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DRAFT
Environmental Impact Report
Creekside Plaza
El Dorado County, California

State Clearinghouse Number 2011092017

APPENDICES

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Appendix A:
Notice of Preparation, Initial Study, and Comments

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A.1 - Notice of Preparation

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NOTICE OF PREPARATION
of a Draft Environmental Impact Report

Date: January 27, 2017

To: Agencies and Interested Parties

From: Robert Peters, Associate Planner, El Dorado County Planning Services

Subject: **Notice of Preparation of a Draft Environmental Impact Report for the Proposed Creekside Plaza Project (Z10-0009/PD10-0005/P10-0012)**

Review Period: January 28, 2017 to February 27, 2017

This Notice of Preparation (NOP) initiates the environmental review process in accordance with the California Environmental Quality Act (14 California Code of Regulations [CCR] Section 15082) for a land development project in El Dorado County. El Dorado County will be the Lead Agency and will prepare the Environmental Impact Report (EIR). The purpose of an NOP is to provide sufficient information about the proposed project and its potential environmental impacts to allow agencies and interested parties the opportunity to provide a meaningful response related to the scope and content of the EIR, including mitigation measures that should be considered and alternatives that should be addressed (CEQA Guidelines 14 CCR Section 15082[b]). The project description, location, and probable environmental effects of the Creekside Plaza Project are briefly described below.

PROVIDING COMMENTS

El Dorado County is soliciting comments from public agencies, private organizations, and individuals regarding the scope and content of the environmental documentation. Because of time limits mandated by State law, comments should be provided no later than 5:00 PM on **Monday February 27, 2017**. Please send all comments to:

Robert Peters, Associate Planner
County of El Dorado Development Services Division
2850 Fairlane Court
Placerville, CA 95667
Email: Robert.Peters@edcgov.us

Agencies that will need to use the EIR when considering permits or other approvals for the proposed project should provide the name of a contact person, phone number, and email address in their comment. Comments provided by email should include "Creekside Plaza NOP Comment" in the subject line, and the name and physical address of the commenter in the body of the email.

PUBLIC SCOPING MEETING

A public scoping meeting (open house format) will be held by the County to inform interested parties about the proposed project, and to provide agencies and the public with an opportunity to provide comments on the scope and content of the EIR. The meeting time and location are as follows:

February 15, 2017 (Wed.)
6:00 p.m. to 7:30 p.m.
Placerville Seventh-Day Adventist Church
6831 Mother Lode Drive
Placerville, CA 95667

The meeting space is accessible to persons with disabilities. Individuals needing special assistive devices will be accommodated to the County's best ability. For more information, please contact Robert Peters (at the contact information above) at least 48 hours before the meeting.

PROJECT LOCATION

The Creekside Plaza Project site consists of three parcels (Assessor's Parcel Numbers 327-211-14, 327-211-16 and 327-211-25), totaling 4.32 acres, located at the northwest corner of the intersection of Forni Road and Missouri Flat Road in the Diamond Springs area outside the incorporated city of Placerville, in El Dorado County. The project site is located within the El Dorado—Diamond Springs Community Region. The project site is located within the Placerville Quadrangle, Section 24, Township 10 North, Range 10 East on the USGS 7.5-minute topographic map. Surrounding land uses are existing single-family residential development to the north and northwest, while commercial uses are located to the west, south, and east.

The property has a General Plan Land Use Designation of Commercial (C), and was rezoned from one-acre residential (R1A) to Community Commercial with a Design Review—Community combining zone (CC-DC) as part of the Targeted General Plan Amendment and Zoning Ordinance Update (TGPA-ZOU) that the Board of Supervisors adopted on December 15, 2015. This targeted amendment and update modernized the General Plan implementation tool and included revisions of the text and the Zone Ordinance and Zoning Map to bring it into conformance with the General Plan.

PROJECT DESCRIPTION

The proposed project is requesting approval of three related actions:

- Rezone (Application File #Z10-0009) of the site from Community Commercial—Design Review—Community combining zone (CC-DC) to Community Commercial-Planned Development (CC-PD) and Open Space-Planned Development (OS-PD).

