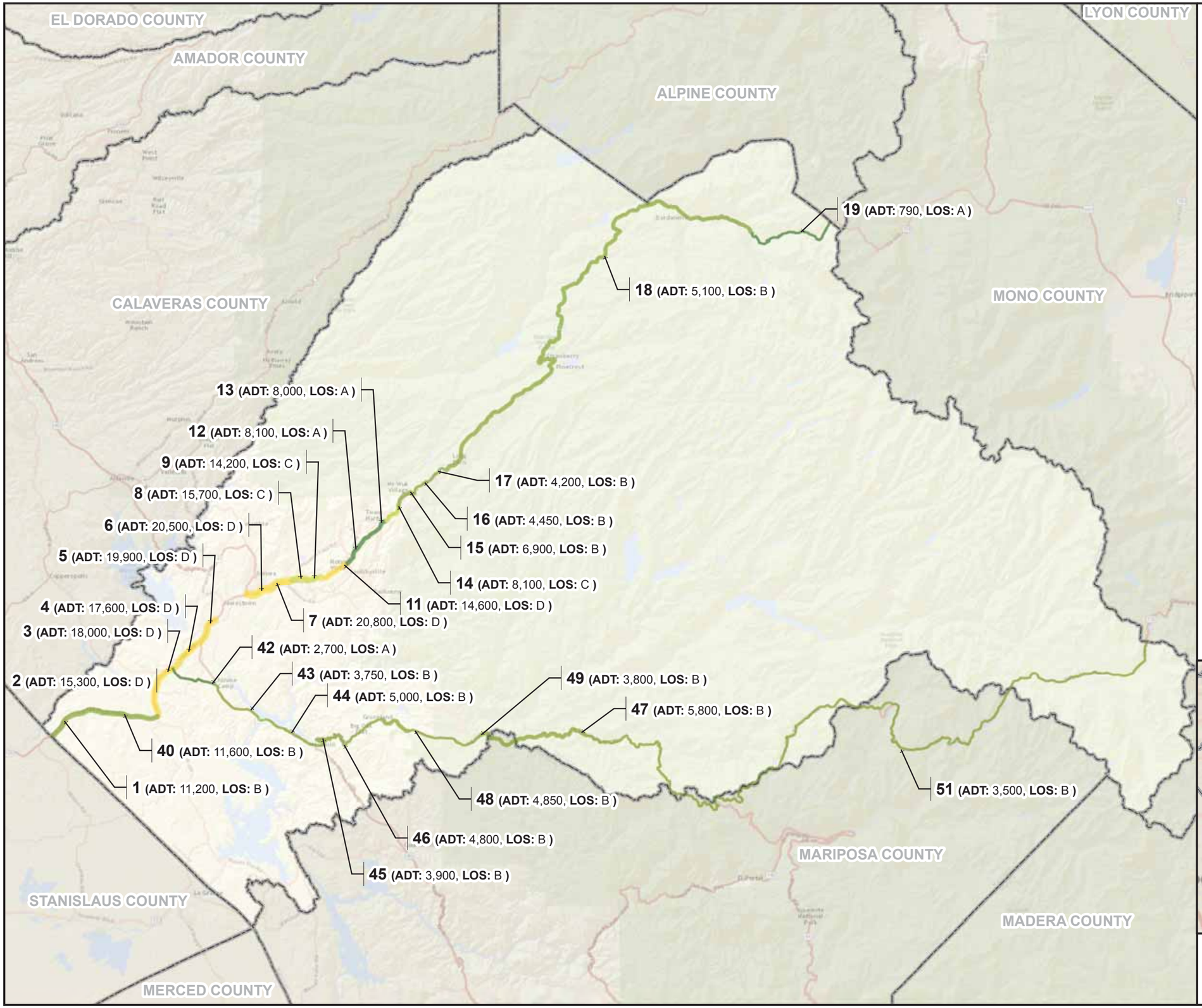
Year 2040 Intersection Turning Movement Volumes - Recent Trends (Proposed)

Tuolomne County EIR Traffic Study

APPENDIX FIGURE 10

WOOD RODGERS

APPENDIX FIGURE 11-A: EXISTING DEFICIENCIES
SR 108 AND SR 120
TUOLUMNE COUNTY EIR TRAFFIC STUDY
TUOLUMNE COUNTY, CA
AUGUST 2015

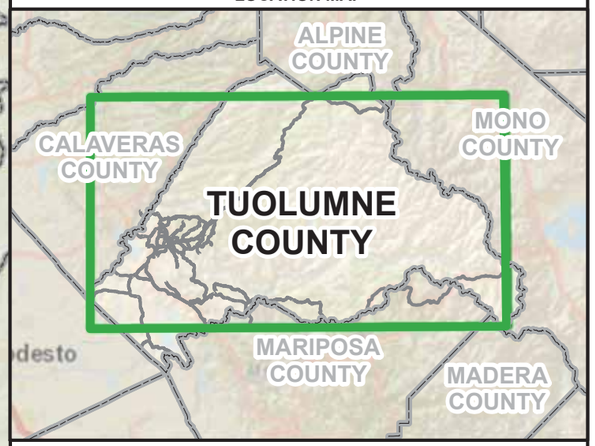


0 17,500 35,000
Feet

Level of Service - Color Range
- A
- B
- C
- D
- E
- F

ADT Values - Proportional
- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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CALAVERAS COUNTY

39 (ADT: 5,600, LOS: B)
147 (ADT: 3,586, LOS: B)
90 (ADT: 2,486, LOS: A)
37 (ADT: 5,500, LOS: B)
126 (ADT: 1,330, LOS: A)
29 (ADT: 10,700, LOS: C)
30 (ADT: 10,900, LOS: C)
116 (ADT: 18,595, LOS: E)
114 (ADT: 5,905, LOS: C)
115 (ADT: 10,859, LOS: C)
38 (ADT: 4,550, LOS: B)
94 (ADT: 2,407, LOS: A)
91 (ADT: 3,134, LOS: B)
28 (ADT: 11,900, LOS: C)
93 (ADT: 4,149, LOS: B)
92 (ADT: 2,798, LOS: B)
67 (ADT: 792, LOS: A)
26 (ADT: 19,700, LOS: D)
141 (ADT: 1,526, LOS: A)
24 (ADT: 19,300, LOS: E)
25 (ADT: 19,300, LOS: D)
130 (ADT: 1,406, LOS: A)
75 (ADT: 2,902, LOS: B)
123 (ADT: 148, LOS: A)
66 (ADT: 2,640, LOS: A)
134 (ADT: 1,032, LOS: A)
76 (ADT: 1,036, LOS: A)
74 (ADT: 1,050, LOS: A)
128 (ADT: 1,454, LOS: A)
27 (ADT: 23,500, LOS: E)
80 (ADT: 11,745, LOS: D)
81 (ADT: 11,955, LOS: D)
82 (ADT: 11,848, LOS: D)
137 (ADT: 596, LOS: A)
150 (ADT: 1,473, LOS: A)
102 (ADT: 502, LOS: A)
84 (ADT: 1,799, LOS: A)
138 (ADT: 3,973, LOS: B)
83 (ADT: 2,399, LOS: B)

52 (ADT: 22,205, LOS: F)
70 (ADT: 15,317, LOS: D)
53 (ADT: 16,986, LOS: A)
54 (ADT: 21,628, LOS: A)
119 (ADT: 3,182, LOS: A)
55 (ADT: 25,060, LOS: C)
118 (ADT: 8,500, LOS: A)
77 (ADT: 15,203, LOS: D)
148 (ADT: 8,815, LOS: A)
100 (ADT: 7,116, LOS: A)
78 (ADT: 13,042, LOS: C)
117 (ADT: 4,299, LOS: A)
79 (ADT: 12,283, LOS: B)
101 (ADT: 805, LOS: A)

APPENDIX FIGURE 11-B: EXISTING DEFICIENCIES
SOUTHERN SONORA AREA
TUOLUMNE COUNTY EIR TRAFFIC STUDY
TUOLUMNE COUNTY, CA
AUGUST 2015

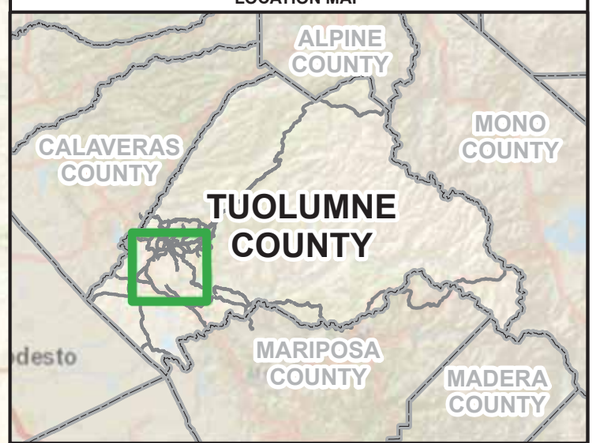
NORTH

0 3,750 7,500
Feet

Level of Service - Color Range
- A
- B
- C
- D
- E
- F

ADT Values - Proportional
- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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APPENDIX FIGURE 11-C: EXISTING DEFICIENCIES
NORTHERN SONORA AREA
TUOLUMNE COUNTY EIR TRAFFIC STUDY
TUOLUMNE COUNTY, CA
AUGUST 2015

CALAVERAS COUNTY

145 (ADT: 2,300, LOS: A)
151 (ADT: 1,149, LOS: A)
64 (ADT: 8,066, LOS: C)
65 (ADT: 4,071, LOS: B)
63 (ADT: 7,900, LOS: C)
149 (ADT: 1,892, LOS: A)
89 (ADT: 1,989, LOS: A)
62 (ADT: 11,100, LOS: D)
36 (ADT: 5,050, LOS: B)
88 (ADT: 3,057, LOS: B)
33 (ADT: 16,100, LOS: E)
32 (ADT: 19,400, LOS: E)
113 (ADT: 6,597, LOS: C)
140 (ADT: 5,501, LOS: B)
31 (ADT: 18,500, LOS: E)
143 (ADT: 1,517, LOS: A)
68 (ADT: 5,868, LOS: B)
69 (ADT: 11,332, LOS: C)
60 (ADT: 5,775, LOS: B)
61 (ADT: 260, LOS: A)
56 (ADT: 12,327, LOS: A)
99 (ADT: 4,729, LOS: B)
35 (ADT: 13,300, LOS: D)
34 (ADT: 15,400, LOS: D)
139 (ADT: 1,709, LOS: A)
98 (ADT: 7,746, LOS: C)
95 (ADT: 2,095, LOS: A)
124 (ADT: 1,169, LOS: A)
96 (ADT: 4,796, LOS: B)
97 (ADT: 5,495, LOS: B)
58 (ADT: 7,435, LOS: C)
125 (ADT: 1,586, LOS: A)
59 (ADT: 3,391, LOS: B)
122 (ADT: 5,316, LOS: A)
121 (ADT: 2,663, LOS: A)
120 (ADT: 596, LOS: A)
57 (ADT: 12,076, LOS: C)
135 (ADT: 8,137, LOS: C)
87 (ADT: 1,914, LOS: A)
108 (ADT: 1,436, LOS: A)
132 (ADT: 1,392, LOS: A)
86 (ADT: 4,466, LOS: B)
85 (ADT: 3,642, LOS: B)
112 (ADT: 4,283, LOS: B)
111 (ADT: 8,050, LOS: C)
107 (ADT: 2,391, LOS: A)
152 (ADT: 2,707, LOS: B)
105 (ADT: 6,457, LOS: C)
104 (ADT: 1,817, LOS: A)
106 (ADT: 6,436, LOS: B)
131 (ADT: 942, LOS: A)
129 (ADT: 1,656, LOS: A)
103 (ADT: 1,033, LOS: A)
125 (ADT: 1,586, LOS: A)

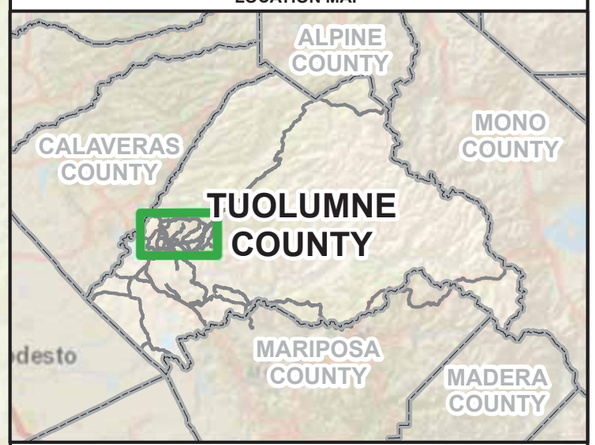
NORTH

0 3,750 7,500
Feet

Level of Service - Color Range
- A
- B
- C
- D
- E
- F

ADT Values - Proportional
- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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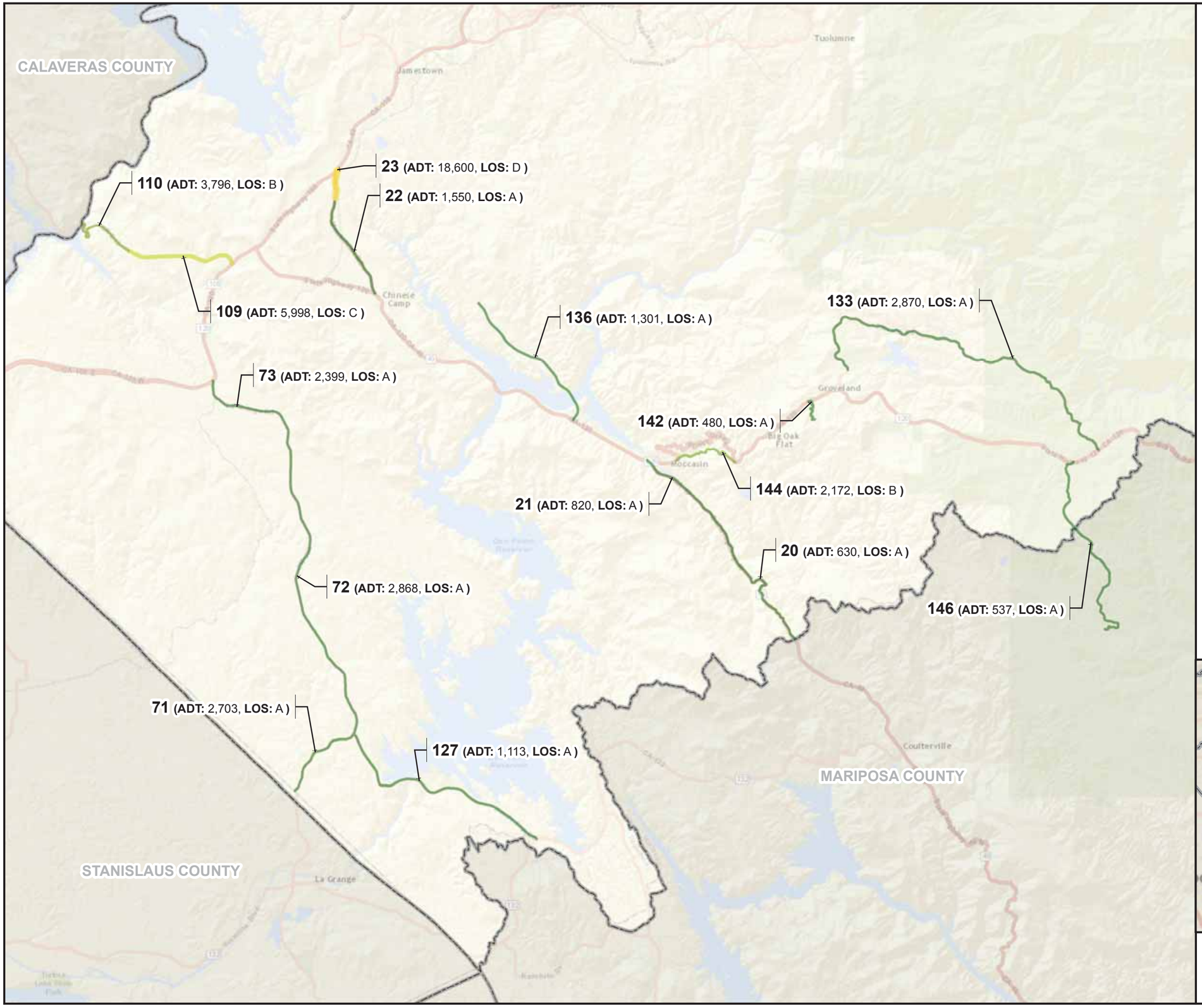
APPENDIX FIGURE 11-D: EXISTING DEFICIENCIES
GROVELAND AREA

TUOLUMNE COUNTY EIR TRAFFIC STUDY

TUOLUMNE COUNTY, CA

AUGUST 2015



NORTH

0 6,250 12,500

Feet

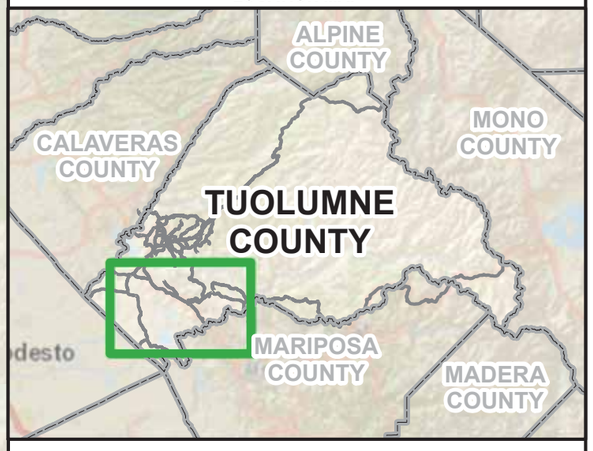
Level of Service - Color Range

- A
- B
- C
- D
- E
- F

ADT Values - Proportional

- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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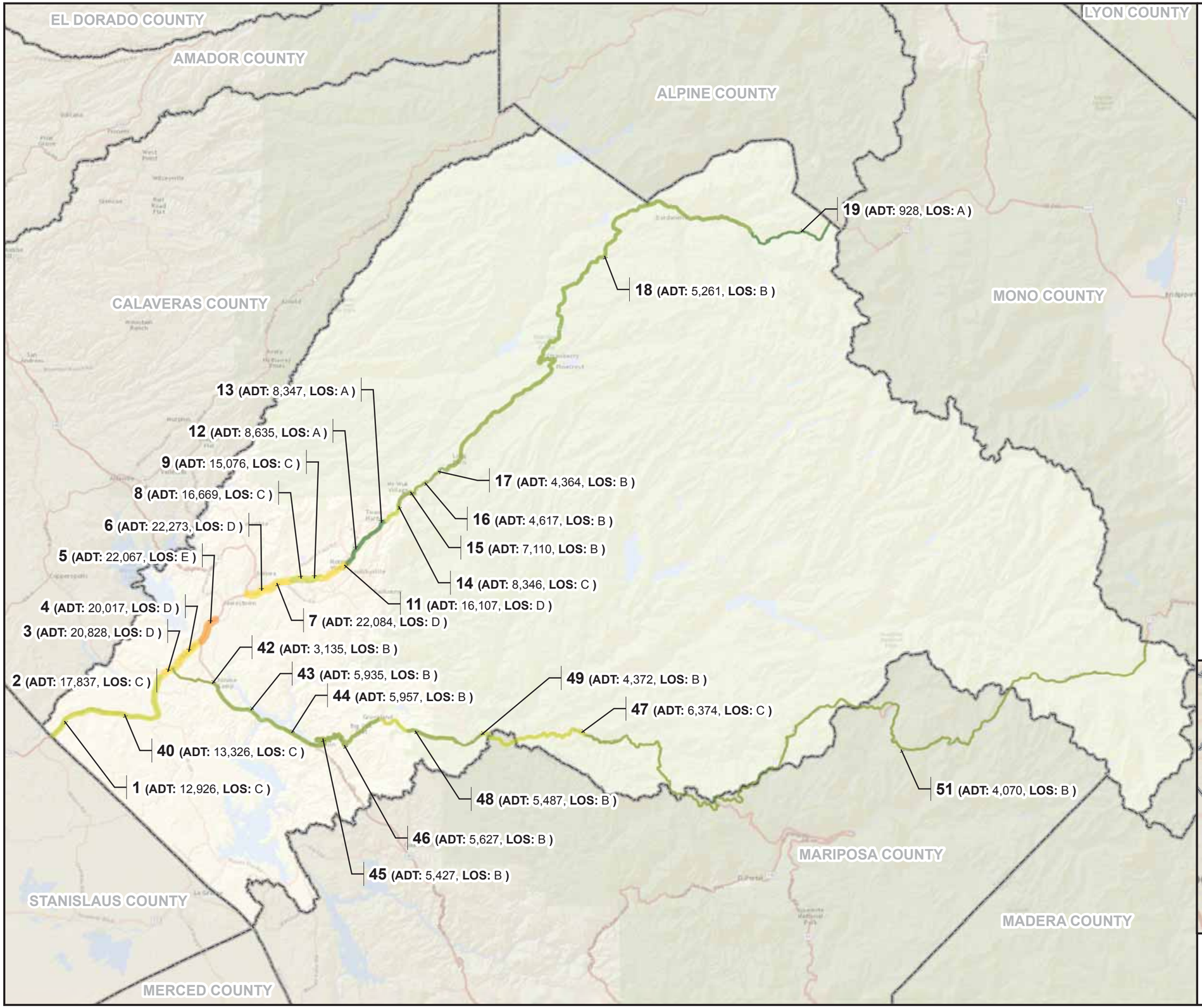
APPENDIX FIGURE 12-A: YEAR 2030 DEFICIENCIES DISTINCTIVE COMMUNITIES PROPOSED SR 108 AND SR 120

