FEBRUARY 28, 2014

Diamond Springs and El Dorado Area Mobility and Livable Community Plan

el dorado county edctc TRANSPORTATION COMMISSION

El Dorado County Transportation Commission

MADE POSSIBLE BY A CALIFORNIA DEPARTMENT OF TRANSPORTATION COMMUNITY-BASED TRANSPORTATION PLANNING GRANT

Caltrans

Diamond Springs and El Dorado Area Mobility and Livable Community Plan

Prepared for:

El Dorado County Transportation Commission

2828 East Street, Suite 1

Placerville, California 95667

Funded by:

California Department of Transportation

Community-Based Transportation Planning Grant

Fiscal year 2011/2012

February 28th, 2014

Acknowledgements

The Diamond Springs and El Dorado Area Mobility and Livable Community Plan results from a dedicated effort by community members, business leaders, key stakeholders, and staff from the El Dorado County Transportation Commission who worked with a multidisciplinary Consultant Team to articulate a vision that will create mobility, economic development and increased livability and guide future transportation infrastructure in the Community Area.

El Dorado County Transportation Commissioners

Ron Briggs, Chair, Representing the County of El Dorado
Wendy Thomas, Vice Chair, Representing the City of Placerville
Patty Borelli, Commissioner, Representing the City of Placerville
Carl Hagen, Commissioner, Representing the City of Placerville
Ron Mikulaco, Commissioner, Representing the County of El Dorado
Ray Nutting, Commissioner, Representing the County of El Dorado
Brian K. Veerkamp, Commissioner, Representing the County of El Dorado
Nieves Castro, Ex Offico Member, Representing Caltrans District 3

El Dorado County Transportation Commission Staff

Sharon Scherzinger, Executive Director
Dan Bolster, Senior Transportation Planner

California Department of Transportation, District 3

Eric Fredericks, Chief – Office of Transportation Planning South
Susan Zanchi, Chief – Office of Travel Forecasting and Modeling
Jasdeep Randhawa, P.E., Transportation Engineer
Cynthia Smith, P.E. Transportation Engineer
Teresa Limon, P.E. Transportation Engineer
Eric Royer, P.E. Transportation Engineer
Susan Wilson, Associate Transportation Planner

County of El Dorado Community Development Agency

Dave Defanti, Assistant Director, Long Range Planning
Roger Trout, Development Services Division Director
Claudia R. Wade, P.E., Senior Civil Engineer, Long Range Planning
Natalie K. Porter, P.E., T.E., Senior Traffic Civil Engineer, Long Range Planning
Matthew D. Smeltzer, P.E., Deputy Director, Transportation Division
Dustin Harrington, P.E., Senior Civil Engineer, Transportation Division

Sacramento Area Council of Governments

Bruce Griesenbeck, Principal Transportation Analyst

Consultant Team

Echelon Transportation Group, Project Management and Engineering
Mark Thomas & Company, Inc., Engineering and Surveying
Fehr and Peers, Traffic Analysis
AIM Consulting, Public Outreach
Foothill Associates, Environmental Planning and Landscape Architecture
Economic & Planning Systems, Inc., Economic Analysis

The process would not have been possible without the dedicated community organizations and their members that gave of their time and energy into the Diamond Springs and El Dorado Area Mobility and Livable Community Plan.

Stakeholder Advisory Committee

Roger Berger, The El Dorado County Commission on Aging
Richard Boylan, P.I.C.O (Preserve Indian Creek Oaks)
Bill Center, No Gridlock Committee
John Mueller and Quinn Cuthbertson, California Highway Patrol
Chrystie Davis and Cari Dewolf, El Dorado Fire Safe Council
Randy Hackbarth and Lynn Murray, El Dorado County Trails Advisory Committee
Renee Hargrove and Jerry Homme, El Dorado Builders Exchange
Cara Hutchinson, El Dorado Arts Council
Mindy Jackson, El Dorado Transit
Bob Johnson, Sierra Club Maidu Group
Art Marinaccio, Taxpayers Association of El Dorado County
Kathy McCoy and Erik Peterson, Diamond Springs-El Dorado Community Advisory Committee
Lynn Murray, Placerville Mobility Support Group
Jackie Neau, Friends of the El Dorado Trail
Kathleen Newell, Shingle Springs Community Alliance
Larry Patterson, Lake Oaks Mobile Home Community Association (Patterson Lake)
Kris Payne, El Dorado County Historical Society & Friends of Diamond Springs-El Dorado
Randy Pesses, S.A.G.E (Surveyors, Architects, Geologists, and Engineers of El Dorado County)
Andy Peters, Mother Lode Union School District
David Pratt, Fairplay Winery Association
Mike Ranalli, Community Economic Development Advisory Committee (CEDAC)
Ren Scammon, El Dorado County Mental Health
Bob Smart, El Dorado County Parks and Recreation Commission
Mike Speegle, El Dorado Community Hall
Laurel Stroud, Residents Involved In Positive Planning, Inc. (R.I.P.P.)
Sue Taylor, Save Our County
John Taylor, Property Owner - Faith Lane and Main Street
Gary Baldock and Scott Thorne, Diamond Springs-El Dorado Fire Protection District
Dale Van Dam and Sydney Wetterstrom, Folsom Lake College - El Dorado Center
Dennis Vanderpool, El Dorado Union High School District
Chuck Wolfe, Sierra Center for Community Options

Table of Contents

List of Figures

EXECUTIVE SUMMARY

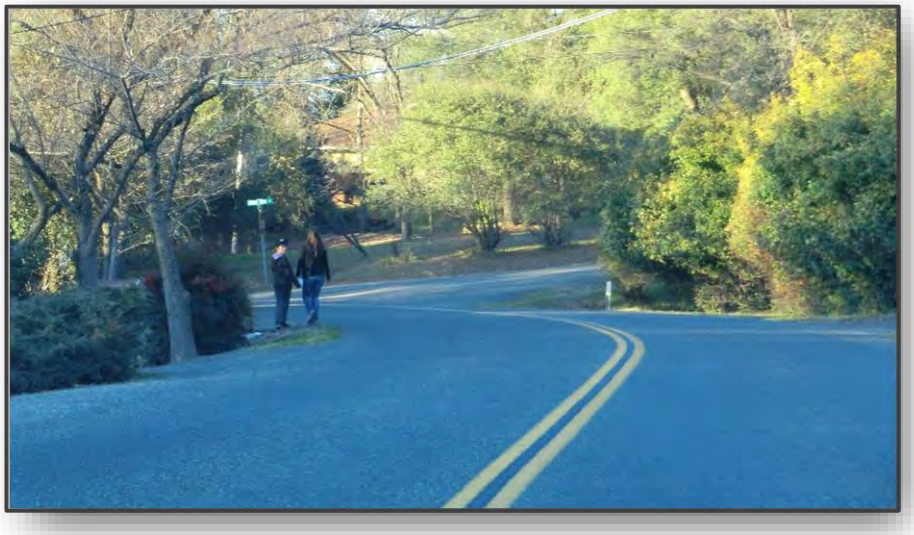
BACKGROUND

On March 30, 2011, the El Dorado County Transportation Commission (EDCTC) submitted an application to Caltrans for a 2011/2012 Community-Based Transportation Planning Grant to fund the Diamond Springs and El Dorado Area Mobility and Livable Community Plan. On July 26, 2011, Caltrans notified EDCTC that the Diamond Springs and El Dorado Area Mobility and Livable Community Plan had been selected for funding in Fiscal Year 2011/2012 with an award of $250,000.

The *Diamond Springs and El Dorado Area Mobility and Livable Community Plan (Community Transportation Plan)* is a community-based study of transportation modes within the *El Dorado Diamond Springs Community Region* as defined by the 2004 El Dorado County General Plan. The study area is roughly bounded by US 50 to the north, Mother Lode Drive to the west, Pleasant Valley Road/Highway 49 to the south, and Missouri Flat road to the east. The Community Transportation Plan is part of a larger effort by El Dorado County, Caltrans and the El Dorado County Transportation Commission (EDCTC) to proactively coordinate regional transportation planning in the project area. It is not within the jurisdiction of the EDCTC or the scope of this document, nor was it the intent with the stakeholder involvement, to supersede or override approved development plans, policies, or the land use authority of El Dorado County.

PURPOSE

The purpose of the study is to provide the communities of Diamond Springs and El Dorado with a menu of options from which they can make informed decisions about transportation infrastructure improvements that will help shape the future of their community. The overall goal of the study is to improve mobility and access for all users within the region by creating multi-modal transportation links between residential neighborhoods, commercial districts and the historic downtown districts of El Dorado and Diamond Springs that are consistent with the Diamond Springs and El Dorado Community Values adopted by the



Pedestrians on Fowler Lane

Diamond Springs Community Advisory Committee on June 20, 2013. In addition to making travel more efficient for residents within the project area, the goal is to also make it easier for people to travel to the area or through the area to reach regional destinations. This increased multi-modal mobility and access will enhance the communities of Diamond Springs and El Dorado and provide the framework to preserve their rural and historic character while accommodating future travel demand within the study area. Potential transportation improvements to meet this goal include new roadway connections, additional bicycle facilities, completion of sidewalk networks, and other streetscape and circulation improvements to the downtown districts of Diamond Springs and El Dorado.

PUBLIC OUTREACH

SAC Mapping Exercise

Understanding the users of a transportation system is critical to developing a mobility plan that supports the needs of the community. Therefore, public involvement and outreach were major components of the Diamond Springs and El Dorado Area Mobility and Livable Community Plan. In an effort to involve a broad range of potentially affected interests, forty-three groups/entities were ratified by the Commission on August 2, 2012 to be represented on the Diamond Springs and El Dorado Area Mobility and Livable Community Plan Stakeholder Advisory Committee (SAC). The project scope of work included five SAC meetings and two public open houses. The study also performed significant outreach to businesses, property owners, and developers in the Diamond Springs and El Dorado area.

The study hosted an initial meeting with identified property owners/developers to introduce the study and process to them. The Diamond Springs business outreach focused on businesses located along Missouri Flat Road, Pleasant Valley Road/SR 49, Enterprise Drive, and Fowler Lane and approximately 120 calls were placed to businesses to introduce the plan and to request an email contact. The El Dorado business outreach focused on Pleasant Valley Road between Oriental Street and Forni Road and approximately 50 calls were placed to businesses to introduce the plan and to request an email contact. A database was maintained of over 75 business email contacts in Diamond Springs and El Dorado that received notice of every public meeting and study updates.

TRAFFIC ANALYSIS

In order to better understand the traffic operations in the Diamond Springs and El Dorado areas on a technical basis as well as from a community perspective, a traffic analysis was completed for the Community Transportation Plan that identified existing conditions, analyzed existing operations, and provided a forecast for projected traffic volumes and operations in the year 2035. Intersection, roadway segment, and freeway counts were collected to determine the existing traffic operations of the study area and the El Dorado County Draft Travel Demand Model was used to forecast traffic volumes and operations in the year 2035. For the purpose of traffic counts and network recommendations, the Community Transportation Plan focused its efforts on the area bounded by US 50 to the north, Mother Lode Drive to the west, Pleasant Valley Road/SR 49 to the south, and the intersection of Pleasant Valley Road/Fowler Lane/SR 49 to the east. The Community Transportation Plan also considered the area north of US 50 that included Folsom Lake College El Dorado Center and the El Dorado County Office of Education.

COMPLETE STREETS

In addition to analyzing intersections and roadways segments in the study area, multi-modal transportation infrastructure was also considered in the context of complete streets. Complete Streets are designed and operated to enable safe access for all users, including people with disabilities, motorists, pedestrians and bicyclists, and transit riders of all ages and abilities. While some specific design elements of a "complete street" that are typically applied in an urban environment may not be appropriate in a rural setting, there are a number of complete street design features that have successfully been implemented in rural and historic settings similar to El Dorado and Diamond Springs that have simultaneously preserved the rural and historic character of their respective locations while providing much needed connectivity benefits. The types of complete street design features that could be compatible with the rural and historic character of the project area include: shoulders, enhanced shoulders, Class I Bike Paths, Class II Bike Lanes, Class III Bike Routes, detached sidewalk, attached sidewalk, medians, enhanced intersections, and organized parking.

RECOMMENDATIONS – ROADWAY

Results from the traffic analysis for the project indicate that planned population and employment growth in the study area will result in increased travel time along Pleasant Valley Road/SR 49 in the project area and through the US 50/Missouri Flat Road interchange. However, the travel time increase on Pleasant Valley Road is due primarily to increased delay at the SR 49/Pleasant Valley Road intersection in El Dorado, and planned improvements at the interchange will reduce travel times on Missouri Flat Road as previously shown. The results of travel demand modeling and traffic analysis in the study area also indicated that future travel times are not being directly affected by roadway capacity and it is not necessary to widen existing roadway segments, including Pleasant Valley Road/SR 49 to improve performance.

While the traffic analysis indicated that the existing roadway network is sufficient to accommodate regional growth, the project team analyzed three potential projects to improve connectivity for local residents:

Union Mine Road Connector

The Union Mine Road Connector is a proposed future roadway connecting Union Mine Road to Faith Lane.

El Dorado Connector

The El Dorado Connector is a conceptual connection from the existing intersection of El Dorado Road/Pleasant Valley Road to the intersection of Union Mine Road/SR 49. The intent of this roadway would be to give local traffic a convenient bypass of the Pleasant Valley Road/SR 49 (S) intersection to improve future traffic operations at that intersection.

Diamond Springs Connector

The Diamond Springs Connector is a conceptual connection between the intersection of Diamond Springs Parkway/SR 49 and a new intersection at Pleasant Valley Road. The intent of the Diamond Springs Connector is to provide a more direct route for traffic on Pleasant Valley Road heading to and from US 50 that avoids the eastern half of Downtown Diamond Springs.

RECOMMENDATIONS – DOWNTOWN DISTRICTS

One of the Community Transportation Plan's goals is to create a more appealing environment in El Dorado and Diamond Springs that induces both local and visiting customers to stay longer and frequent multiple establishments. This goal is a direct result of EDCTC's 2011 Visioning Process, which identified regional job, economic, and personal income growth by providing the proper infrastructure to support and attract small and medium-sized businesses. The recommendations in the Community Transportation Plan are meant to be a set of guidelines to identify potential opportunities for this kind of future development and provide possible infrastructure solutions to maximize the economic potential of El Dorado and Diamond Springs. However, the specific implementation of any of these recommendations will rely

Downtown Diamond Springs

in large part on improvements to Pleasant Valley Road/SR 49 that both meet the growing transportation needs of the region and accommodate the vision for El Dorado and Diamond Springs' development. Specific recommendations that are implemented will be the ones most supported by the citizens of Diamond Springs and El Dorado.

In recognizing the distinct and unique nature of the two communities, the study divided Pleasant Valley Road/SR 49 between El Dorado and Diamond Springs into segments and then made specific recommendations for each segment, including the historic downtowns of Diamond Springs and El Dorado.

EL DORADO

El Dorado's biggest obstacle to economic development is the existing and future congestion and delay at the intersection of Pleasant Valley Road and SR 49 (S). Planned population and employment growth in the region will result in increased volume through this intersection and a forecasted LOS F in 2035. This will increase travel time on Pleasant Valley Road and create long vehicle queues that will spillback into, and result in poor operations, of the SR 49/Union Mine Road and Pleasant Valley Road/Forni Road intersections during peak hours, however this segment of Pleasant Valley Road/SR 49 is allowed to operate at LOS F per the General Plan.

Downtown El Dorado

It is the strong recommendation of the Community Transportation Plan that the intersection of Pleasant Valley Road and SR 49 in El Dorado remain a stop sign controlled intersection into the foreseeable future. The intersection is exempted from LOS requirements in the 2004 El Dorado General Plan and can operate at LOS F without a mandated need to reduce delay and congestion at the intersection. The Community Transportation Plan only presents a signalized intersection and a roundabout as two potential future options that could address the significant level of delay and congestion that the traffic analysis has identified will exist in 2035. A signalized intersection or roundabout are future options that would only be considered if the expected future delay and congestion impacts the ability of local and regional travelers to safely and efficiently travel through the intersection to such a degree that the local community, El Dorado County, and Caltrans decide that there is a reason to change the existing stop sign controlled intersection.

DIAMOND SPRINGS

Convenient and centrally located parking will be an important component of Diamond Springs' ability to attract visitors and maximize its economic potential. The study presented options to address parking, including organized on-street parking, coordinated and more efficient use of existing parking lots, and creation of future parking lots. The study also presented three potential roadway cross sections as potential future development options for Diamond Springs:

- Option 1: On Street Parking and Bicycle Lanes
- Option 2: Enhanced Sidewalks and Bicycle Lanes
- Option 3: Enhanced Sidewalks and On Street Parking
-

Existing Diamond Springs Parking

RECOMMENDATIONS – BICYCLE AND PEDESTRIAN

In addition to roadway and intersection improvements, the study also recommended improvements to the bicycle infrastructure in the study area to enhance the safety, comfort, and connectivity of bicycle routes in the study area. One recommendation was to convert the El Dorado Trail between Pleasant Valley Road and Missouri Flat Road to a Class I Bicycle and shared use path to build the backbone for a bicycle network that connects El Dorado and Diamond Springs to Placerville.

One of the primary goals of the Community Transportation Plan is to improve pedestrian safety with facilities dedicated for pedestrian use. Given the planning level nature of the Community Transportation Plan, the term sidewalk was used in the study to reflect pedestrian improvements that provide a dedicated space for pedestrians that separates them from vehicular traffic. This separation could be a vertical separation (like curb and gutter) or a horizontal separation (like a separated path) but a distinction must be made between the two modes of transportation. As more detailed studies or plans are prepared, the exact type of materials for these sidewalks can be designed within the context of each project. For example, a "boardwalk style" walkway or other aesthetic treatment might be more appropriate for projects in El Dorado or Diamond Springs, where a conventional concrete sidewalk might be more appropriate in residential neighborhoods.

The addition of community appropriate streetscape enhancements, sidewalks, bike lanes, and shared use trails posed as part of the Community Transportation Plan are meant to improve residents' quality of life. These transportation improvements will mean children have safer routes to schools, employees will have alternative commute options, and recreational enthusiasts and tourists will be more inclined to get out of their cars and explore the historic communities. Demographic research done during the study revealed

that a significant portion of the study area's population is comprised of elderly and recently retired people and that the median age of the study area is 47.1 years, which is much higher than that of El Dorado County (43.6) and California (35.2). As the population of Diamond Springs and El Dorado continues to get older, the potential transportation improvements that were identified by the study, including a well connected network of sidewalks and multi-use trails, safe intersections for pedestrians, and access to transit will benefit an aging population and help create a Diamond Springs and El Dorado that is for people of all ages and abilities.

PLACE MAKING

The study identified potential landscape guidelines to offer a general design palette of streetscape elements for the Diamond Springs and El Dorado area that fit into the historic context of the two communities and provides a cohesive appearance between sections of streetscape that may be developed at different times and by different entities. It is not the intention of the guidelines to define specific makes and models of fixture that must be used. Rather, the goal is to define a general aesthetic which will provide a consistent, enjoyable experience with a historic feel for residents and visitors. The guidelines reference: El Dorado County Historic Guidelines, Missouri Flat Design Guidelines, and the Placerville Architectural Guidelines.

Existing Place Making in El Dorado

ECONOMIC POTENTIAL

The study also provided a discussion of the economics of transportation projects and the potential economic benefits of the recommended transportation infrastructure improvements for Diamond Springs and El Dorado. The Community Transportation Plan references case studies from other roadway and complete streets projects in other areas of the United States to evaluate some practical examples that will provide a better understand of the positive and negative effects that these types of projects can have on their surrounding communities, some of the primary reasons for these impacts, and lessons learned that can be applied to the Diamond Springs and El Dorado area.

DRAFT AND FINAL STUDY

An overview of the study and the results of the five SAC meetings and Public Open House #1 were presented to the public at Public Open House #2 on January 9, 2014, to the EDCTC Commissioners on February 6, 2014, and the El Dorado County Planning Commission on February 13, 2014.

Based on comments received during the five SAC meetings, the two Open Houses, the EDCTC Commissioners meeting, and El Dorado County Planning Commission, the Draft Diamond Springs and El Dorado Area Mobility and Livable Community Plan was prepared and posted to the EDCTC website on February 19, 2014. The Final Diamond Springs and El Dorado Area Mobility and Livable Community Plan was presented to the EDCTC Commissioners on March 6, 2014.

NEXT STEPS

EDCTC developed the Diamond Springs and El Dorado Area Mobility and Livable Community Plan to give the citizens of Diamond Springs and El Dorado a good foundation from which they can make informed decisions about transportation infrastructure improvements that will help shape the future of their community. The "next steps" in the development of any of the transportation infrastructure improvements identified in the study will be for EDCTC, Caltrans, El Dorado County, and the community to coordinate on prioritizing those improvements to facilitate the rapid development of key safety and circulation improvements as funding sources are identified. EDCTC will collaborate with Caltrans on updating the Transportation Concept Report State Route 49 with the recommendations made in the Community Transportation Plan. Once a project has been identified as a top priority, EDCTC will coordinate with Caltrans and El Dorado County to identify funding sources that will allow the prioritized transportation infrastructure improvement identified in the study to be constructed.

1. Introduction to the Community Plan

Introduction

The *Diamond Springs and El Dorado Area Mobility and Livable Community Plan (Community Transportation Plan)* is a community-based study of transportation modes within the *El Dorado-Diamond Springs Community Region* as defined by the 2004 El Dorado County General Plan. The study area is roughly bounded by US 50 to the north, Mother Lode Drive to the west, Pleasant Valley Road/SR 49 to the south, and Missouri Flat road to the east.

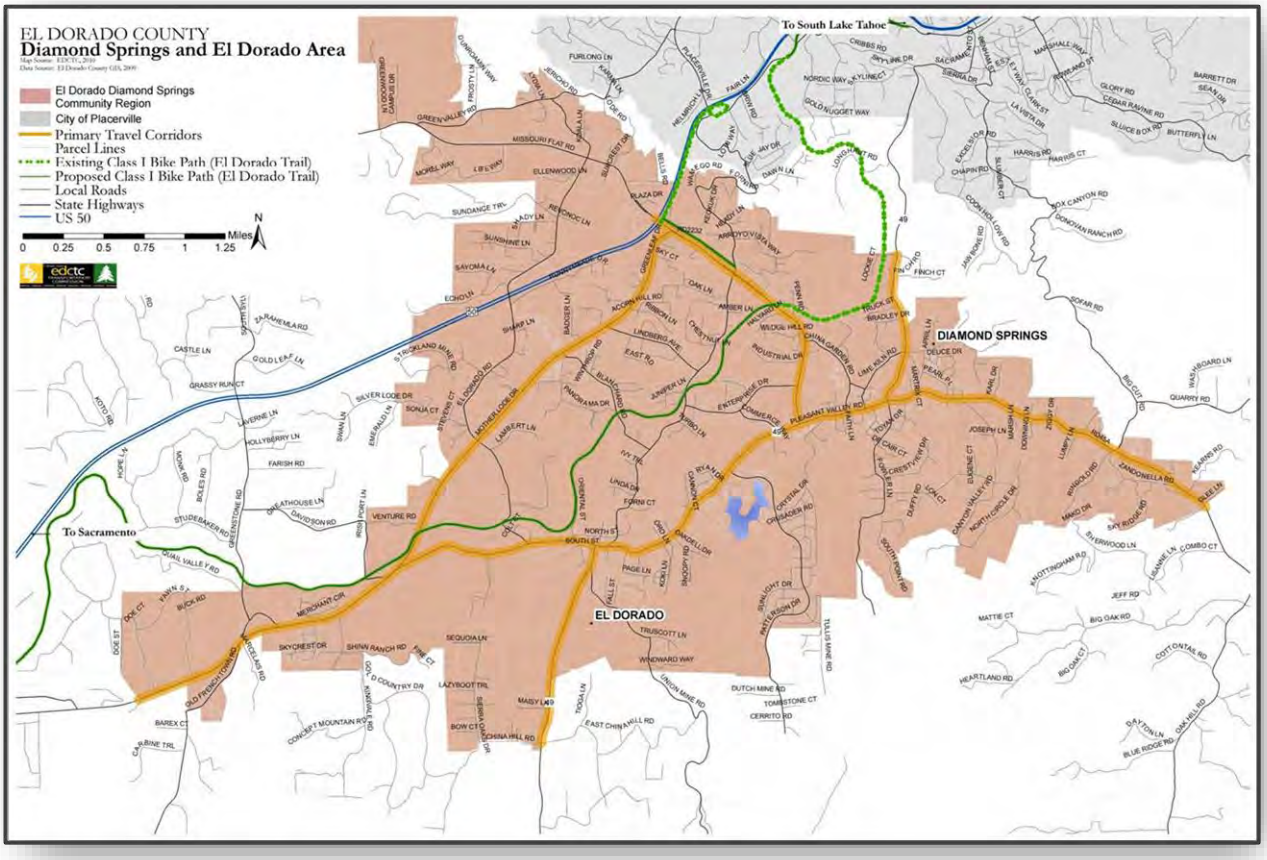


Figure 1 - El Dorado Diamond Springs Community Region

The overall goal of the study is to identify improvements for mobility, safety, and access for all users within the region by creating multi-modal transportation links between residential neighborhoods, commercial districts and the historic downtown districts of El Dorado and Diamond Springs that are consistent with the Diamond Springs and El Dorado Community Values adopted by the Diamond Springs Community Advisory Committee on June 20, 2013. In addition to making travel more efficient for residents within the project area, the goal is to also make it easier for people to travel to the area or through the area to reach regional destinations. This increased multi-modal mobility and access will enhance the communities of

Diamond Springs and El Dorado and provide the framework to preserve their rural and historic character while accommodating future demand within the study area.

The Community Transportation Plan is part of a larger effort by El Dorado County, Caltrans and the El Dorado County Transportation Commission (EDCTC) to proactively coordinate regional transportation planning in the project area. In 2009, the El Dorado County Board of Supervisors created the *Diamond Springs and El Dorado Community Advisory Committee* and appointed members of the local community to serve on the committee for the purpose of engaging the community in a dialog about transportation, land use identified in the adopted El Dorado County General Plan, economic development, community identity, and strategic approaches to preserve cultural, historic, and environmental resources. Subsequently, the 2010 State Route 49 Realignment Study (Coloma to El Dorado) identified the need to take a more focused look at individual segments within the SR 49 corridor, including mobility issues within the Diamond Springs-El Dorado area. The work done by the Diamond Springs and El Dorado Community Advisory Committee and the results of the SR 49 Realignment Study highlighted the need to find transportation solutions in the Diamond Springs and El Dorado area that balance and integrate community values with transportation safety and performance. At the request of the community, in 2010 EDCTC initiated the *Diamond Springs-El Dorado Area Mobility and Livable Community Vision Project (Vision Project).* This project was a precursor to the Community Transportation Plan and drafted a community vision and set of community values through meetings with stakeholders and a visioning workshop. The Vision Project included a review of relevant planning documents (including the current General Plan), review of the existing transportation infrastructure, economic development plans, historic district guidelines, and community identity.

Existing Transportation and Land Use Plans

The intent of the Community Transportation Plan is to supplement these existing studies with a focused and technical analysis of the project area that both addresses the mobility issues identified in the 2010 SR 49 Realignment Study and preserves the rural, environmental, historical, and cultural assets of the region that were outlined in the Vision Project and the adopted Diamond Springs and El Dorado Community Values. The project also takes into consideration the existing transportation and land use plans in the area listed below.

El Dorado County General Plan (2004)

The El Dorado County General Plan provides long range direction and policy for land use within El Dorado County. It is important to note that recommendations in the Community Transportation Plan are intended to function within the context of the approved General Plan and adjacent development projects (both private and public). It is not within the jurisdiction of the EDCTC or the scope of this document, nor was it the intent with the stakeholder involvement, to supersede or override approved development plans, policies, or the land use authority of El Dorado County.

El Dorado County Regional Transportation Plan (2010)

The El Dorado County Regional Transportation Plan 2010-2030 was developed to provide a clear vision for the regional transportation goals, objectives and policies for both the short-term and long-term development of the transportation network within EDCTC's jurisdiction. It identifies large, regional improvements to the existing transportation network including the Missouri Flat Road/US 50 Interchange improvements, Pleasant Valley Road (SR 49)/Patterson Drive Signalization Project, and the Diamond Springs Parkway project which are all within the Community Transportation Plan's study limits. These projects have all been included in the updated El Dorado County Travel Demand Model and are taken into consideration with the network recommendations in this document. It is the intent of the Community Transportation Plan to provide additional recommendations for projects on the local level that improve multi-modal access and connectivity within the study's limits.

El Dorado County Bicycle Transportation Plan (2010)

The El Dorado County Bicycle Transportation Plan updates the adopted El Dorado County Bicycle Master Plan (2005) and provides a framework for the development of a bicycle transportation network that enhances the safety and convenience of bicycling to neighboring jurisdictions, employment centers, residential neighborhoods and other activity centers in El Dorado County. The bicycle transportation plan provides bicycle network recommendations in the Diamond Springs/El Dorado area that were reviewed and evaluated by the project team as part of the Community Transportation Plan.

SR 49 Realignment Study (2010)

The SR 49 realignment study, accepted as complete by the EDCTC Board on May 6, 2010, evaluated over fifty different scenarios for the realignment of SR 49 from El Dorado to Coloma to eliminate the existing at-grade crossing of SR 49 and US 50, relieve traffic on SR 49, and improve the safety and efficiency of goods movement in the region. It is a preliminary Project Identification Document (PID) that identifies provisional project alternatives and makes recommendations on their feasibility. It is not intended to be an authoritative document with an approved realignment of SR 49, however the top three alternatives recommended by the study will have varying degrees of impact to Pleasant Valley Road and Missouri Flat Road within the Community Transportation Plan's limits. The recommendations of this plan have been made with the flexibility to accommodate the future realignment plans for SR 49 with specific recommendations for the long-term development of the highway to meet the local bicycle, pedestrian and automobile needs.

El Dorado County Long-Range and Short-Range Transit Plan (Ongoing)

EDCTC has secured funding for a number of short- and long- range planning grants for the future transit needs of El Dorado County. The most recent long-range planning document was approved in 2003 and was supplemented by a short-range transit plan in 2008. EDCTC is currently preparing a new 2013/2014 Short and Long Range Transit Plan to account for the demographic and socioeconomic and demographic changes that have occurred in the County with the downturn in the economy. The transit plan was still in the preliminary planning stages during the stakeholder visioning process for the Community

Transportation Plan, although there are no anticipated conflicts between the recommendations of this document and the future recommendations of the transit plan. It is anticipated that proposed active transportation improvements proposed in the Community Transportation Plan will improve access to transit and be a benefit to the overall transit plan.

El Dorado County Park and Ride Facilities Master Plan (2007)

The El Dorado County Park and Ride Facilities Master Plan identifies the policies, actions, and financing needed to ensure a continuous and adequate supply of parking capacity to support the growing transit needs of El Dorado County. There is an existing park-and-ride lot within the Community Transportation Plan's limits at the southwest quadrant of the US 50/Missouri Flat Road Interchange that is owned and operated by the California Department of Transportation (Caltrans), and the Central Transit Center Multi-Modal Transfer Facility on Commerce Way that is owned and operated by El Dorado Transit. The recommendations of the Community Transportation Plan are intended to encourage multi-modal connectivity to these facilities and enhance the services that Caltrans and El Dorado Transit provide.

El Dorado County Transit Design Manual (2007)

The El Dorado County Transit Design Manual provides transit improvement standards that are appropriate to the unique conditions of Western El Dorado County. The manual does not supersede the authority of local jurisdictions or existing design standards, but instead provides design guidelines for more pedestrian, bicycle and transit friendly bus stops. While the recommendations in the manual are rather specific relative to scope of the Community Transportation Plan, the intent of both documents to create multi-modal connectivity in the Diamond Springs and El Dorado area are synonymous.

Missouri Flat Master Circulation and Funding Plan – Phase I (2002)

The Missouri Flat Area Master Circulation and Funding Plan (Phase I) is a collaborative plan between El Dorado County, local developers and property owners to identify and incrementally fund improvements to the US 50/Missouri Flat Road interchange and adjacent arterials and collector roads. These improvements are needed to reduce existing traffic congestion and to create additional capacity for planned commercial development in the Missouri Flat area to be consistent with the approved guidelines in the current El Dorado County General Plan. The Community Transportation Plan is sensitive to these recommendations and has accounted for the future traffic volumes and improvements to the US 50/Missouri Flat Road interchange.

El Dorado County Historic Design Guidelines (circa 1980)

The El Dorado County Historic Design guidelines were prepared for the El Dorado County Board of Supervisors to give examples, in text and pictures, of the architectural qualities that are commonly attributed to the "gold rush" or "western frontier" styles. The intent of the guidelines is to protect, enhance and promote the areas and buildings determined to be of historic significance in El Dorado County. The guidelines do not set limits on the type and architectural features that are permissible in historic districts; however they are frequently referenced with development plans in the El Dorado and

Diamond Springs area. Specific recommendations in the Community Transportation Plan within these districts have been made to be sensitive to the historic character of El Dorado County as recommended by this document.

Missouri Flat Design Guidelines (2008)

The Missouri Flat Design Guidelines provide property owners and project architects a clear understanding of the desired design elements for the redevelopment of Missouri Flat Road between El Dorado Road and Pleasant Valley Road. County staff uses the guidelines as a basis for evaluating development proposals on the corridor for the quality of their design. The Community Transportation Plan makes recommendations for the future development of the Missouri Flat roadway section within public right-of-way to complement the approved goals and objectives of the Missouri Flat Design Guidelines.

Diamond Springs-El Dorado Area Mobility and Sustainable Community Vision Project (2011)

The Diamond Springs-El Dorado Area Mobility and Sustainable Community Vision Project initiated a dialogue with the Diamond Springs and El Dorado communities to craft a vision for the physical, economic and social development of the region in the short- and long- term. On June 20, 2013, the Diamond Springs and El Dorado Community Advisory Committee adopted the following Community Values which form the framework for the Community Transportation Plan:

The Rural Character of the Area:

- Oaks, native plants, and wildlife habitat
- Support of local agriculture and community gardens
- A healthy environment
- Preservation and connectivity of wildlife corridors and permeable landscapes

Distinct, Small Communities:

- Ease of travel in and around the community on smaller, uncongested roads
- Safe and efficient bicycle and pedestrian paths
- Places to walk, bike, and gather
- Parks for open space and recreation
- A strong sense of community, knowing your neighbors

Preserve Cultural History:

- Gold Rush / pioneer history and assets
- Golden Chain / SR 49
- Native American history and sacred sites
- The El Dorado Trail and the historic railroad park
- The history and culture of the area celebrated through public art and performance

- Incorporate the culture and history (Gold Rush, Native American, Lumber, Mining) of the area into commercial buildings and public spaces

Employment and Economic Prosperity:

- Job, economic, and personal income growth
- Providing infrastructure to support and attract small and medium-sized businesses
- Keeping commercial development appropriate to enhance and be compatible with the historic areas of Diamond Springs and El Dorado
- Transition commercial zones to provide a smooth transition between commercial and historic areas
- Access to current technology, including fiber optics and high speed internet
- Diverse sources of employment that allow people to live near their work

The Community Transportation Plan is intended to compliment the visioning process with a viable transportation plan that integrates the vision of the community with realistic expectations for the development of transportation infrastructure in the region. Additionally, the Community Transportation Plan will provide the citizens of Diamond Springs and El Dorado the information and analysis from which to make informed decisions that will shape the future of their community.

2. Public Involvement

The El Dorado and Diamond Springs Communities expressed concern that they have not experienced the same level of investment in roadway infrastructure as other areas in El Dorado County. The momentum for investment and change in the region started with the SR 49 Realignment planning effort and cumulated recently with the Vision Project. The Community Transportation Plan builds on the desire and knowledge of the community from these previous efforts and brings forward recommendations that meet the short and long term transportation needs of the residents, business owners and consumers in the region.

To best document the specific needs of the region, the Community Transportation plan engaged the public in two main forums. The first forum was the re-establishment of the Stakeholder Advisory Committee (SAC) from the Vision Project which included property owners, neighborhood community organization members, and members from local business groups. A full list can be found in the acknowledgments section. The SAC was the primary source for collecting community input from representatives from the different stakeholder groups and disseminated information from the Committee meetings back to their constituencies. In this role they were key in encouraging their neighbors, friends and families to attend the general public meetings and have ownership in the process of shaping their community.

The second public outreach opportunity was two open forum public meetings. These workshops offered the public at-large an opportunity to learn about the project and provide input on the project's goals, objectives and improvements to the community. It was also an opportunity for the project team to receive additional feedback on the existing conditions in the project area and verify the information that was collected by the SAC.

Public Outreach

SAC #1 – Visioning (November 8, 2012)

SAC Meeting #1

The first Stakeholder Advisory Committee (SAC) meeting was held on November 8, 2012 and included twenty-two representatives from twenty different organizations. The objective of the meeting was to provide an overview of the project, review the stakeholder engagement process and stakeholder roles and responsibilities, present project goals and the study process, and develop a common understanding of the community values.

Following a presentation on these topics, the SAC was asked to participate in an exercise to identify their community values as they relate to this project. Stakeholders were provided the following three questions to respond to:

1) What do you want to preserve?
2) What do you want to create?
3) What do you want to avoid?

Stakeholders provided answers to each question which were then posted under the appropriate question and grouped according to common themes. At the conclusion of the exercise, stakeholders were asked to provide their thoughts and comments on the community values exercise. Most stakeholders highlighted the need to create more connectivity, preserve the historic and rural feel of the community, and avoid overdevelopment. It was noted that it is important to have connected communities to promote more recreation opportunities and create safe routes to schools. Many stakeholders expressed the desire to preserve the uniqueness of the community while making necessary improvements. Overwhelmingly, stakeholders discussed the importance of avoiding overdevelopment and improvements that would not fit within the rural context of their community.

SAC #1 - Preserve/Create/Avoid Exercise

<u>SAC #2 – Complete Streets (December 5, 2012)</u>

The second SAC meeting focused on the parameters of the Community Transportation Plan and how they fit within the context of approved planning documents and land uses in the region. It also included an introduction to community appropriate transportation planning concepts and how they could be implemented with the recommendations in the final plan.

SAC Meeting #2

There were multiple speakers at the SAC meeting representing the collective planning interests in the region. The intent of the meeting was to provide the SAC an open forum to discuss the project and raise any questions or concerns they have:

Dan Bolster, Senior Transportation Planner EDCTC, discussed the parameters and limitations of the Community Transportation Plan and discussed its relationship to other relevant planning documents in the region.

Eric Fredericks, Caltrans Chief District 3 Office of Transportation Planning, provided an overview of Caltrans' objectives for this study. The outcome of this study will be included in Caltrans' SR 49 TCCR (Transportation Corridor Concept Report), which is on hold pending the outcome of this study.

Roger Trout, El Dorado County Community Development Agency, Development Services Division Manager, provided an overview of land use context and the influence the General Plan has on the project. The El Dorado County General Plan was adopted in 2004 and has had multiple amendments. The General Plan serves as a framework for the community and is a balancing act of competing issues. There are policies in the General Plan supporting community values that were identified by the SAC.

Matt Smeltzer, El Dorado County Community Development Agency, Transportation Division Deputy Director, provided an overview of the planned Diamond Springs Parkway Project. The project consists of the construction of a new arterial roadway connection between Missouri Flat Road and SR 49, north of Pleasant Valley Road (SR 49).

Following the planning discussions there was a presentation on alternative transportation planning concepts and their implementation in rural settings. This presentation was specifically tailored to the stakeholder feedback from the first SAC meeting which emphasized the need to preserve the rural and historical character of the region while improving multi-modal connectivity. Specific project examples were given that highlighted implementation in rural and historic districts including travel lane widths, shoulder widths and treatments, bicycle lane classifications, sidewalk options, medians, enhanced intersections, organized parking, and the concept of "Main Streets". Feedback was collected from the stakeholders on each of these examples asking if each treatment option was appropriate for the project area, and where potential locations for implementation could be.

SAC #3 – Community Area Mapping (February 20, 2013)

There was consensus from the SAC that the presentations from SAC #2 was helpful and more time should be spent discussing how street design treatments could be adapted to fit within the project area. The project team received valuable feedback and where they would be appropriate within the project area, but many stakeholders felt that a project area map would be useful to provide better input.

SAC Meeting #3

As a result, the project team focused the third SAC meeting on a mapping exercise to identify the challenges and opportunities for traffic in the project area. The project team started by giving a brief

synopsis of the feedback that had been received at the previous SAC meetings, and then gave a brief presentation on the existing transportation network within the project's limits. This presentation included an inventory of the existing roadway facilities in the study area and the potential street enhancements that are realistic for each roadway classification.

Following the presentation, stakeholders were broken into small focus groups and asked to document their local knowledge of the area so that the project team could get a better understanding of how the transportation network currently operates and what existing challenges might be addressed with the Community Transportation Plan. Specifically, stakeholders were asked to respond to three different exhibits with questions relating to automobile, bicycle and pedestrian facilities:

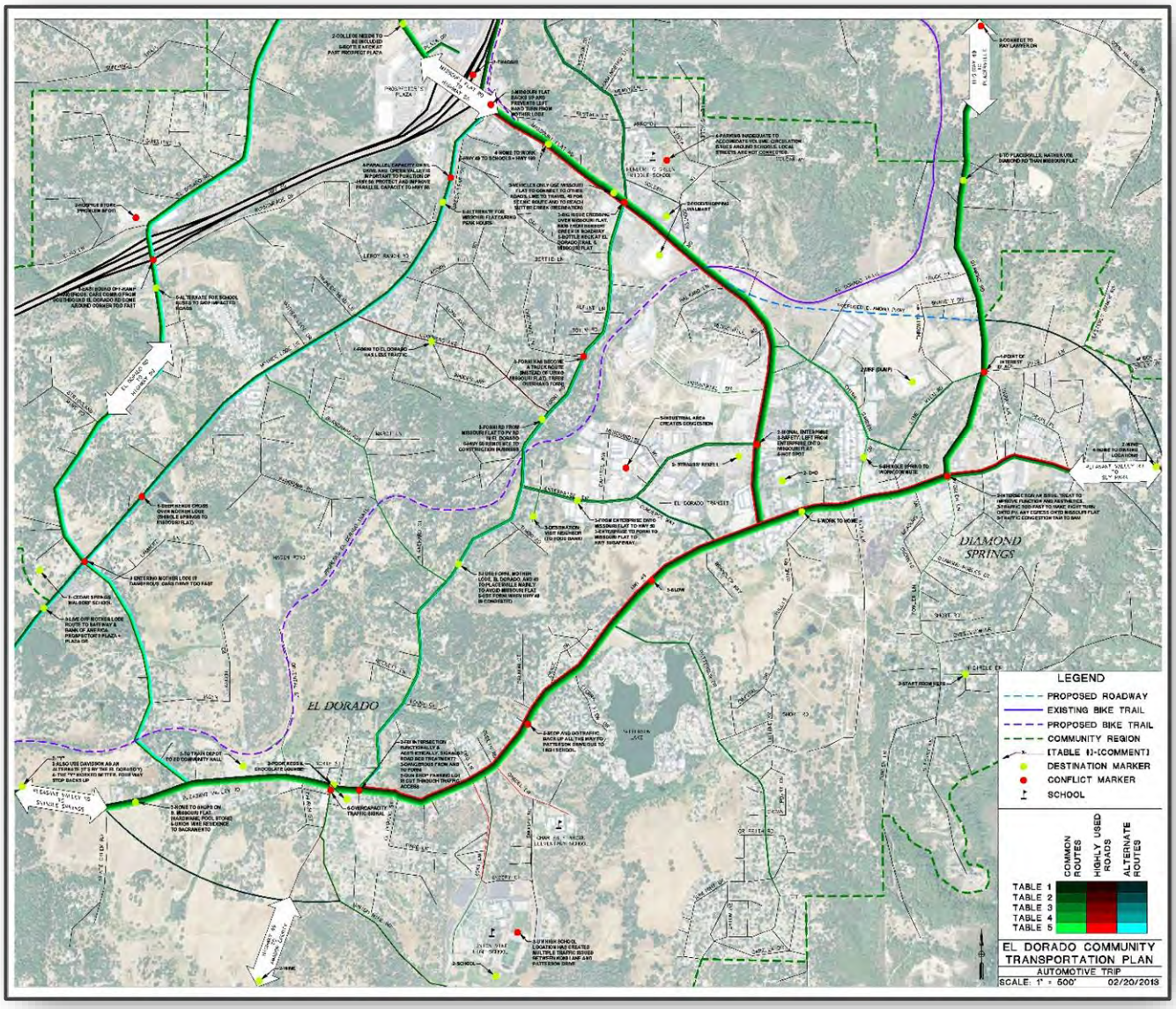


Figure 2 - Example of Automobile Mapping Exercise

Map #1 – Automobile Trips: Stakeholders were asked to document the common automobile trips in the region including where motorists are coming from, where they typically driving to, and what challenges they encounter on the way. From this exercise the project team was able to qualitatively identify the relative congestion in the region and document perceived safety issues by the traveling public.

Map #2 – Bicycle Trips: Stakeholders were asked to identify the typical commute and recreational bicycle routes in the region including perceived challenges. Stakeholders were also asked to identify existing deficiencies in the network and list commute and recreational routes they would take if bicycle facilities were upgraded to be safe and comfortable.

Map #3 – Pedestrian Trips: Similar to the first two exercises, stakeholders were asked to document the general routes where people are walking and the challenges associated with those routes. Stakeholders were asked to identify deficiencies in the existing pedestrian network and identify where potential facilities could be installed or upgraded to improve connectivity and the pedestrian environment.

Stakeholders were also given feedback forms to identify specific improvements and recommendations for the Historic Downtown El Dorado and Diamond Springs areas to be used for future SAC meetings and Public Workshops. Specifically, stakeholders were asked the following for each area:

1) What one mobility improvement should be implemented in the Historic Downtown Area?
2) When visiting downtown, where are some opportunities for gathering places?
3) How do you access downtown and what modes of transportation do you use?

Public Workshop #1 (April 3, 2013)

Public Workshop #1

The first public workshop was held on April 3, 2013 at the Union Mine High School Library. Public workshop notification flyers were sent via email to local jurisdictions, interested agencies, vicinity organizations, and interested individuals (see Appendix A – Outreach List). In addition, the project team reached out to businesses in both downtown El Dorado and Diamond Springs. Focusing on main streets, a database of business contacts was created including over 300 businesses. Phone calls were placed to business owners alerting them of the workshop and asking if they would like to be added to the project contact list by providing a physical address, email, or fax

number. Over seventy workshop notification flyers were emailed or faxed to business and property owners in Diamond Springs and El Dorado. The community workshop flyer was posted on the EDCTC website and Facebook page. A public meeting notice was placed in the Mountain Democrat and published on March 29. Press releases were sent via email to KCRA NBC Channel 3, KOVR CBS Channel 13, KXTV ABC Channel 10, the El Dorado Hills Telegraph, The Mountain Democrat, The Clipper, Village Life Newspapers, the Sacramento Business Journal and The Sacramento Bee.

Over thirty community members attended the workshop which was organized as an open house with a series of community relevant information stations. Attendees were encouraged to visit the stations where project team members were available to answer questions. Each station included an opportunity to provide input on different areas of the plan, and attendees were given a feedback form to provide their thoughts and ideas:

Welcome Table: As attendees entered the workshop, the layout of the room was explained and they were provided with a feedback form to document their comments on the plan.

Station #1 - Community Values: This station had large posters depicting the community values that were identified in the first SAC meeting. The values were divided into what the community would like to create, preserve, and avoid with the plan. Attendees were asked to prioritize the values and add comments using Post-it™ notes.

Public Workshop Complete Street Station

Public Workshop Network Station

Station #2 –Street Tools: This station had large posters that depicted photo examples of the street treatments that were discussed at the second SAC meeting. Attendees were asked to place green dots on treatments that they liked and thought appropriate for the community or red dots on treatments they did not like.

Station #3 – Automobile/Bicycling/Pedestrian Networks – This station was a re-creation of the mapping exercise that was completed by the SAC in the third stakeholder meeting, except that comments received by the SAC were documented on the maps. Attendees of the public workshop were given markers and Post-it™ notes and asked to comment on the existing observations of the SAC as well as add notes on highly used automotive, bicycle and pedestrian routes that might have been missed. They were also asked to identify challenges and constraints for these modes of transportation within the project's limits.

SAC #4 – Active Transportation (October 24, 2013)

The fourth SAC meeting focused on the preliminary results from the Draft El Dorado County Travel Demand Model (Draft EDC TDM) and made recommendations for bicycle and pedestrian improvements to the transportation network. The project team started with a brief overview of the updated traffic analysis including population and employment growth assumptions, the planned transportation improvement projects in the region, and forecast traffic volumes and delay. The preliminary traffic numbers revealed an increase in regional traffic by 2035, but also highlighted the impacts of proposed projects like the Diamond Springs Parkway and the Patterson Drive signalization project.

Active Transportation on the El Dorado Trail

It was noted in the presentation to the SAC that there are three recommendations that can be made by the Community Transportation Plan to relieve automobile congestion in the region: 1) Increase the capacity of roadways by widening existing roads or adding new ones; 2) Increase the efficiency of intersections by adding turn lanes or updating the controls (signals, stop, etc.); or 3) Shift away from automobiles and encourage more people to use active transportation (walking, bicycling, transit, etc.). Based on the projected future traffic operations from the traffic model the project team made the case that it isn't necessary to widen existing roads in the region which was a recommendation that was well received by the stakeholders. It was noted that new roadway connections and intersection controls are a potential recommendation for congestion mitigation, and would be covered in the final SAC meeting. The purpose of this SAC meeting was to discuss the project team's recommendations to the bicycle and pedestrian roadway network in the project area.

The preliminary recommendations for the bicycle and pedestrian network were well received by the majority of stakeholders with a small, but vocal minority objecting to improvements in general to the bicycle and pedestrian network. At the conclusion of the discussion, stakeholders were provided comment cards with the following questions:

1) Please provide your comments or questions on the traffic analysis presented

2) Please provide your comments or questions on the proposed network improvements for bicycles
3) Please provide your comments or questions on the proposed network improvements for pedestrians
4) Other questions or thoughts?

The feedback received from the SAC was very positive and was used to refine the bicycle and pedestrian recommendations before they were presented to the public at the second public workshop.

SAC #5 – Roadway Enhancements and Downtown Development (December 5, 2013)

The final meeting was a recap of the SAC process and a direct follow-up to the previous meeting with recommendations for the roadway network and the downtown development of El Dorado and Diamond Springs. Specific roadway additions and intersection improvements were discussed, but the focus of the meeting was on soliciting feedback from stakeholders on potential future improvements to El Dorado and Diamond Springs to capitalize on the projected economic growth in the region. The intent of the discussion was to vet possible future improvements and get support from the stakeholders that each of the proposed improvements should be presented to the public at the final workshop:

Historic El Dorado

Network Enhancements: Although the future planned roadway network is anticipated to be sufficient to accommodate projected traffic growth in the region, the SAC discussed three alternatives to alleviate local congestion: the Union Mine Road Connector which will be constructed with the proposed residential developments south of Pleasant Valley Road/SR 49 and potentially create a convenient east-west corridor in the region, the El Dorado Connector which would relieve the congested intersection of Pleasant Valley Road and SR 49 with a new roadway from El Dorado Road to Union Mine Road, and the Diamond Springs Connector which would provide a bypass of the Pleasant Valley Road/SR 49 and Missouri Flat Road intersection by constructing a new road between the future Pleasant Valley Parkway project and Pleasant Valley Road. These improvements are discussed in more detail and shown in Section 6 - Recommendations.

Roadway Enhancements: Three roadway cross sections for the historic districts of Diamond Springs and El Dorado were discussed with the SAC. All three options assumed that the travel lanes on Pleasant Valley

Road/SR 49 would be reduced to 11' in the historic districts to promote traffic calming and provide enough existing pavement width for the proposed improvements. The first option used the extra pavement width for on street parking and bike lanes. It was assumed the existing sidewalk in the historic districts of Diamond Springs and El Dorado could be upgraded to meet ADA compliance and provide enough connectivity to make the historic districts walkable. The second option replaced the bike lanes with expanded sidewalks and included on-street parking. This would maintain the existing parking in the districts (the roadway would be striped and signed for bicyclists to share the road with automobile traffic), but dramatically improve pedestrian connectivity. The third option included expanded sidewalks and dedicated bike lanes at the expense of on-street parking.

Parking District: In response to the potential parking impacts with the proposed improvements, the project team analyzed the existing off-system parking in both El Dorado and Diamond Springs and identified the potential for a parking district. A collaborative effort among the existing business owners could maximize underutilized existing off-street parking and create new parking opportunities to meet the growing needs of the District to everyone's benefit.

Back-in Angled Parking: Typically bike lanes are precluded with standard diagonal parking because of the conflict with automobiles backing out of a space and bicyclists in a dedicated bike lane. Back-in angled providing improved visibility and safety for bicyclists.

Roundabout: A potential long-term solution for the intersection of Pleasant Valley Road and SR 49 would be the construction of a roundabout to improve traffic operations. Given the public's negative perception of roundabouts in El Dorado County, the project team wanted the SAC's buy-in on the concept of a roundabout as a potential solution to congestion and delay before taking it to the public.

All of the proposed improvements were well received by the SAC with the exception of the roundabout which elicited a polarized response. A straw poll of the SAC members present indicated an equal split of supporters and critics. However, there was enough positive reaction to the roundabout as a potential option to reduce congestion and delay that the SAC felt it was appropriate to take it before the public at large to get their feedback. The SAC also recommended displaying other options for the intersection such as maintaining the existing stop control or signalizing the intersection. Based on stakeholder feedback at the final SAC meeting, the downtown improvements were refined and presented to the general public at the second public workshop on January 9, 2014.

Public Workshop #2 (January 9, 2014)

The second public workshop was held on January 9, 2014 at the Folsom Lake College El Dorado Center. Notification flyers and press releases were posted and sent to the same distribution list as the first public workshop, and a public meeting notice was placed in the Mountain Democrat on January 6th and 8th, 2014. The public workshop was well attended with over 50 community members in attendance.

The workshop was organized as an open house with a series of informational stations and a presentation highlighting the proposed recommendations that were vetted with the SAC. Attendees were encouraged to visit the stations where project team members were available to answer questions. Each station

included an opportunity to provide input on different recommendations and attendees were given a feedback form to provide their thoughts and ideas. Each community member was also asked to participate in a prioritization exercise and rank the proposed bicycle and pedestrian network improvements from highest to lowest priority.

Station #1 – Stakeholder Input: This station had large posters depicting community values identified by the community and the SAC. Maps were also available showing feedback received through the SAC and the previous community meeting.

Station #2 – Traffic: This station had maps depicting current and future traffic demand forecasting as well as the benefit that network improvements could have on the region, including reduced delay and congestion.

Station #3 – Network improvements: This station depicted recommended network improvements including improvements to Missouri Flat Road, the Diamond Springs Parkway Connector, and the Union Mine Connector. Attendees were asked to provide feedback via post-it notes or comment cards.

Station #4 – Historic District Station: This station included the recommendations for the El Dorado and Diamond Springs Historic Downtown areas that were disused at the final SAC meeting. Attendees were asked to prioritize and comment on the improvements for each downtown area using sticky dots as a "yes" vote for a specific improvement.

Public Workshop #2

Additional Public Outreach

Supplementing the Stakeholder Advisory Committee and the Public Workshops the project team reached out to the constituents that would be most affected by the recommendations made in the Plan. Before the first SAC meeting the project team contacted both the key property owner/developers in the region along with the property owners and business operators along the main commercial corridors. For a complete list, see Appendix A – Outreach List.

Based upon the map of the Diamond Springs and El Dorado Community Region as defined by the El Dorado County General Plan, the study identified and contacted nine property owners/developers and their representatives to introduce the study to them and to request their involvement in the process. The team hosted an initial meeting with the identified property owners/developers to introduce the study and process. On several occasions the property owner/developer representatives were informed the progress of the project and encouraged to participate in the SAC. The project team received comments on the public draft plan from their representatives which were incorporated into the final plan.

In addition, the study understands the importance of communicating with the business community in Diamond Springs and El Dorado. The team performed an initial drive through of both Downtown areas to identify major streets to focus outreach efforts on. Then utilizing an on-line property, homeowner database service (ListSource) property information within targeted area was collected. The outreach team created a list of businesses in both Diamond Springs and El Dorado which focused along Missouri Flat Road, Pleasant Valley Road, Enterprise Drive and Fowler Lane. Approximately 120 calls to the Diamond Springs businesses along with over 50 calls to El Dorado businesses were made to introduce the plan and ask for email contact. The project team maintained a database of over 75 business email contacts that received notice of each public meeting and study updates. Many of these business owners attended the workshops and have made comments that can be found in the Appendix of this document.

(This page intentionally left blank)

3. Existing Conditions

The Community Transportation Plan area is roughly bounded by the El Dorado Diamond Springs Community Region as defined by the 2004 El Dorado County General Plan within the jurisdiction of the Diamond Springs and El Dorado Community Advisory Committee. For the purpose of traffic counts and network recommendations, the Community Transportation Plan focused its efforts on the area bounded by US 50 to the north, Mother Lode Drive to the west, Pleasant Valley Road/SR 49 to the south, and the intersection of Pleasant Valley Road/Fowler Lane/SR 49 to the east. The Community Transportation Plan also considered the area north of US 50 that included Folsom Lake College El Dorado Center and the El Dorado County Office of Education.

History

Diamond Springs and El Dorado (originally Mud Springs), named after their fresh water springs, originated as mining camps during the early Gold Rush era. Both were important settlements and populous trading centers located in some of the most gold-rich territory in the region. Their proximity to the well-established gold rush camp of Placerville, and location on the Carson Trail brought a steady stream of travelers and goods. After gold production declined, the economy depended more on other natural resource extraction opportunities, such as logging, lime and marble mining. This is evidenced by the former Diamond Springs Lime Company, a large plant west of SR 49 that closed in 1956. Mining production gradually declined starting in the latter decades of the 19th century, giving way to the rise of agriculture as a key component of the local economy.

Pony Express Historical Landmark

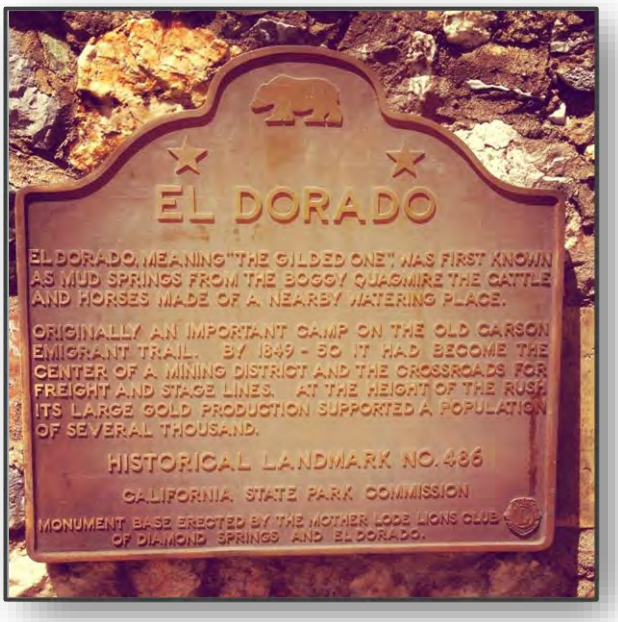
Diamond Springs' logging railroad history includes the Diamond and Caldor Railway which carried logs and lumber from Caldor, in the region of Grizzly Flat, to the mill in Diamond Springs. The California Door Company built the mill in 1901 and constructed the 34-mile long railway line that was primarily used as a logging railroad but also provided some passenger service. By 1953, most of the logs were being brought from Caldor to Diamond Springs by truck. That fact, coupled with the costly upgrades to their railroad cars that the company was facing led to the company's decision in 1953 to abandon operations and remove the tracks and sell the railroad equipment. Today, the old planing mill building and water tower still stand as reminders of Diamond Springs' logging railroad history.

The location of Diamond Springs and El Dorado on trails and trade routes like the Carson Trail was instrumental in the success of their early economies. El Dorado was home to one of the original remounting stations on the Central Overland Pony Express at the present-day intersection of Pleasant Valley Road/SR 49 and Church Street. On April 13, 1860, Pony Express rider William (Sam) Hamilton changed horses at this location while carrying the first westbound mail of the Pony Express from St. Joseph, Missouri, to Sacramento. Today, main transportation routes like SR 49, which runs through the former Main Streets of Diamond Springs and El Dorado, play a similarly critical role in the success of their economies by linking the two towns with the surrounding region.

Today only a few remnants of the Gold Rush era can be detected in El Dorado and Diamond Springs. Diamond Springs experienced major fires in 1856, 1859, and 1870, and El Dorado experienced them in 1923, the 1940's and 1950's. Many of the landmark buildings, especially the thriving hotels and saloons were destroyed by these fires, and others have since been razed or undergone extensive remodeling. The neighborhood design along SR 49 presents a juxtaposition of a myriad of different land uses, including a few historic buildings, service stations and other auto-oriented uses with large parking lots, set alongside small privately-owned artisan goods shops. Residential areas that include country homes with large lots and livestock can be found immediately adjacent to more suburban single-family homes. Locals have described the character of this area as "rustic pioneer with a hometown Americana feel". Many residents today still possess the entrepreneurial and independent spirit of the early settlers, and continue to have a deep sense of appreciation for the land and the natural beauty of the surrounding landscape.

El Dorado

Given the relatively close proximity of Diamond Springs and El Dorado to each other and the fact that they share many elements of the regions' rich and colorful gold rush history, to the outside observer it may appear that the two communities are the same. However, a closer look reveals that the local residents experience them as two distinct communities and strongly identify with the unique character, history, and feel each community has developed over the years. El Dorado has a somewhat more residential character than Diamond Springs and is more service oriented. From a transportation perspective, shops along this stretch of SR 49 through El Dorado lack basic pedestrian infrastructure and there are three unusual intersections with which traffic must contend—a triangular intersection where Mother Lode Drive meets Pleasant Valley Road, a "Y" intersection where Forni Road meets Pleasant

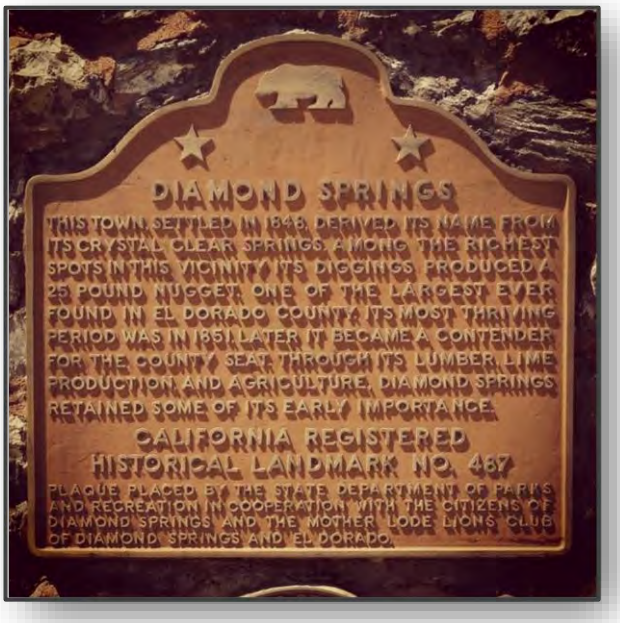


El Dorado Historical Landmark

Valley Road and a "T" intersection where SR 49 makes a ninety degree turn at Pleasant Valley Road. Traffic traveling at highway speeds is not conducive to easy business patronage from either an auto or pedestrian standpoint. Drivers traveling on SR 49 have to make a sudden transition from a highway environment to a small business district while loud, fast-moving traffic and the lack of sidewalks and separation from traffic does not lend itself to a pleasant walking experience. El Dorado serves as an education hub for school-aged children, so highway traffic, school traffic, and lack of appropriate infrastructure presents challenges for children traveling to and from school. Union Mine is a regional high school with a large geographic draw. The Union Mine campus is also home to two alternative programs called Mountain View High School and Shenandoah High School. There is also the El Dorado Trade School, a middle school charter school less than a mile away and Independence High School at the intersection of Pleasant Valley Road and Missouri Flat Road.

Diamond Springs

Diamond Springs' historic district has the potential to become a strolling business district, but currently it has fragmented pedestrian infrastructure and many gaps in the structural elements that combine to define the area. This district has recently experienced some new real estate investment, namely the Diamond Center at the southwest intersection of Pleasant Valley Road/SR49 and Fowler Lane, which has a design that is reminiscent of the Gold Rush era. The Diamond Center features many elements that are appropriate to the period and character of the area, including trash cans that resemble wine barrels and wood elements with large, exposed fastenings. It also utilized or simulated materials that were appropriate for the Gold Rush era including wrought-iron, stone and wood. The overall feedback from the public regarding this development was positive, and the development serves as an example of how the historic character of the towns of Diamond Springs and El Dorado can be preserved and enhanced with modern development efforts that are consistent with the values and vision of the two communities.



Diamond Springs Historical Landmark

Demographic and Economic Background

The Diamond Springs census designated place (CDP), which encompasses portions of both the Diamond Springs and El Dorado areas, had an estimated population of 11,037 at the 2010 Census. Historical growth for this relatively small geographic area is difficult to estimate because significant CDP boundary changes

occurred in 2010. Recent population data indicates population growth has been very slight. The average annual growth rate between the 2010 Census and 2012 American Community Survey is only 0.21%.

Age

A significant portion of the local area's population is comprised of elderly and recently retired people. As shown in Table 3.1, the median age in the study area is much higher than that of El Dorado County and California. The high proportion of elderly is likely a result of residents aging in place as well as an influx of retirees seeking a slower-paced, rural lifestyle and access to outdoor recreation and tourism opportunities in El Dorado County.

Median Age 2010

	2010
Diamond Springs	47.1
El Dorado County	43.6
California	35.2

Source: U.S. Census Bureau "median age"

Figure 3 - Median Age in Study Area

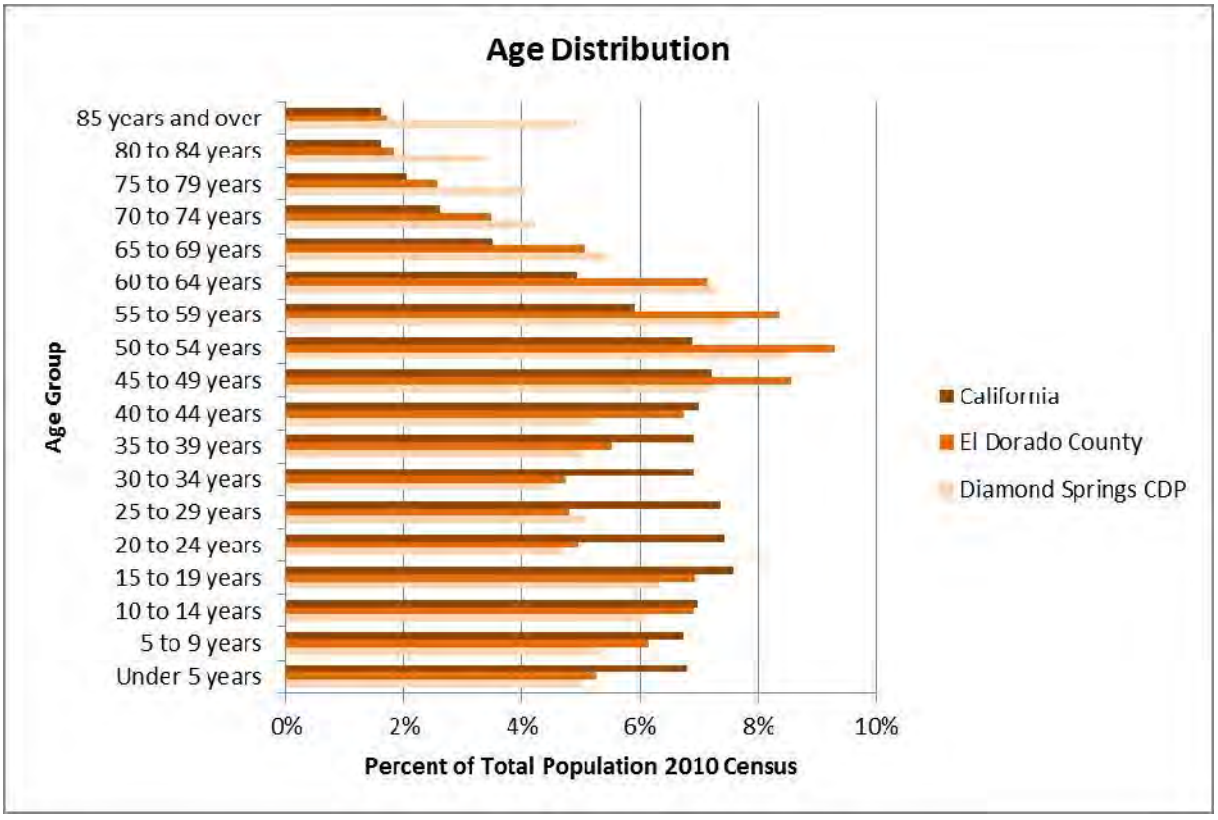


Figure 4 - Age Distribution in Study Area

Income

Several different census datasets indicate that the Diamond Springs CDP has residents of more modest incomes than the rest of El Dorado County. In 2012 the average household income in the Diamond Springs CDP was 73% of the County average ($65,434 and $89,610 respectively). Table 3.3 shows income

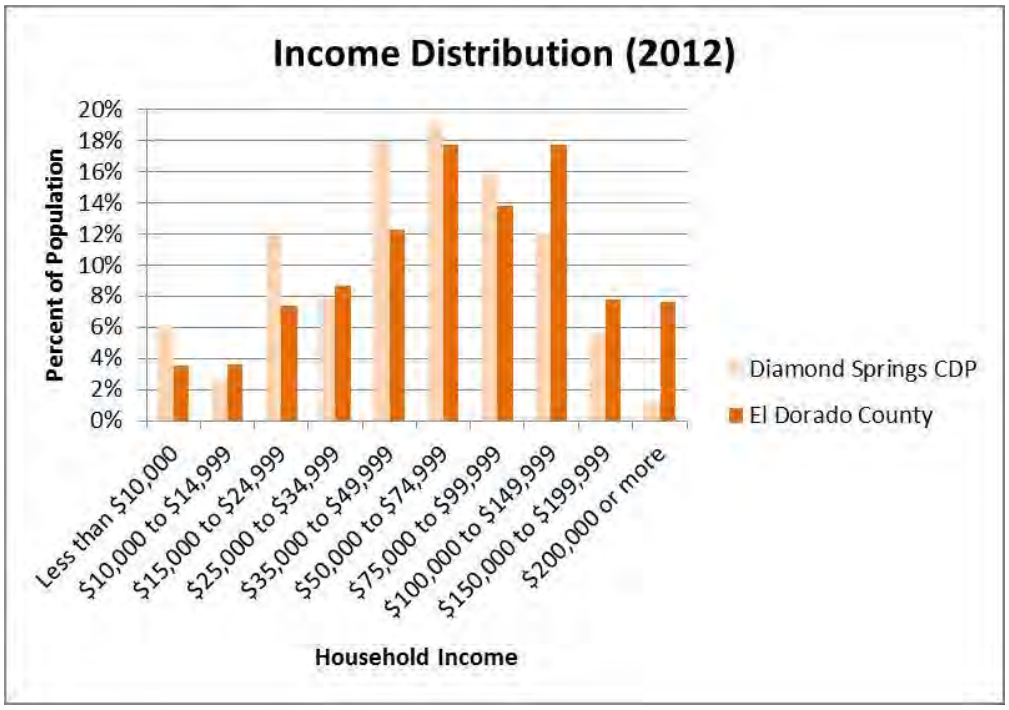


Figure 5 - Income Distribution in Study Area

distributions of the Diamond Springs CDP and El Dorado County. This information highlights the need to carefully consider economic development opportunities associated with transportation improvements recommended in the study area.

Industry in Diamond Springs

The top five industries in Diamond Springs (Which represent 66% of the total measured by the number of residents employed in those industries) include:

- Educational services, health care, and social assistance (21%)
- Professional, scientific, management, administrative and waste management services (13%)
- Retail (11%)
- Construction (11%)
- Manufacturing (10%)

Comparing the Diamond Springs industry data to El Dorado County's industry data revealed the industries in which the Diamond Springs area specializes in and those that the local economy might benefit from expanding. The comparison showed that the Diamond Springs area is most highly specialized in agriculture, forestry, fishing and hunting, and mining. While these specialties combine to employ only 2%

of the population, they are key assets to the community and a major part of its identity. The comparison also revealed that the Diamond Springs area is notably underspecialized in the following industry categories:

- Information
- Arts, Entertainment, Recreation, Accommodation, and Food Services
- Finance, Insurance, and Real Estate
- Wholesale Trade

These underspeicalized areas indicate opportunities for economic development that the community could choose to pursue in the future.

Roadway Network

For the purpose of the Community Transportation Plan, the existing roadway network has been broken down into four different roadway classifications, each with their own distinct characteristics, opportunities for enhancement, and challenges. Major arterials are the largest roads classified in the study, and have a primary function of conveying large amounts of traffic efficiently. An example of a major arterial is Missouri Flat Road, which is a multi-lane facility for a significant distance within the study's limits and has a primary function of conveying traffic to and from the existing interchange at US 50.

Major arterials are typically fed by minor arterials which are smaller roadway segments that convey less traffic but are still relatively large facilities within the rural context of El Dorado County. Examples of minor arterials are Pleasant Valley Road and Mother Lode Drive with posted speed limits on an order of magnitude of 45 mph. These facilities accommodate high volumes of traffic at relatively high speeds, but don't have the multi-lane design you typically see on a major arterial.

Collector streets "collect" traffic from residential and commercial areas and typically connect to minor arterials. They are characterized by lower traffic levels and speeds on an order of magnitude of 35 mph and include streets in the study area such as Patterson Drive and Fowler Lane. These roadways are slightly bigger than the final classification, local streets, which are found in residential and commercial districts within the study's limits. Residential streets typically have a posted speed limit of 25 mph, and are streets where a driver is naturally cautious for pedestrians, children playing in the street, or commercial truck traffic.

It is important to note that these characterizations are approximate, and with the built environment and changing design standards over the years there aren't any hard and fast rules to these roadway classifications. However, these classifications are well suited to frame the conversation about complete street concepts in the project area and to make appropriate recommendations for regional improvements.

Major Arterials

Missouri Flat Road – Beginning at the intersection of Missouri Flat Road and Pleasant Valley Road, Missouri Flat Road runs north through the center of Diamond Springs before turning northwest towards US 50 where it forms the eastern portion of the project's study limits and conveys traffic from Pleasant Valley Road to US 50. The portion of the roadway from US 50 to Golden Center Drive, is a four-lane roadway with a combination of divided medians and two-way left turn lanes. It serves large commercial and retail centers and experiences significant traffic congestion in the AM and PM peak hours. Multiple stakeholders commented on the accessibility issues on this segment of Missouri Flat Road, both from the commercial and retail centers and connecting streets like Mother Lode which connects at a signalized intersection. The southern half of Missouri Flat Road, from Golden Center Drive to Pleasant Valley Road, is a two-lane roadway with a continuous two-way left turn lane. It services smaller commercial and retail businesses but has a notable lack of pedestrian amenities. There were numerous comments from stakeholders and the public about unsafe traffic conditions at the intersection of Missouri Flat Road and Enterprise Drive.

Minor Arterials

Pleasant Valley Road – Pleasant Valley Road is the key connection between El Dorado and Diamond Springs and is designated as SR 49 from its intersection with the southern leg of SR 49 to Fowler Lane/Diamond (SR 49 N). It is a two-lane road with modest shoulders, open channel drainage facilities on both sides of the street, and a significant amount of overhead utilities. It serves as one of the primary routes to Union Mine High School and experiences a significant amount of congestion at the beginning and ending of the school day when school is in session. It is also an important route to and from Amador County and the regional wine industry in south El Dorado County and Amador County.

Pleasant Valley Road

Mother Lode Drive – Mother Lode Drive is the historical alignment of US 50 and was built in the 1930's as a bypass to Forni Road. As a result it is uncharacteristically direct and wide relative to other roads in the region. Locals use it for parallel capacity to US 50 and as a bypass of Missouri Flat Road during AM and PM peak traffic hours. The direct nature of the roadway comes at the expense of the road's topography and it has significant changes in elevation within the study's limits and substantial cut and fill conditions in certain sections.

El Dorado Road – El Dorado Road provides alternate access to US 50, but its curvy alignment and lack of development make it an infrequently used route. It has a lower posted speed limit than Missouri Flat Road in large part because of the number of tight turns and blind corners. It has very narrow (if any) shoulders

for much of its length in the study area, and is constrained on either side of the roadway by existing topographic features.

Collector Roadways

Forni Road – Forni Road was the original designation of US 50 before the Mother Lode bypass was built in the 1930's. The bypass was built specifically because of Forni's tight curves, narrow width and substantial cut and fill conditions which still exist today. Local residents use Forni Road today as a bypass of Missouri Flat Road, and commented that the curves in the road act as a traffic calming measure. As a result, Forni road is the preferred collector road for some residents on Lindberg and Blanchard Avenue who like to avoid merging with high speed traffic on Mother Lode Drive.

Forni Road

Enterprise Drive – Enterprise Drive provides a direct east-west connection from Forni Road to Missouri Flat Road. It serves a concentrated industrial and commercial area in the region, and by means of Commerce Way provides a link to the El Dorado County Transit Authority. It has no striped shoulders, but is a relatively direct and comfortable connection for local traffic.

Patterson Drive – Patterson Drive is a significant collector street providing the Deer Park area of Diamond Springs access to Pleasant Valley Road and SR 49. It has relatively wide and well striped travel lanes and modest shoulders. Most intersections have stop signs on the side streets making it a convenient and efficient route for residents.

Local Roadways

Lindberg Avenue – Lindberg Avenue is the northernmost of two local roadways that provide an east-west connection for the residential developments between Mother Lode Drive and Forni Road. It has relatively narrow travel lanes, no shoulders, and multiple residential units with direct access to the street.


Lindberg Avenue

Blanchard Avenue – Blanchard Avenue is the southernmost local roadway that provides an east-west connection between Mother Lode Drive and Forni Road. It has similar roadway characteristics as Lindberg Avenue (i.e. narrow lanes and no shoulders), but has fewer residential units with direct access to it in some part because of a large hill on the western end of the road.

Additional Roadway Conditions

In addition to the roadway improvement described above, a handful of isolated issues were brought forward by the stakeholders.

Forni Road Intersection with Pleasant Valley Road / SR 49 – A number of stakeholders expressed concerns about the intersection of Forni Road as it connects to Pleasant Valley Road / SR 49. There are two major issues with the intersection. The first is the severe skew of the northern leg as it comes into the highway which makes turning left difficult and causes drivers to have to look over their left shoulder to see oncoming westbound traffic. Additionally, there is anecdotal evidence that drivers are cutting through the Big Horn Gun Shop parking lot to access the highway. Addition studies are needed by the El Dorado County Community Development Agency (CDA) and Caltrans to determine if more traffic control at the intersection would alleviate the problems or if a realignment of the intersection is necessary.

Green Valley Road and Campus Drive Intersection – Safety concerns have been voiced about the intersection near the entrance to Indian Creek Elementary School, El Dorado County Office of Education and the Community College. This intersection will require an additional study by the El Dorado County CDA to evaluate which design features and safety measures need to be addressed and was not analyzed as part of the Community Transportation Plan.

Green Valley Road and Campus Drive

Sidewalks near Herbert Green Middle School – A number of stakeholders addressed the need for additional sidewalks along Golden Center Drive and Forni Road near Herbert Green Middle School. This is a known issue that the El Dorado County staff has actively been seeking funding for. The goals of safer routes to school are supported by the Community Transportation Plan and should be included as funding allows with other improvements for sidewalk gap closures on the northern part of Missouri Flat Road.

Connectivity of Industrial Drive – Like many of the roadways in the project area, Industrial Drive that intersects with the Missouri Flat Road from the west is a dead end street and operates as a long cul-de-sac. It was recommended by a stakeholder that a connection to Enterprise Drive or Merchandise Way to

the south be explored to improve internal circulation. There are limited opportunities for this connection through undeveloped parcels and a more detailed circulation study is needed with future industrial development in this area to look at alternative connections.

Bicycle Network

For the purpose of the Community Transportation Plan and clarity in this document, these facilities are broken down into three categories: Class I Bike Paths, Class II Bike Lanes, and Class III Bicycle Routes. Class I Bicycle Paths are paved paths like the El Dorado Trail between Forni Road and Missouri Flat Road that separate bicycle and vehicular traffic. Class II Bicycle Lanes are traditional bike lanes where there is an exclusive lane for bicycles directly adjacent to vehicular traffic. Class III Bike Routes are routes that bicyclist share with vehicular traffic and are signed and have special pavement markings. Similarly, there are also local bicycle routes that are commonly used by residents and commuters but are not specifically signed or marked for bicyclists. Although not technically Class III facilities, these bike routes were identified by the SAC and the public and were taken into consideration with the study's recommendations. More information on bicycle facilities is provided in the Complete Streets Toolkit Section.

El Dorado County recently paved approximately 2.75 miles of the El Dorado trail from Missouri Flat Road to Forni Road. This paved path is wide enough to accommodate both bicyclists and pedestrians, so in addition to being a Class I bicycle facility it is considered a shared use path. The popularity of this trail as both a commuting and recreational amenity in the region is apparent with its heavy use, especially during lunchtime on the weekdays and on weekends.

Although not paved, the El Dorado Trail from Missouri Flat Road to EL Dorado Road is a common bicycling route that is shared with pedestrians and equestrians. Although not appropriate for all types of bicycles, this trail is a popular recreational route for mountain bikers and local commuters with mountain bikes.

The widening of Missouri Flat Road has included Class II Bike Lanes from US 50 south to Golden Center Drive. The relatively high speed of Missouri Flat Road makes these bike lanes useful for bicycling commuters, but would not typically be considered as a recreational amenity.

Bike Audit on Mother Lode Drive

Feedback from stakeholders and the public at large indicated that there are a number of routes bicyclists use in the region that are not specifically designated as bicycle facilities. Roads like Pleasant Valley Road, Forni Road, Mother Lode Drive and El Dorado Road are used by commuters in the region, but have specific challenges including high speed vehicular traffic, a lack of shoulders, and demanding topography.

A bicycle audit of the study area was performed in May of 2013 to evaluate the exiting roadway network with a bicyclist's perspective on safety, comfort and convenience. The project team rode 23 miles on local facilities and gained a first-hand perspective, along with input from the SAC that helped frame the bicycle network improvements that are recommended in the Community Transportation Plan.

Pedestrian Network

The built pedestrian environment in the study area is somewhat limited given the rural nature of the region. However, the fact that walking is still a common and practical mode of transportation is evident with the numerous well-worn paths adjacent to many roadways. As previously mentioned, the paved portion of the El Dorado trail is wide enough to accommodate both bicyclists and pedestrians and is a popular route for walking. The unpaved portion of the trail is a popular recreational route and a convenient east-west pedestrian connection in the region. There are also established sidewalks on the east and west side of Missouri Flat Road from US 50 to Golden Center Drive which serve the commercial and retail centers in the area.

Worn pedestrian path on Pleasant Valley Road

Responses to the mapping exercises at SAC meetings and the first public workshop indicate that local schools, especially Union Mine High School, are the biggest magnets for pedestrians in the region. There are numerous worn paths along Pleasant Valley Road where school children frequently walk to and from school on the side of the road. Students in the residential neighborhoods south of Pleasant Valley Road are also known to cut across private property south of Patterson Lake as a means of getting to school.

Pedestrians on Panorama Drive

Additional Modes of Transportation

As part of the Community Transportation Plan, additional modes of transportation were evaluated within the context of the existing roadway, bicycle and pedestrian networks:

Transit

Transit service in El Dorado County is provided by the El Dorado County Transit Authority, which offers local fixed route, regional commuter route, dial-a-ride, and paratransit service. There are seven local fixed routes, three of which have stops on Missouri Flat Road and/or Pleasant Valley Road. The Diamond Springs (DS) route runs from Folsom Lake College – El Dorado Center north of US 50, along Missouri Flat Road, to Pleasant Valley Road. The DS route travels along Pleasant Valley Road between Church Street and Pearl Place. Weekday service is provided from 7:00 AM to 5:00 PM with one hour headways.

Transit stop in El Dorado

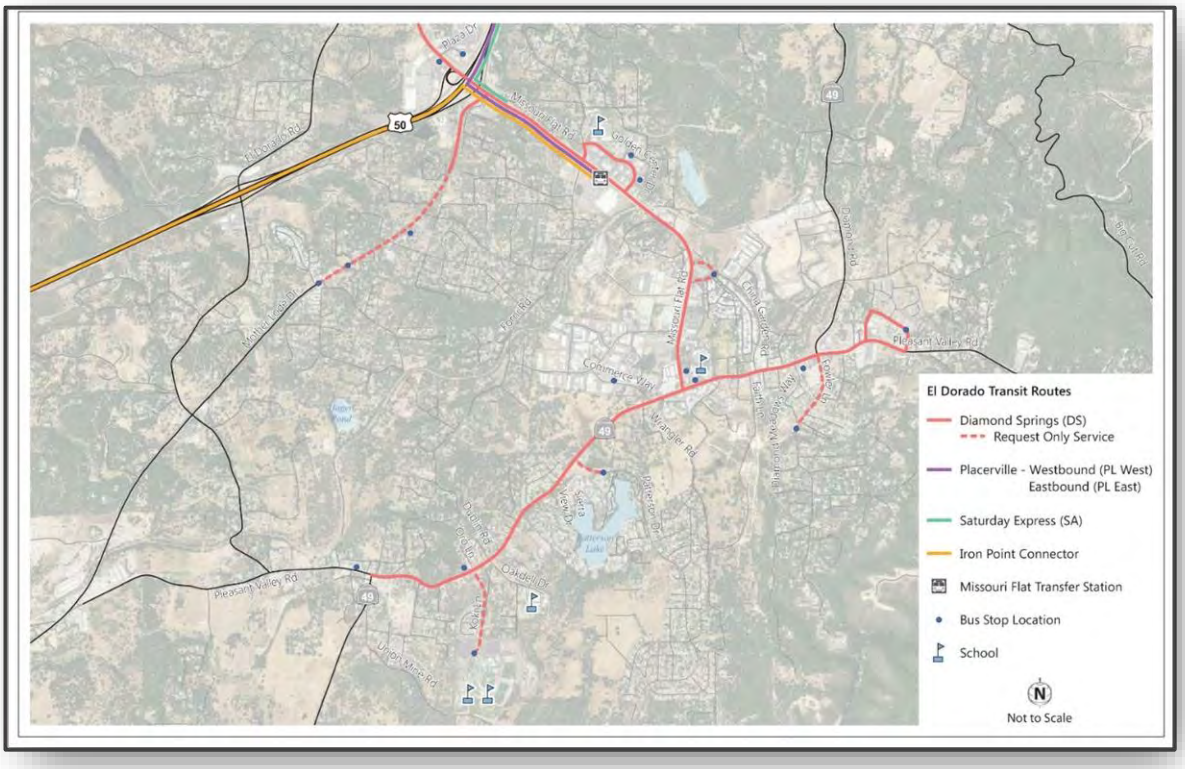


Figure 6 - Transit Routes in Study Area

Equestrian

Horseback riding is still a viable mode of active transportation in the El Dorado Diamond Springs Community Area with active recreation trails throughout El Dorado County. The project study area includes the El Dorado Trail, which is a multi-use shared path including equestrian activities. It is the intent of the Community Transportation Plan to preserve and promote this mode of transportation whenever possible. Recommendations to the roadway network will not prohibit this mode of transportation on local and collector roadways in rural environments.

Excursion Train

There has been a lot of positive momentum in the study area with the El Dorado County Historical Railroad Park just north of Pleasant Valley Road on Oriental Street. The redevelopment plans for the park include the potential to accommodate an excursion train on the existing Sacramento-Placerville Transportation Corridor. This project has a regional impact well beyond the study limits of the Community Transportation Plan and will be studied in much greater detail with the Sacramento-Placerville Transportation Corridor Alternatives Analysis. However, recommendations in this plan have been specifically crafted to not preclude a future excursion train in the study area.

Sacramento-Placerville Railroad Corridor

Diamond Springs Parkway Project

The Diamond Springs Parkway is a future four-lane, divided roadway connecting Missouri Flat Road to SR 49. The primary purpose of this project is to improve traffic safety and operations on portions of SR 49 in the vicinity of Diamond Springs. The new road will provide parallel connection from SR 49 to US 50 that will relieve traffic congestion through Diamond Springs. The project will also improve safety on Diamond Road/SR 49 by reducing residential driveway access with the provision of a new frontage road. The project is planned for completion in phases and is identified in the El Dorado County CDA Transportation Division adopted 2013 Capital Improvement Program.

(This page intentionally left blank)

4. Traffic Analysis

Understanding the users of a transportation system is critical to developing a mobility plan that supports the needs of the community. In order to better understand the traffic operations in the Diamond Springs and El Dorado areas, a traffic analysis was completed for the Community Transportation Plan that identified existing conditions, analyzed existing operations, and provided a forecast for projected traffic volumes and operations in the year 2035.

Data Collection

Intersection, roadway segment, and freeway counts were collected to determine the existing traffic operations of the area. Weather conditions were generally dry and local schools were in full session, during the traffic count data collection.

Intersections

For study intersections, AM peak period (7 AM to 9 AM) and PM peak period (4 PM to 6 PM) intersection turning movement counts were collected in September and November 2012. Traffic counts at and near the US 50/Missouri Flat Road interchange were collected after the auxiliary lane improvements between Missouri Flat Road, Forni Road, and Placerville Drive were open.

Roadway Segments

For study roadways, 24-hour traffic counts were collected in September and November 2012. Traffic counts at and near the US 50/Missouri Flat Road interchange were collected after the auxiliary lane improvements between Missouri Flat Road, Forni Road, and Placerville Drive were open.