- Tentative Parcel Map (Application File #PD10-0005) to subdivide the site into four parcels (Exhibit 1: Site Plan), including three buildable parcels and one 1.14-acre open space parcel, as well as a general vacation of a 0.22-acre portion of Forni Road Right of Way.

- Development Plan (Application File #P10-0012) for a proposed commercial center containing three buildings totaling 30,560 square feet (at maximum buildout) (Table 1).

The three commercial buildings would be located on the south and southwestern portions of the property between Missouri Flats Road and the on-site riparian area. A retaining wall would divide the proposed developed area from the on-site riparian area. Boulders, trees, and other landscaping elements would complement the functionality of the retaining wall by providing a high-quality aesthetic barrier to soften or

shield views from along Forni Road and beyond. Additional landscaping located along project frontages would reduce any potential aesthetic impacts from viewers along local roadways.

As illustrated on Table 1, Building A is located in the northernmost section of the property and would contain approximately 20,060 square feet of office and retail space in two-stories. Building B is located southeast of Building A and would contain a retail store of approximately 1,350 square feet and a 2,550-square-foot fast-food restaurant with drive-thru. The third building, Building C, would be located in the southern most section of the site. Building C would contain approximately 6,600 square feet of retail space. Table 1 shows a summary of the development plan. Additionally, the site plan provides a total of 1.14 acres of open space as well as 77 shade trees, 50 percent of which would be evergreen species. The project would also include installation of bike racks, monument signs, three trash enclosures, on-site landscaping and wrought iron fencing, as well as a 156-stall parking lot and 15-foot-tall pole lights.

Table 1: Development Plan Summary

Parcel Number	Parcel Acreage	Project Component	Use	Building Square Footage	Parking Stalls
3	1.56	Building A	Office	9,860	86
			Retail	10,200	
2	0.90	Building B	Fast Food	2,550	40
			Retail	1,350	
1	0.72	Building C	Retail	6,600	30
A	1.14	Open Space Area	Open Space	—	—
Total	**4.32**	—	—	**30,560**	**156**
Source: Wickert, 2017.					

POTENTIAL ENVIRONMENTAL IMPACTS

Pursuant to CEQA Section 15063, the County has conducted an initial study to determine if the proposed project may have a significant effect on the environment. The purpose of the initial study is to provide the County with information to use in determining whether to prepare an EIR and to assist in focusing the EIR on effects determined to be significant. The initial study also identifies effects of the project found not to be significant and provides an explanation for that determination. The document is available electronically at the following link: http://edcapps.edcgov.us/Planning/ProjectInquiryDisplay.asp?ProjectID=18455

Alternatively, print copies of the document may be viewed at the County of El Dorado Development Services Division at 2850 Fairlane Court Placerville, CA 95667.

On the basis of the initial study, the County has determined that the project could result in significant environmental effects related to air quality, greenhouse gas (GHG) emissions, and transportation, summarized below.

- **Air Quality:** The air basin in which the project is located is in non-attainment for ozone and particulate matter (PM_{10} and $PM_{2.5}$). Construction and operation of the project would contribute to an increase in these pollutants and could exacerbate non-attainment status. Project emissions will be quantified and associated impacts will be analyzed and addressed in the EIR.

- **GHG Emissions:** Construction and operation of the project could result in significant impacts related to GHG emissions and could conflict with applicable plans, policies, or regulations regarding GHG emission reductions. As such, the project's GHG emissions will be quantified and further analyzed in the EIR.

- **Transportation:** Given the land uses proposed, the project is projected to generate 1,645 net new trips, including 106 in the AM peak hour and 198 in PM peak hour. This increase in traffic could adversely impact roadways and intersections in the area. As such, traffic modeling will be conducted to quantify potential impacts, which will be analyzed and addressed in the EIR.

Further, based on the analysis presented in the initial study, the County has determined the following effects not to be significant, as outlined below. Full documentation of the factual basis for this determination is provided in the initial study and will be included in the EIR. Unless specific comments are received during the NOP public comment period that indicate a potential for the project to result in significant impacts, these less than significant effects will not be analyzed further in the EIR.