TUOLUMNE COUNTY EIR TRAFFIC STUDY

TUOLUMNE COUNTY, CA

AUGUST 2015



NORTH

0 17,500 35,000

Feet

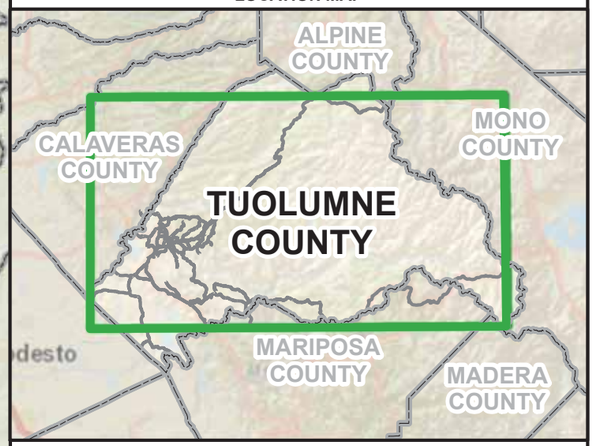
Level of Service - Color Range

- A
- B
- C
- D
- E
- F

ADT Values - Proportional

- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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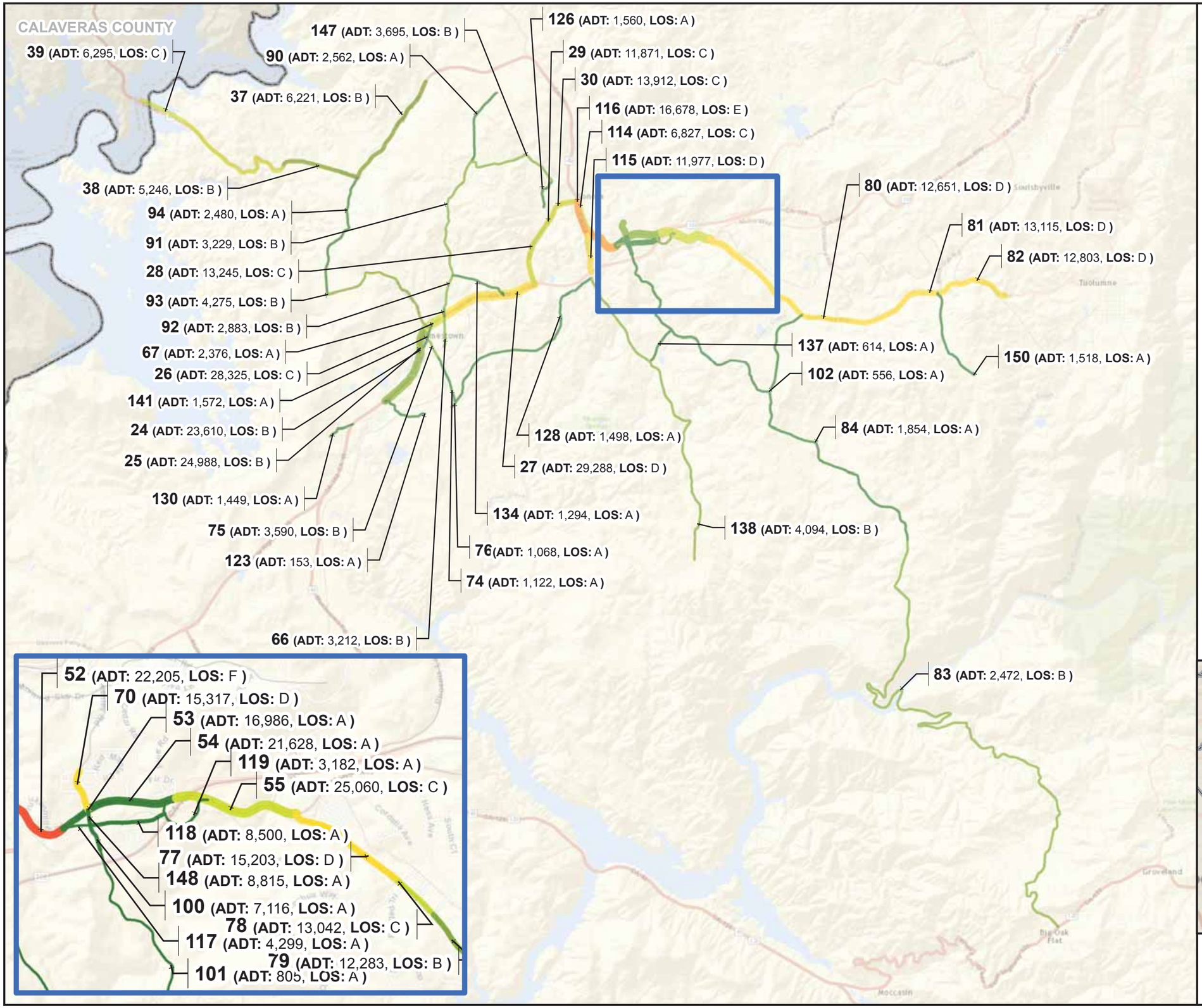
APPENDIX FIGURE 12-B: YEAR 2030 DEFICIENCIES
DISTINCTIVE COMMUNITIES PROPOSED SOUTHERN SONORA AREA

TUOLUMNE COUNTY EIR TRAFFIC STUDY

TUOLUMNE COUNTY, CA

AUGUST 2015



NORTH

0 3,750 7,500

Feet

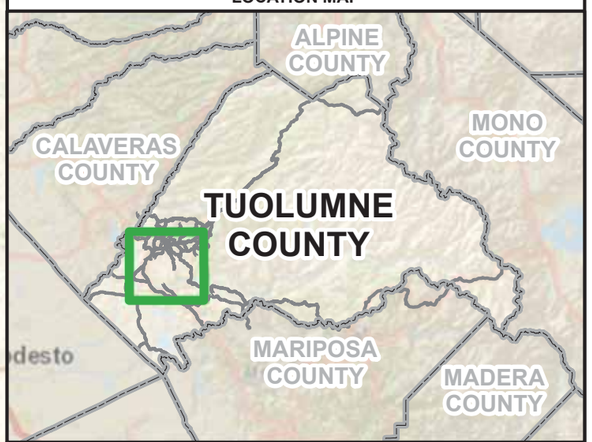
Level of Service - Color Range

- A
- B
- C
- D
- E
- F

ADT Values - Proportional

- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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CALAVERAS COUNTY

145 (ADT: 2,849, LOS: B)
151 (ADT: 1,184, LOS: A)
64 (ADT: 8,665, LOS: C)
65 (ADT: 4,495, LOS: B)
63 (ADT: 8,712, LOS: C)
149 (ADT: 1,950, LOS: A)
89 (ADT: 2,050, LOS: A)
62 (ADT: 12,511, LOS: D)
36 (ADT: 6,312, LOS: B)
88 (ADT: 3,150, LOS: B)
33 (ADT: 11,879, LOS: C)
32 (ADT: 15,004, LOS: D)
113 (ADT: 6,798, LOS: C)
140 (ADT: 5,668, LOS: C)
31 (ADT: 16,883, LOS: E)
143 (ADT: 1,563, LOS: A)
68 (ADT: 10,591, LOS: C)
69 (ADT: 15,500, LOS: D)
60 (ADT: 6,680, LOS: B)
61 (ADT: 432, LOS: A)
56 (ADT: 14,501, LOS: A)
99 (ADT: 4,873, LOS: B)
35 (ADT: 16,684, LOS: A)
34 (ADT: 11,822, LOS: A)
139 (ADT: 1,790, LOS: A)
98 (ADT: 8,803, LOS: C)
97 (ADT: 6,448, LOS: C)
96 (ADT: 5,798, LOS: C)
124 (ADT: 1,205, LOS: A)
95 (ADT: 2,534, LOS: A)
58 (ADT: 7,691, LOS: C)
125 (ADT: 1,743, LOS: A)
59 (ADT: 4,805, LOS: B)
122 (ADT: 5,510, LOS: A)
121 (ADT: 2,850, LOS: A)
120 (ADT: 614, LOS: A)
57 (ADT: 14,067, LOS: C)
135 (ADT: 9,296, LOS: C)
87 (ADT: 2,142, LOS: A)
108 (ADT: 1,480, LOS: A)
132 (ADT: 1,554, LOS: A)
86 (ADT: 4,859, LOS: B)
85 (ADT: 3,894, LOS: B)
112 (ADT: 4,413, LOS: B)
111 (ADT: 8,295, LOS: C)
107 (ADT: 2,511, LOS: A)
152 (ADT: 2,881, LOS: B)
105 (ADT: 7,416, LOS: C)
104 (ADT: 2,203, LOS: A)
106 (ADT: 6,632, LOS: B)
131 (ADT: 992, LOS: A)
129 (ADT: 1,746, LOS: A)
103 (ADT: 1,139, LOS: A)
125 (ADT: 1,743, LOS: A)

APPENDIX FIGURE 12-C: YEAR 2030 DEFICIENCIES
DISTINCTIVE COMMUNITIES PROPOSED NORTHERN SONORA AREA

TUOLUMNE COUNTY EIR TRAFFIC STUDY

TUOLUMNE COUNTY, CA

AUGUST 2015

NORTH

0 3,750 7,500

Feet

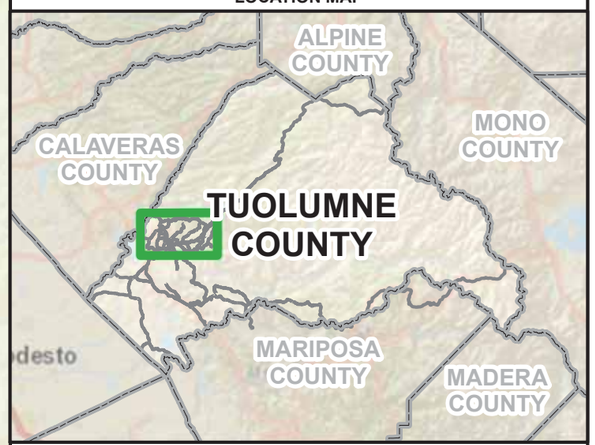
Level of Service - Color Range

- A
- B
- C
- D
- E
- F

ADT Values - Proportional

- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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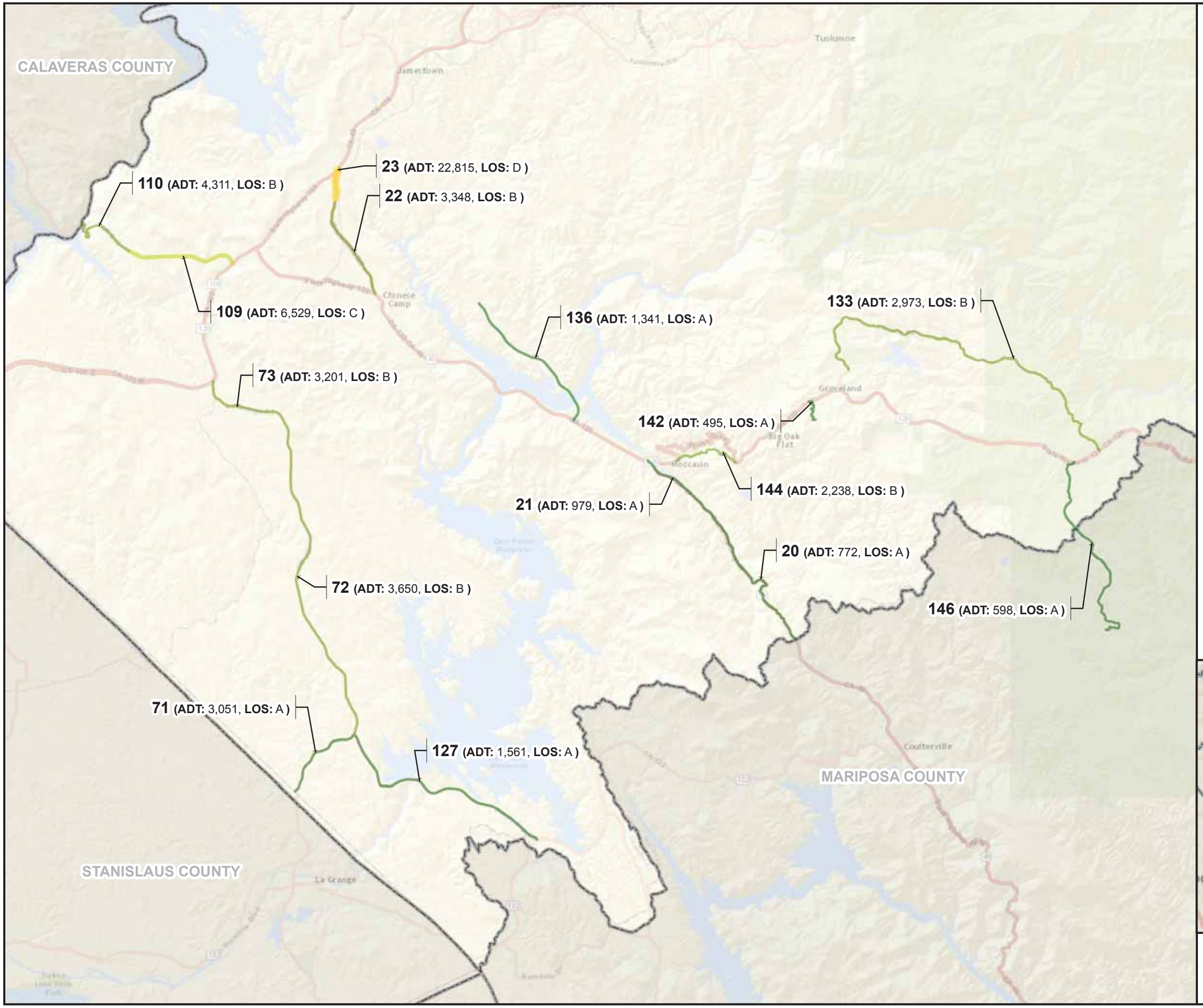
APPENDIX FIGURE 12-D: YEAR 2030 DEFICIENCIES
DISTINCTIVE COMMUNITIES PROPOSED GROVELAND AREA

TUOLUMNE COUNTY EIR TRAFFIC STUDY

TUOLUMNE COUNTY, CA

AUGUST 2015



NORTH

0 6,250 12,500

Feet

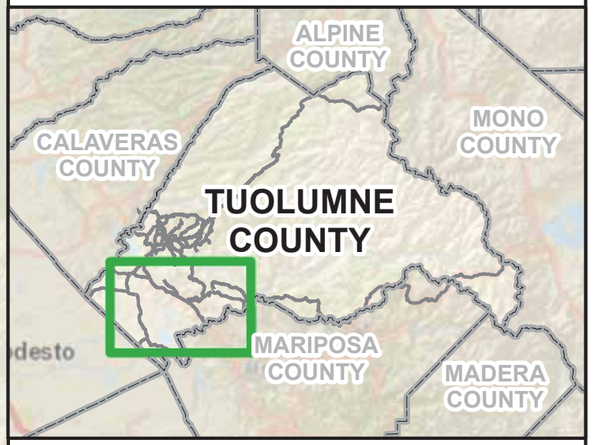
Level of Service - Color Range

- A
- B
- C
- D
- E
- F

ADT Values - Proportional

- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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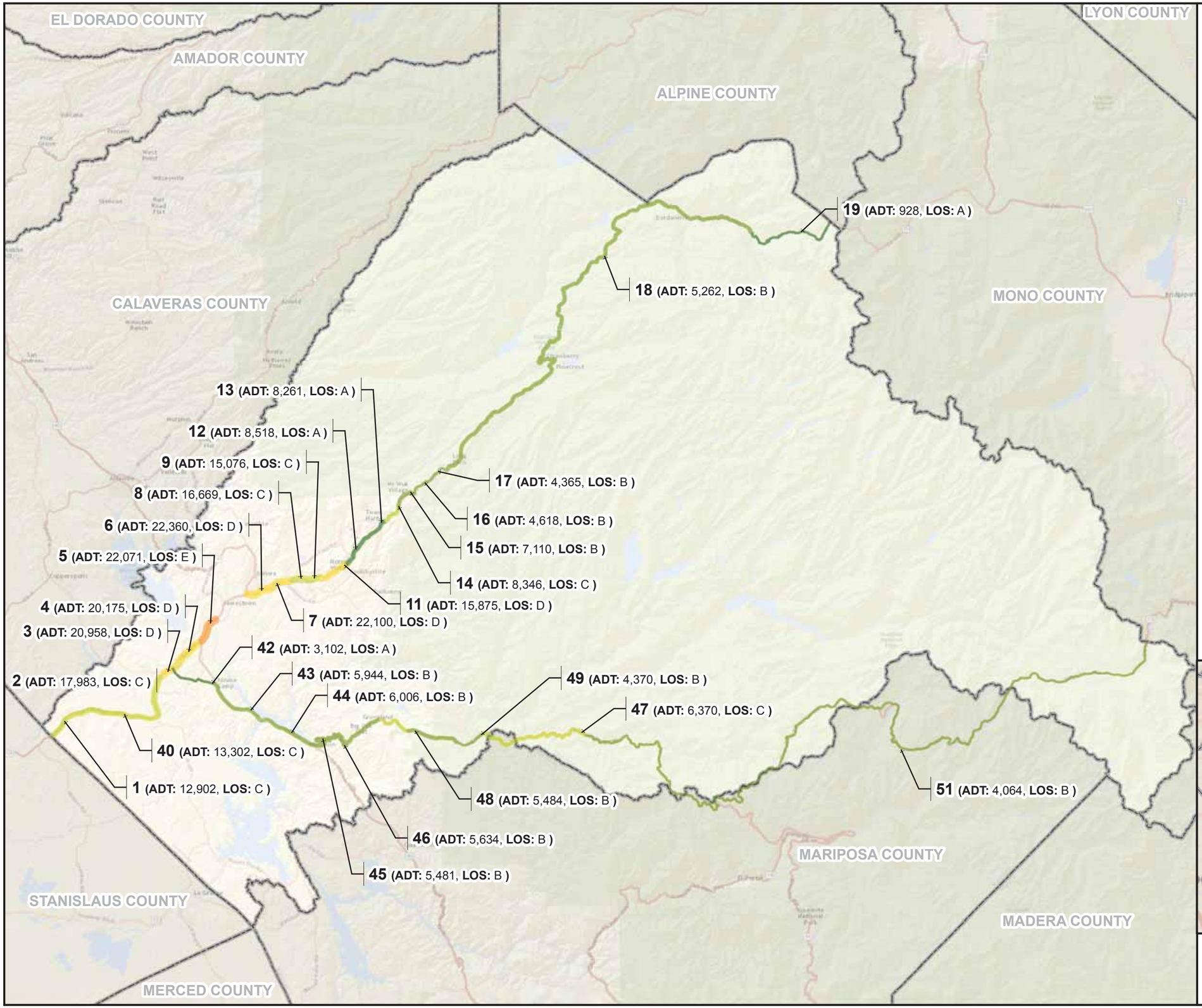
APPENDIX FIGURE 13-A: YEAR 2030 DEFICIENCIES PUBLIC SERVICES PROPOSED SR 108 AND SR 120