Analysis Methodology

Level of Service (LOS) is a standard qualitative measure of traffic operating conditions whereby a letter grade, from A (the best) to F (the worst), is assigned. These grades represent the perspective of drivers and are an indication of the comfort and convenience associated with driving. In general, LOS A represents free-flow conditions with no congestion, and LOS F represents long delays and a facility that is operating at or beyond its capacity.

Intersections

Traffic operations at the study intersections were analyzed using procedures and methodologies contained in the Highway Capacity Manual (HCM), Transportation Research Board, 2010. These methodologies were applied using SimTraffic software packages (Version 7), developed by Trafficware.

Table 4-1 displays the delay range associated with each LOS category for signalized and unsignalized intersections based on the HCM.

TABLE 4-1:
INTERSECTION LEVEL OF SERVICE CRITERIA

Level of Service	Signal Control	Stop Control
A	≤ 10.0	≤ 10.0
B	10.1 – 20.0	10.1 – 15.0
C	20.1 – 35.0	15.1 – 25.0
D	35.1 – 55.0	25.1 – 35.0
E	55.1 – 80.0	35.1 – 50.0
F	> 80.0	> 50.0

Notes:
1. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and acceleration delay.

Source: *Highway Capacity Manual,* Transportation Research Board, 2010.

The SimTraffic micro-simulation analysis applied the following methodology:

- The simulation was conducted for the entire peak hour (i.e., 60 minutes) using four 15-minute intervals with the peak hour factor applied in the second interval
- The results were based on the average of ten model runs
- Each of the ten simulation runs applied a ten-minute seeding time

The existing conditions SimTraffic model was validated to field measured traffic volumes and observed maximum vehicle queue lengths.

The HCM methodology determines the LOS at signalized intersections by comparing the average control delay (i.e. delay resulting from initial deceleration, queue move-up time, time actually stopped, and final acceleration) per vehicle at the intersection to the established thresholds. The LOS for traffic signal controlled and all-way stop controlled intersections is based on the average control delay for the entire intersection. For side-street stop-controlled intersections, the LOS is evaluated separately for each individual movement with delay reported for the critical (i.e., worst case) turning movement.

Roadway Segments

Roadway segment LOS was determined by comparing traffic volumes for selected roadway segments with peak hour LOS capacity thresholds from the 2004 El Dorado County General Plan, which are shown in Table 4-2.

TABLE 4-2:
ROADWAY LEVEL OF SERVICE STANDARDS

Facility Type	Maximum Peak Hour Volume[1]				
	LOS A	LOS B	LOS C	LOS D	LOS E
Minor 2-Lane Highway	90	200	680	1,410	1,740
Major 2-Lane Highway	120	290	790	1,600	2,050
4-Lane, Multilane Highway	1,070	1,760	2,530	3,280	3,650
2-Lane Arterial	-	-	970	1,760	1,870
4-Lane Arterial, Undivided	-	-	1,750	2,740	2,890
4-Lane Arterial, Divided	-	-	1,920	3,540	3,740
6-Lane Arterial, Divided	-	-	2,710	5,320	5,600
8-Lane Arterial, Divided	-	-	3,720	7,110	7,470

Notes: [1] Thresholds apply to arterial roadways with moderate access control.
Source: 2004 El Dorado County General Plan.

Existing Conditions

Intersections

The results of the traffic analysis at existing intersections are shown in Table 4-4. All study intersections operate acceptably at LOS D or better during the AM and PM peak hours, which exceeds the goal of LOS E in the 2004 El Dorado General Plan.

TABLE 4-4:
PEAK HOUR INTERSECTION LEVEL OF SERVICE – EXISTING CONDITIONS

Intersection	Control[1]	AM Peak Hour		PM Peak Hour	
		Delay[2]	LOS	Delay[2]	LOS
1. Missouri Flat Rd/Plaza Dr	Signal	16	B	26	C
2. Missouri Flat Rd/US 50 WB Ramps	Signal	21	C	22	C
3. Missouri Flat Rd/US 50 EB Ramps	Signal	11	B	31	C
4. Missouri Flat Rd/Mother Lode Dr	Signal	11	B	14	B
5. Missouri Flat Rd/Forni Rd	Signal	26	C	23	C
6. Missouri Flat Rd/Golden Center Dr	Signal	21	B	44	D
7. Missouri Flat Rd/China Garden Rd	SSSC	5 (18)	A (C)	4 (13)	A (B)
8. Pleasant Valley Rd/Missouri Flat Ed	Signal	34	C	20	C
9. SR 49/Union Mine Rd	SSSC	5 (12)	A (B)	2 (3)	A (A)
10. SR 49/Pleasant Valley Rd	AWSC	16	C	12	B
11. Pleasant Valley Rd (SR 49)/Forni Rd	SSSC	9 (35)	A (D)	5 (10)	A (A)
12. Pleasant Valley Rd (SR 49)/Oro Ln-Koki Ln	Signal	14	B	12	B
13. Pleasant Valley Rd (SR 49)/Dublin Rd-Oakdell Dr	SSSC	3 (11)	A (B)	2 (9)	A (A)
14. Pleasant Valley Rd (SR 49)/Sierra View Dr	SSSC	3 (6)	A (A)	3 (6)	A (A)
15. Pleasant Valley Rd (SR)/Patterson Dr	AWSC	14	B	17	C
16. Pleasant Valley Rd (SR 49)/Wrangler Rd	SSSC	3 (5)	A (A)	3 (5)	A (A)
17. Pleasant Valley Rd (SR49)/Commerce Way	SSSC	3 (18)	A (C)	3 (14)	A (B)
18. Pleasant Valley Rd (SR49)/Faith Ln	SSSC	1 (11)	A (B)	5 (34)	A (D)
19. Pleasant Valley Rd (SR49)/China Garden Rd	SSSC	2 (13)	A (B)	2 (17)	A (C)
20. Pleasant Valley Rd (SR49)/Diamond Meadows Way	SSSC	2 (24)	A (C)	2 (18)	A (C)
21. Pleasant Valley Rd/Diamond Rd (SR 49)-Fowler Ln	Signal	26	C	18	B

1. SSSC = Side Street Stop Control, AWSC = All Way Stop Control
2. For signalized and all-way stop controlled intersections, average intersection delay is reported in seconds per vehicle for the overall intersection. For side street stop controlled intersections, average delay is reported in seconds per vehicle for the overall intersection (worst approach). All results are rounded to the nearest second.

Bold indicates unacceptable operations.

Source: Fehr & Peers, 2013

Roadway Segments

Table 4-5 shows the level of service and volume-to-capacity (v/c) ratio for each study roadway segment. As shown, all study roadway segments operation acceptable at LOS D or better during the PM peak hour, except for Missouri Flat Road from Golden Center Drive to China Garden Road. This segment is expected to improve in the future with the construction of the Diamond Springs Parkway Project.

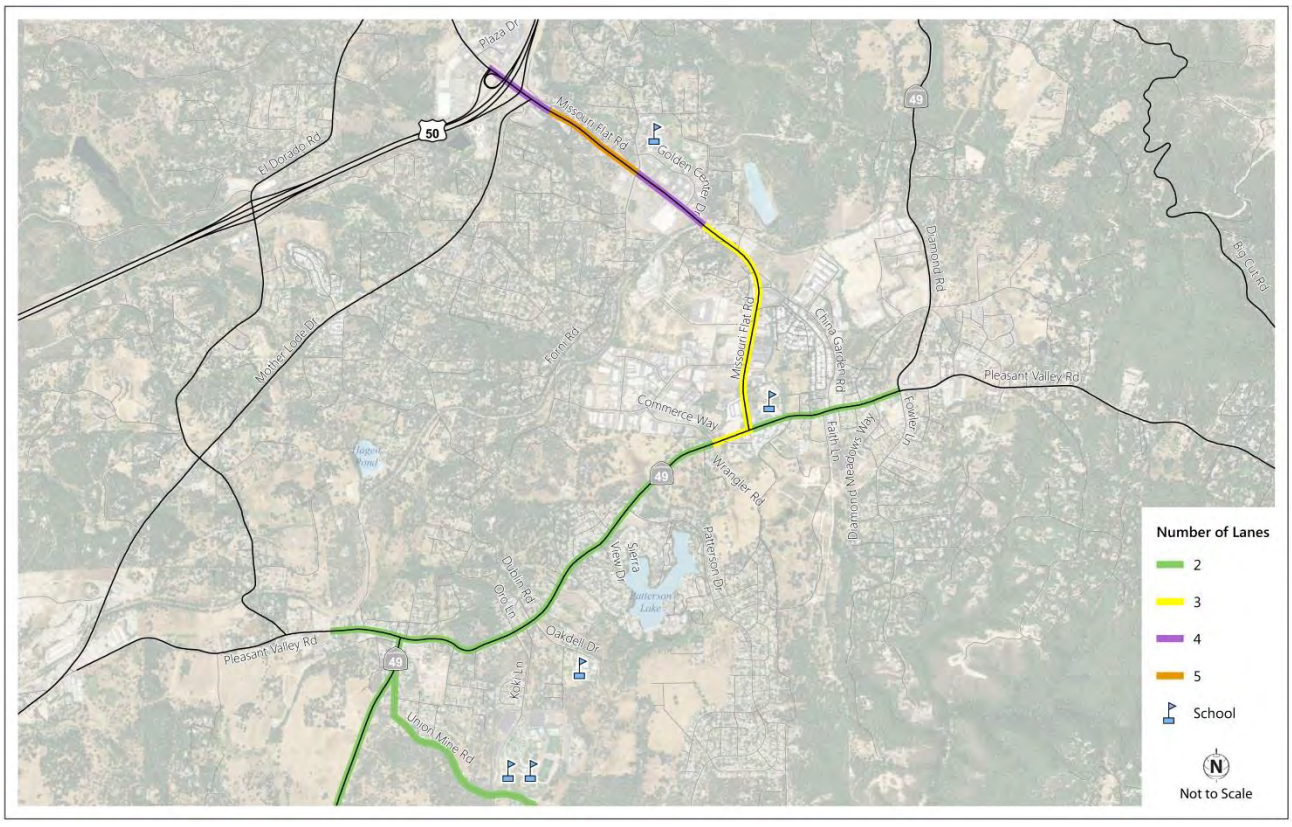


Figure 7 - Lane Configurations

TABLE 4-5:
PM PEAK HOUR ROADWAY SEGMENT OPERATIONS – EXISTING CONDITIONS

Roadway	Location	Roadway Classification[1]	Number of Lanes	Weekday PM Peak Hour Traffic Volume[1]	LOS	V/C Ratio[2]
Missouri Flat Road	Mother Lode Drive to Forni Road	Arterial - Divided	4	3,010	D	0.80
	Forni Road to Golden Center Drive	Arterial - Divided	4	1,990	D	0.53
	Golden Center Drive to China Garden Road	Arterial	2	2,030	F	1.09
	China Garden Road to Pleasant Valley Road	Arterial	2	1,480	D	0.79
Golden Chain Highway (SR 49)	South of Union Mine Road	Arterial	2	490	C	0.26
Pleasant Valley Road (SR 49)	El Dorado Road to SR 49	Major Highway	2	880	D	0.43
	Forni Road to El Dorado Street	Arterial	2	780	C	0.42
	Patterson Drive to Commerce Way	Arterial	2	1,020	D	0.55
	China Garden Road to Diamond Meadows Way	Arterial	2	1,560	D	0.83
	West of Diamond Road (SR 49)	Major Highway	2	1,470	D	0.72
Diamond Road (SR 49)	North of Pleasant Valley Road	Minor Highway	2	570	C	0.33
Forni Road	North of Pleasant Valley Road	Minor Highway	2	290	C	0.17
Commerce Way	North of Pleasant Valley Road	Minor Highway	2	150	B	0.09
El Dorado Road	SR 49 to Mother Lode Drive	Minor Highway	2	210	C	0.12
	Mother Lode Drive to US 50	Minor Highway	2	450	C	0.26
Mother Lode Road	West of Missouri Flat Road	Major Highway	2	350	C	0.17

Note:
1. Traffic volumes are rounded to the nearest 10.
2. V/C Ratio = volume to capacity ratio

Source: Fehr & Peers, 2013

Year 2035 Conditions

The following transportation improvements in the study area are included in the El Dorado County 2013 Capital Improvement Program and were included in the future traffic model for forecasting purposes:

- Headington Road Extension
- Diamond Springs Parkway
- Traffic Signal Installation at the Pleasant Valley Road/Patterson Drive intersection
- Traffic Signal Installation at the Pleasant Valley Road/Mother Lode Drive intersection
- Pleasant Valley Road - turn lane, shoulder, and bike lanes improvement between El Dorado Road and Missouri Flat Road.

El Dorado County will be starting the Missouri Flat Financing and Circulation Plan Phase II (MFF&C-II) Study and will revisit the proposed improvements at the interchange of US 50 and Missouri Flat Road. The recommended final phase of the US 50/Missouri Flat Road interchange identified in the Missouri Flat Interchange Project Study Report (PSR) is a Single-Point Urban Interchange (SPUI), however this improvement is not in the current El Dorado County CIP. Figure 8 shows these improvements, with the recommended final phase of the interchange improvement to be identified in the MFF&C-II Study.

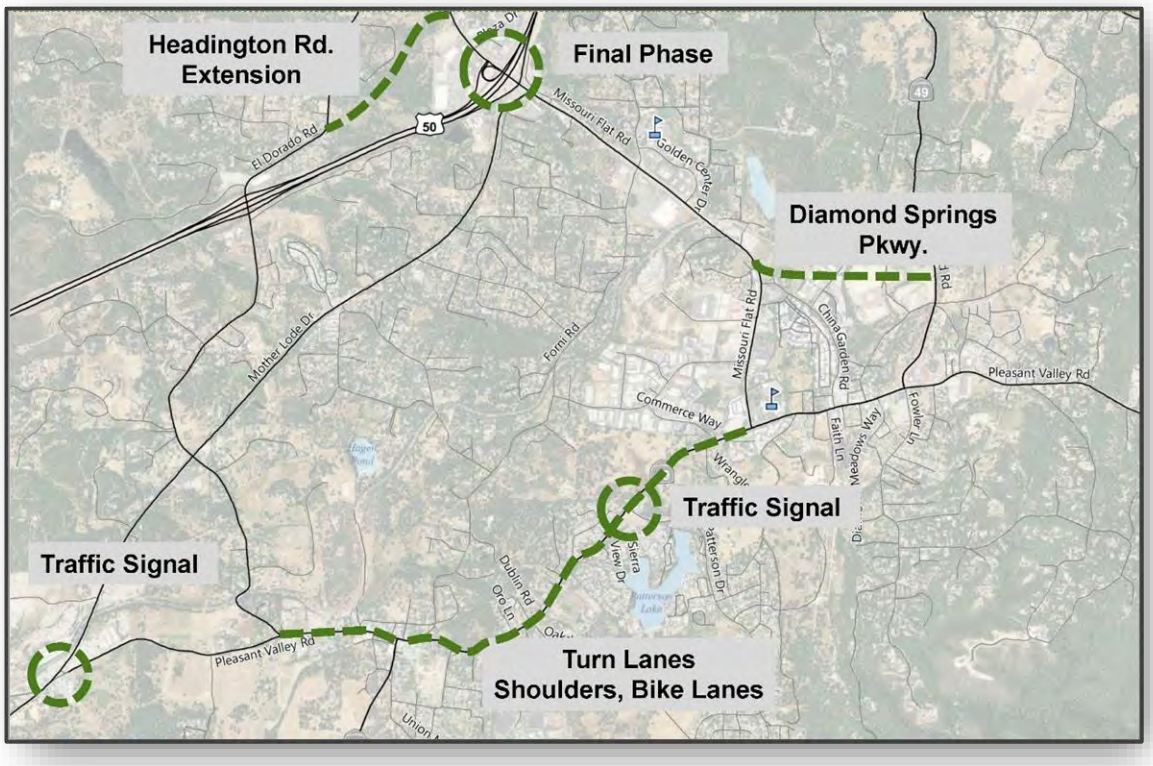


Figure 8 – 2035 Modeled Improvements

Intersections

For year 2035, intersection AM and PM peak hour intersection operations were analyzed with the diamond interchange design at the US 50/Missouri Flat Road interchange and with the planned final phase of the US 50/Missouri Flat Road interchange, which would implement a Single-Point Urban Interchange (SPUI). Table 4-7 summarizes study area traffic operations with the diamond interchange configuration. Table 4-8 summarizes traffic operations with the planned SPUI interchange design for the intersections on Missouri Flat Road from Plaza Drive to Golden Center Drive (i.e., the intersections that would be most affected by interchange operations).

As shown in Table 4-7, the intersections on Missouri Flat Road from Plaza Drive to Golden Center Drive would operate at LOS F during the PM peak hour. In addition, the intersection of SR 49 and Pleasant Valley Road in El Dorado will operate at LOS F. Vehicle queuing at this intersection will cause delay and result in poor operations at the SR 49/Union Mine Road and Pleasant Valley Road (SR49)/Forni Road intersections.

TABLE 4-7: PEAK HOUR INTERSECTION LEVEL OF SERVICE – CUMULATIVE (2035) CONDITIONS

Intersection	Control	AM Peak Hour		PM Peak Hour	
		Delay[1]	LOS	Delay[1]	LOS
Missouri Flat Rd/Plaza Dr	Signal	33	C	**481**	**F**
Missouri Flat Rd/US 50 WB Ramps	Signal	68	E	**140**	**F**
Missouri Flat Rd/US 50 EB Ramps	Signal	32	C	**90**	**F**
Missouri Flat Rd/Mother Lode Dr	Signal	24	C	**109**	**F**
Missouri Flat Rd/Forni Rd	Signal	43	D	**142**	**F**
Missouri Flat Rd/Golden Center Dr	Signal	29	C	**81**	**F**
Missouri Flat Rd/China Garden Rd	SSSC	**6 (67)**	**A (F)**	**15 (183)**	**B (F)**
Pleasant Valley Rd/Missouri Flat Ed	Signal	32	C	37	D
SR 49/Union Mine Rd	SSSC	**187 (374)**	**F (F)**	3 (14)	A (B)
SR 49/Pleasant Valley Rd	AWSC	**72**	**F**	**143**	**F**
Pleasant Valley Rd/Forni Rd	SSSC	**57 (334)**	**F (F)**	**24 (126)**	**C (F)**
Pleasant Valley Rd/Oro Ln-Koki Ln	Signal	21	C	15	B
Pleasant Valley Rd/Dublin Rd-Oakdell Dr	SSSC	**11 (87)**	**B (F)**	4 (18)	A (C)
Pleasant Valley Rd/Sierra View Dr	SSSC	3 (5)	A (A)	2 (5)	A (A)
Pleasant Valley Rd/Patterson Dr	Signal	11	B	12	B
Pleasant Valley Rd/Wrangler Rd	SSSC	4 (22)	A (C)	**11 (83)**	**B (F)**
Pleasant Valley Rd/Commerce Way	SSSC	**6 (58)**	**A (F)**	**33 (491)**	**D (F)**
Pleasant Valley Rd/Faith Ln	SSSC	2 (16)	A (C)	4 (24)	A (C)
Pleasant Valley Rd/China Garden Rd	SSSC	3 (16)	A (C)	2 (19)	A (C)
Pleasant Valley Rd/Diamond Meadows Way	SSSC	2 (11)	A (B)	3 (32)	A (D)
Pleasant Valley Rd/Diamond Rd (SR 49)-Fowler Ln	Signal	**96**	**F**	44	D
Missouri Flat Road / Diamond Springs Parkway	Signal	20	C	29	C

Notes:

1. For signalized and all-way stop controlled intersections, average intersection delay is reported in seconds per vehicle for the overall intersection. All results are rounded to the nearest second.
2. The project includes an extension of Routier Road that causes a shift in travel patterns and traffic volumes at the Old Placerville Road/Macready Avenue and Macready Avenue/Mather Boulevard intersections.

Bold indicates unacceptable operations.

Source: Fehr & Peers, 2013

As shown in Table 4-8, all study intersections near the US 50/Missouri Flat Road interchange would operate acceptably at LOS E or better during the AM and PM peak hours with the SPUI interchange configuration.

TABLE 4-8: PEAK HOUR INTERSECTION LEVEL OF SERVICE – CUMULATIVE (2035) CONDITIONS WITH SPUI INTERCHANGE

Intersection	Control	AM Peak Hour		PM Peak Hour	
		Delay[1]	LOS	Delay[1]	LOS
Missouri Flat Rd/Plaza Dr	Signal	18	B	37	D
Missouri Flat Rd/US 50 WB Ramps	SSSC	5 (12)	A (B)	10 (23)	A (C)
Missouri Flat Rd/US 50 SPUI Ramps	Signal	28	C	42	E
Missouri Flat Rd/US 50 EB Ramps	SSSC	5 (14)	A (B)	**32 (216)**	**D (F)**
Missouri Flat Rd/Mother Lode Dr	Signal	10	A	14	B
Missouri Flat Rd/Forni Rd	Signal	34	C	**137**	**F**
Missouri Flat Rd/Golden Center Dr	Signal	25	C	51	D

Notes:

1. For signalized and all-way stop controlled intersections, average intersection delay is reported in seconds per vehicle for the overall intersection. All results are rounded to the nearest second.
2. The project includes an extension of Routier Road that causes a shift in travel patterns and traffic volumes at the Old Placerville Road/Macready Avenue and Macready Avenue/Mather Boulevard intersections.

Bold indicates unacceptable operations.

Source: Fehr & Peers, 2013

Table 4-9, compares existing and year 2035 travel times on Missouri Flat Road and Pleasant Valley Road. Under year 2035, travel times are summarized on Missouri Flat Road without and with the planned SPUI configuration at the US 50/Missouri Flat Road interchange.

As shown in Table 4-9, planned population and employment growth in the study area will result in increased travel through the US 50/Missouri Flat Road interchange and along Pleasant Valley Road. The travel time increase on Pleasant Valley Road is due to increased delay at the SR 49/Pleasant Valley Road intersection.

Implementation of the planned SPUI interchange configuration will reduce travel time through the US 50/Missouri Flat Road interchange.

TABLE 4-9:
PM PEAK HOUR TRAVEL TIME – YEAR 2035

Roadway	Segment	Direction	Average Travel Time (minutes)			
			Existing		Year 2035	
			AM	PM	AM	PM
Missouri Flat Road	Plaza Drive to China Garden Road (Diamond Interchange)	NB	3.4	3.8	4.1	11.8
		SB	3.2	5.1	3.9	18.2
	Plaza Drive to China Garden Road (Single Point Urban Interchange - SPUI)	NB	N/A		4.2	5.3
		SB			3.4	6.2
Missouri Flat Road	China Garden Road to Pleasant Valley Road	NB	1.3	1.3	1.3	1.2
		SB	1.7	2.3	1.6	2.2
Pleasant Valley Road	SR 49 to Missouri Flat Road	EB	4.3	3.7	4.8	10.7*
		WB	4.5	4.3	4.3	4.2

Sources: Fehr & Peers, 2013.

Roadway Segments

For year 2035, PM peak hour roadway segment operations were analyzed with the CIP roadway network discussed above. Table 4-10 summarizes year 2035 level of service and volume-to-capacity (v/c) ratio for each study roadway segment, based on the CIP roadway network. As shown, segments of Missouri Flat Road will operate at an unacceptable at LOS F during the PM peak hour.

TABLE 4-10:
PM PEAK HOUR ROADWAY SEGMENT OPERATIONS – YEAR 2035 CONDITIONS

Roadway	Location	Roadway Classification[1]	Number of Lanes	Volume[1]	LOS	V/C Ratio[2]
Missouri Flat Road	Mother Lode Drive to Forni Road	Arterial - Divided	4	4,160	F	1.11
	Forni Road to Golden Center Drive	Arterial - Divided	4	3,260	D	0.87
	Golden Center Drive to China Garden Road	Arterial - Undivided	4	3,380	F	1.17
	China Garden Road to Pleasant Valley Road	Arterial	2	1,410	D	0.75
Golden Chain Highway (SR 49)	South of Union Mine Road	Arterial	2	830	C	0.44
Pleasant Valley Road (SR49)	El Dorado Road to SR 49	Major Highway	2	1,140	D	0.56
	Forni Road to El Dorado Street	Arterial	2	1,030	D	0.55
	Patterson Drive to Commerce Way	Arterial	2	1,360	D	0.73
	China Garden Road to Diamond Meadows Way	Arterial	2	1,460	D	0.78
	East of Diamond Road (SR 49)	Major Highway	2	1,870	E	0.91
Diamond Road (SR 49)	North of Pleasant Valley Road	Minor Highway	2	1,330	D	0.76
Forni Road	North of Pleasant Valley Road	Minor Highway	2	480	C	0.28
Commerce Way	North of Pleasant Valley Road	Minor Highway	2	170	B	0.10
El Dorado Road	SR 49 to Mother Lode Drive	Minor Highway	2	360	C	0.21
	Mother Lode Drive to US 50	Minor Highway	2	690	D	0.40
Mother Lode Road	West of Missouri Flat Road	Major Highway	2	500	C	0.24

Note:

1. Traffic volumes are rounded to the nearest 10.
2. V/C Ratio = volume to capacity ratio

Source: Fehr & Peers, 2014.

The roadway segment transportation analysis was conducted using the same methodology as the analysis conducted for the 2004 El Dorado County General Plan, which was based on PM peak hour conditions. As stated in the Draft El Dorado County General Plan EIR, the PM peak hour was used because it represents the highest hourly volume during a typical weekday. At the request of the SAC, daily traffic volumes are provided below. The daily traffic volumes were developed assuming that the PM peak hour represents ten percent of daily traffic. In addition to the roadway segment traffic operation, AM and PM peak hour intersection analysis was conducted using micro-simulation. Roadway segment analysis provides a general indication about the number of through travel lane on a roadway. However, intersection operations analysis is generally more representative of conditions experienced by drivers, since intersections are the locations in the transportation system, where drivers experience delay due to intersection traffic control, vehicle queuing, and vehicle progression along a transportation corridor.

Table 4-11 Daily Roadway Segment Operations – Year 2035 Conditions

Roadway	Location	Roadway Classification[1]	Number of Lanes	Volume[1]	LOS	V/C Ratio[2]
Missouri Flat Road	Mother Lode Drive to Forni Road	Arterial - Divided	4	41,600	F	1.11
	Forni Road to Golden Center Drive	Arterial - Divided	4	32,600	D	0.87
	Golden Center Drive to China Garden Road	Arterial - Undivided	4	33,800	F	1.17
	China Garden Road to Pleasant Valley Road	Arterial	2	14,100	D	0.75
Golden Chain Highway (SR 49)	South of Union Mine Road	Arterial	2	8300	C	0.44
Pleasant Valley Road	El Dorado Road to SR 49	Major Highway	2	11,400	D	0.56
	Forni Road to El Dorado Street	Arterial	2	10,300	D	0.55
	Patterson Drive to Commerce Way	Arterial	2	13,600	D	0.73
	China Garden Road to Diamond Meadows Way	Arterial	2	14,600	D	0.78
	East of Diamond Road (SR 49)	Major Highway	2	18,700	E	0.91
Diamond Road (SR 49)	North of Pleasant Valley Road	Minor Highway	2	13,300	D	0.76
Forni Road	North of Pleasant Valley Road	Minor Highway	2	4800	C	0.28
Commerce Way	North of Pleasant Valley Road	Minor Highway	2	1700	B	0.10
El Dorado Road	SR 49 to Mother Lode Drive	Minor Highway	2	3600	C	0.21
	Mother Lode Drive to US 50	Minor Highway	2	6900	D	0.40
Mother Lode Road	West of Missouri Flat Road	Major Highway	2	5000	C	0.24

Note:
1. Traffic volumes are rounded to the nearest 10.
2. V/C Ratio = volume to capacity ratio Source: Fehr & Peers, 2014

(This page intentionally left blank)

5. Complete Streets Toolkit

Complete Streets are designed and operated to enable safe access for all users, including people with disabilities, motorists, pedestrians and bicyclists, and transit riders of all ages and abilities. All complete streets improvements recommended by the final study will be informed by and measured against the Diamond Springs and El Dorado Community Values adopted by the Diamond Springs Community Advisory Committee on June 20, 2013 and the input received during the five SAC meetings and two public workshops held during the project. At its core, the complete streets concept is about giving all people transportation options by improving connectivity, which is also a goal of the Community Transportation Plan.

Design Elements

While some specific design elements of a "complete street" that are typically applied in an urban environment may not be appropriate in a rural setting, there are a number of complete street design features that have successfully been implemented in rural and historic settings similar to El Dorado and Diamond Springs that have simultaneously preserved the rural and historic character of their respective locations while providing much needed connectivity benefits. The types of complete street design features that could be compatible with the rural and historic character of the project area include:

Shoulders

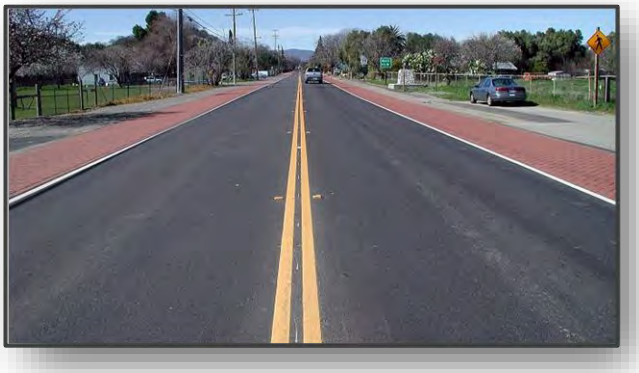
Standard Shoulders

Adding standard shoulders to a roadway with no shoulders or unmarked shoulders can be an inexpensive and effective way to improve safety. Pedestrians and bicyclists will naturally gravitate towards shoulders in a rural environment where sidewalks and bike lanes aren't practical, and a well-marked shoulder provides a visual separation with vehicular traffic. Shoulders also have a minimal impact to existing roadside ditches in a rural drainage environment.

Enhanced Shoulders

Enhanced shoulders are shoulders that have been accentuated with a different treatment than standard asphalt (usually with a stamped pattern and/or a color additive). They have the same benefits as regular

shoulders for bikes and pedestrians, but the contrast with regular asphalt has a traffic calming benefit for vehicular traffic. They are more expensive than regular shoulders to construct and have on-going maintenance costs to maintain the contrast, but are very effective as a safety improvement measure. The stamped concrete shown here was constructed in Capay, CA as part of a series of safety improvement projects on State Route 16.



Enhanced Shoulders

Class III Bicycle Routes

Class III Bicycle Route

Class III Bicycle Routes are an inexpensive way to accommodate bicyclists in a rural environment. They are intended to inform vehicular traffic to be aware of cyclists and "share the road" by means of special roadway signs and pavement markings. They are simple to implement and do not require any additional roadway widening, but do have their limitations. Most rural local and collector roads with low traffic volumes and speeds are ideally suited for Class III Bicycle Routes, but higher speed facilities such as minor or major arterials present too much of a speed differential between automobile and bicycle traffic to be safe.

Class II Bicycle Lanes

Class II Bicycle Lanes are moderately more difficult to implement then Class III Bike Routes, but provide an exclusive space for bicyclists that separates them from vehicular traffic. This makes them better suited on higher speed facilities like minor and major arterials where there is a substantial speed differential between bicycles and automobiles. Similar to a shoulder widening, they are well suited in a rural setting that relies predominantly on roadside ditches for drainage.

Class II Bicycle Lanes

Class I Bicycle Path

Class I Bicycle Paths

Class I Bicycle Paths separate bicyclists and vehicular traffic entirely making them the safest of the three bicycle facilities. They can also be widened to more easily accommodate other modes of active transportation including pedestrians and equestrians, making them a popular recreational amenity. However they are also the most expensive non-motorized facility to construct and maintain.

Detached Sidewalks

Detached sidewalks provide a pedestrian walkway with a physical separation from the vehicular traveled way. This provides a buffer space which both improves pedestrian safety and is an opportunity site for landscaping or other pedestrian amenities. Detached sidewalks are advantageous in a rural environment with roadside ditches since the existing drainage can sometimes be incorporated in the buffer space, however they require more right-of-way than a conventional attached sidewalk.

Detached Sidewalk

Attached Sidewalk

Attached Sidewalks

Attached sidewalks are directly adjacent to the vehicular traveled way and require a curb and gutter section to separate pedestrians and vehicular traffic. This creates a more formal space for pedestrians than shoulders alone with less right-of-way impacts than a detached sidewalk, but does require drainage modifications to existing roadside ditches to accommodate curb and gutter drainage. Attached sidewalks accommodate on-street parking and frequent driveway access points more efficiently than detached sidewalks without curb and gutter.

Medians

Medians can be used as a traffic calming feature on busier roadway segments to organize or limit left turn access and create a refuge for pedestrians as they cross the street. They also provide an opportunity site for landscaping and other aesthetic amenities that can accentuate the culture or history of an area.

Median Improvements

High Visibility Crosswalk

Enhanced intersections

Intersections can be enhanced in historic and commercial areas to improve pedestrian safety and better control vehicular traffic. Improvements could include high visibility crosswalks, bulb-outs to reduce pedestrian crossing distances, and aesthetic streetscape improvements that improve the public space with wayfinding or entrance monuments.

Organized Parking

A well designed layout of on-street parking properly distinguishes vehicular and pedestrian space and provides enhancement opportunities for bulb-outs and other traffic calming measures to improve pedestrian safety. A proper parking layout is easier to regulate and enforce and can be an effective tool in encouraging higher turnover for local businesses.

Organized Parking

6. Recommendations

The Community Transportation Plan aims to improve safety, mobility, and access for all users by increasing connectivity and access for multiple modes of transportation. Potential transportation improvements to meet this goal include new roadway connections, additional bicycle facilities, completion of sidewalk networks, and other streetscape and circulation improvements to the downtown districts of El Dorado and Diamond Springs.

As mentioned in Section 3, demographic research done during the study revealed that a significant portion of the study area's population is comprised of elderly and recently retired people and that the median age of the study area is 47.1 years, which is higher than that of El Dorado County (43.6) and California (35.2). As the population of Diamond Springs and El Dorado continues to get older, the potential transportation improvements that follow, including a well-connected network of sidewalks and multi-use trails, safe intersections for pedestrians, and access to transit will benefit an aging population and help create a Diamond Springs and El Dorado that is for people of all ages and abilities.

Roadway Network

Results from the traffic analysis for the project indicate that planned population and employment growth in the study area will result in increased travel time along Pleasant Valley Road/SR 49 in the project area and through the US 50/Missouri Flat Road interchange. However, the travel time increase on Pleasant Valley Road is due primarily to increased delay at the SR 49/Pleasant Valley Road intersection in El Dorado, and planned improvements at the interchange will reduce travel times on Missouri Flat Road as previously shown.

Based on the results of travel demand modeling and traffic analysis in the project area, future travel times are not being directly affected by roadway capacity and it is not necessary to widen existing roadway segments, including Pleasant Valley Road/SR 49 to improve performance. The El Dorado County 2013 Capital Improvement Program (CIP) does identify widening projects on Pleasant Valley Road to the east of the study area to accommodate future traffic on the Diamond Springs Parkway project, but the local roadway network as planned should be sufficient for regional traffic management through the study horizon year of 2035.

Even though the traffic analysis has shown that the traffic within the project area will generally operate above an acceptable level of service there will be noticeable impacts to drivers within the region. The increased traffic volumes during the peak hour on roads such as Pleasant Valley Road/SR 49 will create challenges for drivers entering the roadways from driveways or side street stop controlled roads such as Dublin Road-Oakdell Drive, Wrangler Road, and Commerce Way. The improvements outlined in this Plan will provide opportunities to increase mobility by creating a more diverse roadway network and by additional opportunities for active transportation, but individual intersection improvements should be considered for operational and safety concerns as growth occurs in the region. The anticipated

signalization of the Patterson Road and Pleasant Valley/SR 49 intersection is a good example of the types of improvements that could help alleviate challenges for drives entering and existing the highway.

It is worth noting that based on the traffic analysis completed for the project, some roadway segments actually result in a modest decrease in future travel time with the construction of projects like the Diamond Springs Parkway. It is also worth noting that the projected 2035 PM peak hour roadway levels on Pleasant Valley Road are well below the 1,760 vehicles/hour threshold identified in the 2004 El Dorado County General Plan for LOS D (which is the current operating level for most of the existing roadway segments on Pleasant Valley Road). The busiest roadway segment on Pleasant Valley Road, from China Garden Road to Diamond Meadows Way, has a projected 2035 PM peak hour roadway l of only 1,460 vehicles/hour. While the traffic analysis indicated that the existing roadway network is sufficient to accommodate regional growth, the project team analyzed three potential projects at the request of the SAC to improve connectivity for local residents:

Union Mine Road Connector

The Union Mine Road Connector is a proposed future roadway connecting Union Mine Road to Faith Lane. It is not specifically identified in the El Dorado County 2013 CIP, but it is recognized on planning maps prepared by El Dorado County Planning Services and was included on the proposed Diamond Springs-El Dorado Circulation Exhibit that was approved by the El Dorado County Board of Supervisors on May 1, 2012 which is to be used as a circulation guideline for all proposed development south of Pleasant Valley

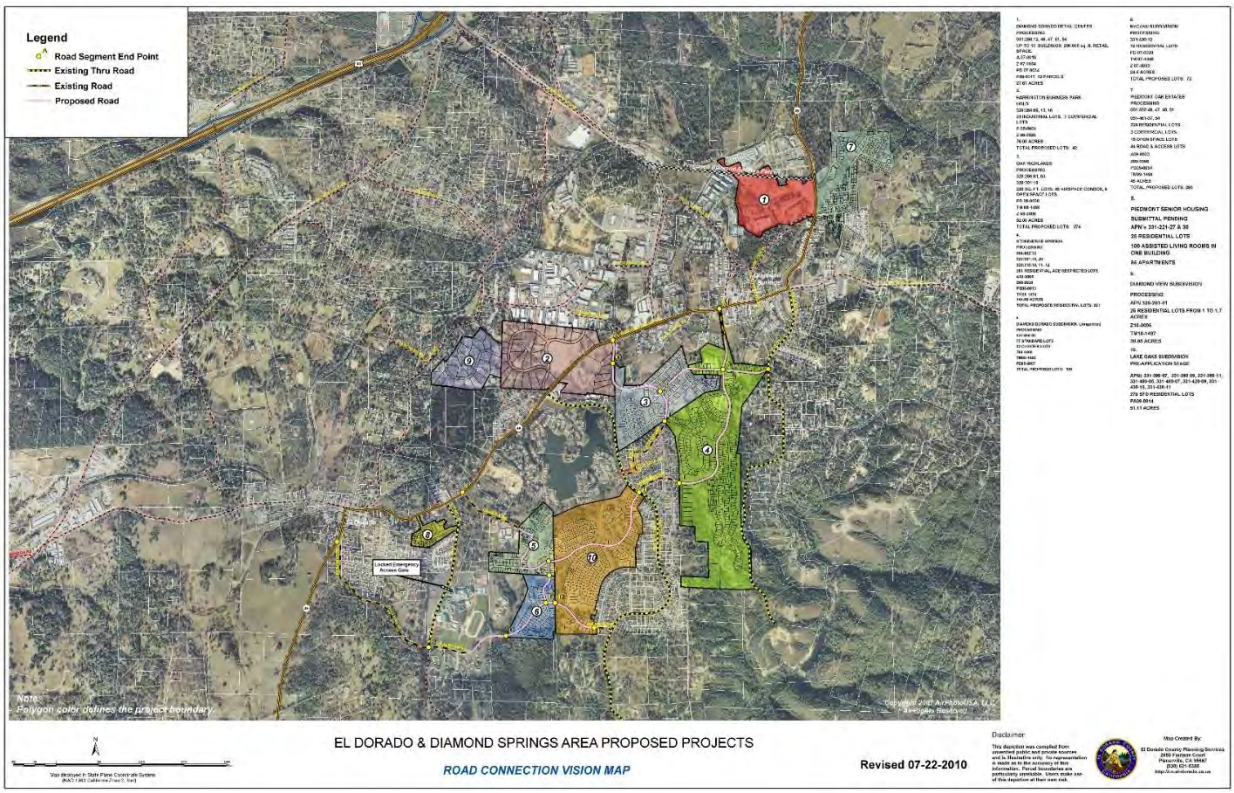


Figure 9 - Road Connection Vision Map

Road identified on the circulation exhibit. The alignment of this road is conceptual and will be refined as development in the area occurs, but the concept of providing a collector roadway with parallel capacity to Pleasant Valley Road will have a dramatic impact on vehicular, bicycle and pedestrian connectivity in the study area. The recommendation of this study can be used as cross section alternatives to the Circulation Exhibit to accommodate the active transportation needs of the residents.

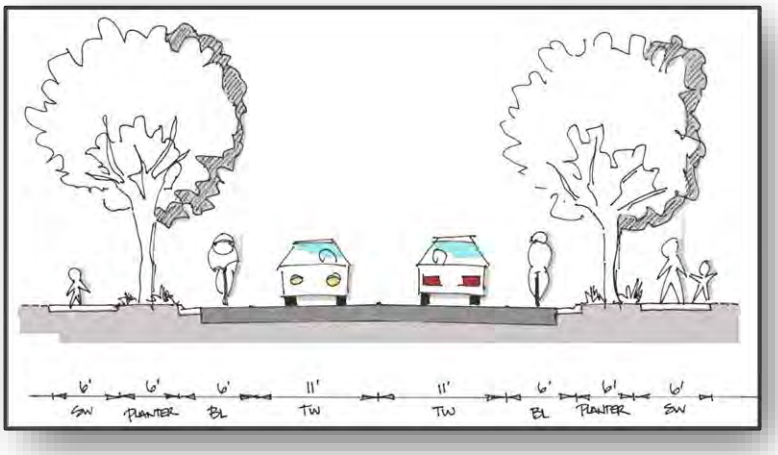


Figure 10 - Proposed Union Mine Connector Cross Section

In its ultimate build out the road should operate similar to Patterson Drive, except it should be constructed wide enough to accommodate Class II Bicycle lanes and detached sidewalks. Its final alignment should be relatively indirect with narrow lanes and enough stop controlled intersections to discourage cut through traffic from Pleasant Valley Road. Its construction can be phased with development, but the ultimate project should provide an east-west corridor to and from Union Mine High school and the residential development south of Pleasant Valley Road that is bicycle and pedestrian friendly.

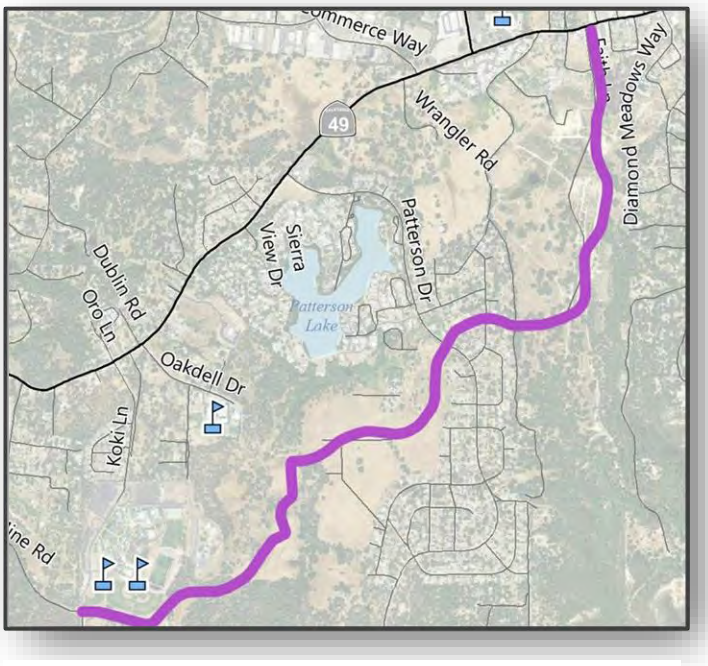


Figure 11 - Proposed Union Mine Connector Alignment

When the Union Mine Connector is ultimately constructed, it will be important to complete bicycle connectivity to El Dorado by constructing Class II Bicycle Lanes on Union Mine Road. Pedestrian connectivity can be accommodated on Koki Lane, but will require coordination with Union Mine High School.

The Union Mine Road connector was analyzed with these assumptions in the traffic model, and it was determined that it would operate at a LOS C with a PM peak hour volume of 300 vehicles/hour in the 2035 build out scenario with the future CIP

network. This analysis confirmed that the roadway will not act as a cut through for Pleasant Valley Road traffic and will be a valuable local connection for the residents of El Dorado and Diamond Springs.

El Dorado Connector

The El Dorado Connector is a conceptual connection from the existing intersection of El Dorado Road/Pleasant Valley Road to the intersection of Union Mine Road/SR 49. The intent of this roadway would be to give local traffic a convenient bypass of the Pleasant Valley Road/SR 49 (S) intersection to improve future traffic operations at that intersection.

Figure 12 - Proposed El Dorado Connector Alignment

Analysis of this bypass indicated a 2035 PM peak hour volume of only 300 vehicles/hour which did not have an appreciable effect on the operations at the Pleasant Valley Road/SR 49 (S) intersection. Given the potential right-of-way constraints and existing local streets the connector would have to bisect, the project team determined this connection did not meet the needs of the Community Transportation Plan to warrant further consideration. A similar bypass to the west outside of the study area was suggested by stakeholders and would require additional analysis.

Diamond Springs Connector

The Diamond Springs Connector is a conceptual connection between the intersection of Diamond Springs Parkway/SR 49 and a new intersection at Pleasant Valley Road. The intent of the Diamond Springs Connector is to provide a more direct route for traffic on Pleasant Valley Road heading to and from US 50 that avoids the eastern half of Downtown Diamond Springs. Initial discussions about the concept of a connection from SR 49 east to Pleasant Valley road originally occurred in the early 1990's as part of a larger discussion about potential improvements to traffic circulation in the Diamond Springs area.

It was noted by the SAC that the idea of the connection was abandoned at that time because of potential right-of-way impacts and concerns from the business community for the potential to divert traffic away from businesses in the Diamond Springs area. While the connection does have its design challenges and would require right-of-way acquisition, it is the recommendation of the Community Transportation Plan that it is studied further as a future regional project given the potential traffic benefits to Pleasant Valley Road and the future development of eastern Diamond Springs. However, no specific alignment for the Diamond Springs Connector has been identified for this report. Any future route consideration will be considered regionally significant and placed with sensitivity to the existing topography and residential

properties and minimizing the potential impacts to cultural, historic, environmental, and community resources.

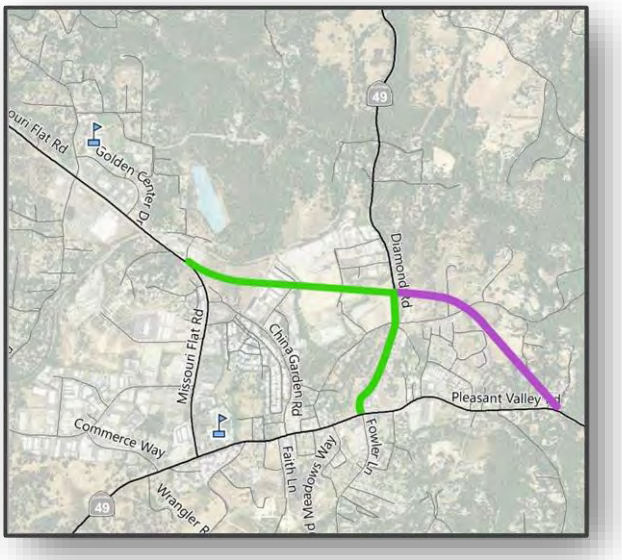


Figure 13 - Proposed Diamond Springs Connector Alignment

Results of the traffic analysis done for the proposed Diamond Springs Connector indicate that the connection would have a 2035 PM peak hour roadway volume of 1,060 vehicles/hour. This results in a reduction of traffic on both Pleasant Valley Road east of Diamond Road (1,870 vehicles/hour with the CIP roadway network versus 1,050 vehicles/hour with the Diamond Springs Connector) and Missouri Flat Road from China Garden Road to Pleasant Valley Road (SR 49) (1,410 vehicles/hour with the CIP roadway network versus 1,120 vehicles/hour with the Diamond Springs Connector). However, there is no significant difference on Pleasant Valley Road traffic volumes west of Missouri Flat Road which indicates the traffic reduction is pass through and commuter vehicular traffic heading to and from US 50 and the Pleasant Valley/Sly Park region and not traffic going through Downtown Diamond Springs or Downtown El Dorado.

The results of the traffic analysis also showed that approximately 14,000 cars per day currently use the segment of Pleasant Valley Road between Pearl Place and the intersection of Pleasant Valley Road, SR 49, and Fowler Lane. By 2035, that number is expected to rise to just under 19,000 cars per day. The traffic analysis indicates that the Diamond Springs Connector would allow traffic volumes on that segment of Pleasant Valley Road to be at nearly the same levels in 2035 as they are today.

While the proposed connector will reduce the amount of traffic in front of businesses on Pleasant Valley Road east of Diamond Road, it will improve that segment from LOS E to D which is more conducive for commuters traveling through the region to want to detour through Diamond Springs to shop. More importantly, this improvement will reduce future traffic volume on Missouri Flat Road between China Garden Road and Pleasant Valley Road (SR 49). This segment of Missouri Flat Road has a continuous two-way left turn lane and discontinuous frontage improvements. As the area redevelops with the future Diamond Springs Parkway Project, this segment of Missouri Flat could be repurposed with bike lanes and continuous sidewalks utilizing the existing space of the two-way left turn lane and shoulders. It would also benefit from a three-way stop or signal controlled intersection at Missouri Flat Road/Enterprise Drive to further calm traffic and alleviate safety concerns at the intersection noted by the SAC.

These improvements would support the existing businesses on the street and promote future development on the corridor. The improvements would also improve bicycle and pedestrian connectivity to the downtown Diamond Springs area and could provide an attractive gateway to the historic downtown

regions of both Diamond Springs and El Dorado. Any proposed improvements would need to consider access to existing businesses on this segment of Missouri Flat Road.

Table 6-1 compares 2035 level of service and volume-to-capacity (v/c) ratios for each of the study's roadway segments, with and without the new roadway connections discussed above. Increases in PM peak hour traffic volume are shaded in red and decreases are shaded in green.

TABLE 6-1:
PM PEAK HOUR ROADWAY SEGMENT OPERATIONS – YEAR 2035 CONDITIONS

Roadway	Location	Roadway Classification[1]	Number of Lanes	CIP Network			CIP Network (With New Connections)		
				Volume	LOS	V/C Ratio	Volume	LOS	V/C Ratio
Missouri Flat Road	Mother Lode Drive to Forni Road	Arterial - Divided	4	4,160	F	1.11	4,160	F	1.11
	Forni Road to Golden Center Drive	Arterial - Divided	4	3,260	D	0.87	3,330	D	0.89
	Golden Center Drive to China Garden Road	Arterial	2	3,380	F	1.17	2,920	F	1.01
	China Garden Road to Pleasant Valley Road	Arterial	2	1,410	D	0.75	1,120	D	0.60
Golden Chain Highway (SR 49)	South of Union Mine Road	Arterial	2	830	C	0.44	830	C	0.44
Pleasant Valley Road (SR49)	El Dorado Road to SR 49	Major Highway	2	1,140	D	0.56	900	D	0.44
	Forni Road to El Dorado Street	Arterial	2	1,030	D	0.55	1,010	D	0.54
	Patterson Drive to Commerce Way	Arterial	2	1,360	D	0.73	1,350	D	0.72
	China Garden Road to Diamond Meadows Way	Arterial	2	1,460	D	0.78	1,390	D	0.74
	East of Diamond Road (SR 49)	Major Highway	2	1,870	E	0.91	1,050	D	0.51
Diamond Road (SR 49)	North of Pleasant Valley Road	Minor Highway	2	1,330	D	0.76	1,050	D	0.60
Forni Road	North of Pleasant Valley Road	Minor Highway	2	480	C	0.28	420	C	0.24
Commerce Way	North of Pleasant Valley Road	Minor Highway	2	170	B	0.10	200	B	0.11
El Dorado Road	SR 49 to Mother Lode Drive	Minor Highway	2	360	C	0.21	380	C	0.22
	Mother Lode Drive to US 50	Minor Highway	2	690	D	0.40	710	D	0.41
Mother Lode Road	West of Missouri Flat Road	Major Highway	2	500	C	0.24	470	C	0.23
El Dorado Connector	El Dorado Road to Union Mine Road	Arterial	2	-	-	-	300	C	0.16
Union Mine Connector	SR 40 (S) to Pleasant Valley Road	Arterial	2	-	-	-	300	C	0.16
Diamond Springs Connector	Diamond Springs Parkway to Pleasant Valley Road	Arterial	2	-	-	-	1,060	D	0.57

Note:
1. Traffic volumes are rounded to the nearest 10.
2. V/C Ratio = volume to capacity ratio

Source: Fehr & Peers, 2013.

Bicycle Network

The following improvements are recommended to enhance the safety, comfort, and connectivity of bicycle routes in the study area. The strategy for their implementation is discussed more in Chapter 10.

Union Mine Road Connector (Class II Bicycle Lanes)

Improvements to the bicycle network start with the assumption that the Union Mine Road Connector will be constructed in the future to provide a critical east-west corridor for bicyclists that parallels Pleasant Valley Road. This facility will be an appealing route for local cyclists with dedicated Class II Bicycle Lanes and low vehicular traffic volumes and speeds. The Union Mine Connector will provide both a direct connection for local residents to Union Mine High School and will be a local route for pedestrians and bicyclists connecting retail and commercial uses in El Dorado and Diamond Springs.

El Dorado Trail (Class I Bicycle Path/Shared Use Path)

Converting the El Dorado Trail between Pleasant Valley Road and Missouri Flat Road to a Class I Bicycle and shared use path will have similar benefits for bicyclists on the north side of Pleasant Valley Road as the Union Mine Road Connector will have to the south. This facility will also have the added benefit of connecting to the existing El Dorado Trail improvements between Missouri Flat Road and Forni Road and the El Dorado Trail improvements to be constructed in 2014 between Forni Road and Placerville Drive/Lower Main Street in Placerville to build the backbone for a bicycle network that connects El Dorado and Diamond Springs to Placerville. The El Dorado Trail improvements, in conjunction with the Union Mine Road Connector, build the framework for bicyclists that many other cycling recommendations are predicated upon. It is important to note that this recommendation does not necessarily preclude future development options for the railroad corridor within the study limits to include excursion, heavy or light rail trains in the future. These transit options have a regional significance beyond the limits of the Community Transportation Plan will be studied in significant detail in the Sacramento-Placerville Transportation Corridor Alternatives Analysis.

El Dorado Trail Signpost

Blanchard Road (Class II Bicycle lanes)

Constructing Class II Bicycle Lanes on Blanchard Road provides a convenient east-west connection for bicyclists between Mother Lode Drive and Forni Road. This connection bisects the El Dorado Trail Class I Bicycle Path and creates a vital link to the El Dorado Trail System. Blanchard Road is recommended as the primary east-west connection in this area because it is approximately half-way between Missouri Flat Road and El Dorado Road and has less residential properties fronting it than Lindberg Avenue.

Mother Lode Drive (Class II Bicycle Lanes)

Mother Lode Drive, with its high speed traffic, limited shoulders, and significant cut and fill sections adjacent to the roadway is unlikely to be a preferred route for most bicyclists in the region if redundancy is built into the network with the El Dorado Trail as a parallel Class I facility. However, there were comments from commuting bicyclists at the first public meeting who prefer routes like Mother Lode over Class I facilities for their speed and efficiency for commuting purposes. Mixed use paths inherently attract multi-modal recreational users (bicyclists, pedestrians, equestrians, etc.) of varying experience and proficiencies and result in slower bicycle speeds then can safely be achieved with a Class II or Class III facility. While upgrading Mother Lode Drive with Class II Bicycle lanes is not an immediate recommendation for the region, it should be considered as a safety enhancement in the future for commuting bicyclists.

El Dorado Road (Class II Bicycle Lanes)

El Dorado Road should be considered for Class II Bicycle Lanes for similar reasons as Mother Lode Drive, especially since it provides a north-south commuting link that diverges away from the El Dorado Trail. El Dorado's winding alignment benefits bicyclists as a vehicular traffic calming measure, but its narrow shoulders around tight curves also presents unique safety issues. Class II Bicycle Lanes on El Dorado Road will be easier to construct than on Mother Lode Drive as there are fewer significant cut and fill sections adjacent to the roadway, and should be considered as a long-term improvement that's both a safety and network enhancement for regional bicyclists that provides a northern connection to US 50 that avoids the future interchange.

Pleasant Valley Road (Class II Bicycle Lanes/Class I Bicycle Path)

Pleasant Valley Road is a regional connection that provides parallel capacity to US 50 and a direct link between El Dorado and Diamond Springs. However, its high speed of traffic and limited shoulders make it an uncomfortable route for bicyclist. As a near-term recommendation, Class II Bicycle Lanes should be constructed on Pleasant Valley Road (SR49) between El Dorado and Diamond Springs to provide a safe bicycling connection between these two

Pleasant Valley Road

communities. This should be relatively easy to implement from a design and right-of-way perspective with the existing roadway pavement and roadside ditches. As a long-term recommendation, a Class I facility should be constructed between El Dorado and Diamond Springs to improve connectivity for recreational and less experienced riders. This path will likely have right-of-way and drainage impacts that will make it more difficult to construct than the proposed Class II facilities, but should be considered a local amenity that provides a vital economic link between the two communities. Furthermore, the Class II facilities should ultimately be extended on Pleasant Valley Road and Mother Lode Drive to the west of the "Y" to provide a bicycle route connecting Shingle Springs to Diamond Springs.

Missouri Flat Road (Class II Bicycle Lanes)

Missouri Flat has existing Class II Bicycle Lanes from US 50 to Golden Center Drive that will be extended with the proposed Diamond Springs Parkway to SR 49. To improve regional bicycle connectivity these bicycle lanes should be included on Missouri Flat Road from Pleasant Valley Road to its realigned intersection with the Diamond Springs Parkway. This will complete the north-south bicycle connection on Missouri Flat Road that is currently missing.

Forni Road (Class III Bicycle Route)

Forni Road provides a convenient north-south connection for bicyclists wishing to bypass portions of Pleasant Valley Road (SR49) and Missouri Flat Road and should be upgraded to a Class III Bicycle Route to warn drivers of the potential for bicyclists sharing the road. Consideration was given to upgrading it with Class II Bicycle Lanes, but it was determined that the existing alignment and topography didn't make this a cost effective recommendation. Its proximity to the El Dorado Trail means that recreational bicyclists will likely gravitate towards the Class I facility, and Forni Road's winding path would be a deterrent for bicycle commuters who prefer straight connections like Mother Lode Drive. The addition of bicycle lanes on Forni Road would improve bicycling safety similar to the recommendations for El Dorado Road, however there are substantial cut and fill conditions on Forni Road that would make this an expensive and cost prohibitive improvement. Near term recommendations to include Class II Bicycle facilities in the El Dorado Trail Plan at the north end of Forni Road should continue to be explored as the El Dorado Trail is developed. The Class II facility is a Safe Routes to Schools link for Herbert C. Green Middle School.

Forni Road

Lindberg Avenue (Class III Bicycle Route)

Lindberg Avenue provides a direct connection from the northern residential area between Mother Lode Drive and Forni Road, and should be upgraded to a Class III Bicycle Route with a direct connection to the El Dorado Trail. Consideration was given to upgrading this to a Class II facility, but there were a considerable amount of residential units fronting the street which potentially limits the ability to add Class II bike lanes and Lindberg Avenue isn't as centrally located as Blanchard Road is to provide a regional connection. However, as a Class III facility it will be ideally suited to meet the needs of local residents.

Lindberg Avenue

Enterprise Drive (Class III Bicycle Route)

Enterprise Drive is the logical extension of the Lindberg Avenue Class III Bicycle Route to complete the east-west connection from Mother Lode Drive to Missouri Flat Road. Feedback from the community indicates that Enterprise Drive is already acting as a Class III Bicycle Route for local residents, and this should be formalized with proper signage and pavement markers to make vehicular drivers aware of the potential for bicyclists sharing the road.

Koki Lane (Class III Bicycle Route)

It will be very important to provide convenient bicycle and pedestrian access from the future Union Mine Connector to the downtown districts of El Dorado and Diamond Springs. The best connection to El Dorado from the Union Mine High School is on Koki Lane which is already a heavily used bicycle and pedestrian route to Union Mine High School. Koki Lane has continuous sidewalk on either side of the street, but no shoulders or bike lanes. The relatively short length of Koki and its low volume of traffic do not warrant widening to accommodate Class II facilities, but an inexpensive safety improvement would be to upgrade it to a Class III Bicycle Route. This connection will require coordination with Union Mine High School.

Koki Lane

Tullis Mine Road (Class I Bicycle Path)

Tullis Mine Road is a unique opportunity to provide a direct bicycle connection from the Union Mine Connector to Diamond Springs. It is currently a dirt roadway that connects the residential developments at Patterson Lake to Pleasant Valley Road and is used as an alternate route to Patterson Drive for first responder access. Any improvements to this road should maintain first responder access, however a Class I Bicycle and shared use path would be easy to construct and would provide alternative bicyclist and pedestrian access from the Union Mine Connector to Diamond Springs.

Tullis Mine Road

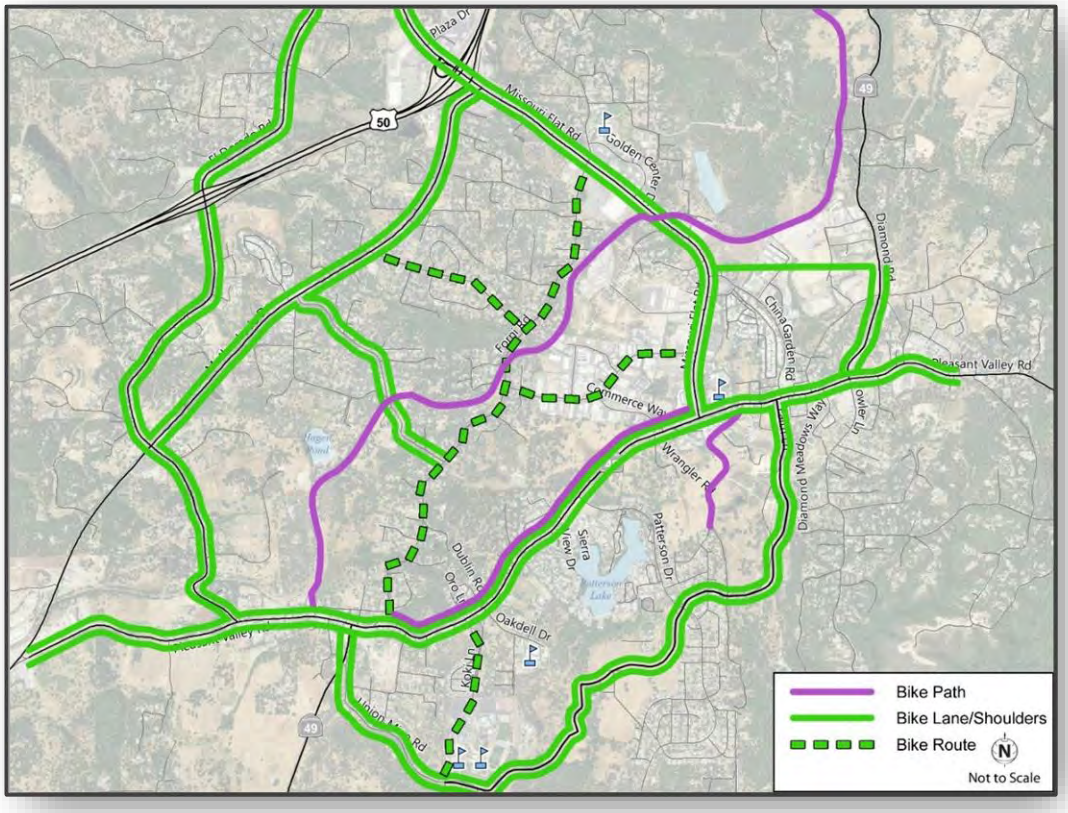


Figure 14 - Proposed Bicycle Network

Pedestrian Network

One of the primary goals of the Community Transportation Plan is to improve pedestrian safety with facilities dedicated for pedestrian use. Given the planning level nature of the Community Transportation

Plan, the term sidewalk is used to reflect pedestrian improvements that provide a dedicated space for pedestrians that separates them from vehicular traffic. This separation could be a vertical separation (like curb and gutter) or a horizontal separation (like a separated path) but a distinction must be made between the two modes of transportation. As more detailed studies or plans are prepared, the exact type of materials for these sidewalks can be designed within the context of each project. For example, a "boardwalk style" walkway or other aesthetic treatment might be more appropriate for projects in El Dorado or Diamond Springs, where a conventional concrete sidewalk might be more appropriate in residential neighborhoods. As materials are selected for a project, on-going maintenance costs and agreements should be factored in to the selection process.

Union Mine Road Connector (Detached Sidewalks)

Similar to the bicycle network, the Union Mine Connector is a key recommendation to improve east-west pedestrian connectivity between Union Mine High School and the residential developments (both existing and proposed) south of Patterson Lake. It was well documented through the public outreach process that there is a significant need for this access with pedestrians using the shoulders of Pleasant Valley Road and private property in the absence of proper pedestrian facilities. The sidewalks should be detached from the roadway to increase pedestrian safety and provide landscaping opportunities for the roadway, but can be constructed in phases as development occurs.

El Dorado Trail (Shared Use Path)

The El Dorado Trail between Pleasant Valley Road and Missouri Flat Road is the second key recommendation to improve regional pedestrian connectivity. It should be designed to be wide enough to be a shared use path and should connect to the existing paved portion of the El Dorado Trail to the east. This will provide an important pedestrian link from El Dorado to Placerville, and will build on the success of the existing trail as a recreational amenity in the region that is currently enjoyed by pedestrians, equestrians and mountain bikers.

Missouri Flat Road (Attached Sidewalks)

As Missouri Flat Road repurposes itself with the Diamond Springs Parkway Project, the southern portion of the roadway, from the proposed Diamond Springs Parkway intersection to Pleasant Valley Road, should include sidewalks to provide complete pedestrian connectivity on Missouri Flat. This connectivity is currently lacking, and providing it will be a benefit both to the existing businesses on Missouri Flat and the future development that is anticipated in the 2004 El Dorado County General Plan.

Missouri Flat Road

Pleasant Valley Road (Shared Use Path)

As a long-term recommendation, a shared use path should be constructed between the El Dorado and Diamond Springs communities. This improvement will link together pedestrian access from the El Dorado Trail, Union Mine Connector, and Missouri Flat Road making walking a viable alternate mode of transportation in the region. A shared use path instead of a sidewalk also respects the distinction between El Dorado and Diamond Springs and maintains the more rural character of the highway.

Koki Lane (Attached Sidewalk)

With the development construction of the Union Mine Connector, Koki Lane will become a significant pedestrian corridor to and from the downtown Diamond Springs Area. As pedestrian volumes increase, it would be advantageous to complete the sidewalk improvements on both sides of the street to maximize pedestrian convenience.

Tullis Mine Road (Shared Use Path)

In addition to being a bicycle route, the Tullis Mine Road Class I Bicycle Path should be constructed wide enough to accommodate pedestrians as a shared use path.

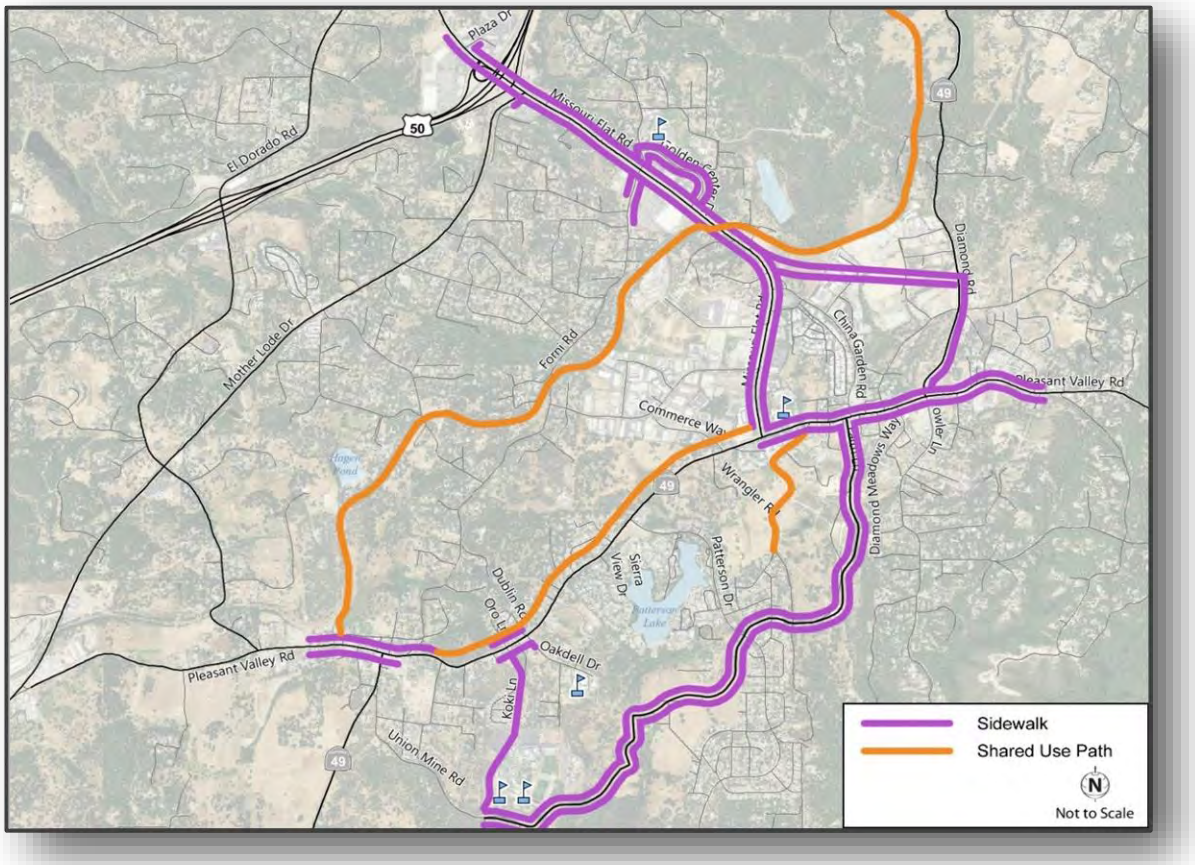


Figure 15 - Proposed Pedestrian Network

Downtown Districts

The addition of community appropriate streetscape enhancements, sidewalks, bike lanes, and shared use trails posed as part of the Community Transportation Plan are meant to improve residents' quality of life. These transportation improvements will mean children have safer routes to schools, employees will have alternative commute options, and recreational enthusiasts and tourists will be more inclined to get out of their cars and explore the historic communities. Areas in Northern California and elsewhere that have implemented similar programs to improve vehicular traffic-related issues and increase pedestrian-oriented appeal have led to substantial retail sales and visitation improvements. Given El Dorado County's status as a popular visitor destination, the improvements proposed as part of the Project are likely to be well-received by the visitor population and are likely to result in positive impacts for local businesses based on case studies of other areas that implemented similar improvements.

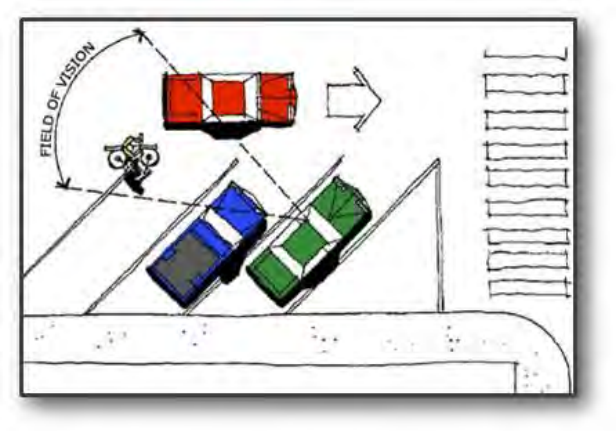
One of the Community Transportation Plan's goals is to create a more appealing environment in El Dorado and Diamond Springs that induces both local and visiting customers to stay longer and frequent multiple establishments. This goal is a direct result of EDCTC's 2011 Visioning Process, which identified regional job, economic, and personal income growth by providing the proper infrastructure to support and attract small and medium-sized businesses. The recommendations in this plan are meant to be a set of guidelines to identify potential opportunities for this kind of future development and provide possible infrastructure solutions to maximize the economic potential of El Dorado and Diamond Springs. However, the specific implementation of any of these recommendations will rely in large part on improvements to Pleasant Valley Road/SR 49 that both meet the growing transportation needs of the region and accommodate the vision for El Dorado and Diamond Springs' development. Specific recommendations that are implemented will be the ones most supported by the citizens of Diamond Springs and El Dorado.

Pleasant Valley Road (Oriental Avenue to SR 49)

Per the traffic analysis, the existing two-lane configuration on Pleasant Valley Road west of SR 49 is adequate to accommodate future traffic volumes. However, the degree to which the recommendations in the Community Transportation Plan impact the economic growth of El Dorado relies partially on the convenience of centrally located parking. The most abundant existing parking in El Dorado is the perpendicular and diagonal parking on the north side of Pleasant Valley Road between Church Street and Missouri Street. These parking spaces, with their relative depth to the existing

Figure 16 - Pleasant Valley Road Back-in Parking

frontages of businesses, are regularly converted to a Farmer's Market from June to October. This is an ideal use for the space and one of the identifying features of the community that should be preserved.



Back-in Parking Visibility

It is the intent of the plan to preserve existing parking in El Dorado wherever it's practical, while making recommendations that balance improvements to the regional transportation network. There could be a potential conflict with the existing parking stall layout and the proposed Class II Bicycle facilities recommended on Pleasant Valley Road (SR 49). Diagonal and perpendicular parking is typically not recommended with Class II Bicycle lanes because the view of oncoming bicyclists can be obstructed by adjacent parked cars. A potential solution to this issue would be to re-stripe the stalls to accommodate back-in parking. By having cars back in to the parking stall, visibility and bicycle safety is improved because the driver is directly facing oncoming bicycle traffic when leaving the stall. It also makes it easier to load and unload vehicles from the sidewalk. This solution does require proper signage and an education effort to be implemented, but it has been a successful solution for other downtown districts. More importantly, it maintains the existing depth of the current parking stalls for events like the Farmer's Market. This solution was vetted at the public meeting and was positively received by community members.

Back-in Parking Signage

Pleasant Valley Road/SR 49 (SR 49 to Missouri Flat Road)

Pleasant Valley Road between SR 49 (S) and Missouri Flat Road is a transition zone between El Dorado and Diamond Springs that has historically separated the two communities. Any improvements on this segment must balance the independence and rural nature of these communities with the need for improved multi-modal connectivity.

This vision is supported by the local residents and stakeholders who participated in the prioritization exercise at the second public meeting. The shared use path connecting El Dorado and Diamond Springs was ranked as the highest priority for both the bicycle and pedestrian networks. While implementation of this shared use facility may be a long-term recommendation for the region, a short-term recommendation is to include Class II Bicycle to provide a better bicycle connection.

Pleasant Valley Road/SR 49 (Missouri Flat Road to China Garden Road)

The western portion of Diamond Springs supports a mixed use of commercial and retail development with discontinuous sidewalk on their frontage. As the region develops, it will be important to create a continuous bicycle and pedestrian path within the existing roadway section by filling in sidewalk gaps and constructing Class II Bicycle Lanes. Within the regional context of the recommendations, it will be important to complete the bicycle and pedestrian network to and from the recommended improvements to Missouri Flat Road.

Pleasant Valley Road/SR 49 (China Garden Road to SR 49 N)

Diamond Springs' development in the historic district between China Garden Road and SR 49 (N) is limited by its fragmented pedestrian infrastructure and gaps in its design scheme. It would benefit from a unified roadway section that links the eclectic frontages that give the community its Gold Rush era charm. An ideal roadway to maximize connectivity and economic potential would include sidewalks, bike lanes and on-street parking; however the existing buildings in the district limit the amount of room available for these improvements. With this limitation in mind, three potential roadway cross sections were presented to the SAC and the community as potential future development options for Diamond Springs:

Option #1 (On Street Parking and Bicycle Lanes) – This option would be constructed within the existing right-of-way to include 8' parallel parking stalls, 5' Class II Bicycle Lanes, and 11' vehicular travel lanes. It would rely on the existing pedestrian walkways fronting the buildings in Diamond Springs to provide pedestrian connectivity.

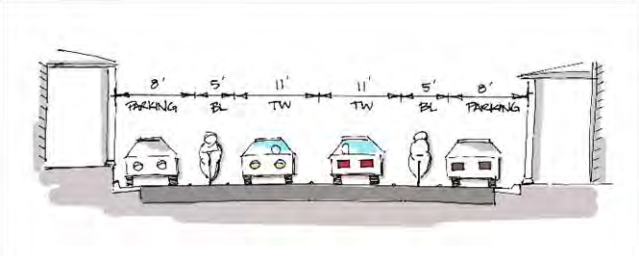


Figure 17 - Diamond Springs On Street Parking and Bicycle Lanes Cross Section and Rendering

Option #2 (Enhanced Sidewalks and Bicycle Lanes) –This option replaces the proposed 8' parallel parking stalls and 5' Class II bicycle lanes from option #1 with 7' sidewalks and 6' Class II bicycle lanes. The sidewalks in this option would be in addition to the existing pedestrian path of travel fronting the existing buildings which will create an enhanced pedestrian experience.

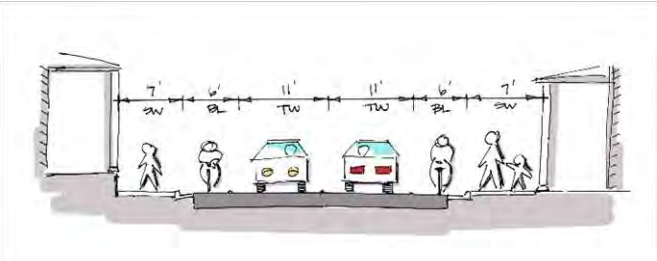


Figure 18 - Diamond Springs Enhanced Sidewalks and Bicycle Lanes Cross Section and Rendering

Option #3 (Enhanced Sidewalks and On Street Parking) – This option replaces the proposed 8' parallel parking stalls and 5' Class II bicycle lanes from option #1 with 5' sidewalks and 8' parallel parking stalls. As with option #2, the sidewalk would integrate with the existing pedestrian path of travel.

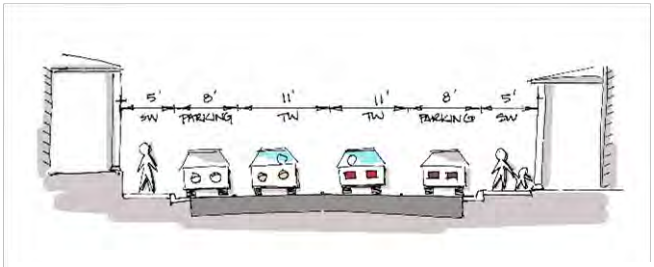


Figure 19 - Diamond Springs Enhanced Sidewalks and On Street Parking Cross Section and Rendering

In summary, there are three potential improvements that can be made to Pleasant Valley Road within the historic district (enhanced sidewalks above and beyond the existing pedestrian path of travel, Class II bicycle lanes, and organized on-street parking) but only enough right-of-way to construct two out of the three. These cross sections were presented to the public at the second public meeting with the opportunity to vote for a preferred option. Option #3 (enhanced sidewalks and on street parking) received the most votes (15) followed by Option #2 (enhanced sidewalks and bike lanes) with 12 votes. Option #1 (on street parking and bike lanes) came in a distant third with only one vote.

From this exercise, the community made it clear that enhanced sidewalks and a continuous pedestrian environment should be a priority for Diamond Springs as it is the common improvement between Option #3 and Option #2. With the enhanced sidewalks attention should be given to improving and adding additional crosswalks connecting the north and south sides of the historic district. A phased approach with

near-term on street parking and long-term Class II Bicycle Lanes could be implemented. Design features like bulb-outs would have to be avoided to not preclude a future bike lane.

Pleasant Valley Road (SR 49 N to Pearl Place)

The eastern half of Diamond Springs is similar in form and character to Pleasant Valley Road (SR49) from Missouri Flat Road to China Garden Road. As redevelopment occurs, it will be important to create a continuous bicycle and pedestrian network with Class II Bicycle Lanes and sidewalk improvements.

El Dorado

El Dorado's biggest obstacle to economic development is the existing and future congestion and delay at the intersection of Pleasant Valley Road and SR 49 (S). Planned population and employment growth in the region will result in increased volume through this intersection and a forecasted LOS F in 2035. This will increase travel time on Pleasant Valley Road and create long vehicle queues that will spillback into, and result in poor operations, of the SR 49/Union Mine Road and Pleasant Valley Road/Forni Road intersections during peak hours, however this segment of Pleasant Valley Road (SR 49) is allowed to operate at LOS F per the General Plan.

Three possible solutions were presented to the SAC and community members to improve this intersection, each of which has its own advantages and disadvantages and specific design considerations to evaluate further:

Option #1 (Stopped Controlled Intersection) – This option maintains the existing operations of the intersection as a three-way stop. There is the potential to upgrade the intersection with sidewalks and enhanced pedestrian crossings to improve the pedestrian environment, but traffic operations would still operate at a LOS F in the future.

Figure 20 - El Dorado Stopped Controlled Intersection Renderings

Option #2 (Signalized Intersection) – Signalizing the intersection would improve the future LOS to D, but might require the removal of on-street parking. This option could improve the pedestrian environment even further with sidewalks and signalized pedestrian crossings.

Figure 21 - El Dorado Signalized Intersection Renderings

Option #3 (Roundabout) – Adding a roundabout to the intersection would decrease future delay and calm traffic through the intersection. It would also create a place making opportunity that could brand El Dorado with public art or a monument and improve the pedestrian environment. It would have the biggest impact to the existing right-of-way of the three options, but would improve future traffic operations to LOS D.

Figure 22 - El Dorado Roundabout Renderings

All three options were presented to the public at the second public meeting. Community members were asked to vote on which of the three proposed intersection improvements they thought best meets the needs of El Dorado's future development. The stopped controlled option received the most votes (17), followed by the roundabout option (13) and the signalized intersection (9).

It is the strong recommendation of the Community Transportation Plan that the intersection of Pleasant Valley Road and SR 49 in El Dorado remain a stop sign controlled intersection into the foreseeable future. The intersection is exempted from LOS requirements in the 2004 El Dorado General Plan and can operate at LOS F without a mandated need to reduce delay and congestion at the intersection. The Community Transportation Plan only presents a signalized intersection and a roundabout as two potential future options that could address the significant level of delay and congestion that the traffic analysis has identified will exist in 2035. A signalized intersection or roundabout are future options that would only be considered if the expected future delay and congestion impacts the ability of local and regional travelers to safely and efficiently travel through the intersection to such a degree that the local community, El Dorado County, and Caltrans decide that there is a reason to change the existing stop sign controlled intersection.

Diamond Springs

Convenient and centrally located parking will be an important component of Diamond Springs' ability to attract visitors and maximize its economic potential. Maintaining on street parking on Pleasant Valley Road with a future enhanced sidewalk (option #3 above) is one way of accomplishing this goal, but has advantages and disadvantages that need to be considered before implementation. With an enhanced sidewalk, on street parking will be more orderly and defined which can both promote enforcement and turn over for businesses while providing traffic calming benefits along Pleasant Valley Road. However, organized parking typically results in a loss of total parking stalls compared to unrestricted parking where parked cars will park wherever there is room (often at the expense of the pedestrian environment). There are three potential solutions to offset a loss of parking stalls with roadway improvements on Pleasant Valley Road:

Additional On Street Parking - Howard Circle, Odd Fellows Road, and North Alley all have potential to be widened to include on-street parking in the public realm. This solution has already been successfully implemented in the northeast corner of the Pleasant Valley Road/Odd Fellows Road intersection.

Existing Parking Lots – Existing parking lots in Diamond Springs are underutilized at certain times of the day. Although no formal parking study was performed as part of the Community Transportation Plan, there might be potential capacity improvements if a Parking District is formed as a collaborative effort among the existing business owners. Formalizing a parking agreement to share underutilized parking assets in the district could help offset the growing parking needs of Diamond Springs to everyone's benefit.

Future Parking Lots – As Diamond Springs grows, there are a number of opportunity sites for additional parking lots. With the anticipated increase in property values as Diamond Springs develops, this approach will need to weigh the highest and best use of each site on a case by case basis.

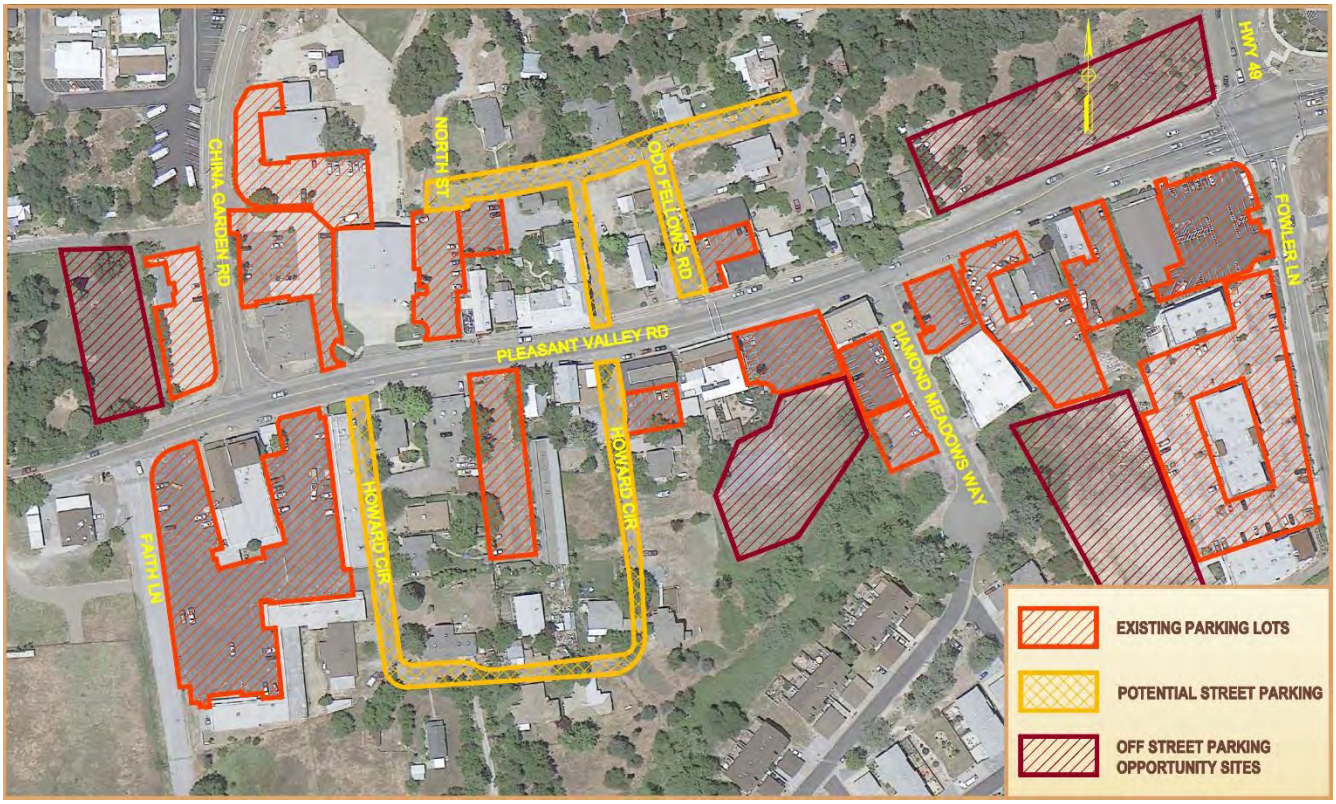


Figure 23 - Diamond Springs Parking Opportunities

7. Place Making

Introduction

The following landscape guidelines offer a general design palette of streetscape elements for the Diamond Springs and El Dorado area that fits into the historic context of the two communities and provides a cohesive appearance between sections of streetscape that may be developed at different times and by different entities. It is not the intention of these guidelines to define specific makes and models of fixture that must be used. Rather, the goal is to define a general aesthetic which will provide a consistent, enjoyable experience with a historic feel for residents and visitors.

Landscape features that strengthen the sense of place and history of the El Dorado and Diamond Springs communities should be included with all projects along the following major routes within the Study Area:

- SR 49
- Missouri Flat Road
- Pleasant Valley Road
- Diamond Springs Parkway
- The proposed Union Mine Connector

Design elements should employ a Gold Rush theme (1850 – 1900), characterized by simple, practical construction generally lacking fine detail, although Craftsman or agrarian may also be appropriate in developments away from the core areas (El Dorado County, 2008). This report provides general design guidelines and, where appropriate, specific examples for some elements, including street monuments, sidewalk accent paving, stormwater swales, furnishings, lighting, signage, street trees and other landscape plantings, and special areas. These examples are not meant to be used exactly as presented. Rather, individual designers are encouraged to exercise their creativity in designing and specifying landscape features consistent with the spirit of the examples described and presented here.

Historic Design Guidelines

Over the past two decades, several efforts have been made to define a historic design guide for communities in El Dorado County. The most recent of these, the Missouri Flat Design Guidelines (rrmdesigngroup, 2008) provides aesthetic recommendations for new development along the Missouri Flat corridor from Missouri Flat Village just north of US 50 to Enterprise Drive. That style guide covers architectural character, site planning, landscape elements, building design, utilities, fixtures and signage. While outside the study area, Section IV of the City of Placerville's Development Guide presents architectural design guidelines for historic downtown Placerville as well as upper Main Street, Broadway, Placerville Drive, and Smith Flat Road that could be a useful reference for the community as they define a historic style. Additionally, the County of El Dorado Planning Department developed a Historic Design Guide in the 1980's that offers examples of Gold Rush era buildings, fences, signage and other features in

an attempt to establish a design vernacular for historic areas. In addition to the Missouri Flat guidelines, the standards and recommendations presented in these latter two documents may help in preserving, enhancing, or restoring historical character in some areas of the communities of Diamond Springs and El Dorado.