- **Aesthetics:** The project site and vicinity is not identified by the County as a scenic view or resource and is not located near any roadway that is classified as a State Scenic Highway. The project would be designed consistent with the visual character of other commercial developments in the project site vicinity. The Applicant would submit a Lighting Plan to the County to reduce potential impacts to from lighting and glare. As conditioned and with adherence to County Code, no significant environmental impacts would result from the project.

- **Agricultural Resources:** This project would have no known significant impact on agricultural lands, would not convert agricultural lands to non-agricultural uses, and would not affect properties subject to a Williamson Act contract. Impacts would be less than significant and no further analysis is required.

- **Biological Resources:** As documented in the initial study, the site does not contain suitable habitat for special-status species; however, the site contains oak woodland, riparian habitat, and wetlands, and Waters of the U.S. The initial study recommends mitigation to reduce potential impacts to nesting migratory bird species and raptors, riparian habitat, Waters of the US, water quality in the unnamed stream that runs through the site, and protected oak trees. As conditioned, mitigated, and with adherence to County Code, the thresholds of significance would not be exceeded; impacts were determined to be less than significant with mitigation incorporated.

- **Cultural Resources:** No significant cultural resources were identified on the project site. Standard conditions of approval would be required with requirements for accidental discovery during project construction. The project would result in a less than significant impact within the Cultural Resources category.

- **Geology and Soils:** The site is in an area with low probability of seismic events and is not located in an Alquist-Priolo Fault Zone. Compliance with applicable regulations would reduce the risk of death, damage, or injury from seismic hazards to the maximum extent practicable. Similarly, compliance with local regulations including the County Grading, Erosion Control and Sediment Ordinance and implementation of best management practices would minimize the risk of potential impacts related to soil erosion, landslides, and other geologic impacts. The project would connect to existing public sewer facilities and no on-site septic systems would be built.

- **Hazards and Hazardous Materials:** The project site is not located on a hazardous materials site pursuant to Government Code Section 65962.5, nor is the site located within an airport land use plan or adjacent to a private airstrip. A Hazardous Materials Business Plan would be prepared for approval by the County Hazardous Materials and Solid Waste Division, and compliance with applicable federal, state, and local regulations would minimize the risks associated with the use, handling, and transport of hazardous materials. Conditions of project approval would ensure that adequate safety and

emergency vehicle access is provided and that appropriate measures are taken to reduce wildfire hazards. Overall, impacts would be less than significant.

- **Hydrology and Water Quality:** The project is not located within a Federal Emergency Management Agency 100-year flood area, nor is the project site within the inundation area of a dam or levee. Given the location of the site, there is no potential for impacts from seiche or tsunami, or from mudflow. The project would rely on water provided by the El Dorado Irrigation District and would not use groundwater. Compliance with applicable regulations, including the provisions of the County Grading, Erosion Control and Sediment Ordinance and implementation of best management practices, would minimize the potential for erosion. Similarly, compliance with applicable California Water Quality Control Board requirements would minimize the potential for stormwater pollution to the extent practicable. As conditioned and with required regulatory permit compliance, the project would result in less than significant impacts related to hydrology and water quality.

- **Land Use and Planning:** The project does not involve the construction of linear transportation infrastructure of the type that could physically divide a community, nor is the site located within the boundaries of an adopted Habitat Conservation Plan or a Natural Community Conservation Plan. The proposed rezoning from CC-DC to CC-PC would be consistent with the General Plan land use designation for the site. The project is conditioned to create an open space easement on the property and as such would not conflict with applicable plans, policies or regulations established for the purpose of preserving wetlands, including the USACE 404 Permit process, the Fish and Game 1602 Permit process, or the Water Quality Certification, Section 401 Permit or California Regional Water Quality Control Board regulations. Overall, impacts would be less than significant.

- **Mineral Resource:** The project site is not located within a Mineral Resource Zone designated by the State of California Division of Mines and Geology or identified as an important mineral resource area in the El Dorado County General Plan. Further, the site does not contain any mineral resources of known local or statewide economic value.