TUOLUMNE COUNTY EIR TRAFFIC STUDY

TUOLUMNE COUNTY, CA

AUGUST 2015



NORTH

0 17,500 35,000

Feet

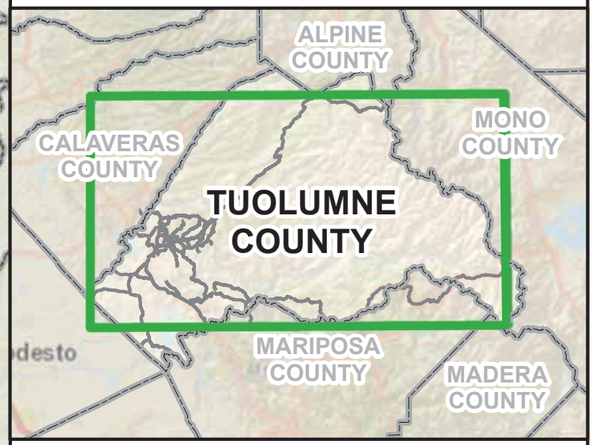
Level of Service - Color Range

- A
- B
- C
- D
- E
- F

ADT Values - Proportional

- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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CALAVERAS COUNTY

39 (ADT: 6,282, LOS: C)
147 (ADT: 3,695, LOS: B)
90 (ADT: 2,562, LOS: A)
37 (ADT: 6,234, LOS: B)
126 (ADT: 1,549, LOS: A)
29 (ADT: 12,043, LOS: C)
30 (ADT: 13,812, LOS: C)
116 (ADT: 16,600, LOS: E)
114 (ADT: 6,716, LOS: C)
115 (ADT: 11,982, LOS: D)
38 (ADT: 5,233, LOS: B)
94 (ADT: 2,480, LOS: A)
91 (ADT: 3,229, LOS: B)
28 (ADT: 13,346, LOS: C)
93 (ADT: 4,275, LOS: B)
92 (ADT: 2,883, LOS: B)
67 (ADT: 2,376, LOS: A)
26 (ADT: 28,298, LOS: C)
141 (ADT: 1,572, LOS: A)
24 (ADT: 23,794, LOS: B)
25 (ADT: 25,241, LOS: C)
130 (ADT: 1,449, LOS: A)
75 (ADT: 3,541, LOS: B)
123 (ADT: 153, LOS: A)
66 (ADT: 3,212, LOS: B)
80 (ADT: 12,398, LOS: D)
81 (ADT: 12,918, LOS: D)
82 (ADT: 12,624, LOS: D)
137 (ADT: 614, LOS: A)
150 (ADT: 1,518, LOS: A)
102 (ADT: 551, LOS: A)
84 (ADT: 1,854, LOS: A)
128 (ADT: 1,498, LOS: A)
27 (ADT: 29,313, LOS: D)
134 (ADT: 1,374, LOS: A)
76 (ADT: 1,068, LOS: A)
74 (ADT: 1,107, LOS: A)
138 (ADT: 4,094, LOS: B)
83 (ADT: 2,472, LOS: B)

52 (ADT: 22,205, LOS: F)
70 (ADT: 15,317, LOS: D)
53 (ADT: 16,986, LOS: A)
54 (ADT: 21,628, LOS: A)
119 (ADT: 3,182, LOS: A)
55 (ADT: 25,060, LOS: C)
118 (ADT: 8,500, LOS: A)
77 (ADT: 15,203, LOS: D)
148 (ADT: 8,815, LOS: A)
100 (ADT: 7,116, LOS: A)
78 (ADT: 13,042, LOS: C)
117 (ADT: 4,299, LOS: A)
79 (ADT: 12,283, LOS: B)
101 (ADT: 805, LOS: A)

APPENDIX FIGURE 13-B: YEAR 2030 DEFICIENCIES PUBLIC SERVICES PROPOSED SOUTHERN SONORA AREA

TUOLUMNE COUNTY EIR TRAFFIC STUDY

TUOLUMNE COUNTY, CA

AUGUST 2015

NORTH

0 3,750 7,500

Feet

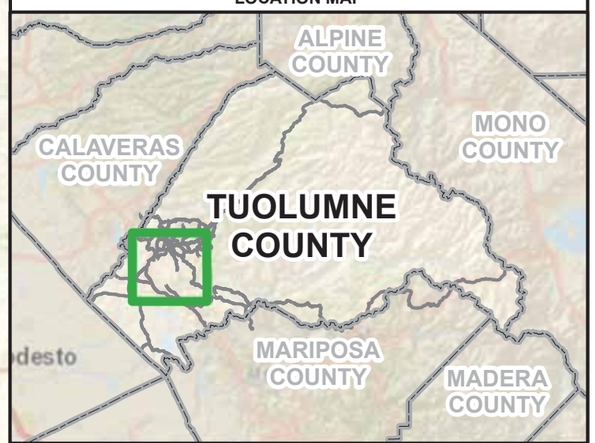
Level of Service - Color Range

- A
- B
- C
- D
- E
- F

ADT Values - Proportional

- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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APPENDIX FIGURE 13-C: YEAR 2030 DEFICIENCIES PUBLIC SERVICES PROPOSED NORTHERN SONORA AREA

TUOLUMNE COUNTY EIR TRAFFIC STUDY

TUOLUMNE COUNTY, CA

AUGUST 2015

CALAVERAS COUNTY

145 (ADT: 2,850, LOS: B)
151 (ADT: 1,184, LOS: A)
64 (ADT: 8,695, LOS: C)
65 (ADT: 4,497, LOS: B)
63 (ADT: 8,747, LOS: C)
149 (ADT: 1,950, LOS: A)
89 (ADT: 2,050, LOS: A)
62 (ADT: 12,546, LOS: D)
36 (ADT: 6,348, LOS: B)
88 (ADT: 3,150, LOS: B)
33 (ADT: 11,917, LOS: D)
32 (ADT: 15,040, LOS: D)
113 (ADT: 6,798, LOS: C)
140 (ADT: 5,668, LOS: C)
31 (ADT: 16,923, LOS: E)
143 (ADT: 1,563, LOS: A)
68 (ADT: 10,651, LOS: C)
69 (ADT: 15,505, LOS: D)
60 (ADT: 6,598, LOS: B)
61 (ADT: 438, LOS: A)
56 (ADT: 14,238, LOS: A)
99 (ADT: 5,129, LOS: B)
135 (ADT: 9,263, LOS: C)
57 (ADT: 14,135, LOS: C)
120 (ADT: 614, LOS: A)
121 (ADT: 2,829, LOS: A)
122 (ADT: 5,503, LOS: A)
59 (ADT: 4,279, LOS: B)
139 (ADT: 1,864, LOS: A)
35 (ADT: 16,720, LOS: A)
34 (ADT: 11,912, LOS: A)
98 (ADT: 9,250, LOS: D)
58 (ADT: 8,193, LOS: C)
125 (ADT: 1,739, LOS: A)
96 (ADT: 6,068, LOS: C)
97 (ADT: 6,775, LOS: C)
95 (ADT: 2,703, LOS: B)
124 (ADT: 1,205, LOS: A)
87 (ADT: 2,096, LOS: A)
108 (ADT: 1,480, LOS: A)
132 (ADT: 1,559, LOS: A)
86 (ADT: 4,822, LOS: B)
85 (ADT: 3,845, LOS: B)
112 (ADT: 4,413, LOS: B)
111 (ADT: 8,295, LOS: C)
107 (ADT: 2,548, LOS: A)
152 (ADT: 2,991, LOS: B)
105 (ADT: 7,348, LOS: C)
104 (ADT: 2,256, LOS: A)
106 (ADT: 6,632, LOS: B)
131 (ADT: 992, LOS: A)
129 (ADT: 1,706, LOS: A)
103 (ADT: 1,174, LOS: A)
125 (ADT: 1,739, LOS: A)

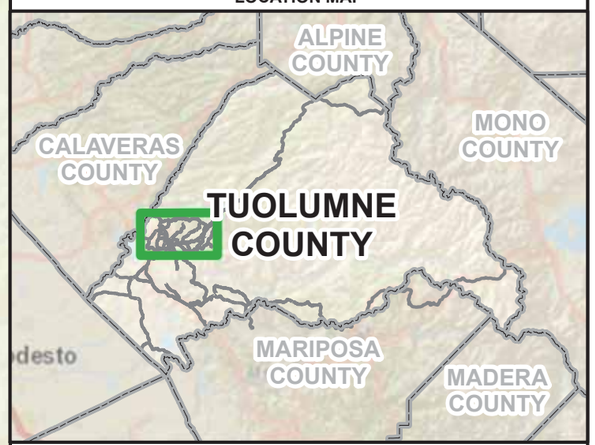
NORTH

0 3,750 7,500
Feet

Level of Service - Color Range
- A
- B
- C
- D
- E
- F

ADT Values - Proportional
- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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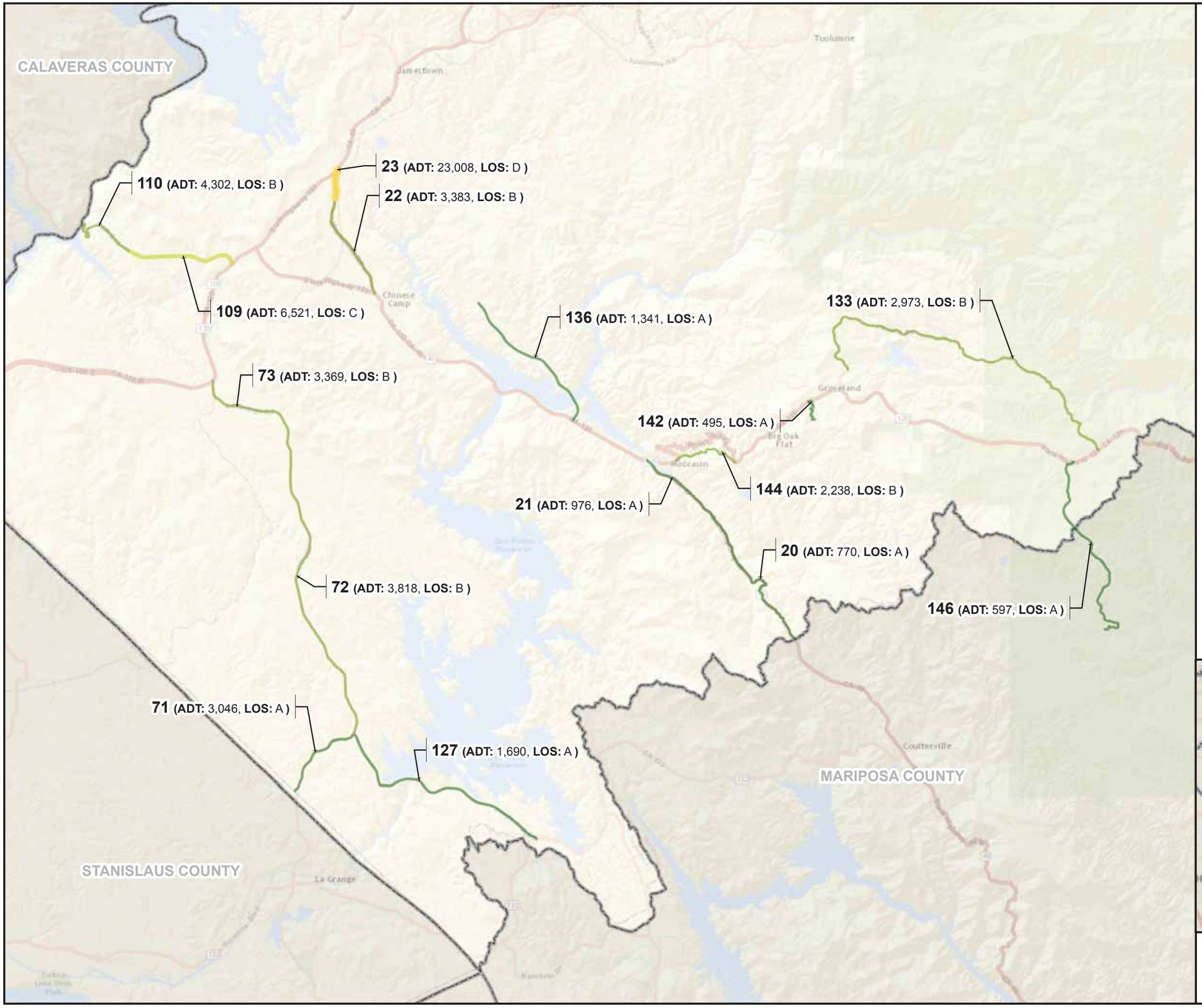
APPENDIX FIGURE 13-D: YEAR 2030 DEFICIENCIES PUBLIC SERVICES PROPOSED GROVELAND AREA

TUOLUMNE COUNTY EIR TRAFFIC STUDY

TUOLUMNE COUNTY, CA

AUGUST 2015



NORTH

0 6,250 12,500

Feet

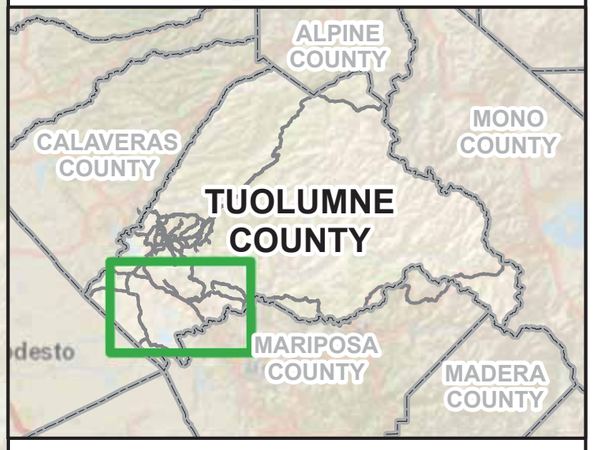
Level of Service - Color Range

- A
- B
- C
- D
- E
- F

ADT Values - Proportional

- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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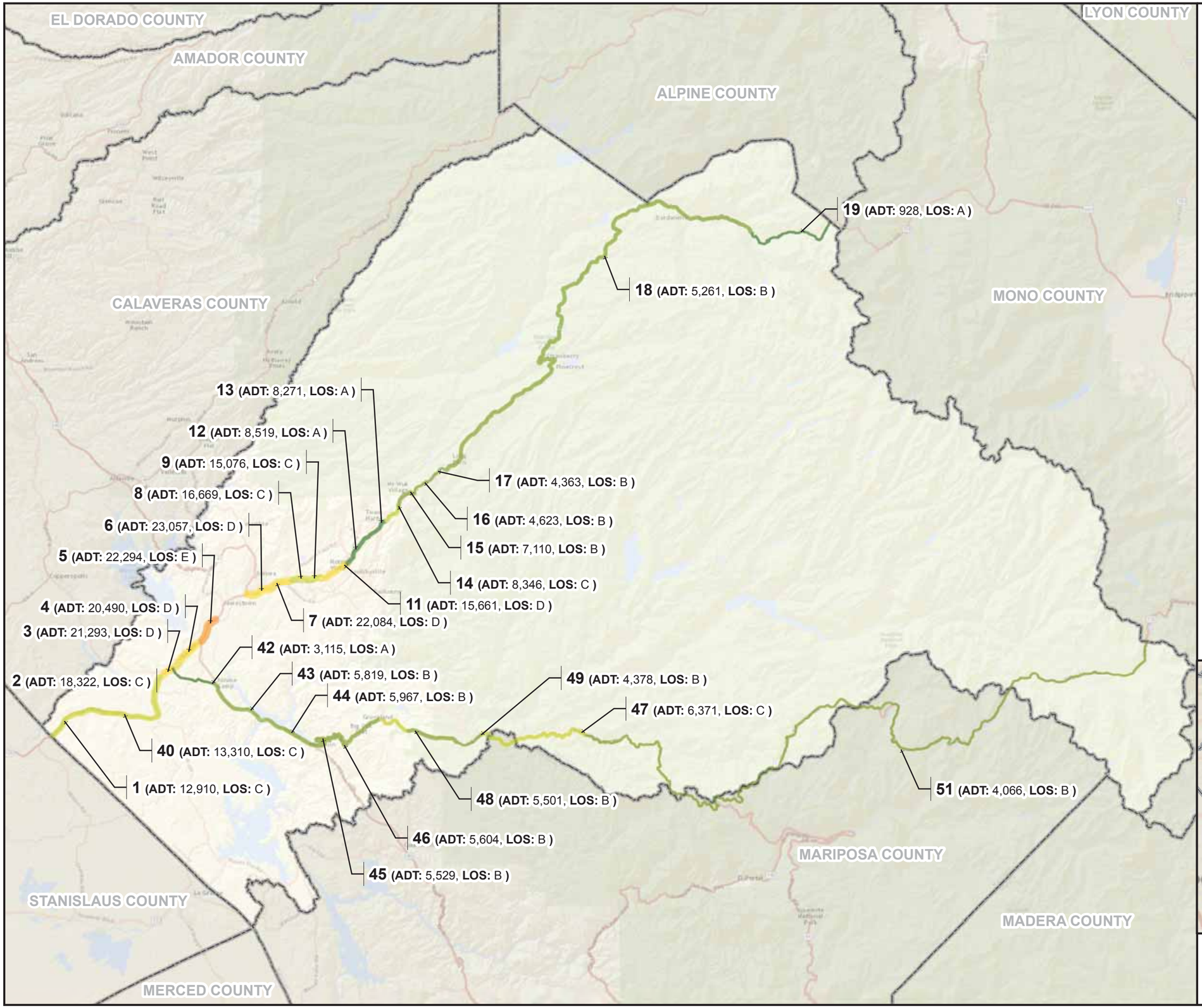
APPENDIX FIGURE 14-A: YEAR 2030 DEFICIENCIES RECENT TRENDS EXISTING SR 108 AND SR 120

TUOLUMNE COUNTY EIR TRAFFIC STUDY

TUOLUMNE COUNTY, CA

AUGUST 2015



NORTH

0 17,500 35,000

Feet

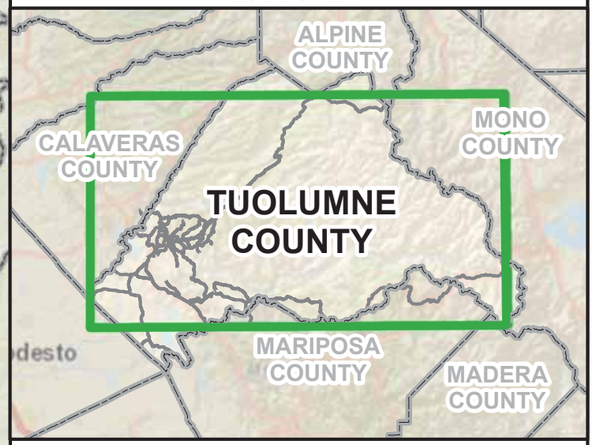
Level of Service - Color Range

- A
- B
- C
- D
- E
- F

ADT Values - Proportional

- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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CALAVERAS COUNTY

39 (ADT: 6,286, LOS: C)
147 (ADT: 3,695, LOS: B)
90 (ADT: 2,562, LOS: A)
37 (ADT: 6,273, LOS: C)
126 (ADT: 1,441, LOS: A)
29 (ADT: 11,850, LOS: C)
30 (ADT: 13,734, LOS: C)
116 (ADT: 16,687, LOS: E)
114 (ADT: 6,875, LOS: C)
115 (ADT: 13,191, LOS: D)
38 (ADT: 5,237, LOS: B)
94 (ADT: 2,480, LOS: A)
91 (ADT: 3,229, LOS: B)
28 (ADT: 13,251, LOS: C)
93 (ADT: 4,321, LOS: B)
92 (ADT: 2,883, LOS: B)
67 (ADT: 2,376, LOS: A)
26 (ADT: 28,655, LOS: C)
141 (ADT: 1,572, LOS: A)
24 (ADT: 23,997, LOS: B)
25 (ADT: 25,249, LOS: C)
130 (ADT: 1,450, LOS: A)
75 (ADT: 4,118, LOS: B)
123 (ADT: 153, LOS: A)
66 (ADT: 3,090, LOS: B)
76 (ADT: 1,068, LOS: A)
74 (ADT: 1,175, LOS: A)
134 (ADT: 1,334, LOS: A)
128 (ADT: 1,498, LOS: A)
27 (ADT: 29,447, LOS: D)
138 (ADT: 4,125, LOS: B)
80 (ADT: 12,590, LOS: D)
81 (ADT: 13,002, LOS: D)
82 (ADT: 12,704, LOS: D)
137 (ADT: 614, LOS: A)
102 (ADT: 602, LOS: A)
150 (ADT: 1,518, LOS: A)
84 (ADT: 1,854, LOS: A)
83 (ADT: 2,472, LOS: B)