Placerville Architectural Guidelines

While the Placerville Architectural Guidelines are not meant to apply to the Diamond Springs and El Dorado areas, they include some important concepts that may help to strengthen the historic character in the area. For example, the Placerville guidelines state "the buildings in this area [historic downtown] embrace the Main Street right-of-way and create a clearly defined space with distinct boundaries." This configuration of structures appears to be similar in many successful vibrant Gold Rush era downtowns along SR 49. The places that stand out within an hour's drive of the study area – Auburn, Placerville, Sutter Creek, Amador City, Jackson – all have well defined downtowns where there is little between the buildings and the street but the sidewalk. Parking lots typically don't front on the main street in the historic core; parking is typically parallel on the curb, with additional parking in a public lot or structure set back from the main thoroughfare. The area of Diamond Springs that shares this character, from the Diamond Springs Hotel west to the just east of the Firehouse Café, has more of a historic feel than areas further east or west, where the roadway opens up and is less constrained by the structures. This is partly due to the age of the structures, but also to the style of development, with covered walkways and a relatively narrow right-of-way .

Another key item in the Placerville Architectural Guidelines is the disclaimer that the guidelines are not meant to "create bogus historical or western theme architecture, but rather to promote innovative design throughout the city which repeats the forms and integrates elements of the existing architecture of merit…" The tendency may exist when recreating historical forms in modern structures to create an artificial environment that feels neither historical nor real. Often this arises through the excessive use of "faux" materials – materials made to simulate a substance far removed from their actual composition. Colored concrete, for instance, usually works well in simulating brick or stone, but may help to create a feeling of artificiality when used to simulate wood or other organic materials. To the extent practical and as allowed by building code, historical recreations and historically-based design elements should be constructed of materials available during the Gold Rush and should be assembled in a manner consistent with methods in use at that time.

Diamond Springs Historic Core

Additional recommendations in the Architectural Guidelines that should be incorporated into the recommendations for the Diamond Springs and El Dorado downtown area are as follows:

Scale and Proportion – Historic buildings should retain their height, mass and overall dimensions when renovated or modified, and new buildings should be compatible with existing.

Pedestrian Orientation – Designs should address the needs of pedestrians and include sufficient setbacks, building orientation to the street, façade articulation such as recessed entries and framed windows, and covered walkways. This latter guideline of incorporating colonnades, covered walks and eating areas can perhaps go the furthest towards creating a historic feeling in the downtown area. Recommendation 2.e, which cautions against creating parking lots on the street-side of a parcel, should be applied throughout the downtown cores.

Façade Treatments – Historic façades should be preserved and new structures should emulate historic architecture. Building façades adjacent to the street should be pedestrian-oriented, which helps facilitate business patronage.

Materials and Finishes – Materials and finishes should be suitable to the area and compatible with surrounding architecture of historical value.

El Dorado County Historic Design Guidelines

The El Dorado County Historic Design Guidelines provide examples of architecture of the type prevalent in the gold mining areas of California during the period of 1850 to 1900. The downtown areas of El Dorado and Diamond Springs are designated "Design Review Historical" by the El Dorado County Zoning Code, and therefore subject to guidelines developed to preserve historic character within that Design-Review – Historic (-DH) Combining Zone. The El Dorado County Historic Design Guidelines were created to provide

a framework for decision-making regarding conformance of development to historic style in those zones. As such, they establish recommendations for architectural style common to historic commercial structures, such as use of brick and masonry exterior walls; iron shuttered doors; wooden shake, shingle or corrugated iron roofing materials; and covered sidewalks of board, brick or stone. Signs were often plain or painted wood, and retaining walls were usually stacked and mortared native rock, granite blocks or brick. The guidelines discourage the use of plastic, neon or interior lit signs as well as those which obscure architectural details. The guidelines also present a number of photographs of historical structures to communicate the overall design style.

Missouri Flat Design Guidelines

The Missouri Flat Design Guidelines, prepared by RRM Design Group in 2008 for the El Dorado County Development Services Department and adopted by Resolution No. 134-2008 by the El Dorado County Board of Supervisors on June 3, 2008, present a number of guidelines for the corridor along Missouri Flat Road from just north of US 50 to Enterprise Drive. The guidelines establish four design styles for new development within the corridor: Mountain, Agrarian, Craftsman and Gold Rush. In 2011, the Diamond Springs and El Dorado Community Advisory Committee recommended removal of the Mountain style from the Guidelines and required Gold Rush style from the El Dorado Trail/Sacramento Placerville Transportation Corridor Railroad right-of-way to Pleasant Valley Road, allowing Craftsman, Agrarian and Gold Rush styles between US 50 and the El Dorado Trail.

Agrarian style structures are characterized by covered porches, low-pitched roofs, heavy wood beams and exposed timber elements, cupolas, and vertically oriented, multi-paned windows with decorative trim. Materials should be locally produced. Walls may be horizontal-lap, board-and-batten, cement-fiber or metal siding or wood clapboard, and roofs may use standing-seam or corrugated metal, wood shingles, or flat tiles.

Craftsman style developed in the late nineteenth and early twentieth century's and often contained small decorative features and hand-crafted details. Buildings were characterized by deep overhangs, gable roofs, exposed decorative wood elements, large porches, shingled dormers, vertically-oriented double-hung wood windows and trim. Stone bases, accents and chimneys were common.

Gold Rush structures are characterized by wooden two or three story construction lacking intricate details. Buildings often had prominent façades with parapet roofs and balconies incorporating columns and braces that doubled as a covered sidewalk. Windows are vertical and narrow with divided lights.

Of these three styles, Gold Rush style is most appropriate for the downtown areas of Diamond Springs and El Dorado, and similar to the recommendations of the Diamond Springs and El Dorado Community Advisory Committee for Missouri Flat Road, design guidelines should limit new development and remodels to Gold Rush style along the historic SR 49/Pleasant Valley downtown core areas.

In addition to defining these styles, the Missouri Flat Design Guidelines include recommendations for site planning, landscape elements, building design, utilitarian spaces, signage, and mixed use development consistent with good planning and design principals. While all of the guidelines should be applied to

development within the study area, the remainder of this section includes a brief discussion on the guidelines as they relate to streetscapes and historic downtown core areas.

Site Planning and Design – Guidelines provide for retention of natural vegetation, stormwater runoff controls including bioswales, and detention basin design. Where feasible, streetscapes should incorporate native landscape plantings, treatment of stormwater in above-ground swales and detention areas, and other site-scale Low Impact Development (LID) techniques such as rain gardens, infiltration galleries and/or permeable pavers to reduce stormwater runoff.

Additionally, the guidelines include a number of recommendations for site layout, including use of natural materials indigenous to the area, orienting buildings towards public spaces and clustering buildings. As already discussed, fronting buildings on the street helps create vibrant downtown areas as shown in the example of downtown Placerville in the photograh below. Incorporating native materials such as stone, masonry, boulders and vegetation into site plans helps create sense-of-place and historically compatible designs.

Downtown Placerville (Photographer Jeremy Block, Wikimedia Commons)

Accent features such as ornamental landscaping, landscaped medians, architectural monuments and/or enhanced paving are recommended, and these elements should be included in streetscapes within the study area. Public outdoor spaces in the downtown cores should be provided and offer shade, benches, landscaping, public art and other elements that attract visitors. Outdoor furniture and fixtures should be compatible with Gold Rush architecture.

Parking lots should not dominate the streetscape. Parking should be located behind buildings, if possible, or screened with earth berms, low walls or landscaping if not.

Streets should include pedestrian walkways that are safe, visually attractive and include landscaping, lighting and specialty paving. Crosswalks should utilize colored, textured paving (or stamped asphalt) compatible with ADA guidelines in an attempt to create distinctive feel.

StreetPrint Textured Asphalt Crosswalk, NC

The guidelines recommend against use of flowering and fruiting trees, which can lead to maintenance issues, though some cities such as Victoria, B.C., and Calgary, Alberta have recently been exploring partnerships with communities to maintain fruit trees in public spaces.

Landscaping Elements – A number of landscaping recommendations are included in the guidelines, such as provision for landscaping between the street and sidewalk and between the sidewalk and buildings, to define focal points and key activity areas, to enclose spaces and frame views, and to provide solar control, fall color, seasonal flower and other effects. Additionally, landscaping should use existing vegetation, rock formations and granitic boulders, which can help reinforce the historic character and sense of place. Guidelines are included for spacing of trees from driveways, utilities, streets and walkways. Plantings should be appropriate for the foothill climate and site microclimate and grouped in zones based upon water use. Smart irrigation controllers with weather sensors should be utilized and irrigation systems should be properly designed and certified by an irrigation designer.

Paving Treatments – Pavements should utilize texture and color to separate pedestrian routes from vehicular travel ways and at crosswalks and to designate gathering areas. Stamped concrete or asphalt, stone, brick or granite pavers are possible paving materials. The City of Auburn utilized a combination of these materials to transform an unattractive and poorly-functioning intersection into a thriving Central Square that shows off the gold rush town's history and is now a popular outdoor dining and gathering

spot. Patterns and colors can also be used to designate on-street parking, pedestrian loading and accessible spaces.

Granite and Brick Pavers and Monument, Auburn, CA

Utilitarian Aspects of Design – In addition to recommendations on planning, landscaping and paving, the Guidelines include prescriptions for utilities, including walls, fences and lighting. General guidelines include screening equipment or installing underground. Booster pumps would typically be installed in underground vaults, irrigation controllers in attractive above-ground cabinets, and backflow devices screened with vegetation. Walls and fences should generally be avoided along public streets, however, where they are needed, they should utilize common historic design elements and details, include offsets every 50 to 75 feet for visual interest and rock or masonry construction if greater than 4 feet high. Chain link is prohibited.

Lighting design should be done with care to avoid glare and light spillage onto adjacent properties. Lights should be of appropriate scale for their uses and use historically appropriate models in the downtown areas as shown in another example of historic downtown Auburn. LED lighting should be considered where practical.

Street Lights in Auburn, CA

Building Signs – Several of the guidelines for building signs should also be applied to monument signage within the streetscape. Designs should match surrounding architecture. In the central historic cores, they should be appropriate for the Gold Rush era, of historically appropriate materials including rock, wood, masonry and/or iron, with modernizations where needed for lighting and other factors. Signs should be illuminated with direction lights and should not be internally lit. Monument signs should be in scale with adjacent buildings and landscaping and should be accented with landscape plantings and/or rocks.

Landscape Guidelines

This section presents landscape guidelines for streetscapes and public spaces along the major corridors and downtown areas within the study area. Recommendations are presented for monuments, sidewalks, Low Impact Development strategies, furnishings, street lighting, signage, street trees and other landscape plantings, and other nodes or special areas. This section concludes with an overview of local, regional and statewide guidelines and regulations applicable to streetscapes within the study area.

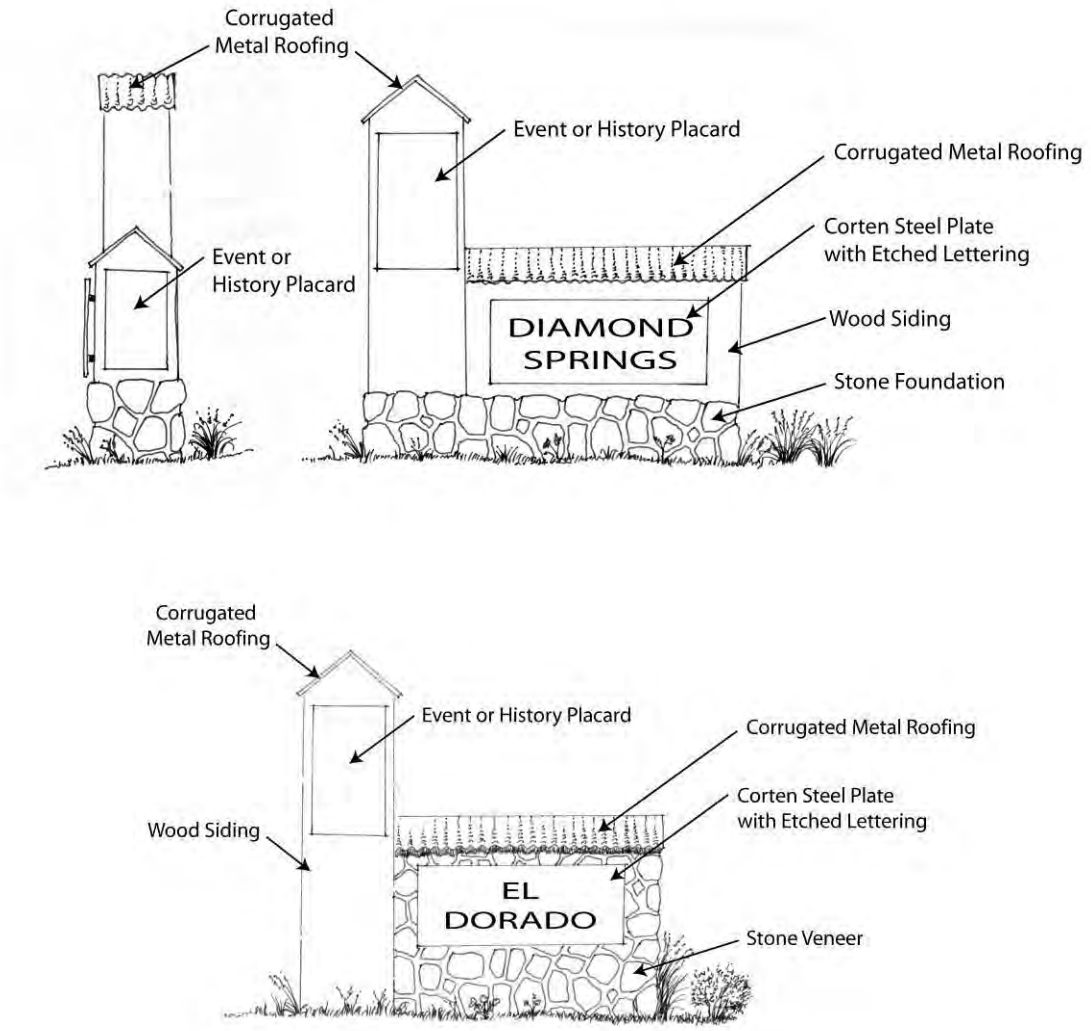
Monuments

Streetscape monuments should be placed at entries/exits to historic downtowns as well as at special nodes or places. Monuments are intended to draw attention to and celebrate the history and character of the area and should incorporate a placer mining theme with materials in use in the mid to late 1800's, such as rock, iron, and timber. River rock or Placerite; large, rough-hewn timbers; visible fastenings; rusted iron or weathered corten steel, and/or corrugated metal roofing are appropriate materials for monuments. Monuments should be considered at entry points to Diamond Springs and El Dorado along SR 49 and Pleasant Valley Road at the following approximate locations as well as other locations the community identifies:

- East of Diamond Springs on Pleasant Valley Road near Carlson Way
- North of Diamond Springs on SR 49 near Diamond Road
- West of the Missouri Flat Road – SR 49 intersection
- SR 49 east of El Dorado near El Dorado Street
- SR 49 south of El Dorado near Union Mine Road
- Pleasant Valley Road west of El Dorado near El Dorado Road.

Monuments for El Dorado and Diamond Springs can vary in design to give each town a unique identity but should be of a similar style. They need to be placed so they do not limit sight distance for vehicles, bicyclists and pedestrians, and should have an approved maintenance agreement before being constructed. The figure below shows possibilities for monument sign designs that reflects Gold Rush era materials and forms. Monuments should be accented by landscape plantings native to the region, including small flowering trees such as Western redbud (*Cercis occidentalis*) and shrubs or grasses such as California rose (*Rosa californica*), or Deer Grass (*Muhlenbergia rigens*). The monuments and plantings should be illuminated via low-profile directional or spot uplights.

In addition to entry points for Diamond Springs and El Dorado, smaller monuments should be located at access points to the El Dorado Trail on Missouri Flat Road where the trail crosses the street and on Pleasant Valley Road at Oriental Street.



Entry Monument Sketches

Sidewalks

Wide sidewalks with accent paving both in the sidewalk and at crosswalks can create a more pleasant pedestrian environment, slow traffic and make crossings safer. Sidewalks should be six to ten feet wide, where not prohibited by street configuration and building placement, and ADA accessible. Accent paving, such as colored brick stamping, installed at recurring intervals along the sidewalks, can provide additional interest and appeal for pedestrians. For example, a six-foot wide sidewalk might incorporate a six-by-six foot square of red or black stamped concrete in a standard brick pattern (running bond, herringbone, basketweave, etc.) every thirty feet.

Sidewalk Accent Paving

Street corners, outdoor gathering spaces and other notable areas should incorporate larger sections of colored, patterned paving or unit pavers. For instance, the corner at SR 49 and Faith Lane, where the weekly Diamond Springs Flea-Farmers market is held, would be a good location for specialized paving.

Along roads where street-trees are desired, but space is insufficient for a six foot or wider planter, consideration should be given to installing sections of sidewalk in permeable pavers. Trees could be installed in tree wells with wrought-iron grates combined with permeable paving in a 10-foot or longer section of sidewalk. Permeable pavers over a 12" or greater depth of coarse no. 2 aggregate allow roots to grow beneath pavement and still receive oxygen and stormwater runoff. Root barrier should be used to prevent root intrusion in unwanted areas. See section 3.7 for additional discussion.

Street crossings within the core downtown areas should be considered for colored stamped asphalt crosswalks such as Streetprint. Actual concrete paver inlay would also be appropriate, though significantly more expensive. Patterns and colors should simulate local brick in historic use (typically red or beige).

Through the downtown areas, sidewalks should be as wide as practical and incorporate tree planters or planting wells where feasible. Planting wells can utilize biofiltration systems if desired to detain and filter stormwater runoff. In areas with sufficient space, curb bulb-outs could help create additional pedestrian gathering areas, accommodate street-trees, and help to slow traffic.

Imprinted Asphalt Crosswalk in Auburn, CA

Low Impact Development Strategies

Low Impact Development (LID) swales, such as those incorporated into the Victory Mine Center in Diamond Springs, can be used where appropriate to capture and detain stormwater runoff. Similar swales have been used in the recently redesigned streetscape in Auburn around the intersection between Lincoln and High Streets and along Sunrise Boulevard in Citrus Heights. Swales and detention areas may help to reduce stormwater flows and mitigate for the effects of increased impervious surfacing due to sidewalks and other improvements, particularly in areas such as El Dorado, where stormwater runoff has been indicated to be an issue. Similarly, new development and retrofits should consider including rain gardens and/or cisterns into landscape design to intercept roof runoff and provide some detention and filtration capacity prior to discharge into storm sewers or local water bodies. New or reconfigured parking lots can incorporate areas of permeable paving and/or swales and detention areas in parking lot planters to detain stormwater and encourage infiltration.

Stormwater Swale

Benches, Trash Receptacles and other Furnishings

Furnishings such as benches and trash receptacles should follow a Gold Rush era design vernacular with a historic/mining theme. The recently constructed Diamond Center, on Fowler Lane just south of Pleasant Valley Road/SR 49, has many elements that are appropriate to the desired time period, including trash cans that resemble wine barrels and wood elements with large, exposed fastenings.

Visible Fastenings in Wood Elements at Diamond Center

Trash Can at
Diamond Center

Furnishings should utilize materials and design appropriate to the Gold Rush era, such as wrought iron, stone and wood. Landscape Forms Plainwell bench with wood slats or the Canterbury 1890 bench are reflexive of the appropriate time period. The Canterbury 1890 bench shown is the cantilevered variety, but it also comes in ground- and surface-mount forms. This bench has been proposed for use at the Monument Garden pocket park in Placerville on Bedford Avenue.

Canterbury International
1890 Cantilevered Bench

Street Lighting

As with furnishings, street lighting should reflect historic designs, preferably those that resemble fixtures in use during California's Gold Rush period (1848 – 1855). Gas lighting began in the United States in Baltimore in 1816, with electrical fixtures not being developed until 1880, so fixtures resembling gas or oil lamps are preferred over those that are more clearly electric. Typically, gas lamps were of the lantern-type mounted on poles or buildings. The photograph below of Placerville c.1865, shows a rectangular-sided gas lamp on a relatively unadorned pole beside a wagon and mule team. Fixtures resembling this type would be appropriate for street lights in the historic core areas.

Placerville's First Gas Street Light, c.1865, El Dorado County Historical Museum

From an environmental and maintenance standpoint, LED lighting may be preferable due to lower energy use and longer life than standard incandescent or halogen bulbs, if LED fixtures can be found that meet the design intent.

Signage

As with the monuments, signage should reflect Gold Rush era materials and manufacturing methods. Local stone, iron, and rough-hewn timbers are appropriate materials for signs. Signs in the Gold Rush era were primarily painted wood. As indicated in the Missouri Flat Design Guidelines (RRM Design Group, 2008), internal lighting of signs should be avoided. A-frame signs are strongly discouraged. Attaching signs directly to buildings is preferred, though for complexes such as Diamond Center, a sign pedestal listing multiple businesses may be more practical.

Street Trees and Landscape Planting

To maintain a Gold Rush era feel, in which landscaping was generally minimal on many properties, landscaping of public areas should generally utilize native and/or drought tolerant plants. If non-natives are used, they should be those compatible with the native oak, grassland, and chaparral palettes.

Where the width between the street and adjacent buildings allows, street trees should be planted every 30 feet within the downtown areas of Diamond Springs and El Dorado to encourage strolling and provide summertime shade. Valley oak (*Quercus lobata*), California black oak (*Quercus kelloggii*), Interior live oak (*Quercus wislizenii*) and Western sycamore (*Platanus racemosa*) are appropriate native street trees for Missouri Flat and Pleasant Valley Roads and SR 49.

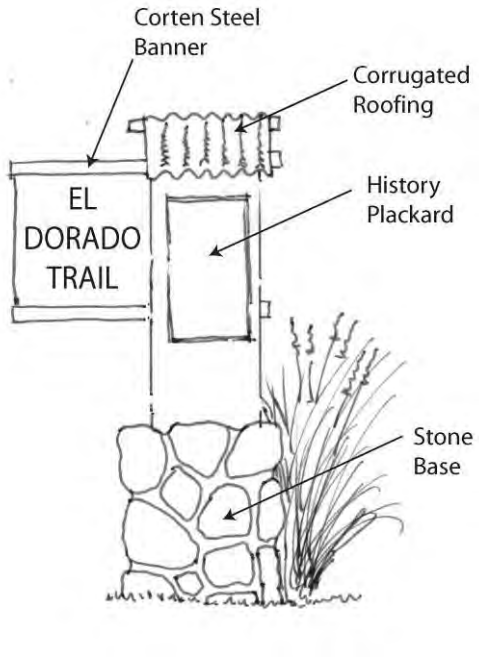
As discussed in section 3.2, where space is tight, tree wells can share space with sidewalks utilizing tree grates and permeable pavers. As with other furnishings, grates should reflect Gold Rush styles, utilizing wrought iron or similar materials and classic designs. Minimum tree well size is 3' x 3'. To maintain ADA accessibility, grating holes must be ½" diameter or less (1/4" is better for high-heeled shoes) and walkways must be clear for 48" around trees. Gratings must be expandable so that rings can be removed as trunks grow. Permeable pavers should extend 8 to 15 feet either side of the tree to allow sufficient space for roots, which generally extend out to the edge of the tree canopy. Tree species in small wells must be tolerant of having the majority of their roots beneath pavement, and root systems must not be aggressive. Root barrier can be used to limit root growth to desired areas. Smaller trees are more appropriate where space is tight or tree wells are small. Appropriate small tree species in a sidewalk well include Western redbud (*Cercis occidentalis*), Goldenrain tree (*Koelreuteria paniculata*) and Chitalpa (*Chitalpa tashkentensis*). The latter two are not native to northern California, but they are drought-tolerant and visually compatible with native landscapes.

Other Special Areas/Nodes

Several areas require special attention because they are gathering places or attractors for residents and visitors. These include the following:

- El Dorado Trail connection at Missouri Flat Road
- Farmers Market/Flea Market at SR 49 and Faith Lane
- Historic structure in Diamond Springs at SR 49 and Georges Alley
- Railroad Park at Oriental and Pleasant Valley Road

These areas should be marked by small monuments, colored and textured crosswalks, lighting, and special landscaping. Monuments can be a variation on the larger town markers discussed earlier, using corrugated roofing, stone masonry or iron/steel elements, as shown below. Monuments should incorporate a placard or sign plate indicating the significance of the location.



Small Monument Sketch

El Dorado Trail at Missouri Flat Road - In addition to a marker or monument, the El Dorado Trail connection at Missouri Flat Road will need improvements to connect the two sides of the trail. This could be an overpass, an on-demand parking light, a rectangular rapid-flash beacon (RRFB) or other solution. Due to speed of traffic through that area, an at-grade crossing should consider raised, textured crosswalks and a median refuge island.

Diamond Springs Flea/Farmers Market **-** The open-air flea market in the parking lot at SR 49 and Faith Lane in Diamond Springs, held year-round on Sundays, is very popular. A farmers market to be held every Saturday on the same site is planned to begin soon. Parking for the flea market occurs on both sides of the road, and families often cross from the north side of the street to the south to get to the market. Raised, patterned crosswalks would help make the crossing safer. Additionally, a monument on that corner and/or an additional colored, textured, paved area could mark that corner as special. EDCTC or the County could potentially work with the owner of the parking lot to convert a couple of parking places to permeable pavers and/or a planter with one or more street trees. A raised planter with a tree would provide sitting space for people meeting friends or family at the market or resting in the shade on a hot weekend summer afternoon following the market.

Flea/Farmers Market Location

Historic Diamond Springs Building **-** The historic building at SR 49 and Georges Alley is currently posted for lease or sale and could provide the potential for a public access or recreational amenity near downtown Diamond Springs. One possibility could be a neighborhood park. Recommendation NP1.A of the El Dorado County Parks and Trails Master Plan (Foothill Associates 2012) states:

"Where parks are lacking in already developed areas, work with residents to identify potential neighborhood park sites as close by as is feasible. Acquire and improve these parcels through a combination of donations, volunteers, partnerships with other public agencies, grants, and CSD assessments. Ideally, at least four neighborhood parks totaling 20 acres would be located in the El Dorado/Diamond Springs area" (NP1.A) (Foothill Associates 2012)." The County general plan established under policy 9.1.1.1 a guideline of 2.0 acres of neighborhood parks per 1,000 population.

While the site is less than the five acres usually desired for a neighborhood park, the proximity to the flea/farmers market, central location within Diamond Springs, historic nature of the site, and adjacency to Independence High School increase the sire's desirability as a public amenity. Other surrounding parcels could be investigated further for the potential to add to the existing site to increase its usability as a neighborhood park.

If the site were purchased and developed as a public amenity, strengthening the connection between the park and downtown, particularly the flea/farmers market with wide sidewalks and street trees, marking the site with a monument, and including interpretive signage on the historic building would be important development objectives. The park site could also provide additional parking for the downtown area and flea/farmers markets and could function as a joint-use facility with the school, which currently lacks athletic fields.

Empty Lot Adjacent to Historic Structure in Diamond Springs

If done, purchase and development of this site as a County park could occur as part of park land dedications for new development in the area and in coordination with other County park efforts.

Railroad Park - Railroad Park is a 6.3 acre proposed park in the town of El Dorado at Oriental and Pleasant Valley Road. A replica of the historic railroad depot has been constructed on the site, but otherwise, it is largely undeveloped. The museum is about 700 feet off of Pleasant Valley Road, so a monument or other marker on the street corner would help direct visitors to the site. Roadway improvements to Oriental Street, including sidewalks, would facilitate access by pedestrians visiting downtown El Dorado.

El Dorado Station at Railroad Park

(This page intentionally left blank)

8. Economic Potential

Opportunities

El Dorado County is experiencing a healthy growth in visitation by capitalizing on its immediate access to the Sacramento Region and multitude of recreational and leisure pursuits. Though the County's historical visitor spending has been relatively sluggish, growing at an average annual rate of just 1.4 percent over the past 20 years, the outlook is more favorable for unincorporated areas. Tourism performance indicators in the unincorporated area of El Dorado County, reveals an annual increase in transient-occupancy tax (TOT) revenues of approximately 10 percent. Visitor spending is expected to grow by its current rate of approximately 1 to 2 percent per year countywide, but some popular areas (especially in the unincorporated portion of the county) may grow at much faster rates, possibly up to 5 to 10 percent, which could bode well for Diamond Springs and El Dorado.

Growth in Tourism

There are many popular attractions, amenities, activities, and programs that drive visitation to El Dorado County, such as agritourism (including wine-related tourism), historical tourism, and outdoor adventure tourism, including activities like hiking, rafting, boating, off-roading, equestrian, fishing, camping, etc. According to a survey conducted by the El Dorado Visitors Authority, the most popular activities or experiences in El Dorado County include dining, visiting wineries, and visiting popular geographic points of interest such as Main Street Placerville or South Lake Tahoe. A variety of other recreational experiences also were noted, such as visiting Apple Hill, visiting Coloma, hiking, camping, visiting museums, river recreation, fishing, skiing, golf, cycling, and others. Sectors of tourism that present the most opportunity for the Study Area, such as heritage tourism, agritourism, wine-related tourism, and adventure-tourism will be discussed separately in the sections to follow.

Diamond Springs Historic Landmark

History and Heritage Tourism

Heritage tourism (also known as "historical tourism") is a key tourism market segment that has great promise for future growth. Heritage tourism worldwide is estimated to account for approximately 20 percent of total trips, and travelers classified as cultural and heritage tourists travel more frequently (on average 5.01 leisure trips per year versus 3.98 trips per year for non-cultural/heritage travelers according

to the U.S. Cultural and Heritage Tourism Study, prepared by Mandala Research, LLC, 2009). Baby boomers represent the most prominent market segment that is interested in heritage tourism. Because an ever-increasing proportion of the population is reaching retirement age and many are choosing to spend these years traveling, the prospects for enhanced heritage tourism from this consumer segment are strong. Since El Dorado County is a popular retirement area, efforts to increase heritage tourism would capture interest from Baby Boomer history buffs who are not willing or able to travel far from home.

Heritage tourism is among the more popular activities for El Dorado County visitors, and several historical towns near the Study Area, such as Placerville, Georgetown, Coloma, and others offer a variety of opportunities to experience historical mining operations, visit museums, or tour the historic downtowns. Coloma, in particular, is among the county's most popular tourism areas outside Lake Tahoe. This is the location where gold was first discovered in California, and the town has been proactive and successful in drawing on its historical significance to draw visitors. The Marshal Gold Discovery State Historical Park hosts approximately 250,000 visitors per year, and quite a few tourism-oriented businesses and museums have been established in the area to provide a rich experience, making Coloma a popular place to visit.

El Dorado County Historical Railroad Park

El Dorado and Diamond Springs are well positioned to benefit from Placerville, Coloma, and Georgetown's tourism traffic because of their close proximity to those areas and similar Gold Rush background. El Dorado and Diamond Springs are already registered as California Historical Landmarks (#486 and #487 respectively). Both towns have a handful of historic buildings and sites of interest. Diamond Springs's notable historic sites include the cemetery, Odd Fellows Hall (1852), the former Campini butcher shop, old school house (now a barber shop), and Diamond Springs Hotel (1916) among others. Points of interest in El Dorado include Poor Red's (a former drug store built in 1856), a historic brick building built in 1857 (now a Harley Davidson agency), former merchant shop once owned by Tracy and Kinsel (now Gallery El Dorado, 1856-57). Strengthening their historic tourism image and improved marketing efforts would entice more visitors to add El Dorado and Diamond Springs as stops on their Gold Rush history tour.

By combining visits to historical sites with other activities such as dining, shopping, or outdoor recreation, a very compelling tourism experience can be provided to visitors of Diamond Springs and El Dorado. To the extent that additional complementary activities, attractions, and amenities can be added or enhanced, prospects for tourism and visitation will continue to improve. In particular, pedestrian and street improvements along Pleasant Valley Road (SR49) through historic El Dorado and Diamond Springs can

make this area of the community more appealing and accessible to tourists and residents, potentially spurring new business and economic development. Future commercial uses in the historic areas of El Dorado and Diamond Springs would do well to focus on creating an experiential district where the experience of the unique history and character of the area is marketed. Examples of appropriate venues in an experiential district could include restaurants, wine clubs, gift shops, boutiques, artisan goods retailers, entertainment and performing arts venues to name a few. Diamond Springs has got a jump start on this with the new Diamond Center commercial development at the intersection of Pleasant Valley Road (SR 49) and Fowler Lane, which has been carefully designed to recreate the historic Gold Rush character.

A joint project of the El Dorado County Historical Museum and the El Dorado Western Railway Foundation is attempting to attract history and heritage tourists to the area by offering excursion rail rides from El Dorado to Shingle Springs in the Sacramento-Placerville Transportation Corridor.

Agriculture and Agritourism

Agritourism is a strong and growing tourism segment in El Dorado County. The Apple Hill area, in particular, is an extremely well-organized collection of growers, bake shops, food stores, wineries, and other attractions that hosts large quantities of visitors each year. These visitors partake in the exploration of a variety of agricultural goods, fresh baked goods, Christmas tree farms, wineries, and many other items. Local residents have suggested that El Dorado and Diamond springs could build off of this model, providing specialty crop visitor-oriented operations centered on pears, cherries, or other local crops.

There is a concerted effort to further organize the various agritourism activities in the county, and the El Dorado County Farm Trails Association (EDCFTA) is one organization helping to facilitate this effort. The EDCFTA helps to publicize local farmers' markets in the county and publishes farm trail maps and directories to help visitors find their way among the various agricultural options.

Viniculture and Wine-Related Tourism

The wine industry is another growing segment of economic activity in El Dorado County, which includes more than 2,200 acres in wine grape production (as of 2010). These wine-growing operations raise the profile of the county's wine-related activities, and there were more than 60 bonded wineries in El Dorado (as of 2010), ranking El Dorado as one of the largest wine regions in the state. El Dorado County and neighboring Amador County have emerged as very strong areas in the wine-related segment and are seen as a more cost-effective and convenient alternative region to visit compared to the booming wine culture that exists in the Napa and Sonoma Valleys.

Diamond Springs and El Dorado are on the doorstep of a number of nearby wineries in Fair Play, Pleasant Valley, Camino, Gold Hill, and Apple Hill making the entire area a popular and emerging destination for wine enthusiasts. Though already strong, the wine-related segment can be strengthened with the

provision of more dining options, enhanced transportation accessibility (such as through organized "wine tours"), the provision of additional lodging options for visitors to stay, and through other related efforts.

Outdoor Recreation and Adventure Tourism

According to the Adventure Travel Trade Association, "adventure tourism" can be defined as tourism that involves two of the following three elements: (1) interaction with nature, (2) interaction with culture, or (3) a physical activity. Adventure tourism is deemed one of the fastest growing segments in the travel industry, with recent estimates indicating 65-percent growth in each year from 2009 to 2012 (according to the "Adventure Tourism Market Study," published by the Adventures Travel Trade Association and George Washington University, 2013). This tourism segment has great existing pull and future potential for the Study Area, as there are a variety of adventure tourism opportunities throughout El Dorado County that the area could benefit from economically.

El Dorado County's vast open spaces and outdoor terrain make it a haven for a variety of adventure tourism activities, including river rafting, hiking, horseback riding, camping, fishing, golfing, snow sports, etc. There are several river rafting companies located in El Dorado County that offer guided tours for various skill, ability, and thrill levels, and river-related activities are a very popular attraction that drives substantial visitation to the county. There are many other aspects of adventure tourism available to El Dorado County visitors, such as rock climbing, mountain biking, geocaching, camping, hiking, boating, and many more. Given El Dorado County's host of superb outdoor recreational options, this tourism segment is likely to thrive long into the future.

Challenges

There are a number of challenges associated with the future development of EL Dorado and Diamond Springs including:

Historic Integrity and Neighborhood Design

Though this area has a rich and interesting history based on Gold Rush era and western settlement, few historic buildings have been preserved. As discussed previously, many have been destroyed by fire, removed due to severe dilapidation, or remodeled. Significant private investment will be required to fully restore the historic charm of this community. This can begin with an effort to "fill in the gaps" in the neighborhood design, building up a contiguous store front experience along key segments of Pleasant Valley Road.

Downtown Diamond Springs

Access

To some visitors, the Diamond Springs and El Dorado area could be considered a bit hidden and "off the beaten path," which is one of the areas charms but is also a challenge from a tourism marketing perspective. Though it does get exposure from travelers on SR 49, bypassers on US 50 rarely venture just the couple miles south to explore this community. Granted, this seclusion appeals to many residents and is a defining aspect of the community's character, but from an economic development standpoint, the community could benefit from expanding its marketing and wayfinding efforts to overcome what it lacks in visual access from US 50. Diamond Springs and El Dorado should partake in a regional marketing initiative collaborating with Placerville, Coloma, and other neighboring communities to organize such things as wine, farm, or history tours and events. Interviewed stakeholders suggested incorporating more lodging opportunities such as Bed & Breakfasts in these communities as another way to maximize the economic benefit of visitors to the area. Visitors who have overnight accommodations in the local area are more apt to explore and experience the various facets of the community and spend more money doing so.

Lacking Cohesive Sense of Community

Local business owners have voiced concern over the lack of opportunities for networking and community organizing within each town and collectively as the combined El Dorado/Diamond Springs area. Business associations are not as active as they used to be, and there is a need for community members and business owners to come together with a renewed effort to showcase what this area has to offer. The proposed transportation improvements from the Community Transportation Plan offer an opportunity to spark revived business owner interest and pride in the Diamond Springs and El Dorado business districts. Though the transportation improvements will be instrumental, it is ultimately the choice of the business owners and residents to take advantage of the economic opportunities those improvements offer to expand and enhance the economic wellbeing of their community.

Economic Benefit of Transportation Improvements

The transportation improvements posed as part of the Community Transportation Plan will provide many economic benefits to the community, including improved quality of life and safety, higher property values, increase in revenue from sales tax and TOT. The addition of sidewalks, bike lanes, and shared use trails mean children will have safer routes to school, employees will have alternative commute options, and recreation enthusiasts and tourists will be more inclined to get out and explore the area. Enhanced streetscapes improve the overall appearance of the community and send a signal to investors and potential employers that this is an area worthy of their investment. Several studies have indicated walkability and access to trails and open space have a positive impact on residential and commercial property values. Retail in particular benefits from pedestrian oriented infrastructure improvements, as it can encourage patrons to linger and explore an area longer, thus leading to increased sales. From the perspective of many businesses, the volume of pedestrians can be as important as absolute counts of

vehicular traffic. Restaurants, cafes, and gift shops are examples of businesses that stand to benefit more greatly from amenities that enhance the overall appeal of an area where customers can park once and explore on foot the many offerings the area provides.

Perspectives on Effects of Transportation Improvements on Local Economies

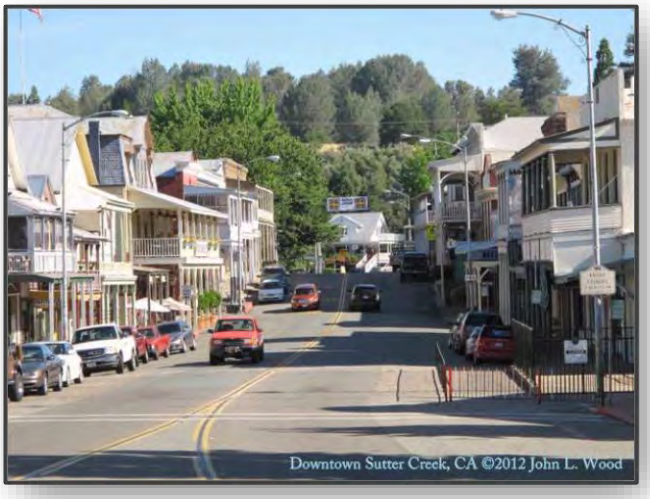
The impact of a transportation improvement project on a town's local economy depends on many factors. To provide additional perspective, Economic & Planning Systems, Inc. (EPS), conducted professional and case-study research to identify lessons learned from other areas that have undergone similar changes to their roadway linkages, such that high-volume traffic was reduced to allow a more inviting, pedestrian-friendly, and tourism-oriented district. While it is important to recognize that no two projects are exactly alike; some instances involve a more formal "bypass," which removes traffic altogether; and others (like the Community Transportation Plan) require a more nuanced shift in roadway alignment, best practices and economic effects that can be studied and applied to the circumstances in El Dorado and Diamond Springs. Though the Diamond Springs Parkway (a proposed connection between SR 49 and Missouri Flat Road) is not proposed as a project in the Community Transportation Plan, but is shown as a proposed El Dorado County project, the effects of the Diamond Springs Parkway project must still be considered a part of the future transportation network. Prominent examples arising from case study research are detailed below:

- **Livermore, California**: The city of Livermore, on the outskirts of the San Francisco Bay Area, implemented a roadway bypass project that aimed to reroute a large portion of vehicle traffic that traveled along the four-lane highway through the center of downtown. The remaining downtown core was revitalized by introducing new sidewalk amenities, street furniture, open space, and historical points of interest, leading to the creation of a more appealing, walkable downtown environment with a host of dining, shopping, and other options. This project has been touted as a tremendous success in revitalizing the downtown, and even during a very difficult economic period, during which overall statewide sales tax revenues declined by 10 percent, downtown Livermore saw retail sales grow by 15 percent.

Livermore, CA

- **Sutter Creek, California:** The city of Sutter Creek, in the gold country foothills of Amador County, underwent a bypass to SR 49, which was a heavily traveled and often-congested regional

thoroughfare traveling directly through the center of town. This project was a true "bypass" that created an entirely new highway alignment that avoided Sutter Creek altogether and caused a significant reduction in vehicular trips. Major elements of this project included installing prominent signage at both ends of the bypass, conducting marketing/public relations campaigns, and creating open space and streetscape projects in the downtown area to enhance its appeal once the vehicular impediments were removed. The Sutter Creek realignment has been successful in changing the character of the downtown area and in driving tourism and visitation to the area. An analysis by EPS indicates overnight visitation in Sutter Creek (as demonstrated by annual TOT increased by 45 percent in the years following construction of the SR 49 bypass.



Sutter Creek, CA

- **Truckee, California:** The town of Truckee was involved in construction of a formal bypass program several years ago, which was meant to relieve traffic congestion along State Route 267 and improve the appeal of the downtown area. This reduction of vehicular traffic allowed the downtown area to enhance its walkable appeal and has helped to create a much more cohesive and attractive downtown destination. Visible indicators demonstrate that Truckee is doing very well since this transportation project, although the quantitative impact of this project is difficult to measure because retail spending data is only readily available on a town-wide basis. However, it should be noted that the town saw retail spending increase 45 percent from the time the bypass was constructed (in 2002) until 2007, after which the severe recession caused sales to decline. The town's TOT revenues also have appreciated substantially since the bypass construction, rising 30 percent from 2002 to 2012. Overall, this project has been considered a great success in enhancing downtown appeal and market position as a visitor destination.

Other communities throughout the United States have demonstrated similar positive impacts resulting from roadway enhancements, and the strengthening of retail districts that can be achieved by increasing pedestrian activity. The City of Lodi, for example, experienced a 30-percent increase in downtown sales tax revenues resulting from the retrofit of five main street blocks in which sidewalks were widened; curbs were bulbed out at intersections; gateway features were constructed; and trees, lighting, benches, and other streetscape amenities were added (per "The Economic Benefits of Walkable Communities," California Local Government Commission, Center for Local Communities). Other examples from a study prepared by the New York Department of Transportation further demonstrated the positive impacts that

better walking infrastructure provides on retail sales. This study showed an increase in retail sales of 49 percent in a case study neighborhood after bicycle traffic was enhanced through the addition of separated bike lanes, and more than 170-percent increase in sales adjacent to a former parking lot that was converted to a walkable pedestrian plaza ("Measuring the Streets," New York Department of Transportation, 2012).

Recommendations to Support Project Success

The overall financial and economic impacts of the Community Transportation Plan will depend heavily on the ability of the Study Area to transform itself into a compelling attraction that will draw local residents to patronize the area, as well as foster a substantial increase in visitation. Concepts for consideration include the following:

Signage and Wayfinding

Signage and wayfinding improvements will be important both during construction activities and as a more permanent signage program. This will be especially important during the preliminary stages of roadway improvements when existing businesses are most vulnerable. One possibility would be to include prominent monumentation that guides visitors into the historic districts in particular, helping visitors to navigate the area and allowing them to reach their destination while enhancing traffic flow and economic performance of the communities. Specific details such as wording and placement should be thoughtfully considered with local input as appropriate, to maximize the success of the Community Transportation Plan. Funding for this type of program could come from funding sources such as TOT, a Business Improvement District, or others as appropriate.

Marketing, Management, and Programming

In addition to a signage program, a concerted marketing effort could greatly improve visibility of this area and help define its identity. To create long term success, the area will need to strengthen its community organizing efforts. This may be initiated by expanding its web presence and participating in regional marketing campaigns that include nearby communities such as Placerville, Coloma, Sutter Creek, etc. that have similar offerings in terms of agriculture, wineries, history, and outdoor adventure. The local community could also develop a comprehensive program of events, concerts, competitions, outdoor festivals, etc., that would help to attract all types of users to the Diamond Springs and El Dorado Area. All businesses in the district—including restaurants, retailers, lodging accommodations, etc.—stand to gain substantially from these types of activities. For this function to occur most efficiently, a single organization may need to be established to manage these events and programs.

Eliminate "Gaps" in the Neighborhood Design Fabric

The degree to which the Community Transportation Plan spurs economic development will depend not only on the quality and extent of transportation infrastructure but also on redevelopment of key nearby parcels and the introduction of new and compelling amenities. Large gaps at street level will significantly hinder the ability to construct a successful pedestrian-oriented district. Every effort must be taken to ensure that these gaps are minimized and eliminated over the long term. If the goal of the historic districts is to create an active, vibrant and exciting neighborhood core that will draw visitors and locals alike, some of the large underutilized parcels should be considered for redevelopment. Potential niche uses that would further enhance the area's competitive advantage in tourism could include lodging, restaurants, artisan goods boutiques, and arts and entertainment venues. Revitalization of the historic cores may best be undertaken through a concerted community planning effort.

Diamond Center in Diamond Springs

Community Planning

One way the community could maximize leverage of Community Transportation Plan improvements would be to develop area plans for each community or the Pleasant Valley Road (SR49) corridor. The focus of this planning endeavor might be to refine the community vision for this corridor, reexamine appropriate uses, and develop design guidelines to help shape and organize the neighborhood design of the district. A fine grain examination with community member participation can be used to further identify key opportunities for site development along this historic route, helping it realize its future potential.

(This page intentionally left blank)

9. Environmental Assessment

Environmental Considerations

As part of the Community Transportation Plan, an environmental assessment was completed for the approximately 8,072-acre El Dorado-Diamond Springs Community Region. This document addresses the onsite physical features, as well as plant communities present and the common plant and wildlife species occurring, or potentially occurring, in the plan area. Furthermore, the suitability of habitats onsite to support special-status species were analyzed and recommendations were provided for any regulatory permitting or further analysis required prior to development occurring on the project site. In addition to an assessment of the overall plan area, two focused study areas, one located near the intersection of Mother Lode Drive and Pleasant Valley Road and one near the intersection of Pearl Place and Pleasant Valley Road were investigated. The findings of the environmental analysis are summarized below.

Special-Status Plant Species

Portions of the project area contain suitable habitat for special-status plant species that are known to occur onsite and in the vicinity. According to the California Natural Diversity Database (CNDDB), two special-status plant species occur onsite, five special-status plant species have a high potential for occurring onsite, and nine special-status plant species have a low potential for occurring onsite. Therefore, prior to any ground disturbance, it is recommended that a special-status plant survey be conducted on the project area. The survey should be conducted by a biologist qualified in the field

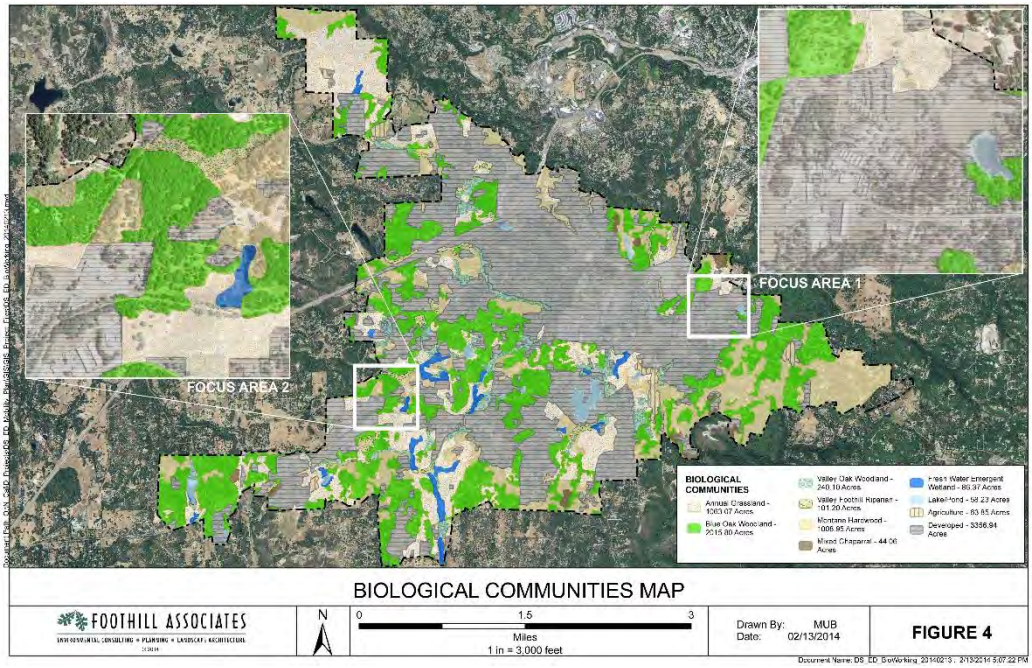


Figure 24 - Biological Communities Map

identification of special-status plants known to occur in the vicinity of the project area and should take place during the bloom period to allow identification of plant species.

Raptors

Several species of raptors forage and may nest on the site including the special-status species bald eagle, northern goshawk, and white-tailed kite. Active raptor nests are protected by the California Fish and Game code Section 3503.5 and the federal Migratory Bird Treaty Act (MBTA). For this reason, if construction is expected to occur during the nesting season (February-August), a pre-construction raptor survey is recommended to determine if active nests are present on the site. The survey should be conducted by a qualified biologist no more than 30 days prior to the onset of construction activities. If the nests are found and considered to be active, construction activities should not occur within 500 feet of the nests until the young have fledged or a qualified biologist has determined that the nest is no longer active. If construction activities are proposed to occur during non-breeding season (September-January), a survey is not required and no further studies are necessary.

Coast Horned Lizard

Portions of the site provide potential habitat for the special-status species coast horned lizard. It is recommended that a pre-construction survey be conducted for this species by a qualified biologist no more than 30 days prior to the initiation of construction activities. If horned lizards are found onsite, the California Department of Fish and Wildlife (CDFW) should be consulted regarding appropriate mitigation measures. Additional mitigation for this species would only be considered if the species was found during pre-construction surveys.

Western Burrowing Owl

Suitable habitat exists onsite for the special-status species burrowing owl. For this reason, it is recommended that a burrowing owl survey be conducted no more than 30 days prior to the onset of construction. Burrowing owls can be present during all times of the year in California, so this survey is recommended regardless of the time construction activities occur. If active owl burrows are located during the preconstruction survey, it is recommended that a 250-foot buffer zone be established around each burrow with an active nest until the young have fledged and are able to exit the burrow. In the case of occupied burrows without active nesting, active burrows after the young have fledged, or if development commences after the breeding season (typically February-August), passive relocation of the birds should be performed. Passive relocation involves installing a one-way door at the burrow entrance, which encourages the owls to move from the occupied burrow. CDFW should be consulted as to suggested guidelines for passive relocation of any owls found onsite. Mitigation acreage may be required for project impacts that result in permanent impacts to active burrows and foraging habitat. CDFW recommends 6.5 acres of foraging habitat for burrowing owl be preserved for each active burrow that would be impacted by project activities. The California Environmental Quality Act (CEQA) lead agency is responsible for determining what mitigation would be appropriate in coordination with CDFW. These

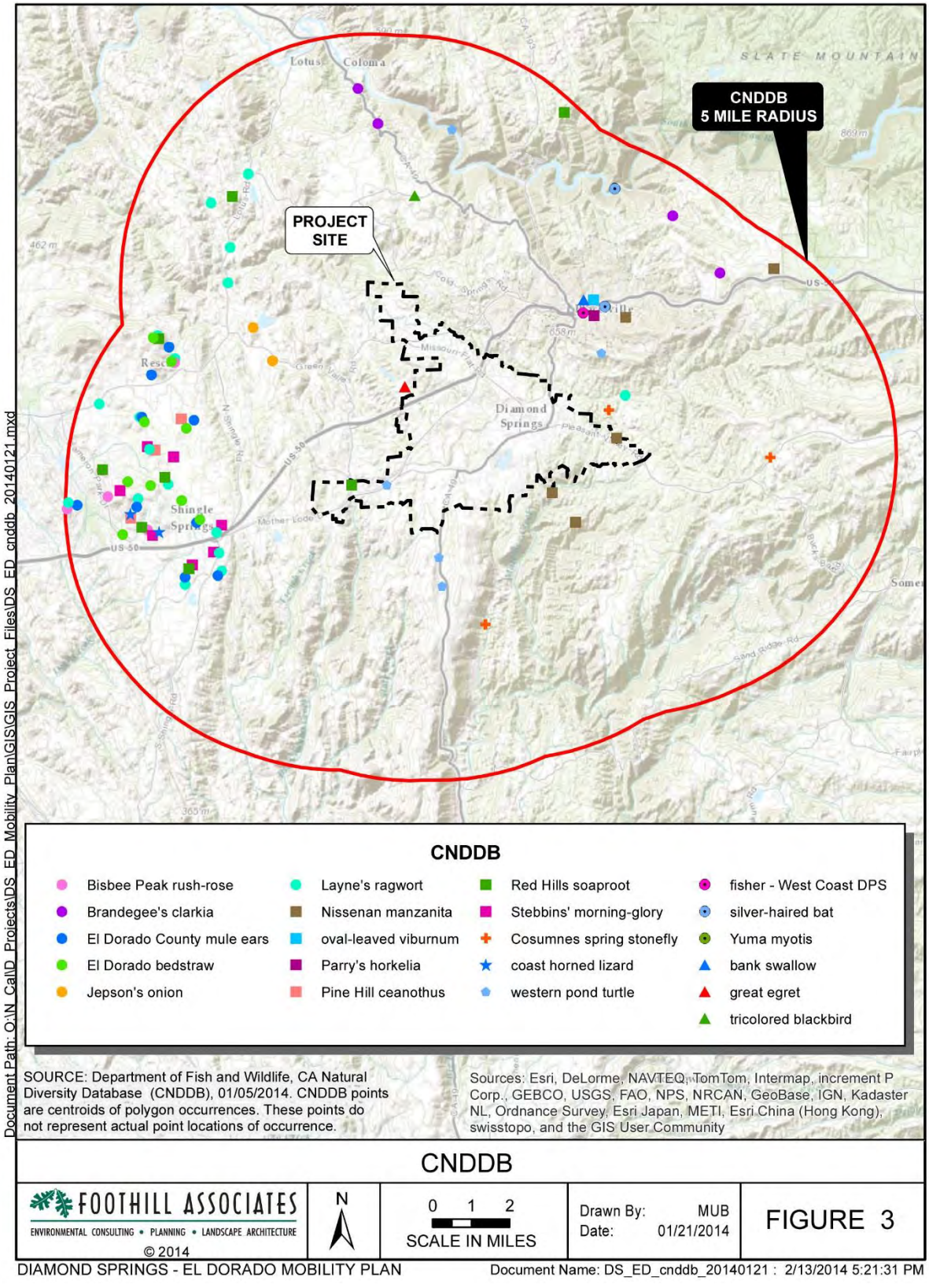


Figure 25 - CNDDB Results

mitigation measures would only apply in the event that active owl burrows were encountered during the preconstruction survey.

Tricolored Blackbird

Perennial marsh habitats within the project area may exist within site boundaries. Aerial photo reconnaissance indicates several potential areas north of the intersection of Pleasant Valley Road and Mother Lode Drive. It is recommended that a pre-construction survey for tricolored blackbird be conducted for any construction activity that would directly impact perennial marsh habitat or occur within 300 feet of perennial marsh habitat. If tricolored blackbirds are found during the pre-construction survey, CDFW and the Unites States Fish and Wildlife Service (USFWS) should be contacted regarding additional mitigation measures that may be required. Additional mitigation measures would only be considered in the event that tricolored blackbirds were located during the pre-construction survey.

Western Pond Turtle

Perennial marsh habitats within the project area contain suitable habitat for western pond turtle and there are CNDDB records for this species north of the intersection of Pleasant Valley Road and Mother Lode Drive. Therefore, it is recommended that a pre-construction survey for western pond turtle be conducted for any construction activity that would directly impact perennial marsh habitat or occur within 300 feet of perennial marsh habitat. If western pond turtles are found during the pre-construction survey, CDFW and USFWS should be contacted regarding additional mitigation measures that may be required. Additional mitigation measures would only be considered in the event that western pond turtles were located during the pre-construction survey.

Special-Status Bat Species

Existing large oaks, snags, hollow trees, caves and buildings could provide potential roosting habitat for various bat species that occur in the vicinity of the study area. Prior to the initiation of construction activities, it is recommended that a preconstruction survey be performed by a qualified biologist to determine if special-status bat species are roosting in tree crevices in the oak woodlands onsite. If special-status bat species are present and roosting on the project site, then CDFW should be consulted regarding potential additional mitigation measures. Adoption of mitigation measures for roosting bat species would be considered only if special-status bat species are found to be roosting within the project area.

Great Egret

The freshwater marshes and lakes onsite and nearby trees for roosting could provide potential habitat for the great egret. Prior to the initiation of construction activities, it is recommended that a preconstruction survey be performed by a qualified biologist to determine if this special-status species is roosting in trees or foraging in aquatic areas. If the great egret is present and roosting or foraging on the project site, then CDFW should be consulted regarding potential additional mitigation measures. Adoption of mitigation measures for this species would be considered only if the great egret is found to be present within the project area.

Valley Elderberry Longhorn Beetle

There is potential for Valley Elderberry Longhorn Beetle (VELB) to be present on the site if elderberry shrubs are present. Pre-construction surveys should be conducted to identify any elderberry shrubs on the site and evaluate any indications of VELB presence. Currently, the USFWS suggests mitigation for impacts to any elderberry shrub with stems of greater than 1 inch diameter at ground level. USFWS calls for a 100-foot buffer to be maintained around any existing elderberry shrub to prevent potential VELB habitat from being impacted. If a 100-foot buffer cannot be maintained, then the elderberry shrub should be transplanted according to USFWS guidelines to a suitable designated mitigation area and additional elderberry shrubs and associated riparian plant species should be planted in the designated mitigation area. The number of additional elderberry shrubs and associated vegetation varies depending on the number and diameter of elderberry stems suitable for use by VELB that are impacted by the project. The USFWS requests that transplantation occur between the beginning of November and the first two weeks of February when elderberries are typically dormant and the chance of transplantation success is higher. These mitigation measures would only be required if the elderberry shrub within the project area was impacted.

Cosumnes Spring Stonefly

The site may provide habitat in several drainages throughout the site. It is recommended that a pre-construction survey be conducted for this species by a qualified biologist no more than 30 days prior to the initiation of construction activities. If these species are found onsite, CDFW should be consulted regarding appropriate mitigation measures. Additional mitigation for this species would only be considered if the species was found during pre-construction surveys.

Sensitive Habitats

Aerial photographic reconnaissance indicates the presence of potential waters of the U.S. These areas are potentially regulated by the United States Army Corps of Engineers (Corps) and CDFW. Additionally, these areas are protected under the El Dorado County General Plan. Consequently, it is recommended that prior to the issuance of a grading permit, the wetland delineation for the project site should be submitted to the Corps and the appropriate Section 404 permit should be acquired. Any waters of the U.S. or jurisdictional wetlands that would be lost or disturbed should be replaced or rehabilitated on a "no-net-loss" basis in accordance with the Corps' mitigation guidelines. Habitat restoration, rehabilitation, and/or replacement should be at a location and by methods agreeable to the Corps. If the project would result in impacts to oak trees, El Dorado County should be consulted regarding oak tree avoidance and replacement guidelines.

El Dorado County Oak Woodland Ordinance

Policy 7.4.4.4 of the County General Plan set forth percentages of onsite canopy retention requirements for development projects until the County developed a County wide strategy. In 2008, the County adopted the El Dorado County Oak Woodland Management Plan (OWMP) to implement these General Plan oak woodland protection policies. However, the County's adoption of the OWMP was challenged in court. The

petitioners claimed, in part, that the County had not complied with CEQA. In 2012, the Appellate Court upheld the CEQA challenge to the OWMP and remanded to the Superior Court which directed the County to rescind approval of the OWMP until additional CEQA analysis is performed. As a result, only Option "A" of Policy 7.4.4.4 is applicable for oak woodland mitigation.

10. Implementation Plan

The Community Transportation Plan is a long range planning document that has taken a holistic look at access and mobility around the Diamond Springs and El Dorado Area. The recommendations described in the planning document do not have specific funding identified for implementation like those in the MC&FP or County's RTP. There are number of ways that the improvements in the Community Transportation Plan can be implemented with assistance from both public and private entities. There are three main approaches to implement the improvements highlighted.

Private Investment

Private developers can be responsible for the design and construction of many of the improvements outlined in the Plan such as portions of the Union Mine Connector or frontage improvements for new construction projects along Pleasant Valley Road or Missouri Flat Road. These improvements would be part of their development plans and implemented alongside the site work.

The advantage of this approach limits the amount of public money used to implement these improvements. The Community Transportation Plan is critical in this case as will help ensure that the neighboring property owners are developing the same roadway cross section such as the previously mentioned frontage improvements. In addition, with projects like the Union Mine Connector the Plan is important to ensure cross development access and continuous mobility along the corridor.

The challenge with relying solely on developer driven projects is that the roadway improvements will be constructed segmentally over a potentially much longer timeframe to achieve continuous connections for either pedestrian routes along frontages or neighborhood connectivity for the new roadways. If there is a critical mass of developer driven projects it may be necessary for the community or the County to seek other funding sources for project completion or gap closures.

Public Investment

The vast majority of public works transportation projects are constructed using various funding sources through a public agency such as the El Dorado County Community Development Agency (CDA) or Caltrans. Development-based funding, including development impact fees, will remain the primary method of paying for new development-required infrastructure. However, in this new economic climate, it is important to assure that necessary and desired infrastructure gets constructed and maintained, while at the same time not impeding the growth and economic development objectives envisioned in the General Plan.

Development Impact Fees

A development impact fee is an ordinance-based, one-time charge on new development designed to cover a "proportional share" of the total capital cost of necessary public infrastructure and facilities. Creating and collecting impact fees are allowed under California Assembly Bill (AB) 1600, as codified in California Government Code Section 66000, known as the Mitigation Fee Act. This law allows a levy of one-time fees to be charged on new development to cover the cost of constructing the infrastructure needed to serve the demands created by new growth. To the extent that required improvements are needed to address both "existing deficiencies," as well as projected impacts from growth, only the portion of costs attributable to new development can be included in the fee.

Land-Secured Financing Options

There is a long history in California and elsewhere in the United States of using land-secured financing methods to fund local infrastructure that benefits a particular area. Traditionally, special assessment bonds as authorized in the 1913 Municipal Improvement Act and other related legislation are issued and funded by annual property tax assessments from benefitting properties. These funding sources can include Special Benefit Assessment Districts, Mello-Roos, or the Statewide Community Infrastructure Program.

Municipal Credit and Financing Programs

In addition to land-secured financing districts, which derive funding exclusively from area-specific special assessments or special taxes, local governments may use a variety of more broadly based financing methods that can fund infrastructure directly or provide a basis of financing developer-based obligations. The County also can use its existing or new general or special taxes or service charges to fund infrastructure in one manner or another including general obligation bonds, revenue bonds, certificates of participation, private placement, infrastructure financing districts, and the state infrastructure bank.

Community Development Corporation

As pertains to the loss of redevelopment, many cities are evaluating options for improving downtown and infill districts in lieu of tax increment financing. One recent trend that might be worthy of further exploration is a Community Development Corporation (CDC). CDCs in San Diego, Roseville, and other California cities have been structured as 501(c)(3) organizations with a Board of Directors independent of the City Council. In many cases, the organization's charter includes authorized activities, investment targets, criteria for investment, and other pertinent elements. However, seed funding may need to be at least partially derived from available County General Funds, which can present a challenge. Other funding sources may include private sources, such as a consortium of agri-industrial interests or other groups.

Federal Funding

Federal funding provides a significant proportion of transportation funding throughout the United States. In 2012, the Moving Ahead for Progress in the 21st Century Act (MAP-21) bill was signed into law, replacing the SAFETEA-LU Act (Safe Accountable Flexible Efficient Transportation Equity Act: A Legacy for Users Act). MAP-21 covers a variety of transportation related issues including financing, congestion relief, improved safety, improved efficiency (such as coordinated planning and environmental streamlining), environmental stewardship, and transportation related research and studies. One key provision of MAP-21 is that funding for bicycle and pedestrian transportation was reduced and consolidated into the "Transportation Alternatives Program" (TAP). The TAP provides funding for programs and projects defined as transportation alternatives, including on- and off-road pedestrian and bicycle facilities, enhanced mobility, community improvement activities, environmental mitigation; recreational trail program projects; and safe routes to school projects to name a few. Potential funding sources include the Transportation Investment Generating Economic Recovery (TIGER) grant, Congestion Mitigation and Air Quality Program (CMAQ), and Historic Preservation Tax incentives.

Federal Funding Sources

Federal funding is generated almost entirely by a motor fuel tax and distributed through over twenty different programs that control application by facility type, permitted use, and geographic location. Federal transportation programs available for programming by El Dorado County include:

Congestion Mitigation and Air Quality Program (CMAQ)

The CMAQ Program was established by the 1991 Federal Intermodal Surface Transportation Efficiency Act (ISTEA) and was re¬authorized with the passage of TEA-21, SAFETEA-LU, and MAP-21. Funds are directed to transportation projects and programs which contribute to the attainment of maintenance of National Ambient Air Quality Standards in non-attainment or air quality maintenance areas for ozone, carbon monoxide, or particulate matter under provisions in the federal Clean Air Act. As part of the Sacramento Valley air basin, which is in non-attainment for ozone, El Dorado County is eligible for CMAQ funds (refer to Chapter 14, Air Quality Conformity).

Eligible CMAQ projects include public transit improvements; high occupancy vehicle lanes; Intelligent Transportation System Infrastructure; traffic management and traveler information systems (i.e., electric toll collection systems); employer-based transportation management plans and incentives; traffic flow improvement programs (signal coordination); fringe parking facilities serving multiple occupancy vehicles; shared ride services; bicycle and pedestrian facilities; flexible work-hour programs; outreach activities establishing Transportation Management Associations; fare/fee subsidy programs; and under certain conditions, Particulate Matter improvement projects.

- **Key Assumptions:** EDCTC will continue to receive CMAQ funds in a manner consistent with historical apportionments
- **El Dorado County 2010-2030 Program Level:** $59.2 million

Regional Surface Transportation Program (RSTP)

RSTP was established by the 1991 Federal Intermodal Surface Transportation Efficiency Act (ISTEA) and continued with the passage of TEA 21 in 1997, SAFETEA-LU in 2005, and MAP-21 in 2012. Of all the funding programs in MAP-21, RSTP is most flexible. A broad variety of transportation projects and modes, including streets and roads, are eligible.

Examples of projects eligible for RSTP include highway projects; bridges (including construction, reconstruction, seismic retrofit, and painting); transit capital improvements; carpool, parking, bicycle, and pedestrian facilities; safety improvements and hazard elimination; research; traffic management systems; surface transportation planning; transportation enhancement activities and control measures; and wetland and other environmental mitigation.

Eighty percent of the apportionment is distributed among the urbanized and non-urbanized areas of the State through Metropolitan Planning Organizations and Regional Transportation Planning Agencies. The remainder goes directly to counties in a formula equal to 110% of the Federal Aid Urban/Federal Aid Secondary funding in place prior to 1991.

- **Key Assumptions:** EDCTC will continue to receive RSTP funds in a manner consistent with historical apportionments
- **El Dorado County 2010-2030 Program Level:** $48.0 Million

Highway Bridge Program (HBP)

The intent of the Highway Bridge Program is to rehabilitate or replace bridges that are unsafe because of structural deficiencies, physical deterioration, or functional obsolescence. Funding is distributed by continuous competitive project selection through Caltrans.

Deficient highway bridges eligible for replacement or rehabilitation must be over waterways, other topographical barriers, other highways, or railroads. HBP funds may be used for:

- The total replacement of a structurally deficient or functionally obsolete highway bridge on any public road with a new facility constructed in the same general traffic corridor
- The rehabilitation that is required to restore the structural integrity of a bridge on any public road, as well as the rehabilitation work necessary to correct major safety (functional) defects
- The replacement of low-water crossings
- Bridge painting and bridge railing replacement

- **Key Assumptions:** EDCTC will continue to receive HBP funds in a manner consistent with historical apportionments
- **El Dorado County 2010-2030 Program Level:** Competitive

Federal Transit Administration (FTA)

- FTA Section 5307 provides operating and capital assistance funds for transit services in urbanized areas by formula. In El Dorado County, only transit service in El Dorado Hills is eligible for these funds. Because the FTA recognizes the overall Sacramento urbanized area as a single unit, Section 5307 funds are distributed to El Dorado Transit via SACOG and Sacramento Regional Transit.
- FTA Section 5310 provides capital expenses that support transportation to meet the special needs of older adults and persons with disabilities.
- FTA Section 5311 provides operating and capital assistance funds for transit services in non-urbanized/rural areas by formula. Caltrans administers this program, with the assistance of regional transportation planning agencies.
- FTA Section 5317 provides additional tools to overcome existing barriers facing Americans with disabilities seeking integration into the work force and full participation in society.

State Funding

State funding also comes largely from the fuel tax, though recent changes in law now provide for some contribution from the state sales tax on motor fuel. State funds are combined with funding from various federal programs through the biennial State Transportation Improvement Program programming process and apportioned to the state highway system projects, and other projects throughout the state formulaically based on the geographic distribution of population and lane miles.

State Programs of Interest to El Dorado County

State Transportation Improvement Project (STIP)

The STIP is a five-year multimodal program which is funded through the State Highway Account and other sources. All STIP projects must be capital projects (including project development costs) needed to improve transportation. These projects generally include, but are not limited to, improving state highways, local roads, public transit, intercity rail, pedestrian and bicycle facilities, grade separations, transportation system management, transportation demand management, sound walls, intermodal facilities and safety.

STIP funding is split into two programs, 25% to the Interregional Transportation Improvement Program (ITIP) for projects nominated by Caltrans, and 75% to County Shares for the State's 58 counties for projects nominated in each county's Regional Transportation Improvement Program (RTIP). The overall STIP is

adopted by the California Transportation Commission, which can accept or reject each RTIP and ITIP in its entirety.

- **Key Assumptions:** ITIP will continue to receive 25% and RTIP will continue to receive 75% of the total STIP allocations from the Highway Trust Fund, State Highway Account, Public Transportation Account, and the new excise tax on gasoline. This includes adjustments resulting from ABX8 6 and ABX8 9 (Gas Tax Swap) and including STIP receipt of 44% of the revenues generated by the new excise tax on gasoline following transfers for bond debt service.
- **El Dorado County 2010-2030 Program Level:** $142.7 Million

State Highway Operations and Protection Program (SHOPP)

The SHOPP is a ten-year program developed by Caltrans for the expenditure of transportation funds for major capital improvements that are necessary to preserve and protect the state highway system. Projects included in the SHOPP are limited to capital improvements relative to maintenance, safety, and rehabilitation of state highways and bridges which do not add capacity to the system.

- **Key Assumptions:** Based on transfers from the State Highway Account, Federal Trust Fund, and the new excise tax on gasoline. Includes adjustments resulting from ABX8 6 and ABX8 9 (Gas Tax Swap) including 12% of the revenues generated by the new excise tax on gasoline following transfers for bond debt service.
- **El Dorado County 2010-2030 Program Level:** $318.7 Million

State Transit Assistance (STA) Fund

In addition to the LTF, the Transportation Development Act of 1971 also established a program of direct subvention for transit services through state generated funding, known as the Public Transportation Account. Funds are allocated through the annual state budget. Distribution is calculated by the State Controller and administered by the regional transportation planning agency. Funds are distributed under Section 99313 of the Public Utilities Code based on population, and under Section 99314 based on the fares generated by the various transit operators.

- **Key Assumptions:** STA will receive $400 (Statewide) million for the remainder of FY2010 and FY2011. The STA will receive an infusion of Non-Article XIX revenues in FY2012 and FY2013. In 2011-12 and thereafter, 75% of diesel sales tax revenues will be transferred from the PTA to STA.
- **El Dorado County 2010-2030 Program Level:** $25.9 Million

State Highway Maintenance

State Highway Maintenance provides funding to support maintenance efforts on the state highways and roadways.

- **Key Assumptions:** State Highway Maintenance will continue to receive transfers from the State Highway Account at an escalating rate indexed to inflation.
- **El Dorado County 2010-2030 Program Level:** $159.1 Million

Prior to the passage of MAP-21, non-motorized transportation was funded in the state through a suite of programs that included State Safe Routes to School, Bicycle Transportation Account, and the Recreational Trails Program. MAP-21 collapsed those programs into single funding program called the Transportation Alternatives Program or TAP. Federal TAP funding was allocated through MAP-21 to individual states, and on September 26, 2013, Governor Brown signed legislation creating the Active Transportation Program (ATP) in the Department of Transportation (Senate Bill 99, Chapter 359 and Assembly Bill 101, Chapter 354). The ATP consolidates existing federal and state transportation programs, including the Transportation Alternatives Program (TAP), Bicycle Transportation Account (BTA), and State Safe Routes to School (SR2S), into a single program with a focus to make California a national leader in active transportation. The ATP is administered by the Division of Local Assistance, Office of Active Transportation and Special Programs.

The advantage of the publicly funded projects is that they can be built on a set timeline based on available funding and span multiple property or jurisdictions. The widening for new class 2 bicycle lanes, sidewalk improvements through the entire historic district in Diamond Springs or the extension of the El Dorado Trail are all of the types of projects that would best be tackled by one of the public agencies.

The challenge with public funding projects is that they are dependent on the project competing well for local, regional, State, or Federal grants or qualifying for some sort of financing district, tax or bond program. As listed above there are many funding sources currently geared towards the implementation of active transportation projects that support the livability goals expressed by the community. The Transportation Community Plan is a critical piece in being competitive for these various public funding sources.

Maintenance Activities

The final and often overlooked implementation strategy is to utilize ongoing roadway maintenance activities to construct some of the smaller active transportation improvements. Pavement management programs that include overlays, slurry seals, or refreshing of striping can be great ways to implement Class II Bicycle Lanes if there is enough existing pavement or at a minimum Class III Bicycle Routes. These projects add minimal cost to the ongoing maintenance activities and can provide needed active transportation facilities.

The advantage to utilizing existing maintenance activities is that the projects can be implemented ahead of many of the available funding cycles for public financing and can also be constructed at a lower overall cost. Many of the items such as slurry seals and striping would be done regardless of the improvement projects.

The biggest challenge with the implementation of projects from the Community Transportation Plan relate to the coordination and design of the new facilities between the maintenance groups and the planning and design groups. Unless there is a process in place for the maintenance staff at the local, regional, or state-agency responsible, such as Caltrans or El Dorado County, to stay abreast of long range planning many of these projects get overlooked until the after the maintenance is completed and the community questions why the facilities were not upgraded. The Community Transportation Plan is the first step in identifying these opportunities for co-benefit. It will be up to the agency staff and a vocal community to seek these opportunities within the annual roadway maintenance program.

An example of the lost opportunity was expressed by the stakeholders when needed Caltrans drainage improvements were completed along Pleasant Valley Road (SR49) near Koki Lane without regard for pedestrian and bicycles. With some forethought, planning and communication the drainage project could have been modified with regards to the community goals to provide better pedestrian access for the school children.

Cost Estimates

Preliminary cost estimates for the various network improvements were prepared following Caltrans' Project Development Procedure Manual and are summarized below:

Bicycle Network Improvements			
Segment	**Location**	**Type of Facility**	**Planning Estimate**
El Dorado Trail[1][2]	Missouri Flat Rd to Pleasant Valley Rd	Class I	$1,934,000
Blanchard Rd	Mother Lode Rd to Forni Rd	Class II	$1,039,000
Mother Lode Rd	Missouri Flat Rd to El Dorado Rd	Class II	$2,144,000
El Dorado Rd	Missouri Flat Rd to Pleasant Valley Rd	Class II	$3,426,000
Pleasant Valley Rd	Carlson Way to Mother Lode Dr	Class II	$4,575,000
Missouri Flat Rd	Diamond Springs Pkwy to Pleasant Valley Rd	Class II	$752,000
Forni Rd	Missouri Flat Rd to Pleasant Valley Rd	Class III	$7,000
Lindberg Ave	Mother Lode Rd to Forni Rd	Class III	$3,000
Enterprise Dr	Forni Rd to Missouri Flat Rd	Class III	$3,000
Union Mine Connector[3]	Pleasant Valley Rd to Faith Lane	Class II	$3,669,000
Koki Ln	Pleasant Valley Rd to Union Mine Rd	Class III	$3,000
Tullis Mine Rd[2]	Pleasant Valley Rd to Justine Ave	Class I	$472,000
Pleasant Valley Rd[2]	Missouri Flat Rd to Forni Rd	Class I	$1,300,000

(1) Does not include crossing of Missouri Flat Road
(2) Included as Pedestrian Improvement
(3) Bicycle Lane Improvements Only

Pedestrian Network Improvements			
Segment	**Location**	**Type of Facility**	**Planning Estimate**
Pleasant Valley Rd	Carlson Way to Missouri Flat Rd	Sidewalk	$601,000
Pleasant Valley Rd	Oriental St to Forni Rd	Sidewalk	$328,000
Missouri Flat Rd	Diamond Springs Pkwy to Pleasant Valley Rd	Sidewalk	$929,000
El Dorado Trail(1)(2)	Missouri Flat Rd to Pleasant Valley Rd	Class I	---(2)
Koki Ln	Pleasant Valley Rd to Union Mine Rd	Sidewalk	$929,000
Union Mine Connector(3)	Pleasant Valley Rd to Union Mine Rd	Sidewalk	$3,413,000
Pleasant Valley Rd(2)	Missouri Flat Rd to Forni	Class I	---(2)
Tullis Mine Rd(2)	Pleasant Valley Rd to Justine Rd	Class I	---(2)
(1) Does not include crossing of Missouri Flat Road (2) Included as Bicycle Improvement (See Bicycle Improvements for Cost) (3) Sidewalk Improvements Only			

Roadway Network Improvements			
Segment	**Location**	**Type of Facility**	**Planning Estimate**
Union Mine Connector(1)	Pleasant Valley Rd to Union Mine Rd	Connector	$5,525,000
Diamond Springs Connector(1)	Diamond Rd to Pleasant Valley Road	Connector	$1,857,000
(1) Roadway Improvements Only			

These estimates are to be considered as an approximate "order of magnitude" for each network improvement and actual costs will vary depending on project-specific design constraints, cultural or biological environmental requirements, and the economic conditions at the time of construction. They are appropriate for the scope and size of the Community Transportation Plan but will require further refinement during environmental approval and design. Broad assumptions were made for each project on a linear foot basis without specific design issues being identified or resolved (i.e. necessary structures, property impacts, grading, etc.).

For each improvement, construction items such as asphalt concrete, aggregate base, and roadway excavation were approximated on a linear foot basis. These linear-foot costs were summarized into a subtotal of construction material costs, to which Caltrans' standard percentages for a planning-level estimate were added including minor items (10% of the material cost), roadway mobilization (10%), supplemental work (10%) and contingencies (20%) giving a total project capital outlay cost.

To better assist with the planning efforts of El Dorado County, project initiation and design costs have been included with the estimates to better reflect the actual cost for each improvement. Environmental approval for each project will vary greatly depending on the location and impacts of each network improvement, and could range in CEQA review from categorical exemptions (CE) to Environmental Impact Reports (EIR). The resulting costs could range anywhere from 10% - 30% (or greater) of the project capital

outlay cost. For the purpose of the planning level cost estimate, 20% of the project capital outlay cost is assumed to be an average cost for environmental review. Once environmental clearance for a project is secured, design costs are generally assumed to be 10% of the total project capital outlay cost.

The scope of the Community Transportation Plan does not include detailed property and legal research or analysis of property records such as obtaining or reviewing title reports, recorded deeds, easements, and maps necessary to clearly establish ownership and rights pertaining to transportation infrastructure improvements. Therefore, right-of-way costs are not included in the cost estimates but would be part of future work should a decision be made to proceed with a project.

It is important to note that the costs portrayed in the above tables reflect the individual cost for each roadway element and not necessarily the total project cost. For example, the Union Mine Connector appears three times as a roadway, bicycle and pedestrian improvement. This reflects the cost to construct the travel lanes, bike lanes, and sidewalks respectively.

Prioritization

At the public workshop, the attendees were asked to complete a prioritization exercise that ranked the ten pedestrian improvements and fourteen bicycle projects in order for highest to lowest as well as preference for treatments in the historic districts. With a relatively small sample size the results should not be taken to represent the desires of the whole community, but there is valuable insight into the preference moving forward with key projects:

Pedestrian Improvements (from highest ranked priority to lowest ranked priority):

- P9 -Pleasant Valley Rd (SR49) - Shared use path
- P5 - Missouri Flat Rd- Sidewalk
- P3 - Pleasant Valley Rd (SR49) - Sidewalk (Carlson Way to Missouri Flat Rd)
- P2 - Missouri Flat Rd (Gap Closures)- Sidewalk
- P6 - El Dorado Trail – Share use path
- P4 - Pleasant Valley Rd (SR 49) - Sidewalk (Oriental St to Forni Rd)
- P8 - Union Mine Connector- Sidewalk
- P7 - Koki Ln- Sidewalk
- P1 - Diamond Springs Pkwy- Sidewalk
- P10 - Tullis Mine Rd- Shared Use Path

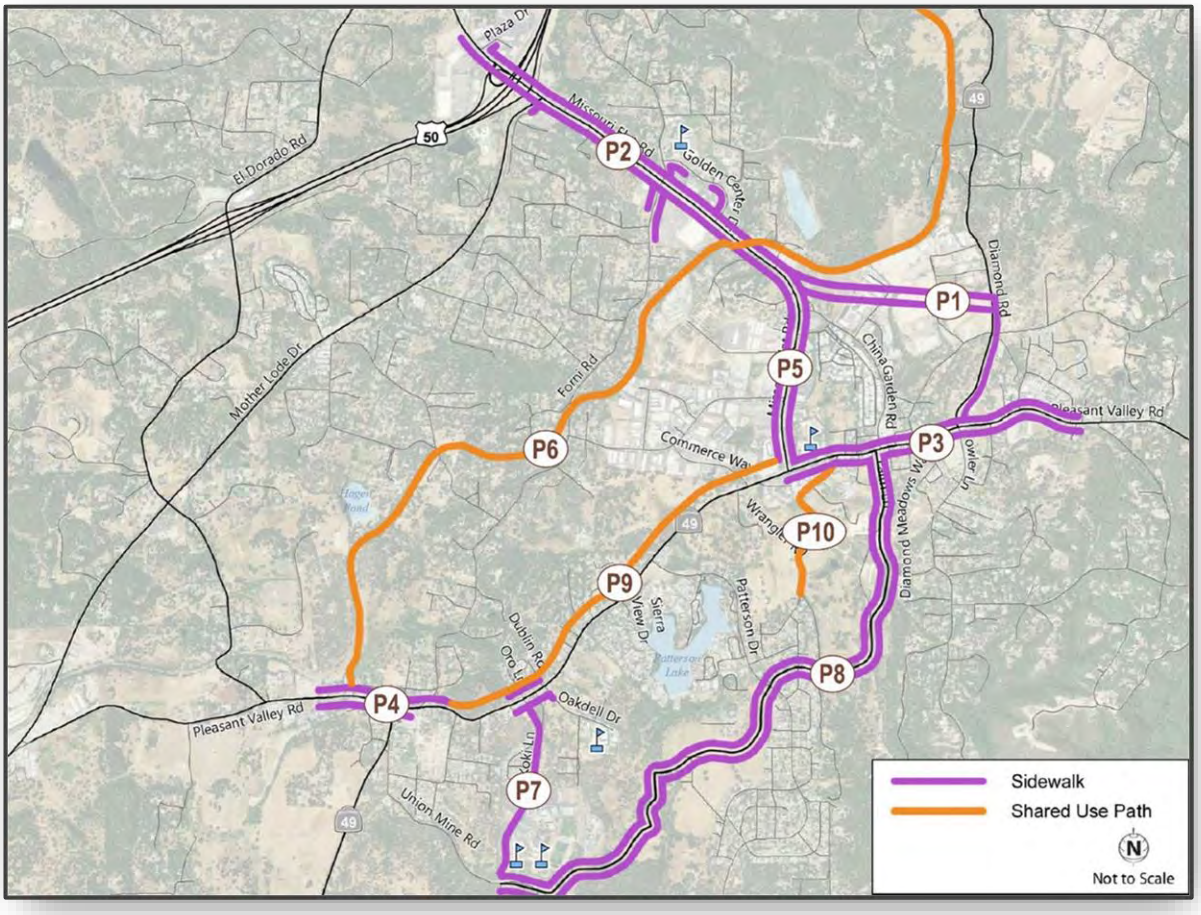


Figure 26 - Pedestrian Prioritization Map

Bicycle Improvements (from highest ranked priority to lowest ranked priority):

- B14 - Pleasant Valley Rd (SR 49) - Class I Bike Path
- B2 - Extending the El Dorado trail
- B7 - Missouri Flat Rd- Class II Bike Lane
- B6 - Pleasant Valley Rd (SR 49) - Class II Bike Lane
- B11 - Union Mine Connector- class II bike lane
- B5 - El Dorado Rd- class II bike lane
- B4 - Mother Lode Rd- Class II Bike Lane
- B3 - Blanchard Rd- Class II Bike Lane
- B1 - Diamond Springs Parkway
- B12 - Koki Ln- Class III bike route
- B8 - Forni Rd- Class III Bike route
- B9 - Lindberg Ave- Class III Bike route
- B10 - Enterprise Dr- Class III Bike route
- B13 - Tullis Mine Rd- Class I Bike Path

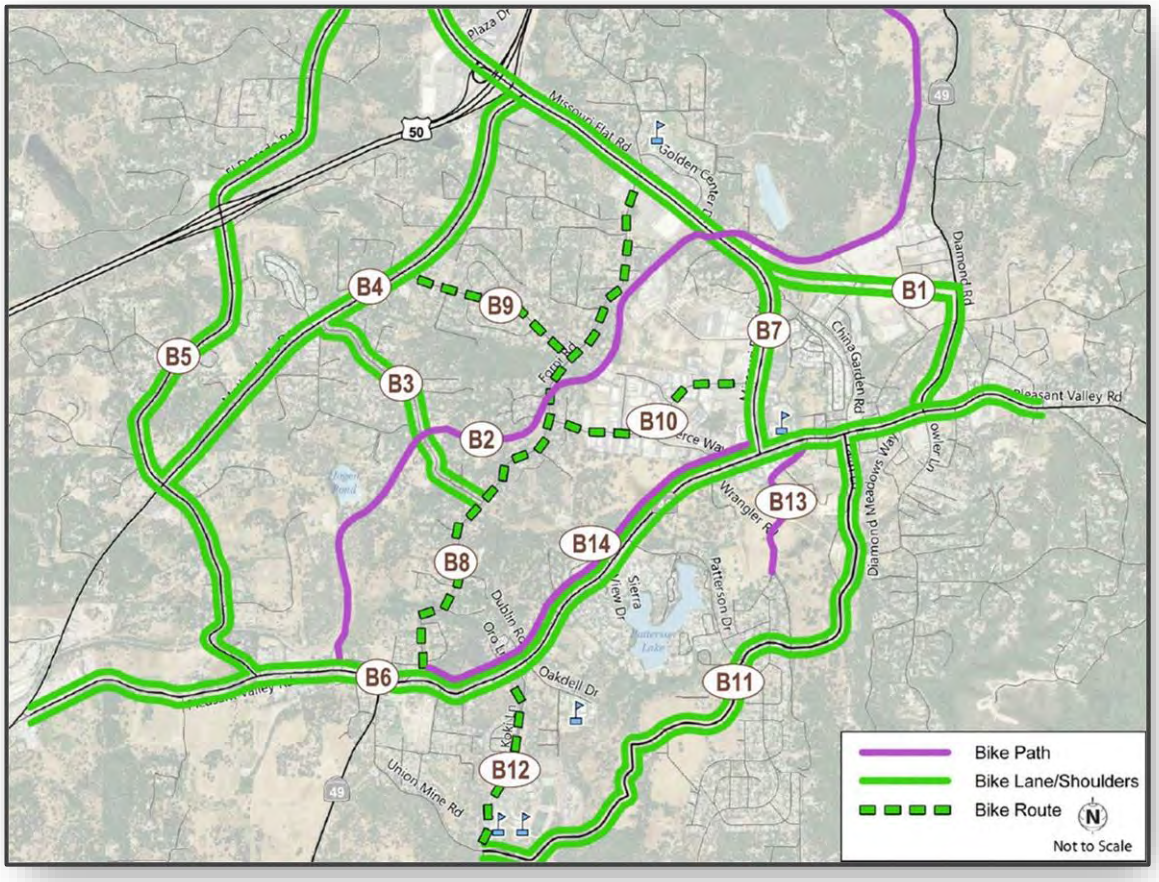


Figure 27 - Bicycle Prioritization Map

There was parity in the surveys for the bicycle and pedestrian improvements with complementary projects at the top and bottom of both lists which demonstrates where the highest current need for active transportation improvements is.

The highest ranked project on both lists was the Class I Path that paralleled Pleasant Valley Road connecting Diamond Springs to El Dorado. Due to the relatively high speeds on SR 49 and lack of shoulders this project meets the needs for school aged children to be able to walk and ride separated from the automobile traffic connecting both the neighborhoods to the north off of Forni Road and to the south around Patterson Lake. The evidence of ad-hoc walking paths in the existing slopes in this region and numerous comments from the public about safe routes to school highlights the immediate need for this project. The challenges of implementing this project will be dependent on the ability of the state to acquire right of way on either the north or south side of Pleasant Valley Road (SR 49), along with maintaining existing intersections, driveways and drainage facilities.

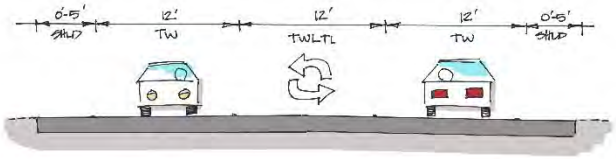


Figure 29 - Missouri Flat "Before" Cross Section

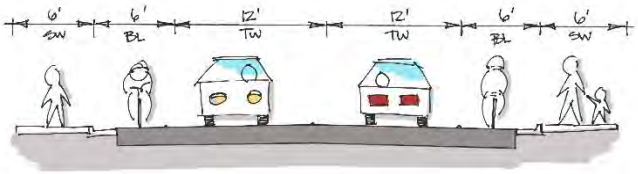


Figure 28 - Missouri Flat Road "After" Cross Section

The next highest ranked projects related to complete streets improvements in Diamond Springs on both Pleasant Valley Road (SR 49) and the southern section of Missouri Flat Road. Making the historic downtown area more walkable and bikeable has the potential to boost economic development and create a destination. These improvements can be phased in many different ways as funding becomes available keeping in mind logical termini and independent utility as the project phasing is defined.

This prioritization for sidewalks was also demonstrated in the cross section exercise for Pleasant Valley Road (SR 49) through the oldest part of historic Diamond Springs. The community members were asked to comment on three cross section that provide two out three amenities which include enhanced sidewalks, Class II Bicycle Lanes and on street parallel parking. Although the voting was split between two alternatives, both alternatives included the enhanced sidewalk that would allow people to park once and walk from shop to shop. As discussed previously in Chapter 6, on-street parking could be implemented with the enhanced sidewalk in the near term until off-street parking is organized with a goal to implement Class II Bicycle lanes long term as the demand for cycling grows.

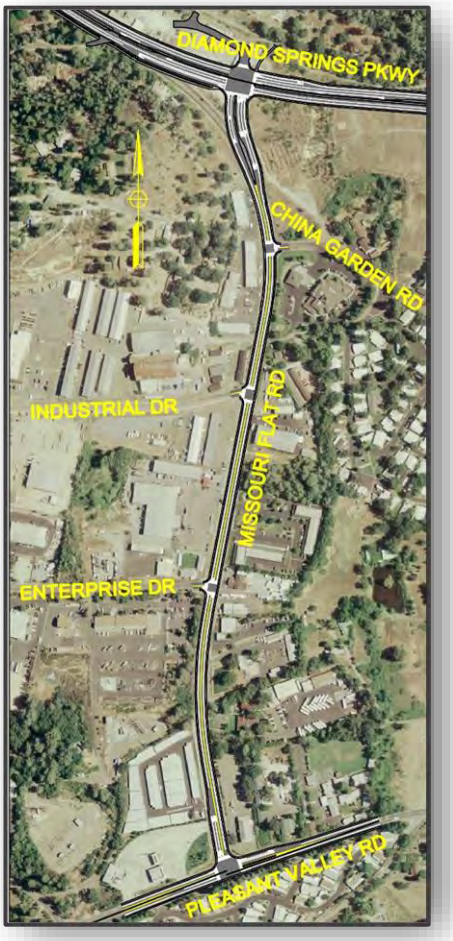


Figure 30 - Missouri Flat Rendering

Missouri Flat Road

The extension of the El Dorado Trail between Missouri Flat Road and the El Dorado Railroad Park at Oriental Way was ranked number 2 out of 14 in the Bicycle Prioritization and number 5 out of 10 in the Pedestrian Prioritization. The

community has experienced the amenity of the first phase of the El Dorado Trail to the east of Missouri Flat Road that they see direct benefit for mobility, access to schools and shopping, and community health of extending it further to the west. To implement the Class I Path within the existing SPTC JPA it will involve addition study in order to determine whether the Class I Bicycle Path can coexist as a rails-with-trails project or supersede the rail in that portion of the corridor. There were many stakeholders that expressed the desire to keep the historic rail in the corridor.

There were a number of projects within the prioritization exercises that ranked in the middle of list. These projects include many of the neighborhood connecting Class II Bicycle lanes as well as the Union Mine Connector. It can be derived from this position in the list that there isn't an immediate need for these improvements which may change as other projects are built. For instance, once the El Dorado Trail is extended, the bike facilities on Lindberg Ave and Blanchard Road will have a higher prioritization for the residences. Likewise as the residential development starts to occur south of Pleasant Valley Road (SR 49), having a good safe route to school such as the Union Mine Connector will become a priority.

A few of the projects ranked consistently low that include the Tullis Mine Road shared use path, enhancements to Koki Lane and many of the Class III bicycle routes. The low rankings could be interpreted as the community valuing better projects with increased safety such as the dedicated bike lanes or bike paths or projects that provide a higher level of access than Tullis Mine Road. Even though these project were seen less valuable by the community they should still be considered as part of the complete network described in the document. As discussed in the preceding implementation section, the Class III Bicycle Routes can be very inexpensive to construct and do provide a high benefit to cost ratio.

The most publicly polarizing issue discussed with the stakeholders and at the public workshop was the treatment of the intersection at Pleasant Valley Road and SR 49 in El Dorado. As discussed in the traffic analysis this intersection will experience a level of service below the County threshold for acceptability. It is estimated that during the peak hour the traffic delays would grow from three minutes today to over ten minutes in the 2035 model. As has been stated previously, the El Dorado General Plan has exempted this intersection from meeting the LOS threshold. This means that the community can choose to accept the congestion and retain the rural character of the existing stop controlled intersection. If at some point in the future the community decides to improve traffic flow through El Dorado, the Community Transportation Plan has analyzed two scenarios that include a new signalized intersection and a modern roundabout designed to accommodate large truck traffic. Of the two scenarios, the roundabout was preferred to the traffic signal; but both were outvoted to keep the existing stop control. Regardless of the intersection control it will be important to upgrade the bicycle lanes and pedestrian facilities including high visibility cross walks at the intersection to activate both sides of the main street in El Dorado.

As with any long range planning process the assumptions and inputs used to create the recommendations change over time. The Community Transportation Plan should act as a roadmap to implement transportation improvements in the community area but be adjusted to the realities of day and not

followed absolutely. It will be important to find strategic partners in the community with common values to work towards the goals outlined in the Plan to create a better place to live, work, play and go to school.

(This page intentionally left blank)

APPENDICES

A – Outreach List

B – Public Comments

Appendix A – Outreach List

Diamond Springs and El Dorado Area
Mobility and Livable Community Plan
SAC Member Database

Stakeholder Interest / Organization	First Name	Last Name	Email	Phone #
2 B Free Bail Bonds				
Allez - Good Food on The Go	Jennifer	Masse		
American Cycling Publications				
Annabelle's Chocolate Lounge				
Artifact Ink				
AT&T	Barbara	Winn		
AvaJade Salon and Spa				
Basically Beads				
Bennett Gallery				
Big Horn Gunshop				
Books N Bears	Everett	Smith		
BOS	Kathy	Witherow		
Butterfly Massage Therapy	Janice	Dubovsky		
California Highway Patrol	Quinn	Cuthbertson		
California Highway Patrol	John	Mueller		
California Trucking Association	Eric	Sauer		
Capital Sierra Insurance Services	Lael	Lorenger		
Comfort Control Heating and Air Conditioning				
Community Economic Development Advisory Committee (CEDAC)	Mike	Ranalli		
D&D Supply				
David MacEntyre, DDS				
Developer - Region Builders	Joshua	Wood		
Diamond Dorado Retail Center (DDRC)	Leonard	Grado		
Diamond Dorado Retail Center (DDRC)	Michelle	Smira		
Diamond Springs Dental Center	Walter L	Ehrlich		
Diamond Springs Dental Center				

Diamond Springs and El Dorado Area
Mobility and Livable Community Plan
SAC Member Database

Stakeholder Interest / Organization	First Name	Last Name	Email	Phone #
Diamond Springs Mobility				
Diamond Springs/El Dorado Fire Protection Systems, Station 49				
Diamond Springs-El Dorado Community Advisory Committee	Kathy	McCoy		
Diamond Springs-El Dorado Community Advisory Committee	Erik	Peterson		
Diamond Springs-El Dorado Fire Protection District	Scott	Thorne		
Dirty Dog Pet Salon	Maryanna Louise	Medina		
Downtown Diamond Springs	Bruce	Wirtanen		
DS Business	Glenda	Dickson		
DS-ED CAC	Dale	Pierce		
Eagle Truck and Auto Service Center				
Economic Development Advisory Committee	Noah	Briel		
Edward Jones	Carl	Hillendahl		
El Dorado Arts Council	Cara	Hutchinson		
El Dorado Builders Exchange	Renee	Hargrove		
El Dorado Citizens for Smart Growth	Jamie	Beutler		
El Dorado City	Natalie	Porter		
El Dorado Community Church	Timothy	Bordges		
El Dorado Community Hall	Mike	Speegle		
El Dorado County	Shawna	Purvines		
El Dorado County	Roger	Trout		
El Dorado County	Claudia	Wade		
El Dorado County Chamber of Commerce	Laurel	Brent-Bumb		
El Dorado County DOT	Matt	Smeltzer		
El Dorado County Historical Society & Friends of Diamond Springs-El Dorado	Kris	Payne		
El Dorado County Mental Health	Ren	Scammon		
El Dorado County Office of Education	Kathy	Daniels		

Diamond Springs and El Dorado Area
Mobility and Livable Community Plan
SAC Member Database

Stakeholder Interest / Organization	First Name	Last Name	Email	Phone #
El Dorado County Parks and Recreation Commission	Bob	Smart		
El Dorado County Trails Advisory Committee	Randy	Hackbarth		
El Dorado County Trails Advisory Committee & Placerville Mobility Support Group	Lynn	Murray		
El Dorado County Youth Commission	Lisa	Boyle		
El Dorado Fire Safe Council	Chrystie	Davis		
El Dorado Fire Safe Council	Cari	Dewolf		
El Dorado Irrigation District	Elizabeth	Wells		
El Dorado Transit	Mindy	Jackson		
El Dorado Union High School District	Dennis	Vanderpool		
El Dorado Winery Association	Betty	McIntyre		
Elite Control, Inc	N	Ashwill		
Fairplay Winery Association	David	Pratt		
Farm Trails	Wendell	Smith		
Fastener Depot	N	Ashwill		
Fire Dawg Coffee				
Folsom Lake College - El Dorado Center	Dale	Van Dam		
Folsom Lake College - El Dorado Center	Sydney	Wetterstrom		
Folsom Lake College Associated Student Government	Will	Dyas		
Foothill Asoociation	Ed	Armstrong		
Foothill Orthodontics				
Friends of the El Dorado Trail	Carl	Drake		
Friends of the El Dorado Trail	Jackie	Neau		
Galley El Dorado	Donna	Aguiar		
Gold County Retirement Center	Jim	Irby		
Group Activity Club for EDC	Manuel	Martinez		
Guts MX Seats	Jessie	Gregg		

Diamond Springs and El Dorado Area
Mobility and Livable Community Plan
SAC Member Database

Stakeholder Interest / Organization	First Name	Last Name	Email	Phone #
Hair Affair				
Hartwick House Antiques	James	Fischer		
Hodnett Insurance Services				
Jordan's Closet				
Lake Oaks Mobile Home Community Association (Patterson Lake)	Sharon	Ligon		
Land Owner	Donovan	Oakleaf		
Legacy Chiller Systems				
Lord's Gym				
Maverick Insulation	Tamara	Chilcott		
Missouri Flat Pet Clinic				
Missouri Flat Storage Depot				
Mother Lode Union School District	Andy	Peters		
Mother Lode USD	Marcy	Guthrie		
Mother Lode USD	John	Nordquist		
No Gridlock Committee	Bill	Center		
Now, Inc.				
P.I.C.O (Preserve Indian Creek Oaks)	Richard	Boylan		
Pacific Cylinders				
Patterson Development	Larry/Kathy	Patterson		
Perfecto Label Co	Paul	Chavez		
Performance Cycle				
PG&E	Marty	Naper		
PG&E	Brian	Sweeney		
Placerville Fruit Growers Assoc.				
Preventive Dental Care				
Pride Realty	Ellen	Day		

Diamond Springs and El Dorado Area
Mobility and Livable Community Plan
SAC Member Database

Stakeholder Interest / Organization	First Name	Last Name	Email	Phone #
R.E.D. Real Estate and Development				
Resident	Deanne	Johnson		
Resident	Carol	Louis		
Resident	Errnie	Louis		
Resident	Martin/Diane	Murillo		
Resident	Kathy	Newell		
Resident	Ken	Purcell		
Resident	Patti	Rebter		
Resident	Stan/June	Stailey		
Resident	George	Turnboo		
Resident	Eric	Wetterstrom		
Resident	Monique	Wilber		
Resident	Shelley	Wiley		
Residents Involved In Positive Planning, Inc. (R.I.P.P.)	Laurel	Stroud		
Rexel USA				
Rim Rock Water Co.				
Robinsons Automotive	Roy	Amburgey		
S.A.G.E (Surveyors, Architects, Geologists, and Engineers of El Dorado County)	Randy	Pesses		
Sandidge Fine Art Gallery				
Save Our County	Kathleen	Newell		
Save Our County	Sue	Taylor		
Shingle Springs Community Alliance	Lori	Parlin		
Sierra Center For Community Options	Chuck	Wolfe		
Sierra Club Maidu Group	Bob	Johnson		
Sierra Door and Supply Co				
Sierra Frameworks				

Diamond Springs and El Dorado Area
Mobility and Livable Community Plan
SAC Member Database

Stakeholder Interest / Organization	First Name	Last Name	Email	Phone #
Sierra Monument				
Spot-On Sign and Graphics				
Stelzmiller Brokerage - Diamond Springs	John	Stelzmiller		
Stonehenge Springs	Brian	Allen		
Stonehenge Springs	Kevin	Sweeney		
Tax and Debt Solutions				
Taxpayers Association of El Dorado County	Bernard	Carlson		
The Clipper				
The Computer Guy				
The El Dorado County Commission on Aging	Roger	Berger		
The Hair Design				
The Pool Place				
Tool Depot				
Total Access Data Recovery				
Tower Mart				
Upholstery Plus				
Uppity Pup Boarding Kennel				
Windfall - Newspaper	Robert & Tina	Henderson		

*Note: Email Addresses and phone numbers removed for privacy reasons

Appendix B – Public Comments

Committee Members
Deanne Johnson
Kathy McCoy
Larry Patterson
Erik Peterson
Dale Pierce
Bob Smart
Greg Webb

DIAMOND SPRINGS AND EL DORADO
COMMUNITY ADVISORY COMMITTEE
February 22, 2014

Sharon Scherzinger, Executive Director
El Dorado Transportation Commission
2828 Easy Street, Suite 1
Placerville, CA 95667

Ciara Zanze
Project Coordinator
2523 J Street Suite 202
Sacramento, CA 95816
(916) 442-1168 Office
www.aimconsultingco.com.

Subject: Diamond Springs and El Dorado Area Mobility and Livable Community Plan

The Diamond Springs-El Dorado Advisory Committee has the following charter: The Committee shall review and make recommendations to staff, Zoning Administrator, Planning Commission, and the Board of Supervisors regarding the following in the area of responsibility: 1) Discretionary project applications; 2) Implementation of the 2004 General Plan land use designations; 3) The Zoning Ordinance update; 4) Design Guidelines; and 5) Other issues as directed the Board of Supervisors.

At our February 20, 2014 meeting we unanimously agreed with the following: Our committee recognizes the Diamond Springs and El Dorado Mobility and Livable Community Plan is not a specific recommendation but rather a menu of opportunities. We advise that the study purpose is to provide planning for transportation improvements. It is ultimately the choice of the business owners and residents of the El Dorado Diamond community to take advantage of the economic opportunities those improvements offer to expand and enhance the economic well being of our community.

Further, we recommend the Historic Design Guidelines be incorporated to the extent possible within the portions of the Highway 49 corridor lying in the proposed Historic Zoning Overlay.

We appreciate the efforts of your commission in developing a plan that will be very helpful in the future of the Diamond Springs-El Dorado community region

Sincerely,
/s/*Robert A. Smart, Jr.*

Robert A. Smart, Jr.
Chairperson
cc: Brian Veerkamp, Supervisor District III

Response:
EDCTC will coordinate with Caltrans and El Dorado County on incorporating the Historic Design Guidelines to the extent possible within the portions of the State Route 49 corridor lying in the proposed Historic Zoning Overlay. Thank you for participating in the Stakeholder Advisory Committee meetings and providing comments on the study. Your comments will be included in the final plan.

From: Donna Aguiar
Sent: Tuesday, February 25, 2014 3:49 PM
To: Dan Bolster
Subject: Mobility Community Plan

Hello Dan,

Nice to have met and spent some meaningful time with you folks last week.

Regarding Historic El Dorado :

High Priority: (page 39-40)
Location: PV RD/Highway 49...Historic El Dorado.
Improve traffic congestion immediately with a left turn lane from PVRD onto Highway 49. Can the empty lot on the corner be purchased by the county?
Improve pedestrian safety with attached or detached sidewalks (balancing with consideration to parking availability).
Enhanced Crosswalks.
Organized Parking. Important issue which must be taken into consideration when reviewing the 3 options offered to improve traffic flow. Roundabout is an interesting concept if it accommodates all vehicles (trucks??) and does not overwhelm the small narrow Pleasant Valley Rd., allows for additional parking somewhere else and (very important) enhances the historic downtown element.

Response:
For both Diamond Springs and El Dorado the Plan recommends more detailed parking studies be completed when improvements to the historic downtown areas are being designed to maximize access, parking and walkability. Any improvements to the SR 49 intersection in El Dorado, including a roundabout, would be designed to Caltrans standards and accommodate the appropriate design vehicle (ie trucks, emergency response, and recreational vehicles).

Low Priority: (page 40)
El Dorado Connector (for obvious reasons...projected 300 car count)
Bike lanes through El Dorado - Bikers should be encouraged to use The El Dorado Trail. Parking availability as well as pedestrian safety definitely trumps bike lanes, especially when there is a bike path less than 60 yards away from and tracks the main thoroughfare through town.

Attention should be given to North St and South St. (both of which connect to Pleasant Valley Rd.) North St. connects directly with Highway 49 as well. These would be great walking/biking additions. They both parallel PV Rd. tracking the main part of town and really are sort of "quaint". ..and are rarely used by vehicles.

Response:
Thank you for the comments regarding parallel routes such as the El Dorado Trail, North Street and South Street. It is important that a robust network on interconnected streets, paths and walkways are part of any community plan to maximize mobility and access of all types of users.

Other comments: (page 50-51)
Back in Parking appears to have the effect of slowing traffic in both direction...???
Deep concern with regard to the roundabout limiting the access to adjacent businesses (both parking as well as walk in traffic).
Suggest more detail with regard to the roundabout...certainly the most interesting concept...worth exploring in detail.
Sidewalks most important and seemingly the most effective resource to improve pedestrian safety as well as improve access to businesses.
Pedestrian safety is alarmingly at risk (and has been over the past 10 years).
Diamond Springs Connector seems to make sense as a continuation of the Missouri Flat Connector based on traffic counts both current and projected.
Is there a proposed area for additional parking in the downtown?

Response:
"The overall goal of the study is to improve mobility and access for all users within the region by creating multi-modal transportation links between residential neighborhoods, commercial districts and the historic downtown districts of El Dorado and Diamond Springs that are consistent with the Diamond Springs and El Dorado Community Values adopted by the Diamond Springs Community Advisory Committee on June 20, 2013, which include preserving the rural character and cultural history of the area" (Page 9, Final Plan).

"It is the strong recommendation of the Community Transportation Plan that the intersection of Pleasant Valley Road and State Route 49 in El Dorado remain a stop sign controlled intersection into the foreseeable future. The intersection is exempted from LOS requirements in the 2004 El Dorado General Plan and can operate at LOS F without a mandated need to reduce delay and congestion at the intersection. The plan only presents a signalized intersection and a roundabout as two potential future options that could address the significant level of delay and congestion that the traffic analysis has identified will exist in 2035. A signalized intersection or roundabout are future options that would only be considered if the expected future delay and congestion impacts the ability of local and regional travelers to safely and efficiently travel through the intersection to such a degree that the local community, El Dorado County, and Caltrans decide that there is a reason to change the existing stop sign controlled intersection" (Page 79, Final Plan).

Thank you for your consideration.

Donna Almquist Aguiar
Gallery El Dorado

Response:
Thank you for providing comments on the study. Your comments will be included in the final plan.

From: RichardBoylanPhD
Sent: Tuesday, February 25, 2014 3:58 PM
To: Dan Bolster
Cc: SupervisorBrianVeerkampDist3- EDC
Subject: Diamond Springs and El Dorado Area Mobility and Livable Community Plan

Dear Mr. Bolster,

Here are my comments on the Diamond Springs and El Dorado Area Mobility and Livable Community Plan.

Overall I want to observe that the Plan, with its setting forth several options for various aspects of transportation and livable community issues, agrees well with the consensus of local residents' desires for their communities.

It should also be noted that the Diamond Springs and El Dorado Area Mobility and Livable Community Plan has the support and approval of the Diamond Springs and El Dorado Community Advisory Committee, the official local planning review body.

The El Dorado County Transportation Commission staff have done a good job of capturing community expressed wishes to retain the rural, historical, and cultural character of the Diamond Springs and El Dorado communities in the outlines of current conditions and the proposed recommendations for our communities.

I have read the plan, all 91 pages, and participated vigorously with EDCTC staff throughout its creation Rather than go into a tedious recitation, page by page, of elements of the Diamond Springs and El Dorado Area Mobility and Livable Community Plan, I have chosen to summarize my overall impressions above.

I will conclude by noting that the menu of choices presented in this plan both provide inspiration and a helpful challenge to local community citizens to take this planning document and translate it into the future shape of our wonderful and unique communities.

Richard Boylan, Ph.D.
Diamond Springs, CA
member, Preserving Indian Creek Oaks, LLC
member: Save Our County

Response:
Thank you for participating in the Stakeholder Advisory Committee meetings and providing comments on the study. Your comments will be included in the final plan.

From: Marti & Claude
Sent: Thursday, February 20, 2014 11:11 AM
To: Ciara Zanze
Subject: Re: Fwd: Diamond Springs and El Dorado Area Mobility and Livable Community Plan - Draft Plan Available Online

---

These comments only pertain to 'downtown' El Dorado.

1. **None of my neighboring businesses on "Main Street" (Pleasant Valley Rd.) in El Dorado have ever been contacted by anyone concerning this boondoggle.**

   Response:
   As part of the Diamond Springs and El Dorado Area Mobility and Livable Community Plan, EDCTC performed the following outreach to businesses, property owners and developers in Diamond Springs and El Dorado:

   - Based upon the map of the Diamond Springs and El Dorado Community Region as defined by the El Dorado County General Plan, the study identified and contacted nine property owners/developers and their representatives to introduce the study to them and to request their involvement in the process.
   - Hosted an initial meeting with the identified property owners/developers to introduce the study and process.
   - Followed up on several occasions with potential property owner/developer representatives to encourage participation in the SAC.
   - Performed an initial drive through of both Downtown areas to identify major streets to focus outreach efforts on.
   - Utilized an on-line property, homeowner database service (ListSource) to identify property information within targeted area.
   - Created a list of businesses in both Diamond Springs and El Dorado.
   - Diamond Springs business outreach – focused on Missouri Flat, Pleasant Valley, Enterprise, Fowler
     - Placed approximately 120 calls to businesses to introduce the plan and ask for email contact
   - El Dorado – focused on Pleasant Valley Road between Oriental and Forni
     - Placed approximately 50 calls to businesses to introduce the plan and ask for email contact
   - Maintained a database of over 75 business email contacts that received notice of each public meeting and study updates.

2. **I don't know what the fascination with round-abouts is. I have spoken with several people in El Dorado and not one person or business wants a round-about!**

Response:
"It is the strong recommendation of the Community Transportation Plan that the intersection of Pleasant Valley Road and State Route 49 in El Dorado remain a stop sign controlled intersection into the foreseeable future. The intersection is exempted from LOS requirements in the 2004 El Dorado General Plan and can operate at LOS F without a mandated need to reduce delay and congestion at the intersection. The plan only presents a signalized intersection and a roundabout as two potential future options that could address the significant level of delay and congestion that the traffic analysis has identified will exist in 2035. A signalized intersection or roundabout are future options that would only be considered if the expected future delay and congestion impacts the ability of local and regional travelers to safely and efficiently travel through the intersection to such a degree that the local community, El Dorado County, and Caltrans decide that there is a reason to change the existing stop sign controlled intersection" (Page 79).

3. **The idea of sacrificing parking spaces for bike lanes is abhorrent. We don't have enough parking now....and there are very few spaces left to put in parking lots.**

Response:
"It is the intent of the plan to preserve existing parking in El Dorado wherever it's practical, while making recommendations that balance improvements to the regional transportation network. There could be a potential conflict with the existing parking stall layout and the proposed Class II Bicycle facilities recommended on Pleasant Valley Road. Diagonal and perpendicular parking is typically not recommended with Class II Bicycle lanes because the view of oncoming bicyclists can be obstructed by adjacent parked cars. A potential solution to this issue would be to re-stripe the stalls to accommodate back-in parking. By having cars back in to the parking stall, visibility and bicycle safety is improved because the driver is directly facing oncoming bicycle traffic when leaving the stall. This solution does require proper signage and an education effort to be implemented, but it has been a successful solution for other downtown districts. More importantly, it maintains the existing depth of the current parking stalls for events like the Farmer's Market. This solution was vetted at the public meeting and was positively received by community members" (Page 74).

4. **Existing parking areas do need upgrading.**

Response:
Comment noted.

5. **Existing sidewalks need repairs and more sidewalks should be constructed.**

Response:
The Community Transportation Plan recommends improving the overall connectivity and safety of the pedestrian environment, including downtown El Dorado (Page 73 and Map Page 72).

From: Bette Lasher
Sent: Tuesday, February 25, 2014 4:05 PM
To: Dan Bolster
Subject: Fw: Diamond Springs & El Dorado Area

Dear Sir:
Regarding the "Diamond Springs El Dorado Area Mobility Livability Community Plan", it appears that someone said that they went door to door and talked to property owners that would be affected. I find it curious as I am a property owner in Diamond Springs, with property facing Highway 49, sort of across from Deb's Frosty, and there has not a soul has come around to see what I thought about what could be planned. It seems as if a bike lane is wished for which is totally ridiculous due to the narrowness of the highway.

Response:
As part of the Diamond Springs and El Dorado Area Mobility and Livable Community Plan, EDCTC performed the following outreach to businesses, property owners and developers in Diamond Springs and El Dorado:

- Based upon the map of the Diamond Springs and El Dorado Community Region as defined by the El Dorado County General Plan, the study identified and contacted nine property owners/developers and their representatives to introduce the study to them and to request their involvement in the process.
- Hosted an initial meeting with the identified property owners/developers to introduce the study and process.
- Followed up on several occasions with potential property owner/developer representatives to encourage participation in the SAC.
- Performed an initial drive through of both Downtown areas to identify major streets to focus outreach efforts on.
- Utilized an on-line property, homeowner database service (ListSource) to identify property information within targeted area.
- Created a list of businesses in both Diamond Springs and El Dorado.
- Diamond Springs business outreach – focused on Missouri Flat, Pleasant Valley, Enterprise, Fowler
    - Placed approximately 120 calls to businesses to introduce the plan and ask for email contact
- El Dorado – focused on Pleasant Valley between Oriental and Forni
    - Placed approximately 50 calls to businesses to introduce the plan and ask for email contact
- Maintained a database of over 75 business email contacts that received notice of each public meeting and study updates.

Network improvements for bicycles were discussed during SAC meeting #4 and Public Meeting #2 and the meeting summaries reflect a mix of comments both in favor of improving bicycle facilities in the study area and comments not in favor of bicycle improvements. Examples of those comments are:

- “The easier it is to ride bikes, walk, ride horses- and the safer it is- the more people will do it! What is more historic, rustic, and rural than people on foot or horses or simple machines (like a bike)? I really like these ideas: thanks for bringing them!” (Public Meeting #2 Summary)
- “This is a very rural community along with an extensive history dating back many years. I just don’t see lots of people recreational or whatever else riding enough to warrant the improvements” (SAC #4 Meeting Summary).
- “Even though people may not be walking and biking now, we need to create a walkable and bikeable community. We have created a situation where no one is able to walk or bike anywhere. We can choose to invest and change this” (SAC #4 Meeting Summary).
- “I am concerned for the demographics in the area, I do not see a lot of people riding their bicycles, we are car centric” (SAC #4 Meeting Summary).

Comment:
This past Thursday I tried to attend the meeting that was said to be held at the fire hall and when I went there at six, the place was closed up and no one was around. Where was the meeting held?

Response:
The monthly meeting of the Diamond Springs and El Dorado Community Advisory Committee was held at 6:00 pm on Thursday, February 20, 2014, at the Diamond Springs Fire Station, 501 Main Street, Diamond Springs, California.

Comment:
This whole process seems to be being done behind closed doors by people that do not live here and for whose benefit? Needless to say, am opposed to this whole process and it needs to be more "open" and the public notified in a better manner.

Bette Lasher
February 25, 2014

Response:
“To best document the specific needs of the region, the Community Transportation plan engaged the public in two main forums. The first forum was the re-establishment of the Stakeholder Advisory Committee (SAC) from the Vision Project which included property owners, neighborhood community organization members, and members from local business groups. The SAC was the primary source for collecting community input from representatives from the different stakeholder groups and disseminated information from the Committee meetings back to their constituencies. In this role they were key in encouraging their neighbors, friends and families to attend the general public meetings and have ownership in the process of shaping their community” (Page 15).

"The second public outreach opportunity was two open forum public meetings. These workshops offered the public at-large an opportunity to learn about the project and provide input on the project's goals, objectives and improvements to the community. It was also an opportunity for the project team to receive additional feedback on the existing conditions in the project area and verify the information that was collected by the SAC" (Page 15).
Specific information about the two public meetings includes:

Community Meeting #1 – April 3, 2013

- A public meeting ad was placed in the Mountain Democrat and published on March 27th
- Workshop notice was distributed to stakeholders and business contact list via email
    - Additional businesses received the flyer via fax or mail if requested
- Meeting notice was posted to the EDCTC website and Facebook page
- Press releases were sent to local and regional media sources, articles and announcements ran in:
    - The Placerville Newswire
    - The Sacramento Bee
    - The Mountain Democrat
- More than 30 community members attended and provided feedback

Community Meeting #2 – January 9, 2014

- A public meeting ad was placed in the Mountain Democrat and published on January 6th and 8th
- Workshop notice was distributed to stakeholders and business contact list via email
    - Additional businesses received the flyer via fax or mail if requested
- Meeting notice was posted to the EDCTC website and Facebook page
- Press releases were sent to local and regional media sources, articles and announcements ran in:
    - The Placerville Newswire
    - The Mountain Democrat
- More than 50 community members attended and provided feedback

In addition to outreach to the public documented above, the study also performed the following outreach to businesses, property owners and developers in Diamond Springs and El Dorado:

- Based upon the map of the Diamond Springs and El Dorado Community Region as defined by the El Dorado County General Plan, the study identified and contacted nine property owners/developers and their representatives to introduce the study to them and to request their involvement in the process.
- Hosted an initial meeting with the identified property owners/developers to introduce the study and process.
- Followed up on several occasions with potential property owner/developer representatives to encourage participation in the SAC.
- Performed an initial drive through of both Downtown areas to identify major streets to focus outreach efforts on.

- Utilized an on -line pr operty, hom eowner dat abase s ervice (ListSource) t o i dentify property information within targeted area.
- Created a list of businesses in both Diamond Springs and El Dorado.
- Diamond Springs business outreach – focused on Missouri Flat, Pleasant Valley, Enterprise, Fowler
    - Placed approximately 120 calls to businesses to introduce the plan and ask for email contact
- El Dorado – focused on Pleasant Valley between Oriental and Forni
    - Placed appr oximately 5 0 c alls t o bus inesses t o i ntroduce t he pl an and as k for email contact
- Maintained a dat abase of over 75 bus iness email contacts that received notice of each public meeting and study updates.

Thank you for pr oviding c omments o n t he study. Y our c omments w ill be i ncluded i n t he final plan.

From: vicki ludwig
Sent: Tuesday, February 25, 2014 9:05 PM
To: Dan Bolster
Subject: My comments: Age friendly?

Mr. Bolster, this is my input on the The Draft Diamond Springs and El Dorado Area Mobility and Livable Community Plan. The current Chair of the El Dorado County Commission on Aging asked me to read the plan and provide my thoughts on it. I am the past Chair of the Commission, currently the appointed by Supervisor Briggs to serve on the Commission. I own a rental house in Diamond Springs. I was in Sacramento today at he the Advisory Aging Councils of California with 30 other statewide members. We exchange informational and learn about the issues facing thegraying citizens of the state.

Using Adobe pdf reader, I searched your document for the words: elderly, aging, aged, seniors, etc. The tools was not of any help in finding information, statements or plans which refer to the 40 % of the residents in El Dorado County who are over 50. So, one the cusp of the deadline I am sending you my comments.

If there is any interest in additional input, I can share my resources on Age Friendly Communities. Or just Google the term it is quite the buzz.

Thank you
Vicki Ludwig M.S.
Retired Boomer

AGE-FRIENDLY COMMUNITY?

"We need to think about this new generation of older adults," says Ruth Finkelstein, ScD, Senior Vice President for Policy and Planning at The New York Academy of Medicine and director of Age-Friendly New York City. "We tend to treat aging as though it were a disease, rather than a stage of life. We need to work with civic leaders to help them understand the many opportunities that arise from the aging of the population."

Individuals are living longer and our county's population is getting older, quickly and permanently. Longevity is wonderful, but it poses a challenge to the towns unprepared to serve — or benefit from — the fast-growing number of older citizens.

This study does not reflect or mention the population growth of the over 50 year olds to the oldest of the old; it has not accounted for the graying of the Diamond Spring-El Dorado communities. The census showed the percentage of school age children 5-18 years old is now less than the percentage for 60 years up. This county and the DS-ED

area has become an aging or retirement community. The non-working adults will not be making as many trips on the roads at peak periods and at peak hours. There will not be as many vehicle trips to and from schools. The youngest Boomers are turning 50 this year.

In a longevity economy, older adults tend to shift their spending away from food and clothing and increase spending on recreation and education. Today's over 50s are internet savvy and will be shopping from home. The needs and wants will be quite different with an economy not centered on raising families. However, the needs and wants of the over 50s to 100+ers will offer other opportunities for business. The income from pensions and Social Security will flow into the local economy and be recirculated. Job creation has a new facet with aging communities.

Across the country, there are movements to create age-friendly communities. How age friendly is Diamond Springs and El Dorado? What makes a community age friendly?

1. Available well maintained sidewalks, available benches, timed traffic lights for pedestrians, availability of parking and well labelled streets. Opportunities for exercise, biking fitness trails.
2. Consistent, scheduled transportation to shopping areas and housing areas, bus stop shelters, accessible buses
3. Mixed use areas with retail. Walkable to get a prescription, a carton of milk, haircut, etc.
4. Housing which is single level, low upkeep, universal design, connect housing with transportation
5. Apply smart growth principles

As an advocate for the aging community in El Dorado County, I want to encourage the committee to read the Community Plan again to consider the plan- is it aging population friendly?

"There is a fountain of youth: it is your mind, your talents, the creativity you bring to your life and the lives of people you love.
When you learn to tap this source, you will truly have defeated age."
— Sophia Loren

Response:
Thank you for providing comments on the study. Your comments will be included in the final plan and were addressed on pages 30, 31, and 59.

DS-ED Plan Comments
Submitted by David Pratt

General Comments:

The exercises and the meeting formats by Aim Consulting were good, but I feel that there were expectations by some in the room that this was going to override personal issues with the general plan. Obviously not true. Part of this problem hinged on the number of stakeholder groups which was too extensive. Then there was not enough consideration given to business owners, property owners and residents that comprise the two vastly different towns in the survey area.

Response:
At the beginning of the study in March 2013, the project team provided a downtown El Dorado business person with the scope, schedule, and goals of the study and the EDCTC Project Manager's name and contact information so that the information could be shared at a meeting of downtown El Dorado Merchants where the study information was handed out to the business owners who attended.

The study understands the importance of communicating with the business community in Diamond Springs and El Dorado. The team performed an initial drive through of both Downtown areas to identify major streets to focus outreach efforts on. Then utilizing an on-line property, homeowner database service (ListSource) property information within targeted area was collected. The outreach team created a list of businesses in both Diamond Springs and El Dorado which focused along Missouri Flat Road, Pleasant Valley Road, Enterprise Drive and Fowler Lane. Approximately 120 calls to the Diamond Springs businesses along with over 50 calls to El Dorado businesses were made to introduce the plan and ask for email contact. The project team maintained a database of over 75 business email contacts that received notice of each public meeting and study updates. Many of these business owners attended the workshops and have made comments that can be found in the Appendix of this document.

Supplementing the Stakeholder Advisory Committee and the Public Workshops the project team reached out to the constituents that would be most affected by the recommendations made in the Plan. Before the first SAC meeting the project team contacted both the key property owner/developers in the region along with the property owners and business operators along the main commercial corridors. For a complete list, see Appendix A – Outreach List.

Next, current statewide design methodologies such as complete streets are not always compatible with historic towns with limited space and endemic problems of connectivity and continuity. The first priority must create that connectivity for general circulation by linking secondary streets and roads with the main thoroughfares. This is a countywide problem and both Diamond Springs and El Dorado have obvious problems with the same. Also, the amount of time and energy given to bike routes is another prime example. The county has not established clear priorities for bike traffic, routes and target activity centers and thus creating more Class 1 and 2 bike lanes is putting the cart in front of the horse. These priorities intersect

at creating bike lanes within a master plan on these secondary connecting streets for the safety of the bike riders and automobile traffic.

Response:
"While some specific design elements of a "complete street" that are typically applied in an urban environment may not be appropriate in a rural setting, there are a number of complete street design features that have successfully been implemented in rural and historic settings similar to El Dorado and Diamond Springs that have simultaneously preserved the rural and historic character of their respective locations while providing much needed connectivity benefits" (Page 55, Final Plan).

Diamond Springs:

Getting commuter traffic out of Diamond Springs should assist in improving general accessibility of the businesses along Main Street. The locals will always take the path of least resistance while it is the tourists that at tied to following the CA49. Creating navigable separation between business clients, tourists and commuters is a critical design factor in order to ensure the future of the business community. Currently, it is nearly impossible to make a left turn onto Main Street from either side of the street. Thus, on street parking and sidewalks are lifeline needs for the business community, not bike lanes. Long term, the larger parking areas and access should transition to the much needed connected secondary streets that mostly parallel the Main Street. The driver will be the value of the current parking lots becoming more valuable for buildings rather than asphalt. Simple economic factors drive the transition.

Response:
"The Community Transportation Plan aims to improve mobility and access for all users by increasing connectivity and access for multiple modes of transportation. Potential transportation improvements to meet this goal include new roadway connections, additional bicycle facilities, completion of sidewalk networks, and other streetscape and circulation improvements to the downtown districts of El Dorado and Diamond Springs" (Page 59, Final Plan).

El Dorado:

The dynamics of El Dorado are different as there is a Merchant's Association that should have had more input into the process. There is more through traffic from semi and tractor trailer trucks and fewer commuters, but more local business traffic. Thus, on street parking is a high priority as there is a limited amount of off-street parking areas. Connectivity on secondary streets is closer to reality because of North Street, but the intersection of 49 and Forni Road was not addressed. It is a non-perpendicular intersection with a high time of day congestion because of Union Mine High School. Also, a significant portion of the business community lies west of the CA49 intersection which reduces the impacts from design methodologies of Caltrans. Signalization of the intersection is a preferred alternative over the controversially roundabout which eliminates on street parking and consumes personal property at the intersection. There is a roundabout planned on CA49 in Plymouth in 2015 and they should absolutely go first.

Response:
At the beginning of the study in March 2013, the project team provided a downtown El Dorado business person with the scope, schedule, and goals of the study and the EDCTC Project Manager's name and contact information so that the information could be shared at a meeting of downtown El Dorado Merchants where the study information was handed out to the business owners who attended.

The study understands the importance of communicating with the business community in Diamond Springs and El Dorado. The team performed an initial drive through of both Downtown areas to identify major streets to focus outreach efforts on. Then utilizing an on-line property, homeowner database service (ListSource) property information within targeted area was collected. The outreach team created a list of businesses in both Diamond Springs and El Dorado which focused along Missouri Flat Road, Pleasant Valley Road, Enterprise Drive and Fowler Lane. Approximately 120 calls to the Diamond Springs businesses along with over 50 calls to El Dorado businesses were made to introduce the plan and ask for email contact. The project team maintained a database of over 75 business email contacts that received notice of each public meeting and study updates. Many of these business owners attended the workshops and have made comments that can be found in the Appendix of this document.

"It is the strong recommendation of the Community Transportation Plan that the intersection of Pleasant Valley Road and State Route 49 in El Dorado remain a stop sign controlled intersection into the foreseeable future. The intersection is exempted from LOS requirements in the 2004 El Dorado General Plan and can operate at LOS F without a mandated need to reduce delay and congestion at the intersection. The plan only presents a signalized intersection and a roundabout as two potential future options that could address the significant level of delay and congestion that the traffic analysis has identified will exist in 2035. A signalized intersection or roundabout are future options that would only be considered if the expected future delay and congestion impacts the ability of local and regional travelers to safely and efficiently travel through the intersection to such a degree that the local community, El Dorado County, and Caltrans decide that there is a reason to change the existing stop sign controlled intersection" (Page 79, Final Plan).

In Between Diamond Springs & El Dorado:

There is a lot of walking traffic along CA49 between the intersection of Missouri Flat Road and town of El Dorado. Most of this traffic comes from Deer Park and Union Mine HS. The proposal to include a mixed bike/walking trail set away from the road between these two points which makes a lot sense. The other component is what is being referred to as the Union Mine connector. This also makes sense as a secondary road that could/should support a mixed use trail for bike/walking because of the high school.

Missouri Flat Road:

This stretch between the proposed Diamond Springs Parkway and CA49 has proposed modifications that add a bike lane, sidewalks or walk trial and the elimination of the middle turn lane. The problem is that this area is a combination of industrial and older retail areas on both

side of the road and the long term traffic load is similar to today's level. Removing the middle turn lane will make it impossible to turn left across traffic and create delays as vehicles hold up traffic turning left from Missouri Flat. There is a truck scale at the Placerville Fruit Growers that is busy during the harvest season. Also, a truss company and a modular home business operate in that same general area which brings tractor trailers into the area. This is over and above the truck traffic getting off of CA49 and heading to US50. Bike lanes along Missouri Flat, in general, defy logic from a public safety perspective, but there might, might be enough foot traffic to warrant a walking path. It would have to set back from the road to reduce the impact on vehicle traffic entering or leaving the businesses along this stretch.

Response:
"Complete Streets are designed and operated to enable safe access for all users, including people with disabilities, motorists, pedestrians and bicyclists, and transit riders of all ages and abilities. All complete streets improvements recommended by the final study will be informed by and measured against the Diamond Springs and El Dorado Community Values adopted by the Diamond Springs Community Advisory Committee on June 20, 2013 and the input received during the five SAC meetings and two public workshops held during the project. At its core, the complete streets concept is about giving all people transportation options by improving connectivity, which is also a goal of the Community Transportation Plan" (Page 55, Final Plan).

Summary:

The timing of this exercise was a challenge as El Dorado County is battling its way through General Plan updates. My experience and context is based upon living and driving in this area for over 20 years and my kids attended Indian Creek, Placerville Christian School, Herbert Green, and Union Mine High School. Even now as a resident in the Fair Play area, it is my main path into town to conduct routine business. My participation as a stakeholder for the Fair Play Winery Association along with many of the other stakeholders was probably not necessary. Targeting the business community should have been the first step and still really needs to happen.

Response:
At the beginning of the study in March 2013, the project team provided a downtown El Dorado business person with the scope, schedule, and goals of the study and the EDCTC Project Manager's name and contact information so that the information could be shared at a meeting of downtown El Dorado Merchants where the study information was handed out to the business owners who attended.

The study understands the importance of communicating with the business community in Diamond Springs and El Dorado. The team performed an initial drive through of both Downtown areas to identify major streets to focus outreach efforts on. Then utilizing an on-line property, homeowner database service (ListSource) property information within targeted area was collected. The outreach team created a list of businesses in both Diamond Springs and El Dorado which focused along Missouri Flat Road, Pleasant Valley Road, Enterprise Drive and Fowler Lane. Approximately 120 calls to the Diamond Springs businesses along with over 50 calls to El

DS-ED Plan Comments
Submitted by David Pratt

Dorado businesses were made to introduce the plan and ask for email contact. The project team maintained a database of over 75 business email contacts that received notice of each public meeting and study updates. Many of these business owners attended the workshops and have made comments that can be found in the Appendix of this document.

Thank you for participating in the Stakeholder Advisory Committee meetings and providing comments on the study. Your comments will be included in the final plan.

6. **The intersection of Hwy. 49 and Pleasant Valley Rd. is not a real problem area. The 3-way stop works. Drivers for the most part are courteous and do yield to other drivers and especially to pedestrians. The only time it gets congested with traffic is for about an hour or so in the afternoons, and even then it's only a couple of minutes delay.**

Response:
"It is the strong recommendation of the Community Transportation Plan that the intersection of Pleasant Valley Road and State Route 49 in El Dorado remain a stop sign controlled intersection into the foreseeable future. The intersection is exempted from LOS requirements in the 2004 El Dorado General Plan and can operate at LOS F without a mandated need to reduce delay and congestion at the intersection. The plan only presents a signalized intersection and a roundabout as two potential future options that could address the significant level of delay and congestion that the traffic analysis has identified will exist in 2035. A signalized intersection or roundabout are future options that would only be considered if the expected future delay and congestion impacts the ability of local and regional travelers to safely and efficiently travel through the intersection to such a degree that the local community, El Dorado County, and Caltrans decide that there is a reason to change the existing stop sign controlled intersection" (Page 79).

7. **Our business has been open at 6211 Pleasant Valley Rd. for about 14 years. We could use at least one or two more pedestrian cross-walks in the downtown area.**

Response:
Option #1 for the intersection of Pleasant Valley Road and State Route 49 states that "there is the potential to upgrade the intersection with sidewalks and enhanced pedestrian crossings to improve the pedestrian environment" (Page 75-76).

Thanx for the opportunity to submit our comments.

Claude & Marti Dunn
Books 'n Bears
El Dorado

Response:
Thank you for providing comments on the study. Your comments will be included in the final plan.

From: Lindell Price
Sent: Wednesday, February 26, 2014 11:10 AM
To: Dan Bolster
Cc: Stanley Price
Subject: Diamond Springs & El Dorado Area Mobility & Livable Community Plan, 2nd email

Dan Bolster,

Thank you for the opportunity to comment. Below you will find some comments on the *Diamond Springs and El Dorado Area Mobility and Livable Community Plan.* These comments are not comprehensive; I have not had time to fully review the Plan.

Comment:
p. 40 ~~traditional~~ attached sidewalk Please change "traditional" to "conventional". Having grown up in older neighborhoods with detached sidewalks, I see the twentieth century attached sidewalks as a recent and rather unsuccessful experiment. Our conservative communities value "traditional" so throughout the Plan, please use "traditional" with great care; "conventional" will be a better word in many cases.

p. 40 Please revise

Attached Sidewalk
Attached sidewalks are directly adjacent to the vehicular traveled way and require a curb and gutter section to separate pedestrians and vehicular traffic. This creates a more formal space for pedestrians with less right-of-way impacts than a detached sidewalk, but does require drainage modifications to existing roadside ditches to accommodate curb and gutter drainage. Attached sidewalks accommodate on-street parking and frequent driveway access points more efficiently then detached sidewalks.

Consider the alternate wording -

Attached Sidewalk
Attached sidewalks are directly adjacent to the vehicular traveled way and require a curb and gutter section to separate pedestrians and vehicular traffic. This creates a ~~more~~ formal space for pedestrians with less right-of-way impacts than a detached sidewalk, but does require drainage modifications to existing roadside ditches to accommodate curb and gutter drainage. ~~Attached sidewalks accommodate on-street parking and frequent driveway access points more efficiently then detached sidewalks.~~

More "formal" than what? No sidewalk? Attached is less formal than "detached sidewalk". Clarify.

How do attached sidewalks accommodate on-street parking more efficiently than detached sidewalks?
How does an attached sidewalk accommodate on-street parking more efficiently?
Are the frequent driveway access points accommodated via rolled curbs that allow driveways to be built more easily?
Is the "efficiency" in the construction or in the use? Please clarify.
An attached sidewalk with frequent driveway access is less safe and less efficient for pedestrians than a similar situation with a detached sidewalk.

Reponse:

Thank you for your comments regarding word choice, document was adjusted. The discussion and example of detached sidewalk in a rural environment does not necessary include curb and gutter. The lack of curb and gutter and the inclusion of drainage swales creates challenges for both parking delineation and drainage, especially culverts at driveways. These challenges are not experienced with attached sidewalks with default curb and gutter or detached sidewalks that have a formal planter strip with curb and gutter.

Comment:
p. 43 Don't include gutter pan in bike lane measurement. Including the gutter pan in the bike lane measurement could cause drivers to believe that bicyclists should ride in the gutter.

Response:
It is standard practice to include the gutter pan when dimensioning a Class II bicycle lane adjacent to a raised curb. This methodology allows for a clear communication to planners and designers when establishing the curb to curb width of a proposed facility.

Comment:
p. 60 Figure 4 Aim for optimal pedestrian surfaces rather than merely meeting ADA minimums. Crosswalks that are textured with stamping or pavers frequently provide a less than optimal surface for pedestrians, especially as they age and need maintenance. Also, typical brick stamped crosswalks are not very visible to drivers, and become even less visible with wear. Consider instead framing crosswalks with stamped or textured pavement, bricks or other pavers in the part of the road used by vehicles rather than the pedestrian crosswalk. (Just be sure that these surfaces do not create hazards for bicyclists.) Colorization or artistic treatment of the crosswalk is fine, as long as pedestrian safety and comfort are prioritized. Aim for an optimal pedestrian surface, crosswalk markings that are adequately visible to both pedestrians (including pedestrians with low vision) and drivers. Consider multiple factors, marking that is adequate for a well lit crosswalk where vehicle speeds are low, may not be adequate in a shady location, or where vehicle speeds are higher.

Response:
Examples from other communities and various treatments are shown throughout the document to provide context to the discussions and to educate future projects. The plan does not prescribe any specific treatments but highlights the existing guidance documents related to historic design guidelines.

Comment:
P. 55 Similarly for sidewalk pavement, optimize the pedestrian surface including consideration of the maintenance that will be needed. Accent paving is usually better used to frame the primary walking areas, along curbs, around posts or planters, and in other areas where people do not typically walk.

Response:
Examples from other communities and various treatments are shown throughout the document to provide context to the discussions and to educate future projects. The plan does not prescribe any

From: Stanley Price
Sent: Wednesday, February 26, 2014 4:21 PM
To: Dan Bolster
Cc: Lindell Price
Subject: Diamond Springs and El Dorado Area Mobility and Livable Community Plan

Dan Bolster,

The Diamond Springs and El Dorado Area Mobility and Livable Community Plan is a good report. In college, while at University of New Hampshire, I worked on a marketing project for the Town of Conway New Hampshire. You have worked hard, and gotten a lot of good content. The future has many options, and some will be realized. This project has many fine features that can be referenced in the future to make the community an even better place to live, and attract visitors to enhance the economic viability.

Page 11, Regarding an upcoming Caltrans' State Route 49 TCCR (Transportation Corridor Concept Report), to be held for the outcome of this study, Caltrans' reliance on "time from one location to another" is false for the main premise in the 2010 State Route 49 Realignment Study (Coloma to El Dorado). In El Dorado County (EDC), we have a portion of the "Golden Chain" SR 49 that can attract through tourists along the Mother Lode. The bicycling potential is huge, if speeds are slower is some portions, and traffic diverted in other portions of current SR 49. Riding the steep stretch in Placerville, just North of the study area is an adventure, in either direction. The El Dorado Trail over Webber Creek is good, but should not replace good road routes.

Response:
Please coordinate with Caltrans District 3 during the preparation of the State Route 49 Transportation Concept Report.

Along this line of thinking, Jennifer Dill, and Susan Handy, of UCD, Institute of Traffic Engineering, studied cycling environments, and found "Comfort and Convenience = More Women Biking". She described women as an indicator species, meaning if there is a large proportion of women cycling, the cycling environment is healthy. Adopt strategies to make bicycling more convenient for everyone, and there will be children and youth cycling to school.

Response:
The overall goal of the study is to improve mobility and access for all users within the region by creating multi-modal transportation links between residential neighborhoods, commercial districts and the historic downtown districts of El Dorado and Diamond Springs that are consistent with the Diamond Springs and El Dorado Community Values adopted by the Diamond Springs Community Advisory Committee on June 20, 2013. A well connected network of sidewalks and multi-use trails, safe intersections for pedestrians, and access to transit will benefit an aging population and help create a Diamond Springs and El Dorado that is for people of all ages and abilities.

*Page 17, Back-in Angled Parking is safer for vehicle users as the rear of the vehicle can be loaded from the sidewalk. For cyclists utilizing the downtown, or with no easy alternative route, b*ack-in angled parking allows improved visibility and safety for vehicles and bicyclists. This is a low-cost improvement for all road users. To park in a reverse angle spot, the first movements are the same as for parallel parking.

Response:
Back-in angled parking has many benefits including those that you have identified. The plan has identified downtown El Dorado as a potential location where the application of back-in angled parking could be implemented.

Page 22, El Dorado Road has very narrow OR NO Shoulders for much of it's length... These features enhance the road's attraction to cyclists, if vehicle speeds are low.

Response:
Class II bicycle lanes are recommended on roadways where the anticipated speed differential between automobiles and bicycles is high. The features that help control speed on El Dorado Road, the narrowness and sight lines, become less effective in a residential area where a majority of the drivers travel on the roadway daily. This daily use creates a comfort level about the expectation ahead along the roadway and results drivers taking more risk by exceeding the comfortable speed. Assuming other recommendations in the document are implemented and the number of cyclists increases over time the potential for conflict also increases. As one of the longer term recommendations of the plan, shoulder or Class II bicycle lane improvements to El Dorado Road will have to be studied based on the actual operating speed and volume, number of cyclists, safety concerns, and the neighborhood impacts of the improvements.

Page 23, Forni Road should be signed as original Lincoln Highway route, if that is the case. Please point this out in the report if it is true. That is a major historical attraction, another of many. I did not know of this importance of Forni Road, which I love to ride.

Response:
EDCTC will coordinate with El Dorado County on determining if Forni Road is the original Lincoln Highway and what type of recognition or signing would be appropriate.

Figure 3-1- Bike Audit Route and Profile shows US 50 as the Lincoln Highway. If the information regarding Forni Road on page 23 is correct, Forni Road should be labeled the Lincoln Highway in some authoritative manner. The map is difficult to read as SR 49 is not marked on the map. While the background map is not of your making, please point out the historic route in your report.

Response:
EDCTC will coordinate with El Dorado County on determining if Forni Road is the original Lincoln Highway and what type of recognition or signing would be appropriate.

Page 26, Equestrian, The El Dorado Trail does not provide adequate equestrian paths from Forni Road to Missouri Flat Road. The current language does not make that clear. I suggest that you consult with equestrians.

Response:
Equestrians had representation on the Stakeholder Advisory Committee. The adequacy of equestrian facilities on the existing segment of the El Dorado Trail between Forni Road and Missouri Flat Road is the jurisdiction of El Dorado County.

Chapter 4, Traffic Analysis, The measure of Level of Service (LOS), A through F gives a distorted view to lay people who went through American schooling with A through F grades. A cost-effective new road should be a LOS D, or so. Also, there should be multi-modal LOS that

includes transit users, bicycle riders and pedestrians. Rapidly evolving research There is work in that field of Traffic Engineering. as well as cost/benefit analysis. quality of service

Response:
The study used the standard definition of LOS to help identify potential solutions to circulation issues identified through use of the El Dorado County Draft TDM during traffic analysis of the project area. Currently, the evaluation of transportation system performance is based primarily on motor vehicle traffic speed and delay. We appreciate that there is a movement to change that, and long-term we support including other modes beyond the automobile in the evaluation of the performance of the transportation system.

The Traffic Analysis should look at Vehicle Miles Traveled (VMT), which is a large component of air pollution. As travel time increases, mode-shift and trip avoidance will become larger factors in reducing traffic volume.

5. Complete Streets Toolkit: A key element to Complete Streets is to have the different uses compatible. Widely varying speeds are incompatible due to safety concerns. Vehicle lane narrowing to reduce speed is a treatment that should be included in the Toolkit.

Response:
Reducing lane width is included in some recommendations.

Page 39, Stamped, grooved, or uneven surfaces are hazards for bicyclists and pedestrians. Enhanced Shoulders with stamping are less or unsuitable for cycling (especially grooved pavement), due to bicycle instability, discomfort and noise to varying degrees. Slowing traffic is so vital to road user safety due to the survivability of a collision between and vehicle and cyclist or pedestrian decreases precipitously as speeds increase above 25 miles per hour. Grooving between vehicle lanes and shoulder or bike lane is particularly bad, due to debris on shoulders, or other obstructions. Focus on colorization instead.

Response:
Comment noted. Stamped asphalt has many pros and cons that will have be evaluated on a case by case basis depending on its specific application.

Page 39, Class III Bicycle Routes pleases me, as Class III Routes were only marginally included in the **El Dorado County Regional Transportation Plan (2010).**

Response:
Comment noted.

Page 40, Detached Sidewalk are the tradition in neighborhoods, and were replace by rolled curbs and attached sidewalks with sprawl. Attached sidewalks are not "traditional".

Response:
Comment noted.

6. Recommendations should include health and safety as primary aims. If we do not explain the benefits of the changes, we do not get the population to understand why they might want changes in their community.

Response:

The potential transportation improvements that follow, including a well connected network of sidewalks and multi-use trails, safe intersections for pedestrians, and access to transit will benefit an aging population and help create a Diamond Springs and El Dorado that is for people of all ages and abilities.

unpaginated: Union Mine Connector map and drawing: The depiction of a 6' BL (6 foot Bike Lane), is deceptive, as it includes the curb and gutter, which is likely 2'. The State minimum for a bike lane is 4'. Why not make the roadway bicycle friendly, and have a wider bike lane? The design indicates a "great safe route to school" but 11' lanes and future smaller cars do not insure that there will be "very little ... cut-through traffic." Put in gutter measures, make the Bike Lanes 5' and have 10' traffic lanes in the same space. Also, have 8' sidewalks to provide exceptional walkability for people to walk side by side. If the traffic is controlled enough, stop signs could be replaced by yield signs.

Response:
It is standard practice to include the gutter pan when dimensioning a Class II bicycle lane adjacent to a raised curb. This methodology allows for a clear communication to planners and designers when establishing the curb to curb width of a proposed facility. The cross sections proposed are alternatives that are to be considered when developing the phases of the Union Mine Connector.

Page 40, Enhanced Intersections: "Control vehicular traffic" involves speed, and for the safety of all community users lower speeds insure better survivability in the event of a collision. A short curb radius slows vehicle turning movements. Short radii curbs refer back to an earlier period of community development.

Response:
The final design of an enhanced intersection, including potential methods to control vehicular traffic, would be done when that type of project is implemented in the project area. Any representation of an enhanced intersection in the study is for illustrative purposes only.

Page 40, Organized Parking: Parking is a very important road feature. Reverse angle parking has effective safety features. Parking areas are an area that can be treated with differential pavement treatments that should not be used where walking is the primary mode. Also, in describing reverse angle parking, point out the safety benefits for loading and unloading people and goods.

Response:
Noted. Comment regarding loading a vehicle was added to the document.

Chapter 6. Recommendations: Safety should be stated in the Plan aims. Motor vehicle fatalities are going down while the numbers and proportions of pedestrian and cyclist fatalities are rising. Infrastructure that lasts 50 years or more is the most effective change.

Response:
Noted. Comments were added to the document.

Unpaginated Union Mine Connector: Consider a street parallel to the Union Mine Connector that provides optimal bicycle and walkability, block through traffic, while allowing traffic on the entire street. A parallel limited-access street would enhance connectivity by minimizing gated communities, and enhance the neighborhood, maximizing property values.

Response:
The Union Mine Connector provides parallel capacity south of SR 49 and a safe route to school for students travelling to Union Mine High School. The traffic analysis indicated that the roadway would function at a relatively low speed, enhancing the safety of bicyclists and pedestrians.

Unpaginated Union Mine Connector. cont.: As an interim project to the Union Mine Connector, obtain grant funding and build a Class 1 Bicycle Path, utilized as a shared route trail (include equestrians), in the interim to provide the safety and convenience of your connector to the present residents until the road can be completed. Demonstrate improvements to the citizens quality of life.

Response:
Comment noted.

Page 45, Bicycle Network: The importance of the Union Mine Connector is indicated by the position in the Bicycle Network discussion. Facilitate the construction of the pedestrian/bicycle connection with the first construction on that route, with the stated condition that the Class 1 Path will be replace with an excellent walkable and bike-able road.

Response:
Conditioning development is the jurisdiction of El Dorado County. “It is not within the jurisdiction of the EDCTC or the scope of this document, nor was it the intent with the stakeholder involvement, to supersede or override approved development plans, policies, or the land use authority of El Dorado County” (Page 9, Final Plan).

Chapter 7, Placemaking: Public Spaces should be a section of this chapter. Crime Prevention Through Environmental Design is a design feature to be considered at a basic design point. My idea to get eyes on the street and create a lively public space, I suggest building a small accustical shell into structures (walls, street furniture, etc.). Street musicians, historic orators, and children singing could use the shell to blend and project sound toward a public space. This architectural feature would enhance a lively and vibrant space that residents and visitors would enjoy. Eyes of performers would be looking the opposite direction of many of the space users, and provide an even safer public space.

Response:
This concept was not discussed at any of the five SAC meetings or the two public meetings. However, it would be an appropriate subject to bring forward for the consideration of the Diamond Springs and El Dorado Community Advisory Committee.

Unpaginated Diamond Springs Cross Sections: The 6' marking for the bike lanes misrepresents State law, by including the curb and gutter in the bike lane. Do not suggest to drivers that bicycles should ride in the gutter.

Response:
It is standard practice to include the gutter pan when dimensioning a Class II bicycle lane adjacent to a raised curb. This methodology allows for a clear communication to planners and designers when establishing the curb to curb width of a proposed facility.

Page 71, El Dorado Trail at Missouri Flat Road: A raised, textured crosswalk is suggested but undesirable. Texture road pavement approaching the crossing area to alert motorists to a hazard, and place speed tables prior to the pedestrian crossing to slow traffic. Pedestrians do not need to be advised by a textured road crossing that they are in a hazardous area. Slow the vehicles. Consider "triple fours" crosswalk markings developed in Sacramento. An on-demand rapid flashing beacon and well designed median installed soon may prevent a fatality at that location. Putting an unsafe road crossing in "Placemaking" is curious.

Response:
Comment noted. The document lists a number of possible treatments for consideration. Additional studies and design efforts will be required at the crossings which may include a full grade separated crossing.

Health and pedestrian safety foremost,

Respectfully,

Stanley

Response:
Thank you for providing comments on the study. Your comments will be included in the final plan.

From: Joan Stek
Sent: Wednesday, February 26, 2014 4:18 PM
To: Dan Bolster
Subject: Thank you

Hi Dan,

I just finished my first read-through of the plan. It seems to be a very thorough and well-prepared and presented document. Some of it is pretty exciting but if we really have to wait until 2035 I'll be 82! Though I do count on being still fit and active well in to old age, I'll just have to wait.
The roundabout idea is scary to me. I've been in a roundabout down in Roseville and did not find it comfortable to use. Plus, I just don't have much faith in my fellow drivers. So I'm glad that part is not a done deal. As far as the rest of the new road and walk ways go they look like pretty good improvements. Our own property is about 2 miles down Union Mine Road from the high school. I imagine other properties closer may be facing more direct effects from the proposed changes. I hope it all works out as relatively easy adjustments for everyone concerned.
Gail Hartwick is out of town for a few days. She mentioned that she will be addressing a BOS(?) meeting. I didn't get the date from her and I would like to be there to support her. Do you know when that meeting is going to be?

Joan Stek
Springhouse Farm
El Dorado, CA

Response:
Thank you for providing comments on the study. Your comments will be included in the final plan.

"It is the strong recommendation of the Community Transportation Plan that the intersection of Pleasant Valley Road and State Route 49 in El Dorado remain as top sign controlled intersection into the foreseeable future. The intersection is exempted from LOS requirements in the 2004 El Dorado General Plan and can operate at LOS F without a mandated need to reduce delay and congestion at the intersection. The plan only presents a signalized intersection and a roundabout as two potential future options that could address the significant level of delay and congestion that the traffic analysis has identified will exist in 2035. A signalized intersection or roundabout are future options that would only be considered if the expected future delay and congestion impacts the ability of local and regional travelers to safely and efficiently travel through the intersection to such a degree that the local community, El Dorado County, and Caltrans decide that there is a reason to change the existing stop sign controlled intersection" (Pages 79).

specific treatments but highlights the existing guidance documents related to historic design guidelines.

I'll try to send more this afternoon, but must leave for a meeting.

Response:
Thank you for providing comments on the study. Your comments will be included in the final plan.

TO: El Dorado County Transportation Commission

FROM: Laurel Stroud

I am a participant in the stakeholder workshop sponsored by the El Dorado Transportation Commission (EDCTC), seeking solutions for future traffic, highway, and pedestrian needs. I went into the project as a representative of Residents Involved in Positive Planning (RIPP), a group supporting the semi-rural atmosphere of Diamond Springs and El Dorado. The group supports measured, intelligent growth rather than rampant high density type growth which caters to urban dwellers and developers that can short change transportation capacity requirements for such developments. Our community is becoming a target for these type of projects that are thrust on us by government agencies due to lack of decent planning by this County.

Response:
Thank you for participating in the Stakeholder Advisory Committee meetings and providing comments on the study. Your comments will be included in the final plan.

I am thoroughly unhappy with how this project was handled, and feel I have been lied to. I believe the project started out with the genuine desire to do right, but after a delay of many months in the middle of the project (which included supposed "review" by County officials), the project them resumed with a completely different direction. The end result had already been determined and those of us working on the project were directed to that result. The direction is to make Diamond Springs and El Dorado into the high density cookie-cutter developments that are represented in Elk Grove and Roseville, not to mention much influence from European-style development.

Response:
The eight month gap (February 20, 2013 to October 24, 2013) between Stakeholder Advisory Committee (SAC) meeting No. 3 and SAC meeting No. 4 was due to the length of time it took for the study to recieve the El Dorado County Draft Travel Demand Model (EDC Draft TDM) and then work with the County, Caltrans, and SACOG to validate the EDC Draft TDM for use in the study area. EDCTC chose to use the EDC Draft TDM to model existing and future traffic demand in the project area instead of using the Sacramento Area Council of Government's SACMET model. Use of the EDC Draft TDM allowed the study's traffic analysis to reflect the 2004 El Dorado County General Plan land use, job, housing, and growth projections. In October 2013 the study was able to utilize the EDC Draft TDM to perform traffic analysis needed to identify potential improvements to the transportation network in the study area. Subsequently, SAC meeting #4 was held on October 24, 2013 to discuss potential network improvements for bicycles and pedestrians and SAC meeting #5 was held on December 5, 2013 to discuss potential network improvements for roadways and intersections. The proposed network improvements and the results of SAC meeting #4 and SAC meeting #5 were then shared with the public at Public Workshop No. 2 on January 9, 2014.

El Dorado and Diamond Springs are tired of being the County's dumping ground for nasty projects and overdevelopment, which only serve to line the pockets of developers and their real estate friends, not to mention certain County department heads and high level officials. This project has a number of flaws, which were pointed out by project members more than once, but ignored completely in the summary of the project which was conducted by the idiotic sticky-note system. (Hence, there is no record of what was actually said). And it appears no research was done at all by the truly inept consultants.

Response:
"It is not within the jurisdiction of the EDCTC or the scope of this document, nor was it the intent with the stakeholder involvement, to supersede or override approved development plans, policies, or the land use authority of El Dorado County" (Page 4, Draft Plan).

Meeting summaries were produced for all five SAC meetings and the two public workshops and the summaries are available online on the EDCTC website at:
http://www.edctc.org/3/DS-ED_SAC.html
The meeting summaries include a review of the meeting objectives and a summary of the questions and comments made by SAC members and the public during the meetings.

The study performed extensive research during the community-based transportation planning effort including:

- Demographic and economic background of the study area, including: population growth projections; median age of the population and age distribution in the study area; income distribution; educational attainment in the study area compared to El Dorado County, California, and the United States; industry breakdown and specialization.
- Current land use identified by 2004 El Dorado County General Plan.
- Future year 2035 land use identified by 2004 El Dorado County General Plan.
- Analysis of current and future retail and non-retail employment in the project area
- Current travel demand (base year 2013)
- Future year 2035 travel demand.
- Reviewed existing roadway network detail in the study area.
- Reviewed Traffic Analysis Zone (TAZ) structure in the study area.
- Updated transportation network attributes in the study area to reflect existing conditions (e.g. verified roadway network speeds, number of lanes on the roadway, and roadway capacities to reflect existing and planned conditions).
- Reviewed and updated the existing study area land use to ensure adequate residential and employment levels. Increased base year employment levels along the Missouri Flat corridor to reflect existing commercial development levels
- Performed a detailed analysis of the existing roadway network in the project area.

- Analysis of the future year roadway network in the study area to reflect the El Dorado County 2013 Capital Improvement Program and El Dorado County Regional Transportation Plan constrained roadway network.
- Economic analysis of the project area, including economic benefits of transportation projects
- Reviewed of all relevant planning documents (El Dorado County, El Dorado Transit, EDCTC, Caltrans, SACOG)
- Coordinated the planning effort with El Dorado County, El Dorado Transit, Caltrans, SACOG, and the community.

1. First, and vitally important, is the **value of the historic towns themselves. Both towns include Pony Express stops, historic structures, and old but very successful businesses**. The proposed roundabout for El Dorado would wipe out or severely infringe on historic places such as Poor Red's and businesses located in very old nearby buildings.

   Response:
   "The overall goal of the study is to improve mobility and access for all users within the region by creating multi-modal transportation links between residential neighborhoods, commercial districts and the historic downtown districts of El Dorado and Diamond Springs that are consistent with the Diamond Springs and El Dorado Community Values adopted by the Diamond Springs Community Advisory Committee on June 20, 2013, which include preserving the rural character and cultural history of the area" (Page 1).

   "It is the strong recommendation of the Community Transportation Plan that the intersection of Pleasant Valley Road and State Route 49 in El Dorado remain a stop sign controlled intersection into the foreseeable future. The intersection is exempted from LOS requirements in the 2004 El Dorado General Plan and can operate at LOS F without a mandated need to reduce delay and congestion at the intersection. The plan only presents a signalized intersection and a roundabout as two potential future options that could address the significant level of delay and congestion that the traffic analysis has identified will exist in 2035. A signalized intersection or roundabout are future options that would only be considered if the expected future delay and congestion impacts the ability of local and regional travelers to safely and efficiently travel through the intersection to such a degree that the local community, El Dorado County, and Caltrans decide that there is a reason to change the existing stop sign controlled intersection" (Page 79).

2. **At no time was any talk of drainage done.** Any changes to the roads in the two towns could **severely impact both towns, especially El Dorado.** Due to unkept promises by former Board of Supervisors members that culverts would be maintained in that town, El Dorado

regularly floods at any time there is moderate rainfall or more. No study was given as to how any road changes would affect that drainage. **Nor was the subject of drainage considered at any time for any part of this project. Drainage and destruction of property and habitat is certainly a required element of CEQA, but no mention of that was given.**

Response:
The issue of drainage in Diamond Springs and El Dorado is outside the scope of the study and is the jurisdiction of El Dorado County if individual projects are pursued.

The Diamond Springs and El Dorado Area Mobility and Livable Community Plan is not an activity defined as a "project" by CEQA and therefore environmental review is not required. However, an environmental assessment was performed to address the biological resources (including both plant communities present and wildlife species occurring, or potentially occurring) in the study area. The suitability of these habitats to support special-status species was analyzed, and recommendations are made in the Community Transportation Plan on the regulatory permitting or additional analysis that will need to be made to meet environmental laws, regulations, and policies that are relevant to CEQA before any projects can be constructed.

3. **Adding bike lanes to residential roads was also heavily presented,** although it was never a high priority for the project members. **No consideration was given there for drainage, tree removal which may impact the environment or oak canopy, or taking of property by eminent domain.** How would CEQA regulations be met?

Response:
Network improvements for bicycles were discussed during SAC meeting #4 and Public Meeting #2 and the meeting summaries reflect a mix of comments both in favor of improving bicycle facilities in the study area and comments not in favor of bicycle improvements. Examples of those comments are:

- "The easier it is to ride bikes, walk, ride horses- and the safer it is- the more people will do it! What is more historic, rustic, and rural than people on foot or horses or simple machines (like a bike)? I really like these ideas: thanks for bringing them!" (Public Meeting #2 Summary)
- "This is a very rural community along with an extensive history dating back many years. I just don't see lots of people recreational or whatever else riding enough to warrant the improvements" (SAC #4 Meeting Summary).
- "Even though people may not be walking and biking now, we need to create a walkable and bikeable community. We have created a situation where no one is

able to walk or bike anywhere. We can choose to invest and change this" (SAC #4 Meeting Summary).

- "I am concerned for the demographics in the area, I do not see a lot of people riding their bicycles, we are car centric" (SAC #4 Meeting Summary).

The issue of drainage in Diamond Springs and El Dorado is outside the scope of the study and is the jurisdiction of El Dorado County if individual projects are pursued.

The Diamond Springs and El Dorado Area Mobility and Livable Community Plan is not an activity defined as a "project" by CEQA and therefore environmental review is not required. However, an environmental assessment was performed to address the biological resources (including both plant communities present and wildlife species occurring, or potentially occurring) in the study area. The suitability of these habitats to support special-status species was analyzed, and recommendations are made in the Community Transportation Plan on the regulatory permitting or additional analysis that will need to be made to meet environmental laws, regulations, and policies that are relevant to CEQA before any projects can be constructed.

4. **Adding bike lanes to many roads in both towns was considered to be a very large part of the project,** even though little support was given by most members of the project. Yet this topic was pushed forward as a vital part of the project---again we were directed to a desired result, this time **"walkable communities", an idea that only works in high density areas, not places where many people live on large parcels of land.**

Response:
Network improvements for bicycles were discussed during SAC meeting #4 and Public Meeting #2 and the meeting summaries reflect a mix of comments both in favor of improving bicycle facilities in the study area and comments not in favor of bicycle improvements. Examples of those comments are:

- "The easier it is to ride bikes, walk, ride horses- and the safer it is- the more people will do it! What is more historic, rustic, and rural than people on foot or horses or simple machines (like a bike)? I really like these ideas: thanks for bringing them!" (Public Meeting #2 Summary)
- "This is a very rural community along with an extensive history dating back many years. I just don't see lots of people recreational or whatever else riding enough to warrant the improvements" (SAC #4 Meeting Summary).
- "Even though people may not be walking and biking now, we need to create a walkable and bikeable community. We have created a situation where no one is able to walk or bike anywhere. We can choose to invest and change this" (SAC #4 Meeting Summary).

- "I am concerned for the demographics in the area, I do not see a lot of people riding their bicycles, we are car centric" (SAC #4 Meeting Summary).

Additionally, demographic research done during the study revealed that a significant portion of the study area's population is comprised of elderly and recently retired people. The median age of the study area is 47.1 years, which is much higher than that of El Dorado County (43.6) and California (35.2). As the population of Diamond Springs and El Dorado continues to get older, a well connected network of sidewalks and multi-use trails could help to create an age-friendly community where an individual can walk to get a prescription, a carton of milk, a haircut, or visit a friend.

5. **Adding bike lines seemed to enter every conversation**, and was continually brought up by the consultants. They appeared to be strongly directing project participants to higher density communities. Their research, however, was sadly lacking as **it appears that at no time did they or the project manager, Dan Bolster, contact business owners in each community. I am thoroughly convinced that there was behind the scenes direction from El Dorado County officials to come to a certain set of conclusions, no matter how the public felt.** Otherwise it would seem that these consultant are too incompetent to stay in business and why then would this county hire them?

Response:
"It is not within the jurisdiction of the EDCTC or the scope of this document, nor was it the intent with the stakeholder involvement, to supersede or override approved development plans, policies, or the land use authority of El Dorado County" (Page 10).

As part of the Diamond Springs and El Dorado Area Mobility and Livable Community Plan, EDCTC performed the following outreach to businesses, property owners and developers in Diamond Springs and El Dorado:

- Based upon the map of the Diamond Springs and El Dorado Community Region as defined by the El Dorado County General Plan, the study identified and contacted nine property owners/developers and their representatives to introduce the study to them and to request their involvement in the process.

- Hosted an initial meeting with the identified property owners/developers to introduce the study and process.
- Followed up on several occasions with potential property owner/developer representatives (Michelle Smira, Joshua Wood and Brian Allen) to encourage participation in the SAC.
- Performed an initial drive through of both Downtown areas to identify major streets to focus outreach efforts on.

- Utilized an on-line property, homeowner database service (ListSource) to identify property information within targeted area.
- Created a list of businesses in both Diamond Springs and El Dorado.
- Diamond Springs business outreach – focused on Missouri Flat, Pleasant Valley, Enterprise, Fowler
    - Placed approximately 120 calls to businesses to introduce the plan and ask for email contact
- El Dorado – focused on Pleasant Valley between Oriental and Forni
    - Placed approximately 50 calls to businesses to introduce the plan and ask for email contact
- Maintained a database of over 75 business email contacts that received notice of each public meeting and study updates.

6. Bike lanes suggested for downtown Diamond Springs would **involve taking parts of roadway from businesses that could only be done by eminent domain**. It took a business owner there to point out that important consideration to the consultants and project leader, showing an embarrassing lack of study done by them. They were not aware who owns parts of the road.

Response:
The study scope does not include the detailed property and legal research and analysis of property records, such as obtaining or reviewing title reports, recorded deeds, easements, and maps necessary to clearly establish the chain-of-title and current ownership and rights pertaining to the right-of-way for any of the transportation infrastructure improvements recommended in the study. That type of right-of-way conditions analysis would be part of future work should a decision be made to proceed with a project.

7. There was **no valid consideration given to the Americans with Disabilities Act (ADA),** as recommended parking solutions (if parking was taken off streets or wiped out by roundabouts) was to take open property in both towns (much by eminent domain) and locate parking in areas that would not be compliant with ADA requirements for parking for disabled people within a certain number of feet to businesses. Again, no research was done.

Response:
The Stakeholder Advisory Committee included representation from the ADA community (Placerville Mobility Support Group) and their ADA recommendations will be incorporated into the study. Additionally, the transportation infrastructure improvements recommended in the Diamond Springs and El Dorado Area Mobility and Livable Community Plan are planned to be consistent with the Federal Highway Administration's (FHWA) Americans with Disabilities Act (ADA) program to ensure that people with

disabilities have equitable opportunities to use the public rights-of-way system. As transportation projects identified in the plan are delivered it will be the responsibility of the implementing agency to ensure that a specific project is designed and constructed in compliance with FHWA's ADA program guidelines.

8. **The suggestion was made by the consultants that sidewalks in Diamond Springs could be widened to allow for more public traffic**. Did the consultant even look at the 3-4 foot high historic sidewalks and the wooden walkways in downtown? They seemed to be unaware that the **walkways are a treasure that should not be touched and such a project would be hugely expensive with not much return on investment, not to mention that some are a valuable part of local history. What does CEQA have to say about disturbing historic areas?**

   Response:
   "The transportation improvements posed as part of the Community Transportation Plan will provide many economic benefits to the community, including improved quality of life and safety, higher property values, increase in revenue from sales tax and Transient Occupancy Tax (TOT). The addition of sidewalks, bike lanes, and shared use trails mean children will have safer routes to school, employees will have alternative commute options, and recreation enthusiasts and tourists will be more inclined to get out and explore the area. Enhanced streetscapes improve the overall appearance of the community and send a signal to investors and potential employers that this is an area worthy of their investment" (Page 105).

   "The overall goal of the study is to improve mobility and access for all users within the region by creating multi-modal transportation links between residential neighborhoods, commercial districts and the historic downtown districts of El Dorado and Diamond Springs that are consistent with the Diamond Springs and El Dorado Community Values adopted by the Diamond Springs Community Advisory Committee on June 20, 2013, which include preserving the rural character and cultural history of the area" (Page 9).

   The Diamond Springs and El Dorado Area Mobility and Livable Community Plan is not an activity defined as a "project" by CEQA and therefore environmental review is not required. However, an environmental assessment was performed to address the biological resources (including both plant communities present and wildlife species occurring, or potentially occurring) in the study area. The suitability of these habitats to support special-status species was analyzed, and recommendations are made in the Community Transportation Plan on the regulatory permitting or additional analysis that will need to be made to meet environmental laws, regulations, and policies that are relevant to CEQA before any projects can be constructed.

9. **There was never any mention of any effect on trees and other vegetation** by the project consultants or planner, even though it was

brought up several times by stakeholders. **What is the effect per CEQA?**

Response:
The Diamond Springs and El Dorado Area Mobility and Livable Community Plan is not an activity defined as a "project" by CEQA and therefore environmental review is not required. However, an environmental assessment was performed to address the biological resources (including both plant communities present and wildlife species occurring, or potentially occurring) in the study area. The suitability of these habitats to support special-status species was analyzed, and recommendations are made in the Community Transportation Plan on the regulatory permitting or additional analysis that will need to be made to meet environmental laws, regulations, and policies that are relevant to CEQA before any projects can be constructed.

10. **Several suggestions of alternate roadways to bypass one town or the other were given by stakeholders but were never included in the final project.** The only connecting roadway was the Union Mine Connector, shown by the consultant as the only alternative for excess traffic. **That roadway is dependent on three housing projects (at least one of them including high-density construction) being approved by the County.** Pictures shown by consultants of what such a road might look like were of picturesque, bucolic country roads, a complete and intentional misrepresentation of what that road would look like with all the development included**. Again, what is the effect on air quality as required by CEQA?**

Response:
While the results of the travel demand modeling and traffic analysis indicated that the existing roadway network in the study area is sufficient to accommodate regional growth and travel, the project team responded to requests by the SAC to analyze potential projects to improve connectivity for local residents. Pages 42 and 43 of the Draft Diamond Springs and El Dorado Area Mobility and Livable Community Plan describe the three potential projects the SAC asked the project team to analyze for their ability to improve connectivity for local residents by providing new, alternate connections in the study area. The Union Mine Connector would bypass El Dorado to the south; the El Dorado Connector would bypass El Dorado to the west; the Diamond Springs Connector would bypass Diamond Springs to the northeast.

Union Mine Road Connector

The Union Mine Road Connection is a proposed future roadway connecting Union Mine Road to Faith Lane.

El Dorado Connector

The El Dorado Connector is a conceptual connection from the existing intersection of El Dorado Road/Pleasant Valley Road to the intersection of Union Mine Road/State Route 49.

Diamond Springs Connector

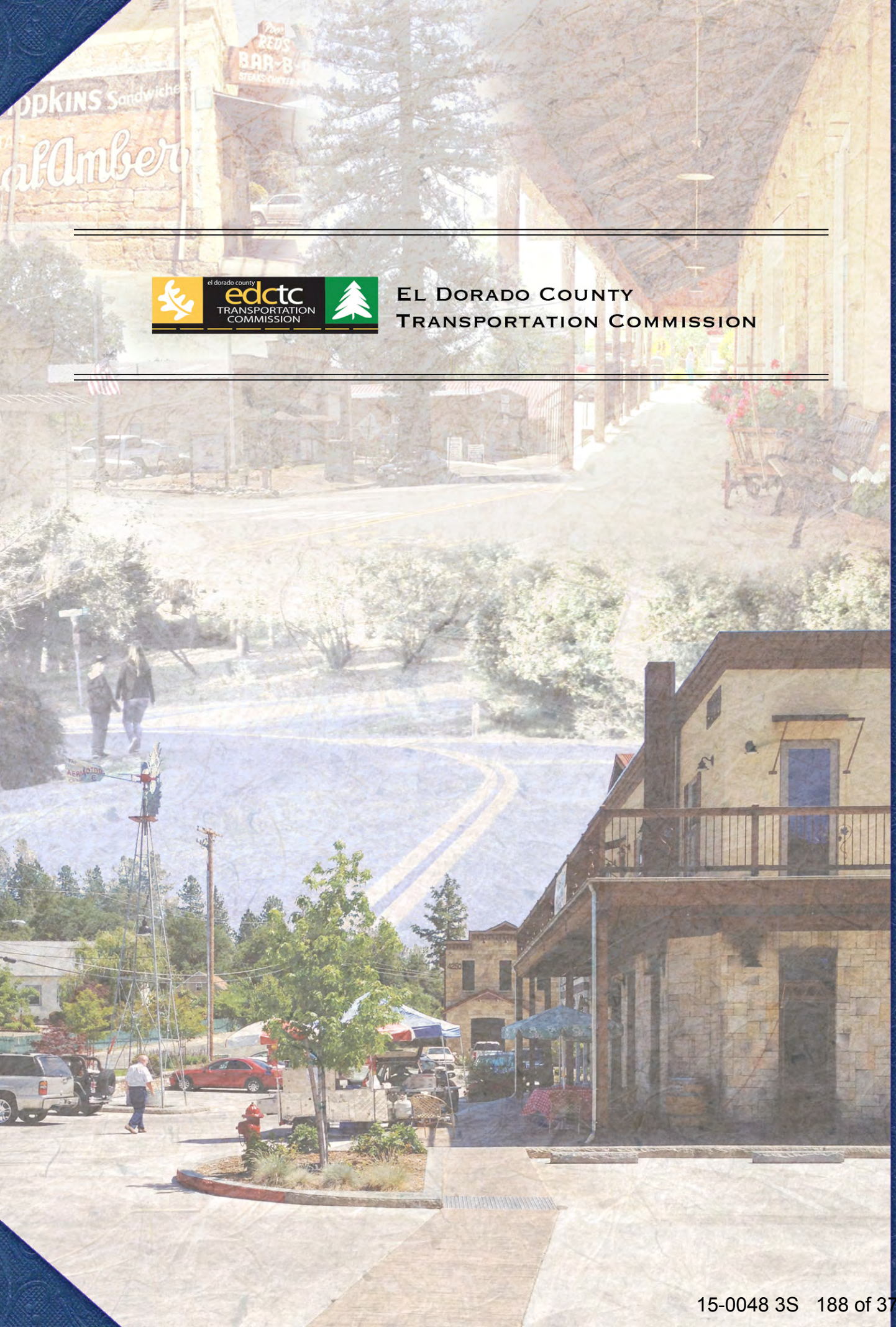
The Diamond Springs Connector is a conceptual connection between the intersection of Diamond Springs Parkway/State Route 49 and a new intersection at Pleasant Valley Road.

The Diamond Springs and El Dorado Area Mobility and Livable Community Plan is not an activity defined as a "project" by CEQA and therefore environmental review is not required. However, an environmental assessment was performed to address the biological resources (including both plant communities present and wildlife species occurring, or potentially occurring) in the study area. The suitability of these habitats to support special-status species was analyzed, and recommendations are made in the Community Transportation Plan on the regulatory permitting or additional analysis that will need to be made to meet environmental laws, regulations, and policies that are relevant to CEQA before any projects can be constructed.

I am thoroughly unhappy with what was accomplished in this supposed "stakeholder workshop." **We were directed toward a pre-determined result with the very clumsy use of the Delphi technique and it was really obvious.** This project has no validity to it other than to enrich developers, and certain County officials and real estate people. **The pathetic lack of even an attempt to look legitimate through research and valid numbers by the consultants and project planner was an insult to the public, especially people** living in the two towns involved.

My feeling is that **this project was an attempt for a huge power grab by this County, with an attempt to make it look legitimate by including various stakeholders in this county (many of whom have no relation to Diamond Springs or El Dorado).** This project failed miserably in my opinion and is a really big slap in the face to residents and business owners here. **My hope is that the two EL Dorado County Supervisors representing these towns will step up and reject this badly-played shell game of a project.**

Response:
Thank you for participating in the Stakeholder Advisory Committee meetings and providing comments on the study. Your comments will be included in the final plan.



El Dorado County Transportation Commission

Landscape Guidelines

for the Diamond Springs – El Dorado Mobility Plan

Prepared for:

Mark Thomas and Company

February 17, 2014

Submitted by:

FOOTHILL ASSOCIATES

Table of Contents

List of Figures

1.0 INTRODUCTION

1.1 Purpose

These landscape guidelines define a general design palette of streetscape elements for the Diamond Springs and El Dorado area that fits into the historic context of these places and provides a cohesive appearance between sections of streetscape that may be developed at different times and by different entities. It is not the intention of these guidelines to define specific makes and models of fixture that must be used. Rather, the goal is to define a general aesthetic which will provide a consistent, enjoyable experience with a historic feel for residents and visitors.

Landscape features that strengthen the sense of place and history of the El Dorado and Diamond Springs communities should be included with all projects along the following major routes within the Study Area:

- Highway 49,
- Missouri Flat Road,
- Pleasant Valley Road,
- Diamond Springs Parkway, and
- The proosed Union Mine Connector.