52 (ADT: 22,205, LOS: F)
70 (ADT: 15,317, LOS: D)
53 (ADT: 16,986, LOS: A)
54 (ADT: 21,628, LOS: A)
119 (ADT: 3,182, LOS: A)
55 (ADT: 25,060, LOS: C)
118 (ADT: 8,500, LOS: A)
77 (ADT: 15,203, LOS: D)
148 (ADT: 8,815, LOS: A)
100 (ADT: 7,116, LOS: A)
78 (ADT: 13,042, LOS: C)
117 (ADT: 4,299, LOS: A)
79 (ADT: 12,283, LOS: B)
101 (ADT: 805, LOS: A)

APPENDIX FIGURE 14-B: YEAR 2030 DEFICIENCIES RECENT TRENDS EXISTING SOUTHERN SONORA AREA

TUOLUMNE COUNTY EIR TRAFFIC STUDY
TUOLUMNE COUNTY, CA
AUGUST 2015

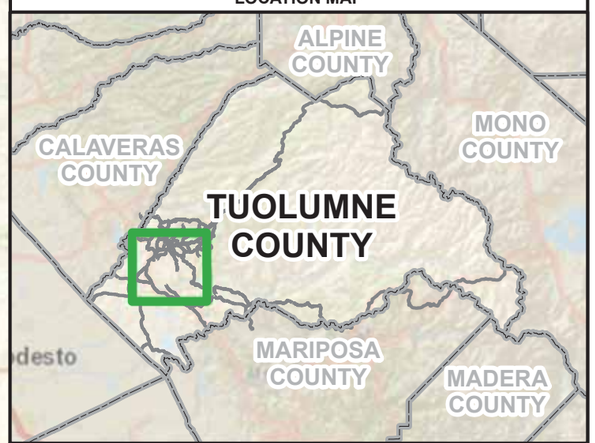
NORTH

0 3,750 7,500
Feet

Level of Service - Color Range
- A
- B
- C
- D
- E
- F

ADT Values - Proportional
- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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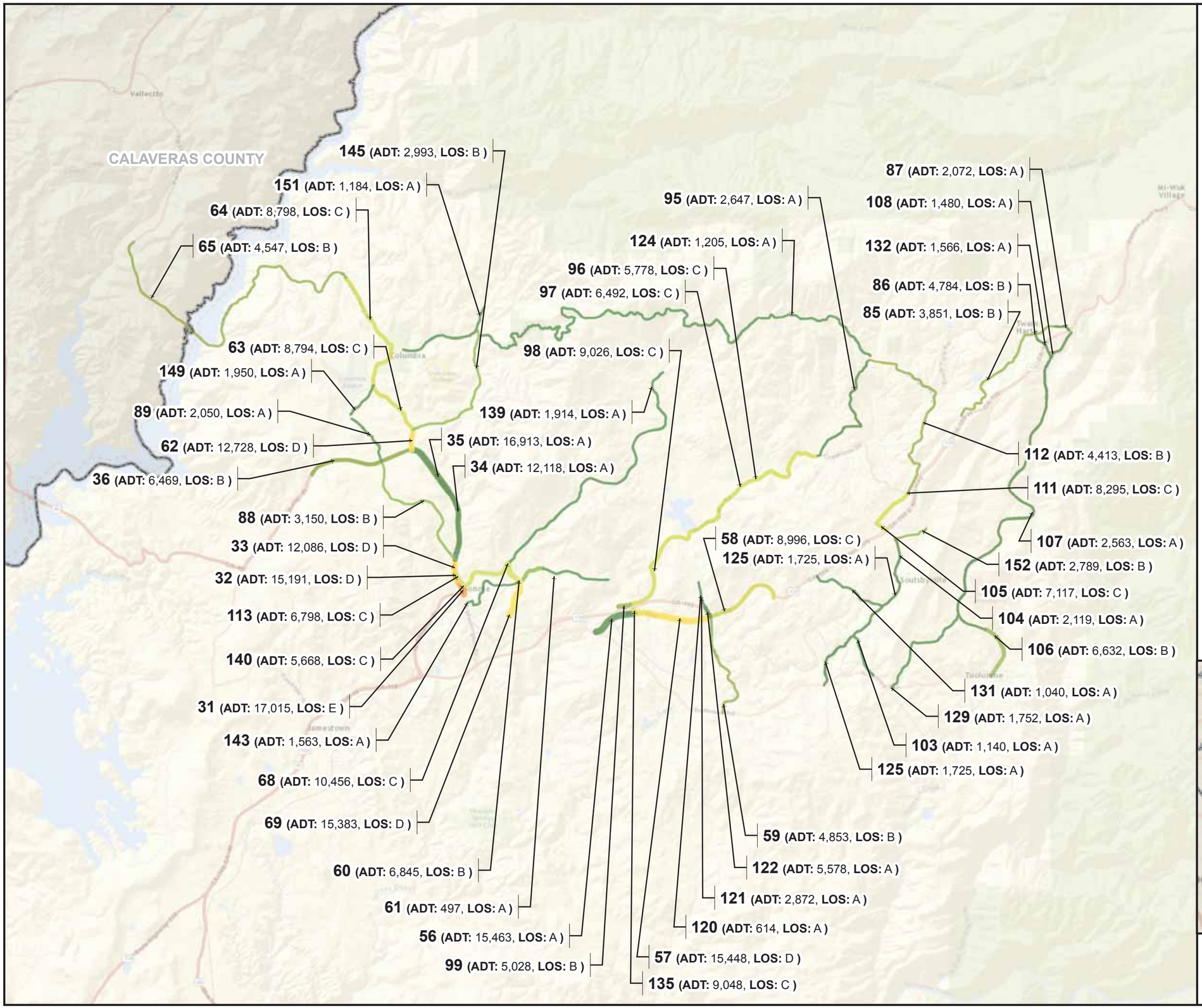
APPENDIX FIGURE 14-C: YEAR 2030 DEFICIENCIES RECENT TRENDS EXISTING NORTHERN SONORA AREA

TUOLUMNE COUNTY EIR TRAFFIC STUDY

TUOLUMNE COUNTY, CA

AUGUST 2015



NORTH

0 3,750 7,500

Feet

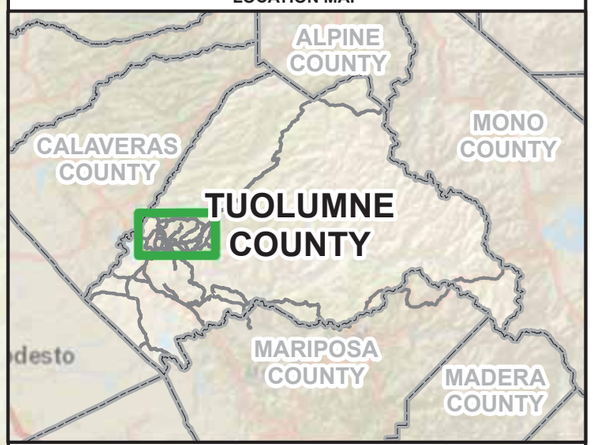
Level of Service - Color Range

- A
- B
- C
- D
- E
- F

ADT Values - Proportional

- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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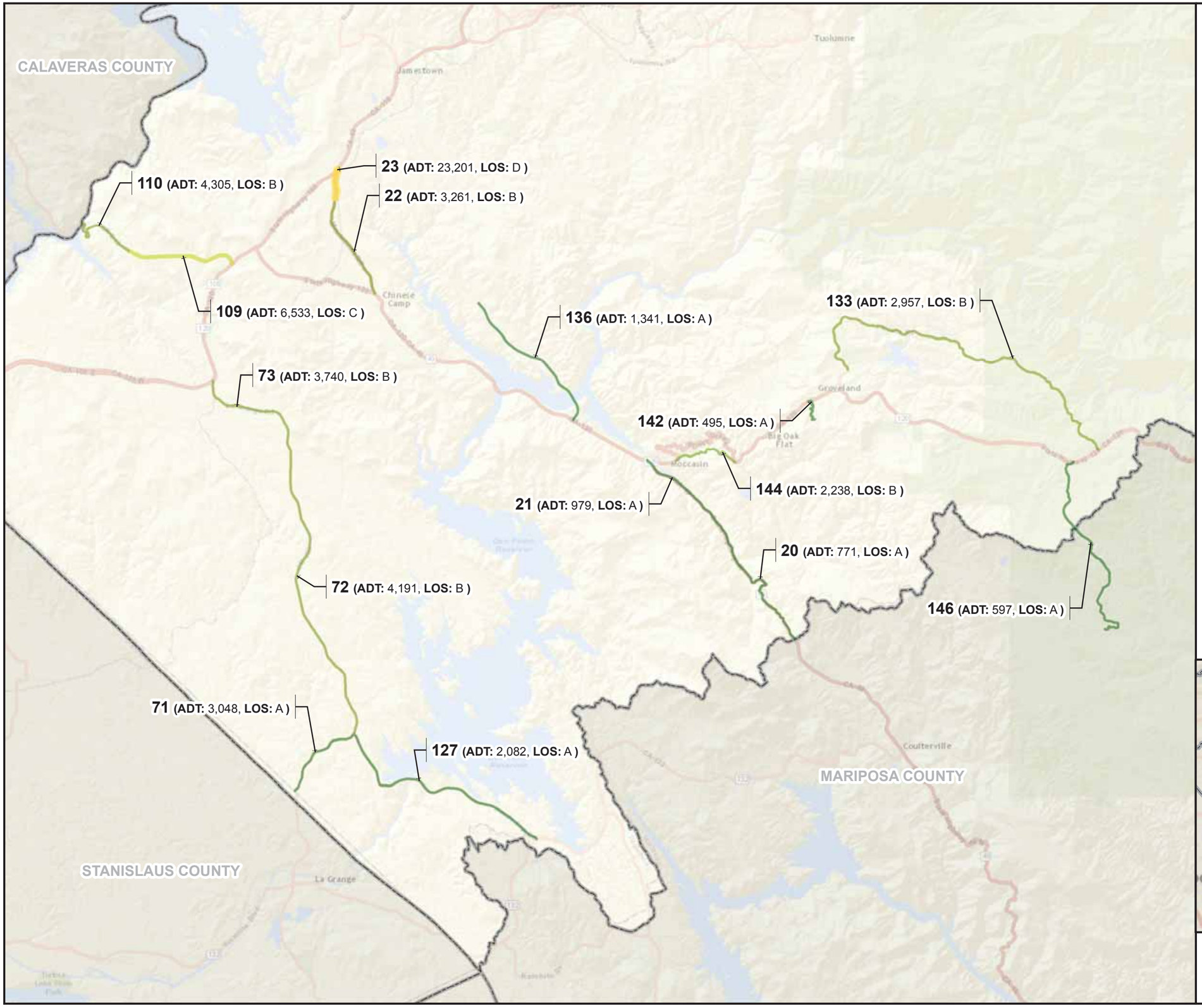
APPENDIX FIGURE 14-D: YEAR 2030 DEFICIENCIES RECENT TRENDS EXISTING GROVELAND AREA

TUOLUMNE COUNTY EIR TRAFFIC STUDY

TUOLUMNE COUNTY, CA

AUGUST 2015



NORTH

0 6,250 12,500

Feet

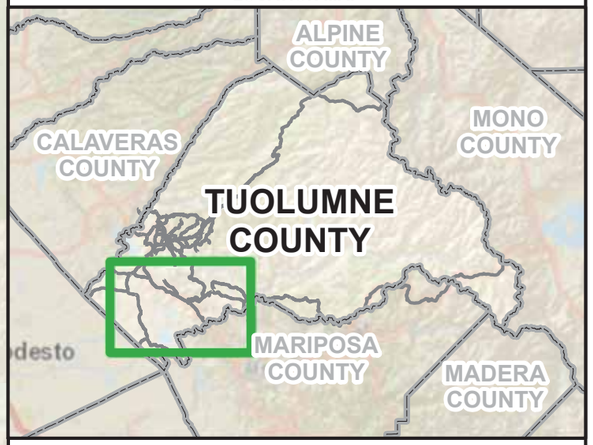
Level of Service - Color Range

- A
- B
- C
- D
- E
- F

ADT Values - Proportional

- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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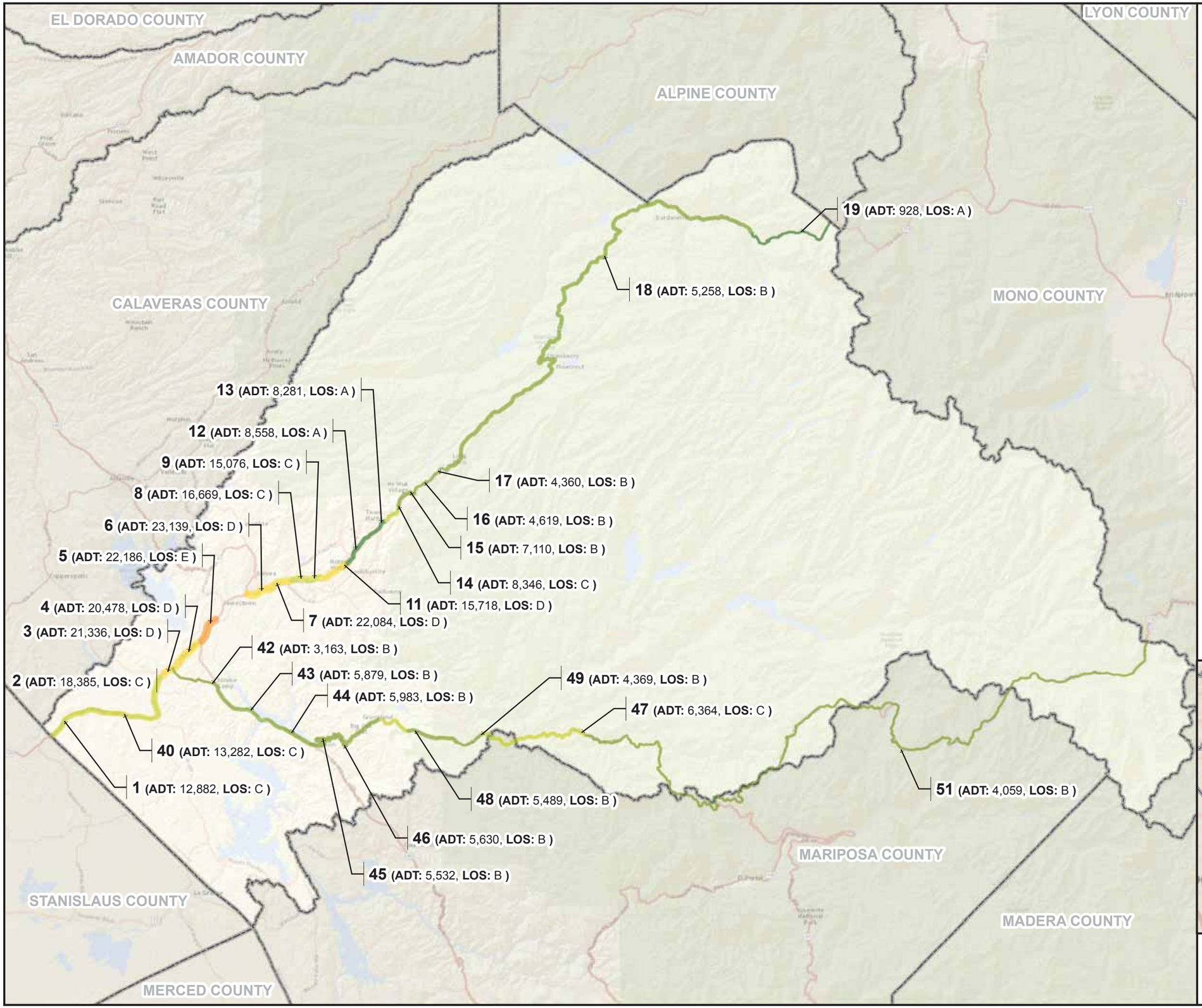
APPENDIX FIGURE 15-A: YEAR 2030 DEFICIENCIES DISTINCTIVE COMMUNITIES PROPOSED SR 108 AND SR 120

TUOLUMNE COUNTY EIR TRAFFIC STUDY

TUOLUMNE COUNTY, CA

AUGUST 2015



NORTH

0 17,500 35,000

Feet

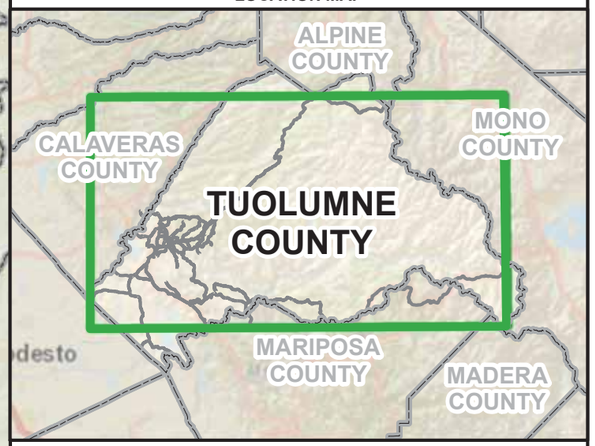
Level of Service - Color Range

- A
- B
- C
- D
- E
- F

ADT Values - Proportional

- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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CALAVERAS COUNTY

39 (ADT: 6,271, LOS: C)
147 (ADT: 3,695, LOS: B)
90 (ADT: 2,562, LOS: A)
37 (ADT: 6,251, LOS: C)
126 (ADT: 1,370, LOS: A)
29 (ADT: 11,705, LOS: C)
30 (ADT: 13,985, LOS: C)
116 (ADT: 16,497, LOS: E)
114 (ADT: 6,849, LOS: C)
115 (ADT: 13,022, LOS: D)
38 (ADT: 5,222, LOS: B)
94 (ADT: 2,671, LOS: B)
91 (ADT: 3,229, LOS: B)
28 (ADT: 13,017, LOS: C)
93 (ADT: 4,558, LOS: B)
92 (ADT: 2,883, LOS: B)
67 (ADT: 2,376, LOS: A)
26 (ADT: 28,606, LOS: C)
141 (ADT: 1,572, LOS: A)
24 (ADT: 23,978, LOS: B)
25 (ADT: 25,309, LOS: C)
130 (ADT: 1,449, LOS: A)
75 (ADT: 3,684, LOS: B)
123 (ADT: 153, LOS: A)
66 (ADT: 3,075, LOS: B)
134 (ADT: 1,314, LOS: A)
76 (ADT: 1,068, LOS: A)
74 (ADT: 1,174, LOS: A)
128 (ADT: 1,498, LOS: A)
27 (ADT: 29,478, LOS: D)
138 (ADT: 4,099, LOS: B)
80 (ADT: 12,300, LOS: D)
81 (ADT: 12,715, LOS: D)
82 (ADT: 12,459, LOS: D)
137 (ADT: 614, LOS: A)
150 (ADT: 1,518, LOS: A)
102 (ADT: 576, LOS: A)
84 (ADT: 1,854, LOS: A)
83 (ADT: 2,472, LOS: B)

52 (ADT: 22,205, LOS: F)
70 (ADT: 15,317, LOS: D)
53 (ADT: 16,986, LOS: A)
54 (ADT: 21,628, LOS: A)
119 (ADT: 3,182, LOS: A)
55 (ADT: 25,060, LOS: C)
118 (ADT: 8,500, LOS: A)
77 (ADT: 15,203, LOS: D)
148 (ADT: 8,815, LOS: A)
100 (ADT: 7,116, LOS: A)
78 (ADT: 13,042, LOS: C)
117 (ADT: 4,299, LOS: A)
79 (ADT: 12,283, LOS: B)
101 (ADT: 805, LOS: A)

APPENDIX FIGURE 15-B: YEAR 2030 DEFICIENCIES
DISTINCTIVE COMMUNITIES PROPOSED SOUTHERN SONORA AREA
TUOLUMNE COUNTY EIR TRAFFIC STUDY
TUOLUMNE COUNTY, CA
AUGUST 2015