Design elements should employ a Gold Rush theme (1850 – 1900), characterized by simple, practical construction generally lacking fine detail, although Craftsman or agrarian may also be appropriate in developments away from the core areas (El Dorado County, 2008). This report provides general design guidelines and, where appropriate, specific examples for some elements, including street monuments, sidewalk accent paving, stormwater swales, furnishings, lighting, signage, street trees and other landscape plantings, and special areas. These examples are not meant to be used exactly as presented. Rather, individual designers are encouraged to exercise their creativity in designing and specifying landscape features consistent with the spirit of the examples described and presented here.

2.0 HISTORIC DESIGN GUIDELINES

Over the past two decades, several efforts have been made to define a historic desire guide for communities in El Dorado County. The most recent of these, the Missouri Flat Design Guidelines (rrmdesigngroup, 2008) provide aesthetic recommendations for new development along the Missouri Flat corridor from Missouri Flat Village just north of Highway 50 to Enterprise Drive. This style guide covers architectural character, site planning, landscape elements, building design, utilities, fixtures and signage. While outside the study area, Section IV of the City of Placerville's Development Guide presents architectural design guidelines for historic downtown Placerville as well as upper Main Street, Broadway, Placerville Drive, and Smith Flat Road that could be useful in defining a historic style. Additionally, the County of El Dorado Planning Department developed a Historic Design Guide in the 1980's that offers examples of Gold Rush era buildings, fences, signage and other features in an attempt to establish a design vernacular for historic areas. In addition to the Missouri Flat guidelines, the standards and recommendations presented in these latter two documents may help in preserving, enhancing, or in some areas restoring historical character in the communities of Diamond Springs and El Dorado.

2.1 Placerville Architectural Guidelines

While the Placerville Architectural Guidelines are not meant to apply to the Diamond Springs and El Dorado areas, they include some important concepts that may help to strengthen the historic character in the area. For example, the Placerville guidelines state "the buildings in this area [historic downtown] embrace the Main Street right-of-way and create a clearly defined space with distinct boundaries." This configuration of structures appears to be similar in many successful vibrant Gold Rush era downtowns along Highway 49. The places that stand out within an hours drive of the study area – Auburn, Placerville, Sutter Creek, Amador City, Jackson – all have well defined downtowns where there is little between the buildings and the street but the sidewalk. Parking lots typically don't front on the main street in the historic core; parking is typically parallel on the curb, with additional parking in a public lot or structure set back from the main thoroughfare. The area of Diamond Springs that shares this character, from the Diamond Springs Hotel west to the just east of the Firehouse Café, has more of a historic feel than areas further east or west, where the roadway opens up and is less constrained by the structures. This is partly due to the age of the structures, but also to the style of development, with covered walkways and a relatively narrow right-of-way (**Figure 1**).

Another key item in the Placerville Architectural Guidelines is the disclaimer that the guidelines are not meant to "create bogus historical or western theme architecture, but rather to promote innovative design throughout the city which repeats the forms and integrates elements of the existing architecture of merit…" The tendency may exist when recreating historical forms in modern structures to create an artificial environment that feels neither historical nor real, but rather like a fantasy recreation. Often this arises through the excessive use of "faux" materials – materials made to simulate a substance far removed from their actual composition. Colored concrete, for instance, usually works

well in simulating brick or stone, but may help to create a feeling of artificiality when used to simulate wood or other organic materials. To the extent practical and as allowed by building code, historical recreations and historically-based design elements should be constructed of materials available during the Gold Rush and should be assembled in a manner consistent with methods in use at that time.

Figure 1 -- Diamond Springs Historic Core

Additional recommendations in the Architectural Guidelines that should be incorporated into the recommendations for theDiamond Springs and El Dorado downtown area are as follows:

Scale and Proportion – Historic buildings should retain their height, mass and overall dimensions when renovated or modified, and new buildings should be compatible with existing.

Pedestrian Orientation – Designs should address the needs of pedestrians and include sufficient setbacks, building orientation to the street, façade articulation such as recessed entries and framed windows, and covered walkways. This latter guideline of incorporating colonnades, covered walks and eating areas can perhaps go the furthest towards creating a historic feeling in the downtown area. Recommendation 2.e, which cautions against creating parking lots on the street-side of a parcel, should be applied throughout the downtown cores.

Façade Treatments – Historic façades should be preserved and new structures should emulate historic architecture. Building façades adjacent to the street must be pedestrian-oriented.

Materials and Finishes – Materials and finishes should be suitable to the area and compatible with surrounding architecture of historical value.

2.2 El Dorado County Historic Design Guidelines

The El Dorado County Historic Design Guidelines provide examples of architecture of the type prevalent in the gold mining areas of California during the period of 1850 to 1900. The downtown areas of El Dorado and Diamond Springs are designated "Design Review Historical" by the El Dorado County Zoning Code, and therefore subject to guidelines developed to preserve historic character within that Design-Review – Historic (-DH) Combining Zone. The El Dorado County Historic Design Guidelines were created to provide a framework for decision-making regarding conformance of development to historic style in those zones. As such, they establish recommendations for architectural style common to historic commercial structures, such as use of brick and masonry exterior walls; iron shuttered doors; wooden shake, shingle or corrugated iron roofing materials; and covered sidewalks of board, brick or stone. Signs were often plain or painted wood, and retaining walls were usually stacked and mortared native rock, granite blocks or brick. The guidelines discourage the use of plastic, neon or interior lit signs as well as those which obscure architectural details. The guidelines also present a number of photographs of historical structures to communicate the overall design style.

2.3 Missouri Flat Design Guidelines

The Missouri Flat Design Guidelines, prepared by RRM Design Group in 2008 for the El Dorado County Development Services Department and adopted by resolution on June 3, 2008, present a number of guidelines for the corridor along Missouri Flat Road from just north of Highway 50 to Enterprise Drive. These guidelines establish four design styles for new development within the corridor: Mountain, Agrarian, Craftsman and Gold Rush. In 2011, the Diamond Springs and El Dorado Community Advisory Committee recommended removal of the Mountain style from the Guidelines and required Gold Rush style from the El Dorado Trail/Sacramento Placerville Transportation Corridor Railroad right-of-way to Pleasant Valley Road, allowing Craftsman, Agrarian and Gold Rush styles between Highway 50 and the El Dorado Trail.

Agrarian style structures are characterized by covered porches, low-pitched roofs, heavy wood beams and exposed timber elements, cupolas, and vertically oriented, multi-paned windows with decorative trim. Materials should be locally produced. Walls may be horizontal-lap, board-and-batten, cement-fiber or metal siding or wood clapboard, and roofs may use standing-seam or corrugated metal, wood shingles, or flat tiles.

Craftsman style developed in the late nineteenth and early twentieth centuries and often contained small decorative features and hand-crafted details. Buildings were characterized by deep overhangs, gable roofs, exposed decorative wood elements, large porches, shingled dormers, vertically-oriented double-hung wood windows and trim. Stone bases, accents and chimneys were common.

Gold Rush structures are characterized by wooden two or three story construction lacking intricate details. Buildings often had prominent façades with parapet roofs and balconies incorporating columns and braces that doubled as a covered sidewalk. Windows are vertical and narrow with divided lights.

Of these three styles, Gold Rush style is most appropriate for the downtown areas of Diamond Springs and El Dorado, and similar to the recommendations of the Community Advisory Committee for Missouri Flat Road, design guidelines should limit new development and remodels to Gold Rush style along the historic Highway 49/Pleasant Valley downtown core areas.

In addition to defining these styles, the Missouri Flat Design Guidelines include recommendations for site planning, landscape elements, building design, utilitarian spaces, signage, and mixed use development consistent with good planning and design principals. While all of the guidelines should be applied to development within the study area, the remainder of this section includes a brief discussion on the guidelines as they relate to streetscapes and historic downtown core areas.

Site Planning and Design – Guidelines provide for retention of natural vegetation, stormwater runoff controls including bioswales, and detention basin design. Where feasible, streetscapes should incorporate native landscape plantings, treatment of stormwater in above-ground swales and detention areas, and other site-scale Low Impact Development (LID) techniques such as rain gardens, infiltration galleries and/or permeable pavers to reduce stormwater runoff.

Additionally, the guidelines include a number of recommendations for site layout, including use of natural materials indigenous to the area, orienting buildings towards public spaces and clustering buildings. As already discussed, fronting buildings on the street helps create vibrant downtown areas (**Figure 2**). Incorporating native materials such as stone, masonry, boulders and vegetation into site plans helps create sense-of-place and historically compatible designs.

Figure 2 -- Downtown Placerville, photographer Jeremy Block, Wikimedia Commons

Accent features such as ornamental landscaping, landscaped medians, architectural monuments and/or enhanced paving are recommended, and these elements should be included in streetscapes within the study area. Public outdoor spaces in the downtown cores should be provided and offer shade, benches, landscaping, public art and other elements that attract visitors. Outdoor furniture and fixtures should be compatible with Gold Rush architecture.

Parking lots should not dominate the streetscape. Parking should be located behind buildings, if possible, or screened with earth berms, low walls or landscaping if not.

Streets should include pedestrian walkways that are safe, visually attractive and include landscaping, lighting and specialty paving. Crosswalks should utilized colored, textured paving (or stamped asphalt) compatible with ADA guidelines (**Figure 3**).

Figure 3 -- StreetPrint Textured Asphalt Crosswalk, NC

The guidelines recommend against use of flowering and fruiting trees, which can lead to maintenance issues, though some cities such as Victoria, B.C., and Calgary, Alberta have recently been exploring partnerships with communities to maintain fruit trees in public spaces.

Landscaping Elements – A number of landscaping recommendations are included in the guidelines, such as provision for landscaping between the street and sidewalk and between the sidewalk and buildings, to define focal points and key activity areas, to enclose spaces and frame views, and to provide solar control, fall color, seasonal flower and other effects. Additionally, landscaping should use existing vegetation, rock formations and granitic boulders, which can help reinforce the historic character and sense of place. Guidelines are included for spacing of trees from driveways, utilities, streets and walkways. Plantings should be appropriate for the foothill climate and site

microclimate and grouped in zones based upon water use. Smart irrigation controllers with weather sensors should be utilized and irrigation systems should be properly designed and certified by an irrigation designer.

Paving Treatments – Pavements should utilize texture and color to separate pedestrian routes from vehicular travel ways and at crosswalks and to designate gathering areas. Stamped concrete or asphalt, stone, brick or granite pavers are possible paving materials (**Figure 4**). Patterns and colors can also be used to designate on-street parking, pedestrian loading and accessible spaces.

Figure 4 -- Granite and Brick Pavers and Monument, Auburn, CA

Utilitarian Aspects of Design – In addition to recommendations on planning, landscaping and paving, the Guidelines include prescriptions for utilities, including walls, fences and lighting. General guidelines include screening equipment or installing underground. Booster pumps would typically be installed in underground vaults, irrigation controllers in attractive above-ground cabinets, and backflow devices screened with vegetation. Walls and fences should generally be avoided along public streets, however, where they are needed, they should utilize common historic design elements and details, include offsets every 50 to 75 feet for visual interest and rock or masonry construction if greater than 4 feet high. Chain link is prohibited.

Lighting design should be done with care to avoid glare and light spillage onto adjacent properties. Lights should be of appropriate scale for their uses and use historically

appropriate models in the downtown areas (**Figure 5**). LED lighting should be considered where practical.

Figure 5 -- Street Lights in Auburn, CA

Building Signs – Several of the guidelines for building signs should also be applied to monument signage within the streetscape. Designs should match surrounding architecture. In the central cores, they should be appropriate for the Gold Rush era, of historically appropriate materials including rock, wood, masonry and/or iron, with modernizations where needed for lighting and other factors. Signs should be illuminated with direction lights and should not be internally lit. Monument signs should be in scale with adjacent buildings and landscaping and should be accented with landscape plantings and/or rocks.

3.0 LANDSCAPE GUIDELINES

This section presents landscape guidelines for streetscapes and public spaces along the major corridors and downtown areas within the study area. Recommendations are presented for monuments, sidewalks, Low Impact Development strategies, furnishings, street lighting, signage, street trees and other landscape plantings, Complete Street segments, and other nodes or special areas. This section concludes with an overview of local, regional and statewide guidelines and regulations applicable to streetscapes within the study area.

3.1 Monuments

Streetscape monuments should be placed at entries/exits to historic downtowns as well as at special nodes or places. Monuments should incorporate a placer mining theme with materials in use in the mid to late 1800's, such as rock, iron, and timber. River rock or Placerite[1]; large, rough-hewn timbers; visible fastenings; rusted iron or weathered corten steel, and/or corrugated metal roofing are appropriate materials for monuments. Monuments should be considered at entry points to Diamond Springs and El Dorado along Highway 49 and Pleasant Valley Road at the following approximate locations:

- East of Diamond Springs on Pleasant Valley Road near Carlson Way,
- North of Diamond Springs on Highway 49 near Diamond Road,
- West of the Missouri Flat Road – Highway 49 intersection,
- Highway 49 east of El Dorado near El Dorado Street,
- Highway 49 south of El Dorado near Union Mine Road,
- Pleasant Valley Road west of El Dorado near El Dorado Road.

Monuments for El Dorado and Diamond Springs can vary in design to give each town a unique identity but should be of a similar style. **Figure 6** shows possibilities for monument sign designs that reflects Gold Rush era materials and forms. Monuments should be accented by landscape plantings native to the region, including small flowering trees such as Western redbud (*Cercis occidentalis*) and shrubs or grasses such as California rose (*Rosa californica*), or Deer Grass (*Muhlenbergia rigens*). The monuments and plantings should be illuminated via low-profile directional or spot uplights.

In addition to entry points for Diamond Springs and El Dorado, smaller monuments should be located at access points to the El Dorado Trail on Missouri Flat Road where the trail crosses the street and on Pleasant Valley Road at Oriental Street.

[1] Sierra Placerite is a local trade name for a quarried stone local to the Placerville area. It is composed of rhyolite tuff, fine grained and ranging from light buff to white in color with circular stains of yellow-ochre to gray or brown.

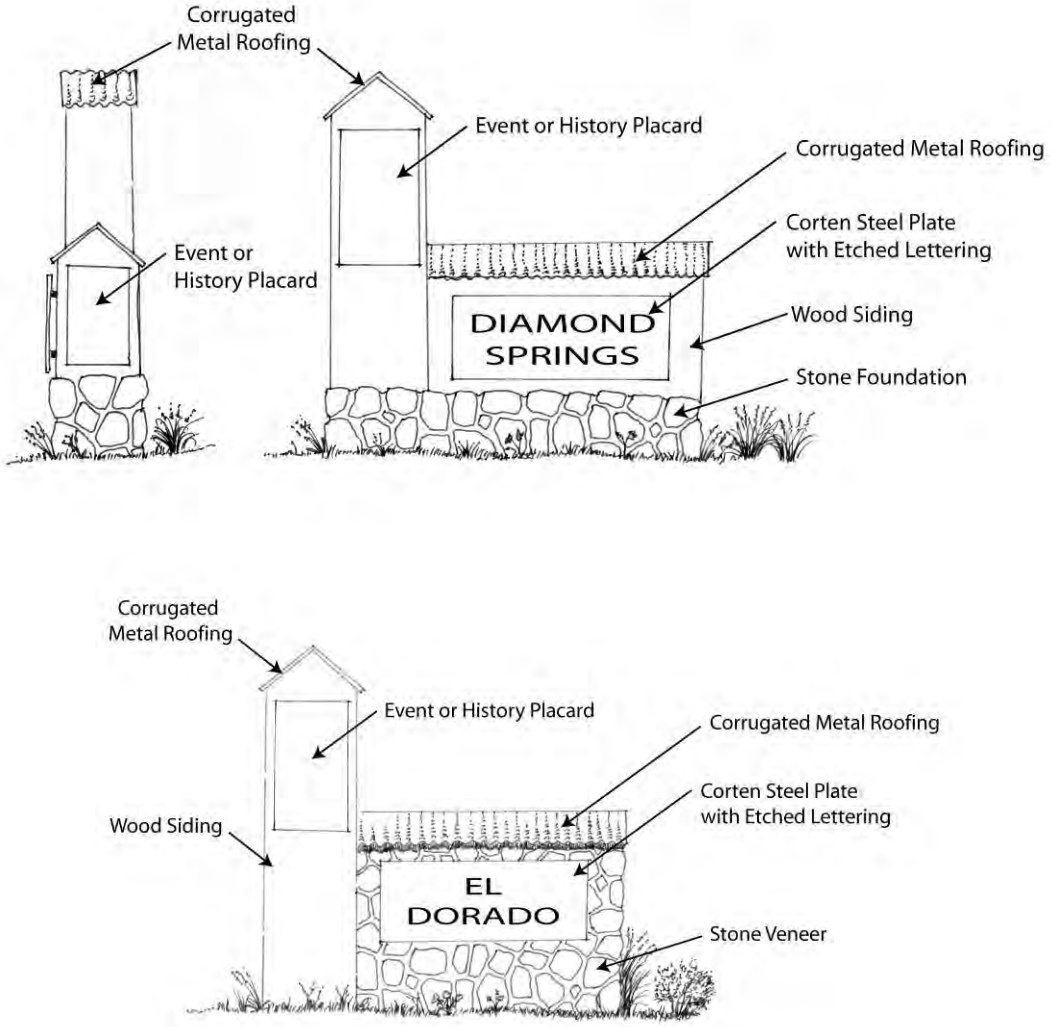


Figure 6 -- Entry Monument Sketches

3.2 Sidewalks

Wide sidewalks with accent paving both in the sidewalk and at crosswalks can create a more pleasant pedestrian environment, slow traffic and make crossings safer. Sidewalks should be six to ten feet wide, where not prohibited by street configuration and building placement, and ADA accessible. Accent paving, such as colored brick stamping, installed at recurring intervals along the sidewalks, can provide additional interest and appeal for pedestrians (**Figure 7**). For example, a six-foot wide sidewalk might incorporate a six-by-six foot square of red or black stamped concrete in a standard brick pattern (running bond, herringbone, basketweave, etc.) every thirty feet.

Figure 7 -- Sidewalk Accent Paving

Street corners, outdoor gathering spaces and other notable areas should incorporate larger sections of colored, patterned paving or unit pavers. For instance, the corner at Highway 49 and Faith Lane, where the weekly Diamond Springs Flea-Farmers market is held, would be a good location for specialized paving.

Along roads where street-trees are desired, but space is insufficient for a six foot or wider planter, consideration should be given to installing sections of sidewalk in permeable pavers. Trees could be installed in tree wells with wrought-iron grates combined with permeable paving in a 10-foot or longer section of sidewalk. Permeable pavers over a 12" or greater depth of coarse no. 2 aggregate allow roots to grow beneath pavement and still receive oxygen and stormwater runoff. Root barrier should be used to prevent root intrusion in unwanted areas. See section 3.7 for additional discussion.

Street crossings within the core downtown areas should be considered for colored stamped asphalt crosswalks such as Streetprint (**Figure 8**). Actual concrete paver inlay would also be appropriate, though significantly more expensive. Patterns and colors should simulate local brick in historic use (typically red or beige).

Through the downtown areas, sidewalks should be as wide as practical and incorporate tree planters or planting wells where feasible. Planting wells can utilize biofiltration systems if desired to detain and filter stormwater runoff. In areas with sufficient space, curb bulb-outs could help create additional pedestrian gathering areas, accommodate street-trees, and help to slow traffic.

Figure 8 -- Imprinted Asphalt Crosswalk in Auburn, CA

3.3 Low Impact Development Strategies

LID swales, such as those incorporated into the Victory Mine Center in Diamond Springs, can be used where appropriate to capture and detain stormwater runoff. Similar swales have been used in the recently redesigned streetscape in Auburn around the intersection between Lincoln and High Streets and along Sunrise Boulevard in Citrus Heights (**Figure 9**). Swales and detention areas may help to reduce stormwater flows and mitigate for the effects of increased impervious surfacing due to sidewalks and other improvements, particularly in areas such as El Dorado, where stormwater runoff has been indicated to be an issue. Similarly, new development and retrofits should consider including rain gardens and/or cisterns into landscape design to intercept roof runoff and provide some detention and filtration capacity prior to discharge into storm sewers or local water bodies. New or reconfigured parking lots can incorporate areas of permeable paving and/or swales and detention areas in parking lot planters to detain stormwater and encourage infiltration.

Figure 9 -- Stormwater Swale

3.4 Benches, Trash Receptacles and other Furnishings

Furnishings such as benches and trash receptacles should follow a Gold Rush era design vernacular with a historic/mining theme. The recently constructed Diamond Center, on Fowler Lane just south of Pleasant Valley Road/Highway 49, has many elements that are appropriate to the desired time period, including trash cans that resemble wine barrels and wood elements with large, exposed fastenings (**Figure 10** and **Figure 11**).

Figure 10 -- Visible Fastenings in Wood Elements at Diamond Center

Figure 11 -- Trash Can at Diamond Center

Furnishings should utilize materials and design appropriate to the Gold Rush era, such as wrought iron, stone and wood. Landscape Forms Plainwell bench with wood slats or the Canterbury 1890 bench (**Figure 12**) are reflexive of the appropriate time period. The Canterbury 1890 bench shown is the cantilevered variety, but it also comes in ground- and surface-mount forms. This bench has been proposed for use at the Monument Garden pocket park in Placerville on Bedford Avenue.

Figure 12 -- Canterbury International 1890 Cantilevered Bench

3.5 Street Lighting

As with furnishings, street lighting should reflect historic designs, preferably those that resemble fixtures in use during California's Gold Rush period (1848 – 1855). Gas lighting began in the United States in Baltimore in 1816, with electrical fixtures not being developed until 1880, so fixtures resembling gas or oil lamps are preferred over those that are more clearly electric. Typically, gas lamps were of the lantern-type mounted on poles or buildings. **Figure 13**, a photograph of Placerville c.1865, shows a rectangular-sided gas lamp on a relatively unadorned pole beside a wagon and mule team. Fixtures resembling this type would be appropriate for street lights in the historic core areas.

Figure 13 – Placerville's First Gas Street Light, c.1865, El Dorado County Historical Museum

From an environmental and maintenance standpoint, LED lighting may be preferable due to lower energy use and longer life than standard incandescent or halogen bulbs, if LED fixtures can be found that meet the design intent.

3.6 Signage

As with the monuments, signage should reflect Gold Rush era materials and manufacturing methods. Local stone, iron, and rough-hewn timbers are appropriate materials for signs. Signs in the Gold Rush era were primarily painted wood. As indicated in the Missouri Flat Design Guidelines (RRM Design Group, 2008), internal lighting of signs should be avoided. A-frame signs are strongly discouraged. Attaching signs directly to buildings is preferred, though for complexes such as Diamond Center, a sign pedestal listing multiple businesses may be more practical.

3.7 Street Trees and Landscape Planting

To maintain a Gold Rush era feel, in which landscaping was generally minimal on many properties, landscaping of public areas should generally utilize native and/or drought tolerant plants. If non-natives are used, they should be those compatible with the native oak, grassland, and chaparral palettes.

Where the width between the street and adjacent buildings allows, street trees should be planted every 30 feet within the downtown areas of Diamond Springs and El Dorado to encourage strolling and provide summertime shade. Valley oak (*Quercus lobata*), California black oak (*Quercus kelloggii*), Interior live oak (*Quercus wislizenii*) and Western sycamore (*Platanus racemosa*) are appropriate native street trees for Missouri Flat and Pleasant Valley Roads and Highway 49.

As discussed in section 3.2, where space is tight, tree wells can share space with sidewalks utilizing tree grates and permeable pavers. As with other furnishings, grates should reflect Gold Rush styles, utilizing wrought iron or similar materials and classic designs. Minimum tree well size is 3’ x 3’. To maintain ADA accessibility, grating holes must be ½” diameter or less (1/4” is better for high-heeled shoes) and walkways must be clear for 48” around trees. Gratings must be expandable so that rings can be removed as trunks grow. Permeable pavers should extend 8 to 15 feet either side of the tree to allow sufficient space for roots, which generally extend out to the edge of the tree canopy. Tree species in small wells must be tolerant of having the majority of their roots beneath pavement, and root systems must not be aggressive. Root barrier can be used to limit root growth to desired areas. Smaller trees are more appropriate where space is tight or tree wells are small. Appropriate small tree species in a sidewalk well include Western redbud (*Cercis occidentalis*), Goldenrain tree (Koelreuteria paniculata) and Chitalpa (*Chitalpa tashkentensis*). The latter two are not native to northern California, but they are drought-tolerant and visually compatible with native landscapes.

3.8 Complete Street segments

Downtown segments of Highway 49, Missouri Flat Road and Pleasant Valley Road should be designed as “Complete Streets” with routes for pedestrians, bicycles and automobiles. Where space is insufficient for all three modes of travel, automobile speeds must be slow enough to allow bicycles to comfortably share the road, and shared routes must be well marked. The new Union Mine Connector Road should also be designed as a Complete Street route with a more rural feel than the downtown areas. Complete Street

designs should go beyond balancing the needs of various transportation modes to take an integrated approach to transportation, recreation, stormwater management and vegetation, so that all of these systems support each other. For example, above-ground stormwater swales in either a median strip or in landscape planters between bike lanes and sidewalks help to irrigate street trees and other landscaping, which in turn create a shady environment for pedestrians and bicyclists, cool the street environment, and provide habitat for birds.

Complete Street concepts that should be included in downtown areas include low speed limits, wide sidewalks, raised cross-walks, street trees, street lighting, and areas to gather and sit. Where space is sufficient, businesses are encouraged to install landscape planters and benches, and restaurants are encouraged to have outdoor seating areas. Parking lots adjacent to the sidewalk are generally discouraged and should be separated by a planting strip of at least three feet wide. **Figure 14** shows a section of High Street in Auburn that was converted to from a strip-mall-like configuration into a "Complete Street". Evidence indicates that local businesses have benefited significantly from this retrofit.

Figure 14 -- Complete Street in Auburn, CA

3.9 Other Special Areas/Nodes

Several areas require special attention because they are gathering places or attractors for residents and visitors. These include the following:

- El Dorado Trail connection at Missouri Flat Road,
- Farmers Market/Flea Market at Highway 49 and Faith Lane,

- Historic structure in Diamond Springs at Highway 49 and Georges Alley,
- Railroad Park at Oriental and Pleasant Valley Road.

These areas should be marked by small monuments, colored and textured crosswalks, lighting, and special landscaping. Monuments can be a variation on the larger town markers discussed earlier, using corrugated roofing, stone masonry or iron/steel elements, as shown in **Figure 15**. Monuments should incorporate a placard or sign plate indicating the significance of the location.

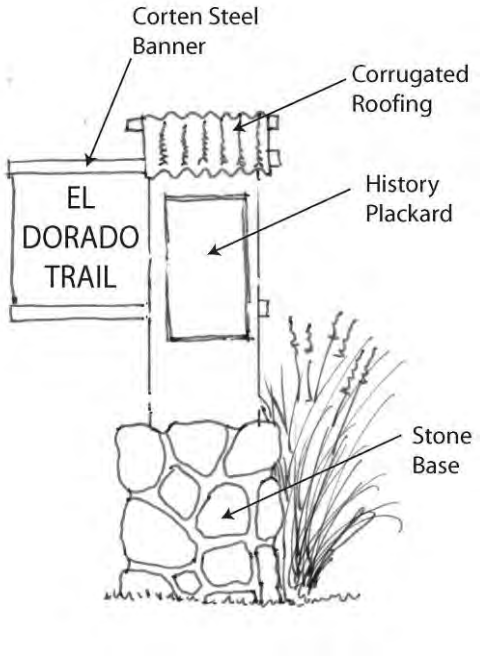


Figure 15 -- Small Monument Sketch

El Dorado Trail at Missouri Flat Road

In addition to a marker or monument, the El Dorado Trail connection at Missouri Flat Road will need improvements to connect the two sides of the trail. This could be an overpass, an on-demand parking light, a rectangular rapid-flash beacon (RRFB) or other solution. Due to speed of traffic through that area, an at-grade crossing should consider raised, textured crosswalks and a median refuge island.

Diamond Springs Flea/Farmers Market

The open-air flea market in the parking lot at Highway 49 and Faith Lane in Diamond Springs, held year-round on Sundays, is very popular (**Figure 16**). A farmers market to be held every Saturday on the same site is planned to begin soon. Parking for the flea market occurs on both sides of the road, and families often cross from the north side of the street to the south to get to the market. Raised, patterned crosswalks would help

make the crossing safer. Additionally, a monument on that corner and/or an additional colored, textured, paved area could mark that corner as special. EDCTC or the County could potentially work with the owner of the parking lot to convert a couple of parking places to permeable pavers and/or a planter with one or more street trees. A raised planter with a tree would provide sitting space for people meeting friends or family at the market or resting in the shade on a hot weekend summer afternoon following the market.

Figure 16 -- Flea/Farmers Market Location

Historic Diamond Springs Building

The historic building at Highway 49 and Georges Alley is currently posted for lease or sale and could be a potential for a public access or recreational amenity near downtown Diamond Springs (**Figure 17**). One possibility could be a neighborhood park. Recommendation NP1.A of the El Dorado County Parks and Trails Master Plan (Foothill Associates 2012) states:

"Where parks are lacking in already developed areas, work with residents to identify potential neighborhood park sites as close by as is feasible. Acquire and improve these parcels through a combination of donations, volunteers, partnerships with other public agencies, grants, and CSD assessments. Ideally, at least four neighborhood parks totaling 20 acres would be located in the El Dorado/Diamond Springs area" (NP1.A) (Foothill Associates 2012)." The County general plan established under policy 9.1.1.1 a guideline of 2.0 acres of neighborhood parks per 1,000 population.

While the site is less than the five acres usually desired for a neighborhood park, the proximity to the flea/farmers market, central location within Diamond Springs, historic nature of the site, and adjacency to Independence High School increase it's desirability as

a public amenity. Other surrounding parcels could be investigated further for the potential to add to the existing site to increase its usability as a neighborhood park.

If the site were purchased and developed as a public amenity, strengthening the connection between the park and downtown, particularly the flea/farmers market with wide sidewalks and street trees, marking the site with a monument, and including interpretive signage on the historic building would be important development objectives. The park site could also provide additional parking for the downtown area and flea/farmers markets and could function as a join-use facility with the school, which currently lacks athletic fields.

Figure 17 -- Empty Lot Adjacent to Historic Structure in Diamond Springs

If done, purchase and development of this site as a County park could occur in as part of park land dedications for new development in the area and in coordination with other County park efforts. Development of this site as a park may require an amendment of the County General Plan to change the zoning from commercial to public park/open space, which could have implications for economic development and revitalization of Diamond Springs given the proximity of the parcel to the core area.

Railroad Park

Railroad Park is a 6.3 acre proposed park in the town of El Dorado at Oriental and Pleasant Valley Road. A railroad museum has been constructed on the site, but otherwise, it is largely undeveloped (**Figure 18**). The museum is about 700 feet off of Pleasant Valley Road, so a monument or other marker on the street corner would help direct visitors to the site. Roadway improvements to Oriental Street, including sidewalks, would facilitate access by pedestrians visiting downtown El Dorado.

Figure 18 -- Museum at Railroad Park

3.10 El Dorado County Landscaping Guidelines

El Dorado County provides guidelines for landscaping on both private and public land through its General Plan goals, objectives and policies and the Zoning Code. In addition, various regional and state codes and guidelines apply to landscape design in El Dorado County. These include the CALGreen Building Code, California Fire Safe Regulations, and the Model Water Efficient Landscaping Ordinance (MWELO).

3.10.1 El Dorado County Zoning Code and General Plan

The El Dorado County Zoning ordinance requires landscaping for all industrial, research and development, commercial, multi-unit residential, civic or utility land uses for areas not occupied by structures, walkways, driveways, parking lots, decks, patios, other hardscapes, and other non-irrigated areas such as open space. A water efficient landscape plan may be required. These requirements do not apply to commercial uses on agricultural, rural lands and resource-zoned land, unless a parking lot is adjacent to a road (El Dorado County, 2012). The zoning code also includes requirements for fences, outdoor lighting, and parking that may apply to streetscapes.

The El Dorado County General Plan includes a number of policies, goals and objectives within the Land Use Element that apply to corridor streetscapes including the following:

GOAL 2.3: NATURAL LANDCAPE FEATURES

> **Maintain the characteristic natural landscape features unique to each area of the County.**

OBJECTIVE 2.3.1: TOPOGRAPHY AND NATIVE VEGETATION

Provide for the retention of distinct topographical features and conservation of the native vegetation of the County.

GOAL 2.4: EXISTING COMMUNITY IDENTITY

Maintain and enhance the character of existing rural and urban communities, emphasizing both the natural setting and build design elements which contribute to the qualify of life, economic health, and community pride of County residents

OBJECTIVE 2.4.1: COMMUNITY IDENTITY

Identification, maintenance, and enhancement of the unique identity of each existing community.

GOAL 2.6: SCENIC CORRIDOR IDENTIFICATION

Protection and improvement of scenic values along designated scenic road corridors.

OBJECTIVE 2.6.1: SCENIC CORRIDOR IDENTIFICATION

Identification of scenic and historical roads and corridors.

GOAL 2.7: SIGNS

Regulation of the size, quantity, and location of signs to maintain and enhance the visual appearance of the County.

OBJECTIVE 2.7.1 SIGNS REGULATION

Regulation of the location, number and size of highway signs and elimination of billboards along identified scenic and historic routes.

GOAL 2.8: LIGHTING

Elimination of high intensity lighting and glare consistent with prudent safety practices.

OBJECTIVE 2.8.1

Provide standards, consistent with prudent safety practices, for the elimination of high intensity lighting and glare.

The following goals and policies from the Transportation and Circulation Element applicable to streetscapes:

GOAL TC-4: To provide a safe, continuous, and easily accessible non-motorized transportation system that facilitates the use of the viable alternative transportation modes.

POLICY TC-4: Within Community Regions and Rural Centers, all development shall include pedestrian/bike paths connecting to adjacent development and to schools, parks, commercial areas and other facilities where feasible. In Rural Regions, pedestrian/bike paths shall be considered as appropriate.

GOAL TC-5: To provide safe, continuous, and accessible sidewalks and pedestrian facilities as a viable alternative transportation mode.

POLICY TC-5c: Roads adjacent to schools or parks shall have curbs and sidewalks.

The following goals and policies from the Conservation and Open Space Element may apply to streetscapes:

GOAL 7.3.5: WATER CONSERVATION

Conservation of water resources, encouragement of water conservation, and construction of wastewater disposal systems designed to reclaim and re-use treated wastewater on agricultural crops and for other irrigation and wildlife enhancement projects.

POLICY 7.3.5.1: Drought-tolerant plant species, where feasible, shall be used for landscaping of commercial development. Where the use of drought-tolerant native plant species is feasible, they should be used instead of non-native plant species.

POLICY 7.3.5.3: The County Parks and Recreation Division shall use drought tolerant landscaping for all new parks and park improvement projects.

GOAL 7.4.5: NATIVE VEGETATION AND LANDMARK TREES

Protect and maintain native trees including oaks and landmark and heritage trees.

POLICY 7.4.5.2: It shall be the policy of the County to preserve native oaks wherever feasible, through the review of all proposed development activities where such trees are present on either public or private property, while at the same time recognizing individual rights to develop private property in a reasonable manner.

GOAL 7.5: CULTURAL RESOURCES

Ensure the preservation of the County's important cultural resources

OBJECTIVE 7.5.2: VISUAL INTEGRITY

Maintenance of the visual integrity of historic resources

POLICY 7.5.2.3: New buildings and reconstruction in historic communities shall generally conform to the types of architecture prevalent in the gold mining areas of California during the period 1850 to 1910.

3.10.2 CALGreen Building Code

The 2010 California Green Building Standards Code, also known as CALGreen, includes requirements for new construction primarily related to outdoor water use applicable to streetscapes. For instance, Section 4.304.1 requires conformance to the California Department of Water Resources Model Water Efficient Landscape Ordinance (MWELO), discussed in more detail in later in this section, and 5.304.3 requires weather-based irrigation controllers on all landscaping between 1,000 and 2,500 square feet. Additionally, 5.407.1 requires design of landscape irrigation to prevent overspray on buildings.

CALGreen also includes a number of voluntary measures for non-residential structures. These are encouraged, but not required. Voluntary measures include LID techniques such as bioretention (rain gardens), cisterns, permeable and porous paving, and vegetative swales and filter strips; standards for outdoor lighting such as lamp efficiency standards and photo/astronomical time switch control, and lighting power allowances; and provisions for use of recycled, rainwater capture, or graywater irrigation systems.

3.10.3 Fire Safety

The State of California Code or Regulations, Vol. 18, Title 14, Natural Resources, includes a number of provisions for decreasing the threat of wildfire, which is a serious issue in the foothill communities around Diamond Springs and El Dorado. Few of the regulations, however, are directed to landscaping, beyond creating buffers 30-feet around buildings clear of flammable vegetation and a reduced fuel zone from 30-feet to 100-feet around structures.

In addition to the buffers required by Title 14, landscape designs should avoid the use of highly flammable plants and consider fire resistant plants instead. The California Native Plant Society produces a brochure called "Native Plant Landscaping to Reduce Wildfire Risk", which includes lists of the less flammable native plants[2].

3.10.4 Model Water Efficient Landscaping Ordinance

The Water Conservation in Landscaping Act of 2006 (AB 1881) required cities, counties and special districts to adopt landscape water conservation ordinances to guide the water consumption of landscape vegetation. The MWELO was developed to serve as a model ordinance. Agencies that did not have ordinances in place by January 1, 2010 were to conform to the MWELO until such time as their ordinances were adopted. El Dorado County is currently operating under the MWELO.

The objective of the MWELO is to set maximum limits for irrigation water consumption, and thereby promote the use of lower water use landscape designs, by establishing a Maximum Applied Water Allowance (MAWA) for a landscaped area. In order to be approved under the ordinance, the Estimated Total Water Use (ETWU) for a new landscape must fall under its MAWA. The ETWU is based upon a number of factors,

[2] Located at this address, as of February 2014: http://www.cnpssd.org/fire/ReduceFireRisk.pdf.

including whether a plant requires high, medium or low water to survive (its Plant Factor), the size of the irrigated area, and the efficiency of the irrigation system. Plants with lower water requirements have lower Plant Factors, which lowers the overall ETWU score of the project and makes it more likely to be under the MAWA.

The MWELO requires detailed irrigation plans to be submitted with a new project as well as an irrigation audit following construction to demonstrate that the system operates as designed and that irrigation efficiency met the assumptions used in ETWU.

4.0 REFERENCES

1. El Dorado County, 2012. *Title 17 – Zoning Ordinance.* El Dorado County. October 2012.

2. El Dorado County, 2013. *El Dorado County General Plan, Land Use Element.* El Dorado County. July 2004 (Amended December 2009).

3. Foothill Associates, 2012. *Final El Dorado County Parks and Trails Master Plan*. El Dorado County. March 27, 2012.

4. RRM Design Group. *Missouri Flat Design Guidelines.* El Dorado County. June, 2008.

Environmental Assessment

Diamond Springs and El Dorado Area Mobility and Livable Community Plan
El Dorado County, California

Prepared for: El Dorado County Transportation Commission

Date: February 28, 2014

Submitted by:

FOOTHILL ASSOCIATES

Table of Contents

List of Tables

List of Figures

1.0 EXECUTIVE SUMMARY

Foothill Associates conducted an environmental assessment on the Diamond Springs and El Dorado Area Mobility and Livable Community Plan area, located in El Dorado County, California. The plan area lies largely between U.S. Highway 50 and California State Highway 49, east of Mother Load Drive. The purpose of this document is to summarize the general biological resources in the plan area, to assess the suitability of the area to support special-status species and sensitive habitat types, and to provide recommendations for regulatory permitting or further analysis that may be required.

Land uses surrounding the project site include undeveloped land, oak and montane woodlands, and annual grassland. Known or potential biological constraints on the site include:

- Potential habitat for special-status plant species;
- Potential nesting sites and foraging habitat for raptors (including bald eagle, northern goshawk and white-tailed kite);
- Potential habitat for coast horned lizard;
- Potential habitat for western burrowing owl;
- Potential habitat for tricolored blackbird;
- Potential habitat for western pond turtle;
- Potential habitat for special-status bat species;
- Potential habitat for great egret;
- Potential habitat for valley elderberry longhorn beetle;
- Potential habitat for Cosumnes spring stonefly;
- Potential habitat for California red-legged frog, and foothill yellow-legged frog;
- Potential habitat for special-status fish; and
- Sensitive habitats: potentially jurisdictional waters of the U.S. including seasonal wetlands and perennial marsh, and associated ephemeral drainages and oak woodlands.

2.0 INTRODUCTION

This report summarizes the findings of an environmental assessment completed for the approximately 8,072-acre Diamond Springs and El Dorado Area Mobility and Livable Community Plan, located within El Dorado County, California. This document addresses the onsite physical features, as well as, plant communities present and the common plant and wildlife species occurring, or potentially occurring in the plan area. Furthermore, the suitability of habitats onsite to support special-status species are analyzed and recommendations are provided for any regulatory permitting or further analysis required prior to development occurring on the project site. In addition to an assessment of the overall plan area, two focused study areas, one located near the intersection of Mother Load Drive and Pleasant Valley Road and one near the intersection of Pearl Place and Pleasant Valley Road were investigated.

The Diamond Springs and El Dorado Area Mobility and Livable Community Plan (Plan) area is situated southwest of the City of Placerville and includes portions of U.S. Highway 50, and State Highway 49, as well as rural residential areas, such as Diamond Springs. The Plan is characterized as a foothill woodland plant community. Dominant overstory includes blue oak (*Quercus douglasii*), interior live oak (*Quercus wislizeni*) and foothill pine (*Pinus sabiniana*), an understory of toyon (*Heteromeles arbutifolia*), manzanita (*Arcrostaphylos* spp.), and buckbrush (*Ceanothus cuneatus*), and herbaceous ground cover of various grasses and forbs, such as wild oat (*Avena fatua*), soft chess (*Bromus hordeaceus*) and Spanish lotus (*Acmispon americanus*).

3.0 REGULATORY FRAMEWORK

Federal, State, and local environmental laws, regulations, and policies relevant to the California Environmental Quality Act (CEQA) review process are summarized below. The CEQA significance criteria are also included in this section.

3.1 Federal Endangered Species Act

The United States Congress passed the Federal Endangered Species Act (FESA) in 1973 to protect those species that are endangered or threatened with extinction. FESA is intended to operate in conjunction with the National Environmental Policy Act (NEPA) to help protect the ecosystems upon which endangered and threatened species depend.

FESA prohibits the "take" of endangered or threatened wildlife species. "Take" is defined to include harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such conduct (FESA Section 3 [(3)(19)]). Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns (50 CFR §17.3). Harass is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns (50 CFR §17.3). Actions that result in take can result in civil or criminal penalties.

FESA and Clean Water Act (CWA) Section 404 guidelines prohibit the issuance of wetland permits for projects that jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species. The U.S. Army Corps of Engineers (Corps) must consult with the U.S. Fish and Wildlife Service (USFWS) and/or the National Marine Fisheries Service (NMFS) when threatened or endangered species under their jurisdiction may be affected by a proposed project. In the context of the proposed project, FESA would be initiated if development resulted in take of a threatened or endangered species or if issuance of a Section 404 permit or other federal agency action could result in take of an endangered species or adversely modify critical habitat of such a species.

3.2 Migratory Bird Treaty Act

Raptors (birds of prey), migratory birds, and other avian species are protected by a number of State and federal laws. The federal Migratory Bird Treaty Act (MBTA) prohibits the killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of Interior. Section 3503.5 of the California Fish and Game Code states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto."

3.3 California Endangered Species Act

The State of California enacted the California Endangered Species Act (CESA) in 1984. CESA is similar to the FESA but pertains to State-listed endangered and threatened species. CESA requires state agencies to consult with the California Department of Fish and Wildlife (CDFW), formally California Department of Fish and Game, when preparing California Environmental Quality Act (CEQA) documents. The purpose is to ensure that the state lead agency actions do not jeopardize the continued existence of a listed species or result in the destruction, or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available (Fish and Game Code §2080). CESA directs agencies to consult with CDFW on projects or actions that could affect listed species, directs CDFW to determine whether jeopardy would occur and allows CDFW to identify "reasonable and prudent alternatives" to the project consistent with conserving the species. CESA allows CDFW to authorize exceptions to the State's prohibition against take of a listed species if the "take" of a listed species is incidental to carrying out an otherwise lawful project that has been approved under CEQA (Fish & Game Code § 2081).

3.4 CDFW Species of Concern

In addition to formal listing under FESA and CESA, species receive additional consideration by CDFW and local lead agencies during the CEQA process. Species that may be considered for review are included on a list of "Species of Special Concern," developed by the CDFW. It tracks species in California whose numbers, reproductive success, or habitat may be threatened.

3.5 California Native Plant Society

The California Native Plant Society (CNPS) maintains a rank of plant species native to California that has low population numbers, limited distribution, or are otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. Potential impacts to populations of CNPS-ranked plants receive consideration under CEQA review. The following identifies the definitions of the CNPS listings:

- Rank 1A: Plants presumed Extinct in California
- Rank 1B: Plants Rare, Threatened, or Endangered in California and elsewhere
- Rank 2: Plants Rare, Threatened, or Endangered in California, but more numerous elsewhere
- Rank 3: Plants about which we need more information – A Review List
- Rank 4: Plants of limited distribution – A Watch List

3.6 Jurisdictional Waters of the United States

3.6.1 Federal Jurisdiction

The Corps regulates discharge of dredge or fill material into waters of the United States under Section 404 of the CWA. "Discharges of fill material" is defined as the addition of fill material into waters of the U.S., including, but not limited to the following: placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; fill for intake and outfall pipes and subaqueous utility lines [33 C.F.R. §328.2(f)]. In addition, Section 401 of the CWA (33 U.S.C. 1341) requires any applicant for a Federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the United States to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards.

Waters of the U.S. include a range of wet environments such as lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, and wet meadows. Boundaries between jurisdictional waters and uplands are determined in a variety of ways depending on which type of waters is present. Methods for delineating wetlands and non-tidal waters are described below.

- Wetlands are defined as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" [33 C.F.R. §328.3(b)]. Presently, to be a wetland, a site must exhibit three wetland criteria: hydrophytic vegetation, hydric soils, and wetland hydrology existing under the "normal circumstances" for the site.

- The lateral extent of non-tidal waters is determined by delineating the ordinary high water mark (OHWM) [33 C.F.R. §328.4(c)(1)]. The OHWM is defined by the Corps as "that line on shore established by the fluctuations of water and indicated by physical character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" [33 C.F.R. §328.3(e)].

3.6.2 CDFW Jurisdiction

CDFW is a trustee agency that has jurisdiction under Section 1600 *et seq*. of the California Fish and Game Code. Under Sections 1602 and 1603, a private party must notify CDFW if a proposed project will "substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds…except when the department has been notified pursuant to Section 1601." If an existing fish or wildlife resource may be substantially adversely affected by the activity, CDFW may propose reasonable measures that will allow protection of those resources. If these measures are

agreeable to the parties involved, they may enter into an agreement with CDFW identifying the approved activities and associated mitigation measures.

3.7 CEQA Significance Criteria

Section 15064.7 of the CEQA Guidelines encourages local agencies to develop and publish the thresholds that the agency uses in determining the significance of environmental effects caused by projects under its review. However, agencies may also rely upon the guidance provided by the expanded Initial Study checklist contained in Appendix G of the CEQA Guidelines. Appendix G provides examples of impacts that would normally be considered significant. Based on these examples, impacts to biological resources would normally be considered significant if the project would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS;

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS;

- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;

- Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;

- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and

- Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional or state habitat conservation plan.

An evaluation of whether or not an impact on biological resources would be substantial must consider both the resource itself and how that resource fits into a regional or local context. Substantial impacts would be those that would diminish, or result in the loss of, an important biological resource, or those that would obviously conflict with local, State, or federal resource conservation plans, goals, or regulations. Impacts are sometimes locally important but not significant according to CEQA. The reason for this is that although the impacts would result in an adverse alteration of existing conditions, they would not substantially diminish, or result in the permanent loss of, an important resource on a population-wide or region-wide basis.

3.8 El Dorado County General Plan

CONSERVATION AND PROTECTION OF WATER RESOURCES

GOAL 7.3: WATER QUALITY AND QUANTITY
Conserve, enhance, and manage water resources and protect their quality from degradation.

OBJECTIVE 7.3.1: WATER RESOURCE PROTECTION
Preserve and protect the supply and quality of the County's water resources including the protection of critical watersheds, riparian zones, and aquifers.

Policy 7.3.1.1 *Encourage the use of Best Management Practices, as identified by the Soil Conservation Service, in watershed lands as a means to prevent erosion, siltation, and flooding.*

Policy 7.3.1.2 *Establish water conservation programs that include both drought tolerant landscaping and efficient building design requirements as well as incentives for the conservation and wise use of water.*

Policy 7.3.1.*3* *The County shall develop the criteria and draft an ordinance to allow and encourage the use of domestic gray water for landscape irrigation purposes. (See Title 22 of the State Water Code and the Graywater Regulations of the Uniform Plumbing Code).*

OBJECTIVE 7.3.2: WATER QUALITY
Maintenance of and, where possible, improvement of the quality of underground and surface water.

Policy 7.3.2.1 *Stream and lake embankments shall be protected from erosion, and streams and lakes shall be protected from excessive turbidity.*

Policy 7.3.2.2 *Projects requiring a grading permit shall have an erosion control program approved, where necessary.*

Policy 7.3.2.3 *Where practical and when warranted by the size of the project, parking lot storm drainage shall include facilities to separate oils and salts from storm water in accordance with the recommendations of the Storm Water Quality Task Force's California Storm Water Best Management Practices Handbooks (1993).*

Policy 7.3.2.4 *The County should evaluate feasible alternatives to the use of salt for ice control on County roads.*

Policy 7.3.2.5 *As a means to improve the water quality affecting the County's recreational waters, enhanced and increased detailed analytical water quality studies and monitoring should be implemented to identify and reduce point and non-point pollutants and contaminants. Where such studies or monitoring reports have identified sources of pollution, the County shall propose means to prevent, control, or treat identified pollutants and contaminants.*

OBJECTIVE 7.3.3: WETLANDS
Protection of natural and man-made wetlands, vernal pools, wet meadows, and riparian areas from impacts related to development for their importance to wildlife habitat, water purification, scenic values, and unique and sensitive plant life.

Policy 7.3.3.1 *For projects that would result in the discharge of material to or that may affect the function and value of river, stream, lake, pond, or wetland features, the application shall include a delineation of all such features. For wetlands, the delineation shall be conducted using the U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual*

Policy 7.3.3.2 *intentionally blank*

Policy 7.3.3.3 *The County shall develop a database of important surface water features, including lake, river, stream, pond, and wetland resources.*

Policy 7.3.3.4 *The Zoning Ordinance shall be amended to provide buffers and special setbacks for the protection of riparian areas and wetlands. The County shall encourage the incorporation of protected areas into conservation easements or natural resource protection areas.*

Exceptions to riparian and wetland buffer and setback requirements shall be provided to permit necessary road and bridge repair and construction, trail construction, and other recreational access structures such as docks and piers, or where such buffers deny reasonable use of the property, but only when appropriate mitigation measures and Best Management Practices are incorporated into the project. Exceptions shall also be provided for horticultural and grazing activities on agriculturally zoned lands that utilize "best management practices (BMPs)" as recommended by the County Agricultural Commission and adopted by the Board of Supervisors.

Until standards for buffers and special setbacks are established in the Zoning Ordinance, the County shall apply a minimum setback of 100 feet from all perennial streams, rivers, lakes, and 50 feet from intermittent streams and wetlands. These interim standards may be modified in a particular instance if more detailed information relating to slope, soil stability, vegetation, habitat, or other site- or project-specific conditions supplied as part of the review for a specific project demonstrates that a

different setback is necessary or would be sufficient to protect the particular riparian area at issue.

For projects where the County allows an exception to wetland and riparian buffers, development in or immediately adjacent to such features shall be planned so that impacts on the resources are minimized. If avoidance and minimization are not feasible, the County shall make findings, based on documentation provided by the project proponent, that avoidance and minimization are infeasible.

Policy 7.3.3.5 *Rivers, streams, lakes and ponds, and wetlands shall be integrated into new development in such a way that they enhance the aesthetic and natural character of the site while disturbance to the resource is avoided or minimized and fragmentation is limited.*

OBJECTIVE 7.3.4: DRAINAGE
Protection and utilization of natural drainage patterns.

Policy 7.3.4.1 *Natural watercourses shall be integrated into new development in such a way that they enhance the aesthetic and natural character of the site without disturbance.*

Policy 7.3.4.2 *Modification of natural stream beds and flow shall be regulated to ensure that adequate mitigation measures are utilized.*

OBJECTIVE 7.3.5: WATER CONSERVATION
Conservation of water resources, encouragement of water conservation, and construction of wastewater disposal systems designed to reclaim and re-use treated wastewater on agricultural crops and for other irrigation and wildlife enhancement projects.

Policy 7.3.5.1 *Drought-tolerant plant species, where feasible, shall be used for landscaping of commercial development. Where the use of drought-tolerant native plant species is feasible, they should be used instead of non-native plant species.*

Policy 7.3.5.2 *A list of appropriate local indigenous drought tolerant plant materials shall be maintained by the County Planning Department and made available to the public.*

Policy 7.3.5.3 *The County Parks and Recreation Division shall use drought tolerant landscaping for all new parks and park improvement projects.*

Policy 7.3.5.4 *Require efficient water conveyance systems in new construction. Establish a program of ongoing conversion of open ditch systems shall be*

considered for conversion to closed conduits, reclaimed water supplies, or both, as circumstances permit.

Policy 7.3.5.5 *Encourage water reuse programs to conserve raw or potable water supplies consistent with State Law.*

CONSERVATION OF BIOLOGICAL RESOURCES

GOAL 7.4: WILDLIFE AND VEGETATION RESOURCES

Identify, conserve, and manage wildlife, wildlife habitat, fisheries, and vegetation resources of significant biological, ecological, and recreational value.

OBJECTIVE 7.4.1: RARE, THREATENED, AND ENDANGERED SPECIES

The County shall protect State and Federally recognized rare, threatened, or endangered species and their habitats consistent with Federal and State laws.

Policy 7.4.1.1 *The County shall continue to provide for the permanent protection of the eight sensitive plant species known as the Pine Hill endemics and their habitat through the establishment and management of ecological preserves consistent with County Code Chapter 17.71 and the USFWS's Gabbro Soil Plants for the Central Sierra Nevada Foothills Recovery Plan (USFWS 2002).*

Policy 7.4.1.2 *Private land for preserve sites will be purchased only from willing sellers.*

Policy 7.4.1.3 *Limit land uses within established preserve areas to activities deemed compatible. Such uses may include passive recreation, research and scientific study, and education. In conjunction with use as passive recreational areas, develop a rare plant educational and interpretive program.*

Policy 7.4.1.4 *Proposed rare, threatened, or endangered species preserves, as approved by the County Board of Supervisors, shall be designated Ecological Preserve (-EP) overlay on the General Plan land use map.*

Policy 7.4.1.5 *Species, habitat, and natural community preservation/conservation strategies shall be prepared to protect special status plant and animal species and natural communities and habitats when discretionary development is proposed on lands with such resources unless it is determined that those resources exist, and either are or can be protected, on public lands or private Natural Resource lands.*

Policy 7.4.1.6 *All development projects involving discretionary review shall be designed to avoid disturbance or fragmentation of important habitats to the extent reasonably feasible. Where avoidance is not possible, the development*

shall be required to fully mitigate the effects of important habitat loss and fragmentation. Mitigation shall be defined in the Integrated Natural Resources Management Plan (INRMP) (see Policy 7.4.2.8 and Implementation Measure CO-M).

The County Agricultural Commission, Plant and Wildlife Technical Advisory Committee, representatives of the agricultural community, academia, and other stakeholders shall be involved and consulted in defining the important habitats of the County and in the creation and implementation of the INRMP.

Policy 7.4.1.7 *The County shall continue to support the Noxious Weed Management Group in its efforts to reduce and eliminate noxious weed infestations to protect native habitats and to reduce fire hazards.*

OBJECTIVE 7.4.2: IDENTIFY AND PROTECT RESOURCES
Identification and protection, where feasible, of critical fish and wildlife habitat including deer winter, summer, and fawning ranges; deer migration routes; stream and river riparian habitat; lake shore habitat; fish spawning areas; wetlands; wildlife corridors; and diverse wildlife habitat.

Policy 7.4.2.1 *To the extent feasible in light of other General Plan policies and to the extent permitted by State law, the County of El Dorado will protect identified critical fish and wildlife habitat, as identified on the Important Biological Resources Map maintained at the Planning Department, through any of the following techniques: utilization of open space, Natural Resource land use designation, clustering, large lot design, setbacks, etc.*

Policy 7.4.2.2 *Where critical wildlife areas and migration corridors are identified during review of projects, the County shall protect the resources from degradation by requiring all portions of the project site that contain or influence said areas to be retained as non-disturbed natural areas through mandatory clustered development on suitable portions of the project site or other means such as density transfers if clustering cannot be achieved. The setback distance for designated or protected migration corridors shall be determined as part of the project's environmental analysis. The intent and emphasis of the Open Space land use designation and of the non-disturbance policy is to ensure continued viability of contiguous or interdependent habitat areas and the preservation of all movement corridors between related habitats. The intent of mandatory clustering is to provide a mechanism for natural resource protection while allowing appropriate development of private property. Horticultural and grazing projects on agriculturally designated lands are exempt from the restrictions placed on disturbance of natural areas when utilizing "Best Management Practices" (BMPs) recommended by the County*

Agricultural Commission and adopted by the Board of Supervisors when not subject to Policy 7.1.2.7.

Policy 7.4.2.3 *Consistent with Policy 9.1.3.1 of the Parks and Recreation Element, low impact uses such as trails and linear parks may be provided within river and stream buffers if all applicable mitigation measures are incorporated into the design.*

Policy 7.4.2.4 *Establish and manage wildlife habitat corridors within public parks and natural resource protection areas to allow for wildlife use. Recreational uses within these areas shall be limited to those activities that do not require grading or vegetation removal.*

Policy 7.4.2.5 *Setbacks from all rivers, streams, and lakes shall be included in the Zoning Ordinance for all ministerial and discretionary development projects.*

Policy 7.4.2.6 *El Dorado County Biological Community Conservation Plans shall be required to protect, to the extent feasible, rare, threatened, and endangered plant species only when existing federal or State plans for non-jurisdictional areas do not provide adequate protection.*

Policy 7.4.2.7 *The County shall form a Plant and Wildlife Technical Advisory Committee to advise the Planning Commission and Board of Supervisors on plant and wildlife issues, and the committee should be formed of local experts, including agricultural, fire protection, and forestry representatives, who will consult with other experts with special expertise on various plant and wildlife issues, including representatives of regulatory agencies. The Committee shall formulate objectives which will be reviewed by the Planning Commission and Board of Supervisors.*

Policy 7.4.2.8 *Develop within five years and implement an Integrated Natural Resources Management Plan (INRMP) that identifies important habitat in the County and establishes a program for effective habitat preservation and management. The INRMP shall include the following components:*

A. Habitat Inventory. This part of the INRMP shall inventory and map the following important habitats in El Dorado County:

1. *Habitats that support special status species;*
2. *Aquatic environments including streams, rivers, and lakes;*
3. *Wetland and riparian habitat;*
4. *Important habitat for migratory deer herds; and*
5. *Large expanses of native vegetation.*

The County should update the inventory every three years to identify the amount of important habitat protected, by habitat type, through County programs and the amount of important habitat removed because of new development during that period. The inventory and mapping effort shall be developed with the assistance of the Plant and Wildlife Technical Advisory Committee, CDFW, and USFWS. The inventory shall be maintained and updated by the County Planning Department and shall be publicly accessible.

B. *Habitat Protection Strategy. This component shall describe a strategy for protecting important habitats based on coordinated land acquisitions (see item D below) and management of acquired land. The goal of the strategy shall be to conserve and restore contiguous blocks of important habitat to offset the effects of increased habitat loss and fragmentation elsewhere in the county. The Habitat Protection Strategy should be updated at least once every five years based on the results of the habitat monitoring program (item F below). Consideration of wildlife movement will be given by the County on all future 4- and 6-lane roadway construction projects. When feasible, natural undercrossings along proposed roadway alignments that could be utilized by terrestrial wildlife for movement will be preserved and enhanced.*

C. *Mitigation Assistance. This part of the INRMP shall establish a program to facilitate mitigation of impacts to biological resources resulting from projects approved by the County that are unable to avoid impacts on important habitats. The program may include development of mitigation banks, maintenance of lists of potential mitigation options, and incentives for developers and landowner participation in the habitat acquisition and management components of the INRMP.*

D. *Habitat Acquisition. Based on the Habitat Protection Strategy and in coordination with the Mitigation Assistance program, the INRMP shall include a program for identifying habitat acquisition opportunities involving willing sellers. Acquisition may be by state or federal land management agencies, private land trusts or mitigation banks, the County, or other public or private organizations. Lands may be acquired in fee or protected through acquisition of a conservation easement designed to protect the core habitat values of the land while allowing other uses by the fee owner. The program should identify opportunities for partnerships between the County and other organizations for habitat acquisition and management. In evaluating proposed acquisitions, consideration will be given to site specific features (e.g., condition and threats to habitat, presence of special status species), transaction related features (e.g., level of*

protection gained, time frame for purchase completion, relative costs), and regional considerations (e.g., connectivity with adjacent protected lands and important habitat, achieves multiple agency and community benefits). Parcels that include important habitat and are located generally to the west of the El Dorado National Forest should be given priority for acquisition. Priority will also be given to parcels that would preserve natural wildlife movement corridors such as crossing under major roadways (e.g., U.S. Highway 50 and across canyons). All land acquired shall be added to the Ecological Preserve overlay area.

E. *Habitat Management. Each property or easement acquired through the INRMP should be evaluated to determine whether the biological resources would benefit from restoration or management actions. Examples of the many types of restoration or management actions that could be undertaken to improve current habitat conditions include: removal of non native plant species, planting native species, repair and rehabilitation of severely grazed riparian and upland habitats, removal of culverts and other structures that impede movement by native fishes, construction of roadway under and overcrossing that would facilitate movement by terrestrial wildlife, and installation of erosion control measures on land adjacent to sensitive wetland and riparian habitat.*

F. *Monitoring. The INRMP shall include a habitat monitoring program that covers all areas under the Ecological Preserve overlay together with all lands acquired as part of the INRMP. Monitoring results shall be incorporated into future County planning efforts so as to more effectively conserve and restore important habitats. The results of all special status species monitoring shall be reported to the CNDDB. Monitoring results shall be compiled into an annual report to be presented to the Board of Supervisors.*

G. *Public Participation. The INRMP shall be developed with and include provisions for public participation and informal consultation with local, state, and federal agencies having jurisdiction over natural resources within the County.*

H. *Funding. The County shall develop a conservation fund to ensure adequate funding of the INRMP, including habitat maintenance and restoration. Funding may be provided from grants, mitigation fees, and the County general fund. The INRMP annual report described under item F above shall include information on current funding levels and shall project anticipated funding needs and anticipated and potential funding sources for the following five years.*

Policy 7.4.2.9 *The Important Biological Corridor (-IBC) overlay shall apply to lands identified as having high wildlife habitat values because of extent, habitat function, connectivity, and other factors. Lands located within the overlay district shall be subject to the following provisions except that where the overlay is applied to lands that are also subject to the Agricultural District (-A) overlay or that are within the Agricultural Lands (AL) designation, the land use restrictions associated with the -IBC policies will not apply to the extent that the agricultural practices do not interfere with the purposes of the -IBC overlay.*

- *Increased minimum parcel size;*
- *Higher canopy-retention standards and/or different mitigation standards/thresholds for oak woodlands;*
- *Lower thresholds for grading permits;*
- *Higher wetlands/riparian retention standards and/or more stringent mitigation requirements for wetland/riparian habitat loss;*
- *Increased riparian corridor and wetland setbacks;*
- *Greater protection for rare plants (e.g., no disturbance at all or disturbance only as recommended by U.S. Fish and Wildlife Service/California Department of Fish and Wildlife);*
- *Standards for retention of contiguous areas/large expanses of other (non-oak or non-sensitive) plant communities;*
- *Building permits discretionary or some other type of "site review" to ensure that canopy is retained;*
- *More stringent standards for lot coverage, floor area ratio (FAR), and building height; and*
- *No hindrances to wildlife movement (e.g., no fences that would restrict wildlife movement).*

The standards listed above shall be included in the Zoning Ordinance.

Wildland Fire Safe measures are exempt from this policy, except that Fire Safe measures will be designed insofar as possible to be consistent with the objectives of the Important Biological Corridor.

OBJECTIVE 7.4.3: COORDINATION WITH APPROPRIATE AGENCIES
Coordination of wildlife and vegetation protection programs with appropriate Federal and State agencies.

OBJECTIVE 7.4.4: FOREST AND OAK WOODLAND RESOURCES
Protect and conserve forest and woodland resources for their wildlife habitat, recreation, water production, domestic livestock grazing, production of a sustainable flow of wood products, and aesthetic values.

Policy 7.4.4.1 *The Natural Resource land use designation shall be used to protect important forest resources from uses incompatible with timber harvesting.*

Policy 7.4.4.2 *Through the review of discretionary projects, the County, consistent with any limitations imposed by State law, shall encourage the protection, planting, restoration, and regeneration of native trees in new developments and within existing communities.*

Policy 7.4.4.3 *Utilize the clustering of development to retain the largest contiguous areas possible in wildland (undeveloped) status.*

Policy 7.4.4.4 *For all new development projects (not including agricultural cultivation and actions pursuant to an approved Fire Safe Plan necessary to protect existing structures, both of which are exempt from this policy) that would result in soil disturbance on parcels that (1) are over an acre and have at least 1 percent total canopy cover or (2) are less than an acre and have at least 10 percent total canopy cover by woodlands habitats as defined in this General Plan and determined from base line aerial photography or by site survey performed by a qualified biologist or licensed arborist, the County shall require one of two mitigation options: (1) the project applicant shall adhere to the tree canopy retention and replacement standards described below; or (2) the project applicant shall contribute to the County's Integrated Natural Resources Management Plan (INRMP) conservation fund described in Policy 7.4.2.8.*

Option A

The County shall apply the following tree canopy retention standards:

Percent Existing Canopy Cover	Canopy Cover to be Retained
80–100	60% of existing canopy
60–79	70% of existing canopy
40–59	80% of existing canopy
20–39	85% of existing canopy
10-19	90% of existing canopy
1-9 for parcels > 1 acre	90% of existing canopy

Under Option A, the project applicant shall also replace woodland habitat removed at 1:1 ratio. Impacts on woodland habitat and mitigation requirements shall be addressed in a Biological Resources Study and Important Habitat Mitigation Plan as described in Policy 7.4.2.8.

Woodland replacement shall be based on a formula, developed by the County, that accounts for the number of trees and acreage affected.

Option B

The project applicant shall provide sufficient funding to the County's INRMP conservation fund, described in Policy 7.4.2.8, to fully compensate for the impact to oak woodland habitat. To compensate for fragmentation as well as habitat loss, the preservation mitigation ratio shall be 2:1 and based on the total woodland acreage onsite directly impacted by habitat loss and indirectly impacted by habitat fragmentation. The costs associated with acquisition, restoration, and management of the habitat protected shall be included in the mitigation fee. Impacts on woodland habitat and mitigation requirements shall be addressed in a Biological Resources Study and Important Habitat Mitigation Plan as described in Policy 7.4.2.8.

Policy 7.4.4.5 *Where existing individual or a group of oak trees are lost within a stand, a corridor of oak trees shall be retained that maintains continuity between all portions of the stand. The retained corridor shall have a tree density that is equal to the density of the stand.*

OBJECTIVE 7.4.5: NATIVE VEGETATION AND LANDMARK TREES
Protect and maintain native trees including oaks and landmark and heritage trees.

Policy 7.4.5.1 *A tree survey, preservation, and replacement plan shall be required to be filed with the County prior to issuance of a grading permit for discretionary permits on all high-density residential, multifamily residential, commercial, and industrial projects. To ensure that proposed replacement trees survive, a mitigation monitoring plan should be incorporated into discretionary projects when applicable and shall include provisions for necessary replacement of trees.*

Policy 7.4.5.2 *It shall be the policy of the County to preserve native oaks wherever feasible, through the review of all proposed development activities where such trees are present on either public or private property, while at the same time recognizing individual rights to develop private property in a reasonable manner. To ensure that oak tree loss is reduced to reasonable acceptable levels, the County shall develop and implement an Oak Tree Preservation Ordinance that includes the following components:*

A. Oak Tree Removal Permit Process. Except under special exemptions, a tree removal permit shall be required by the County for removal of any native oak tree with a single main trunk of at least 6 inches diameter at breast height (dbh), or a multiple trunk with an aggregate of at least 10 inches dbh. Special exemptions when a tree removal permit is not needed shall include removal of trees less than

36 inches dbh on 1) lands in Williamson Act Contracts, Farmland Security Zone Programs, Timber Production Zones, Agricultural Districts, designated Agricultural Land (AL), and actions pursuant to a Fire Safe plan; 2) all single family residential lots of one acre or less that cannot be further subdivided; 3) when a native oak tree is cut down on the owner's property for the owner's personal use; and 4) when written approval has been received from the County Planning Department. In passing judgment upon tree removal permit applications, the County may impose such reasonable conditions of approval as are necessary to protect the health of existing oak trees, the public and the surrounding property, or sensitive habitats. The County Planning Department may condition any removal of native oaks upon the replacement of trees in kind. The replacement requirement shall be calculated based upon an inch for inch replacement of removed oaks. The total of replacement trees shall have a combined diameter of the tree(s) removed. Replacement trees may be planted onsite or in other areas to the satisfaction of the County Planning Department. The County may also condition any tree removal permit that would affect sensitive habitat (e.g., valley oak woodland), on preparation of a Biological Resources Study and an Important Habitat Mitigation Program as described in Policy 7.4.1.6. If an application is denied, the County shall provide written notification, including the reasons for denial, to the applicant.

B. *Tree Removal Associated with Discretionary Project. Any person desiring to remove a native oak shall provide the County with the following as part of the project application:*

- *A written statement by the applicant or an arborist stating the justification for the development activity, identifying how trees in the vicinity of the project or construction site will be protected and stating that all construction activity will follow approved preservation methods;*
- *A site map plan that identifies all native oaks on the project site; and*
- *A report by a certified arborist that provides specific information for all native oak trees on the project site.*

C. *Commercial Firewood Cutting. Fuel wood production is considered commercial when a party cuts firewood for sale or profit. An oak tree removal permit shall be required for commercial firewood cutting of any native oak tree. In reviewing a permit application, the Planning Department shall consider the following:*

- *Whether the trees to be removed would have a significant negative environmental impact;*

- *Whether the proposed removal would not result in clear-cutting, but will result in thinning or stand improvement;*
- *Whether replanting would be necessary to ensure adequate regeneration;*
- *Whether the removal would create the potential for soil erosion;*
- *Whether any other limitations or conditions should be imposed in accordance with sound tree management practices; and*
- *What the extent of the resulting canopy cover would be.*

D. Penalties. Fines will be issued to any person, firm, or corporation that is not exempt from the ordinance who damages or destroys an oak tree without first obtaining an oak tree removal permit. Fines may be as high as three times the current market value of replacement trees as well as the cost of replacement, and/or replacement of up to three times the number of trees required by the ordinance. If oak trees are removed without a tree removal permit, the County Planning Department may choose to deny or defer approval of any application for development of that property for a period of up to 5 years. All monies received for replacement of illegally removed or damaged trees shall be deposited in the County's Integrated Natural Resources Management Plan (INRMP) conservation fund.

PRESERVATION OF OPEN SPACE

GOAL 7.6: OPEN SPACE CONSERVATION
Conserve open space land for the continuation of the County's rural character, commercial agriculture, forestry and other productive uses, the enjoyment of scenic beauty and recreation, the protection of natural resources, for protection from natural hazards, and for wildlife habitat.

OBJECTIVE 7.6.1: IMPORTANCE OF OPEN SPACE
Consideration of open space as an important factor in the County's quality of life.

Policy 7.6.1.1 *The General Plan land use map shall include an Open Space land use designation. The purpose of this designation is to implement the goals and objectives of the Land Use and the Conservation and Open Space Elements by serving one or more of the purposes stated below. In addition, the designations on the land use map for Rural Residential and Natural Resource areas are also intended to implement said goals and objectives. Primary purposes of open space include:*

A. *Conserving natural resource areas required for the conservation of plant and animal life including habitat for fish and wildlife species; areas required for ecologic and other scientific study purposes; rivers, streams, banks of rivers and streams and watershed lands;*

B. *Conserving natural resource lands for the managed production of resources including forest products, rangeland, agricultural lands important to the production of food and fiber; and areas containing important mineral deposits;*

C. *Maintaining areas of importance for outdoor recreation including areas of outstanding scenic, historic and cultural value; areas particularly suited for park and recreation purposes including those providing access to lake shores, beaches and rivers and streams; and areas which serve as links between major recreation and open space reservations including utility easements, banks of rivers and streams, trails and scenic highway corridors;*

D. *Delineating open space for public health and safety including, but not limited to, areas which require special management or regulation because of hazardous or special conditions such as earthquake fault zones, unstable soil areas, flood plains, watersheds, areas presenting high fire risks, areas required for the protection of water quality and water reservoirs, and areas required for the protection and enhancement of air quality; and*

E. *Providing for open spaces to create buffers which may be landscaped to minimize the adverse impact of one land use on another.*

Policy 7.6.1.2 *The County will provide for Open Space lands through:*

A. *The designation of land as Open Space;*

B. *The designation of land for low-intensity land uses as provided in the Rural Residential and Natural Resource land use designations;*

C. *Local implementation of the Federal Emergency Management Agency's National Flood Insurance Program;*

D. *Local implementation of the State Land Conservation Act Program; and*

E. *Open space land set aside through Planned Developments (PDs).*

Policy 7.6.1.3 *The County shall implement Policy 7.6.1.1 through zoning regulations and the administration thereof. It is intended that certain districts and certain requirements in zoning regulations carry out the purposes set forth in Policy 7.6.1.1 as follows:*

A. *The Open Space (OS) Zoning District is consistent with and shall implement the Open Space designation of the General Plan land use map and all other land use designations.*

B. *The Agricultural (A), Exclusive Agricultural (AE), Planned Agricultural (PA), Select Agricultural (SA-10), and Timberland Production Zone (TPZ) zoning districts are consistent with Policy 7.6.1.1 and serve one or more of the purposes set forth therein.*

C. *Zoning regulations shall provide for setbacks from all flood plains, streams, lakes, rivers and canals to maintain Purposes A, B, C, and D set forth in Policy 7.6.1.1.*

D. *Zoning regulations shall provide for maintenance of permanent open space in residential, commercial, industrial, agricultural, and residential agricultural zone districts based on standards established in those provisions of the County Code. The regulations shall minimize impacts on wetlands, flood plains, streams, lakes, rivers, canals, and slopes in excess of 30 percent and shall maintain Purposes A, B, C, and D in Policy 7.6.1.1.*

E. *Landscaping requirements in zoning regulations shall provide for vegetative buffers between incompatible land uses in order to maintain Purpose E in Policy 7.6.1.1.*

F. *Zoning regulations shall provide for Mineral Resource Combining Zone Districts and/or other appropriate mineral zoning categories which shall be applied to lands found to contain important mineral deposits if development of the resource can occur in compliance with all other policies of the General Plan. Those regulations shall maintain Purposes A, B, C, D, and E of Policy 7.6.1.1.*

Policy 7.6.1.4 *The creation of new open space areas, including Ecological Preserves, common areas of new subdivisions, and recreational areas, shall include wildfire safety planning.*

3.9 El Dorado County Oak Woodland Ordinance

As detailed above, Policy 7.4.4.4 of the County General Plan set forth percentages of on-site canopy retention requirements for development projects until the County developed a County wide strategy. In 2008, the County adopted the El Dorado County Oak Woodland Management Plan (OWMP) to implement these General Plan oak woodland protection policies. However, the County's adoption of the OWMP was challenged in court. The petitioners claimed, in part, that the County had not complied with CEQA. In 2012, the Appellate Court upheld the CEQA challenge to the OWMP and remanded to the Superior Court which directed the County to rescind approval of the OWMP until additional CEQA analysis is performed. As a result, only Option "A" of Policy 7.4.4.4 is applicable for oak woodland mitigation.

4.0 METHODS

Available information pertaining to the natural resources of the region was reviewed. All references reviewed for this assessment are listed in the References section. Site-specific information was reviewed including:

- California Department of Fish and Game (CDFG). 2011. *Northern Sierra Nevada Foothills Vegetation Project: Vegetation Mapping Report*. Sacramento, CA;

- California Department of Fish and Wildlife (CDFW). 2014. California Natural Diversity Data Base. (CNDDB: *Camino, Coloma, Clarksville, Fiddletown, Garden Valley, Latrobe, Placerville, and Shingle Springs* quadrangles), Sacramento, CA.;

- California Native Plant Society (CNPS). 2014. Inventory of Rare and Endangered Plants (online edition, v8-01a), (CNPS: *Camino, Coloma, Clarksville, Fiddletown, Garden Valley, Latrobe, Placerville, and Shingle Springs* quadrangles);

- El Dorado County. 2010. Integrated Natural Resources Management Plan – Phase 1. Accessed online February 2014 at: http://www.edcgov.us/Planning/General_Plan_Integrated_Natural_Resources_Management_Plan_(INRMP).aspx;

- Natural Resources Conservation Service (NRCS). 2014. Web Soils Survey. Accessed online February 2014 at: http;//websoilsurvey.nrcs.usda.gov;

- Soil Conservation Service. 1974. *Soil Survey of El Dorado Area, California*. U.S. Department of Agriculture;

- Soil Conservation Service. March 1992. *Official List of Hydric Soil Map Units for El Dorado County*. California. U.S. Department of Agriculture; and

- U.S. Fish and Wildlife Service (USFWS). 2014. *Federal Endangered and Threatened Species that May Be Affected by Projects in the Placerville and Shingle Springs 7.5-minute series Quadrangle. Sacramento, CA.*

Existing habitat, species, aerial photographs, and other data was reviewed for the plan area to determine potential biological constraints, including special-status species, waters of the U.S., and protected habitats and trees.

5.0 RESULTS

5.1 Site Location and Description

The Plan area consists of approximately 8,072 acres. Land uses surrounding the site include residential and commercial development dispersed throughout various undeveloped property. The Plan is located in El Dorado County southeast of the City of Placerville and includes portions of U.S. Highway 50, and State Highway 49, as well as rural residential areas, such as Diamond Springs (**Figure 1**). The plan area includes portions of both the *Shingle Springs, California* and *Placerville, California* 7.5-minute USGS quadrangles.

5.2 Physical Features

5.2.1 Topography and Drainage

Topography on the site ranges from relatively level to moderately sloped with elevations ranging from approximately 1,500 to 1,900 feet above mean sea level (MSL). The Plan area contains several small to moderately-sized streams and lakes. Drainage generally flows from east to west towards the Central Valley. The northern part of the plan area is located in the American River watershed and the south portion is in the Cosumnes River watershed.

5.2.2 Soils

The Natural Resources Conservation Service (NRCS) has mapped thirty-five soil units in the plan area (**Figure 2**). The soil units that occur on the site are summarized in **Table 1** below and, general characteristics associated with these soils types are described below (NRCS 2014).

Table 1 — Soil Map Units that Occur on the Project Site

Soil Map Unit Symbol	Soil Map Unit	Hydric Soil	Serpentine Soil
AaF	Acidic Rock Land	No	No
AkC	Argonaut Gravelly Loam, 2 to 15 Percent Slopes	Yes	No
AmD	Argonaut Very Rocky Loam, 3 to 30 Percent Slopes	Yes	No
ArC	Auberry Coarse Sandy Loam, 9 to 15 Percent Slopes	No	No
AtE	Auberry Coarse Sandy Loam, 30 to 50 Percent Slopes	No	No
AzE	Auburn Cobbly Clay Loam, Heavy Subsoil Variant, 9 to 50 Percent Slopes	No	No
AwD	Auburn Silt Loam, 2 to 30 Percent Slopes	No	No
AxD	Auburn Very Rocky Silt Loam, 2 to 30 Percent Slopes	No	No
AxE	Auburn Very Rocky Silt Loam, 30 to 50 Percent Slopes	No	No
BhD	Boomer Gravelly Loam, 15 to 30 Percent Slopes	No	No
BhC	Boomer Gravelly Loam, 3 to 15 Percent Slopes	No	No
BkD	Boomer Very Rocky Loam, 3 to 30 Percent Slopes	No	No
BkE	Boomer Very Rocky Loam, 30 to 50 Percent Slopes	No	No
BpC	Boomer-Sites Loams, 9 to 15 Percent Slopes	No	No
DeE	Delpiedra Very Rocky Loam, 3 to 50 Percent Slopes	No	Yes
DfD	Diamond Springs Very Fine Sandy Loam, 15 to 30 Percent Slopes	No	No
DfB	Diamond Springs Very Fine Sandy Loam, 3 to 9 Percent Slopes	No	No
DfC	Diamond Springs Very Fine Sandy Loam, 9 to 15 Percent Slopes	No	No
DgE	Diamond Springs Very Rocky Very Fine Sandy Loam, 3 to 50 Percent Slopes	No	No
JuE	Josephine Very Rocky Silt Loam, 9 to 50 Percent Slopes	No	No
LaB	Loamy Alluvial Land	No	No
MaD	Mariposa Gravelly Silt Loam, 3 to 30 Percent Slopes	No	No
MbE	Mariposa Very Rocky Silt Loam, 3 to 50 Percent Slopes	No	No
MbF	Mariposa Very Rocky Silt Loam, 50 to 70 Percent Slopes	No	No
MmF	Metamorphic Rock Land	No	No
MpB	Mixed Alluvial Land	No	No
PrD	Placer Diggings	No	No
SaF	Serpentine Rock Land	No	Yes
SfC2	Sierra Sandy Loam, 9 to 15 Percent Slopes, Eroded	Yes	No
SuD	Sobrante Silt Loam, 15 to 30 Percent Slopes	No	No
SuC	Sobrante Silt Loam, 3 to 15 Percent Slopes	No	No
SwD	Sobrante Very Rocky Silt Loam, 3 to 30 Percent Slopes	No	No
TaD	Tailings	Yes	No
WaB	Wet Alluvial Land	Yes	No

Acidic Rock Land

Excessively drained shallow soils, 0 to 4 inches, composed of unweathered bedrock. Associated with steep canyon walls, and have little to no vegetative cover. This land type has no mapped hydric inclusions and is not considered a serpentine soil.

Argonaut Gravelly Loam, 2 to 15 percent slopes

This soil is well drained. Vegetation associated with this soil series includes annual grasses, forbs, and oaks. This soil has mapped hydric inclusions or components, but is not considered a serpentine soil.

Argonaut Very Rocky Loam, 3 to 30 percent slopes

This soil is well drained. Vegetation associated with this soil series includes annual grasses, forbs, and oaks. This soil has mapped hydric inclusions or components, but is not considered a serpentine soil.

Auberry Coarse Sandy Loam, 9 to 15 percent slopes

This soil is well drained. Vegetation associated with this soil series includes annual grasses, forbs, oaks and foothill pine. This soil has no mapped hydric inclusions or components, and is not considered a serpentine soil.

Auberry Coarse Sandy Loam, 30 to 50 percent slopes

This soil is well drained. Surface runoff is rapid, and the erosion hazard is very high. Vegetation associated with this soil series includes annual grasses, forbs, oaks and foothill pines. This soil has no mapped hydric inclusions or components, and is not considered a serpentine soil.

Auburn Cobbly Clay Loam, Heavy Subsoil Variant, 9 to 50 percent slopes

The soils in this series are well drained. Permeability is moderate. Vegetation associated with this soil series includes chamise brush, annual grasses, and oaks. This soil has no mapped hydric inclusions or components, and is not considered a serpentine soil.

Auburn Cobbly Clay Loam, Heavy Subsoil Variant, 9 to 50 percent slopes

The soils in this series are well drained. Permeability is moderate. Vegetation associated with this soil series includes annual grasses, forbs, oaks and foothill pines. This soil has no mapped hydric inclusions or components, and is not considered a serpentine soil.

Auburn silt loam, 2 to 30 percent slopes

The soils in this series are well drained. Permeability is moderate. This soil has slopes that are dominantly between 5 and 15 percent slopes. Vegetation associated with this soil series includes annual grasses, forbs, and oaks. This soil has no mapped hydric inclusions or components, and is not considered a serpentine soil.

Auburn Very Rocky Silt Loam, 2 to 30 percent slopes

The soils in this series are well drained. Permeability is moderate. Vegetation associated with this soil series includes annual grasses, forbs, and oaks. This soil has no mapped hydric inclusions or components, and is not considered a serpentine soil.

Auburn Very Rocky Silt Loam, 30 to 50 percent slopes

The soils in this series are well drained. Surface runoff is medium to rapid, and the erosion hazard is moderate to high. Vegetation associated with this soil series includes annual grasses, forbs, and oaks. This soil has no mapped hydric inclusions or components, and is not considered a serpentine soil

Boomer Gravelly Loam, 15 to 30 percent slopes

The soils in this series consist of well-drained soils that are underlain by basic schists. Vegetation is mainly coniferous forests and grasses. This soil has no mapped hydric inclusions or components, and is not considered a serpentine soil.

Boomer Gravelly Loam, 3 to 15 percent slopes

The soils in this series consist of well-drained soils that are underlain by basic schists. Vegetation is mainly coniferous forests and grasses. This soil has no mapped hydric inclusions or components, and is not considered a serpentine soil.

Boomer Very Rocky Loam, 3 to 30 percent slopes

The soils in this series consist of well-drained soils that are underlain by basic schists. Vegetation is mainly coniferous forests and grasses. This soil has no mapped hydric inclusions or components, and is not considered a serpentine soil.

Boomer Very Rocky Loam, 30 to 50 percent slopes

The soils in this series consist of well-drained soils that are underlain by basic schists. Surface runoff is rapid and erosion hazard is high. Vegetation is mainly coniferous forests and grasses. This soil has no mapped hydric inclusions or components, and is not considered a serpentine soil.

Boomer-Sites Loams, 9 to 15 percent slopes

The soils in this series consist of well-drained soils that are underlain by basic schists. Surface runoff is medium and erosion hazard is moderate. Vegetation is mainly coniferous forests and grasses. This soil has no mapped hydric inclusions or components, and is not considered a serpentine soil.

Delpiedra Very Rocky Loam, 3 to 50 percent slopes

This series of soils are somewhat excessively drained soils underlain by hard serpentine rock. Vegetation is mainly annual grasses, forbs, brush and foothill pines. This soil has no mapped hydric inclusions or components, but is considered a serpentine soil.

Diamond Springs Very Fine Sandy Loam, 15 to 30 percent slopes

These soils are well-drained soils that are strongly sloping to steep. Vegetation is mainly coniferous forest and associated hardwoods. This soil has no mapped hydric inclusions or components, and is not considered a serpentine soil.

Diamond Springs Very Fine Sandy Loam, 3 to 9 percent slopes

These soils are well-drained soils that are moderately sloping. Vegetation is mainly coniferous forest and associated hardwoods. This soil has no mapped hydric inclusions or components, and is not considered a serpentine soil.

Diamond Springs Very Fine Sandy Loam, 9 to 15 percent slopes

This soil is well-drained and moderately sloping. Vegetation is mainly coniferous forest and associated hardwoods. This soil has no mapped hydric inclusions or components, and is not considered a serpentine soil.

Diamond Springs Very Rocky Very Fine Sandy Loam, 3 to 50 percent slopes

This soil is well-drained soils that may be strongly sloping. Surface runoff is medium to rapid, and the erosion hazard is slight to high. Vegetation is mainly coniferous forest and associated hardwoods. This soil has no mapped hydric inclusions or components, and is not considered a serpentine soil.

Josephine Very Rocky Silt Loam, 9 to 50 percent slopes

This series of soils are well-drained soils that may be strongly sloping. Surface runoff is medium to rapid, and the erosion hazard is moderate to high. Vegetation is mainly coniferous forest, associated hardwoods and scattered brush. This soil has no mapped hydric inclusions or components, and is not considered a serpentine soil.

Loamy Alluvial Land

This soil consists of small areas of recent alluvium that have slopes of 2 to 5 percent and are adjacent to stream channels. This land type is occasionally flooded by overflowing streams. This soil has no mapped hydric inclusions or components, and is not considered a serpentine soil.

Mariposa Gravelly Silt Loam, 3 to 30 percent slopes

This series of soils are well-drained soils that may be moderately sloping. Surface runoff is medium, and the erosion hazard is slight to moderate. Vegetation is mainly coniferous

forest, associated hardwoods and brush. This soil has no mapped hydric inclusions or components, and is not considered a serpentine soil.

Mariposa Very Rocky Silt Loam, 50 to 70 percent slopes

These soils are very steep on mountainous uplands. Surface runoff is rapid, and the erosion hazard is high. This soil has no mapped hydric inclusions or components, and is not considered a serpentine soil.

Metamorphic Rock Land

Metamorphic rock land is in areas of highly resistant schist and slate formations. Rock outcrops and stones occupy from 50 to 90 percent of the surface, and the remainder is a thin mantle of soil. This land type is excessively drained. Surface runoff is very rapid and erosion hazed is slight to moderate. This land type has no mapped hydric inclusions or components, and is not considered serpentinous.

Mixed Alluvial Land

This land type consists of small areas of recent mixed alluvium adjacent to stream channels, and is moderately well drained to somewhat poorly drained. The land is subject to frequent flooding in winter. This land type has no mapped hydric inclusions or components, and is not considered serpentinous.

Placer Diggings

This land type consists of area of stone, cobbly, and gravelly material, commonly in beds of creeks and other streams or of areas that have been placer mined. Areas in streambeds frequently are flooded during the rainy season. The vegetation generally consist of grass, brush, oak and some conifers. This land type has no mapped hydric inclusions or components, and is not considered serpentinous.