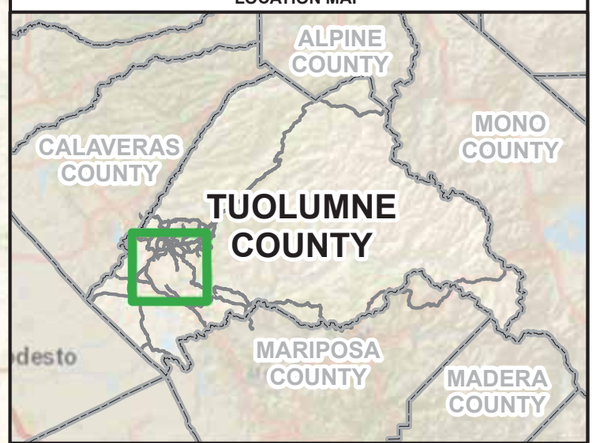
NORTH

0 3,750 7,500
Feet

Level of Service - Color Range
- A
- B
- C
- D
- E
- F

ADT Values - Proportional
- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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CALAVERAS COUNTY

145 (ADT: 2,963, LOS: B)
151 (ADT: 1,184, LOS: A)
64 (ADT: 8,744, LOS: C)
65 (ADT: 4,539, LOS: B)
63 (ADT: 8,754, LOS: C)
149 (ADT: 1,950, LOS: A)
89 (ADT: 2,050, LOS: A)
62 (ADT: 12,659, LOS: D)
36 (ADT: 6,234, LOS: B)
88 (ADT: 3,150, LOS: B)
33 (ADT: 11,741, LOS: C)
32 (ADT: 15,020, LOS: D)
113 (ADT: 6,798, LOS: C)
140 (ADT: 5,668, LOS: C)
31 (ADT: 16,749, LOS: E)
143 (ADT: 1,563, LOS: A)
68 (ADT: 10,598, LOS: C)
69 (ADT: 15,539, LOS: D)
60 (ADT: 6,773, LOS: B)
61 (ADT: 444, LOS: A)
56 (ADT: 15,418, LOS: A)
99 (ADT: 5,143, LOS: B)
35 (ADT: 16,612, LOS: A)
34 (ADT: 11,742, LOS: A)
139 (ADT: 1,956, LOS: A)
98 (ADT: 9,131, LOS: C)
97 (ADT: 6,650, LOS: C)
96 (ADT: 5,949, LOS: C)
124 (ADT: 1,205, LOS: A)
95 (ADT: 2,654, LOS: A)
58 (ADT: 9,356, LOS: C)
125 (ADT: 1,713, LOS: A)
59 (ADT: 4,202, LOS: B)
122 (ADT: 5,549, LOS: A)
121 (ADT: 2,849, LOS: A)
120 (ADT: 614, LOS: A)
57 (ADT: 15,250, LOS: D)
135 (ADT: 9,034, LOS: C)
87 (ADT: 2,112, LOS: A)
108 (ADT: 1,480, LOS: A)
132 (ADT: 1,589, LOS: A)
86 (ADT: 4,845, LOS: B)
85 (ADT: 3,863, LOS: B)
112 (ADT: 4,413, LOS: B)
111 (ADT: 8,295, LOS: C)
107 (ADT: 2,576, LOS: A)
152 (ADT: 2,872, LOS: B)
105 (ADT: 7,219, LOS: C)
104 (ADT: 2,169, LOS: A)
106 (ADT: 6,632, LOS: B)
131 (ADT: 994, LOS: A)
129 (ADT: 1,706, LOS: A)
103 (ADT: 1,170, LOS: A)
125 (ADT: 1,713, LOS: A)

APPENDIX FIGURE 15-C: YEAR 2030 DEFICIENCIES
DISTINCTIVE COMMUNITIES PROPOSED NORTHERN SONORA AREA
TUOLUMNE COUNTY EIR TRAFFIC STUDY
TUOLUMNE COUNTY, CA
AUGUST 2015

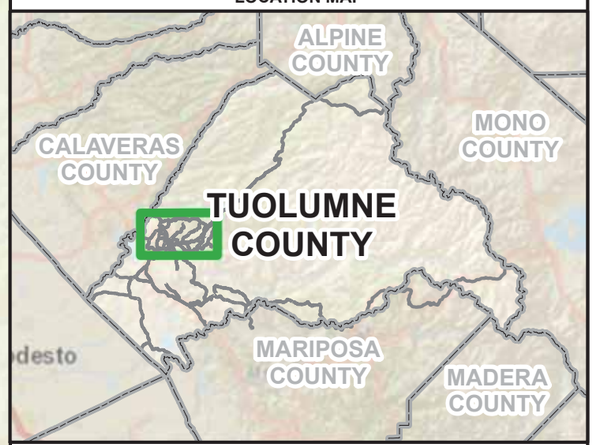
NORTH

0 3,750 7,500
Feet

Level of Service - Color Range
- A
- B
- C
- D
- E
- F

ADT Values - Proportional
- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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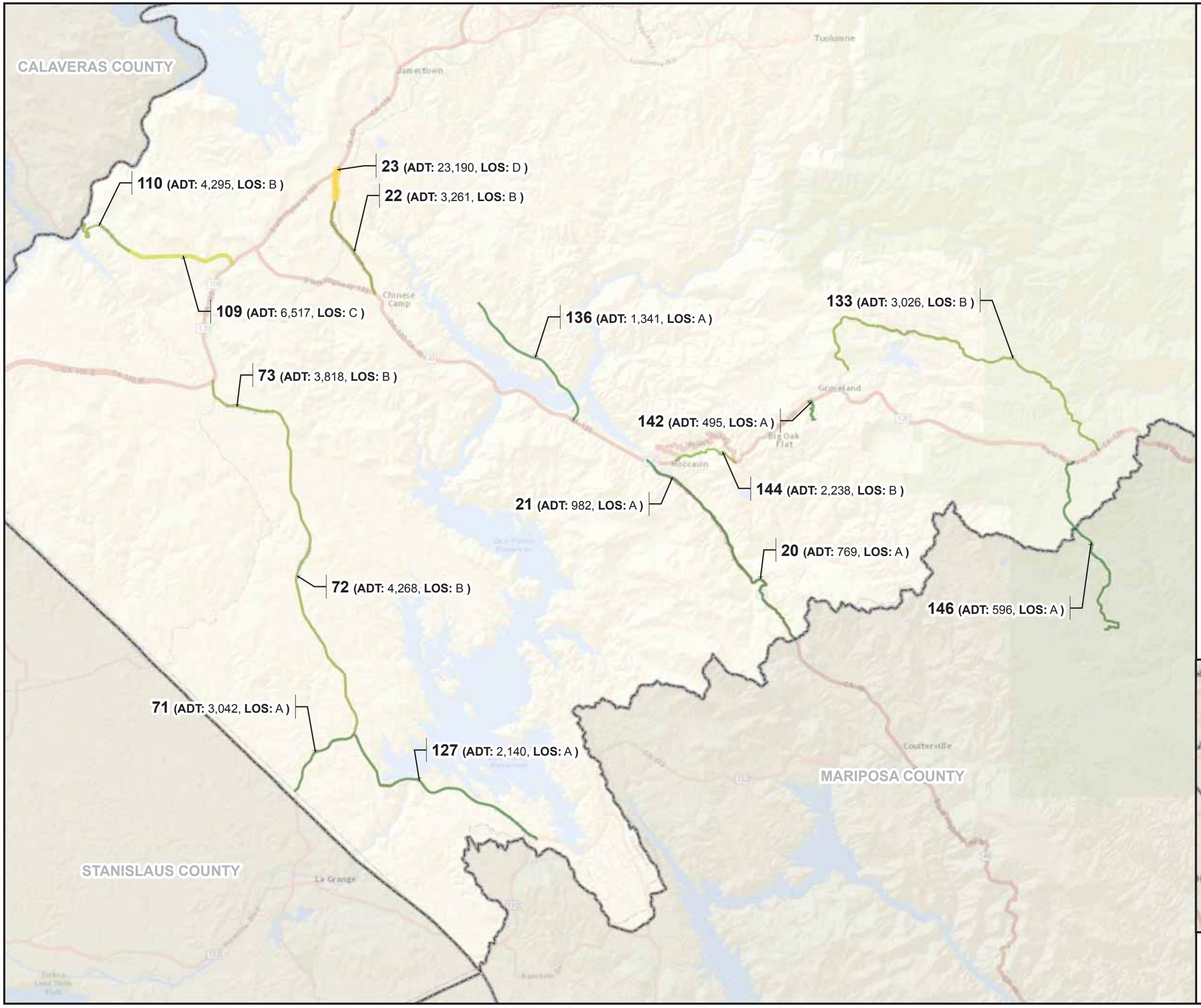
APPENDIX FIGURE 15-D: YEAR 2030 DEFICIENCIES
DISTINCTIVE COMMUNITIES PROPOSED GROVELAND AREA

TUOLUMNE COUNTY EIR TRAFFIC STUDY

TUOLUMNE COUNTY, CA

AUGUST 2015



NORTH

0 6,250 12,500

Feet

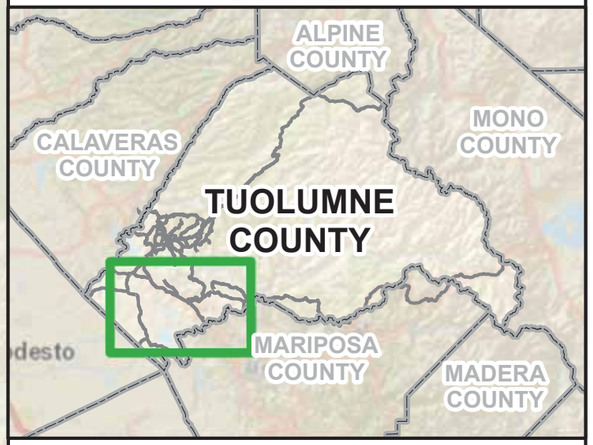
Level of Service - Color Range

- A
- B
- C
- D
- E
- F

ADT Values - Proportional

- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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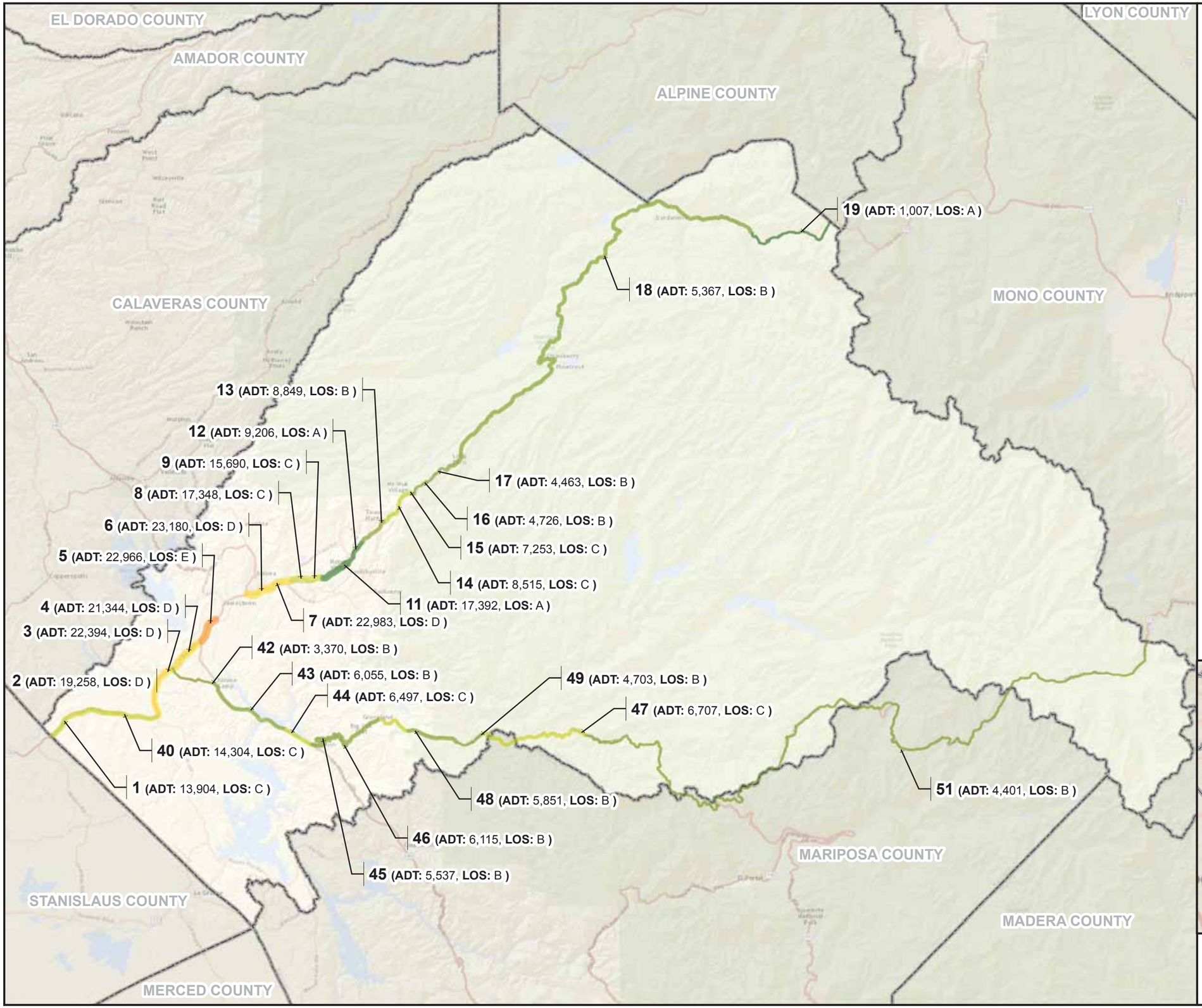
APPENDIX FIGURE 16-A: YEAR 2040 DEFICIENCIES DISTINCTIVE COMMUNITIES PROPOSED SR 108 AND SR 120

TUOLUMNE COUNTY EIR TRAFFIC STUDY

TUOLUMNE COUNTY, CA

AUGUST 2015



0 17,500 35,000

Feet

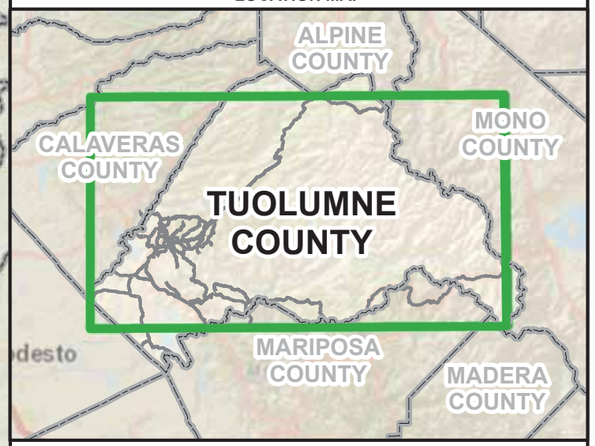
Level of Service - Color Range

- A
- B
- C
- D
- E
- F

ADT Values - Proportional

- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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CALAVERAS COUNTY

39 (ADT: 6,685, LOS: C)
147 (ADT: 3,770, LOS: B)
90 (ADT: 2,613, LOS: A)
37 (ADT: 6,635, LOS: C)
126 (ADT: 1,591, LOS: A)
29 (ADT: 12,603, LOS: C)
30 (ADT: 14,770, LOS: D)
116 (ADT: 17,706, LOS: E)
114 (ADT: 7,590, LOS: C)
115 (ADT: 12,715, LOS: D)
38 (ADT: 5,636, LOS: B)
94 (ADT: 2,715, LOS: B)
91 (ADT: 3,362, LOS: B)
28 (ADT: 14,062, LOS: C)
93 (ADT: 4,609, LOS: B)
92 (ADT: 3,307, LOS: B)
67 (ADT: 2,455, LOS: A)
26 (ADT: 29,756, LOS: D)
141 (ADT: 1,604, LOS: A)
24 (ADT: 24,673, LOS: B)
25 (ADT: 26,011, LOS: C)
130 (ADT: 1,478, LOS: A)
75 (ADT: 3,979, LOS: B)
123 (ADT: 156, LOS: A)
66 (ADT: 3,503, LOS: B)
134 (ADT: 1,358, LOS: A)
76 (ADT: 1,089, LOS: A)
74 (ADT: 1,193, LOS: A)
128 (ADT: 1,528, LOS: A)
27 (ADT: 30,157, LOS: D)
80 (ADT: 13,129, LOS: D)
81 (ADT: 13,380, LOS: D)
82 (ADT: 13,399, LOS: D)
137 (ADT: 627, LOS: A)
102 (ADT: 567, LOS: A)
150 (ADT: 1,548, LOS: A)
84 (ADT: 1,891, LOS: A)
138 (ADT: 4,176, LOS: B)
83 (ADT: 2,522, LOS: B)

52 (ADT: 22,205, LOS: F)
70 (ADT: 15,317, LOS: D)
53 (ADT: 16,986, LOS: A)
54 (ADT: 21,628, LOS: A)
119 (ADT: 3,182, LOS: A)
55 (ADT: 25,060, LOS: C)
118 (ADT: 8,500, LOS: A)
77 (ADT: 15,203, LOS: D)
148 (ADT: 8,815, LOS: A)
100 (ADT: 7,116, LOS: A)
78 (ADT: 13,042, LOS: C)
117 (ADT: 4,299, LOS: A)
79 (ADT: 12,283, LOS: B)
101 (ADT: 805, LOS: A)

APPENDIX FIGURE 16-B: YEAR 2040 DEFICIENCIES DISTINCTIVE COMMUNITIES PROPOSED SOUTHERN SONORA AREA

TUOLUMNE COUNTY EIR TRAFFIC STUDY

TUOLUMNE COUNTY, CA

AUGUST 2015

NORTH

0 3,750 7,500

Feet

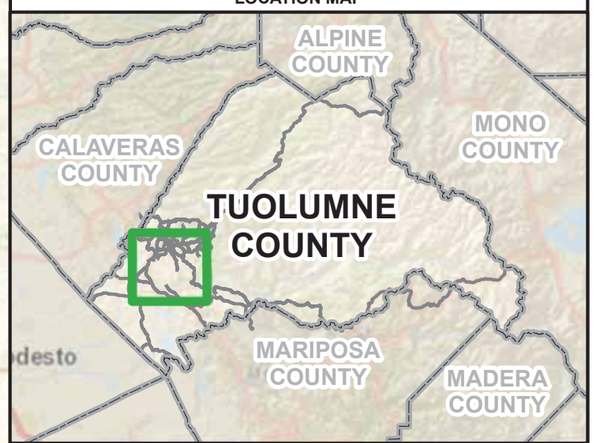
Level of Service - Color Range

- A
- B
- C
- D
- E
- F

ADT Values - Proportional

- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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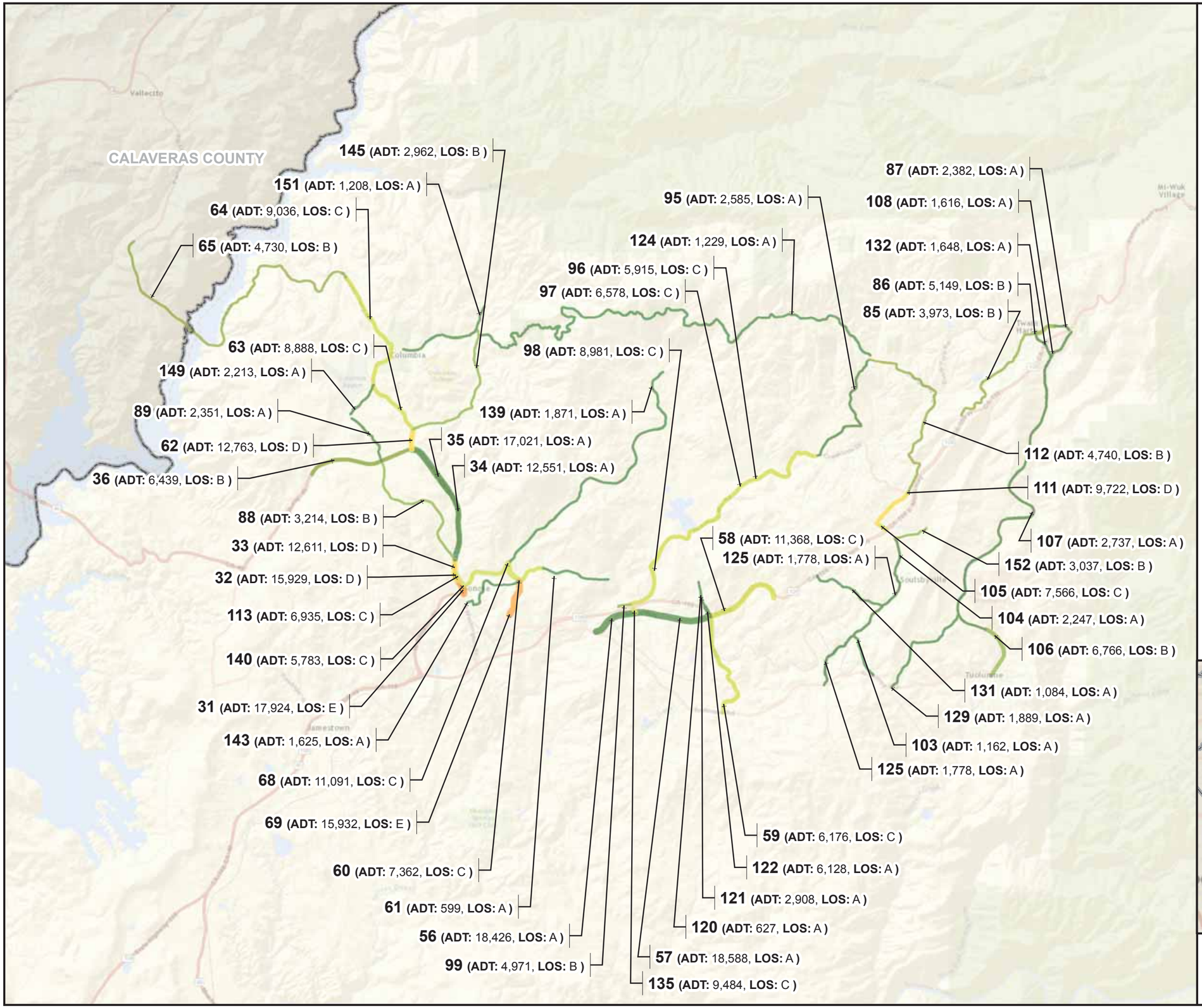
APPENDIX FIGURE 16-C: YEAR 2040 DEFICIENCIES
DISTINCTIVE COMMUNITIES PROPOSED NORTHERN SONORA AREA