Serpentine Rock Land

This land type is in areas of highly resistant serpentine an other ultrabasic rock formations. Rock outcrops and stones make up from 50 to 90 percent of the surface, and there is a thin mantle of soil. This land type is undulating to very steep, and is excessively drained. Surface runoff is very rapid and the erosion hazard is slight to moderate. This land type has no mapped hydric inclusions or components, and is serpentinous.

Sierra Sandy Loam, 9 to 15 percent slopes, Eroded

This series of soils are well-drained soils and strongly sloping. Surface runoff is medium, and the erosion hazard is moderate. Vegetation is annual grasses and forbs and scattered areas of hardwoods and conifers. This soil has mapped hydric inclusions or components, and is not considered a serpentine soil.

Sobrante Silt Loam, 15 to 30 percent slopes

This series of soils are well-drained soils and sloping. Surface runoff is medium, and the erosion hazard is moderate. Vegetation is annual grasses and forbs and scattered oaks. This soil has no mapped hydric inclusions or components, and is not considered a serpentine soil.

Sobrante Silt Loam, 3 to 15 percent slopes

This series of soils are well-drained soils and gently to strongly sloping. Surface runoff is slow to medium, and the erosion hazard is slight to moderate. Vegetation is annual grasses and forbs and scattered oaks. This soil has no mapped hydric inclusions or components, and is not considered a serpentine soil.

Sobrante Very Rocky Silt Loam, 3 to 30 percent slopes

This series of soils are well-drained soils and gently to strongly sloping. Rocky outcrops make up 5 to 25 percent of the surface area. Vegetation is annual grasses and forbs and scattered oaks. This soil has no mapped hydric inclusions or components, and is not considered a serpentine soil.

Tailings

This land type consists of cobbly and stoney tailings from dredge mining and hydraulic mining and in hardrock mine dumps. All soil material either has been washed away, from hydraulic mining or has been buried as in dredge mining. Surface runoff is slight, and the erosion hazard is none to slight. This soil has mapped hydric inclusions or components, but is not considered a serpentine soil.

Wet Alluvial Land

This land type consists of small areas of recent alluvium adjacent to stream channels. It is poorly drained, has a slow surface runoff, and is occasionally flooded. This soil has mapped hydric inclusions or components, but is not considered a serpentine soil.

5.3 Biological Communities

Biological communities in the study area were assessed using data from the Northern Sierra Nevada Foothill Vegetation Project (CDFG 2011) and the Integrated Natural Resources Management Plan (INRMP) (El Dorado County 2010). Ten biological communities were identified in the project area. No priority conservation areas or important biological corridors identified in the INRMP are located in the plan area However, an important biological corridor was identified just north of the plan area along Weber Creek.

5.3.1 Annual Grassland

Annual grassland habitats are open grasslands composed mostly of annual plant species and often occur in association with the understory of oak woodland habitats. The

structure of annual grasslands depends largely on weather patterns and the extent of livestock grazing. Annual grassland is characterized primarily by an assemblage of non-native grasses and forbs. Much of the vegetation in this community is common to the Central Valley and foothills. Dominant grass species may include soft chess (*Bromus hordeaceous*), Mediterranean barley (*Hordeum marinum*), medusahead (*Taeniatherum caput-medusae*), and wild oat (*Avena* spp.). Common herbaceous species include yellow star-thistle (*Centaurea solstitialis*), clover (*Trifolium* sp.), and vinegar weed (*Trichostema lanceolatum*).

Annual grassland habitat supports breeding, foraging, and shelter habitat for many species of wildlife. Wildlife species expected to use this habitat include horned lark (*Eremophila alpestris*), northern harrier (*Circus cyaneus*), killdeer (*Charadrius vociferus*), red-tailed hawk (*Buteo jamaicensis*), black phoebe (*Sayornis nigricans*), western meadowlark (*Sturnella neglecta*), and coyote (*Canis latrans*).

5.3.2 Blue Oak Woodland

Blue oak woodlands are defined as woodlands with blue oak (*Quercus douglasii*) as the sole or dominating species in the tree canopy along with foothill pine (*Pinus sabiniana*), interior live oak (*Quercus wislizenii*), and valley oak (*Quercus lobata*). Typically, blue oak woodland exhibits a continuous, intermittent, or savanna-like canopy that is one or two-tiered; shrubs are infrequent or common; and ground cover is grassy (Sawyer and Keeler-Wolf 1995). The understory of this community is typically similar to the annual grassland community or a mix of low shrubs. Blue oak woodland is protected under Section 7.4.4.4 of the County General Plan.

Blue oak woodland provides breeding, foraging, and shelter habitat for several species of wildlife such as western scrub jay (*Aphelocoma californica*), Nuttall's woodpecker (*Picoides nuttallii*), white-breasted nuthatch (*Sita carolinensis*), red-breasted sapsucker (*Sphyrapicus ruber*), northern flicker (*Colaptes auratus*), acorn woodpecker (*Melanerpes formicivorus*), and Cooper's hawk (*Accipiter cooperii*).

5.3.3 Valley Oak Woodland

The Valley oak woodland canopy is dominated by valley oaks, but may also include blue oaks, interior live oaks, foothill pines, and other riparian trees. The understory is often dominated by annual grassland, but may include some shrubs, such as Himalayan blackberry (*Rubus armeniacus*), poison oak (*Toxicodendron diversiloba*), and wild grape (*Vitis californica*). Valley oak woodlands are typically found in valley bottoms and seasonally moist areas. Valley oak woodland is protected under Section 7.4.4.4 of the County General Plan.

Species found in valley oak woodlands are similar to those found in blue oak woodlands.

5.3.4 Valley Foothill Riparian

This biotic community is described as such by the California Department of Fish and Game (Mayer and Laudenslayer 1988). Valley foothill riparian habitats occur in the Central Valley and the lower foothills of the Cascade, Sierra Nevada, and Coast Ranges from sea level to 3,000 feet elevation. This biotic community consists of three defined layers – tree canopy, shrub, and herbaceous. Typically there is a sub-canopy layer and an understory shrub layer. Tree and shrub species that characterize this community include California sycamore (*Platanus racemosa*), Fremont cottonwood (*Populus fremontii*), valley oak, white alder (*Alnus rhombifolia*), Oregon ash (*Fraxinus latifolia*), and box elder (*Acer negundo*) with shrubs of Himalayan blackberry, Mexican elderberry (*Sambucus mexicana*), and poison oak. This biotic community is often associated with low velocity flowing streams, floodplains, and gently sloping terrain (Mayer and Laudenslayer 1988). Valley foothill riparian habitat is protected under Section 7.4.4.4 of the County General Plan.

Foothill riparian habitats provide value for a multitude of wildlife species and are often used as migration corridors. Common wildlife species found in valley foothill riparian habitat include belted kingfisher (*Ceryle alcyon*), mule deer (*Odocoileus hemionus*), and coyote.

5.3.5 Montane Hardwood

This habitat type generally occurs at lower elevations than montane-hardwood conifer forest types and can occur along river canyons. The structure of this community ranges from a dense to open canopy cover often times with a poorly defined shrub layer. Snags and downed woody material are usually sparse throughout the montane hardwood habitat types. At lower to mid-level elevations, this community is characterized by foothill pine, Pacific madrone (*Arbutus menziesii*), California bay (*Umbellularia californica*), and black oak (*Quercus kelloggii*) and shrubs such as manzanita (*Arctostaphylos* spp.), coyote bush (*Baccharis pilularis*), and poison oak. Montane hardwood habitat is protected under Section 7.4.4.4 of the County General Plan.

Wildlife species with the potential to occur in this community include mule deer, Cooper's hawk, sharp-shinned hawk (*Accipiter striatus*), several bat species, and other species of mammals and herpetofauna (amphibians and reptiles).

5.3.6 Mixed Chaparral

This is a shrub-dominated habitat type and is described as a structurally homogenous bush-land type (Mayer and Laudenslayer 1988). Mixed chaparral typically occurs below 5,000 feet on mountain ranges throughout California, excluding deserts. Dominant plant species in this habitat type include manzanita (*Arctostaphylos manzanita*) and scrub oak (*Quercus berberidifolia*), chamise (*Adenostoma fasciculatum*), toyon (*Heteromeles arbutifolia*), yerba santa (*Eriodyctyon* spp.), California buckeye (*Aesculus californica*), and poison oak. On serpentine soils, incense cedar (*Calocedrus decurrens*) and foothill pine are typically found.

Wildlife species expected to occur within this habitat type include western scrub jay, spotted towhee (*Pipilo maculatus*), and California quail (*Callipepla californica*).

5.3.7 Freshwater Emergent Wetland

Freshwater emergent wetlands are characterized by erected, rooted water-tolerant plant species. Habitats included in this category include marsh, seasonal wetlands, and seeps. Emergent wetland areas flood frequently, enough so that roots prosper in an anaerobic (oxygen-free) environment. This habitat type may occur in close association with other terrestrial communities including riverine, lacustrine, and wet meadow. Freshwater emergent wetlands are typically considered jurisdictional and regulated by the Corps.

Wildlife species that utilize these habitat types include raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), western pond turtle (*Actinemys marmorata*), and Sierran tree frog (*Pseudacris sierra*) among others. This habitat type also supports and provides habitat for a number of managed wetlands and wildlife management areas for several species of waterfowl.

5.3.8 Lake/ Pond

Lacustrine, or open water, habitats are typically created when a stream or river is either artificially or naturally dammed. Although some lakes or ponds may have a fringe of freshwater emergent habitat around the perimeter, they are defined by open water, which may be a result of their depth or substrate. Lakes and ponds provide habitat to many species of fish and amphibians and their predators, such as bald eagles (*Haliaeetus leucocephalus*). They are also important stopover points for migrating waterfowl. Lakes, ponds, and other open water habitats are typically considered jurisdictional and regulated by the Corps.

5.3.9 Agriculture

Agricultural lands in the project area include orchard, pasture, and croplands. While these areas provide some benefits for wildlife species, they are generally actively managed and disturbed on a regular basis. Thus agricultural lands are most likely to be used by common species that adapt well to human disturbance.

5.3.10 Developed

Developed areas include roads, buildings, parks, and other altered habitats. While some species, such as raccoons, house sparrows (*Passer domesticus*), and rock doves (*Columba livia*), have adapted well to human disturbance, the diversity and abundance of wildlife is much reduced in developed areas.

5.4 Special-Status Species

Special-status species are plant and animal species that have been afforded special recognition by federal, State, or local resource agencies or organizations. Listed and

special-status species are of relatively limited distribution and may require specialized habitat conditions. Listed and special-status species are defined as:

- Listed or proposed for listing under the State or Federal Endangered Species acts;
- Protected under other regulations (e.g. Migratory Bird Treaty Act);
- CDFW Species of Special Concern;
- Ranked and/or Listed as species of concern by CNPS or USFWS; or
- Receive consideration during environmental review under CEQA.

Special-status species considered for this analysis are based on review of the CNDDB occurrence records of species, review of the USFWS lists for special-status species occurring in the region, and CNPS literature (**Table 2**). The locations of special-status species occurrences in the project vicinity are shown in **Figure 3**, which is from a search of the CNDDB. **Table 2** includes, the common name and scientific name for each species, regulatory status (federal, State, local, CNPS), habitat descriptions, and potential for occurrence on the project site. The following set of criteria has been used to determine each species potential for occurrence on the site:

- **Present**: Species known to occur on the site, based on CNDDB records, and/or was observed on the site during the field survey(s).

- **High**: Species known to occur on or near the site (based on CNDDB records within 8 km or 5 mi, and/or based on professional expertise specific to the site or species) and there is suitable habitat on the site.

- **Low**: Species known to occur in the vicinity of the site, and there is marginal habitat onsite.-**OR**-Species is not known to occur in the vicinity of the site, however there is suitable habitat on the site.

- **None**: Species is not known to occur on or in the vicinity of the site and there is no suitable habitat for the species on the site.-**OR**-Species was surveyed for during the appropriate season with negative results.

Only those species that are known to be present or that have a high or low potential for occurrence will be discussed further following **Table 2**.

Table 2 — Listed and Special-Status Species Potentially Occurring on the Site or in the Vicinity

Special-Status Species	Regulatory Status (Federal; State; Local; CNPS)	Habitat Requirements	Potential for Occurrence
Plants			
Bisbee Peak rush-rose *Helianthemum suffrutescens*	--;--;--;3.2	Rocky hillsides in chaparral areas. Often associated with gabbro soil types. Several CNDDB occurrences within 5 miles of the project area.	**No**; although species recorded within 5 miles of site, no gabbro soil is found on the site**.**
Brandegee's clarkia *Clarkia biloba* ssp. *brandegeeae*	--;--;--;4.2	Foothill woodlands and conifer habitats, often roadcuts. Usually in dry areas. Four CNDDB occurrences within 5 miles of the project area.	**High**; species recorded within 5 miles of site and suitable habitat onsite.
Congdon's onion *Allium sanbornii* var. *congdonii*	--;--;--;4.3	Chaparral and cismontane woodland on serpentine or volcanic based soil; 1300 to 3600 feet in elevation.	**Low**; species not known within 5 mile radius, but serpentine and volcanic soil present.
El Dorado County mule ears *Wyethia reticulata*	--;--;--;1B.2	Clay or gabbroic soil in chaparral and cismontane woodland and lower montane coniferous forest from 600 to 2200 feet in elevation.	**Low**; species recorded within 5 miles of site and some clay soils occur onsite.
El Dorado bedstraw *Galium californicum* ssp. *sierrae*	FE; CR; SLC; 1B.2	Open pine forests and oak woodlands between 300 and 2000 feet; associated with gabbro soils. Several CNDDB occurrences within 5 miles of the project site.	**None**; there is no gabbro soil habitat for this species onsite.
Ewan's larkspur *Delphinium hansenii ssp. ewanianum*	--;--;--;4.2	Rocky cismontane woodland, and valley and foothill grassland, from 300 to 1900 feet in elevation.	**Low**; suitable habitat onsite, but no known occurrences within a 5 mile radius of site.
Fresno ceanothus *Ceanothus fresnensis*	--;--;--;4.3	Openings in cismontane woodland, lower montane coniferous forest, from 3300 to 6000 feet in elevation.	**None**; site is below known elevation range for this species.
Hernandez bluecurls *Trichostema rubisepalum*	--;--;--;4.3	Associated with volcanic or serpentinite, gravelly soil in broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest and vernal pools, from 600 to 2900 feet in elevation.	**Low**; suitable habitat onsite, but no known occurrences within a 5 mile radius of site.

Special-Status Species	Regulatory Status (Federal; State; Local; CNPS)	Habitat Requirements	Potential for Occurrence
Humboldt lily *Lilium humboldtii spp. humboldtii*	--;--;--;4.2	Openings in chaparral and cismontane woodland and lower montane coniferous forest from 360 to 3400 feet in elevation.	**Low**; suitable habitat onsite, but no known occurrences within a 5 mile radius of site.
Jepson's onion *Allium jepsonii*	--;--;--;1B.2	Suitable habitat is serpentine soils in chaparral, lower montane coniferous forest, and cismontane woodland.	**High**; suitable serpentine habitat present and is found within 5 miles of site.
Layne's butterweed *Senecio layneae*	FT;CR;--;1B.2	Chaparral, cismontane woodland / serpentine or gabbroic substrate from 600 to 3,000 feet elevation. Known from El Dorado, Tuolumne, and Yuba counties.	**High**; suitable serpentine habitat present and is found within 5 miles of site.
Layne's ragwort *Packera layneae*	FT;CR;--;1B.2	Dry pine woodlands, oak woodlands, or chaparral areas associated with serpentine or gabbroic, rocky soils. Several CNDDB occurrences within 5 miles of project area.	**High**; suitable serpentine habitat present and is found within 5 miles of site.
Nissenan manzanita *Arctostaphylos nissenana*	--;--;--;1B.2	Closed-cone coniferous forest, chaparral / rocky; 1,350 to 3,300 feet elevation. Known from El Dorado and Tuolumne counties.	**Present**; found within site boundary.
Oval-leaved viburnum *Viburnum ellipticum*	--;--;--;2B.3	Chaparral, montane woodland, and lower montane coniferous forest between 705 to 4,600 feet.	**High**; species recorded within 5 miles of site and suitable habitat onsite.
Parry's horkelia *Horkelia parryi*	--;--;--;1B.2	Open chaparral and foothill woodland between 0 and 1000 feet.	**None**; site is located about known range of species.
Pine Hill ceanothus *Ceanothus roderickii*	FE; CR; --; 1B.2	Dry, stony soils in chaparral areas. Often associated with serpentine or gabbro soil types. Several CNDDB occurrences within 5 miles of project area.	**High**; suitable habitat present and is found within 5 miles of site.
Pine Hill flannelbush *Fremontodendron decumbens*	FE; CR; -- 1B.2	Chaparral and oak and pine woodlands on rocky ridges with gabbro soils. Several CNDDB occurrences within 5 miles of project area.	**None**; there is no gabbro soil habitat for this species onsite.

Special-Status Species	Regulatory Status (Federal; State; Local; CNPS)	Habitat Requirements	Potential for Occurrence
Pleasant Valley mariposa lily *Calochortus clavatus* var. *avius*	--;--;--;1B.2	Lower montane coniferous forest (Josephine silt loam and volcanic); 915 to 5,400 feet. Known from Amador, El Dorado and possibly Mariposa counties.	**None**; there is no coniferous forest onsite.
Red Hills soaproot *Chlorogalum grandiflorum*	--;--;--;1B.2	Open hillsides in chaparral communities. Usually associated with gabbro or serpentine soils. Several CNDDB occurrences within 5 miles of project area.	**Present**; found within site boundary.
Sanford's arrowhead *Sagittaria sanfordii*	--;--;--;1B.2	Habitat is freshwater marsh and similar quiet shallow freshwater areas. Known elevation range is below 2,000 feet. No CNDDB occurrence within 5 miles of project area.	**Low**; although not found within 5 mile of site, potential habitat onsite for this species possible.
Sierra bolandra *Bolandra californica*	--;--;--;4.3	Mesic, rocky habitat in lower montane coniferous forest and upper montane coniferous forest, at 3600 to 5200 feet in elevation.	**None**; site is below known elevation range for this species.
Sierra clarkia *Clarkia virgata*	--;--;--;4.3	Cismontane woodland, lower montane coniferous forest, from 2200 to 3500 feet in elevation.	**None**; site is below known elevation range for this species.
Starved daisy *Erigeron miser*	--;--;--;1B.3	Rocky ground in upper montane coniferous forest from 3300 to 5000 feet in elevation.	**None**; site is below known elevation range for this species.
Stebbins' morning glory *Calystegia stebbinsii*	FE;CE;--;1B.1	Open hillsides in chaparral communities. Typically associated with gabbro soil types although it can be found on serpentine soils. Several CNDDB occurrences within 5 miles of project area.	**High**; serpentine soil habitat for this species onsite. Found within 5 miles of site.
Streambank spring beauty *Claytonia parviflora* ssp. *grandiflora*	--;--;--;4.2	Rocky habitat in cismontane woodland (pine/blue oak woodlands), from 600 to 3400 feet in elevation.	**Low**; suitable habitat onsite, but no known occurrences within a 5 mile radius of site.
True's Manzanita *Arctostaphylos mewukka* ssp. *truei*	--;--;--;4.2	Chaparral, lower montane coniferous forest, sometimes roadside, 1200 to 2900 feet in elevation. Not found within 5 mile radius.	**Low**; suitable habitat onsite, but no known occurrences within a 5 mile radius of site.

Special-Status Species	Regulatory Status (Federal; State; Local; CNPS)	Habitat Requirements	Potential for Occurrence
Yellow bur navarretia *Navarretia prolifera* ssp. *lutea*	--;--;--;4.2	Chaparral, cismontane woodland, from 2800 to 3500 feet in elevation. Not found within 5 mile radius.	**None**; site is below known elevation range for this species.
Wildlife			
Invertebrates			
Cosumnes spring stonefly *Cosumnoperia hypocrena*	--;--;--;--	Freshwater intermittent streams.	**High**; suitable habitat present and is found within 5 miles of site
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	FT;--;--;--	Blue elderberry shrubs usually associated with riparian areas.	**Low**; potential habitat onsite, but no known occurrences within a 5 mile radius of site.
Amphibians/Reptiles			
California red-legged frog *Rana aurora draytonii*	FT; CSC; --; --	Requires a permanent water source and is typically found along quiet slow moving streams, ponds, or marsh communities with emergent vegetation.	**Low**; potentially suitable habitat onsite, but no known occurrences within a 5 mile radius of site.
Coast horned lizard *Phrynosoma blainvillii*	--;CSC;--;--	Grasslands, coniferous forests, woodlands, and chaparral, with open areas and patches of loose sandy soil. Often found in lowlands along sandy washes with scattered shrubs and along dirt roads, and frequently found near ant hills. Found within 5 miles of the project.	**Low**; potentially suitable habitat onsite, but no known occurrences within a 5 mile radius of site.
Foothill yellow-legged frog *Rana boylii*	--;CSC;--;--	Typically found in slow-moving streams or channels with rocky or muddy bottoms.	**Low**; potentially suitable habitat onsite, but no known occurrences within a 5 mile radius of site.
Western pond turtle *Emys marmorata*	--;CSC;--;--	Agricultural wetlands and other wetlands such as irrigation and drainage canals, low gradient streams, marshes, ponds, sloughs, small lakes, and their associated uplands. Present onsite.	**Present**; found within site boundary.

Special-Status Species	Regulatory Status (Federal; State; Local; CNPS)	Habitat Requirements	Potential for Occurrence
Fish			
Central Valley spring-run Chinook salmon *Oncorhynchus tshawytscha*	FT; CT; --; --	Sacramento and San Joaquin Rivers and their tributaries.	**None**.
Central Valley winter-run Chinook salmon *Oncorhynchus tshawytscha*	FE;CE;--;--	Sacramento and San Joaquin Rivers and their tributaries.	**None**.
Central Valley steelhead *Oncorhynchus mykiss*	FT;--;--;--	Sacramento and San Joaquin Rivers and their tributaries.	**Low**; potential stream habitat may be found onsite.
Delta smelt *Hypomesus transpacificus*	FT;CE;--;--	Sacramento and San Joaquin Rivers and their lower tributaries.	**None**; there is no potential habitat for this species on the site.
Birds			
Bald eagle *Haliaeetus leucocephalus*	--;CE;--;--	Nesting restricted to the mountainous habitats near permanent water sources in the northernmost counties of California, the Central Coast Region, and on Santa Catalina Island. Winters throughout most of California at lakes, reservoirs, river systems, and coastal wetlands.	**Low**; potentially suitable habitat onsite, but no known occurrences within a 5 mile radius of site.
Bank swallow *Riparia riparia*	--; CT;--;--	Nests in riverbanks and forages over riparian areas and adjacent uplands.	**High**; potentially suitable habitat may be found onsite and found within a 5 mile radius of site.
Burrowing owl *Athene cunicularia*	--;CSC;--;-- (Burrowing sites and some wintering sites)	Found in open, dry grasslands, agricultural and range lands, and desert habitats often associated with burrowing animals.	**Low**; potentially suitable habitat onsite, but no known occurrences within a 5 mile radius of site.
Great blue heron *Ardea herodias*	--;CSC;--;-- (nesting colony)	Variety of habitats close to bodies of water including fresh and saltwater marshes, wet meadows, lake edges and shorelines. Colonial nester in tall trees, cliff sides and sequestered spots on marshes.	**Low**; potential habitat, but not found within a 5 mile radius of site.
Great egret *Ardea alba*	--;CSC;--;-- (nesting colony)	Found in salt and freshwater marshes of significant size, marshy ponds and tidal flats.	**High**; potential habitat onsite, and is found within 0.5 mile of site.

Special-Status Species	Regulatory Status (Federal; State; Local; CNPS)	Habitat Requirements	Potential for Occurrence
Northern goshawk *Accipiter genitilis*	--;CSC;--;--	Mixed coniferous and deciduous forests with dense canopy.	**Low**; potentially suitable habitat onsite, but no known occurrences within a 5 mile radius of site.
Tricolored blackbird *Agelaius tricolor*	--;CSC;--;-- (nesting colony)	Nests in dense blackberry, cattail, tules, willow, or wild rose within emergent wetlands throughout the Central Valley and in northeastern California.	**Low**; potentially suitable habitat onsite, and is found within a 5 mile radius of site. Elevation of Plan area may be too high.
White-tailed kite *Elanus leucurus*	--;CFP;--;--	Nests in isolated trees or woodland areas with suitable open foraging habitat.	**Low**; potentially suitable habitat onsite, but no known occurrences within a 5 mile radius of site.
Other Raptors (Hawks, Owls and Vultures)	MBTA and §3503.5 Department of Fish and Game Code	Nests in a variety of communities including cismontane woodland, mixed coniferous forest, chaparral, montane meadow, riparian, and urban communities.	**High**; most of site has potentially suitable habitat.
Mammals			
Fisher *Martes pennanti*	FC;CSC;--;--	Occurs in intermediate to large-tree stages of coniferous forests and deciduous; riparian habitats with >50% canopy closure.	**High**; potentially suitable habitat present and species is found within 5 miles of site.
Silver-haired bat *Lasionycteris noctivagans*	--;CSC;--;--	Temperate, northern hardwoods with ponds or streams nearby. The typical day roost for the bat is behind loose tree bark.	**High**; potentially suitable habitat present and species is found within 5 miles of site.
Yuma myotis *Myotis yumanensis*	--;CSC;--;--	Reside in open forests and woodland habitats with sources of water over which to feed. Roost in buildings, mines, caves, and crevices.	**High**; potentially suitable habitat present and species is found within 5 miles of site.

Federally-Listed Species:		**California State Listed Species:**	**CNPS* Rank Categories:**
FE = federal endangered	FPD = proposed for delisting	CE = California state endangered	1A = plants presumed extinct in California
FT = federal threatened	FD = delisted	CT = California state threatened	1B = plants rare, threatened, or endangered in California and elsewhere
FC = candidate		CR = California state rare	2 = plants rare, threatened, or endangered in California, but common elsewhere
PT = proposed threatened		CSC = California Species of Special Concern	3 = plants about which we need more information
			4 = plants of limited distribution
			Other Special-status Listing:

Special-Status Species	Regulatory Status (Federal; State; Local; CNPS)	Habitat Requirements	Potential for Occurrence
Source: Foothill Associates			SLC = species of local or regional concern or conservation significance

5.4.1 Listed and Special-Status Plants

Based on a records search of the CNDDB and the USFWS list, suitable habitat for special-status plant species occurs on the site. Based on field observations and literature review specific to the special-status plants listed in **Table 2**, the potential for occurrence has been determined for each species. The species that are considered **present** onsite are: Nissenan manzanita (*Arctostaphylos nissenana*), and Red Hills soaproot (*Chlorogalum graniflorum*). Species considered to have a ***high*** potential on the site include the following: Brandegee's clarkia (*Clarkia biloba* ssp. *brandegeeae*), Jepson's onion (*Allium jepsonii*), Layne's butterweed (*Senecio layneae),* Layne's ragwort (*Packera layneae*), Pine Hill ceanothus (*Ceanothus roderickii*), oval-leaved viburnum (*Viburnum ellipticum),* and Stebbin's morning glory (*Calystegia stebbinsii*). The species that are present or are considered to have a ***low*** potential on the site include the following: Dongdon's onion (*Allium sanbornii* var. *congdonii*), El Dorado County mule ears (*Wyethia reticulate*), Ewan's larkspur (*Delphinium hansenii* ssp. *ewanianum*), Hernandez bluecurls (*Trichostema rubisepalum*), Humboldt lily (*Lilium humboldtii* ssp. *humboldtii*), Sanford's arrowhead (*Sagittaria sanfordii*), streambank spring beauty (*Claytonia parviflora* ssp. *grandiflora*), True's manzanita (*Arctostaphylos mewukka* ssp. *truei*).

Plant Species Determined Present within Study Area

Nissenan Manzanita

Nissenan manzanita is found in the closed-cone coniferous forest and chaparral, in rocky areas 1,350 to 3,300 feet elevation from El Dorado and Tuolumne counties. It blooms from February through March. This species has no federal or California state status, but is ranked by CNPS as rare, threatened, or endangered in California and elsewhere. Nissenan manzanita is present in the far eastern end of the Plan and outside of the Plan along the southeastern border. Therefore, this species has a high potential for occurring on other portions of the site.

Red Hills Soaproot

Red Hills soaproot is a perennial herb that occurs in open hillsides in chaparral communities, which is usually associated with gabbro or serpentine soils. This species blooms from May through June and does not have federal or state protection, but is ranked by CNPS as rare, threatened, or endangered in California and elsewhere. Several

CNDDB occurrences for this species have been recorded within five miles of project area, and one occurrence is shown onsite. Since this species occurs onsite, as well as within five miles of the Plan, Red Hills soaproot has a high potential for occurring elsewhere onsite.

Plant Species with a High Potential to Occur within the Study Area

Brandegee's Clarkia

Brandegee's clarkia has no State or federal status, but is on the CNPS list 4. It is typically found in foothill woodlands and low elevation conifer forests (CNPS 2014). The blooming period is from May through June. There are several records of this species occurring within five miles of the project site and potential habitat occurs within the site (**Figure 3**) (CDFW 2014). Therefore, the potential for this species to occur on the site is high.

Jepson's Onion

Jepson's onion is listed as CNPS rank 1B.2 and blooms from April through August. This species is found on serpentine soils in chaparral, lower montane coniferous forest, and cismontane woodland. Since the CNDDB map (**Figure 3**) shows Jepson's onion occurring in several locations to the west of the Plan, and because the Plan has areas of serpentine soil, chaparral and cismontane (hillside) woodland, the potential for observing this species is high.

Layne's Butterweed

Layne's butterweed is listed on the CNDDB list as Federally Threatened, California State Rare; and is ranked by CNPS as rare, threatened, or endangered in California and elsewhere. This species blooms from April through August and is found in chaparral, cismontane woodland, on serpentine or gabbroic substrate from 600 to 3,000 feet elevation. This species is known to occur in El Dorado, Tuolumne, and Yuba counties and has been observed within five miles of the Plan boundary. Because the Plan site has serpentine soil, is within the species elevation range and because the species has been observed within five mile of the site, this species has a high potential of occurring onsite.

Layne's Ragwort

Layne's ragwort is listed on the CNDDB list as Federally Threatened, California State Rare; and is ranked by CNPS as rare, threatened, or endangered in California and elsewhere. This species blooms from April through August and is found in dry pine woodlands, oak woodlands, or chaparral areas associated with serpentine or gabbroic, rocky soils chaparral, cismontane woodland, on serpentine or gabbroic substrate from 1,200 to 3,000 feet elevation. This has been observed within five miles of the Plan boundary. Because the Plan site has serpentine soil, is within the species elevation range and because the species has been observed within five mile of the site, this species has a high potential of occurring onsite.

Oval-Leaved Viburnum

Oval-leaved viburnum is considered endangered in California by CNPS. This species is found in chaparral, montane woodland, and lower montane coniferous forest between 705 to 4,600 feet in elevation. It blooms from May through June. Since there is suitable habitat onsite and because this species occurs within five miles of the Plan, oval-leaved viburnum has a high potential for occurring onsite.

Pine Hill Ceanothus

Pine Hill ceanothus is listed on the CNDDB list as federally endangered, California state rare and rare, threatened, or endangered in California and elsewhere by CNPS. It blooms from April thought June. Typical habitat is dry, stony soils in chaparral areas, and is often associated with serpentine or gabbro soil types. Several CNDDB occurrences for this species have been recorded within five miles of project area. Since there is suitable habitat onsite and because this species occurs within five miles of the Plan, Pine Hill ceanothus has a high potential for occurring onsite.

Stebbin's Morning Glory

Stebbin's morning glory is listed on the CNDDB list as federally endangered and endangered by the State of California, and is considered rare, threatened, or endangered in California and elsewhere by CNPS. This species is found on open hillsides in chaparral communities. This plant is typically associated with gabbro soil types although it can be found on serpentine soils. Since there is suitable habitat onsite and because this species occurs within five miles of the Plan, Stebbin's morning glory has a high potential for occurring onsite.

Plant Species with a Low Potential to Occur within Study Area

Congdon's Onion

Congdon's onion does not have California state or federal protection, but is ranked as uncommon in California by the CNPS. This species occurs on chaparral and cismontane woodland, and on serpentinite or volcanic based soil from 1300 to 3600 feet in elevation. It blooms from April through June. Potential habitat occurs onsite, but is not found on or within five miles of the study site. Therefore, this species has a low potential of occurring onsite.

El Dorado County Mule Ears

El Dorado County mule-ears does not have California state or federal protection, but is considered rare, threatened, or endangered in California and elsewhere by the CNPS. This species occurs on rocky cismontane woodland, and valley and foothill grassland, from 300 to 1900 feet in elevation.. It blooms from April to August. This species is found within five miles of the site and may occur on clay soils. Therefore, this species has a low potential of occurring onsite.

Ewan's Larkspur

Ewan's larkspur is not afforded California State rare or federal protection, and is ranked as uncommon in California by the CNPS. This species occurs in open pine forests and oak woodlands between 300 and 2000 feet. There are no CNDDB occurrences within five miles of the project site. It blooms from March through May. This species is not found within five miles of the site, but potential habitat may occur onsite. Therefore, this species has a low potential of occurring onsite.

Hernandez Bluecurls

Hernandez bluecurls are associated with volcanic or serpentinite, gravelly soil in broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest and vernal pools, from 600 to 2900 feet in elevation. This species has no state or federal protection, but is considered uncommon in California by CNPS. It blooms from June through August. Although not found within five miles of the site, this species may be found on soils and at the elevation for this site. Therefore, this species is considered to have a low potential for the site.

Humboldt Lily

Humboldt lily occurs in openings in chaparral and cismontane woodland and lower montane coniferous forest from 360 to 3400 feet in elevation. This species has no state or federal protection, but is considered uncommon in California by CNPS. It blooms from May through July. Although not found within five miles of the site, this species may be found on soils and at the elevation for this site. Therefore, this species is considered to have a low potential for the site.

Sanford's Arrowhead

Sanford's arrowhead occurs in freshwater marsh and similar quiet shallow freshwater areas below 2,000 feet. It blooms from May through October. There are no CNDDB occurrence records within five miles of project area. This species does not have California state or federal protection, but is considered rare, threatened, or endangered in California and elsewhere by the CNPS. Although not found within five miles for the site, this species may be found in wetlands and at the elevation of this site. Therefore, this species is considered to have a low potential for the site.

Streambank Spring Beauty

Habitat for the streambank spring beauty is rocky habitat in cismontane woodland (pine/blue oak woodlands), from 600 to 3400 feet in elevation. This species has no state or federal protection, but is considered uncommon in California by CNPS. It blooms from February through April. Although not found within five miles of the site, this species may be found on habitats and at the elevation for this site. Therefore, this species is considered to have a low potential for the site.

True's Manzanita

Habitat for the True's manzanita is chaparral, lower montane coniferous forest, sometimes along roadsides, from 1200 to 2900 feet in elevation. This species is not found within a five mile radius of the site. This species has no state or federal protection, but is considered uncommon in California by CNPS. It blooms from February through July. Although not found within five miles of the site, this species may be found on habitats and at the elevation for this site. Therefore, this species is considered to have a low potential for the site.

5.4.2 Listed and Special-Status Animals

Based on a records search of the CNDDB and the USFWS list, suitable habitat for special-status animal species occurs on the site. Based on field observations and literature review specific to the special-status animals listed in **Table 2**, the potential for occurrence has been determined for each species. The western pond turtle (*Emys marmorata*), is the only known species to be ***present*** onsite. The species that are considered to have a ***high*** potential to occur on the site include the following: Cosumnes spring stonefly (*Cosumnoperia hypocrena*), great egret (*Ardea alba*), bank swallow (*Riparia riparia*), fisher (*Martes pennanti*), silver-haired bat (*Lasiionycteris noctivagans*), and Yuma myotis (*Myotis yumaninsis*), and other raptors.

The species that are considered to have a ***low*** potential to occur are valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), California red-legged frog (*Rana aurora draytonii*), coast horned lizard (*Phrynosoma blainvillii*), foothill yellow-legged frog (*Rana boylii*), Central Valley steelhead (*Oncorhynchus mykiss*), bald eagle (*Haliaeetus leucocephalus*), burrowing owl (*Athene cunicularia*), great blue heron (*Ardea herodias*), northern goshawk (*Accipiter genitilis*), tricolored blackbird (*Agelaius tricolor*), and white-tailed kite (*Elanus leucurus*).

Wildlife Present within the Study Area

Western Pond Turtle

Western pond turtles require slow moving perennial aquatic habitats with suitable basking sites. Pond turtles have sometimes adapted to using irrigation ditches. Suitable aquatic habitat typically has a muddy or rocky bottom and has emergent aquatic vegetation for cover (Stebbins 2003). There is one occurrence onsite and several CNDDB records for this species within five miles of the project site (**Figure 3**) (CDFW 2014). There are at least two other ponds in the study area, therefore the potential for this species occurring elsewhere on the site is high.

Wildlife with a High Potential to Occur within the Study Area

Cosumnes Spring Stonefly

The Cosumnes spring stonefly occurs in freshwater intermittent streams found close to the eastern boundary of study site and other sites within a five mile radius. The females lay hundreds or even thousands of eggs in a ball which they initially carry about on their abdomens, and later deposit into the water. The eggs typically take two to three weeks to hatch, but some species undergo diapause with the eggs remaining dormant throughout a dry season, and hatching only when conditions are suitable. Stoneflies usually live in areas with running water. Because there are freshwater streams occurring onsite and because this species occurs close to the site boundary and in other sites within five miles of the site boundary, the potential for this species to occur on the site is high.

Great Egret

The great egret feeds and rests in fresh, and saline emergent wetlands, along the margins of estuaries, lakes, and slow-moving streams, on mudflats and salt ponds, and in irrigated croplands and pastures. This species nests in large trees and roosts in trees. In northern California, it is fairly common to common yearlong in coastal lowlands, inland valleys, and the Central Valley. Locally abundant March to July near the larger nesting colonies. Because there are freshwater streams and lakes occurring onsite and because this species occurs close to the site boundary, the potential for this species to occur on the site is high.

Bank Swallow

The bank swallow forages by hawking insects during long, gliding flights. It feeds predominantly over open riparian areas, but also over brushland, grassland, wetlands, water, and cropland, and uses holes dug in cliffs and river banks for cover. The bank swallow will also roost on logs, shoreline vegetation, and telephone wires. There is one occurrence onsite and several CNDDB records for this species within five miles of the project site (**Figure 3**) (CDFW 2014). There is potential habitat in the study area, and it is found within five miles of the study site. Therefore the potential for this species occurring elsewhere on the site is high.

Fisher

The fisher inhabits intermediate to large-tree stages of coniferous forests and deciduous woodlands, and riparian habitats with greater than fifty percent canopy closure used for denning and resting. There is one occurrence onsite and several CNDDB records for this species within five miles of the project site (**Figure 3**) (CDFW 2014). There is potential habitat in the study area, and it is found within five miles of the study site. Therefore the potential for this species occurring elsewhere on the site is high.

Silver-Haired Bat

The silver-haired bat roosts in hollow trees, snags, buildings, rock crevices, caves, and under bark. Females may form nursery colonies or occur as solitary individuals in dense

foliage or hollow trees. This species" foraging flight is slow and fluttery with short glides. It feeds less than 6 m (20 ft) above forest streams, ponds, and open brushy areas. There is one occurrence in the CNDDB records for this species within five miles of the project site (**Figure 3**) (CDFW 2014). There is potential habitat in the study area, and it is found within five miles of the study site. Therefore the potential for this species occurring elsewhere on the site is high.

Yuma Myotis

This vesper bat resides in open forests and woodland habitats with sources of water over which to feed. It roosts in buildings, mines, caves, and crevices. This species has been recorded in the CNDDB records within five miles of the project site (**Figure 3**) (CDFW 2014). There is potential habitat in the study area, and it is found within five miles of the study site. Therefore the potential for this species occurring elsewhere on the site is high.

Other Raptor Species

Other raptor species forage and nest in a variety of habitats throughout El Dorado County. Raptor nests are protected under the MBTA and Section 3503.5 of the California Fish and Game Code, which makes it illegal to destroy any active raptor nest. Large trees onsite and in the vicinity of the project area may provide potential nesting habitat for raptor species. In addition, potential foraging habitat for raptors occurs within the annual grassland habitat on the project site. Consequently, raptors and other migratory birds have a high potential to occur on the site.

Wildlife with a Low Potential to Occur within the Study Area

Bald Eagle

Nesting restricted to the mountainous habitats near permanent water sources in the northernmost counties of California, the Central Coast Region, and on Santa Catalina Island. This species winters throughout most of California at lakes, reservoirs, river systems, and coastal wetlands. This species requires large bodies of water, or free flowing rivers with abundant fish, and adjacent snags or other perches. It swoops from hunting perches, or soaring flight, to pluck fish from water, and will wade into shallow water to pursue fish. The eagle also pounces on, or chases, injured or ice-bound water birds. In flooded fields, occasionally pounces on displaced voles, or other small mammals. Groups may feed gregariously, especially on spawning fish. This species scavenges dead fish, water birds, and mammals. Although the eagle is not found within five miles of the Plan area, the site has potential nesting and foraging areas, and therefore has a low potential for occurrence.

California Red-Legged Frog

California red-legged frog requires a permanent water source and is typically found along quiet slow moving streams, ponds, or marsh communities with emergent vegetation. This species is listed as federally threatened and California state species of concern.

Although the frog is not found within five miles of the Plan area, the site has potential for permanent water sources, and therefore has a low potential for the California red-legged frog.

Coast Horned Lizard

The coast horned lizard inhabits open areas of sandy soil and low vegetation in valleys, foothills and semiarid mountains from sea level to 8,000 feet in elevation. It is typically found in grasslands, coniferous forests, woodlands, and chaparral, with open areas and patches of loose soil. Often found in lowlands along sandy washes with scattered shrubs and along dirt roads, and frequently found near ant hills (Zeiner 1988). There are two CNDDB records of this species within five miles of the site (**Figure 3**) (CDFW 2014). The grasslands and woodlands onsite may provide habitat for the coast horned lizard, however likelihood for occurrence is low due to the limited number of sandy washes on the project site.

Foothill Yellow-Legged Frog

The foothill yellow-legged frog is found in or near rocky streams in a variety of habitats, including valley-foothill hardwood, valley-foothill hardwood-conifer, valley-foothill riparian, ponderosa pine, mixed conifer, coastal scrub, mixed chaparral, and wet meadow types. Adults often bask on exposed rock surfaces near streams. When disturbed, they dive into the water and take refuge under submerged rocks or sediments. During periods of inactivity, especially during cold weather, individuals seek cover under rocks in the streams or on shore within a few meters of water. Although the frog is not found within five miles of the Plan area, the site has potential for rocky stream habitat, and therefore has a low potential for occurrence.

Great Blue Heron

The great blue heron occupies a variety of habitats close to bodies of water including fresh and saltwater marshes, wet meadows, lake edges and shorelines. This species is a colonial nester in tall trees, cliff sides and sequestered spots on marshes. Although the heron is not found within five miles of the Plan area, the site has potential nesting and foraging areas, and therefore has a low potential for occurrence.

Northern Goshawk

The northern goshawk hunts in wooded areas, using snags and dead-topped trees for observation and prey-plucking perches. This species feeds mostly on birds, from robin to grouse in size. Small mammals, of squirrel and rabbit size, are also often taken, but it rarely eats carrion and insects. Prey caught in air, on ground, or in vegetation, using fast, searching flight, or rapid dash from a perch. This hawk usually nests on north slopes, near water, in densest parts of stands, but close to openings. Although the hawk is not found within five miles of the Plan area, the site has potential nesting and foraging areas, and therefore has a low potential for occurrence.

Special-Status Fish Species

Central Valley steelhead rely on streams, rivers, estuaries and marine habitat during their lifecycle. In freshwater and estuarine habitats, steelhead feed on small crustaceans, insects and small fishes. Eggs are laid in small and medium gravel and need good water flow (to supply oxygen) to survive. After emerging from the redds, steelhead remain in streams and rivers for 1 to 4 years before migrating through the estuaries to the ocean. Unlike salmon, steelhead migrate individually rather than in schools. Steelhead spend 1 to five years at sea before returning to natal streams or rivers. At least two specific storages of steelhead have developed: those that enter fresh water during fall, winter and early spring (the winter run); and those that enter in spring, summer and early fall (the summer run). Steelhead do not always die after spawning, but will migrate downstream through estuaries to the ocean.

Although there are no CNDDB records for these species within five miles of the site (CDFW 2014) the site has some higher order streams tributary to the Sacramento River. Therefore, the potential for this species to occur in the site is low.

Tricolored Blackbird

The tricolored blackbird nests in dense blackberry, cattail, tules, willow, or wild rose within emergent wetlands throughout the Central Valley and foothills surrounding the valley. This species forages on ground in croplands, grassy fields, flooded land, and along edges of ponds. There is one occurrence onsite and several CNDDB records for this species within five miles of the project site (**Figure 3**) (CDFW 2014). There is potential habitat in the study area, and it is found within five miles of the study site. Therefore the potential for this species occurring elsewhere on the site is high.

Valley Elderberry Longhorn Beetle

The USFWS has determined the range of the beetle to include the watersheds of the American, San Joaquin, and Sacramento Rivers and their tributaries up to approximately 3,000 feet above MSL (USFWS 1980). Typically, the beetles are found on elderberry shrubs within riparian plant communities. Some studies have found that multiple elderberry shrubs clumped together provide superior habitat for the beetle while isolated elderberry shrubs are less likely to support beetle populations. Typical plant species that co-occur with the elderberry shrubs include California sycamore (*Platanus racemosa*), willows (*Salix* spp.), blackberry (*Rubus* spp.), and poison oak (*Toxicodendron diversilobum*) (USFWS 1984). Beetles require elderberry stems with a basal diameter of at least 1 inch in order for the larvae to utilize the stems (USFWS 1999). The valley elderberry longhorn beetle depends on elderberry shrubs for its entire lifecycle. Adults are typically active from March through May during the flowering period of the elderberry shrub. The female lays its eggs on the leaves and stems of the elderberry shrub. The larvae emerge within a few days and burrow into the elderberry stem. The larvae feed on the stem pith until they pupate. When the host shrub begins flowering, the pupa emerges from the stem as an adult (Barr 1991). The project is not likely to adversely affect valley elderberry longhorn beetle. One elderberry bush (*Sambucus*

mexicana = S. nigra ssp. *canadensis*) that may provide suitable habitat occurs onsite. Sixteen live stems, 6 between 1 and 3 inches in diameter, and 10 under 1" in diameter were counted. Although the beetle is not found within five miles of the Plan area, the site has potential for elderberry shrubs, and therefore has a low potential for the valley elderberry longhorn beetle.

Western Burrowing Owl

Western burrowing owl is a small ground-dwelling owl that occurs in western North America from Canada to Mexico, and east to Texas, and Louisiana. Although in certain areas of its range western burrowing owls are migratory, these owls are predominantly non-migratory in California (Zeiner *et al.* 1990). The western burrowing owl is an opportunistic forager, foraging on large arthropods, mainly beetle and grasshoppers, small mammals, reptiles, birds, and carrion. The breeding season for western burrowing owls occurs from March to August, peaking in April and May (Zeiner *et al.* 1990). Western burrowing owls nest in burrows in the ground, often in old ground squirrel burrows. This owl is also known to use artificial burrows including pipes, culverts, and nest boxes. There are no CNDDB records of occurrences for this species within five miles of the plan area (**Figure 3**) (CDFW 2014). However, the annual grassland onsite may provide suitable habitat for this species to occur. Consequently, this species has a low potential to occur within the annual grassland community.

White-Tailed Kite

The white-tailed kite is a medium-sized raptor that is a yearlong resident in coastal and valley lowlands in California. White-tailed kite are monogamous and breed from February to October, peaking from May to August (Zeiner *et al.* 1990). This species nests near the top of dense oaks, willows, or other large trees. There are no CNDDB records of white-tailed kite listed within five miles of the project site (**Figure 3**). However, the oak woodland onsite provides potential nesting habitat for this species, and the annual grassland onsite provides potential foraging habitat. Therefore, the potential for this species to occur on the site is low.

5.5 Sensitive Habitats

Sensitive habitats include those that are of special concern to resource agencies or those that are protected under CEQA, Section 1600 of the California Fish and Game Code, or Section 404 of the Clean Water Act. Additionally, sensitive habitats are protected under the specific policies outlined in the El Dorado County General Plan. Sensitive habitats within the site include oak woodlands, and waters of the U.S., which may include seasonal and perennial wetlands, creeks, ponds and lakes.

Oak trees are regulated under the El Dorado County General Plan, based on canopy coverage onsite. Oak tree removal, revegetation, and mitigation will be in accordance with the El Dorado General Plan framework (refer to Section 7.4.4 and 7.4.5).

Waters of the U.S. will need to formally delineated, and a jurisdictional determination issued by the Army Corps of Engineers. Aerial photography indicates that several ponds, and numerous streams occur in the Plan area. Wetlands may be associated with these features and in several low-lying areas throughout the site. Wetlands may also be associated with several hydric soil types identified in **Section 5.2.2**.

6.0 FOCUS AREAS

El Dorado County has identified two focus areas requiring a more thorough environmental review. Focus Area 1 (FA1) is located northeast of the intersection of State Highway 49 and Pleasant Valley Road, along the eastern boundary of the site, and Focus Area 2 (FA2) is located north of the intersection of Pleasant Valley Road and Mother Lode Drive, on the western boundary of the site. Species most likely to be found in these focus areas have been investigated in a more detailed analysis by habitat and soils type.

6.1 Focus Area Soils

FA1 consists of seven soil mapping units. These are: Diamond Springs Very Fine Sandy Loam, 3 to 9 Percent Slopes (DfB), Diamond Springs Very Fine Sandy Loam, 9 to 15 Percent Slopes (DfC), Diamond Springs Very Rocky Very Fine Sandy Loam, 3 to 50 Percent Slopes (DgE), Mariposa Gravelly Silt Loam, 3 to 30 Percent Slopes (MaD), Mariposa Very Rocky Silt Loam, 50 to 70 Percent Slopes (MbF), Placer Diggings (PrD), Water (W). Each mapping unit (except Water) is listed in **Table 1**, described in **Section 5.2.2** and shown in **Figure 2**. **Table 1** shows that none of these mappings units have hydric inclusions or components, or are considered serpentine soils. All these soils are well-drained, fine sandy or silt loams, except Placer Diggings, which is cobbly and gravelly, and may have areas near streams that frequently flood. DgE, MaD and MbF may have slopes up to 70 percent slopes. MbF has a high erosion rating. All of these soils have a combination of coniferous forests, hardwoods and brush. MbF has sparse vegetative cover due to steep slopes, and DfB is primarily coniferous forest.

FA2 consists of seven soil mapping units. These are: Auburn Very Rocky Silt Loam, 2 to 30 Percent Slopes (AxD), Auburn Silt Loam, 2 to 30 Percent Slopes (AwD), Diamond Springs Very Fine Sandy Loam, 3 to 9 Percent Slopes (DFB), Diamond Springs Very Fine Sandy Loam, 9 to 15 Percent Slopes (DfC), Mixed Alluvial Land (MpB), Placer Diggings (PrD), and Wet Alluvial Land (WaB). Each mapping unit is listed in Table 1, described in **Section 5.2.2** and shown in **Figure 2**. **Table 1** shows one of these mappings units, WaB, having hydric inclusions or components, and none are considered serpentine soils. These soils vary from very rocky silt loams and silt loams, to gravelly sandy, cobbly and clay soils. The well-drained soils include AxD, AwD, DfB, and DfC. MpB is moderately to somewhat poorly drained and frequently flooded. PrD has some areas that are frequently flooded and WaB is pooly drained and occasionally flooded.

6.2 Focus Area Biological Communities

Biological communities in the focus areas are similar to the habitats described in **Section 5.3** for the rest of the Plan. These are blue oak woodland, annual grassland, developed areas, montane hardwood, valley foothill riparian, and lake/pond. Overstory canopy in the blue oak woodland ranges from moderately open to densely closed. Dominant overstory trees include blue oak, interior live oak, and foothill pine. Annual grasslands are open areas composed of mostly annual grasses and forbs. Developed areas are

regions of commercial and residential development with low-lying herbaceous plant cover and landscaped trees and shrubs. Focus Area 1 has a higher degree of residential and commercial development than FA2; FA2 having more commercial development than residential. Montane hardwood community ranges from open to dense canopy with a canopy of Pacific madrone, California bay laurel and black oak. Valley foothill riparian is a biotic community is often associated with low velocity flowing streams, floodplains, and gently sloping terrain. Representative trees include California sycamore and Fremont cottonwood. The lake/pond habitats are typically impoundments created originally as water sources for cattle, usually having a mesic fringe of herbaceous vegetation and some woody plants. These areas are often waters of the U.S. and considered jurisdictional under the Army Corps of Engineers. The biological communities are depicted in **Figure 4** at the end of the document.

6.3 Special-Status Species in Focus Areas

Based on soil types and habitats identified in the focus areas, the following special-status species afforded special recognition by federal, State, or local resource agencies or organizations, listed and described in **Section 5.4**, and shown in **Figure 3**, have the potential to occur. Soils of particular importance as indicators of special-status plant habitat are those with hydric components or inclusions, or those frequently flooded, and those with unique mineral composition, such as serpentine. Although no serpentine soils are recorded in the NRCS listings (NRCS 2014) for the focus areas, soils with hydric components or inclusions include MpB, WaB, which are found in FA2, and PrD, that frequently floods, which is found in both focus areas.

6.3.1 Special-Status Plants in Focus Areas

Based on a records search of the CNDDB and the USFWS list, no special-status plants are known to occur in the focus areas. Based on soil types and habitats identified in the focus areas, Brandegee's clarkia is the only special-status plant species with a high potential for occurring in the focus areas. Brandegee's clarkia is found in dry areas and roadsides within the foothill woodland and coniferous forests. The eight special-status plant species with a low potential for occurring in the focus areas are: Congdon's onion, El Dorado County mule ears, Ewan's larkspur, Hernandez bluecurls, Humboldt lily, Sanford's arrowhead, streambank spring beauty and True's Manzanita. All of these species are found in the dry slopes of the foothill woodland habitat, except Sanford's arrowhead, which is found in freshwater marshes. Congdon's onion and Hernandez blue curls are found on volcanic soils. El Dorado County mule ears, Hernandiz blue curls and Humboldt lily are found in chaparral regions. A description of each of these species is in **Section 5.4.1** of this document.

6.3.2 Special-Status Wildlife in Focus Areas

Based on a records search of the CNDDB and the USFWS list, one special-status wildlife species, western pond turtle, is known to occur in southwest corner of FA2. Based on habitats identified in the focus areas, the great egret, other raptors, silver haired bat, and Yuma myotis are special-status species that have a high potential for occurring. Special-

status species that have a low potential for occurring in the focus areas include: blennosperma vernal pool andrenid bee, Ricksecker's water scavenger beetle, Valley elderberry longhorn beetle, vernal pool fairy shrimp, California red-legged frog, coast horned lizard, bald eagle, burrowing owl, great blue heron, northern goshawk, and white-tailed kite. Descriptions of these species are in **Section 5.4.2** of this document.

Special-status wildlife species found in dry foothill woodland include other raptors, special-status bats, coast horned lizard, northern goshawk, and white-tailed kite. Species found in lakes, ponds or slow moving waters include great egret, great blue heron, California red-legged frog and foothill yellow-legged frog and bald eagle. The burrowing owl frequents the annual grassland areas to burrow in that communities loose soil.

7.0 DISCUSSION AND RECOMMENDATIONS

As discussed, the site consists of ±8,072 acres of land that supports primarily foothill woodland and annual grassland habitats. Known or potential biological constraints on the site include:

- Potential habitat for special-status plant species;
- Potential nesting sites and foraging habitat for raptors (including bald eagle, northern goshawk and white-tailed kite);
- Potential habitat for coast horned lizard;
- Potential habitat for western burrowing owl;
- Potential habitat for tricolored blackbird;
- Potential habitat for western pond turtle;
- Potential habitat for special-status bat species;
- Potential habitat for great egret;
- Potential habitat for valley elderberry longhorn beetle;
- Potential habitat for Cosumnes spring stonefly;
- Potential habitat for California red-legged frog, and foothill yellow-legged frog; and
- Potential habitat for special-status fish; and
- Sensitive habitats: potentially jurisdictional waters of the U.S. including seasonal wetlands and perennial marsh, and associated ephemeral drainages and oak woodlands.

7.1 Special-Status Plant Species

As mentioned previously, portions of the project area contain suitable habitat for special-status plant species that are known to occur onsite and in the vicinity. According to the CNDDB, two special-status plant species occur onsite, five special-status plant species have a high potential for occurring onsite, and nine special-status plant species have a low potential for occurring onsite. Therefore, prior to any ground disturbance, it is recommended that a special-status plant survey be conducted on the project area. The survey should be conducted by a biologist qualified in the field identification of special-status plants known to occur in the vicinity of the project area and should take place during the bloom period to allow identification of plant species.

7.2 Raptors

As discussed earlier, several species of raptors forage and may nest on the site including the special-status species bald eagle, northern goshawk, and white-tailed kite. Active raptor nests are protected by the California Fish and Game code Section 3503.5 and the

MBTA. For this reason, if construction is expected to occur during the nesting season (February-August), a pre-construction raptor survey is recommended to determine if active nests are present on the site. The survey should be conducted by a qualified biologist no more than 30 days prior to the onset of construction activities. If the nests are found and considered to be active, construction activities should not occur within 500 feet of the nests until the young have fledged or a qualified biologist has determined that the nest is no longer active. If construction activities are proposed to occur during non-breeding season (September-January), a survey is not required and no further studies are necessary.

7.3 Coast Horned Lizard

Portions of the site provide potential habitat for the special-status species coast horned lizard. It is recommended that a pre-construction survey be conducted for this species by a qualified biologist no more than 30 days prior to the initiation of construction activities. If horned lizards are found onsite, CDFW should be consulted regarding appropriate mitigation measures. Additional mitigation for this species would only be considered if the species was found during pre-construction surveys.

7.4 Western Burrowing Owl

Suitable habitat exists onsite for the special-status species burrowing owl. For this reason, it is recommended that a burrowing owl survey be conducted no more than 30 days prior to the onset of construction. Burrowing owls can be present during all times of the year in California, so this survey is recommended regardless of the time construction activities occur. If active owl burrows are located during the preconstruction survey, it is recommended that a 250-foot buffer zone be established around each burrow with an active nest until the young have fledged and are able to exit the burrow. In the case of occupied burrows without active nesting, active burrows after the young have fledged, or if development commences after the breeding season (typically February-August), passive relocation of the birds should be performed. Passive relocation involves installing a one-way door at the burrow entrance, which encourages the owls to move from the occupied burrow. CDFW should be consulted as to suggested guidelines for passive relocation of any owls found onsite. Mitigation acreage may be required for project impacts that result in permanent impacts to active burrows and foraging habitat. CDFW recommends 6.5 acres of foraging habitat for burrowing owl be preserved for each active burrow that would be impacted by project activities. The CEQA lead agency is responsible for determining what mitigation would be appropriate in coordination with CDFW. These mitigation measures would only apply in the event that active owl burrows were encountered during the preconstruction survey.

7.5 Tricolored Blackbird

Perennial marsh habitats within the project area may exist within site boundaries. Aerial photo reconnaissance indicates several potential areas within Focus Area 2. It is recommended that a pre-construction survey for tricolored blackbird be conducted for any construction activity that would directly impact perennial marsh habitat or occur

within 300 feet of perennial marsh habitat. If tricolored blackbirds are found during the pre-construction survey, CDFW and USFWS should be contacted regarding additional mitigation measures that may be required. Additional mitigation measures would only be considered in the event that tricolored blackbirds were located during the pre-construction survey.

7.6 Western Pond Turtle

Perennial marsh habitats within the project area contain suitable habitat for western pond turtle and there are CNDDB records for this species within Focus Area 2. Therefore, it is recommended that a pre-construction survey for western pond turtle be conducted for any construction activity that would directly impact perennial marsh habitat or occur within 300 feet of perennial marsh habitat. If western pond turtles are found during the pre-construction survey, CDFW and USFWS should be contacted regarding additional mitigation measures that may be required. Additional mitigation measures would only be considered in the event that western pond turtles were located during the pre-construction survey.

7.7 Special-Status Bat Species

Existing large oaks, snags, hollow trees, caves and buildings could provide potential roosting habitat for various bat species that occur in the vicinity of the study area. Prior to the initiation of construction activities, it is recommended that a preconstruction survey be performed by a qualified biologist to determine if special-status bat species are roosting in tree crevices in the oak woodlands onsite. If special-status bat species are present and roosting on the project site, then CDFW should be consulted regarding potential additional mitigation measures. Adoption of mitigation measures for roosting bat species would be considered only if special-status bat species are found to be roosting within the project area.

7.8 Great Egret

The freshwater marshes and lakes onsite and nearby trees for roosting could provide potential habitat for the great egret. Prior to the initiation of construction activities, it is recommended that a preconstruction survey be performed by a qualified biologist to determine if this special-status species is roosting in trees or foraging in aquatic areas. If the great egret is present and roosting or foraging on the project site, then CDFW should be consulted regarding potential additional mitigation measures. Adoption of mitigation measures for this species would be considered only if the great egret is found to be present within the project area.

7.9 Valley Elderberry Longhorn Beetle

There is potential for VELB to be present on the site if elderberry shrubs are present. Pre-construction surveys should be conducted to identify any elderberry shrubs on the site and evaluate any indications of VELB presence. Currently, the USFWS suggests mitigation for impacts to any elderberry shrub with stems of greater than 1 inch diameter at ground level. USFWS calls for a 100-foot buffer to be maintained around any existing

elderberry shrub to prevent potential VELB habitat from being impacted. If a 100-foot buffer cannot be maintained, then the elderberry shrub should be transplanted according to USFWS guidelines to a suitable designated mitigation area and additional elderberry shrubs and associated riparian plant species should be planted in the designated mitigation area. The number of additional elderberry shrubs and associated vegetation varies depending on the number and diameter of elderberry stems suitable for use by VELB that are impacted by the project. The USFWS requests that transplantation occur between the beginning of November and the first two weeks of February when elderberries are typically dormant and the chance of transplantation success is higher. These mitigation measures would only be required if the elderberry shrub within the project area was impacted.

7.10 Cosumnes Spring Stonefly

The site may provide habitat in several drainages throughout the site. It is recommended that a pre-construction survey be conducted for this species by a qualified biologist no more than 30 days prior to the initiation of construction activities. If these species are found onsite, CDFW should be consulted regarding appropriate mitigation measures. Additional mitigation for this species would only be considered if the species was found during pre-construction surveys.

7.11 Sensitive Habitats

Aerial photographic reconnaissance indicates the presence of potential waters of U.S. These areas are potentially regulated by the Corps and CDFW. Additionally, these areas are protected under the El Dorado County General Plan. Consequently, it is recommended that prior to the issuance of a grading permit, the wetland delineation for the project site should be submitted to the Corps and the appropriate Section 404 permit should be acquired. Any waters of the U.S. or jurisdictional wetlands that would be lost or disturbed should be replaced or rehabilitated on a “no-net-loss” basis in accordance with the Corps’ mitigation guidelines. Habitat restoration, rehabilitation, and/or replacement should be at a location and by methods agreeable to the Corps.

If the project would result in impacts to oak trees, El Dorado County should be consulted regarding oak tree avoidance and replacement guidelines.

8.0 REFERENCES

Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken, editors. 2012. *The Jepson manual: Vascular Plants of California, Second Edition*. University of California, Berkeley.

Barr, C.B. 1991. *The distribution, habitat, and status of the valley elderberry longhorn beetle Desmocerus californicus dimorphus*. U.S. Fish and Wildlife Service: Sacramento, CA.

Calflora. 2014. *The Calflora Database: Information on California plants for education, research and conservation*. Web application accessed February 2014 at http://www.calflora.org/ , Berkeley, California.

California Department of Fish and Game (CDFG). 2011. *Northern Sierra Nevada Foothills Vegetation Project: Vegetation Mapping Report*. Sacramento, CA.

California Department of Fish and Wildlife (CDFW). 2014. California Natural Diversity Data Base. (CNDDB: *Camino, Coloma, Clarksville, Fiddletown, Garden Valley, Latrobe, Placerville, and Shingle Springs quadrangles*), Sacramento, CA. Accessed on January 21, 2014.

California Native Plant Society (CNPS). 2014. *Inventory of Rare and Endangered Plants* (online edition, v8-01a), (CNPS: Camino, Coloma, Clarksville, Fiddletown, Garden Valley, Latrobe, Placerville, and Shingle Springs quadrangles). Accessed on January 21, 2014.

El Dorado County. 2004. *El Dorado County General Plan: Conservation and Open Space Element*. El Dorado County Planning Department. Accessed online January 21, 2014 at: http://www.co.eldorado.ca.us/Planning/AdoptedGeneralPlan/7_conservation.pdf.

El Dorado County. 2010. *Integrated Natural Resources Management Plan – Phase 1*. Accessed online February 2014 at: http://www.edcgov.us/Planning/General_Plan_Integrated_Natural_Resources_Management_Plan_(INRMP).aspx.

Mayer, K.E. and W.F. Laudenslayer, Jr. (eds). 1998. *A Guide to Wildlife Habitats of California.* State of California, Resource Agency, Department of Fish and Game, Sacramento, CA.

Natural Resources Conservation Service (NRCS). 2014. Web Soils Survey. Accessed online February 2014 at: http;//websoilsurvey.nrcs.usda.gov.

Sawyer, John O. and Todd Keeler-Wolf. 1995. *A Manual of California Vegetation*. California Native Plant Society (CNPS), Sacramento, CA.

Soil Conservation Service. 1974. *Soil Survey of El Dorado Area*, California. U.S. Department of Agriculture.

Soil Conservation Service. March 1992. *Official List of Hydric Soil Map Units for El Dorado County*. California. U.S. Department of Agriculture.

Stebbins, R. C. 2003. *Western Amphibians and Reptiles*. 3rd edition. Boston: Houghton Mifflin Co.

U.S. Fish and Wildlife Service (USFWS). 1999. *Conservation Guidelines for the Valley Elderberry Longhorn Beetle: Sacramento, California*.

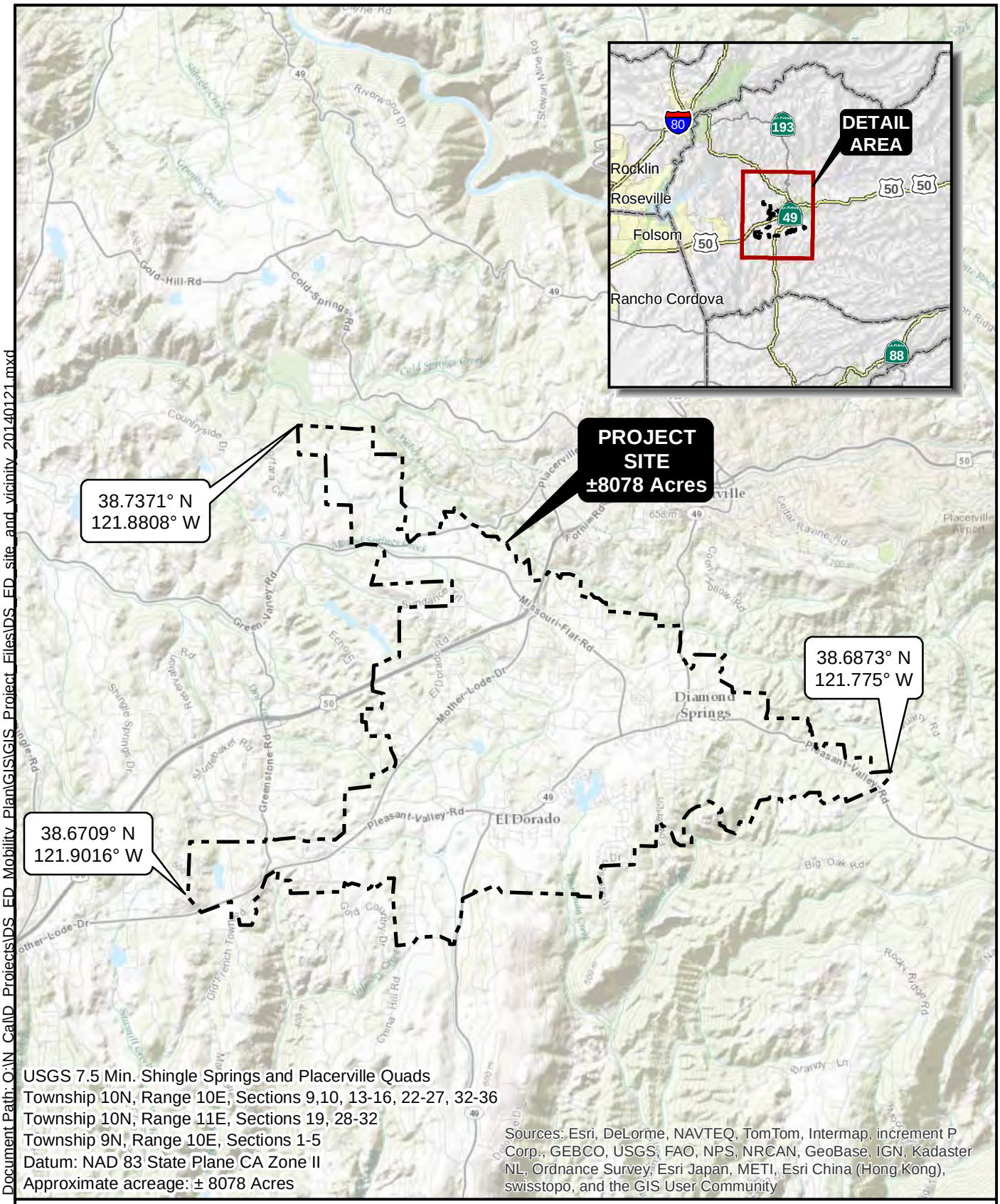
USFWS. 1984. *Recovery Plan for the Valley Elderberry Longhorn Beetle*. U.S. Fish and Wildlife Service, Endangered Species Program: Portland, Oregon.

USFWS. 1980. *Listing the Valley Elderberry Longhorn Beetle as a Threatened Species with Critical Habitat. Federal Register 45:52803–52807.*

USFWS. 2014. *Federal Endangered and Threatened Species that may be affected by Projects in the Placerville and Shingle Springs 7.5-minute series Quadrangle*. Sacramento, CA. Accessed on January 21, 2014.

Zeiner, D.C., W.R. Laudenslayer Jr., K.E. Mayer, and M. White, eds. 1990. *California's Wildlife Volume II: Birds*, State of California: The Resource Agency, Department of Fish and Game, Sacramento, CA.

Zeiner *et al.* (editors). 1988. *California's Wildlife, Volume I, Amphibians and Reptiles.* State of California: The Resource Agency, Department of Fish and Game, Sacramento, CA.



Document Path: O:\N_Cal\D_Projects\DS_ED_Mobility_Plan\GIS\GIS_Project_Files\DS_ED_site_and_vicinity_20140121.mxd

USGS 7.5 Min. Shingle Springs and Placerville Quads
Township 10N, Range 10E, Sections 9,10, 13-16, 22-27, 32-36
Township 10N, Range 11E, Sections 19, 28-32
Township 9N, Range 10E, Sections 1-5
Datum: NAD 83 State Plane CA Zone II
Approximate acreage: ± 8078 Acres

Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, and the GIS User Community

SITE AND VICINITY

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE

N

0 3500 7000
FEET
1 inch = 7,000 feet

Drawn By: MUB
Date: 01/21/2014

FIGURE 1

Project Boundary
± 8078 Acres

SOIL TYPE

AaF	AwD	BhC	DeE	JuE	MbF	SaF	SwD	
AkC	AxD	BhD	DfB	LaB	MmF	SfC2	TaD	
AmD	AxE	BkD	DfC	MaD	MpB	SuC	W	
ArC	AzE	BkE	DfD	MbE	PrD	SuD	WaB	
AtE		BpC	DgE					

USDA, Soil Conservation Service, digital soil data
derived from SSURGO data, El Dorado County CA, 2005

Document Path: O:\N_Cal\D_Projects\DS_ED_Mobility_Plan\GIS\GIS_Project_Files\DS_ED_Soils11x17_20140121.mxd

SOILS

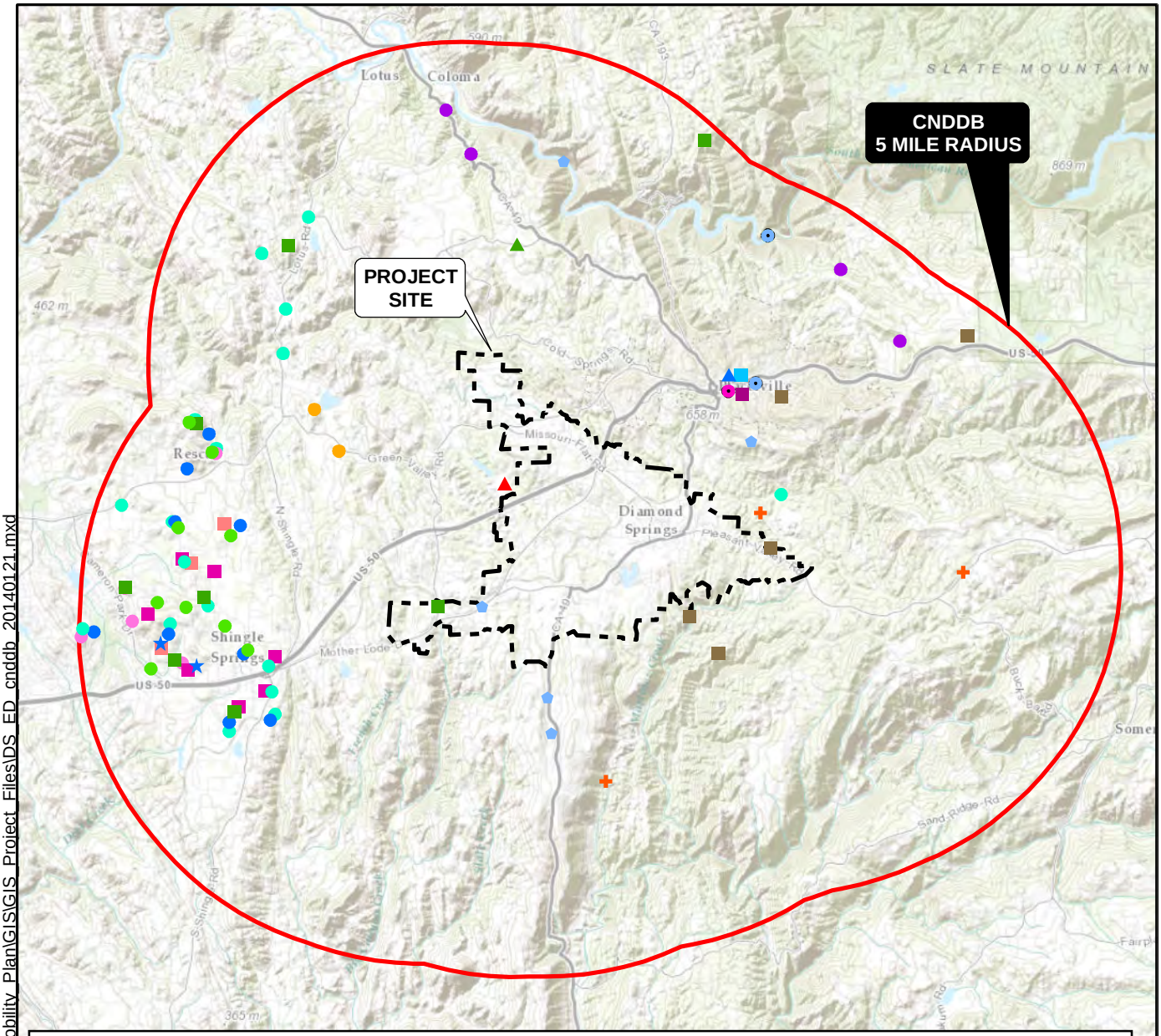
FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE

N

0 1.5 3
Miles
1 inch = 3,000 feet

Drawn By: MUB
Date: 02/03/2014

FIGURE 2



SOURCE: Department of Fish and Wildlife, CA Natural Diversity Database (CNDDB), 01/05/2014. CNDDB points are centroids of polygon occurrences. These points do not represent actual point locations of occurrence.

Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, and the GIS User Community

Document Path: O:\N_Cal\D_Projects\DS_ED_Mobility_Plan\GIS\GIS_Project_Files\DS_ED_cnddb_20140121.mxd

CNDDB

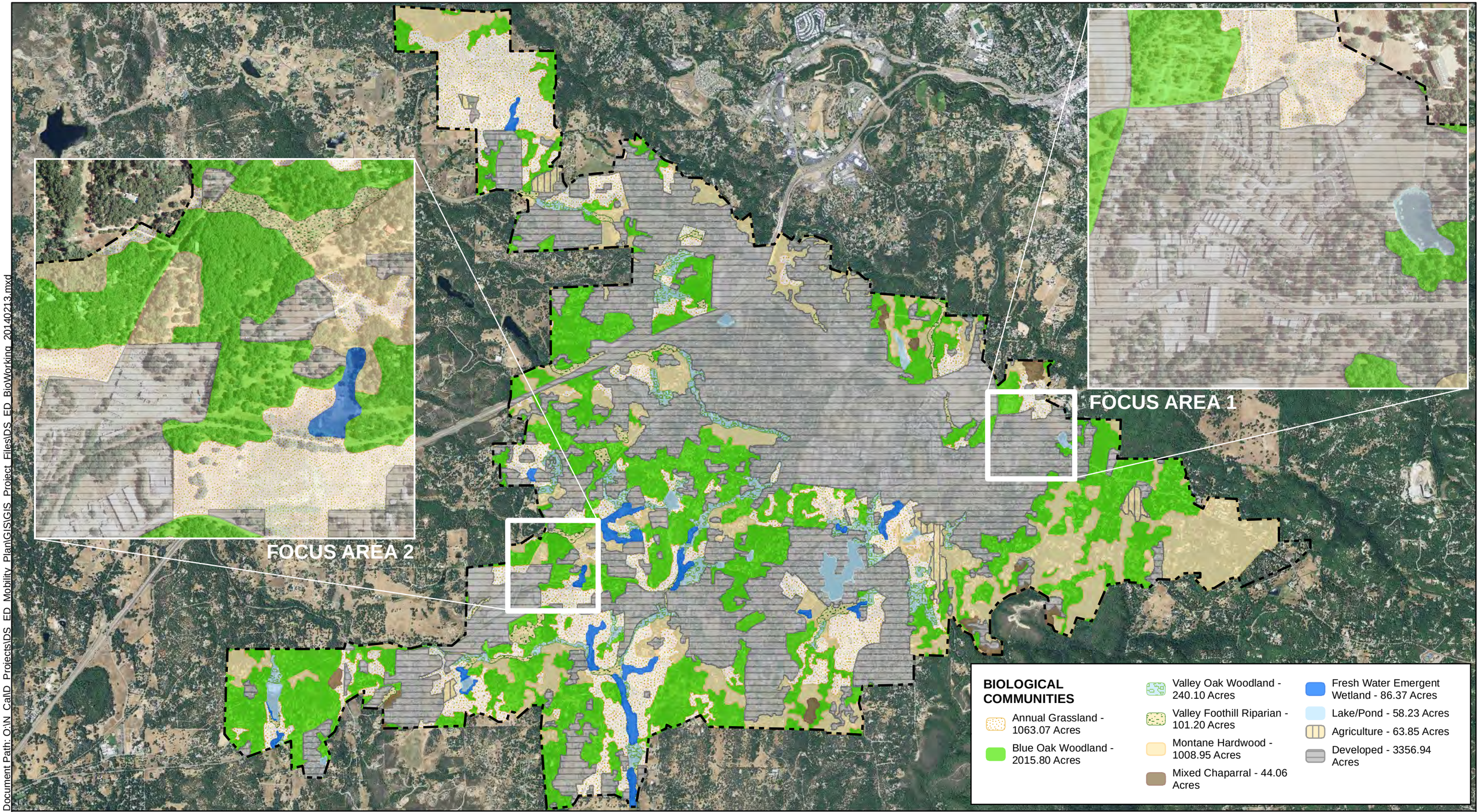
FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE

N

0 1 2
SCALE IN MILES

Drawn By: MUB
Date: 01/21/2014

FIGURE 3



Document Path: O:\N_Cal\D_Projects\DS_ED_Mobility_Plan\GIS\GIS_Project_Files\DS_ED_BioWorking_20140213.mxd

BIOLOGICAL COMMUNITIES MAP

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE

N

0 1.5 3
Miles
1 in = 3,000 feet

Drawn By: MUB
Date: 02/13/2014

FIGURE 4

Document Name: DS_ED_BioWorking_20140213 - 2/13/2014 5:07:22 PM

Diamond Springs and El Dorado Area Mobility and Livable Community Plan Draft Technical Report

Prepared for:
El Dorado County Transportation Commission

February 2014

RS12-3036

FEHR PEERS

Table of Contents

Appendices

List of Figures

List of Tables

INTRODUCTION

This technical report presents the results of the transportation analysis completed for the Diamond Springs & El Dorado Area Mobility and Livable Community Plan project. This technical report summarizes the following information:

- Data Collection
- Analysis Methodology
- Travel Demand Forecasts
- Existing Conditions
- Year 2035 Conditions

DATA COLLECTION

This section summarizes the existing conditions data collection.

TRAFFIC COUNTS

Intersection, roadway segment, and freeway counts were collected to determine the existing traffic operations of study facilities. Weather conditions were generally dry and local schools were in full session, during the traffic count data collection. Figure 1 shows the study area.

INTERSECTIONS

For study intersections, AM peak period (7 AM to 9 AM) and PM peak period (4 PM to 6 PM) intersection turning movement counts were collected in September and November 2012. Traffic counts at and near the US 50/Missouri Flat Road interchange were collected after the auxiliary lane improvements between Missouri Flat Road, Forni Road, and Placerville Drive were open. Intersection turning movement counts were collected at the following study intersections:

1) Missouri Flat Road/Plaza Drive
2) Missouri Flat Road/US Highway 50 Westbound Ramps
3) Missouri Flat Road/US Highway 50 Eastbound Ramps
4) Missouri Flat Road/Mother Lode Drive
5) Missouri Flat Road/Forni Road
6) Missouri Flat Road/Golden Center Drive
7) Missouri Flat Road/China Garden Road
8) Missouri Flat Road/Pleasant Valley Road (State Route 49)
9) State Route 49/Union Mine Road
10) State Route 49/Pleasant Valley Road
11) Pleasant Valley Road/Forni Road
12) Pleasant Valley Road/Oro Lane-Koki Lane
13) Pleasant Valley Road/Dublin Road-Oakdell Drive
14) Pleasant Valley Road/Sierra View Drive

15) Pleasant Valley Road/Patterson Drive
16) Pleasant Valley Road/Wrangler Road
17) Pleasant Valley Road/Commerce Way
18) Pleasant Valley Road/Faith Lane
19) Pleasant Valley Road/China Garden Road
20) Pleasant Valley Road/Diamond Meadows Way
21) Pleasant Valley Road/Diamond Road (State Route 49)-Fowler Lane

ROADWAY SEGMENTS

For study roadways, 24-hour traffic counts were collected in September and November 2012. Traffic counts at and near the US 50/Missouri Flat Road interchange were collected after the auxiliary lane improvements between Missouri Flat Road, Forni Road, and Placerville Drive were open. Roadway segment traffic counts were collected at the following locations:

Missouri Flat Road – Between Enterprise Drive and Pleasant Valley Road

Golden Chain Highway (SR 49) – South of Union Mine Road

Pleasant Valley Road

- West of Golden Chain Highway (SR 49)
- Between Forni Road and El Dorado Street
- Between Patterson Drive and Commerce Way
- Between China Garden Road and Diamond Meadows Way
- East of Diamond Road (SR 49)

Forni Road – North of Pleasant Valley Road

Commerce Way – North of Pleasant Valley Road

Diamond Road (SR 49) – North of Pleasant Valley Road

Figure 2 shows existing through travel lanes on study area roadways.

ANALYSIS METHODOLOGY

This section outlines the analysis methods applied for study roadway and intersections. Each study roadway facility was analyzed using the concept of Level of Service (LOS).

LOS is a qualitative measure of traffic operating conditions whereby a letter grade, from A (the best) to F (the worst), is assigned. These grades represent the perspective of drivers and are an indication of the comfort and convenience associated with driving. In general, LOS A represents free-flow conditions with no congestion, and LOS F represents long delays and a facility that is operating at or near its functional capacity.

INTERSECTIONS

Traffic operations at the study intersections were analyzed using procedures and methodologies contained in the *Highway Capacity Manual* (HCM), Transportation Research Board, 2010. These methodologies were applied using SimTraffic software packages (Version 7), developed by Trafficware. Table 1 displays the delay range associated with each LOS category for signalized and unsignalized intersections based on the HCM.

TABLE 1:
INTERSECTION LEVEL OF SERVICE CRITERIA

Level of Service	Signal Control	Stop Control
A	≤ 10.0	≤ 10.0
B	10.1 – 20.0	10.1 – 15.0
C	20.1 – 35.0	15.1 – 25.0
D	35.1 – 55.0	25.1 – 35.0
E	55.1 – 80.0	35.1 – 50.0
F	> 80.0	> 50.0

Notes: [1] Control delay includes initial deceleration delay, queue move-up time, stopped delay, and acceleration delay.
Source: *Highway Capacity Manual*, Transportation Research Board, 2010.

The SimTraffic micro-simulation analysis applied the following methodology:

- The simulation was conducted for the entire peak hour (i.e., 60 minutes) using four 15-minute intervals with the peak hour factor applied in the second interval
- The results were based on the average of ten model runs
- Each of the ten simulation runs applied a ten-minute seeding time

The existing conditions SimTraffic model was validated to field measured traffic volumes and observed maximum vehicle queue lengths.

The HCM methodology determines the level of service (LOS) at signalized intersections by comparing the average control delay (i.e. delay resulting from initial deceleration, queue move-up time, time actually stopped, and final acceleration) per vehicle at the intersection to the established thresholds. The LOS for traffic signal controlled and all-way stop controlled intersections is based on the average control delay for the entire intersection. For side-street stop-controlled intersections, the LOS is evaluated separately for each individual movement with delay reported for the critical (i.e., worst case) turning movement.

ROADWAYS

Roadway segment LOS was determined by comparing traffic volumes for selected roadway segments with peak hour LOS capacity thresholds from the 2004 El Dorado County General Plan, which are shown in Table 2. The 2004 General Plan transportation analysis is based on the PM peak hour. The PM peak hour represents the highest hourly volume during a typical weekday.

TABLE 2:
ROADWAY LEVEL OF SERVICE STANDARDS

Facility Type	Maximum Peak Hour Volume[1]				
	LOS A	LOS B	LOS C	LOS D	LOS E
Minor 2-Lane Highway	90	200	680	1,410	1,740
Major 2-Lane Highway	120	290	790	1,600	2,050
4-Lane, Multilane Highway	1,070	1,760	2,530	3,280	3,650
2-Lane Arterial	-	-	970	1,760	1,870
4-Lane Arterial, Undivided	-	-	1,750	2,740	2,890
4-Lane Arterial, Divided	-	-	1,920	3,540	3,740
6-Lane Arterial, Divided	-	-	2,710	5,320	5,600
8-Lane Arterial, Divided	-	-	3,720	7,110	7,470

Notes: [1] Thresholds apply to arterial roadways with moderate access control.
Source: 2004 El Dorado County General Plan.

FREEWAYS

Freeway operations were analyzed using the procedures and methodologies contained in the *Highway Capacity Manual* (Transportation Research Board, 2010). Table 3 describes the HCM LOS criteria for freeway mainline, freeway ramp junctions, and freeway weaving segments. For weaving segments, Caltrans District 3 prefers analysis based on the Leisch Method, which is described in the *Highway Design Manual* (Caltrans, last updated July 1, 2008). For consistency with both the El Dorado County General Plan and Caltrans preference, analysis of freeway weaving segments was conducted using the Leisch Method.

TABLE 3:
FREEWAY LEVEL OF SERVICE DEFINITIONS

Level of Service	Density (Passenger Cars per Mile per Lane) [1]	
	Mainline	Ramp Merge/Diverge
A	< 11	< 10
B	> 11 to 18	> 10 to 20
C	> 18 to 26	> 20 to 28
D	> 26 to 35	> 28 to 35
E	> 35 to 45	> 35
F	> 45 or any v/c ratio > 1.00 1	Demand exceeds capacity 2

Notes: [1] v/c ratio = demand flow rate divided by the capacity of a given segment.

[2] Occurs when freeway demand exceeds upstream (diverge) or downstream (merge) freeway segment capacity, or if off-ramp demand exceeds off-ramp capacity.

Source: Exhibits 10-7 and13-2 of 2010 HCM.

TRAVEL DEMAND FORECASTS

This section describes the travel demand forecasting process.

For this project, the El Dorado County model was utilized to develop forecasts in the study area. However, as is standard practice with large area travel demand models, a thorough model review was completed and the model was refined to ensure that it produced reasonable results in the study area.

BASE YEAR MODEL VALIDATION

Before any model can be applied for use in a major specific plan application, it must first satisfy specific validation criteria identified by Caltrans, the Federal Highways Administration (FHWA), and the California Transportation Commission (CTC). These criteria were developed to ensure that a model is developed such that it can accurately forecast existing conditions based on land use and roadway network information, which improves the model's ability to accurately forecast future conditions. The state-of-the-practice is to use a valid base year model when developing defensible forecasts for changes in the roadway network and/or changes in proposed land use.

MODEL REFINEMENTS

The following refinements were implemented in the study area:

- Updated land use to reflect existing commercial (i.e., retail and office) employment along the Missouri Flat Road corridor (i.e., near the US 50 interchange). Employment calculated was based on measured building area, existing land uses, and industry employment yields for retail and office land use, resulting in the addition of about 510 employees.

- Updated network attributes in the study area to reflect existing conditions (e.g. verified roadway network speeds, number of lanes on the roadway, and roadway capacities to reflect existing conditions). Specific changes included coded network speed reductions on segments of Green Valley Road, El Dorado Road, and a speed increase on Mother Lode Drive (west of Missouri Flat Road). Speed changes were based on measured travel time runs on facilities during non-peak conditions.

- Updated the future year roadway network in the study area to only reflect the SACOG Metropolitan Transportation Plan (MTP) constrained roadway network, which is consistent with the County's Capital Improvement Program (CIP).

- Added peak hour assignment functionality.

The roadway network and land use refinements described above were implemented in response to the model's base year forecasts at the US 50/Missouri Flat Road interchange, which were low, compared to existing traffic counts. Specific information related to the model's performance is described below:

STATIC VALIDATION

The first step of any model validation is to ensure that the model generally produces similar results to existing counts. Please note that, since the model is being used to generate AM peak hour and PM peak hour forecasts, the model must be valid at our study facilities for both time periods.

Key metrics for model validation guidelines are described below:

- The volume-to-count ratio is computed by dividing the volume assigned by the model and the actual traffic count for individual roadways (or intersections). The volume-to-count ratio should be less than 10%.

- The deviation is the difference between the model volume and the actual count divided by the actual count. Caltrans provides guidance on the maximum allowable deviation by facility type (e.g. lower-volume roadways can have a higher deviation than higher-volume roadways). 75% of the study facilities should be within the maximum allowable deviation.

- The correlation coefficient estimates the correlation between the actual traffic counts and the estimated traffic volumes from the model. The correlation coefficient should be greater than 0.88.

- The percent Root Mean Square Error (RMSE) is the square root of the model volume minus the actual count squared divided by the number of counts. It is a measure similar to standard deviation in that it assesses the accuracy of the entire model. The RMSE should be less than 40%.

The model validation statistics are summarized in Table 4. As shown in Table 4, the model meets or exceeds the identified model validation statistics in the study area. As such, the model is deemed appropriate for use in this assessment. Appendix A includes the detailed static validation results.

TABLE 4:
TRAVEL DEMAND FORECASTING SUB AREA STATIC VALIDATION

Metric	Model Performance	Performance Target
AM Peak Hour		
Model/Count Ratio	0.97	Between 0.90 and 1.10
Percent Within Caltrans Maximum Deviation	95%	> 75%
Percent Root Mean Square Error	20%	< 40%
Correlation Coefficient	0.97	> 0.88
PM Peak Hour		
Model/Count Ratio	1.00	Between 0.90 and 1.10
Percent Within Caltrans Maximum Deviation	92%	> 75%
Percent Root Mean Square Error	21%	< 40%
Correlation Coefficient	0.96	> 0.88

Source: Fehr & Peers, 2014.

DYNAMIC VALIDATION

Dynamic validation refers to evaluating how a travel demand forecasting model responds to changes to model inputs. For this project, the El Dorado County travel demand model was used to develop forecasts for the study area (i.e., roadways and intersections) in response to planned population and employment growth and planned transportation improvements. Therefore, the dynamic validation focused on reviewing how the traffic model responded (i.e., in direction and magnitude) to changes to roadway network and land use inputs. Table 5 summarizes the results of the dynamic validation.

TABLE 5:
TRAVEL DEMAND FORECASTING SUB AREA DYNAMIC VALIDATION

Input Change	Expected Performance	Observed Performance Match Expectations?
Modified Roadway Network Speed Reduced coded speed on Green Valley Road between Placerville Drive and Missouri Flat Road.	Volume on Green Valley would decrease. Volume on US 50 (parallel facility) between Placerville Drive and Missouri Flat Road would increase with similar magnitude as decrease on Green Valley Road.	Yes
Added New Roadway to Model Network In El Dorado, added new two-lane roadway between the El Dorado Road/Pleasant Valley Road intersection and the SR 49/Union Mine Road intersection.	Volume on new roadway connection should be less than volume on Pleasant Valley Road and SR 49. Screenline volume, including Pleasant Valley Road and new roadway, should be similar to but higher than volume on Pleasant Valley Road without the new roadway, due to increased roadway capacity.	Yes
Increased Retail Employment in a TAZ Increased retail employment in TAZ 140 by about 240 employees.	PM peak hour trip generation would increase by about 400 based on average PM peak hour trip generation rate for shopping center land use from ITE.	Yes

Source: Fehr & Peers, 2014.

POPULATION AND EMPLOYMENT

Table 6 summarizes household and employment growth in the Diamond Springs and El Dorado areas, based on the El Dorado County travel demand forecasting model. As shown households are forecasted to grow at about 0.80 percent per year and employment is forecast to grow at 1.20 percent per year with most of the employment growth in the retail sector.

TABLE 6:
DIAMOND SPRINGS AND EL DORADO AREA HOUSEHOLD AND EMPLOYMENT GROWTH

Model Forecast Year	Households	Employment		
		Total	Retail	Non-Retail
2010	5,066	7,081	2,780	4,301
2035	6,081	9,200	4,145	5,055
Growth				
Growth	1,015	2,119	1,365	754
Percent Increase	20%	30%	49%	18%
Annual Growth Rate	0.80%	1.20%	1.96%	0.70%

Source:
El Dorado County Travel Demand Model, June 2013 Release.
Fehr & Peers, 2014.

EXISTING CONDITIONS

This section discusses the physical and operational characteristics of the existing transportation system.

INTERSECTIONS

As shown in Table 7, all study intersections operate acceptably at LOS E or better during the AM and PM peak hours. Figure 3 shows existing study intersection AM and PM peak hour turning movement volumes. Appendix A includes the SimTraffic analysis results.

TABLE 7:
PEAK HOUR INTERSECTION LEVEL OF SERVICE – EXISTING CONDITIONS

Intersection	Control[1]	AM Peak Hour		PM Peak Hour	
		Delay[2]	LOS	Delay[2]	LOS
1. Missouri Flat Rd/Plaza Dr	Signal	16	B	26	C
2. Missouri Flat Rd/US 50 WB Ramps	Signal	21	C	22	C
3. Missouri Flat Rd/US 50 EB Ramps	Signal	11	B	31	C
4. Missouri Flat Rd/Mother Lode Dr	Signal	11	B	14	B
5. Missouri Flat Rd/Forni Rd	Signal	26	C	23	C
6. Missouri Flat Rd/Golden Center Dr	Signal	21	B	44	D
7. Missouri Flat Rd/China Garden Rd	SSSC	5 (18)	A (C)	4 (13)	A (B)
8. Pleasant Valley Rd/Missouri Flat Ed	Signal	34	C	20	C
9. SR 49/Union Mine Rd	SSSC	5 (12)	A (B)	2 (3)	A (A)
10. SR 49/Pleasant Valley Rd	AWSC	16	C	12	B
11. Pleasant Valley Rd/Forni Rd	SSSC	9 (35)	A (D)	5 (10)	A (A)
12. Pleasant Valley Rd/Oro Ln-Koki Ln	Signal	14	B	12	B
13. Pleasant Valley Rd/Dublin Rd-Oakdell Dr	SSSC	3 (11)	A (B)	2 (9)	A (A)
14. Pleasant Valley Rd/Sierra View Dr	SSSC	3 (6)	A (A)	3 (6)	A (A)
15. Pleasant Valley Rd/Patterson Dr	AWSC	14	B	17	C
16. Pleasant Valley Rd/Wrangler Rd	SSSC	3 (5)	A (A)	3 (5)	A (A)
17. Pleasant Valley Rd/Commerce Way	SSSC	3 (18)	A (C)	3 (14)	A (B)
18. Pleasant Valley Rd/Faith Ln	SSSC	1 (11)	A (B)	5 (34)	A (D)

TABLE 7:
PEAK HOUR INTERSECTION LEVEL OF SERVICE – EXISTING CONDITIONS

Intersection	Control[1]	AM Peak Hour		PM Peak Hour	
		Delay[2]	LOS	Delay[2]	LOS
19. Pleasant Valley Rd/China Garden Rd	SSSC	2 (13)	A (B)	2 (17)	A (C)
20. Pleasant Valley Rd/Diamond Meadows Way	SSSC	2 (24)	A (C)	2 (18)	A (C)
21. Pleasant Valley Rd/Diamond Rd (SR 49)-Fowler Ln	Signal	26	C	18	B

Notes: [1] SSSC = Side Street Stop Control, AWSC = All Way Stop Control

[2] For signalized and all-way stop controlled intersections, average intersection delay is reported in seconds per vehicle for the overall intersection. For side street controlled intersections, average delay is reported in seconds per vehicle for the overall intersection (worse approach). All results are rounded to the nearest second.

Bold indicates unacceptable operations.

Source: Fehr & Peers, 2013

ROADWAYS

Table 8 shows the level of service and volume-to-capacity (v/c) ratio for each study roadway segment. As shown, most study roadway segments operate at LOS E or better during the PM peak hour. The two-lane segment of Missouri Flat Road between Golden Center Drive and China Garden Road operates at LOS F. The El Dorado County General Plan allows LOS F on Missouri Flat Road from US 50 to China Garden Road.

TABLE 8:
PM PEAK HOUR ROADWAY SEGMENT OPERATIONS – EXISTING CONDITIONS

Roadway	Location	Roadway Classification[1]	Number of Lanes	Weekday PM Peak Hour Traffic Volume[1]	LOS	V/C Ratio[2]
Missouri Flat Road	Mother Lode Drive to Forni Road	Arterial - Divided	4	3,010	D	0.80
	Forni Road to Golden Center Drive	Arterial - Divided	4	1,990	D	0.53
	Golden Center Drive to China Garden Road	Arterial	2	2,030	F	1.09
	China Garden Road to Pleasant Valley Road	Arterial	2	1,480	D	0.79
Golden Chain Highway (SR 49)	South of Union Mine Road	Arterial	2	490	C	0.26

Pleasant Valley Road	El Dorado Road to SR 49	Major Highway	2	880	D	0.43
	Forni Road to El Dorado Street	Arterial	2	780	C	0.42
	Patterson Drive to Commerce Way	Arterial	2	1,020	D	0.55
	China Garden Road to Diamond Meadows Way	Arterial	2	1,560	D	0.83
	West of Diamond Road (SR 49)	Major Highway	2	1,470	D	0.72
Diamond Road (SR 49)	North of Pleasant Valley Road	Minor Highway	2	570	C	0.33
Forni Road	North of Pleasant Valley Road	Minor Highway	2	290	C	0.17
Commerce Way	North of Pleasant Valley Road	Minor Highway	2	150	B	0.09
El Dorado Road	SR 49 to Mother Lode Drive	Minor Highway	2	210	C	0.12
	Mother Lode Drive to US 50	Minor Highway	2	450	C	0.26
Mother Lode Road	West of Missouri Flat Road	Major Highway	2	350	C	0.17

Notes: [1] Traffic volumes are rounded to the nearest 10.
[2] V/C Ratio = volume to capacity ratio.
Source: Fehr & Peers, 2013.

BICYCLE FACILITIES

Figure 4 shows the existing bicycle facilities, including bike lanes and bike paths near the Missouri Flat Road and Pleasant Valley Road corridors.

As shown in the Figure 4, Class II bike lanes exist on Missouri Flat Road between Plaza Drive and Golden Center Drive. The El Dorado Trail, a Class I paved bike path, exists between Missouri Flat Road and Diamond Road. The trail connects to the east side of Missouri Flat Road and extends northeast to Forni Road near the El Dorado County Jail in Placerville, California.

PEDESTRIAN FACILITIES

Figure 5 shows the existing pedestrian facilities, including sidewalks and controlled and uncontrolled crosswalks, along the Missouri Flat Road and Pleasant Valley Road corridors.

As shown in the Figure 5, sidewalks exist along most of Missouri Flat Road between Plaza Drive and Golden Center Drive, with a fairly large gap on the west side of the road between Mother Lode Drive and Forni Road. A short segment of segment sidewalk exists on the west side of Missouri Flat Road, north of Pleasant Valley Road adjacent to the Missouri Flat Storage Depot.

Sidewalks are present in short segments on Pleasant Valley Road through Diamond Springs. Short segments of sidewalk also exist on Pleasant Valley Road near Patterson Drive adjacent to the Tower Market gas station, between Oakdell Drive-Dublin Road and Koki Lane-Oro Lane, west of Koki Lane-Oro Lane, and west of the Golden Chain Highway (SR 49).

Controlled crosswalks are at locations where vehicles must stop for a traffic signal or stop sign. Uncontrolled crosswalks are at locations where vehicles are not controlled, but must yield to a pedestrian in the crosswalk.

TRANSIT ROUTES

Transit service in El Dorado County is provided by the El Dorado County Transit Authority, which offers local fixed route, regional commuter route, dial-a-ride, and paratransit service. There are seven local fixed routes, three of which have stops on Missouri Flat Road and/or Pleasant Valley Road.

The Diamond Springs (DS) route, shown in pink on Figure 6, runs from Folsom Lake College – El Dorado Center north of US 50, along Missouri Flat Road, to Pleasant Valley Road. The DS route travels along Pleasant Valley Road between Church Street and Pearl Place. Weekday service is provided from 7:00 AM to 5:00 PM with one hour headways.

The Placerville-Eastbound (PL-East) and Placerville-Westbound (PL-West), shown in purple on Figure 6, runs from the Missouri Flat Transfer Station

COLLISION RECORDS

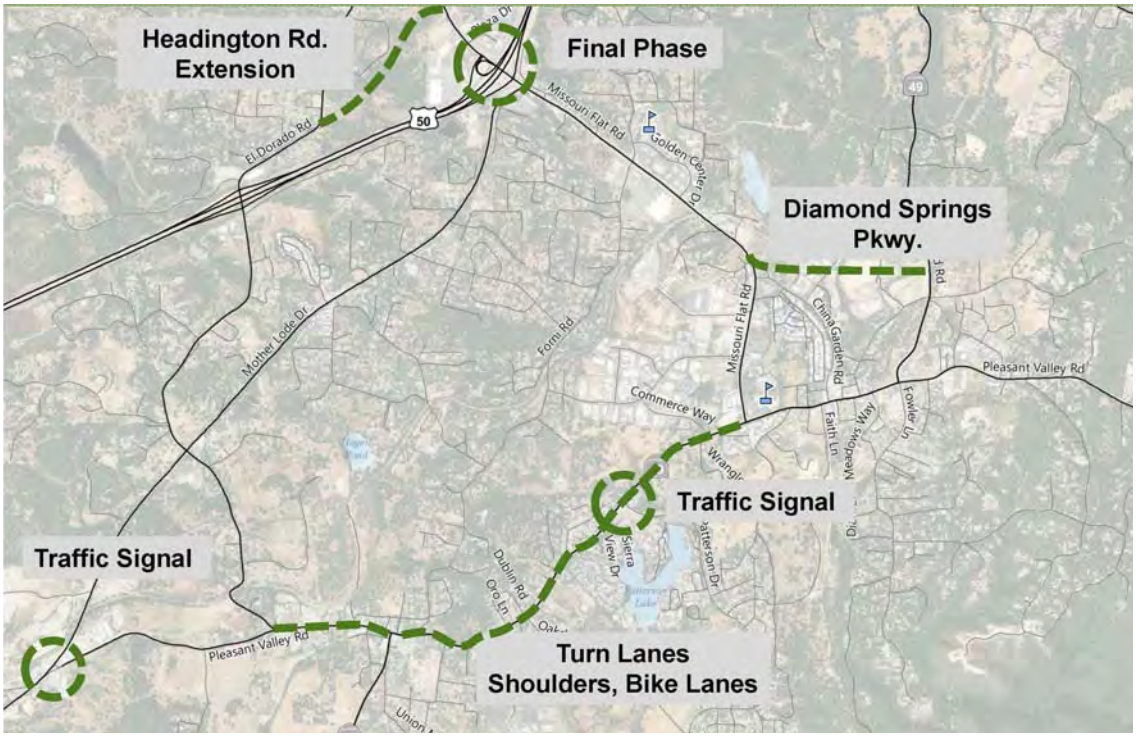
Figures 7 and 8 summarize reported collisions in the study area for the eight year period from January 2004 through December 2011, using collision records from the Statewide Integrated Traffic Records System (SWITRS). Figure 7 shows all reported intersection and roadway segment collisions (i.e., vehicle, bicycle, and pedestrian). Figure 8 shows just collisions involving bicycles and pedestrians, grouped by collisions that occurred at intersection and on roadway segments.

YEAR 2035 CONDITIONS

This section discusses the conditions of the transportation system under year 2035 conditions. The following transportation improvements in the study area are included in the El Dorado County CIP:

- Headington Road Extension
- Diamond Springs Parkway
- Traffic Signal Installation at the Pleasant Valley Road/Patterson Drive intersection
- Traffic Signal Installation at the Pleasant Valley Road/Mother Load Drive intersection
- Pleasant Valley Road - turn lane, shoulder, and bike lanes improvement between El Dorado Road and Missouri Flat Road.

There is a planned final phase of the US 50/Missouri Flat Road interchange that would implement a Single-Point Urban Interchange (SPUI). This improvement is not in the El Dorado County CIP. The following image shows these improvements.



INTERSECTIONS

For year 2035, intersection AM and PM peak hour intersection operations were analyzed with the diamond interchange configuration at the US 50/Missouri Flat Road interchange and with the planned final phase of the US 50/Missouri Flat Road interchange, which would implement a Single-Point Urban Interchange (SPUI). Table 9 summarizes study area traffic operations with the diamond interchange configuration. Table 10 summarizes traffic operations with the planned SPUI interchange configuration for the intersections on Missouri Flat Road from Plaza Drive to Golden Center Drive (i.e., the intersections that would be most affected by interchange operations). Figure 9 shows year 2035 study intersection AM and PM peak hour turning movement volume forecasts. Appendix A includes the SimTraffic analysis results.

DIAMOND INTERCHANGE CONFIGURATION

As shown in Table 9, the intersections on Missouri Flat Road from Plaza Drive to Golden Center Drive would operate at LOS F during the PM peak hour. In addition, the SR 49/Pleasant Valley Road intersection will operate at LOS F. Vehicle queuing at this intersection will cause long vehicle queues that will spillback into and result in poor operations at the SR 49/Union Mine Road and Pleasant Valley Road/Forni Road intersections.

TABLE 9:
PEAK HOUR INTERSECTION LEVEL OF SERVICE – YEAR 2035

Intersection	Control	AM Peak Hour		PM Peak Hour	
		Delay[1]	LOS	Delay[1]	LOS
Missouri Flat Rd/Plaza Dr	Signal	33	C	**481**	**F**
Missouri Flat Rd/US 50 WB Ramps	Signal	68	E	**140**	**F**
Missouri Flat Rd/US 50 EB Ramps	Signal	32	C	**90**	**F**
Missouri Flat Rd/Mother Lode Dr	Signal	24	C	**109**	**F**
Missouri Flat Rd/Forni Rd	Signal	43	D	**142**	**F**
Missouri Flat Rd/Golden Center Dr	Signal	29	C	**81**	**F**
Missouri Flat Rd/China Garden Rd	SSSC	**6 (67)**	**A (F)**	**15 (183)**	**B (F)**
Pleasant Valley Rd/Missouri Flat Ed	Signal	32	C	37	D
SR 49/Union Mine Rd	SSSC	**187 (374**)	**F (F)**	3 (14)	A (B)
SR 49/Pleasant Valley Rd	AWSC	**72**	**F**	**143**	**F**
Pleasant Valley Rd/Forni Rd	SSSC	**57 (334)**	**F (F)**	**24 (126)**	**C (F)**
Pleasant Valley Rd/Oro Ln-Koki Ln	Signal	21	C	15	B
Pleasant Valley Rd/Dublin Rd-Oakdell Dr	SSSC	**11 (87)**	**B (F)**	4 (18)	A (C)
Pleasant Valley Rd/Sierra View Dr	SSSC	3 (5)	A (A)	2 (5)	A (A)
Pleasant Valley Rd/Patterson Dr	Signal	11	B	12	B
Pleasant Valley Rd/Wrangler Rd	SSSC	4 (22)	A (C)	**11 (83)**	**B (F)**
Pleasant Valley Rd/Commerce Way	SSSC	**6 (58)**	**A (F)**	**33 (491)**	**D (F)**
Pleasant Valley Rd/Faith Ln	SSSC	2 (16)	A (C)	4 (24)	A (C)
Pleasant Valley Rd/China Garden Rd	SSSC	3 (16)	A (C)	2 (19)	A (C)
Pleasant Valley Rd/Diamond Meadows Way	SSSC	2 (11)	A (B)	3 (32)	A (D)
Pleasant Valley Rd/Diamond Rd (SR 49)-Fowler Ln	Signal	**96**	**F**	44	D
Missouri Flat Road / Diamond Springs Parkway	Signal	20	C	29	C

Notes: [1] For signalized and all-way control stop controlled intersections, average intersection delay is reported in seconds per vehicle for the overall intersection. All results are rounded to the nearest second.

Bold indicates unacceptable operations.

Source: Fehr & Peers, 2013.

SPUI INTERCHANGE CONFIGURATION

As shown in Table 10, all study intersections near the US 50/Missouri Flat Road interchange would operate acceptably at LOS E or better during the AM and PM peak hours with the SPUI interchange configuration except for the eastbound right-turn off-ramp, which is planned to be side-street stop control, which would operate at LOS F. Signal control should be considered as a potential phased improvement at the eastbound and westbound right-turn off-ramps.

TABLE 10:
PEAK HOUR INTERSECTION LEVEL OF SERVICE – YEAR 2035 (WITH SPUI INTERCHANGE)

Intersection	Control	AM Peak Hour		PM Peak Hour	
		Delay[1]	LOS	Delay[1]	LOS
Missouri Flat Rd/Plaza Dr	Signal	18	B	37	D
Missouri Flat Rd/US 50 WB Ramps	SSSC	5 (12)	A (B)	10 (23)	A (C)
Missouri Flat Rd/US 50 SPUI Ramps	Signal	28	C	42	E
Missouri Flat Rd/US 50 EB Ramps	SSSC	5 (14)	A (B)	**32 (216)**	**D (F)**
Missouri Flat Rd/Mother Lode Dr	Signal	10	A	14	B
Missouri Flat Rd/Forni Rd	Signal	34	C	**137**	**F**
Missouri Flat Rd/Golden Center Dr	Signal	25	C	51	D

Notes: [1] For signalized and all-way control stop controlled intersections, average intersection delay is reported in seconds per vehicle for the overall intersection. All results are rounded to the nearest second.

Bold indicates unacceptable operations.

Source: Fehr & Peers, 2013.

TRAVEL TIME

Table 11 compares existing and year 2035 travel times on Missouri Flat Road and Pleasant Valley Road. Under year 2035, travel times are summarized on Missouri Flat Road without and with the planned SPUI configuration at the US 50/Missouri Flat Road interchange.

As shown in Table 11, planned population and employment growth in the study area will result in increased travel through the US 50/Missouri Flat Road interchange and along Pleasant Valley Road. The travel time increase on Pleasant Valley Road is due to increased delay at the SR 49/Pleasant Valley Road intersection.

Implementation of the planned SPUI interchange configuration will reduce travel time through the US 50/Missouri Flat Road interchange.

TABLE 11:
PM PEAK HOUR TRAVEL TIME – YEAR 2035

Roadway	Segment	Direction	Average Travel Time (minutes)			
			Existing		Year 2035	
			AM	PM	AM	PM
Missouri Flat Road	Plaza Drive to China Garden Road (Diamond Interchange)	NB	3.4	3.8	4.1	11.8
		SB	3.2	5.1	3.9	18.2
	Plaza Drive to China Garden Road (Single Point Urban Interchange - SPUI)	NB	N/A		4.2	5.3
		SB			3.4	6.2
Missouri Flat Road	China Garden Road to Pleasant Valley Road	NB	1.3	1.3	1.3	1.2
		SB	1.7	2.3	1.6	2.2
Pleasant Valley Road	SR 49 to Missouri Flat Road	EB	4.3	3.7	4.8	10.7
		WB	4.5	4.3	4.3	4.2

Sources: Fehr & Peers, 2013.

ROADWAYS

For year 2035, PM peak hour roadway segment operations were analyzed with the CIP roadway network discussed above and for conditions with the following new roadway connections added to the CIP roadway network:

- El Dorado Road Extension – An extension of El Dorado Road from the Pleasant Valley Road/El Dorado Road intersection (i.e., southeast) to the SR 49/Union Mine Road intersection
- Union Mine Road Connection – A new roadway connection between Union Mine Road and Faith Lane
- Diamond Springs Parkway Extension – An extension of Diamond Springs Parkway from the Diamond Springs Parkway/SR 49 Road intersection (i.e., southeast) to Pleasant Valley Road east of Diamond Springs (no specific location identified)

CIP ROADWAY NETWORK

Table 12 summarizes year 2035 level of service and volume-to-capacity (v/c) ratio for each study roadway segment, based on the CIP roadway network. As shown, segments of Missouri Flat Road will operate unacceptable at LOS F during the PM peak hour. The 2004 El Dorado County General Plan transportation analysis is based on the PM peak hour because it represents the highest hourly volume during a typical weekday. Daily traffic volumes are included in Appendix A and were developed by factoring the peak hour volumes assuming that the PM peak hour represented ten percent of daily traffic.

TABLE 12:
PM PEAK HOUR ROADWAY SEGMENT OPERATIONS – YEAR 2035 CONDITIONS

Roadway	Location	Roadway Classification[1]	Number of Lanes	Volume[1]	LOS	V/C Ratio[2]
Missouri Flat Road	Mother Lode Drive to Forni Road	Arterial - Divided	4	4,160	F	1.11
	Forni Road to Golden Center Drive	Arterial - Divided	4	3,260	D	0.87
	Golden Center Drive to China Garden Road	Arterial - Undivided	4	3,380	F	1.17
	China Garden Road to Pleasant Valley Road	Arterial	2	1,410	D	0.75
Golden Chain Highway (SR 49)	South of Union Mine Road	Arterial	2	830	C	0.44
Pleasant Valley Road	El Dorado Road to SR 49	Major Highway	2	1,140	D	0.56
	Forni Road to El Dorado Street	Arterial	2	1,030	D	0.55
	Patterson Drive to Commerce Way	Arterial	2	1,360	D	0.73
	China Garden Road to Diamond Meadows Way	Arterial	2	1,460	D	0.78
	East of Diamond Road (SR 49)	Major Highway	2	1,870	E	0.91
Diamond Road (SR 49)	North of Pleasant Valley Road	Minor Highway	2	1,330	D	0.76
Forni Road	North of Pleasant Valley Road	Minor Highway	2	480	C	0.28
Commerce Way	North of Pleasant Valley Road	Minor Highway	2	170	B	0.10
El Dorado Road	SR 49 to Mother Lode Drive	Minor Highway	2	360	C	0.21
	Mother Lode Drive to US 50	Minor Highway	2	690	D	0.40
Mother Lode Road	West of Missouri Flat Road	Major Highway	2	500	C	0.24

Notes: [1] Traffic volumes are rounded to the nearest 10.
[2] V/C Ratio = volume to capacity ratio.

Source: Fehr & Peers, 2014.

NEW ROADWAY CONNECTIONS

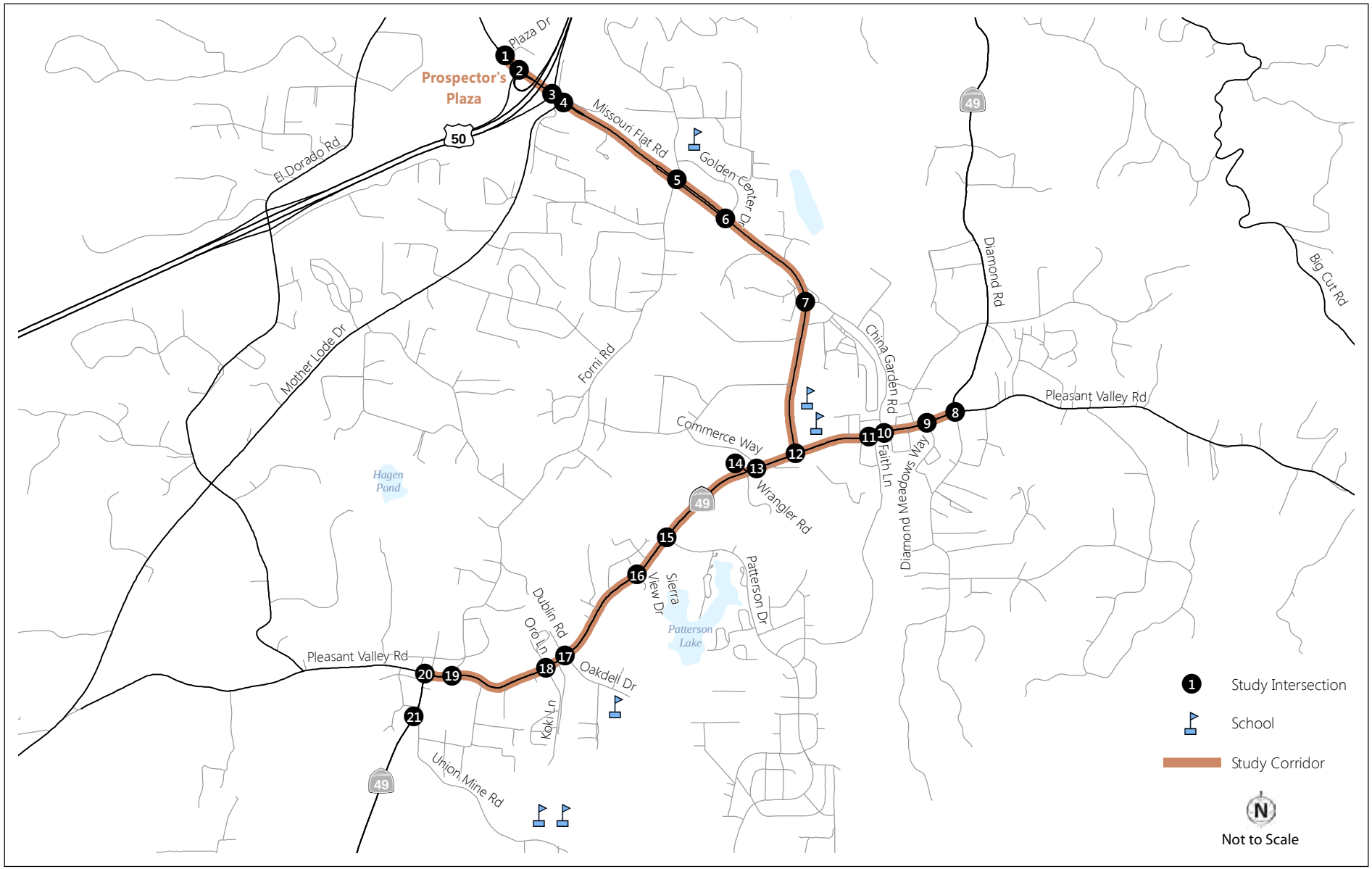
Table 13 compares year 2035 level of service and volume-to-capacity (v/c) ratio for each study roadway segment, without and with the new roadway connections discussed above. Increases in PM peak hour traffic volume are shaded red and decreases are shaded green.

TABLE 13:
PM PEAK HOUR ROADWAY SEGMENT OPERATIONS – YEAR 2035 CONDITIONS

Roadway	Location	Roadway Classification[1]	Number of Lanes	CIP Network			CIP Network (With New Connections)		
				Volume	LOS	V/C Ratio	Volume	LOS	V/C Ratio
Missouri Flat Road	Mother Lode Drive to Forni Road	Arterial - Divided	4	4,160	F	1.11	4,160	F	1.11
	Forni Road to Golden Center Drive	Arterial - Divided	4	3,260	D	0.87	3,330	D	0.89
	Golden Center Drive to China Garden Road	Arterial	2	3,380	F	1.17	2,920	F	1.01
	China Garden Road to Pleasant Valley Road	Arterial	2	1,410	D	0.75	1,120	D	0.60
Golden Chain Highway (SR 49)	South of Union Mine Road	Arterial	2	830	C	0.44	830	C	0.44
Pleasant Valley Road	El Dorado Road to SR 49	Major Highway	2	1,140	D	0.56	900	D	0.44
	Forni Road to El Dorado Street	Arterial	2	1,030	D	0.55	1,010	D	0.54
	Patterson Drive to Commerce Way	Arterial	2	1,360	D	0.73	1,350	D	0.72
	China Garden Road to Diamond Meadows Way	Arterial	2	1,460	D	0.78	1,390	D	0.74
	East of Diamond Road (SR 49)	Major Highway	2	1,870	E	0.91	1,050	D	0.51
Diamond Road (SR 49)	North of Pleasant Valley Road	Minor Highway	2	1,330	D	0.76	1,050	D	0.60
Forni Road	North of Pleasant Valley Road	Minor Highway	2	480	C	0.28	420	C	0.24
Commerce Way	North of Pleasant Valley Road	Minor Highway	2	170	B	0.10	200	B	0.11
El Dorado Road	SR 49 to Mother Lode Drive	Minor Highway	2	360	C	0.21	380	C	0.22
	Mother Lode Drive to US 50	Minor Highway	2	690	D	0.40	710	D	0.41
Mother Lode Road	West of Missouri Flat Road	Major Highway	2	500	C	0.24	470	C	0.23
El Dorado Connector	El Dorado Road to Union Mine Road	Arterial	2	-	-	-	300	C	0.16
Union Mine Connector	SR 40 (S) to Pleasant Valley Road	Arterial	2	-	-	-	300	C	0.16
Diamond Springs Connector	Diamond Springs Parkway to Pleasant Valley Road	Arterial	2	-	-	-	1,060	D	0.57

Notes: [1] Traffic volumes are rounded to the nearest 10.
[2] V/C Ratio = volume to capacity ratio.

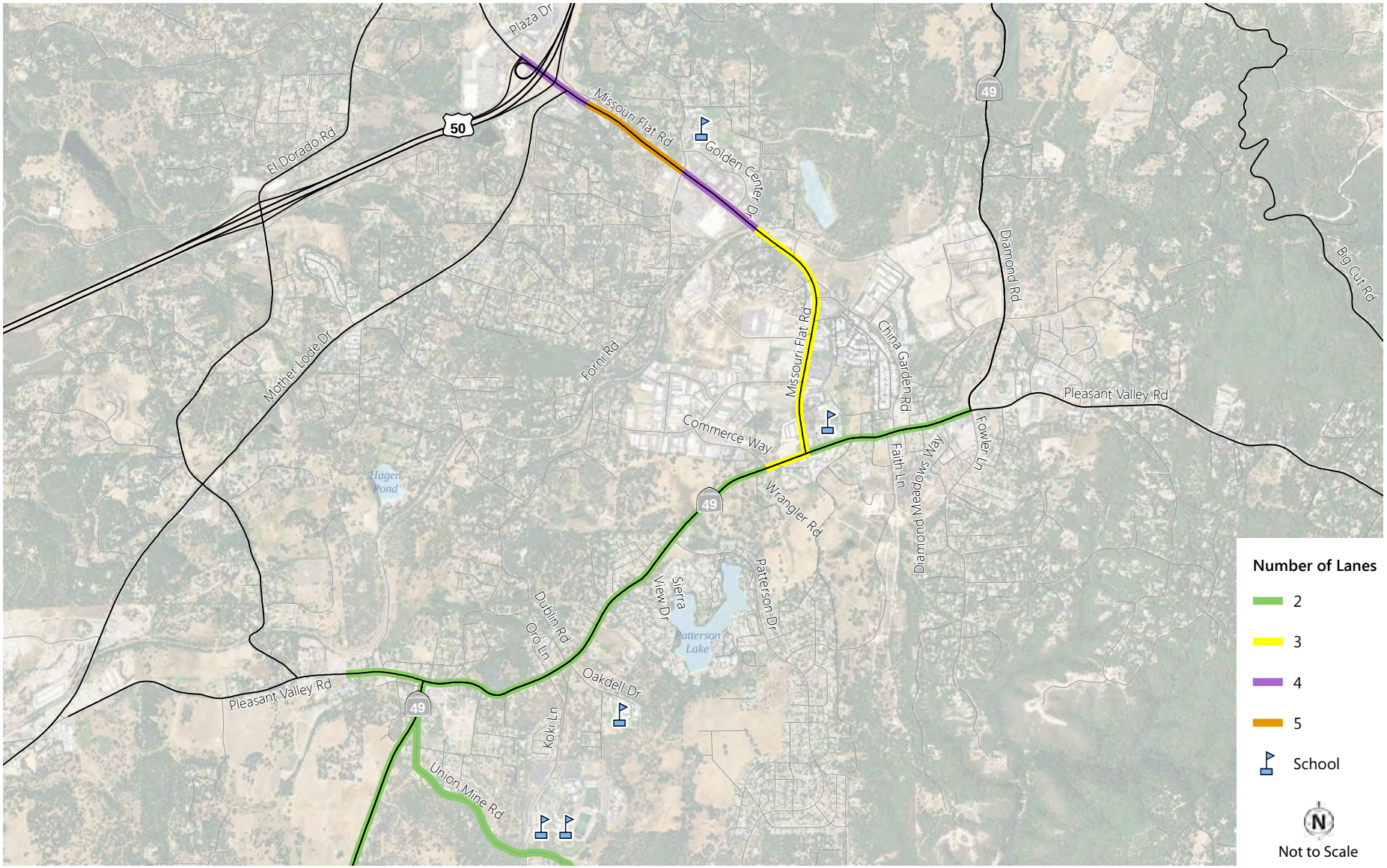
Source: Fehr & Peers, 2013.



FEHR PEERS

DIAMOND SPRINGS / EL DORADO AREA
MOBILITY AND LIVABLE COMMUNITY PLAN
FIGURE 1

Document Path: \\Fpse03\fpse2\Data2\2012Projects\RS_Projects\RS12-3036\GIS_x\MXD\studyCorridorBase23.mxd

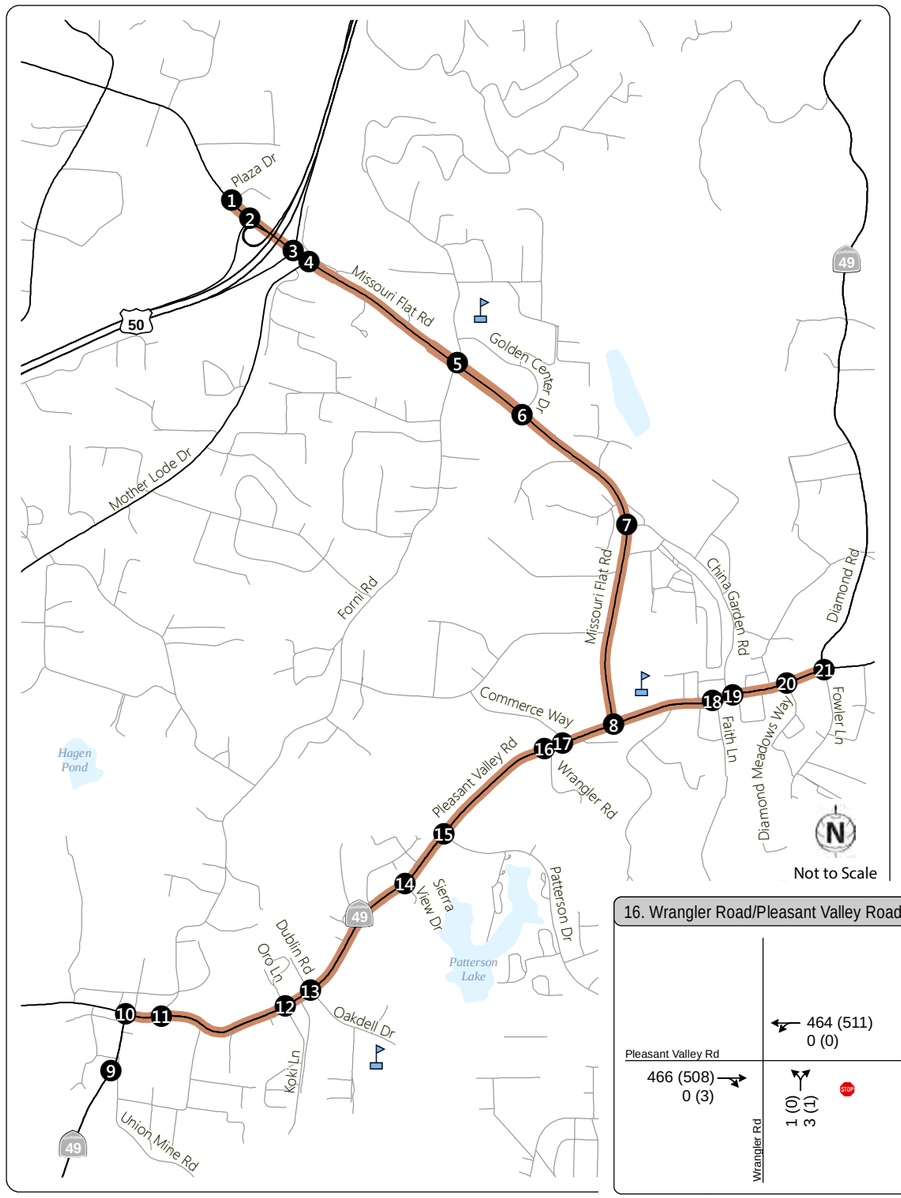


DIAMOND SPRINGS / EL DORADO AREA
MOBILITY AND LIVABLE COMMUNITY PLAN
NUMBER OF LANES

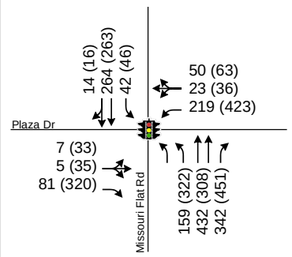
FIGURE 2

FEHR & PEERS

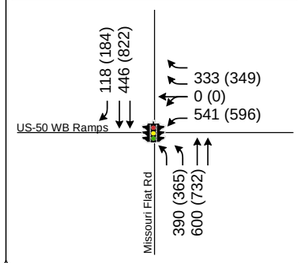
Document Path: \\Fpse03\fpse2\Data2\2012Projects\RS_Projects\RS12-3036\GIS_x\MXD\fig0x_lanes.mxd



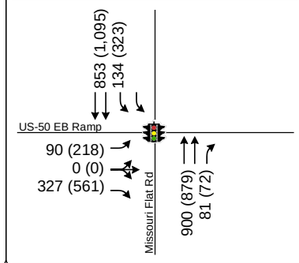
1. Missouri Flat Road/Plaza Drive



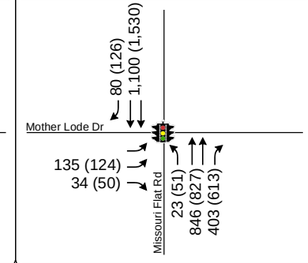
2. Missouri Flat Road/US-50 WB Ramps



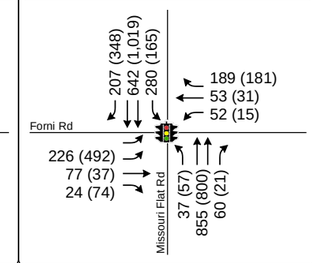
3. Missouri Flat Road/US-50 EB Ramp



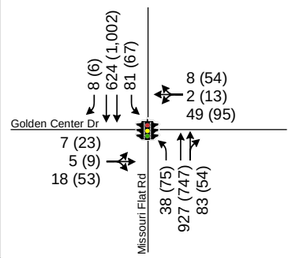
4. Missouri Flat Road/Mother Lode Drive



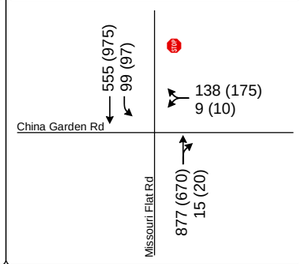
5. Missouri Flat Road/Forni Road



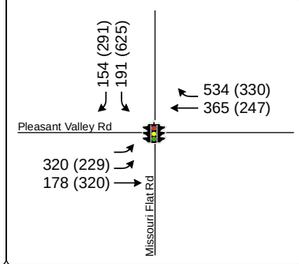
6. Missouri Flat Road/Golden Center Drive



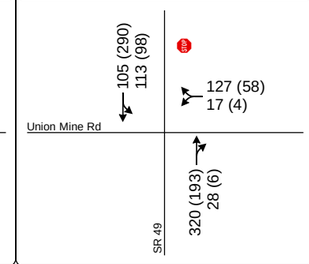
7. Missouri Flat Road/China Garden Road



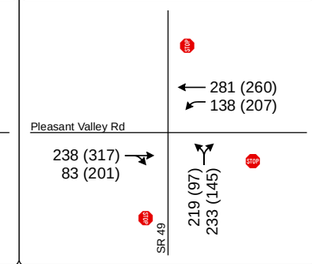
8. Missouri Flat Road/Pleasant Valley Road



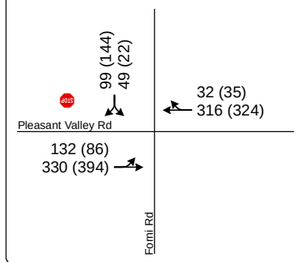
9. State Route 49/Union Mine Road



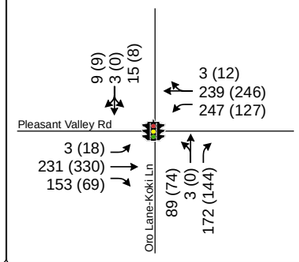
10. State Route 49/Pleasant Valley Road



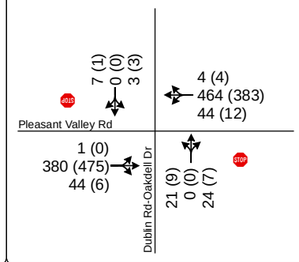
11. Forni Road/Pleasant Valley Road



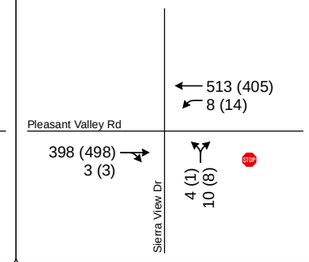
12. Oro Lane-Koki Lane/Pleasant Valley Road



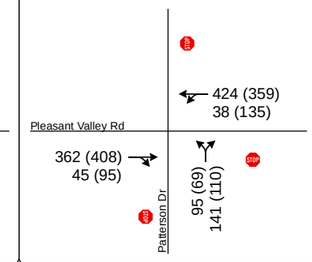
13. Dublin Road-Oakdell Drive/Pleasant Valley Road



14. Sierra View Drive/Pleasant Valley Road

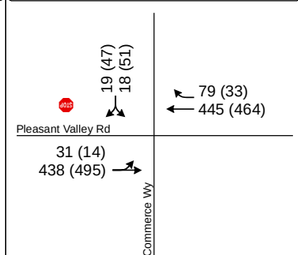


15. Patterson Drive/Pleasant Valley Road

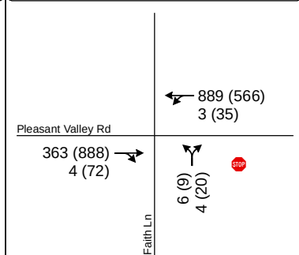


16. Wrangler Road/Pleasant Valley Road

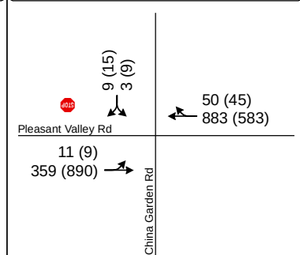
17. Commerce Way/Pleasant Valley Road



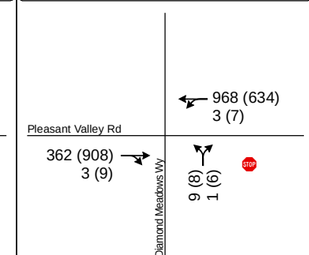
18. Faith Lane/Pleasant Valley Road



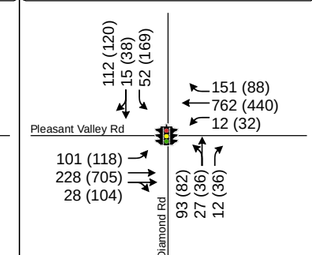
19. China Garden Road/Pleasant Valley Road



20. Diamond Meadows Way/Pleasant Valley Road



21. Diamond Road/Pleasant Valley Road



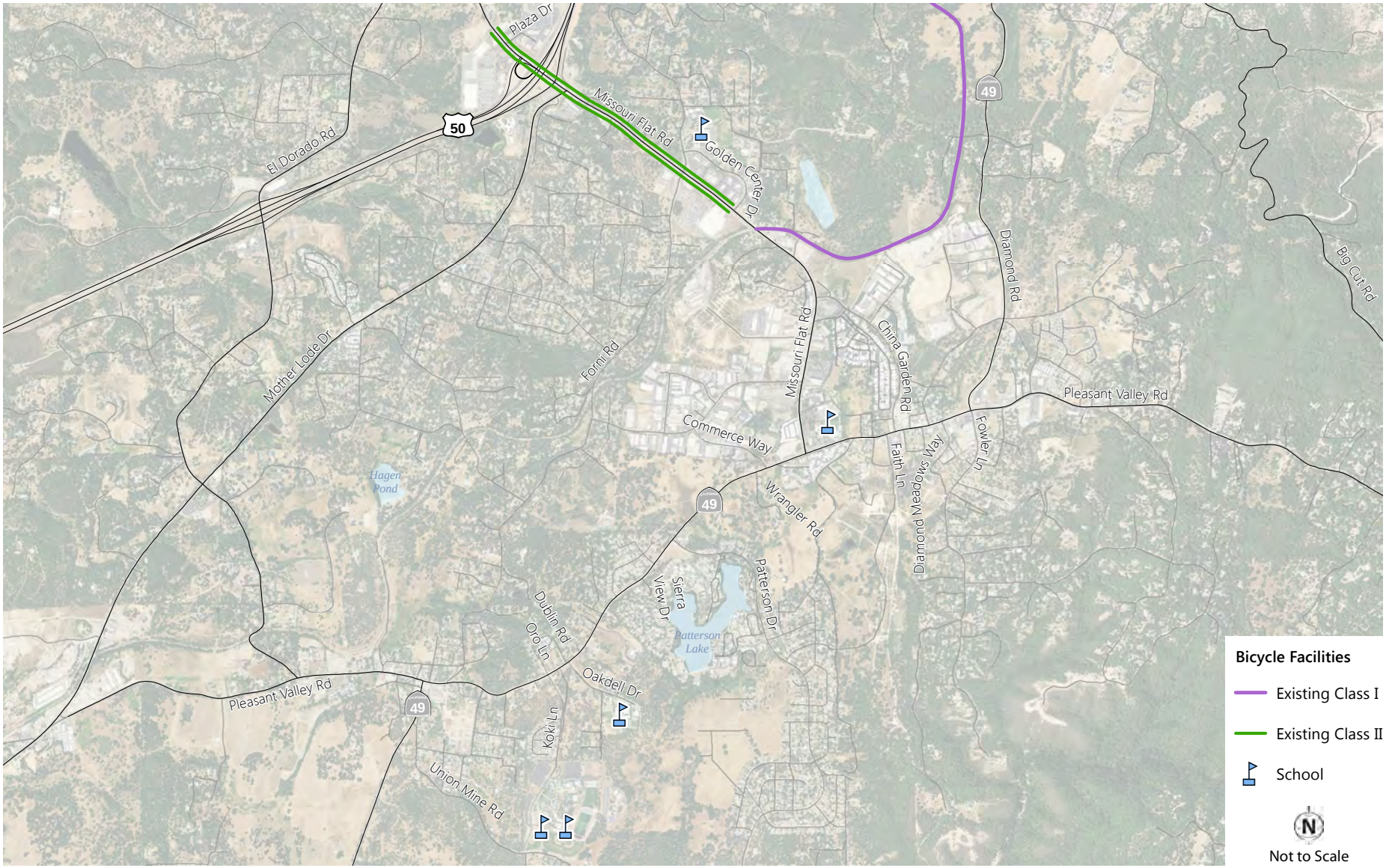
Turn Lane
AM (PM) Peak Hour Traffic Volume
1 Study Intersection
Traffic Signal
Stop Sign

PEAK HOUR TRAFFIC VOLUMES AND LANE CONFIGURATIONS - EXISTING CONDITIONS

FIGURE 3

FEHR PEERS

Path: \\Fpse03\fpse2\Data2\2012Projects\RS_Projects\RS12-3036\GIS\MXD\FigX_Existing_phtv.mxd

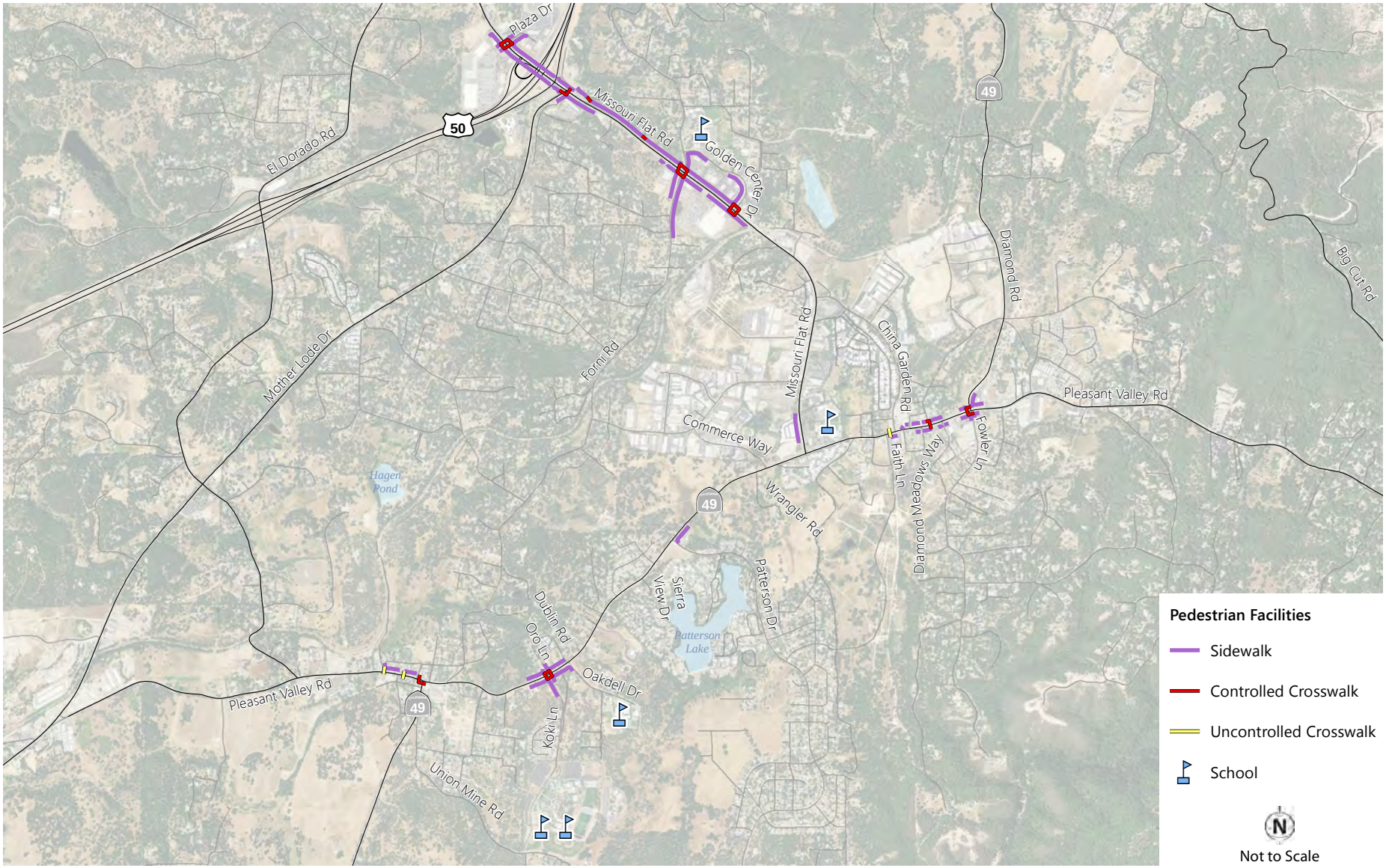


DIAMOND SPRINGS / EL DORADO AREA
MOBILITY AND LIVABLE COMMUNITY PLAN
BICYCLE FACILITIES

FIGURE 4

FEHR & PEERS

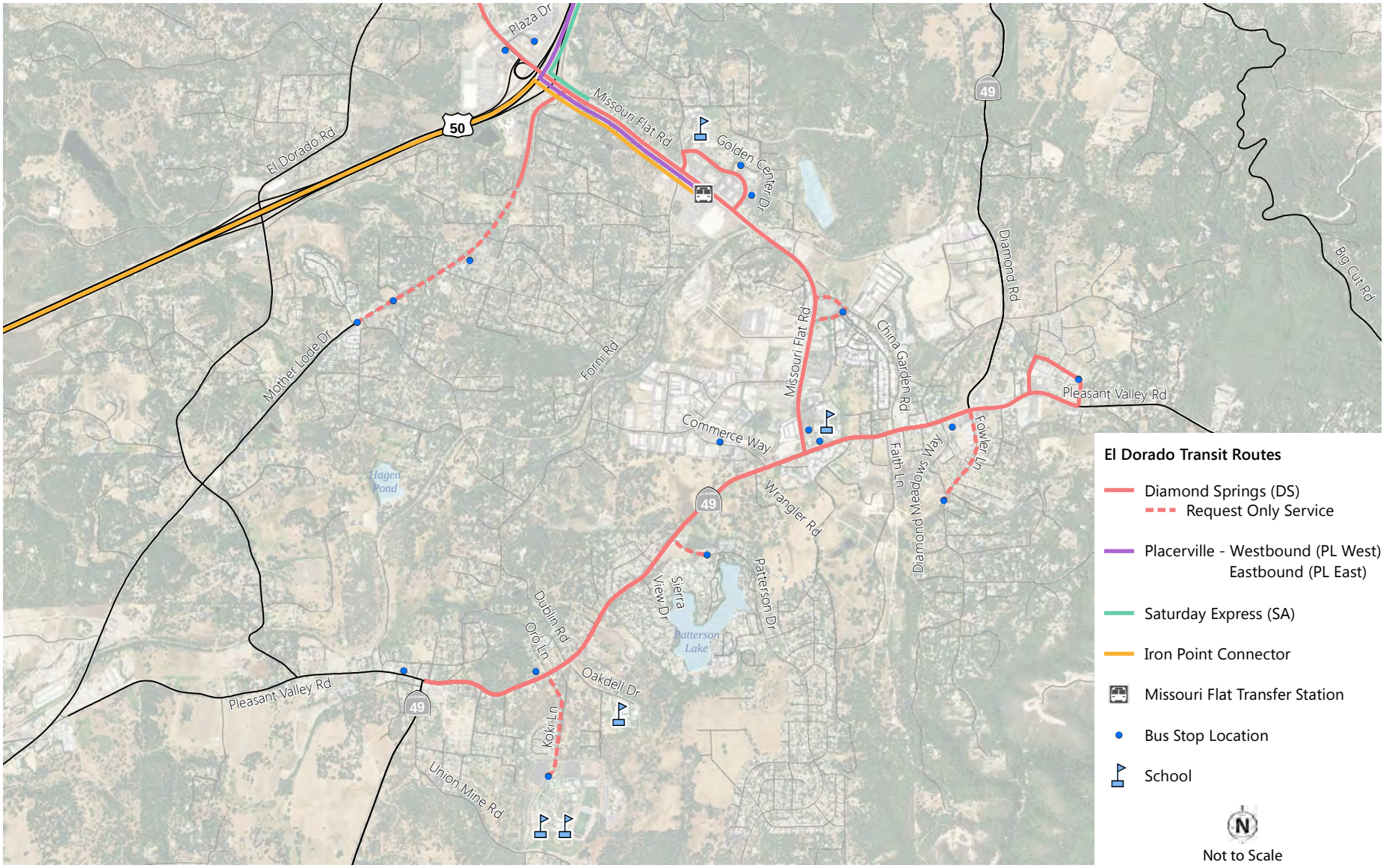
Document Path: \\Fpse03\fpse2\Data2\2012Projects\RS_Projects\RS12-3036\GIS_x\MXD\fig0x_bikeFacilitiesmxd.mxd



DIAMOND SPRINGS / EL DORADO AREA
MOBILITY AND LIVABLE COMMUNITY PLAN
PEDESTRIAN FACILITIES
FIGURE 5

FEHR & PEERS

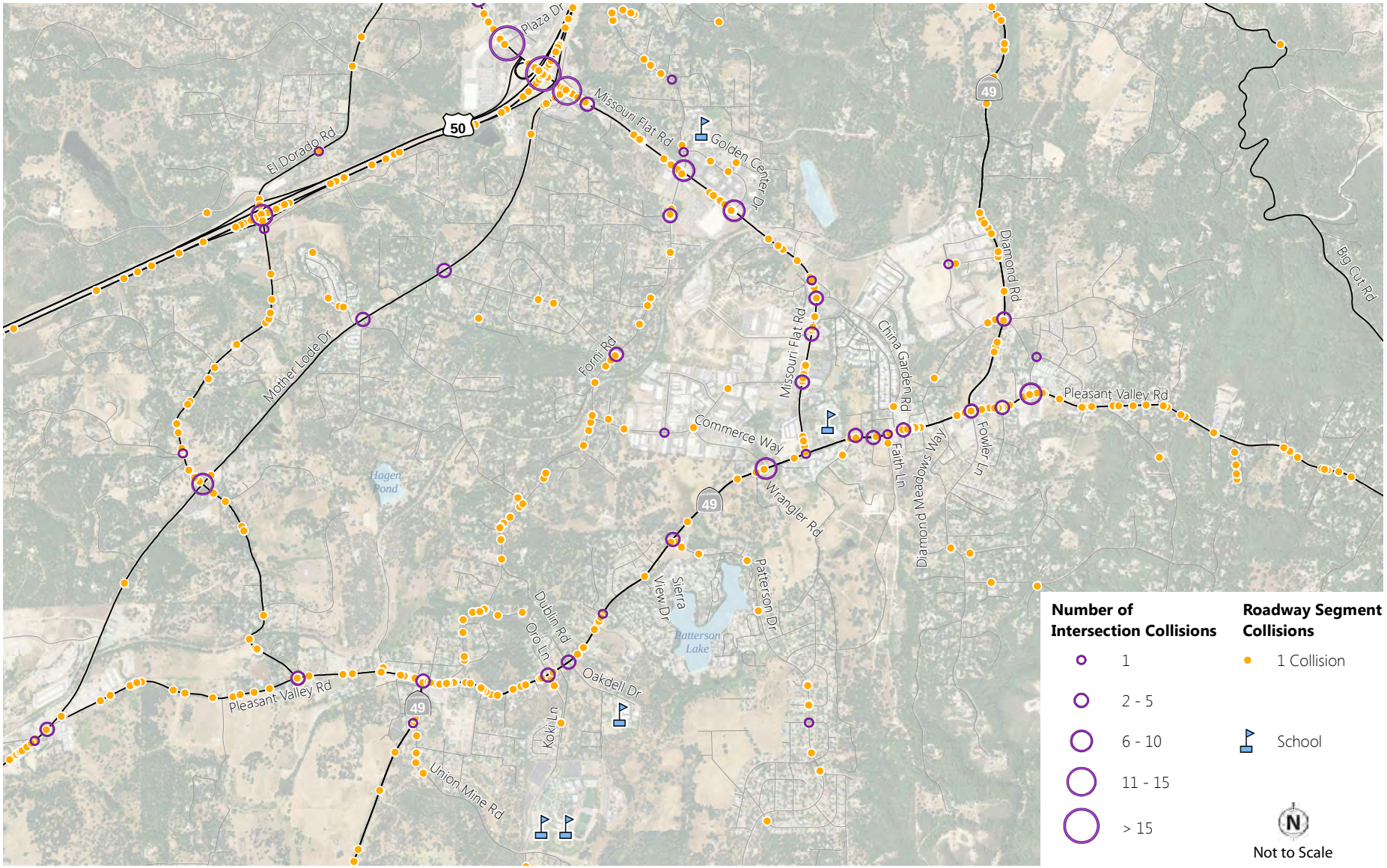
Document Path: \\Fpse03\fpse2\Data2\2012Projects\RS_Projects\RS12-3036\GIS_x\MXD\fig0x_pedFacilitiesmxd.mxd



DIAMOND SPRINGS / EL DORADO AREA
MOBILITY AND LIVABLE COMMUNITY PLAN
TRANSIT ROUTES
FIGURE 6

FEHR & PEERS

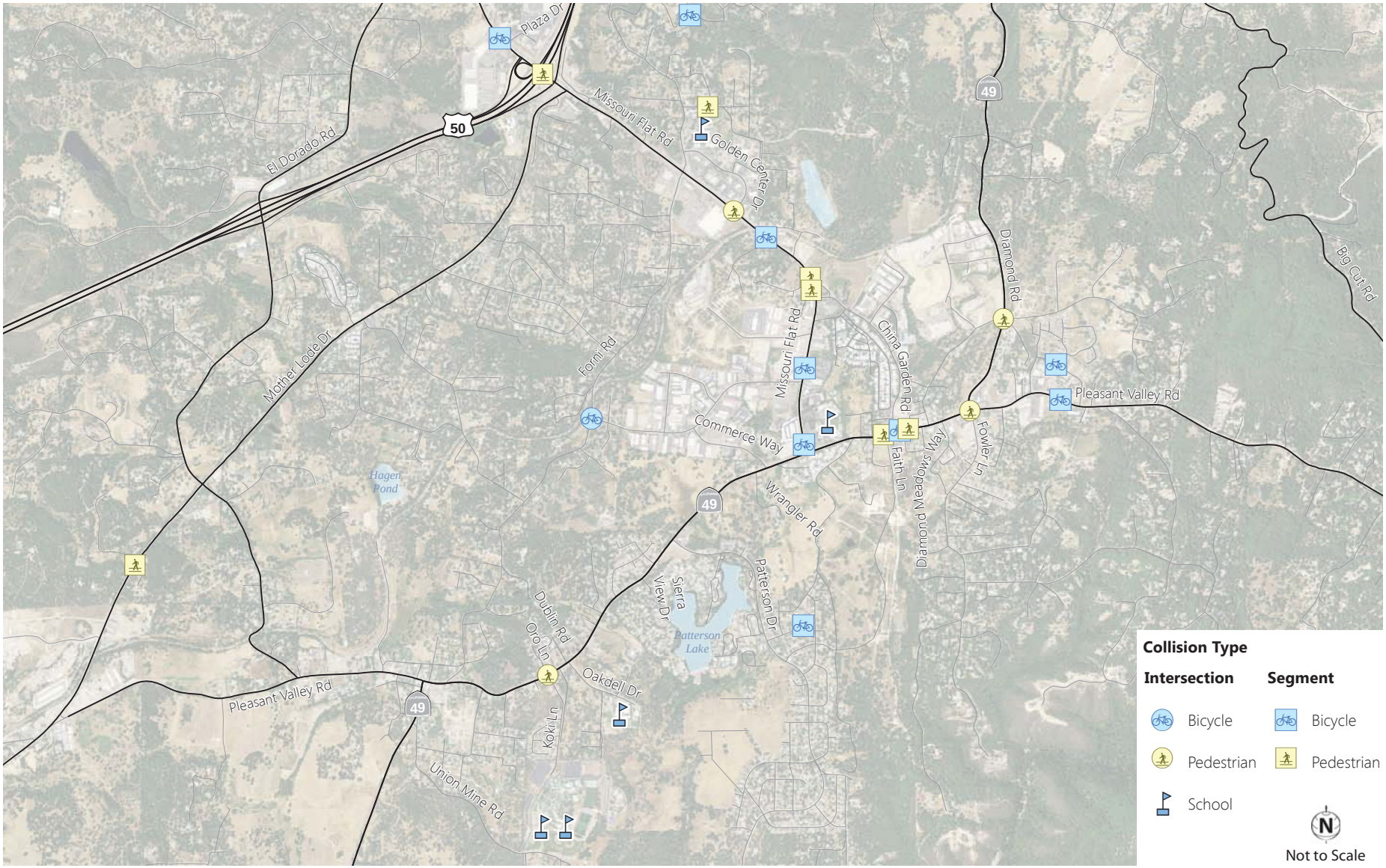
Document Path: \\Fpse03\fpse2\Data2\2012Projects\RS_Projects\RS12-3036\GIS_x\MXD\fig0x_transitFacilities.mxd



FEHR & PEERS

Document Path: \\Fpse03\fpse2\Data2\2012Projects\RS_Projects\RS12-3036\GIS_x\MXD\fig0x_collisions_justPts3.mxd

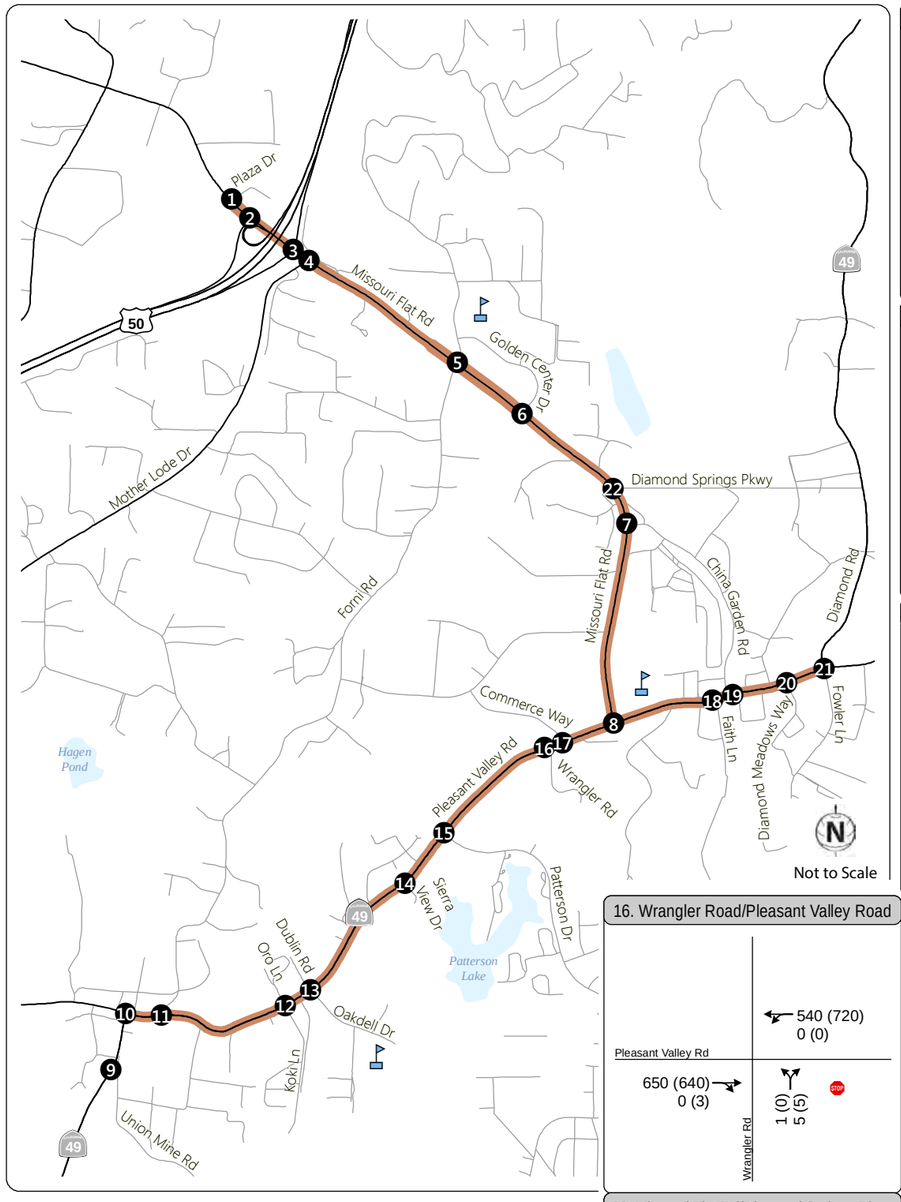
DIAMOND SPRINGS / EL DORADO AREA
MOBILITY AND LIVABLE COMMUNITY PLAN
COLLISION DENSITY
FIGURE 7



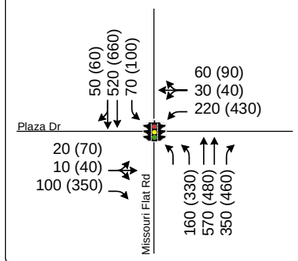
DIAMOND SPRINGS / EL DORADO AREA
MOBILITY AND LIVABLE COMMUNITY PLAN
BICYCLE AND PEDESTRIAN COLLISIONS
FIGURE 8

FEHR & PEERS

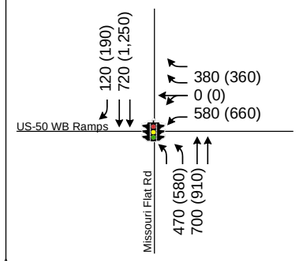
Document Path: \\Fpse03\fpse2\Data2\2012Projects\RS_Projects\RS12-3036\GIS_x\MXD\fig0x_collisions_bikePed.mxd



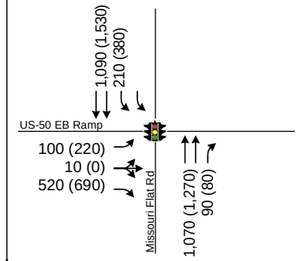
1. Missouri Flat Road/Plaza Drive



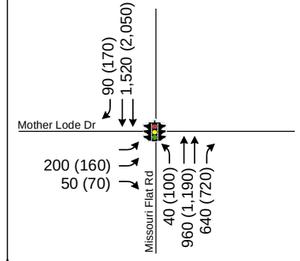
2. Missouri Flat Road/US-50 WB Ramps



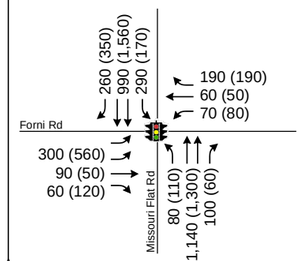
3. Missouri Flat Road/US-50 EB Ramp



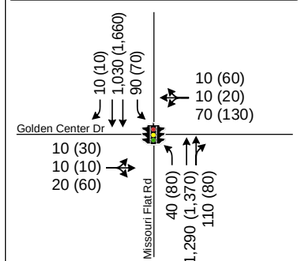
4. Missouri Flat Road/Mother Lode Drive



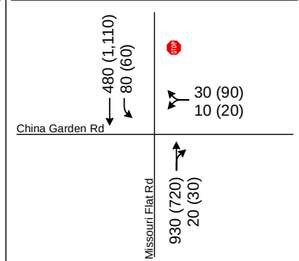
5. Missouri Flat Road/Forni Road



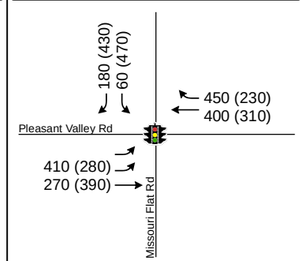
6. Missouri Flat Road/Golden Center Drive



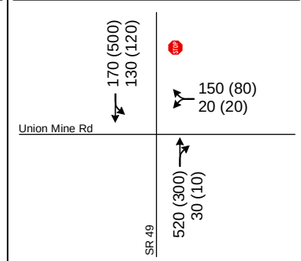
7. Missouri Flat Road/China Garden Road



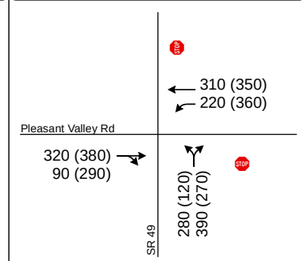
8. Missouri Flat Road/Pleasant Valley Road



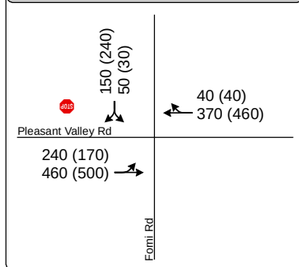
9. State Route 49/Union Mine Road



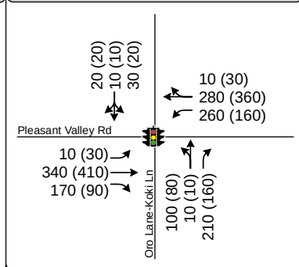
10. State Route 49/Pleasant Valley Road



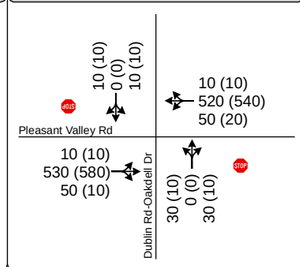
11. Forni Road/Pleasant Valley Road



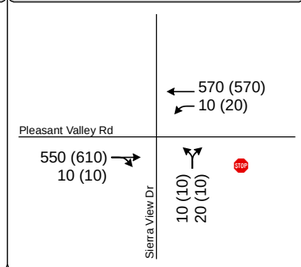
12. Oro Lane-Koki Lane/Pleasant Valley Road



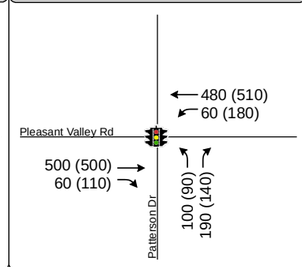
13. Dublin Road-Oakdell Drive/Pleasant Valley Road



14. Sierra View Drive/Pleasant Valley Road

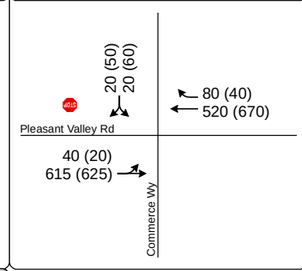


15. Patterson Drive/Pleasant Valley Road

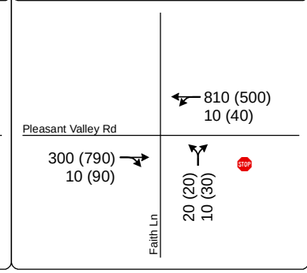


16. Wrangler Road/Pleasant Valley Road

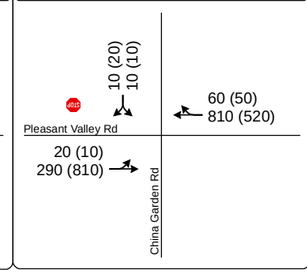
17. Commerce Way/Pleasant Valley Road



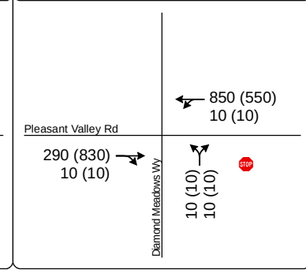
18. Faith Lane/Pleasant Valley Road



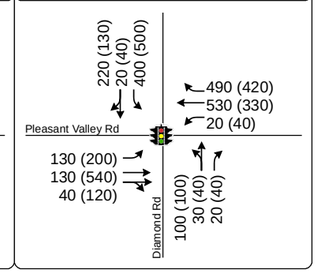
19. China Garden Road/Pleasant Valley Road



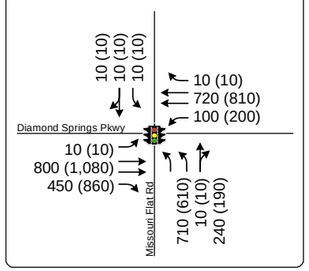
20. Diamond Meadows Way/Pleasant Valley Road



21. Diamond Road/Pleasant Valley Road



22. Missouri Flat Rd/Diamond Springs Pkwy



Turn Lane
AM (PM) Peak Hour Traffic Volume
1 Study Intersection
Traffic Signal
Stop Sign

PEAK HOUR TRAFFIC VOLUMES AND LANE CONFIGURATIONS - CUMULATIVE CONDITIONS

FIGURE 9

FEHR PEERS

Path: \\Fpse03\fpse2\Data2\2012Projects\RS_Projects\RS12-3036\GIS\MXD\FigX_Cumu_phtv_update.mxd

APPENDIX A

Model Validation
Static

El Dorado County Model Validation Results: AM Peak Two-Way Total Traffic Volumes

ID	Name	Cross Street	A Node	B Node	Model A-B Node	Model Volume	Traffic Count	Model /Count	Allowable Deviation	Within Deviation	Model - Count	Difference Squared
57	Missouri Flats Rd	S/Plaza drive	2656	2654	02656-02654	1,235	1,497	0.83	0.31	Yes	-262	68,446
58	Missouri Flats Rd	S/WB US HWY 50 Ramps	2652	2648	02652-02648	1,733	1,977	0.88	0.28	Yes	-244	59,680
63	Missouri Flats Rd	S/EB US HWY 50 Ramps	2649	2648	02649-02648	2,104	2,161	0.97	0.27	Yes	-57	3,207
64	Missouri Flats Rd	S/Motherlode Dr	2649	2645	02649-02645	2,001	2,406	0.83	0.26	Yes	-405	163,838
65	Motherlode Drive	W/Missouri Flats Rd	2649	2647	02649-02647	195	272	0.72	0.60	Yes	-77	5,970
66	Missouri Flats Rd	N/Forni Rd	2644	2668	02644-02668	1,982	2,399	0.83	0.27	Yes	-417	174,111
67	Forni Road	S/Missouri Flats Rd	2668	2626	02668-02626	736	624	1.18	0.44	Yes	112	12,452
68	Forni Road	N/Missouri Flats Rd	2667	2668	02667-02668	403	711	0.57	0.42	No	-308	94,648
69	Missouri Flats Rd	N/Golden Center Drive	2670	2665	02670-02665	1,346	1,655	0.81	0.30	Yes	-309	95,378
70	Golden Center Drive	N/Missouri Flats Rd	403	2665	00403-02665	131	210	0.62	0.60	Yes	-79	6,217
71	China Garden Road	E/Missouri Flats Rd	2672	2671	02672-02671	361	261	1.38	0.60	Yes	100	10,029
72	Missouri Flats Rd	N/China Garden Road	2666	2672	02666-02672	1,474	1,673	0.88	0.30	Yes	-199	39,735
73	Missouri Flats Rd	S/China Garden Road	2672	2570	02672-02570	1,171	1,456	0.80	0.31	Yes	-285	81,386
74	Pleasant Valley Rd	W/SR 49	1933	1934	01933-01934	780	821	0.95	0.40	Yes	-41	1,657
75	SR 49	S/Pleasant Valley Rd	1934	1911	01934-01911	786	673	1.17	0.43	Yes	113	12,723
76	SR 49	S/Union Mine Rd	1924	1915	01924-01915	570	450	1.27	0.60	Yes	120	14,366
77	Pleasant Valley Rd	W/Forni Rd	1934	2600	01934-02600	878	877	1.00	0.39	Yes	1	2
78	Pleasant Valley Rd	E/Forni Rd	2600	2591	02600-02591	718	727	0.99	0.42	Yes	-9	80
79	Forni Road	N/Pleasant Valley Rd	2599	2600	02599-02600	185	312	0.59	0.60	Yes	-127	16,045
80	Pleasant Valley Rd	S/Patterson Dr	2602	2601	02602-02601	784	928	0.85	0.38	Yes	-144	20,632
81	Pleasant Valley Rd	N/Patterson Dr	2619	2602	02619-02602	876	865	1.01	0.39	Yes	11	126
82	Patterson Dr	S/Pleasant Valley Rd	2602	2595	02602-02595	432	319	1.35	0.60	Yes	113	12,661
83	Commerce Way	N/Pleasant Valley Rd	2598	2619	02598-02619	131	137	0.96	0.60	Yes	-6	37
84	Pleasant Valley Rd	W\Commerce Way	2619	2620	02619-02620	923	1,022	0.90	0.37	Yes	-99	9,801
85	Pleasant Valley Rd	E/Missouri Flats Rd	2620	2617	02620-02617	1,374	1,268	1.08	0.33	Yes	106	11,261
86	Missouri Flats Rd	N/Pleasant Valley Rd	2618	2620	02618-02620	960	1,199	0.80	0.34	Yes	-239	57,116
87	Pleasant Valley Rd	W\China Garden Rd	2621	2623	02621-02623	1,329	1,262	1.05	0.33	Yes	67	4,464
88	Pleasant Valley Rd	E\China Garden Rd	2623	2624	02623-02624	1,274	1,328	0.96	0.32	Yes	-54	2,919
89	Golden Chain Hwy	N/Pleasant Valley Rd	2567	2581	02567-02581	276	458	0.60	0.60	Yes	-182	32,979
90	Pleasant Valley Rd	E/Golden Chain Hwy	2579	2581	02579-02581	1,409	606	2.32	0.44	No	803	644,491
R-8	US 50 EB Off-Ramp	Missouri Flats Rd	1947	2648	01947-02648	397	417	0.95	0.60	Yes	-20	392
R-9	US 50 EB On-Ramp	Missouri Flats Rd	2648	2642	02648-02642	614	618	0.99	0.44	Yes	-4	12
R-10	US 50 WB Off-Ramp	Missouri Flats Rd	2639	2650	02639-02650	683	874	0.78	0.39	Yes	-191	36,462
R-11	US 50 WB On-Ramp	Missouri Flats Rd	2654	1944	02654-01944	526	508	1.03	0.47	Yes	18	307
H-7	US 50	Greenstone Rd				4,277	3,800	1.13	0.23	Yes	477	227,883
H-8	US 50	El Dorado Rd				4,276	3,650	1.17	0.24	Yes	626	391,903
H-9	US 50	Missouri Flat Rd				4,651	4,150	1.12	0.23	Yes	501	250,810
H-10	US 50	Main St				3,706	4,650	0.80	0.22	Yes	-944	891,051
H-11	US 50	Schnell School Rd				2,565	2,650	0.97	0.26	Yes	-85	7,264
					Subtotal	**50,253**	**51,871**			**Model/Count Ratio =**	**0.97**	
										Percent Within Caltrans Maximum Deviation =	**95%**	>75%
										Percent Root Mean Square Error =	**20%**	<40%
										Correlation Coefficient =	**0.97**	>0.88

Total Count	**39**
Link Within Deviation	**37**
Link Outside Deviation	**2**

El Dorado County Model Validation Results: PM Peak Two-Way Total Traffic Volumes

ID	Name	Cross Street	A Node	B Node	Model A-B Node	Model Volume	Traffic Count	Model /Count	Allowable Deviation	Within Deviation	Model - Count	Difference Squared
57	Missouri Flats Rd	S/Plaza drive	2656	2654	02656-02654	1,639	2,087	0.79	0.28	Yes	-448	200,296
58	Missouri Flats Rd	S/WB US HWY 50 Ramps	2652	2648	02652-02648	2,068	2,515	0.82	0.26	Yes	-447	200,021
63	Missouri Flats Rd	S/EB US HWY 50 Ramps	2649	2648	02649-02648	2,740	2,607	1.05	0.26	Yes	133	17,777
64	Missouri Flats Rd	S/Motherlode Dr	2649	2645	02649-02645	2,583	3,071	0.84	0.25	Yes	-488	237,991
65	Motherlode Drive	W/Missouri Flats Rd	2649	2647	02649-02647	289	351	0.82	0.60	Yes	-62	3,880
66	Missouri Flats Rd	N/Forni Rd	2644	2668	02644-02668	2,555	3,005	0.85	0.25	Yes	-450	202,473
67	Forni Road	S/Missouri Flats Rd	2668	2626	02668-02626	1,139	1,039	1.10	0.37	Yes	100	10,042
68	Forni Road	N/Missouri Flats Rd	2667	2668	02667-02668	535	448	1.19	0.60	Yes	87	7,531
69	Missouri Flats Rd	N/Golden Center Drive	2670	2665	02670-02665	1,638	1,870	0.88	0.29	Yes	-232	53,790
70	Golden Center Drive	N/Missouri Flats Rd	403	2665	00403-02665	159	290	0.55	0.60	Yes	-131	17,063
71	China Garden Road	E/Missouri Flats Rd	2672	2671	02672-02671	510	302	1.69	0.60	No	208	43,089
72	Missouri Flats Rd	N/China Garden Road	2666	2672	02666-02672	1,793	1,917	0.94	0.28	Yes	-124	15,362
73	Missouri Flats Rd	S/China Garden Road	2672	2570	02672-02570	1,355	1,675	0.81	0.30	Yes	-320	102,134
74	Pleasant Valley Rd	W/SR 49	1933	1934	01933-01934	840	875	0.96	0.39	Yes	-35	1,233
75	SR 49	S/Pleasant Valley Rd	1934	1911	01934-01911	913	650	1.41	0.43	Yes	263	69,403
76	SR 49	S/Union Mine Rd	1924	1915	01924-01915	727	493	1.47	0.60	Yes	234	54,538
77	Pleasant Valley Rd	W/Forni Rd	1934	2600	01934-02600	1,067	947	1.13	0.38	Yes	120	14,512
78	Pleasant Valley Rd	E/Forni Rd	2600	2591	02600-02591	818	775	1.05	0.41	Yes	43	1,809
79	Forni Road	N/Pleasant Valley Rd	2599	2600	02599-02600	291	287	1.02	0.60	Yes	4	20
80	Pleasant Valley Rd	S/Patterson Dr	2602	2601	02602-02601	895	941	0.95	0.38	Yes	-46	2,094
81	Pleasant Valley Rd	N/Patterson Dr	2619	2602	02619-02602	1,045	1,012	1.03	0.37	Yes	33	1,107
82	Patterson Dr	S/Pleasant Valley Rd	2602	2595	02602-02595	498	409	1.22	0.60	Yes	89	7,884
83	Commerce Way	N/Pleasant Valley Rd	2598	2619	02598-02619	163	145	1.12	0.60	Yes	18	311
84	Pleasant Valley Rd	W\Commerce Way	2619	2620	02619-02620	1,102	1,046	1.05	0.37	Yes	56	3,164
85	Pleasant Valley Rd	E/Missouri Flats Rd	2620	2617	02620-02617	1,494	1,522	0.98	0.31	Yes	-28	803
86	Missouri Flats Rd	N/Pleasant Valley Rd	2618	2620	02618-02620	1,113	1,475	0.75	0.31	Yes	-362	130,745
87	Pleasant Valley Rd	W\China Garden Rd	2621	2623	02621-02623	1,434	1,500	0.96	0.31	Yes	-66	4,395
88	Pleasant Valley Rd	E\China Garden Rd	2623	2624	02623-02624	1,360	1,545	0.88	0.31	Yes	-185	34,367
89	Golden Chain Hwy	N/Pleasant Valley Rd	2567	2581	02567-02581	364	568	0.64	0.45	Yes	-204	41,743
90	Pleasant Valley Rd	E/Golden Chain Hwy	2579	2581	02579-02581	1,586	1,470	1.08	0.31	Yes	116	13,407
R-8	US 50 EB Off-Ramp	Missouri Flats Rd	1947	2648	01947-02648	577	779	0.74	0.41	Yes	-202	40,848
R-9	US 50 EB On-Ramp	Missouri Flats Rd	2648	2642	02648-02642	983	1,008	0.98	0.37	Yes	-25	602
R-10	US 50 WB Off-Ramp	Missouri Flats Rd	2639	2650	02639-02650	772	945	0.82	0.38	Yes	-173	29,877
R-11	US 50 WB On-Ramp	Missouri Flats Rd	2654	1944	02654-01944	419	549	0.76	0.46	Yes	-130	17,012
H-7	US 50	Greenstone Rd				4,658	3,800	1.23	0.23	Yes	858	735,492
H-8	US 50	El Dorado Rd				4,576	3,650	1.25	0.24	No	926	856,739
H-9	US 50	Missouri Flat Rd				5,336	4,150	1.29	0.23	No	1,186	1,406,007
H-10	US 50	Main St				4,070	4,650	0.88	0.22	Yes	-580	335,953
H-11	US 50	Schnell School Rd				2,701	2,650	1.02	0.26	Yes	51	2,571
					Subtotal	**58,804**	**59,018**			**Model/Count Ratio =**	**1.00**	
										Percent Within Caltrans Maximum Deviation =	**92%**	>75%
										Percent Root Mean Square Error =	**21%**	<40%
										Correlation Coefficient =	**0.96**	>0.88