TUOLUMNE COUNTY EIR TRAFFIC STUDY

TUOLUMNE COUNTY, CA

AUGUST 2015



NORTH

0 3,750 7,500

Feet

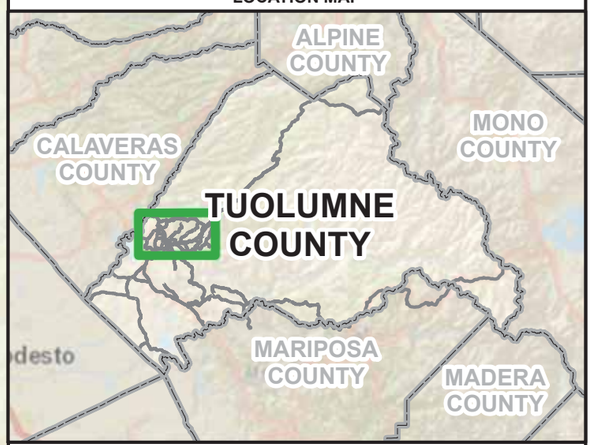
Level of Service - Color Range

- A
- B
- C
- D
- E
- F

ADT Values - Proportional

- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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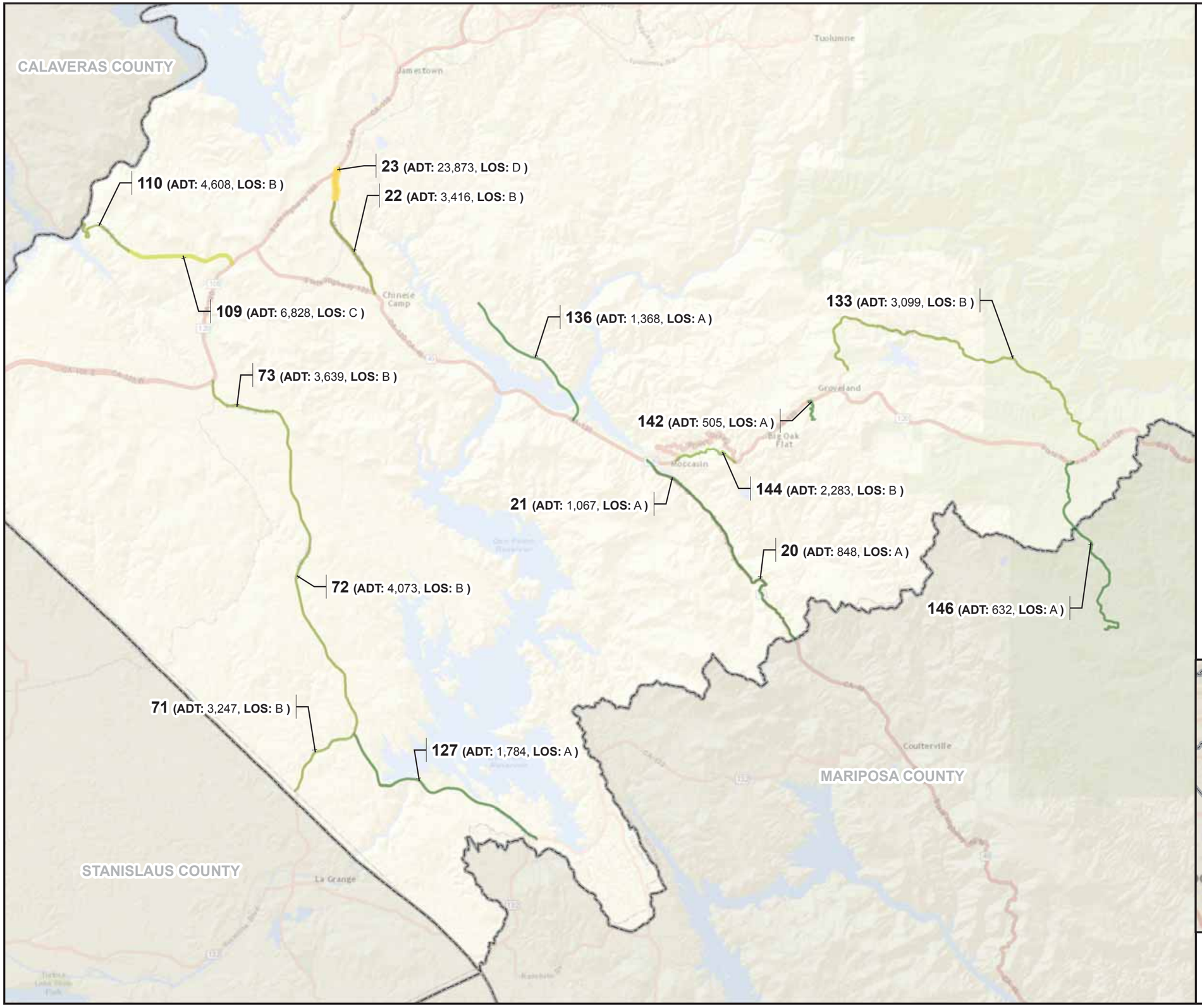
APPENDIX FIGURE 16-D: YEAR 2040 DEFICIENCIES
DISTINCTIVE COMMUNITIES PROPOSED GROVELAND AREA

TUOLUMNE COUNTY EIR TRAFFIC STUDY

TUOLUMNE COUNTY, CA

AUGUST 2015



NORTH

0 6,250 12,500

Feet

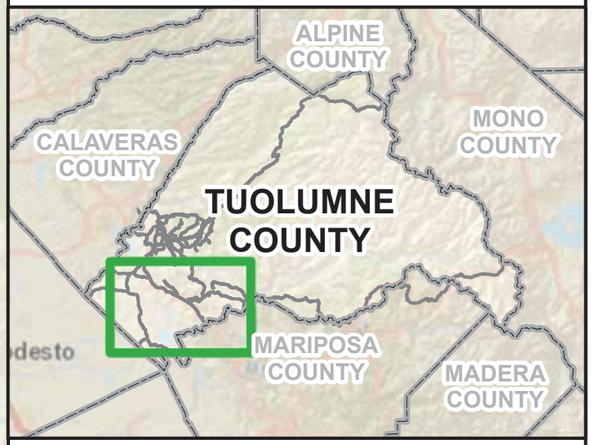
Level of Service - Color Range

- A
- B
- C
- D
- E
- F

ADT Values - Proportional

- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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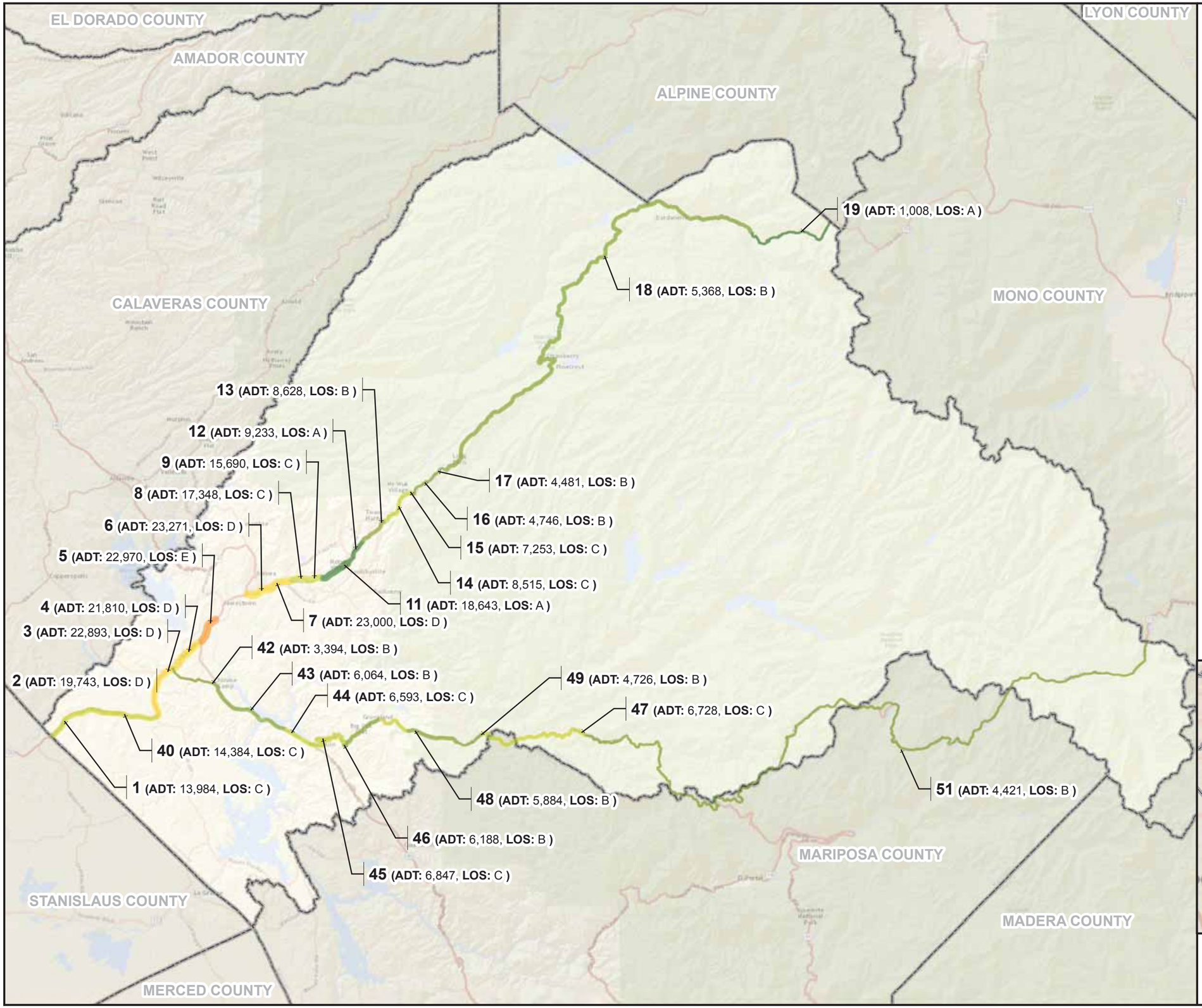
APPENDIX FIGURE 17-A: YEAR 2040 DEFICIENCIES PUBLIC SERVICES PROPOSED SR 108 AND SR 120

TUOLUMNE COUNTY EIR TRAFFIC STUDY

TUOLUMNE COUNTY, CA

AUGUST 2015



NORTH

0 17,500 35,000

Feet

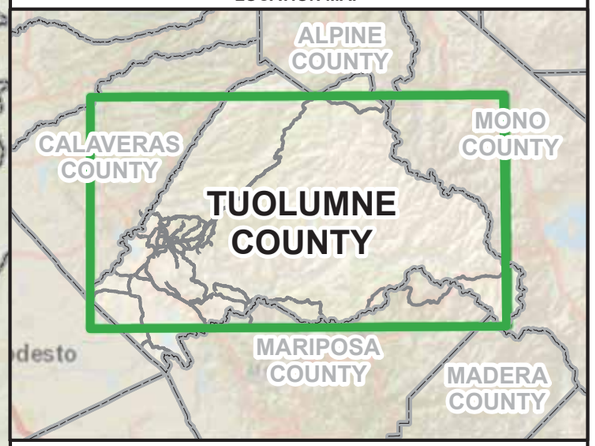
Level of Service - Color Range

- A
- B
- C
- D
- E
- F

ADT Values - Proportional

- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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CALAVERAS COUNTY

39 (ADT: 6,728, LOS: C)
147 (ADT: 3,770, LOS: B)
90 (ADT: 2,665, LOS: A)
37 (ADT: 6,698, LOS: C)
126 (ADT: 1,580, LOS: A)
29 (ADT: 12,785, LOS: C)
30 (ADT: 14,663, LOS: D)
116 (ADT: 17,623, LOS: E)
114 (ADT: 7,362, LOS: C)
115 (ADT: 12,721, LOS: D)
38 (ADT: 5,678, LOS: B)
94 (ADT: 2,609, LOS: B)
91 (ADT: 3,457, LOS: B)
28 (ADT: 14,169, LOS: C)
93 (ADT: 4,513, LOS: B)
92 (ADT: 3,440, LOS: B)
67 (ADT: 2,455, LOS: A)
26 (ADT: 29,905, LOS: D)
141 (ADT: 1,604, LOS: A)
24 (ADT: 25,083, LOS: C)
25 (ADT: 26,419, LOS: C)
130 (ADT: 1,478, LOS: A)
75 (ADT: 3,859, LOS: B)
123 (ADT: 156, LOS: A)
66 (ADT: 3,461, LOS: B)
134 (ADT: 1,450, LOS: A)
76 (ADT: 1,089, LOS: A)
74 (ADT: 1,221, LOS: A)
128 (ADT: 1,528, LOS: A)
27 (ADT: 30,166, LOS: D)
138 (ADT: 4,245, LOS: B)
80 (ADT: 12,934, LOS: D)
81 (ADT: 13,179, LOS: D)
82 (ADT: 13,214, LOS: D)
137 (ADT: 627, LOS: A)
150 (ADT: 1,548, LOS: A)
102 (ADT: 562, LOS: A)
84 (ADT: 1,891, LOS: A)
83 (ADT: 2,522, LOS: B)

52 (ADT: 22,205, LOS: F)
70 (ADT: 15,317, LOS: D)
53 (ADT: 16,986, LOS: A)
54 (ADT: 21,628, LOS: A)
119 (ADT: 3,182, LOS: A)
55 (ADT: 25,060, LOS: C)
118 (ADT: 8,500, LOS: A)
77 (ADT: 15,203, LOS: D)
148 (ADT: 8,815, LOS: A)
100 (ADT: 7,116, LOS: A)
78 (ADT: 13,042, LOS: C)
117 (ADT: 4,299, LOS: A)
79 (ADT: 12,283, LOS: B)
101 (ADT: 805, LOS: A)

APPENDIX FIGURE 17-B: YEAR 2040 DEFICIENCIES PUBLIC SERVICES PROPOSED SOUTHERN SONORA AREA

TUOLUMNE COUNTY EIR TRAFFIC STUDY
TUOLUMNE COUNTY, CA
AUGUST 2015

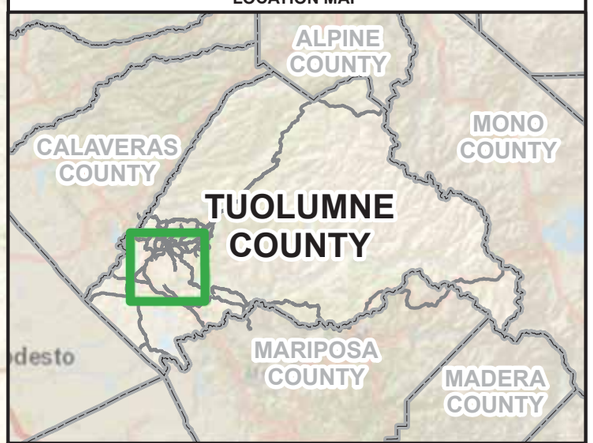
NORTH

0 3,750 7,500
Feet

Level of Service - Color Range
- A
- B
- C
- D
- E
- F

ADT Values - Proportional
- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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APPENDIX FIGURE 17-C: YEAR 2040 DEFICIENCIES PUBLIC SERVICES PROPOSED NORTHERN SONORA AREA

TUOLUMNE COUNTY EIR TRAFFIC STUDY

TUOLUMNE COUNTY, CA

AUGUST 2015

CALAVERAS COUNTY

145 (ADT: 3,029, LOS: B)
151 (ADT: 1,208, LOS: A)
64 (ADT: 9,139, LOS: C)
65 (ADT: 4,799, LOS: B)
63 (ADT: 8,924, LOS: C)
149 (ADT: 2,246, LOS: A)
89 (ADT: 2,387, LOS: A)
62 (ADT: 12,799, LOS: D)
36 (ADT: 6,704, LOS: B)
88 (ADT: 3,214, LOS: B)
33 (ADT: 12,652, LOS: D)
32 (ADT: 15,967, LOS: D)
113 (ADT: 6,935, LOS: C)
140 (ADT: 5,783, LOS: C)
31 (ADT: 17,966, LOS: E)
143 (ADT: 1,598, LOS: A)
68 (ADT: 11,724, LOS: D)
69 (ADT: 16,585, LOS: E)
60 (ADT: 7,407, LOS: C)
61 (ADT: 645, LOS: A)
56 (ADT: 18,346, LOS: A)
99 (ADT: 5,233, LOS: B)
139 (ADT: 1,909, LOS: A)
35 (ADT: 17,110, LOS: A)
34 (ADT: 12,646, LOS: A)
98 (ADT: 9,437, LOS: D)
95 (ADT: 2,758, LOS: B)
124 (ADT: 1,229, LOS: A)
96 (ADT: 6,190, LOS: C)
97 (ADT: 6,912, LOS: C)
58 (ADT: 11,798, LOS: C)
125 (ADT: 1,774, LOS: A)
59 (ADT: 5,828, LOS: C)
122 (ADT: 6,075, LOS: A)
121 (ADT: 2,886, LOS: A)
120 (ADT: 627, LOS: A)
57 (ADT: 18,603, LOS: A)
135 (ADT: 9,450, LOS: C)
87 (ADT: 2,224, LOS: A)
108 (ADT: 1,603, LOS: A)
132 (ADT: 1,738, LOS: A)
86 (ADT: 5,005, LOS: B)
85 (ADT: 4,179, LOS: B)
112 (ADT: 4,760, LOS: B)
111 (ADT: 9,898, LOS: D)
107 (ADT: 2,705, LOS: A)
152 (ADT: 3,051, LOS: B)
105 (ADT: 8,492, LOS: C)
104 (ADT: 2,302, LOS: A)
106 (ADT: 6,766, LOS: B)
131 (ADT: 1,107, LOS: A)
129 (ADT: 1,807, LOS: A)
103 (ADT: 1,198, LOS: A)
125 (ADT: 1,774, LOS: A)

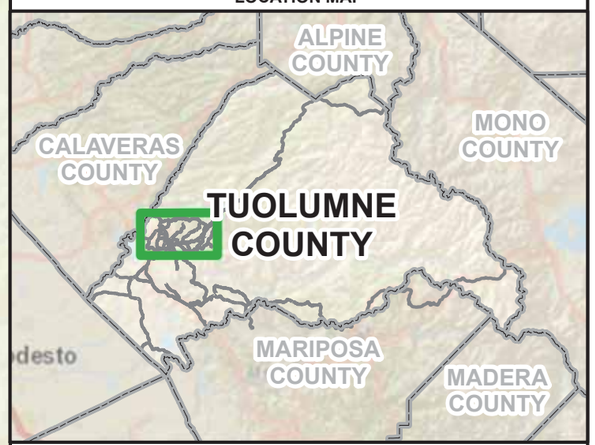
NORTH

0 3,750 7,500
Feet

Level of Service - Color Range
- A
- B
- C
- D
- E
- F

ADT Values - Proportional
- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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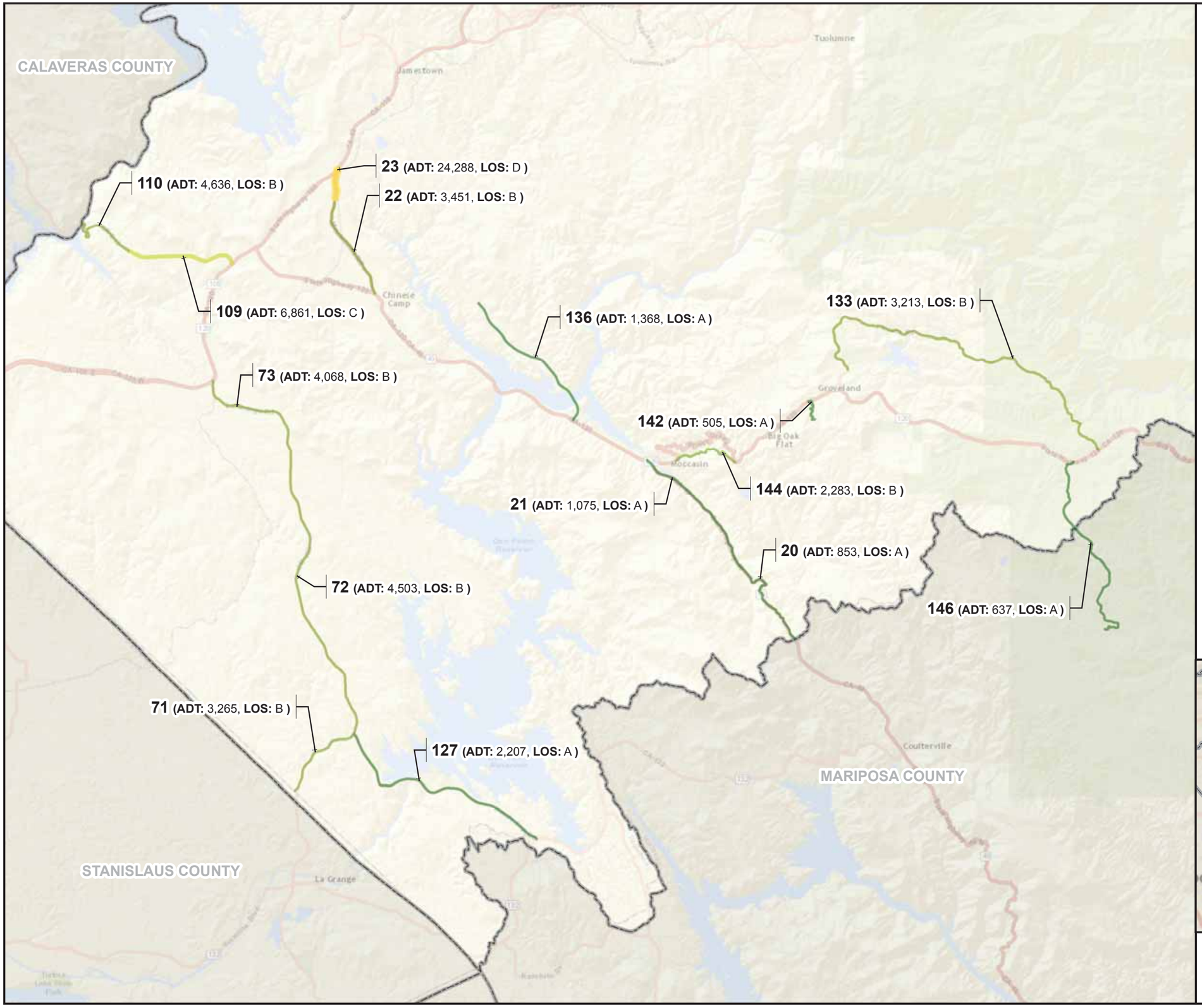
APPENDIX FIGURE 17-D: YEAR 2040 DEFICIENCIES PUBLIC SERVICES PROPOSED GROVELAND AREA

TUOLUMNE COUNTY EIR TRAFFIC STUDY

TUOLUMNE COUNTY, CA

AUGUST 2015



NORTH

0 6,250 12,500

Feet

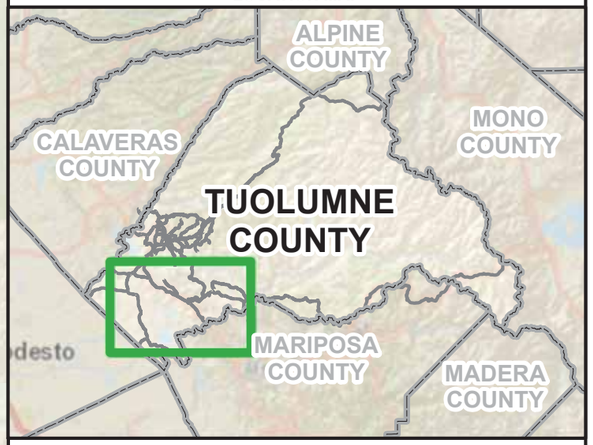
Level of Service - Color Range

- A
- B
- C
- D
- E
- F

ADT Values - Proportional

- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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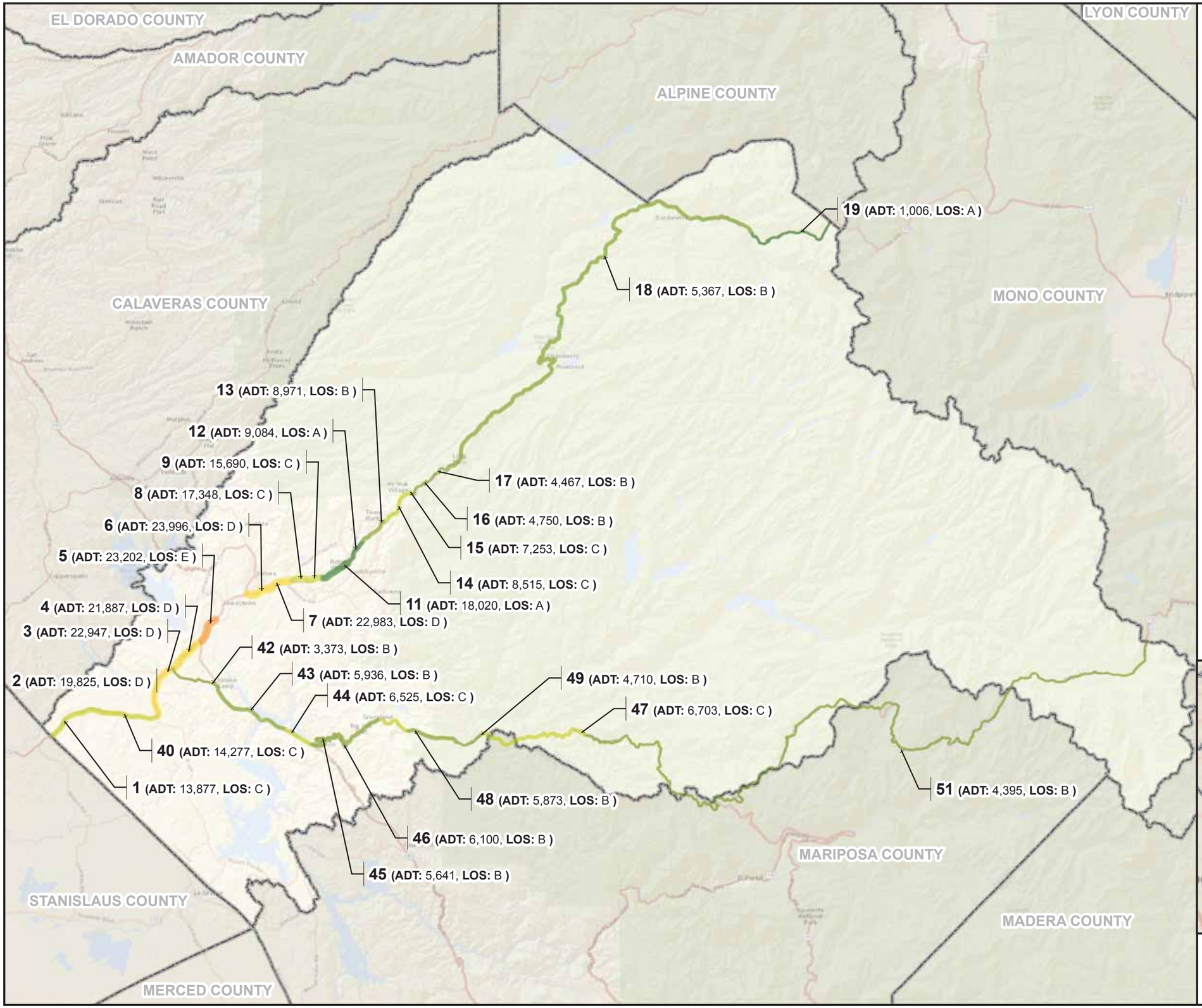
APPENDIX FIGURE 18-A: YEAR 2040 DEFICIENCIES RECENT TRENDS EXISTING SR 108 AND SR 120

TUOLUMNE COUNTY EIR TRAFFIC STUDY

TUOLUMNE COUNTY, CA

AUGUST 2015



NORTH

0 17,500 35,000

Feet

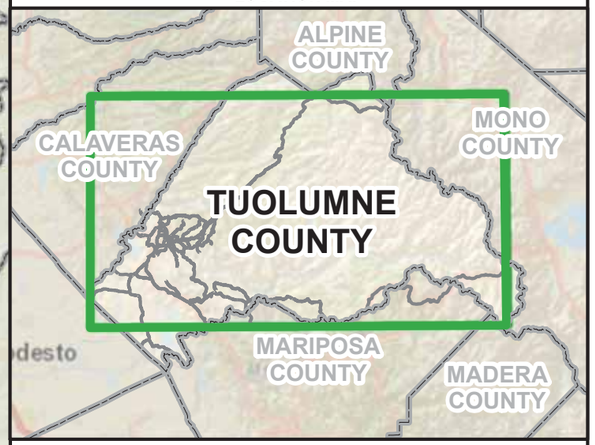
Level of Service - Color Range

- A
- B
- C
- D
- E
- F

ADT Values - Proportional

- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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CALAVERAS COUNTY

39 (ADT: 6,671, LOS: C)
147 (ADT: 3,770, LOS: B)
90 (ADT: 2,694, LOS: A)
37 (ADT: 6,716, LOS: C)
126 (ADT: 1,470, LOS: A)
29 (ADT: 12,581, LOS: C)
30 (ADT: 14,581, LOS: D)
116 (ADT: 17,716, LOS: E)
114 (ADT: 7,705, LOS: C)
115 (ADT: 14,004, LOS: D)
38 (ADT: 5,622, LOS: B)
94 (ADT: 2,530, LOS: A)
91 (ADT: 3,506, LOS: B)
28 (ADT: 14,068, LOS: C)
93 (ADT: 4,511, LOS: B)
92 (ADT: 3,452, LOS: B)
67 (ADT: 2,455, LOS: A)
26 (ADT: 30,022, LOS: D)
141 (ADT: 1,604, LOS: A)
24 (ADT: 25,267, LOS: C)
25 (ADT: 26,596, LOS: C)
130 (ADT: 1,479, LOS: A)
75 (ADT: 4,399, LOS: B)
123 (ADT: 156, LOS: A)
66 (ADT: 3,215, LOS: B)
134 (ADT: 1,386, LOS: A)
76 (ADT: 1,089, LOS: A)
74 (ADT: 1,226, LOS: A)
128 (ADT: 1,528, LOS: A)
27 (ADT: 30,148, LOS: D)
80 (ADT: 13,059, LOS: D)
81 (ADT: 13,264, LOS: D)
82 (ADT: 13,200, LOS: D)
137 (ADT: 627, LOS: A)
102 (ADT: 614, LOS: A)
150 (ADT: 1,548, LOS: A)
84 (ADT: 1,891, LOS: A)
138 (ADT: 4,208, LOS: B)
83 (ADT: 2,522, LOS: B)

52 (ADT: 22,205, LOS: F)
70 (ADT: 15,317, LOS: D)
53 (ADT: 16,986, LOS: A)
54 (ADT: 21,628, LOS: A)
119 (ADT: 3,182, LOS: A)
55 (ADT: 25,060, LOS: C)
118 (ADT: 8,500, LOS: A)
77 (ADT: 15,203, LOS: D)
148 (ADT: 8,815, LOS: A)
100 (ADT: 7,116, LOS: A)
78 (ADT: 13,042, LOS: C)
117 (ADT: 4,299, LOS: A)
79 (ADT: 12,283, LOS: B)
101 (ADT: 805, LOS: A)

APPENDIX FIGURE 18-B: YEAR 2040 DEFICIENCIES RECENT TRENDS EXISTING SOUTHERN SONORA AREA

TUOLUMNE COUNTY EIR TRAFFIC STUDY

TUOLUMNE COUNTY, CA

AUGUST 2015

NORTH

0 3,750 7,500

Feet

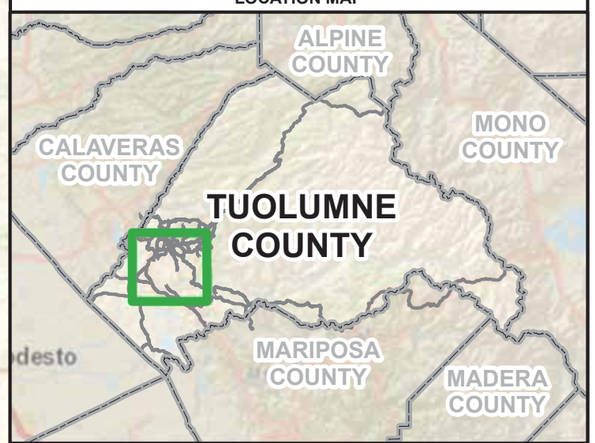
Level of Service - Color Range

- A
- B
- C
- D
- E
- F

ADT Values - Proportional

- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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APPENDIX FIGURE 18-C: YEAR 2040 DEFICIENCIES RECENT TRENDS EXISTING NORTHERN SONORA AREA

TUOLUMNE COUNTY EIR TRAFFIC STUDY

TUOLUMNE COUNTY, CA

AUGUST 2015

CALAVERAS COUNTY

145 (ADT: 3,226, LOS: B)
151 (ADT: 1,208, LOS: A)
64 (ADT: 9,279, LOS: D)
65 (ADT: 4,786, LOS: B)
63 (ADT: 8,971, LOS: C)
149 (ADT: 2,314, LOS: A)
89 (ADT: 2,447, LOS: A)
62 (ADT: 12,985, LOS: E)
36 (ADT: 6,891, LOS: B)
88 (ADT: 3,214, LOS: B)
33 (ADT: 12,831, LOS: D)
32 (ADT: 16,127, LOS: E)
113 (ADT: 6,935, LOS: C)
140 (ADT: 5,783, LOS: C)
31 (ADT: 18,064, LOS: E)
143 (ADT: 1,631, LOS: A)
68 (ADT: 11,213, LOS: C)
69 (ADT: 16,132, LOS: E)
60 (ADT: 6,983, LOS: C)
61 (ADT: 562, LOS: A)
56 (ADT: 18,332, LOS: A)
99 (ADT: 5,129, LOS: B)
98 (ADT: 9,208, LOS: D)
139 (ADT: 2,010, LOS: A)
35 (ADT: 17,525, LOS: A)
34 (ADT: 12,865, LOS: A)
95 (ADT: 2,700, LOS: B)
124 (ADT: 1,229, LOS: A)
96 (ADT: 5,895, LOS: C)
97 (ADT: 6,623, LOS: C)
58 (ADT: 11,680, LOS: C)
125 (ADT: 1,760, LOS: A)
59 (ADT: 5,828, LOS: C)
122 (ADT: 5,691, LOS: A)
121 (ADT: 2,930, LOS: A)
120 (ADT: 627, LOS: A)
57 (ADT: 17,863, LOS: A)
135 (ADT: 9,231, LOS: C)
87 (ADT: 2,481, LOS: A)
108 (ADT: 1,659, LOS: A)
132 (ADT: 1,697, LOS: A)
86 (ADT: 5,244, LOS: B)
85 (ADT: 3,929, LOS: B)
112 (ADT: 4,748, LOS: B)
111 (ADT: 9,685, LOS: D)
107 (ADT: 2,739, LOS: A)
152 (ADT: 2,973, LOS: B)
105 (ADT: 7,824, LOS: C)
104 (ADT: 2,162, LOS: A)
106 (ADT: 6,797, LOS: B)
131 (ADT: 1,160, LOS: A)
129 (ADT: 1,863, LOS: A)
103 (ADT: 1,221, LOS: A)
125 (ADT: 1,760, LOS: A)

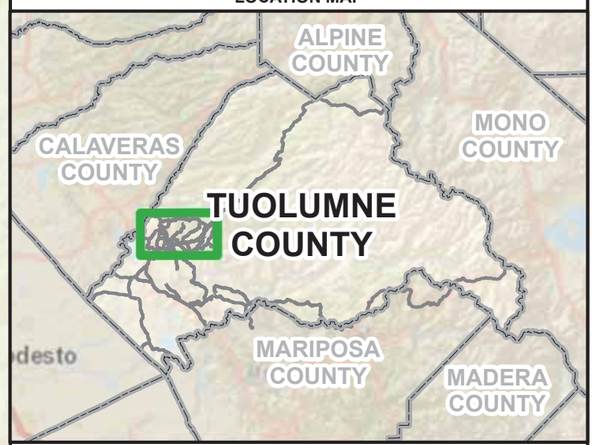
NORTH

0 3,750 7,500
Feet

Level of Service - Color Range
- A
- B
- C
- D
- E
- F

ADT Values - Proportional
- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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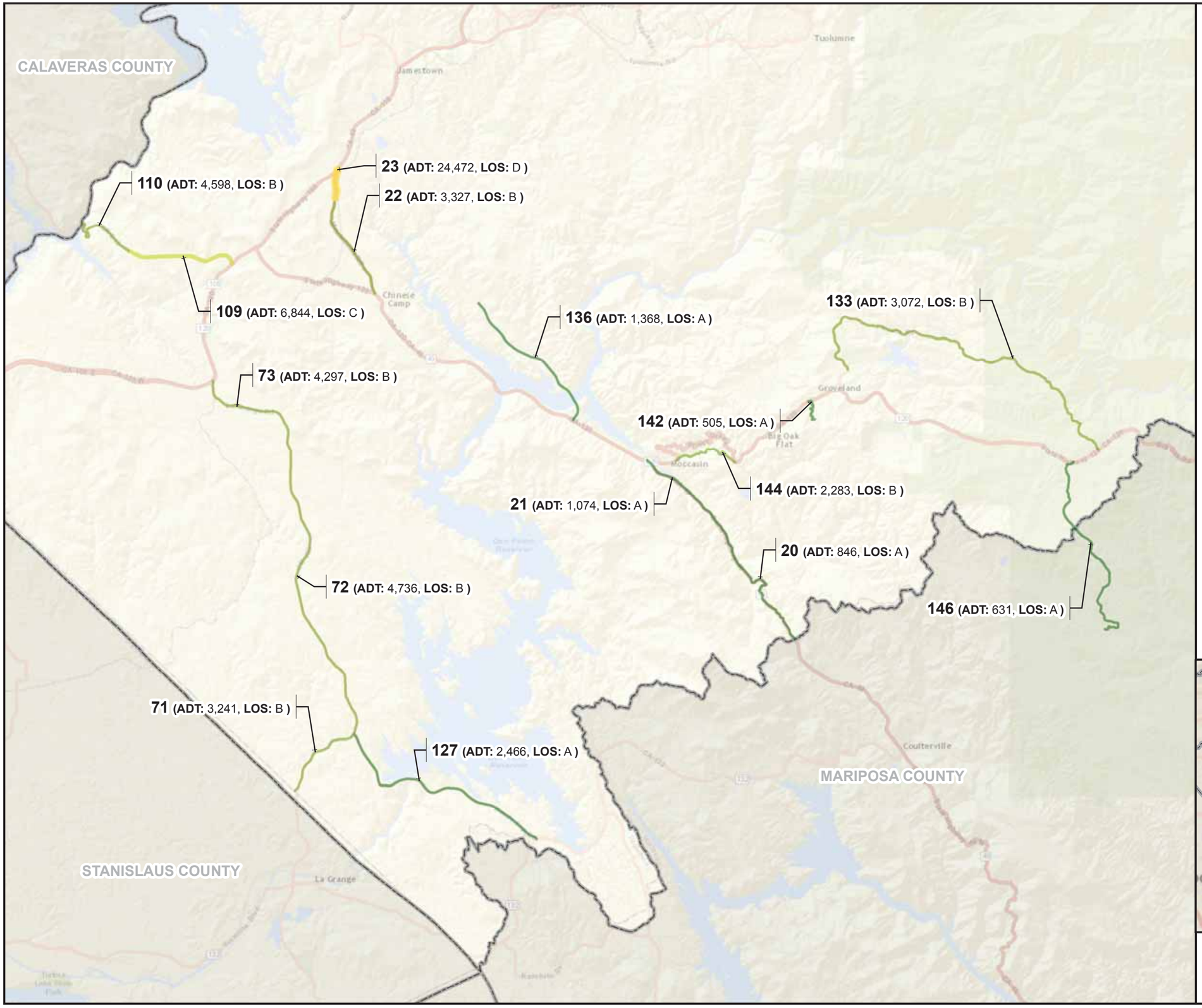
APPENDIX FIGURE 18-D: YEAR 2040 DEFICIENCIES RECENT TRENDS EXISTING GROVELAND AREA