Total Count	**39**
Link Within Deviation	**36**
Link Outside Deviation	**3**

SimTraffic Analysis
Existing Conditions

Intersection 1 **Missouri Flat Road/Plaza Drive** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	159	156	98.2%	35.9	1.7	D
	Through	432	458	106.0%	10.0	1.5	A
	Right Turn	342	354	103.6%	3.5	0.3	A
	Subtotal	**933**	**969**	**103.8%**	**11.8**	**0.7**	**B**
SB	Left Turn	42	41	96.9%	48.1	3.2	D
	Through	264	264	100.0%	10.8	1.0	B
	Right Turn	14	15	105.0%	5.1	2.2	A
	Subtotal	**320**	**320**	**99.8%**	**15.3**	**1.4**	**B**
EB	Left Turn	7	7	100.0%	47.5	11.4	D
	Through	5	6	110.0%	43.1	11.0	D
	Right Turn	81	83	103.0%	5.6	0.8	A
	Subtotal	**93**	**96**	**103.1%**	**10.7**	**2.1**	**B**
WB	Left Turn	219	222	101.2%	36.6	1.9	D
	Through	23	22	96.1%	41.7	4.6	D
	Right Turn	50	51	101.6%	23.3	3.3	C
	Subtotal	**292**	**295**	**100.9%**	**34.7**	**1.9**	**C**
Total		**1638**	**1679**	**102.5%**	**16.4**	**0.8**	**B**

Intersection 2 **Missouri Flat Road/US 50 WB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	390	377	96.7%	41.8	3.0	D
	Through	600	637	106.1%	12.0	0.9	B
	Right Turn						
	Subtotal	**990**	**1014**	**102.4%**	**23.1**	**1.7**	**C**
SB	Left Turn						
	Through	446	462	103.5%	11.3	0.9	B
	Right Turn	118	122	103.3%	3.2	0.3	A
	Subtotal	**564**	**584**	**103.5%**	**9.6**	**0.7**	**A**
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	541	530	97.9%	33.2	1.3	C
	Through						
	Right Turn	333	329	98.8%	11.7	0.7	B
	Subtotal	**874**	**859**	**98.2%**	**25.0**	**0.8**	**C**
Total		**2428**	**2456**	**101.2%**	**20.6**	**0.9**	**C**

Intersection 3 **Missouri Flat Road/US 50 EB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	900	914	101.6%	7.5	1.5	A
	Right Turn	81	77	95.6%	1.5	0.3	A
	Subtotal	**981**	**992**	**101.1%**	**7.1**	**1.4**	**A**
SB	Left Turn	134	132	98.7%	45.6	3.1	D
	Through	853	860	100.8%	5.4	0.7	A
	Right Turn						
	Subtotal	**987**	**992**	**100.5%**	**10.7**	**0.5**	**B**
EB	Left Turn	90	91	101.2%	35.4	2.5	D
	Through						
	Right Turn	327	329	100.6%	14.5	1.3	B
	Subtotal	**417**	**420**	**100.8%**	**19.0**	**1.0**	**B**
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		**2385**	**2404**	**100.8%**	**10.6**	**0.7**	**B**

Intersection 4 **Missouri Flat Road/Mother Lode Drive** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	23	21	91.7%	52.7	5.6	D
	Through	846	887	104.8%	11.6	1.4	B
	Right Turn	403	409	101.6%	9.8	0.3	A
	Subtotal	**1272**	**1317**	**103.5%**	**11.7**	**0.9**	**B**
SB	Left Turn						
	Through	1100	1096	99.6%	6.9	0.7	A
	Right Turn	80	82	102.3%	2.5	0.2	A
	Subtotal	**1180**	**1178**	**99.8%**	**6.6**	**0.7**	**A**
EB	Left Turn	135	132	97.8%	38.7	2.7	D
	Through						
	Right Turn	34	34	100.3%	13.9	2.2	B
	Subtotal	**169**	**166**	**98.3%**	**33.6**	**2.4**	**C**
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		**2621**	**2661**	**101.5%**	**10.8**	**0.5**	**B**

Intersection 5 **Missouri Flat Road/Forni Road** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	37	36	97.3%	52.0	5.7	D
	Through	855	880	103.0%	29.0	3.1	C
	Right Turn	60	64	105.8%	11.3	2.1	B
	Subtotal	**952**	**980**	**102.9%**	**28.7**	**2.7**	**C**
SB	Left Turn	280	271	96.7%	51.2	8.0	D
	Through	642	679	105.8%	16.3	1.4	B
	Right Turn	207	198	95.7%	9.4	0.7	A
	Subtotal	**1129**	**1148**	**101.7%**	**23.4**	**2.7**	**C**
EB	Left Turn	226	228	100.8%	40.6	2.9	D
	Through	77	81	105.3%	35.9	3.6	D
	Right Turn	24	23	94.6%	8.1	0.6	A
	Subtotal	**327**	**332**	**101.4%**	**37.2**	**1.9**	**D**
WB	Left Turn	52	51	97.1%	40.0	4.3	D
	Through	53	54	101.1%	42.1	3.4	D
	Right Turn	189	189	99.9%	1.9	0.1	A
	Subtotal	**294**	**293**	**99.7%**	**15.8**	**1.9**	**B**
Total		**2702**	**2753**	**101.9%**	**26.2**	**1.3**	**C**

Intersection 6 **Missouri Flat Road/Golden Center Drive** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	38	37	96.6%	42.6	2.5	D
	Through	927	939	101.3%	18.6	1.1	B
	Right Turn	83	91	109.4%	14.0	1.4	B
	Subtotal	**1048**	**1066**	**101.8%**	**19.0**	**1.1**	**B**
SB	Left Turn	81	81	99.9%	40.3	3.4	D
	Through	624	656	105.1%	20.4	3.3	C
	Right Turn	8	9	113.8%	3.5	0.4	A
	Subtotal	**713**	**746**	**104.6%**	**22.4**	**3.1**	**C**
EB	Left Turn	7	8	118.6%	31.6	9.9	C
	Through	5	4	78.0%	33.8	13.1	C
	Right Turn	18	18	98.9%	9.6	4.4	A
	Subtotal	**30**	**30**	**100.0%**	**18.4**	**4.5**	**B**
WB	Left Turn	49	51	104.5%	30.4	2.6	C
	Through	2	2	120.0%	26.9	19.3	C
	Right Turn	8	9	110.0%	9.6	4.4	A
	Subtotal	**59**	**62**	**105.8%**	**27.5**	**2.9**	**C**
Total		**1850**	**1905**	**103.0%**	**20.5**	**1.7**	**C**

Intersection 1 **Missouri Flat Road/Plaza Drive** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	322	326	101.3%	40.2	4.5	D
	Through	308	317	103.0%	30.0	5.3	C
	Right Turn	451	441	97.9%	6.2	0.6	A
	Subtotal	**1081**	**1085**	**100.4%**	**23.4**	**2.7**	**C**
SB	Left Turn	46	44	95.4%	48.4	4.3	D
	Through	263	273	104.0%	27.2	3.0	C
	Right Turn	16	19	115.6%	17.5	6.6	B
	Subtotal	**325**	**336**	**103.3%**	**29.4**	**3.0**	**C**
EB	Left Turn	33	35	106.7%	38.0	2.5	D
	Through	35	37	106.6%	41.3	5.4	D
	Right Turn	320	322	100.8%	12.5	1.3	B
	Subtotal	**388**	**395**	**101.8%**	**17.5**	**0.8**	**B**
WB	Left Turn	423	408	96.4%	34.9	1.5	C
	Through	36	34	95.6%	40.0	4.6	D
	Right Turn	63	62	98.3%	29.1	3.7	C
	Subtotal	**522**	**504**	**96.6%**	**34.6**	**1.5**	**C**
Total		**2316**	**2320**	**100.2%**	**25.7**	**1.8**	**C**

Intersection 2 **Missouri Flat Road/US 50 WB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	365	366	100.2%	35.3	2.1	D
	Through	732	736	100.5%	13.0	1.4	B
	Right Turn						
	Subtotal	**1097**	**1101**	**100.4%**	**20.4**	**1.3**	**C**
SB	Left Turn						
	Through	822	821	99.9%	21.7	3.8	C
	Right Turn	184	182	99.0%	3.7	0.2	A
	Subtotal	**1006**	**1004**	**99.8%**	**18.5**	**3.1**	**B**
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	596	605	101.5%	34.4	1.7	C
	Through						
	Right Turn	349	351	100.5%	15.3	1.5	B
	Subtotal	**945**	**956**	**101.2%**	**27.4**	**1.1**	**C**
Total		**3048**	**3061**	**100.4%**	**21.9**	**1.5**	**C**

Intersection 3 **Missouri Flat Road/US 50 EB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	879	881	100.2%	16.6	0.7	B
	Right Turn	72	73	101.4%	3.2	0.5	A
	Subtotal	**951**	**954**	**100.3%**	**15.6**	**0.7**	**B**
SB	Left Turn	323	316	97.9%	59.6	4.1	E
	Through	1095	1115	101.9%	15.4	1.6	B
	Right Turn						
	Subtotal	**1418**	**1432**	**101.0%**	**25.2**	**1.3**	**C**
EB	Left Turn	218	213	97.7%	45.8	5.9	D
	Through						
	Right Turn	561	572	101.9%	68.2	22.3	E
	Subtotal	**779**	**784**	**100.7%**	**62.2**	**17.6**	**E**
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		**3148**	**3170**	**100.7%**	**31.4**	**4.6**	**C**

Intersection 4 **Missouri Flat Road/Mother Lode Drive** **N/A**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	51	52	101.6%	49.1	3.9	E
	Through	827	834	100.8%	14.1	1.0	B
	Right Turn	613	616	100.5%	11.5	0.4	B
	Subtotal	**1491**	**1502**	**100.7%**	**14.3**	**0.6**	**B**
SB	Left Turn						
	Through	1530	1553	101.5%	12.0	0.9	B
	Right Turn	126	128	101.9%	3.5	0.4	A
	Subtotal	**1656**	**1681**	**101.5%**	**11.4**	**0.8**	**B**
EB	Left Turn	124	120	96.5%	45.8	4.1	E
	Through						
	Right Turn	50	49	98.0%	23.1	3.3	C
	Subtotal	**174**	**169**	**97.0%**	**39.2**	**3.5**	**E**
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		**3321**	**3352**	**100.9%**	**14.1**	**0.7**	**B**

Intersection 5 **Missouri Flat Road/Forni Road** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	57	57	100.2%	47.7	5.7	D
	Through	800	814	101.7%	19.0	3.2	B
	Right Turn	21	23	111.4%	4.7	2.3	A
	Subtotal	**878**	**894**	**101.9%**	**20.5**	**2.9**	**C**
SB	Left Turn	165	160	97.1%	44.4	2.3	D
	Through	1019	1087	106.6%	15.2	2.4	B
	Right Turn	348	352	101.2%	7.9	1.1	A
	Subtotal	**1532**	**1599**	**104.4%**	**16.6**	**1.9**	**B**
EB	Left Turn	492	483	98.2%	51.9	3.6	D
	Through	37	36	95.9%	38.7	5.1	D
	Right Turn	74	74	100.4%	13.4	2.2	B
	Subtotal	**603**	**593**	**98.3%**	**46.3**	**3.7**	**D**
WB	Left Turn	15	13	86.0%	50.2	8.0	D
	Through	31	30	97.4%	44.8	4.3	D
	Right Turn	181	184	101.7%	1.7	0.1	A
	Subtotal	**227**	**227**	**100.1%**	**10.1**	**0.8**	**B**
Total		**3240**	**3313**	**102.3%**	**22.5**	**1.8**	**C**

Intersection 6 **Missouri Flat Road/Golden Center Drive** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	75	69	92.5%	46.6	2.1	D
	Through	747	759	101.7%	14.3	1.2	B
	Right Turn	54	61	112.8%	9.3	2.4	A
	Subtotal	**876**	**890**	**101.6%**	**16.5**	**1.2**	**B**
SB	Left Turn	67	68	101.0%	74.8	16.5	E
	Through	1002	1036	103.4%	69.2	14.2	E
	Right Turn	6	5	78.3%	9.4	6.7	A
	Subtotal	**1075**	**1108**	**103.1%**	**69.2**	**14.2**	**E**
EB	Left Turn	23	20	87.8%	40.5	6.7	D
	Through	9	9	101.1%	45.5	11.8	D
	Right Turn	53	54	101.9%	18.8	3.6	B
	Subtotal	**85**	**83**	**98.0%**	**26.9**	**4.5**	**C**
WB	Left Turn	95	95	99.7%	37.3	2.8	D
	Through	13	13	101.5%	37.4	8.1	D
	Right Turn	54	61	113.0%	21.7	3.4	C
	Subtotal	**162**	**169**	**104.3%**	**31.7**	**3.0**	**C**
Total		**2198**	**2250**	**102.4%**	**44.0**	**7.3**	**D**

Intersection 7 **Missouri Flat Road/China Garden Road** **Unsignalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	877	901	102.7%	3.9	0.2	A
	Right Turn	15	15	98.7%	2.6	0.9	A
	Subtotal	**892**	**915**	**102.6%**	**3.9**	**0.2**	**A**
SB	Left Turn	99	101	101.5%	8.5	1.0	A
	Through	555	563	101.4%	1.5	0.2	A
	Right Turn						
	Subtotal	**654**	**663**	**101.4%**	**2.5**	**0.3**	**A**
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	9	9	94.4%	29.6	10.0	D
	Through						
	Right Turn	138	133	96.1%	16.8	4.1	C
	Subtotal	**147**	**141**	**96.0%**	**17.6**	**4.2**	**C**
Total		**1693**	**1720**	**101.6%**	**4.5**	**0.5**	**A**

Intersection 8 **Missouri Flat Road/Pleasant Valley Road** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	191	194	101.8%	22.8	2.3	C
	Through						
	Right Turn	154	149	96.9%	5.2	0.8	A
	Subtotal	**345**	**344**	**99.6%**	**15.1**	**1.6**	**B**
EB	Left Turn	320	328	102.6%	72.7	26.3	E
	Through	178	177	99.4%	56.2	23.4	E
	Right Turn						
	Subtotal	**498**	**505**	**101.4%**	**67.1**	**25.2**	**E**
WB	Left Turn						
	Through	365	360	98.5%	38.4	6.2	D
	Right Turn	534	545	102.1%	12.6	5.3	B
	Subtotal	**899**	**905**	**100.6%**	**22.9**	**5.8**	**C**
Total		**1742**	**1754**	**100.7%**	**34.1**	**8.9**	**C**

Intersection 9 **SR 49/Union Mine Rd** **Unsignalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	320	329	102.9%	2.3	4.5	A
	Right Turn	28	31	109.3%	2.0	4.4	A
	Subtotal	**348**	**360**	**103.4%**	**2.3**	**4.5**	**A**
SB	Left Turn	113	111	97.8%	4.6	0.9	A
	Through	105	118	112.6%	2.8	0.7	A
	Right Turn						
	Subtotal	**218**	**229**	**104.9%**	**3.6**	**0.8**	**A**
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	17	16	93.5%	22.7	20.7	C
	Through						
	Right Turn	127	131	103.4%	11.0	12.7	B
	Subtotal	**144**	**147**	**102.2%**	**12.3**	**13.7**	**B**
Total		**710**	**736**	**103.6%**	**4.7**	**5.1**	**A**

Intersection 10 **SR 49/Pleasant Valley Rd** **Unsignalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	219	227	103.6%	26.0	16.0	D
	Through						
	Right Turn	233	242	103.9%	23.6	15.7	C
	Subtotal	**452**	**469**	**103.8%**	**24.8**	**15.8**	**C**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	238	241	101.4%	11.3	2.3	B
	Right Turn	83	86	103.1%	8.8	2.7	A
	Subtotal	**321**	**327**	**101.8%**	**10.6**	**2.4**	**B**
WB	Left Turn	138	136	98.7%	9.1	0.4	A
	Through	281	294	104.7%	9.3	0.7	A
	Right Turn						
	Subtotal	**419**	**431**	**102.7%**	**9.3**	**0.6**	**A**
Total		**1192**	**1226**	**102.9%**	**15.6**	**6.8**	**C**

Intersection 11 **Forni Rd/Pleasant Valley Rd** **Unsignalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	49	49	99.4%	42.4	18.2	E
	Through						
	Right Turn	99	103	103.6%	30.9	21.7	D
	Subtotal	**148**	**151**	**102.2%**	**34.5**	**20.0**	**D**
EB	Left Turn	132	133	100.8%	7.2	1.1	A
	Through	330	354	107.2%	3.5	0.8	A
	Right Turn						
	Subtotal	**462**	**487**	**105.4%**	**4.5**	**0.9**	**A**
WB	Left Turn						
	Through	316	335	106.1%	3.3	0.2	A
	Right Turn	32	35	107.8%	2.7	0.6	A
	Subtotal	**348**	**370**	**106.2%**	**3.2**	**0.2**	**A**
Total		**958**	**1008**	**105.2%**	**8.7**	**3.4**	**A**

Intersection 12 **Oro Lane-Koki Lane/Pleasant Valley Rd** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	89	90	101.3%	17.0	1.3	B
	Through	3	2	76.7%	12.8	7.6	B
	Right Turn	172	174	101.1%	9.6	0.5	A
	Subtotal	**264**	**266**	**100.9%**	**12.1**	**0.6**	**B**
SB	Left Turn	15	12	82.7%	15.5	6.0	B
	Through	3	3	93.3%	11.4	10.6	B
	Right Turn	9	10	111.1%	6.7	3.6	A
	Subtotal	**27**	**25**	**93.3%**	**11.4**	**4.1**	**B**
EB	Left Turn	3	2	76.7%	30.5	11.8	C
	Through	231	255	110.5%	16.2	1.3	B
	Right Turn	153	153	100.1%	7.1	0.9	A
	Subtotal	**387**	**411**	**106.1%**	**12.9**	**1.0**	**B**
WB	Left Turn	247	245	99.3%	18.4	2.1	B
	Through	239	270	113.0%	13.8	2.2	B
	Right Turn	3	2	73.3%	8.0	6.9	A
	Subtotal	**489**	**518**	**105.8%**	**16.0**	**1.9**	**B**
Total		**1167**	**1220**	**104.5%**	**14.0**	**1.0**	**B**

Intersection 13 **Dublin Road-Oakdell Drive/Pleasant Valley Rd** **Unsignalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	21	21	101.9%	15.7	3.0	C
	Through						
	Right Turn	24	24	99.2%	6.0	1.6	A
	Subtotal	**45**	**45**	**100.4%**	**10.6**	**1.7**	**B**
SB	Left Turn	3	2	56.7%	14.3	15.5	B
	Through						
	Right Turn	7	7	92.9%	5.0	1.6	A
	Subtotal	**10**	**8**	**82.0%**	**7.2**	**4.6**	**A**
EB	Left Turn						
	Through	380	405	106.6%	2.9	0.2	A
	Right Turn	44	47	107.7%	1.7	0.3	A
	Subtotal	**424**	**452**	**106.7%**	**2.7**	**0.1**	**A**
WB	Left Turn	44	43	96.6%	4.3	0.7	A
	Through	464	466	100.3%	3.1	0.4	A
	Right Turn	4	4	110.0%	1.7	1.0	A
	Subtotal	**512**	**513**	**100.1%**	**3.2**	**0.4**	**A**
Total		**991**	**1018**	**102.7%**	**3.3**	**0.3**	**A**

Intersection 14 **Sierra View Drive/Pleasant Valley Rd** **Unsignalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	4	4	87.5%	13.0	13.7	B
	Through						
	Right Turn	10	11	112.0%	4.0	0.7	A
	Subtotal	**14**	**15**	**105.0%**	**6.3**	**3.3**	**A**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	398	406	101.9%	1.6	0.2	A
	Right Turn	3	4	126.7%	0.5	0.5	A
	Subtotal	**401**	**410**	**102.1%**	**1.6**	**0.2**	**A**
WB	Left Turn	8	8	93.8%	5.1	1.2	A
	Through	513	514	100.2%	4.2	0.2	A
	Right Turn						
	Subtotal	**521**	**521**	**100.1%**	**4.2**	**0.2**	**A**
Total		**936**	**946**	**101.0%**	**3.1**	**0.2**	**A**

Intersection 15 **Patterson Drive/Pleasant Valley Rd** **Unsignalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	95	95	100.3%	8.1	0.6	A
	Through						
	Right Turn	141	145	102.5%	6.3	0.6	A
	Subtotal	**236**	**240**	**101.6%**	**7.1**	**0.5**	**A**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	362	370	102.2%	15.8	2.6	C
	Right Turn	45	47	103.6%	9.1	3.1	A
	Subtotal	**407**	**417**	**102.4%**	**15.0**	**2.6**	**B**
WB	Left Turn	38	34	88.4%	14.5	2.2	B
	Through	424	427	100.6%	17.5	1.1	C
	Right Turn						
	Subtotal	**462**	**460**	**99.6%**	**17.2**	**1.1**	**C**
Total		**1105**	**1117**	**101.0%**	**14.2**	**1.0**	**B**

Intersection 16 **Wrangler Rd/Pleasant Valley Rd** **Unsignalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn	3	3	96.7%	3.3	1.4	A
	Subtotal	**3**	**3**	**96.7%**	**3.3**	**1.4**	**A**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	466	509	109.2%	4.9	1.0	A
	Right Turn						
	Subtotal	**466**	**509**	**109.2%**	**4.9**	**1.0**	**A**
WB	Left Turn						
	Through	464	454	97.9%	0.3	0.1	A
	Right Turn						
	Subtotal	**464**	**454**	**97.9%**	**0.3**	**0.1**	**A**
Total		**933**	**966**	**103.5%**	**2.7**	**0.5**	**A**

Intersection 17 **Commerce Way/Pleasant Valley Rd** **Unsignalized**

Direction	Movement	Volume (veh/hr)			Total Delay (sec/veh)		
		Demand	Served	% Served	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	18	18	101.7%	29.2	30.2	D
	Through						
	Right Turn	19	22	114.2%	8.8	8.5	A
	Subtotal	**37**	**40**	**108.1%**	**18.4**	**19.3**	**C**
EB	Left Turn	31	31	100.0%	6.5	3.1	A
	Through	438	445	101.6%	2.6	2.1	A
	Right Turn						
	Subtotal	**469**	**476**	**101.5%**	**2.9**	**2.2**	**A**
WB	Left Turn						
	Through	445	438	98.4%	2.9	0.2	A
	Right Turn	79	82	104.2%	2.5	0.2	A
	Subtotal	**524**	**520**	**99.3%**	**2.8**	**0.2**	**A**
Total		**1030**	**1036**	**100.6%**	**3.4**	**1.7**	**A**

Intersection 18 **Faith Lane/Pleasant Valley Rd** **Unsignalized**

Direction	Movement	Volume (veh/hr)			Total Delay (sec/veh)		
		Demand	Served	% Served	Average	Std. Dev.	LOS
NB	Left Turn	6	7	115.0%	15.7	7.4	C
	Through						
	Right Turn	4	6	145.0%	4.5	1.6	A
	Subtotal	**10**	**13**	**127.0%**	**10.7**	**4.4**	**B**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	363	367	101.0%	2.8	0.4	A
	Right Turn	4	5	130.0%	2.4	1.3	A
	Subtotal	**367**	**372**	**101.3%**	**2.7**	**0.4**	**A**
WB	Left Turn	3	2	76.7%	2.4	1.3	A
	Through	889	901	101.4%	0.8	0.1	A
	Right Turn						
	Subtotal	**892**	**904**	**101.3%**	**0.8**	**0.1**	**A**
Total		**1269**	**1288**	**101.5%**	**1.4**	**0.2**	**A**

Intersection 19 **China Garden Rd/Pleasant Valley Rd** **Unsignalized**

Direction	Movement	Volume (veh/hr)			Total Delay (sec/veh)		
		Demand	Served	% Served	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	3	2	76.7%	18.9	13.0	C
	Through						
	Right Turn	9	10	105.6%	10.7	3.2	B
	Subtotal	**12**	**12**	**98.3%**	**12.8**	**4.4**	**B**
EB	Left Turn	11	11	99.1%	9.0	2.2	A
	Through	359	365	101.7%	0.7	0.3	A
	Right Turn						
	Subtotal	**370**	**376**	**101.6%**	**1.0**	**0.3**	**A**
WB	Left Turn						
	Through	883	933	105.7%	2.9	0.2	A
	Right Turn	50	49	98.6%	2.5	0.3	A
	Subtotal	**933**	**982**	**105.3%**	**2.8**	**0.2**	**A**
Total		**1315**	**1370**	**104.2%**	**2.4**	**0.2**	**A**

Intersection 20 **Diamond Meadows Way/Pleasant Valley Rd** **Unsignalized**

Direction	Movement	Volume (veh/hr)			Total Delay (sec/veh)		
		Demand	Served	% Served	Average	Std. Dev.	LOS
NB	Left Turn	9	7	81.1%	24.4	5.2	C
	Through						
	Right Turn						
	Subtotal	**9**	**7**	**81.1%**	**24.4**	**5.2**	**C**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	362	371	102.4%	1.3	0.1	A
	Right Turn	3	2	73.3%	1.0	1.3	A
	Subtotal	**365**	**373**	**102.1%**	**1.3**	**0.1**	**A**
WB	Left Turn	3	3	96.7%	3.6	1.9	A
	Through	968	975	100.7%	1.7	0.1	A
	Right Turn						
	Subtotal	**971**	**977**	**100.7%**	**1.7**	**0.1**	**A**
Total		**1345**	**1358**	**100.9%**	**1.7**	**0.1**	**A**

Intersection 21 **Diamond Rd-Fowler Lane/Pleasant Valley Rd** **Signalized**

Direction	Movement	Volume (veh/hr)			Total Delay (sec/veh)		
		Demand	Served	% Served	Average	Std. Dev.	LOS
NB	Left Turn	93	94	101.5%	34.1	4.6	C
	Through	27	27	101.1%	35.5	3.9	D
	Right Turn	12	13	109.2%	9.4	1.8	A
	Subtotal	**132**	**135**	**102.1%**	**31.9**	**4.0**	**C**
SB	Left Turn	52	51	98.1%	39.3	4.3	D
	Through	15	15	99.3%	36.1	6.1	D
	Right Turn	112	115	102.3%	18.1	2.4	B
	Subtotal	**179**	**181**	**100.8%**	**25.5**	**2.5**	**C**
EB	Left Turn	101	101	100.2%	39.1	4.9	D
	Through	228	236	103.5%	14.3	2.3	B
	Right Turn	28	29	102.1%	10.5	1.7	B
	Subtotal	**357**	**366**	**102.5%**	**20.9**	**2.1**	**C**
WB	Left Turn	12	11	91.7%	52.5	12.4	D
	Through	762	758	99.5%	28.0	4.6	C
	Right Turn	151	144	95.3%	18.4	3.6	B
	Subtotal	**925**	**913**	**98.7%**	**26.8**	**4.5**	**C**
Total		**1593**	**1594**	**100.1%**	**25.7**	**3.2**	**C**

Intersection 7 **Missouri Flat Road/China Garden Road** **Unsignalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	670	664	99.1%	3.6	0.4	A
	Right Turn	20	21	105.0%	2.2	1.0	A
	Subtotal	**690**	**685**	**99.3%**	**3.5**	**0.3**	**A**
SB	Left Turn	97	97	99.6%	7.4	0.7	A
	Through	975	983	100.9%	2.6	0.1	A
	Right Turn						
	Subtotal	**1072**	**1080**	**100.7%**	**3.0**	**0.1**	**A**
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	10	10	97.0%	31.4	13.0	D
	Through						
	Right Turn	175	162	92.3%	12.3	3.6	B
	Subtotal	**185**	**171**	**92.5%**	**13.3**	**3.7**	**B**
Total		**1947**	**1936**	**99.5%**	**4.1**	**0.5**	**A**

Intersection 8 **Missouri Flat Road/Pleasant Valley Road** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	625	617	98.7%	27.0	1.4	C
	Through						
	Right Turn	291	300	103.0%	3.7	0.6	A
	Subtotal	**916**	**917**	**100.1%**	**19.4**	**1.0**	**B**
EB	Left Turn	229	230	100.2%	33.4	3.5	C
	Through	320	321	100.3%	18.3	4.0	B
	Right Turn						
	Subtotal	**549**	**550**	**100.2%**	**24.6**	**3.8**	**C**
WB	Left Turn						
	Through	247	253	102.4%	31.8	1.6	C
	Right Turn	330	328	99.4%	6.3	0.5	A
	Subtotal	**577**	**581**	**100.7%**	**17.4**	**0.8**	**B**
Total		**2042**	**2048**	**100.3%**	**20.2**	**1.5**	**C**

Intersection 9 **SR 49/Union Mine Rd** **Unsignalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	193	190	98.6%	0.4	0.0	A
	Right Turn	6	7	110.0%	0.3	0.3	A
	Subtotal	**199**	**197**	**98.9%**	**0.4**	**0.0**	**A**
SB	Left Turn	98	98	100.3%	3.0	0.2	A
	Through	290	321	110.8%	2.3	0.2	A
	Right Turn						
	Subtotal	**388**	**420**	**108.1%**	**2.4**	**0.2**	**A**
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	4	4	97.5%	8.9	4.7	A
	Through						
	Right Turn	58	60	102.6%	2.8	0.5	A
	Subtotal	**62**	**63**	**102.3%**	**3.2**	**0.6**	**A**
Total		**649**	**680**	**104.7%**	**1.9**	**0.1**	**A**

Intersection 10 **SR 49/Pleasant Valley Rd** **Unsignalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	97	96	98.5%	7.5	0.8	A
	Through						
	Right Turn	145	145	99.7%	6.3	1.0	A
	Subtotal	**242**	**240**	**99.2%**	**6.8**	**0.9**	**A**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	317	325	102.5%	15.9	3.4	C
	Right Turn	201	207	102.7%	13.9	3.5	B
	Subtotal	**518**	**532**	**102.6%**	**15.2**	**3.4**	**C**
WB	Left Turn	207	213	103.0%	11.9	1.0	B
	Through	260	263	101.2%	10.7	0.5	B
	Right Turn						
	Subtotal	**467**	**476**	**102.0%**	**11.3**	**0.7**	**B**
Total		**1227**	**1248**	**101.7%**	**12.1**	**1.6**	**B**

Intersection 11 **Forni Rd/Pleasant Valley Rd** **Unsignalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	22	21	94.1%	23.7	5.6	C
	Through						
	Right Turn	144	152	105.8%	8.2	2.9	A
	Subtotal	**166**	**173**	**104.2%**	**10.0**	**3.2**	**A**
EB	Left Turn	86	83	96.7%	6.5	0.9	A
	Through	394	404	102.4%	2.8	0.6	A
	Right Turn						
	Subtotal	**480**	**487**	**101.4%**	**3.4**	**0.7**	**A**
WB	Left Turn						
	Through	324	333	102.6%	3.4	0.3	A
	Right Turn	35	36	102.3%	3.0	0.8	A
	Subtotal	**359**	**368**	**102.6%**	**3.3**	**0.2**	**A**
Total		**1005**	**1028**	**102.3%**	**4.5**	**0.7**	**A**

Intersection 12 **Oro Lane-Koki Lane/Pleasant Valley Rd** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	74	77	103.6%	14.4	1.2	B
	Through						
	Right Turn	144	144	99.7%	9.2	0.7	A
	Subtotal	**218**	**220**	**101.0%**	**11.0**	**0.8**	**B**
SB	Left Turn	8	7	81.3%	11.3	4.2	B
	Through						
	Right Turn	9	9	100.0%	2.7	1.1	A
	Subtotal	**17**	**16**	**91.2%**	**6.5**	**2.6**	**A**
EB	Left Turn	18	18	97.2%	20.5	2.2	C
	Through	330	362	109.8%	12.7	1.1	B
	Right Turn	69	68	98.1%	4.7	0.3	A
	Subtotal	**417**	**448**	**107.3%**	**11.8**	**1.0**	**B**
WB	Left Turn	127	127	100.1%	14.4	1.8	B
	Through	246	268	108.9%	12.1	1.7	B
	Right Turn	12	12	102.5%	6.4	2.2	A
	Subtotal	**385**	**407**	**105.8%**	**12.6**	**1.5**	**B**
Total		**1037**	**1091**	**105.2%**	**11.9**	**0.9**	**B**

Intersection 13 **Dublin Road-Oakdell Drive/Pleasant Valley Rd** **Unsignalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	9	9	97.8%	10.8	2.9	B
	Through						
	Right Turn	7	6	82.9%	5.4	1.8	A
	Subtotal	**16**	**15**	**91.3%**	**8.6**	**2.0**	**A**
SB	Left Turn	3	4	116.7%	8.3	6.4	A
	Through						
	Right Turn						
	Subtotal	**3**	**4**	**116.7%**	**8.3**	**6.4**	**A**
EB	Left Turn						
	Through	475	499	105.1%	2.6	0.1	A
	Right Turn	6	9	150.0%	1.6	0.7	A
	Subtotal	**481**	**508**	**105.7%**	**2.6**	**0.1**	**A**
WB	Left Turn	12	11	92.5%	3.5	1.4	A
	Through	383	389	101.6%	1.7	0.1	A
	Right Turn	4	6	137.5%	0.7	0.6	A
	Subtotal	**399**	**406**	**101.7%**	**1.7**	**0.2**	**A**
Total		**899**	**932**	**103.7%**	**2.3**	**0.1**	**A**

Intersection 14 **Sierra View Drive/Pleasant Valley Rd** **Unsignalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn	8	10	128.8%	4.5	1.0	A
	Subtotal	**8**	**10**	**128.8%**	**4.5**	**1.0**	**A**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	498	505	101.4%	1.7	0.1	A
	Right Turn	3	4	116.7%	1.0	1.3	A
	Subtotal	**501**	**509**	**101.5%**	**1.7**	**0.1**	**A**
WB	Left Turn	14	13	93.6%	6.1	1.1	A
	Through	405	415	102.5%	4.1	0.1	A
	Right Turn						
	Subtotal	**419**	**428**	**102.2%**	**4.1**	**0.1**	**A**
Total		**928**	**947**	**102.1%**	**2.8**	**0.1**	**A**

Intersection 15 **Patterson Drive/Pleasant Valley Rd** **Unsignalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	69	63	91.9%	7.8	0.7	A
	Through						
	Right Turn	110	105	95.5%	5.4	0.5	A
	Subtotal	**179**	**169**	**94.1%**	**6.3**	**0.5**	**A**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	408	421	103.1%	21.4	1.9	C
	Right Turn	95	98	103.6%	15.8	1.6	C
	Subtotal	**503**	**519**	**103.2%**	**20.4**	**1.8**	**C**
WB	Left Turn	135	137	101.3%	15.3	1.7	C
	Through	359	381	106.2%	17.2	1.5	C
	Right Turn						
	Subtotal	**494**	**518**	**104.9%**	**16.7**	**1.5**	**C**
Total		**1176**	**1206**	**102.5%**	**16.8**	**1.0**	**C**

Intersection 16 **Wrangler Road/Pleasant Valley Rd** **Unsignalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	508	518	101.9%	4.7	0.2	A
	Right Turn	3	2	73.3%	3.9	1.9	A
	Subtotal	**511**	**520**	**101.8%**	**4.7**	**0.2**	**A**
WB	Left Turn						
	Through	511	521	101.9%	0.3	0.0	A
	Right Turn						
	Subtotal	**511**	**521**	**101.9%**	**0.3**	**0.0**	**A**
Total		**1022**	**1041**	**101.8%**	**2.5**	**0.1**	**A**

Intersection 17 **Commerce Way/Pleasant Valley Rd** **Unsignalized**

Direction	Movement	Volume (veh/hr)			Total Delay (sec/veh)		
		Demand	Served	% Served	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	51	48	93.1%	19.1	2.8	C
	Through						
	Right Turn	47	45	96.6%	9.4	2.3	A
	Subtotal	**98**	**93**	**94.8%**	**14.4**	**2.5**	**B**
EB	Left Turn	14	15	108.6%	5.3	1.5	A
	Through	495	497	100.4%	0.8	0.2	A
	Right Turn						
	Subtotal	**509**	**512**	**100.6%**	**0.9**	**0.3**	**A**
WB	Left Turn						
	Through	464	519	111.8%	2.2	0.1	A
	Right Turn	33	32	97.0%	1.7	0.2	A
	Subtotal	**497**	**551**	**110.8%**	**2.2**	**0.1**	**A**
Total		**1104**	**1156**	**104.7%**	**2.6**	**0.2**	**A**

Intersection 18 **Faith Lane/Pleasant Valley Rd** **Unsignalized**

Direction	Movement	Volume (veh/hr)			Total Delay (sec/veh)		
		Demand	Served	% Served	Average	Std. Dev.	LOS
NB	Left Turn	9	9	104.4%	61.3	26.4	F
	Through						
	Right Turn	20	20	97.5%	21.8	12.5	C
	Subtotal	**29**	**29**	**99.7%**	**33.6**	**13.7**	**D**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	888	879	99.0%	5.6	0.4	A
	Right Turn	72	74	102.9%	4.1	0.6	A
	Subtotal	**960**	**953**	**99.3%**	**5.5**	**0.4**	**A**
WB	Left Turn	35	37	106.9%	14.9	3.7	B
	Through	566	563	99.5%	3.1	1.0	A
	Right Turn						
	Subtotal	**601**	**601**	**99.9%**	**3.8**	**1.2**	**A**
Total		**1590**	**1582**	**99.5%**	**5.4**	**0.6**	**A**

Intersection 19 **China Garden Road/Pleasant Valley Rd** **Unsignalized**

Direction	Movement	Volume (veh/hr)			Total Delay (sec/veh)		
		Demand	Served	% Served	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	9	9	103.3%	24.4	8.6	C
	Through						
	Right Turn	15	16	108.7%	12.1	4.9	B
	Subtotal	**24**	**26**	**106.7%**	**16.8**	**3.3**	**C**
EB	Left Turn	9	7	73.3%	4.8	2.9	A
	Through	890	890	100.0%	0.7	0.1	A
	Right Turn						
	Subtotal	**899**	**897**	**99.7%**	**0.7**	**0.2**	**A**
WB	Left Turn						
	Through	583	597	102.4%	3.7	1.1	A
	Right Turn	45	42	93.1%	2.7	0.9	A
	Subtotal	**628**	**639**	**101.7%**	**3.7**	**1.0**	**A**
Total		**1551**	**1561**	**100.6%**	**2.2**	**0.4**	**A**

Intersection 20 **Diamond Meadows/Pleasant Valley Rd** **Unsignalized**

Direction	Movement	Volume (veh/hr)			Total Delay (sec/veh)		
		Demand	Served	% Served	Average	Std. Dev.	LOS
NB	Left Turn	8	7	92.5%	22.9	6.9	C
	Through						
	Right Turn	6	6	106.7%	12.3	6.3	B
	Subtotal	**14**	**14**	**98.6%**	**17.8**	**5.7**	**C**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	908	901	99.3%	2.2	0.1	A
	Right Turn	9	9	103.3%	2.1	0.6	A
	Subtotal	**917**	**911**	**99.3%**	**2.2**	**0.1**	**A**
WB	Left Turn	7	7	98.6%	9.1	2.0	A
	Through	634	635	100.1%	1.7	0.2	A
	Right Turn						
	Subtotal	**641**	**642**	**100.1%**	**1.8**	**0.2**	**A**
Total		**1572**	**1566**	**99.6%**	**2.2**	**0.1**	**A**

Intersection 21 **Diamond Rd-Fowler Ln/Pleasant Valley Rd** **Signalized**

Direction	Movement	Volume (veh/hr)			Total Delay (sec/veh)		
		Demand	Served	% Served	Average	Std. Dev.	LOS
NB	Left Turn	82	88	107.3%	26.7	2.9	C
	Through	36	34	93.3%	26.3	2.4	C
	Right Turn	36	34	93.6%	11.1	1.6	B
	Subtotal	**154**	**155**	**100.8%**	**23.2**	**2.2**	**C**
SB	Left Turn	169	171	101.2%	31.4	1.8	C
	Through	38	34	89.5%	26.8	3.9	C
	Right Turn	120	119	99.3%	10.7	1.4	B
	Subtotal	**327**	**324**	**99.1%**	**23.3**	**1.5**	**C**
EB	Left Turn	118	116	98.4%	30.3	1.7	C
	Through	705	698	99.0%	13.3	1.4	B
	Right Turn	104	103	98.8%	11.5	1.5	B
	Subtotal	**927**	**917**	**98.9%**	**15.2**	**1.3**	**B**
WB	Left Turn	32	35	110.3%	37.4	4.5	D
	Through	440	434	98.5%	19.4	1.2	B
	Right Turn	88	85	96.7%	8.8	0.8	A
	Subtotal	**560**	**554**	**98.9%**	**18.9**	**1.4**	**B**
Total		**1968**	**1950**	**99.1%**	**18.2**	**0.8**	**B**

SimTraffic Analysis
2035 Conditions

Intersection 1 **Missouri Flat Road/Plaza Drive** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	160	150	93.6%	52.4	9.2	D
	Through	650	648	99.7%	37.1	8.3	D
	Right Turn	350	343	98.1%	6.2	1.7	A
	Subtotal	**1160**	**1141**	**98.4%**	**29.7**	**6.0**	**C**
SB	Left Turn	70	70	100.6%	44.2	12.5	D
	Through	520	504	97.0%	40.4	23.0	D
	Right Turn	50	48	95.2%	36.3	26.4	D
	Subtotal	**640**	**622**	**97.2%**	**40.5**	**22.0**	**D**
EB	Left Turn	20	19	96.0%	30.8	4.1	C
	Through	10	10	97.0%	34.1	4.7	C
	Right Turn	100	101	101.1%	12.5	3.4	B
	Subtotal	**130**	**130**	**100.0%**	**16.8**	**3.0**	**B**
WB	Left Turn	220	214	97.0%	36.0	10.0	D
	Through	30	34	112.7%	37.6	12.2	D
	Right Turn	60	62	104.0%	24.6	10.3	C
	Subtotal	**310**	**310**	**99.9%**	**33.8**	**10.0**	**C**
Total		**2240**	**2203**	**98.4%**	**32.7**	**9.5**	**C**

Intersection 2 **Missouri Flat Road/US 50 WB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	470	468	99.5%	47.5	11.8	D
	Through	700	699	99.8%	14.4	1.6	B
	Right Turn						
	Subtotal	**1170**	**1166**	**99.7%**	**27.7**	**5.6**	**C**
SB	Left Turn						
	Through	720	679	94.3%	101.6	29.2	F
	Right Turn	120	117	97.6%	8.8	4.7	A
	Subtotal	**840**	**796**	**94.8%**	**87.9**	**25.5**	**F**
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	700	671	95.8%	129.8	44.1	F
	Through						
	Right Turn	460	441	95.9%	44.7	31.0	D
	Subtotal	**1160**	**1112**	**95.8%**	**95.9**	**38.2**	**F**
Total		**3170**	**3074**	**97.0%**	**68.1**	**17.5**	**E**

Intersection 3 **Missouri Flat Road/US 50 EB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	1070	1062	99.3%	16.8	1.2	B
	Right Turn	90	90	100.3%	3.1	0.4	A
	Subtotal	**1160**	**1153**	**99.4%**	**15.7**	**1.1**	**B**
SB	Left Turn	210	196	93.3%	61.0	12.2	E
	Through	1210	1163	96.1%	46.2	4.5	D
	Right Turn						
	Subtotal	**1420**	**1359**	**95.7%**	**48.3**	**5.1**	**D**
EB	Left Turn	100	100	99.9%	19.5	2.1	B
	Through	10	11	109.0%	25.8	3.9	C
	Right Turn	520	522	100.4%	26.7	3.3	C
	Subtotal	**630**	**633**	**100.5%**	**25.5**	**2.9**	**C**
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		**3210**	**3145**	**98.0%**	**31.8**	**2.6**	**C**

Intersection 4 **Missouri Flat Road/Mother Lode Drive** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	40	39	98.3%	74.9	22.6	E
	Through	960	953	99.3%	43.0	18.0	D
	Right Turn	640	645	100.8%	19.4	2.2	B
	Subtotal	**1640**	**1638**	**99.8%**	**34.5**	**11.5**	**C**
SB	Left Turn						
	Through	1640	1582	96.5%	10.6	0.5	B
	Right Turn	90	89	98.6%	1.3	0.1	A
	Subtotal	**1730**	**1671**	**96.6%**	**10.1**	**0.5**	**B**
EB	Left Turn	200	201	100.7%	46.1	3.7	D
	Through						
	Right Turn	50	54	108.8%	21.4	3.9	C
	Subtotal	**250**	**256**	**102.3%**	**40.9**	**3.6**	**D**
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		**3620**	**3564**	**98.4%**	**23.5**	**5.2**	**C**

Intersection 5 **Missouri Flat Road/Forni Road** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	80	77	96.3%	74.9	8.7	E
	Through	1140	1127	98.9%	53.3	6.5	D
	Right Turn	100	100	99.9%	29.7	5.3	C
	Subtotal	**1320**	**1304**	**98.8%**	**52.7**	**6.4**	**D**
SB	Left Turn	290	277	95.6%	74.1	7.1	E
	Through	1140	1088	95.4%	30.5	2.2	C
	Right Turn	260	254	97.6%	19.3	1.6	B
	Subtotal	**1690**	**1619**	**95.8%**	**36.3**	**2.9**	**D**
EB	Left Turn	300	316	105.4%	66.5	5.3	E
	Through	90	92	102.7%	49.1	5.0	D
	Right Turn	60	59	98.2%	10.4	1.2	B
	Subtotal	**450**	**467**	**103.9%**	**56.0**	**3.1**	**E**
WB	Left Turn	70	71	100.9%	61.9	5.0	E
	Through	60	65	107.8%	50.6	3.6	D
	Right Turn	190	201	105.8%	1.7	0.1	A
	Subtotal	**320**	**336**	**105.1%**	**23.7**	**1.5**	**C**
Total		**3780**	**3727**	**98.6%**	**43.4**	**3.1**	**D**

Intersection 6 **Missouri Flat Road/Golden Center Drive** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	40	40	100.0%	65.3	7.4	E
	Through	1290	1265	98.1%	25.3	2.4	C
	Right Turn	110	109	98.6%	21.8	3.5	C
	Subtotal	**1440**	**1414**	**98.2%**	**26.2**	**2.5**	**C**
SB	Left Turn	90	85	94.0%	75.2	7.8	E
	Through	1170	1121	95.8%	28.3	4.1	C
	Right Turn	10	8	84.0%	7.9	0.8	A
	Subtotal	**1270**	**1214**	**95.6%**	**31.4**	**3.7**	**C**
EB	Left Turn	10	10	97.0%	43.2	9.6	D
	Through	10	9	91.0%	37.4	11.0	D
	Right Turn	20	20	100.5%	18.8	5.0	B
	Subtotal	**40**	**39**	**97.3%**	**29.3**	**3.7**	**C**
WB	Left Turn	70	69	98.7%	40.4	4.6	D
	Through	10	11	111.0%	44.3	6.7	D
	Right Turn	10	10	104.0%	22.8	8.1	C
	Subtotal	**90**	**91**	**100.7%**	**39.0**	**3.3**	**D**
Total		**2840**	**2757**	**97.1%**	**29.0**	**2.3**	**C**

Intersection 7 **Missouri Flat Road-Oakdell Drive/China Garden Drive** **Unsignalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	930	900	96.8%	5.4	0.6	A
	Right Turn	20	21	102.5%	3.5	0.5	A
	Subtotal	**950**	**921**	**96.9%**	**5.4**	**0.5**	**A**
SB	Left Turn	80	73	90.6%	15.5	2.4	C
	Through	480	470	97.9%	1.4	0.1	A
	Right Turn						
	Subtotal	**560**	**542**	**96.8%**	**3.3**	**0.4**	**A**
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	10	11	110.0%	67.3	33.5	F
	Through						
	Right Turn	30	30	98.7%	27.8	20.0	D
	Subtotal	**40**	**41**	**101.5%**	**38.6**	**23.0**	**E**
Total		**1550**	**1504**	**97.0%**	**5.5**	**0.9**	**A**

Intersection 8 **Missouri Flat Road-Sierra View Drive/Pleasant Valley Rd** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	60	56	93.3%	23.3	2.1	C
	Through						
	Right Turn	180	182	101.2%	8.5	0.8	A
	Subtotal	**240**	**238**	**99.3%**	**12.0**	**0.7**	**B**
EB	Left Turn	410	391	95.3%	66.5	20.4	E
	Through	270	258	95.7%	50.5	17.3	D
	Right Turn						
	Subtotal	**680**	**649**	**95.4%**	**60.2**	**18.9**	**E**
WB	Left Turn						
	Through	400	381	95.2%	25.4	1.8	C
	Right Turn	450	436	97.0%	8.2	0.6	A
	Subtotal	**850**	**817**	**96.2%**	**16.2**	**1.2**	**B**
Total		**1770**	**1705**	**96.3%**	**32.3**	**7.4**	**C**

Intersection 9 **SR 49-Patterson Drive/Union Mine Road** **Unsignalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	520	435	83.6%	373.7	101.2	F
	Right Turn	30	29	95.3%	377.7	111.5	F
	Subtotal	**550**	**463**	**84.2%**	**373.9**	**101.6**	**F**
SB	Left Turn	130	133	101.9%	6.0	0.7	A
	Through	170	193	113.5%	3.9	0.6	A
	Right Turn						
	Subtotal	**300**	**326**	**108.5%**	**4.7**	**0.6**	**A**
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	20	20	98.0%	31.6	19.2	D
	Through						
	Right Turn	150	151	100.9%	26.9	18.0	D
	Subtotal	**170**	**171**	**100.5%**	**27.4**	**18.0**	**D**
Total		**1020**	**960**	**94.1%**	**186.9**	**47.9**	**F**

Intersection 10 **SR 49-Wrangler Rd/Pleasant Valley Rd** **Unsignalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	280	238	84.9%	156.9	39.0	F
	Through						
	Right Turn	390	327	83.7%	151.8	35.9	F
	Subtotal	**670**	**564**	**84.2%**	**153.9**	**36.8**	**F**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	320	322	100.7%	38.6	21.6	E
	Right Turn	90	91	101.6%	36.0	22.1	E
	Subtotal	**410**	**414**	**100.9%**	**38.0**	**21.7**	**E**
WB	Left Turn	220	224	101.7%	12.5	1.3	B
	Through	310	313	100.9%	10.7	1.0	B
	Right Turn						
	Subtotal	**530**	**536**	**101.2%**	**11.5**	**1.0**	**B**
Total		**1610**	**1514**	**94.1%**	**71.9**	**13.2**	**F**

Intersection 11 **Forni Road/Pleasant Valley Rd** **Unsignalized**

Direction	Movement	Volume (veh/hr)			Total Delay (sec/veh)		
		Demand	Served	% Served	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	50	45	89.6%	404.2	248.7	F
	Through						
	Right Turn	150	145	96.3%	339.3	208.7	F
	Subtotal	**200**	**189**	**94.7%**	**354.7**	**217.8**	**F**
EB	Left Turn	240	222	92.6%	10.8	1.7	B
	Through	460	434	94.3%	7.2	0.9	A
	Right Turn						
	Subtotal	**700**	**656**	**93.7%**	**8.4**	**1.1**	**A**
WB	Left Turn						
	Through	370	395	106.6%	3.7	0.3	A
	Right Turn	40	40	99.0%	3.4	0.6	A
	Subtotal	**410**	**434**	**105.9%**	**3.7**	**0.2**	**A**
Total		**1310**	**1279**	**97.7%**	**56.6**	**29.1**	**F**

Intersection 12 **Oro Lane-Faith Lane/Pleasant Valley Rd** **Signalized**

Direction	Movement	Volume (veh/hr)			Total Delay (sec/veh)		
		Demand	Served	% Served	Average	Std. Dev.	LOS
NB	Left Turn	100	98	98.4%	21.0	1.6	C
	Through	10	9	91.0%	20.6	3.5	C
	Right Turn	210	211	100.2%	7.8	3.6	A
	Subtotal	**320**	**318**	**99.4%**	**12.2**	**2.6**	**B**
SB	Left Turn	30	28	93.0%	26.8	12.9	C
	Through	10	9	89.0%	25.8	21.7	C
	Right Turn	20	21	107.0%	12.0	9.6	B
	Subtotal	**60**	**58**	**97.0%**	**21.5**	**12.2**	**C**
EB	Left Turn	10	10	101.0%	39.3	25.8	D
	Through	340	328	96.6%	23.8	12.7	C
	Right Turn	170	160	94.2%	11.9	7.7	B
	Subtotal	**520**	**499**	**95.9%**	**20.3**	**11.5**	**C**
WB	Left Turn	260	263	101.1%	32.1	7.7	C
	Through	280	320	114.4%	21.4	9.3	C
	Right Turn	10	10	95.0%	16.6	14.5	B
	Subtotal	**550**	**593**	**107.8%**	**26.1**	**8.4**	**C**
Total		**1450**	**1467**	**101.2%**	**21.0**	**7.7**	**C**

Intersection 13 **Dublin Road/Pleasant Valley Rd** **Unsignalized**

Direction	Movement	Volume (veh/hr)			Total Delay (sec/veh)		
		Demand	Served	% Served	Average	Std. Dev.	LOS
NB	Left Turn	30	32	105.7%	85.7	104.4	F
	Through						
	Right Turn	30	32	105.3%	77.5	106.5	F
	Subtotal	**60**	**63**	**105.5%**	**81.6**	**105.7**	**F**
SB	Left Turn	10	10	100.0%	58.9	71.8	F
	Through						
	Right Turn	10	10	98.0%	21.7	35.8	C
	Subtotal	**20**	**20**	**99.0%**	**40.4**	**48.5**	**E**
EB	Left Turn	10	10	98.0%	9.0	6.6	A
	Through	530	533	100.5%	4.4	1.7	A
	Right Turn	50	49	97.0%	2.9	2.1	A
	Subtotal	**590**	**591**	**100.2%**	**4.4**	**1.8**	**A**
WB	Left Turn	50	48	96.0%	10.5	4.9	B
	Through	520	523	100.5%	8.4	4.9	A
	Right Turn	10	10	101.0%	7.4	6.2	A
	Subtotal	**580**	**581**	**100.1%**	**8.5**	**4.8**	**A**
Total		**1250**	**1255**	**100.4%**	**10.5**	**7.3**	**B**

Intersection 14 **Sierra View Drive/Pleasant Valley Rd** **Unsignalized**

Direction	Movement	Volume (veh/hr)			Total Delay (sec/veh)		
		Demand	Served	% Served	Average	Std. Dev.	LOS
NB	Left Turn	10	0	0.0%	0.0	0.0	A
	Through						
	Right Turn	20	0	0.0%	0.0	0.0	A
	Subtotal	**30**	**0**	**0.0%**	**0.0**	**0.0**	**A**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	550	534	97.1%	2.3	0.3	A
	Right Turn	10	8	76.0%	1.3	0.8	A
	Subtotal	**560**	**542**	**96.7%**	**2.3**	**0.3**	**A**
WB	Left Turn	10	9	91.0%	5.4	1.5	A
	Through	570	576	101.1%	2.8	0.2	A
	Right Turn						
	Subtotal	**580**	**585**	**100.9%**	**2.8**	**0.2**	**A**
Total		**1170**	**1127**	**96.3%**	**2.5**	**0.2**	**A**

Intersection 15 **Patterson Drive/Pleasant Valley Rd** **Signalized**

Direction	Movement	Volume (veh/hr)			Total Delay (sec/veh)		
		Demand	Served	% Served	Average	Std. Dev.	LOS
NB	Left Turn	100	103	102.5%	14.3	1.1	B
	Through						
	Right Turn	190	185	97.2%	11.7	1.0	B
	Subtotal	**290**	**287**	**99.0%**	**12.6**	**0.8**	**B**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	500	481	96.2%	12.5	0.8	B
	Right Turn	60	60	100.5%	2.5	0.3	A
	Subtotal	**560**	**541**	**96.7%**	**11.4**	**0.8**	**B**
WB	Left Turn	60	56	93.0%	24.0	2.6	C
	Through	480	483	100.7%	8.5	0.7	A
	Right Turn						
	Subtotal	**540**	**539**	**99.9%**	**10.1**	**0.5**	**B**
Total		**1390**	**1368**	**98.4%**	**11.1**	**0.4**	**B**

Intersection 16 **Wrangler Road/Pleasant Valley Rd** **Unsignalized**

Direction	Movement	Volume (veh/hr)			Total Delay (sec/veh)		
		Demand	Served	% Served	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn	5	6	126.0%	22.2	29.7	C
	Subtotal	**5**	**6**	**126.0%**	**22.2**	**29.7**	**C**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	650	659	101.3%	6.6	3.4	A
	Right Turn						
	Subtotal	**650**	**659**	**101.3%**	**6.6**	**3.4**	**A**
WB	Left Turn						
	Through	540	530	98.2%	0.3	0.0	A
	Right Turn						
	Subtotal	**540**	**530**	**98.2%**	**0.3**	**0.0**	**A**
Total		**1195**	**1195**	**100.0%**	**3.8**	**1.9**	**A**

Intersection 17 **Commerce Way/** **Unsignalized**

Direction	Movement	Volume (veh/hr)			Total Delay (sec/veh)		
		Demand	Served	% Served	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	20	20	101.0%	57.6	58.0	F
	Through						
	Right Turn	20	22	111.5%	19.8	23.6	C
	Subtotal	**40**	**43**	**106.3%**	**38.3**	**40.8**	**E**
EB	Left Turn	40	36	89.8%	8.4	2.1	A
	Through	615	591	96.0%	5.6	3.5	A
	Right Turn						
	Subtotal	**655**	**627**	**95.6%**	**5.8**	**3.4**	**A**
WB	Left Turn						
	Through	520	507	97.5%	2.7	0.1	A
	Right Turn	80	78	97.0%	2.2	0.3	A
	Subtotal	**600**	**585**	**97.4%**	**2.6**	**0.1**	**A**
Total		**1295**	**1254**	**96.8%**	**5.5**	**3.1**	**A**

Intersection 18 **Faith Lane/Pleasant Valley Rd** **Unsignalized**

Direction	Movement	Volume (veh/hr)			Total Delay (sec/veh)		
		Demand	Served	% Served	Average	Std. Dev.	LOS
NB	Left Turn	20	21	103.0%	15.7	4.1	C
	Through						
	Right Turn	10	11	114.0%	4.2	1.1	A
	Subtotal	**30**	**32**	**106.7%**	**11.7**	**3.1**	**B**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	300	304	101.4%	2.9	0.3	A
	Right Turn	10	10	103.0%	1.6	0.5	A
	Subtotal	**310**	**314**	**101.4%**	**2.8**	**0.3**	**A**
WB	Left Turn	10	8	83.0%	3.3	1.3	A
	Through	810	786	97.1%	0.8	0.1	A
	Right Turn						
	Subtotal	**820**	**795**	**96.9%**	**0.8**	**0.1**	**A**
Total		**1160**	**1141**	**98.4%**	**1.7**	**0.1**	**A**

Intersection 19 **China Garden Road/Pleasant Valley Rd** **Unsignalized**

Direction	Movement	Volume (veh/hr)			Total Delay (sec/veh)		
		Demand	Served	% Served	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	10	11	108.0%	15.8	3.7	C
	Through						
	Right Turn	10	12	119.0%	8.0	2.1	A
	Subtotal	**20**	**23**	**113.5%**	**11.6**	**1.9**	**B**
EB	Left Turn	20	17	84.5%	8.1	1.8	A
	Through	290	281	96.9%	1.2	0.5	A
	Right Turn						
	Subtotal	**310**	**298**	**96.1%**	**1.6**	**0.6**	**A**
WB	Left Turn						
	Through	810	783	96.7%	2.6	0.1	A
	Right Turn	60	57	94.5%	2.2	0.3	A
	Subtotal	**870**	**840**	**96.6%**	**2.6**	**0.1**	**A**
Total		**1200**	**1161**	**96.7%**	**2.5**	**0.2**	**A**

Intersection 20 **Diamond Meadows Dr/Pleasant Valley Rd** **Unsignalized**

Direction	Movement	Volume (veh/hr)			Total Delay (sec/veh)		
		Demand	Served	% Served	Average	Std. Dev.	LOS
NB	Left Turn	10	9	92.0%	16.2	6.6	C
	Through						
	Right Turn	10	9	88.0%	4.5	1.5	A
	Subtotal	**20**	**18**	**90.0%**	**10.8**	**3.7**	**B**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	290	285	98.3%	1.2	0.2	A
	Right Turn	10	9	85.0%	0.6	0.5	A
	Subtotal	**300**	**294**	**97.8%**	**1.2**	**0.2**	**A**
WB	Left Turn	10	8	83.0%	3.5	0.7	A
	Through	850	811	95.4%	1.6	0.1	A
	Right Turn						
	Subtotal	**860**	**819**	**95.2%**	**1.6**	**0.1**	**A**
Total		**1180**	**1131**	**95.8%**	**1.7**	**0.1**	**A**

Intersection 21 **Diamond Road/Pleasant Valley Rd** **Signalized**

Direction	Movement	Volume (veh/hr)			Total Delay (sec/veh)		
		Demand	Served	% Served	Average	Std. Dev.	LOS
NB	Left Turn	100	98	97.6%	54.6	6.1	D
	Through	30	31	103.3%	59.4	10.8	E
	Right Turn	20	21	104.5%	14.0	5.1	B
	Subtotal	**150**	**150**	**99.7%**	**49.9**	**7.2**	**E**
SB	Left Turn	400	397	99.2%	53.0	8.4	D
	Through	20	19	96.5%	36.3	5.2	D
	Right Turn	220	211	95.9%	21.2	3.5	C
	Subtotal	**640**	**627**	**98.0%**	**41.8**	**6.4**	**E**
EB	Left Turn	130	121	93.2%	62.7	9.1	E
	Through	130	135	103.9%	22.2	2.4	C
	Right Turn	40	34	84.3%	5.1	1.8	A
	Subtotal	**300**	**290**	**96.6%**	**37.2**	**4.9**	**E**
WB	Left Turn	20	19	95.0%	184.5	61.9	F
	Through	530	499	94.2%	164.7	57.7	F
	Right Turn	490	484	98.8%	141.5	56.7	F
	Subtotal	**1040**	**1002**	**96.4%**	**153.9**	**57.3**	**F**
Total		**2130**	**2069**	**97.1%**	**96.0**	**28.0**	**F**

Intersection 22 **Missouri Flat Road/Missouri Flat Road** **Signalized**

Direction	Movement	Volume (veh/hr)			Total Delay (sec/veh)		
		Demand	Served	% Served	Average	Std. Dev.	LOS
NB	Left Turn	710	690	97.2%	22.6	2.9	C
	Through	10	12	121.0%	16.4	5.6	B
	Right Turn	240	229	95.3%	8.7	1.2	A
	Subtotal	**960**	**931**	**96.9%**	**19.1**	**2.4**	**C**
SB	Left Turn	10	10	104.0%	33.4	5.3	C
	Through	10	10	103.0%	37.2	8.0	D
	Right Turn	10	11	109.0%	11.4	2.3	B
	Subtotal	**30**	**32**	**105.3%**	**28.0**	**2.4**	**D**
EB	Left Turn	10	9	94.0%	42.4	10.9	D
	Through	800	776	97.0%	28.3	3.3	C
	Right Turn	450	429	95.4%	10.0	2.1	A
	Subtotal	**1260**	**1215**	**96.4%**	**22.0**	**2.8**	**C**
WB	Left Turn	100	101	101.3%	39.0	5.8	D
	Through	720	717	99.5%	14.3	1.3	B
	Right Turn	10	9	89.0%	5.0	1.5	A
	Subtotal	**830**	**827**	**99.6%**	**17.3**	**1.7**	**C**
Total		**3080**	**3003**	**97.5%**	**19.9**	**1.7**	**C**

Intersection 1 **Missouri Flat Road/Plaza Drive** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	330	252	76.2%	118.6	20.3	F
	Through	570	475	83.3%	83.6	12.0	F
	Right Turn	460	393	85.4%	11.3	3.1	B
	Subtotal	**1360**	**1119**	**82.3%**	**66.0**	**9.1**	**E**
SB	Left Turn	100	46	46.2%	2051.3	467.2	F
	Through	660	294	44.5%	2174.0	484.6	F
	Right Turn	60	27	44.2%	2146.9	479.2	F
	Subtotal	**820**	**366**	**44.7%**	**2156.4**	**481.2**	**F**
EB	Left Turn	70	64	91.1%	94.6	28.0	F
	Through	40	40	100.0%	91.5	26.7	F
	Right Turn	350	345	98.6%	92.0	22.0	F
	Subtotal	**460**	**449**	**97.6%**	**92.3**	**23.1**	**F**
WB	Left Turn	430	221	51.3%	619.2	78.2	F
	Through	40	19	47.8%	657.6	125.1	F
	Right Turn	90	48	53.1%	631.2	117.4	F
	Subtotal	**560**	**288**	**51.4%**	**622.4**	**83.2**	**F**
Total		**3200**	**2222**	**69.4%**	**480.6**	**55.0**	**F**

Intersection 2 **Missouri Flat Road/US 50 WB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	580	446	76.9%	60.0	5.1	E
	Through	910	746	82.0%	26.4	4.0	C
	Right Turn						
	Subtotal	**1490**	**1192**	**80.0%**	**39.0**	**3.8**	**D**
SB	Left Turn						
	Through	1250	763	61.1%	144.0	7.2	F
	Right Turn	190	114	60.2%	15.3	2.3	B
	Subtotal	**1440**	**878**	**61.0%**	**127.2**	**6.5**	**F**
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	820	705	85.9%	287.5	32.1	F
	Through						
	Right Turn	450	393	87.3%	205.1	32.8	F
	Subtotal	**1270**	**1098**	**86.4%**	**258.1**	**29.2**	**F**
Total		**4200**	**3167**	**75.4%**	**139.4**	**10.7**	**F**

Intersection 3 **Missouri Flat Road/US 50 EB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	1270	1007	79.3%	24.7	2.0	C
	Right Turn	80	65	81.4%	2.5	0.6	A
	Subtotal	**1350**	**1072**	**79.4%**	**23.4**	**2.0**	**C**
SB	Left Turn	380	267	70.3%	59.7	4.0	E
	Through	1690	1219	72.1%	47.5	1.9	D
	Right Turn						
	Subtotal	**2070**	**1486**	**71.8%**	**49.7**	**2.0**	**D**
EB	Left Turn	220	185	84.0%	205.9	50.6	F
	Through						
	Right Turn	690	603	87.3%	271.7	48.3	F
	Subtotal	**910**	**787**	**86.5%**	**256.7**	**44.9**	**F**
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		**4330**	**3346**	**77.3%**	**89.8**	**10.1**	**F**

Intersection 4 **Missouri Flat Road/Mother Lode Drive** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	100	77	77.1%	296.5	83.8	F
	Through	1190	1068	89.7%	149.4	49.3	F
	Right Turn	720	647	89.9%	45.2	14.5	D
	Subtotal	**2010**	**1792**	**89.2%**	**118.0**	**37.8**	**F**
SB	Left Turn						
	Through	2210	1691	76.5%	10.7	0.4	B
	Right Turn	170	131	77.2%	1.4	0.1	A
	Subtotal	**2380**	**1823**	**76.6%**	**10.0**	**0.4**	**A**
EB	Left Turn	160	38	23.5%	3512.4	1253.4	F
	Through						
	Right Turn	70	20	28.4%	3033.8	1176.7	F
	Subtotal	**230**	**58**	**25.0%**	**3335.0**	**1209.7**	**F**
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		**4620**	**3672**	**79.5%**	**109.0**	**18.1**	**F**

Intersection 5 **Missouri Flat Road/Forni Road** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	110	100	90.5%	153.5	38.2	F
	Through	1300	1243	95.6%	77.0	19.1	E
	Right Turn	60	60	100.2%	53.9	15.3	D
	Subtotal	**1470**	**1402**	**95.4%**	**81.6**	**18.3**	**F**
SB	Left Turn	170	127	74.9%	87.4	14.0	F
	Through	1760	1299	73.8%	43.5	10.4	D
	Right Turn	350	266	76.1%	31.0	9.9	C
	Subtotal	**2280**	**1693**	**74.2%**	**44.9**	**10.6**	**D**
EB	Left Turn	560	433	77.2%	680.8	268.3	F
	Through	50	36	71.2%	639.1	294.7	F
	Right Turn	120	94	78.1%	585.2	249.8	F
	Subtotal	**730**	**562**	**77.0%**	**661.8**	**265.2**	**F**
WB	Left Turn	80	82	102.5%	63.0	11.1	E
	Through	50	53	106.2%	57.8	7.5	E
	Right Turn	190	192	100.8%	3.6	2.7	A
	Subtotal	**320**	**327**	**102.1%**	**27.4**	**6.1**	**C**
Total		**4800**	**3983**	**83.0%**	**141.8**	**37.2**	**F**

Intersection 6 **Missouri Flat Road/Golden Center Drive** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	80	68	85.1%	248.1	86.3	F
	Through	1370	1320	96.3%	112.7	57.3	F
	Right Turn	80	73	91.0%	104.5	51.4	F
	Subtotal	**1530**	**1461**	**95.5%**	**118.8**	**57.5**	**F**
SB	Left Turn	70	46	65.6%	104.9	15.3	F
	Through	1880	1430	76.1%	49.7	12.5	D
	Right Turn	10	7	74.0%	18.0	5.9	B
	Subtotal	**1960**	**1484**	**75.7%**	**51.2**	**12.3**	**D**
EB	Left Turn	30	32	105.3%	61.7	19.5	E
	Through	10	9	93.0%	56.4	19.9	E
	Right Turn	60	63	105.2%	37.2	14.3	D
	Subtotal	**100**	**104**	**104.0%**	**46.2**	**16.4**	**D**
WB	Left Turn	130	127	97.3%	59.4	20.8	E
	Through	20	20	100.0%	60.4	29.1	E
	Right Turn	60	63	105.5%	49.9	21.0	D
	Subtotal	**210**	**210**	**99.9%**	**56.7**	**21.6**	**E**
Total		**3800**	**3258**	**85.7%**	**81.1**	**29.6**	**F**

Intersection 7 **Missouri Flat Road-Oakdell Drive/China Garden Drive** **Unsignalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	720	709	98.4%	14.0	22.6	B
	Right Turn	30	33	109.3%	14.5	26.9	B
	Subtotal	**750**	**742**	**98.9%**	**14.0**	**22.8**	**B**
SB	Left Turn	60	48	79.7%	42.7	83.2	E
	Through	1110	911	82.0%	3.6	4.6	A
	Right Turn						
	Subtotal	**1170**	**958**	**81.9%**	**5.3**	**7.3**	**A**
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	20	19	94.5%	182.7	165.3	F
	Through						
	Right Turn	90	83	91.9%	108.9	94.0	F
	Subtotal	**110**	**102**	**92.4%**	**120.6**	**100.6**	**F**
Total		**2030**	**1802**	**88.7%**	**14.9**	**16.8**	**B**

Intersection 8 **Missouri Flat Road-Sierra View Drive/Pleasant Valley Rd** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	470	387	82.3%	21.9	1.4	C
	Through						
	Right Turn	430	354	82.3%	10.5	0.9	B
	Subtotal	**900**	**741**	**82.3%**	**16.4**	**1.1**	**B**
EB	Left Turn	280	271	96.7%	107.0	19.5	F
	Through	390	375	96.2%	56.3	12.8	E
	Right Turn						
	Subtotal	**670**	**646**	**96.4%**	**77.6**	**16.2**	**E**
WB	Left Turn						
	Through	310	308	99.4%	22.7	0.9	C
	Right Turn	230	233	101.3%	5.5	0.3	A
	Subtotal	**540**	**541**	**100.2%**	**15.3**	**0.5**	**B**
Total		**2110**	**1928**	**91.4%**	**36.6**	**5.6**	**D**

Intersection 9 **SR 49-Patterson Drive/Union Mine Road** **Unsignalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	300	301	100.4%	2.5	0.2	A
	Right Turn	10	12	122.0%	2.2	0.9	A
	Subtotal	**310**	**314**	**101.1%**	**2.5**	**0.2**	**A**
SB	Left Turn	120	113	94.0%	3.9	0.4	A
	Through	500	473	94.6%	3.1	0.3	A
	Right Turn						
	Subtotal	**620**	**586**	**94.5%**	**3.2**	**0.3**	**A**
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	20	18	87.5%	14.1	2.1	B
	Through						
	Right Turn	80	79	98.3%	4.4	0.8	A
	Subtotal	**100**	**96**	**96.1%**	**6.2**	**0.8**	**A**
Total		**1030**	**995**	**96.6%**	**3.3**	**0.2**	**A**

Intersection 10 **SR 49-Wrangler Rd/Pleasant Valley Rd** **Unsignalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	120	120	100.3%	16.7	4.1	C
	Through						
	Right Turn	270	269	99.4%	14.2	4.6	B
	Subtotal	**390**	**389**	**99.7%**	**15.0**	**4.4**	**B**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	380	331	87.2%	386.4	91.9	F
	Right Turn	290	242	83.4%	382.3	90.7	F
	Subtotal	**670**	**573**	**85.6%**	**384.6**	**91.3**	**F**
WB	Left Turn	360	343	95.3%	16.2	1.6	C
	Through	350	335	95.8%	10.9	1.0	B
	Right Turn						
	Subtotal	**710**	**678**	**95.5%**	**13.6**	**1.3**	**B**
Total		**1770**	**1640**	**92.7%**	**143.4**	**30.8**	**F**

Intersection 11 **Forni Road/Pleasant Valley Rd** **Unsignalized**

Direction	Movement	Volume (veh/hr)			Total Delay (sec/veh)		
		Demand	Served	% Served	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	30	30	98.3%	125.7	145.3	F
	Through						
	Right Turn	240	237	98.5%	94.2	131.7	F
	Subtotal	**270**	**266**	**98.5%**	**98.0**	**134.7**	**F**
EB	Left Turn	170	149	87.6%	10.8	1.9	B
	Through	500	473	94.5%	6.4	1.5	A
	Right Turn						
	Subtotal	**670**	**621**	**92.7%**	**7.4**	**1.6**	**A**
WB	Left Turn						
	Through	460	446	97.0%	4.1	0.4	A
	Right Turn	40	40	99.0%	3.5	0.7	A
	Subtotal	**500**	**486**	**97.2%**	**4.1**	**0.4**	**A**
Total		**1440**	**1373**	**95.4%**	**23.9**	**26.0**	**C**

Intersection 12 **Oro Lane-Faith Lane/Pleasant Valley Rd** **Signalized**

Direction	Movement	Volume (veh/hr)			Total Delay (sec/veh)		
		Demand	Served	% Served	Average	Std. Dev.	LOS
NB	Left Turn	80	73	90.6%	17.1	1.8	B
	Through	10	11	108.0%	16.8	6.5	B
	Right Turn	160	154	96.2%	5.9	0.8	A
	Subtotal	**250**	**237**	**94.9%**	**9.8**	**1.0**	**A**
SB	Left Turn	20	20	100.0%	19.2	3.8	B
	Through	10	9	93.0%	14.7	3.6	B
	Right Turn	20	18	91.5%	6.3	2.2	A
	Subtotal	**50**	**48**	**95.2%**	**13.4**	**2.2**	**B**
EB	Left Turn	30	26	87.3%	28.2	3.0	C
	Through	410	422	103.0%	16.9	2.0	B
	Right Turn	90	83	92.6%	7.3	1.2	A
	Subtotal	**530**	**532**	**100.3%**	**15.9**	**1.8**	**B**
WB	Left Turn	160	141	88.0%	22.8	2.0	C
	Through	360	362	100.4%	14.0	2.4	B
	Right Turn	30	28	92.7%	8.7	3.4	A
	Subtotal	**550**	**530**	**96.4%**	**16.1**	**1.9**	**B**
Total		**1380**	**1347**	**97.6%**	**14.8**	**1.0**	**B**

Intersection 13 **Dublin Road/Pleasant Valley Rd** **Unsignalized**

Direction	Movement	Volume (veh/hr)			Total Delay (sec/veh)		
		Demand	Served	% Served	Average	Std. Dev.	LOS
NB	Left Turn	10	11	110.0%	17.6	8.6	C
	Through						
	Right Turn	10	10	101.0%	6.4	2.2	A
	Subtotal	**20**	**21**	**105.5%**	**12.3**	**5.0**	**B**
SB	Left Turn	10	9	93.0%	14.6	6.6	B
	Through						
	Right Turn	10	9	89.0%	6.0	1.9	A
	Subtotal	**20**	**18**	**91.0%**	**10.4**	**4.4**	**B**
EB	Left Turn	10	11	108.0%	5.7	1.5	A
	Through	580	578	99.7%	3.1	0.1	A
	Right Turn	10	10	104.0%	1.8	1.4	A
	Subtotal	**600**	**599**	**99.9%**	**3.1**	**0.2**	**A**
WB	Left Turn	20	18	90.0%	6.5	1.6	A
	Through	540	493	91.2%	3.6	0.3	A
	Right Turn	10	9	89.0%	2.2	1.1	A
	Subtotal	**570**	**520**	**91.1%**	**3.7**	**0.3**	**A**
Total		**1210**	**1158**	**95.7%**	**3.6**	**0.3**	**A**

Intersection 14 **Sierra View Drive/Pleasant Valley Rd** **Unsignalized**

Direction	Movement	Volume (veh/hr)			Total Delay (sec/veh)		
		Demand	Served	% Served	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	610	585	95.9%	2.1	0.2	A
	Right Turn	10	9	93.0%	1.1	0.4	A
	Subtotal	**620**	**594**	**95.8%**	**2.1**	**0.2**	**A**
WB	Left Turn	20	15	75.5%	4.8	1.0	A
	Through	570	533	93.5%	2.2	0.2	A
	Right Turn						
	Subtotal	**590**	**548**	**92.9%**	**2.3**	**0.1**	**A**
Total		**1210**	**1142**	**94.4%**	**2.2**	**0.1**	**A**

Intersection 15 **Patterson Drive/Pleasant Valley Rd** **Signalized**

Direction	Movement	Volume (veh/hr)			Total Delay (sec/veh)		
		Demand	Served	% Served	Average	Std. Dev.	LOS
NB	Left Turn	90	84	93.4%	17.7	1.8	B
	Through						
	Right Turn	140	147	105.0%	11.6	1.0	B
	Subtotal	**230**	**231**	**100.5%**	**13.8**	**1.0**	**B**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	500	483	96.7%	15.3	1.2	B
	Right Turn	110	108	98.0%	4.0	0.5	A
	Subtotal	**610**	**591**	**96.9%**	**13.2**	**1.1**	**B**
WB	Left Turn	180	152	84.6%	21.8	1.4	C
	Through	510	491	96.3%	5.7	0.6	A
	Right Turn						
	Subtotal	**690**	**643**	**93.2%**	**9.5**	**0.6**	**A**
Total		**1530**	**1466**	**95.8%**	**11.7**	**0.6**	**B**

Intersection 16 **Wrangler Road/Pleasant Valley Rd** **Unsignalized**

Direction	Movement	Volume (veh/hr)			Total Delay (sec/veh)		
		Demand	Served	% Served	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn	5	3	68.0%	82.8	148.5	F
	Subtotal	**5**	**3**	**68.0%**	**82.8**	**148.5**	**F**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	640	623	97.3%	21.4	15.2	C
	Right Turn	3	4	116.7%	10.9	14.0	B
	Subtotal	**643**	**626**	**97.4%**	**21.3**	**15.1**	**C**
WB	Left Turn						
	Through	720	644	89.5%	0.3	0.0	A
	Right Turn						
	Subtotal	**720**	**644**	**89.5%**	**0.3**	**0.0**	**A**
Total		**1368**	**1274**	**93.1%**	**11.0**	**7.8**	**B**

Intersection 17 **Commerce Way/** **Unsignalized**

Direction	Movement	Volume (veh/hr)			Total Delay (sec/veh)		
		Demand	Served	% Served	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	60	48	80.0%	490.6	420.1	F
	Through						
	Right Turn	50	43	85.4%	412.0	301.9	F
	Subtotal	**110**	**91**	**82.5%**	**453.9**	**359.7**	**F**
EB	Left Turn	20	19	96.0%	14.6	9.3	B
	Through	625	602	96.3%	14.5	7.0	B
	Right Turn						
	Subtotal	**645**	**621**	**96.3%**	**14.5**	**7.0**	**B**
WB	Left Turn						
	Through	670	627	93.5%	2.3	0.1	A
	Right Turn	40	36	89.3%	1.8	0.4	A
	Subtotal	**710**	**662**	**93.3%**	**2.2**	**0.1**	**A**
Total		**1465**	**1374**	**93.8%**	**32.6**	**18.5**	**D**

Intersection 18 **Faith Lane/Pleasant Valley Rd** **Unsignalized**

Direction	Movement	Volume (veh/hr)			Total Delay (sec/veh)		
		Demand	Served	% Served	Average	Std. Dev.	LOS
NB	Left Turn	20	21	106.0%	24.0	7.0	C
	Through						
	Right Turn	30	29	98.0%	13.2	2.7	B
	Subtotal	**50**	**51**	**101.2%**	**17.5**	**4.1**	**C**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	790	693	87.7%	4.6	0.2	A
	Right Turn	90	77	85.7%	3.0	0.3	A
	Subtotal	**880**	**770**	**87.5%**	**4.4**	**0.2**	**A**
WB	Left Turn	40	37	91.3%	9.7	2.7	A
	Through	500	501	100.1%	2.3	0.5	A
	Right Turn						
	Subtotal	**540**	**537**	**99.4%**	**2.8**	**0.7**	**A**
Total		**1470**	**1357**	**92.3%**	**4.3**	**0.3**	**A**

Intersection 19 **China Garden Road/Pleasant Valley Rd** **Unsignalized**

Direction	Movement	Volume (veh/hr)			Total Delay (sec/veh)		
		Demand	Served	% Served	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	10	10	96.0%	19.3	6.4	C
	Through						
	Right Turn	20	20	99.0%	7.8	2.3	A
	Subtotal	**30**	**29**	**98.0%**	**11.4**	**2.3**	**B**
EB	Left Turn	10	8	75.0%	6.4	2.6	A
	Through	810	715	88.3%	0.6	0.2	A
	Right Turn						
	Subtotal	**820**	**723**	**88.1%**	**0.7**	**0.2**	**A**
WB	Left Turn						
	Through	520	517	99.4%	2.4	0.2	A
	Right Turn	50	52	104.6%	1.8	0.6	A
	Subtotal	**570**	**569**	**99.9%**	**2.4**	**0.2**	**A**
Total		**1420**	**1321**	**93.1%**	**1.6**	**0.2**	**A**

Intersection 20 **Diamond Meadows Dr/Pleasant Valley Rd** **Unsignalized**

Direction	Movement	Volume (veh/hr)			Total Delay (sec/veh)		
		Demand	Served	% Served	Average	Std. Dev.	LOS
NB	Left Turn	10	10	97.0%	32.2	31.7	D
	Through						
	Right Turn	10	9	91.0%	12.9	7.7	B
	Subtotal	**20**	**19**	**94.0%**	**21.9**	**17.0**	**C**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	830	734	88.4%	2.6	0.7	A
	Right Turn	10	10	97.0%	2.9	1.9	A
	Subtotal	**840**	**743**	**88.5%**	**2.6**	**0.7**	**A**
WB	Left Turn	10	8	82.0%	9.5	4.2	A
	Through	550	551	100.2%	1.8	0.4	A
	Right Turn						
	Subtotal	**560**	**559**	**99.9%**	**1.9**	**0.4**	**A**
Total		**1420**	**1321**	**93.1%**	**2.6**	**0.6**	**A**

Intersection 21 **Diamond Road/Pleasant Valley Rd** **Signalized**

Direction	Movement	Volume (veh/hr)			Total Delay (sec/veh)		
		Demand	Served	% Served	Average	Std. Dev.	LOS
NB	Left Turn	100	104	103.5%	68.0	20.1	E
	Through	40	35	88.3%	70.6	20.2	E
	Right Turn	40	45	112.0%	18.9	9.8	B
	Subtotal	**180**	**184**	**102.0%**	**56.5**	**17.2**	**F**
SB	Left Turn	500	499	99.9%	77.0	26.1	E
	Through	40	42	105.3%	52.5	19.9	D
	Right Turn	130	126	96.8%	36.0	20.0	D
	Subtotal	**670**	**667**	**99.6%**	**67.8**	**24.6**	**F**
EB	Left Turn	200	173	86.3%	64.1	9.3	E
	Through	540	479	88.6%	28.0	2.3	C
	Right Turn	120	109	90.6%	14.1	1.9	B
	Subtotal	**860**	**760**	**88.3%**	**34.3**	**3.6**	**D**
WB	Left Turn	40	42	106.0%	68.8	12.6	E
	Through	330	329	99.6%	40.8	9.9	D
	Right Turn	420	426	101.4%	17.0	8.2	B
	Subtotal	**790**	**797**	**100.9%**	**29.6**	**9.1**	**D**
Total		**2500**	**2408**	**96.3%**	**43.8**	**8.7**	**D**

Intersection 22 **Missouri Flat Road/Missouri Flat Road** **Signalized**

Direction	Movement	Volume (veh/hr)			Total Delay (sec/veh)		
		Demand	Served	% Served	Average	Std. Dev.	LOS
NB	Left Turn	610	584	95.7%	48.0	25.2	D
	Through	10	16	161.0%	22.8	22.0	C
	Right Turn	190	192	101.3%	13.8	6.4	B
	Subtotal	**810**	**792**	**97.8%**	**39.3**	**20.9**	**E**
SB	Left Turn	10	10	103.0%	55.9	36.3	E
	Through	10	8	81.0%	39.3	12.5	D
	Right Turn	10	10	97.0%	15.8	9.5	B
	Subtotal	**30**	**28**	**93.7%**	**38.0**	**16.2**	**E**
EB	Left Turn	10	9	85.0%	60.9	12.6	E
	Through	1080	944	87.4%	29.4	11.5	C
	Right Turn	860	660	76.7%	16.7	8.2	B
	Subtotal	**1950**	**1612**	**82.7%**	**24.3**	**10.0**	**C**
WB	Left Turn	200	192	96.2%	55.4	21.1	E
	Through	810	821	101.3%	22.9	16.6	C
	Right Turn	10	10	104.0%	10.3	7.0	B
	Subtotal	**1020**	**1023**	**100.3%**	**28.9**	**16.9**	**D**
Total		**3810**	**3456**	**90.7%**	**29.1**	**14.2**	**C**

Daily Roadway Segment Analysis
2035 Conditions

Daily Roadway Segment Operations – Year 2035 Conditions

Roadway	Location	Roadway Classification[1]	Number of Lanes	Volume[1]	LOS	V/C Ratio[2]
Missouri Flat Road	Mother Lode Drive to Forni Road	Arterial - Divided	4	41,600	F	1.11
	Forni Road to Golden Center Drive	Arterial - Divided	4	32,600	D	0.87
	Golden Center Drive to China Garden Road	Arterial - Undivided	4	33,800	F	1.17
	China Garden Road to Pleasant Valley Road	Arterial	2	14,100	D	0.75
Golden Chain Highway (SR 49)	South of Union Mine Road	Arterial	2	8300	C	0.44
Pleasant Valley Road	El Dorado Road to SR 49	Major Highway	2	11,400	D	0.56
	Forni Road to El Dorado Street	Arterial	2	10,300	D	0.55
	Patterson Drive to Commerce Way	Arterial	2	13,600	D	0.73
	China Garden Road to Diamond Meadows Way	Arterial	2	14,600	D	0.78
	East of Diamond Road (SR 49)	Major Highway	2	18,700	E	0.91
Diamond Road (SR 49)	North of Pleasant Valley Road	Minor Highway	2	13,300	D	0.76
Forni Road	North of Pleasant Valley Road	Minor Highway	2	4800	C	0.28
Commerce Way	North of Pleasant Valley Road	Minor Highway	2	1700	B	0.10
El Dorado Road	SR 49 to Mother Lode Drive	Minor Highway	2	3600	C	0.21
	Mother Lode Drive to US 50	Minor Highway	2	6900	D	0.40
Mother Lode Road	West of Missouri Flat Road	Major Highway	2	5000	C	0.24

Note:

1. Traffic volumes are rounded to the nearest 10.
2. V/C Ratio = volume to capacity ratio

Source: Fehr & Peers, 2014