TUOLUMNE COUNTY EIR TRAFFIC STUDY

TUOLUMNE COUNTY, CA

AUGUST 2015



NORTH

0 6,250 12,500

Feet

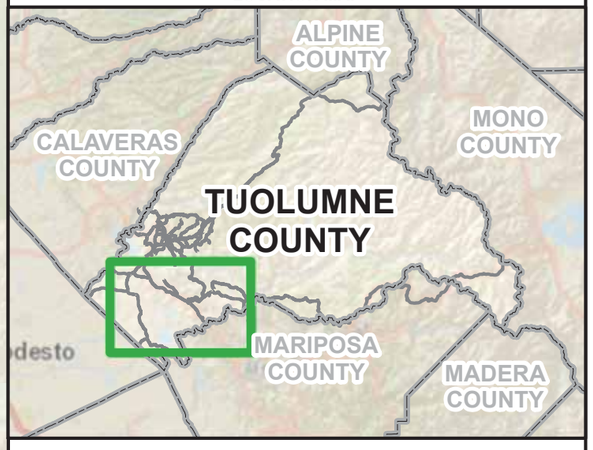
Level of Service - Color Range

- A
- B
- C
- D
- E
- F

ADT Values - Proportional

- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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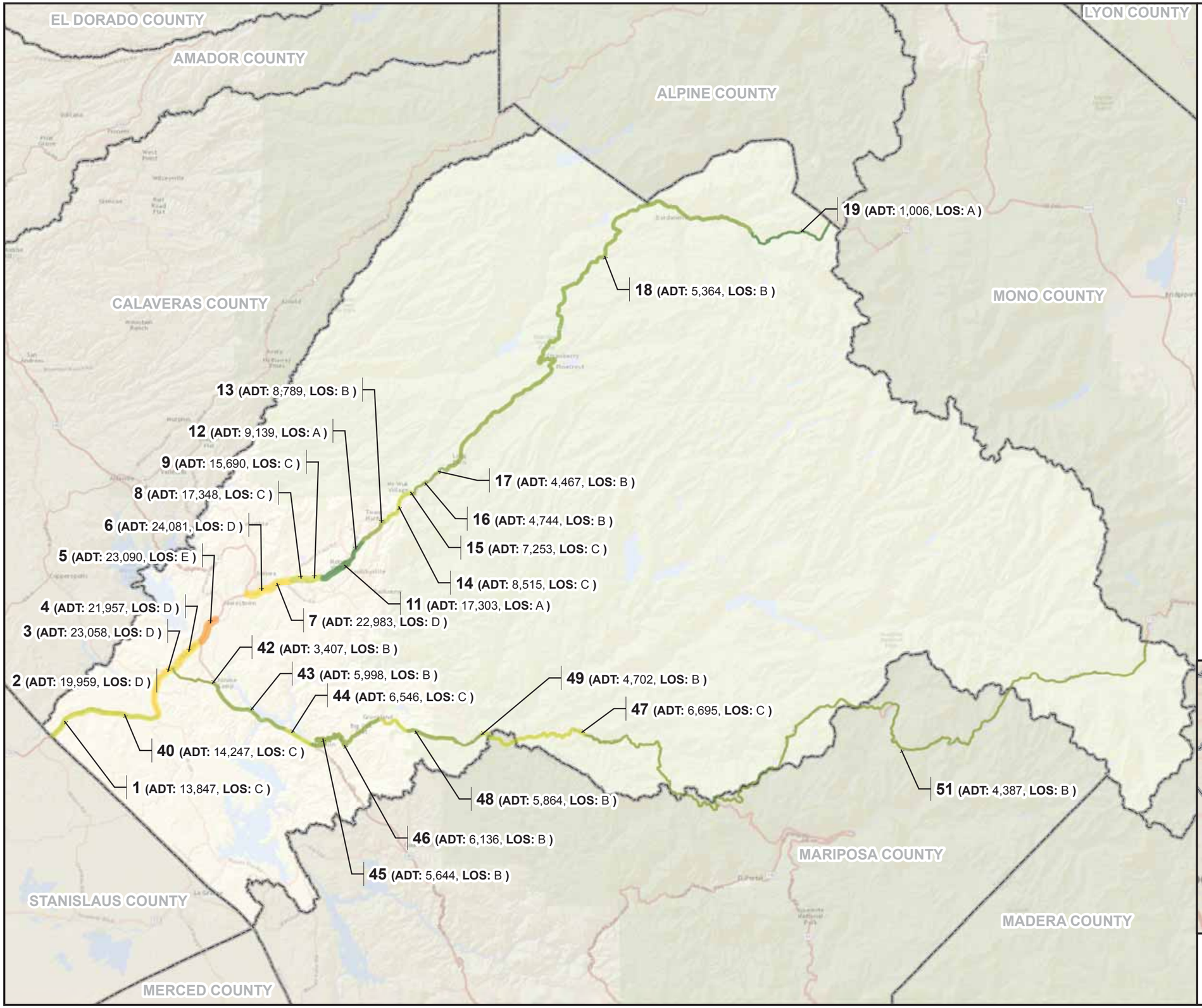
APPENDIX FIGURE 19-A: YEAR 2040 DEFICIENCIES RECENT TRENDS PROPOSED SR 108 AND SR 120

TUOLUMNE COUNTY EIR TRAFFIC STUDY

TUOLUMNE COUNTY, CA

AUGUST 2015



NORTH

0 17,500 35,000

Feet

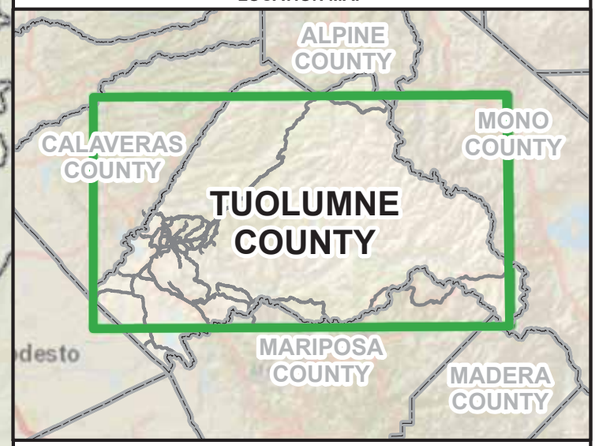
Level of Service - Color Range

- A
- B
- C
- D
- E
- F

ADT Values - Proportional

- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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CALAVERAS COUNTY

39 (ADT: 6,655, LOS: C)
147 (ADT: 3,770, LOS: B)
90 (ADT: 2,713, LOS: B)
37 (ADT: 6,687, LOS: C)
126 (ADT: 1,521, LOS: A)
29 (ADT: 12,426, LOS: C)
30 (ADT: 14,847, LOS: D)
116 (ADT: 17,514, LOS: E)
114 (ADT: 7,497, LOS: C)
115 (ADT: 13,825, LOS: D)
38 (ADT: 5,606, LOS: B)
94 (ADT: 2,725, LOS: B)
91 (ADT: 3,519, LOS: B)
28 (ADT: 13,820, LOS: C)
93 (ADT: 4,685, LOS: B)
92 (ADT: 3,459, LOS: B)
67 (ADT: 2,455, LOS: A)
26 (ADT: 30,078, LOS: D)
141 (ADT: 1,604, LOS: A)
24 (ADT: 25,282, LOS: C)
25 (ADT: 26,536, LOS: C)
130 (ADT: 1,478, LOS: A)
75 (ADT: 3,919, LOS: B)
123 (ADT: 156, LOS: A)
66 (ADT: 3,348, LOS: B)
134 (ADT: 1,369, LOS: A)
76 (ADT: 1,089, LOS: A)
74 (ADT: 1,273, LOS: A)
128 (ADT: 1,528, LOS: A)
27 (ADT: 30,167, LOS: D)
80 (ADT: 12,670, LOS: D)
81 (ADT: 12,972, LOS: D)
82 (ADT: 12,818, LOS: D)
137 (ADT: 627, LOS: A)
102 (ADT: 588, LOS: A)
150 (ADT: 1,548, LOS: A)
84 (ADT: 1,891, LOS: A)
138 (ADT: 4,201, LOS: B)
83 (ADT: 2,522, LOS: B)

52 (ADT: 22,205, LOS: F)
70 (ADT: 15,317, LOS: D)
53 (ADT: 16,986, LOS: A)
54 (ADT: 21,628, LOS: A)
119 (ADT: 3,182, LOS: A)
55 (ADT: 25,060, LOS: C)
118 (ADT: 8,500, LOS: A)
77 (ADT: 15,203, LOS: D)
148 (ADT: 8,815, LOS: A)
100 (ADT: 7,116, LOS: A)
78 (ADT: 13,042, LOS: C)
117 (ADT: 4,299, LOS: A)
79 (ADT: 12,283, LOS: B)
101 (ADT: 805, LOS: A)

APPENDIX FIGURE 19-B: YEAR 2040 DEFICIENCIES RECENT TRENDS PROPOSED SOUTHERN SONORA AREA

TUOLUMNE COUNTY EIR TRAFFIC STUDY

TUOLUMNE COUNTY, CA

AUGUST 2015

NORTH

0 3,750 7,500

Feet

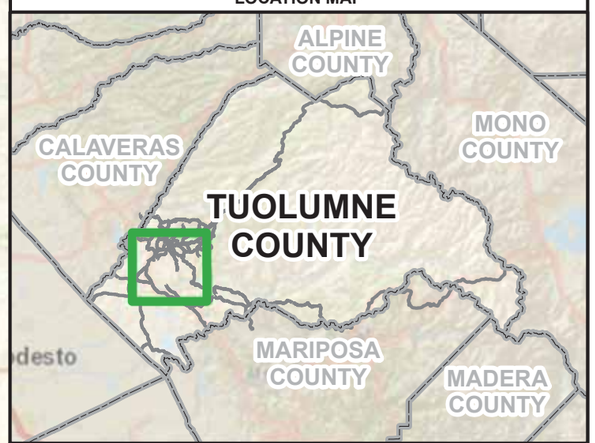
Level of Service - Color Range

- A
- B
- C
- D
- E
- F

ADT Values - Proportional

- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



WOOD RODGERS

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APPENDIX FIGURE 19-C: YEAR 2040 DEFICIENCIES RECENT TRENDS PROPOSED NORTHERN SONORA AREA

TUOLUMNE COUNTY EIR TRAFFIC STUDY

TUOLUMNE COUNTY, CA

AUGUST 2015

CALAVERAS COUNTY

145 (ADT: 3,158, LOS: B)
151 (ADT: 1,208, LOS: A)
64 (ADT: 9,163, LOS: C)
65 (ADT: 4,777, LOS: B)
63 (ADT: 8,931, LOS: C)
149 (ADT: 2,293, LOS: A)
89 (ADT: 2,442, LOS: A)
62 (ADT: 12,914, LOS: E)
36 (ADT: 6,761, LOS: B)
88 (ADT: 3,214, LOS: B)
33 (ADT: 12,465, LOS: D)
32 (ADT: 15,946, LOS: D)
113 (ADT: 6,935, LOS: C)
140 (ADT: 5,783, LOS: C)
31 (ADT: 17,782, LOS: E)
143 (ADT: 1,603, LOS: A)
68 (ADT: 11,430, LOS: C)
69 (ADT: 16,221, LOS: E)
60 (ADT: 7,391, LOS: C)
61 (ADT: 646, LOS: A)
56 (ADT: 17,833, LOS: A)
99 (ADT: 5,247, LOS: B)
139 (ADT: 2,105, LOS: A)
35 (ADT: 17,190, LOS: A)
34 (ADT: 12,466, LOS: A)
98 (ADT: 9,315, LOS: D)
95 (ADT: 2,708, LOS: B)
124 (ADT: 1,229, LOS: A)
96 (ADT: 6,069, LOS: C)
97 (ADT: 6,784, LOS: C)
58 (ADT: 11,526, LOS: C)
125 (ADT: 1,748, LOS: A)
59 (ADT: 5,721, LOS: C)
122 (ADT: 6,072, LOS: A)
121 (ADT: 2,906, LOS: A)
120 (ADT: 627, LOS: A)
57 (ADT: 18,200, LOS: A)
135 (ADT: 9,216, LOS: C)
87 (ADT: 2,376, LOS: A)
108 (ADT: 1,560, LOS: A)
132 (ADT: 1,686, LOS: A)
86 (ADT: 5,128, LOS: B)
85 (ADT: 3,941, LOS: B)
112 (ADT: 4,661, LOS: B)
111 (ADT: 9,516, LOS: D)
107 (ADT: 2,642, LOS: A)
152 (ADT: 3,066, LOS: B)
105 (ADT: 7,365, LOS: C)
104 (ADT: 2,213, LOS: A)
106 (ADT: 6,766, LOS: B)
131 (ADT: 1,140, LOS: A)
129 (ADT: 1,741, LOS: A)
103 (ADT: 1,194, LOS: A)
125 (ADT: 1,748, LOS: A)

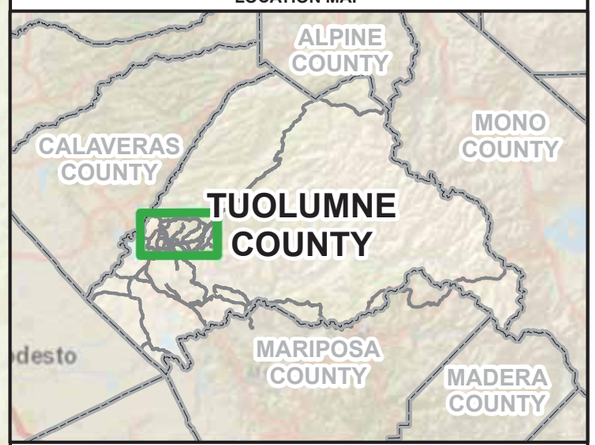
NORTH

0 3,750 7,500
Feet

Level of Service - Color Range
- A
- B
- C
- D
- E
- F

ADT Values - Proportional
- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



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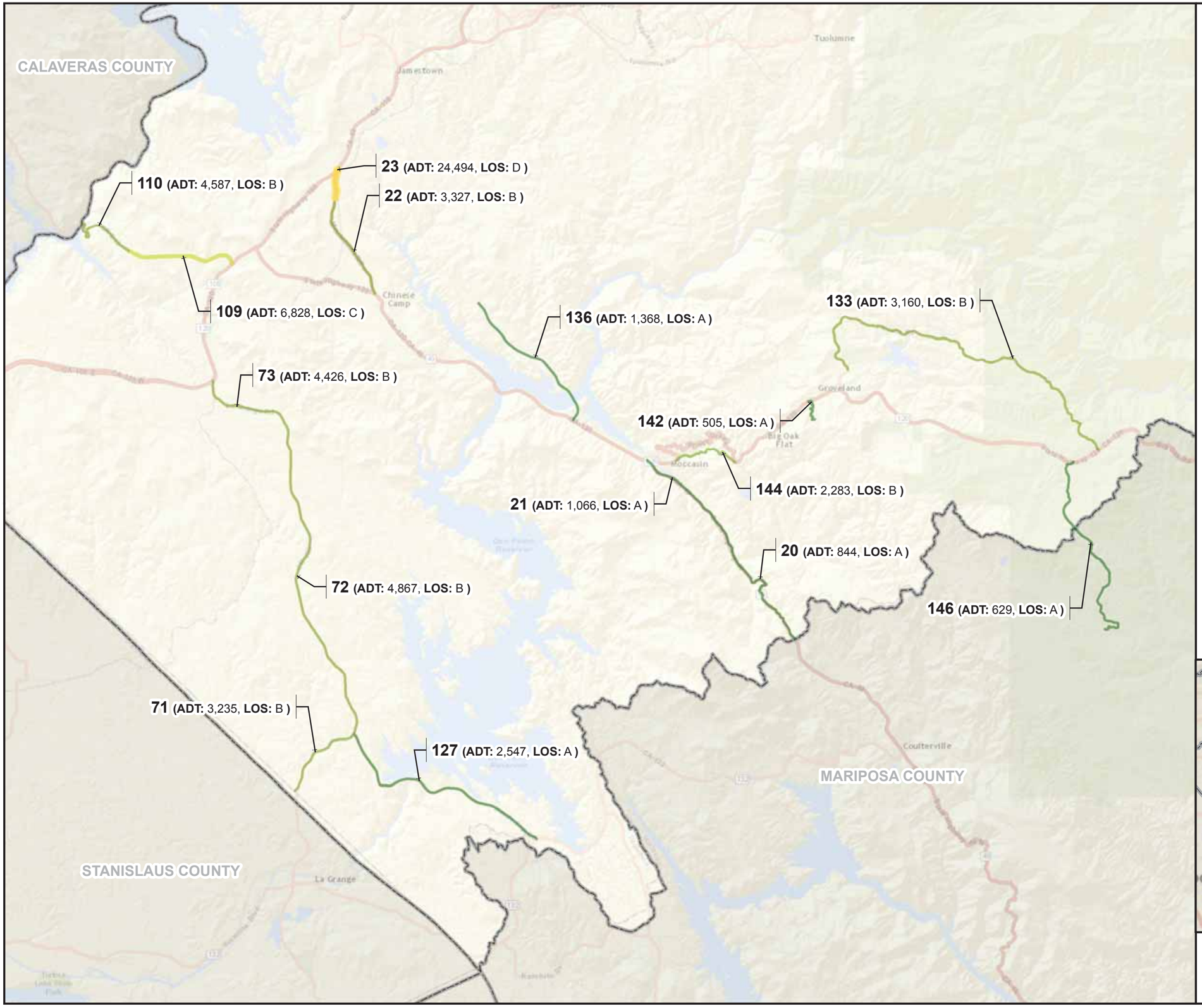
APPENDIX FIGURE 19-D: YEAR 2040 DEFICIENCIES RECENT TRENDS PROPOSED GROVELAND AREA

TUOLUMNE COUNTY EIR TRAFFIC STUDY

TUOLUMNE COUNTY, CA

AUGUST 2015



NORTH

0 6,250 12,500

Feet

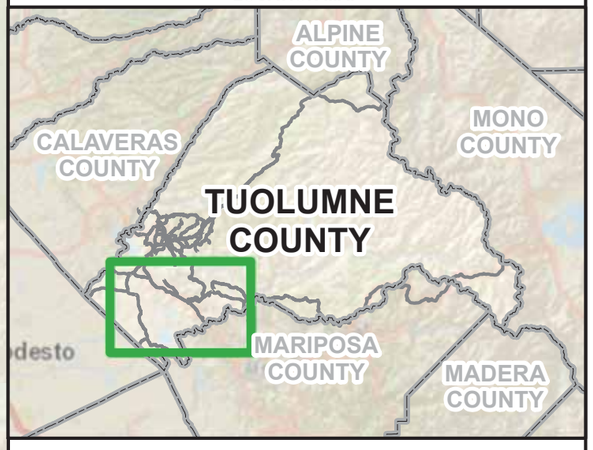
Level of Service - Color Range

- A
- B
- C
- D
- E
- F

ADT Values - Proportional

- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 25,000
- 25,000+

LOCATION MAP



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APPENDIX ATTACHMENTS (UNDER SEPARATE COVER)

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