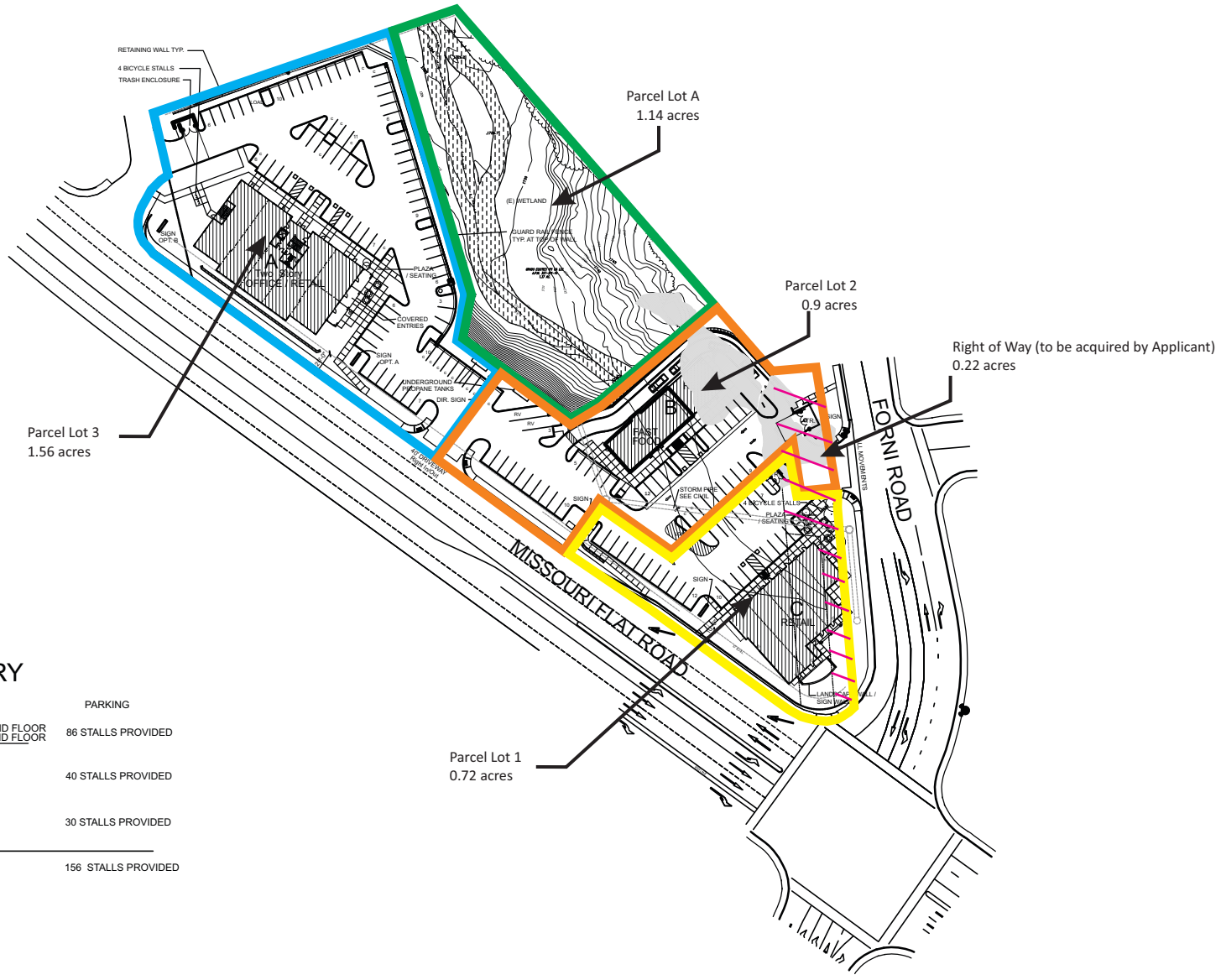
- **Noise:** Compliance with regulatory standards in the County Code would ensure that construction impacts would be minimized to the extent practicable, and given the nature of the proposed uses, the project would not increase ambient noise levels in excess of the standards established in the General Plan. No airports would be impacted, as the project is not located within an airport land use plan or within 2 miles of a public airport or private landing strip. Overall, impacts would be less than significant.

- **Population and Housing:** The project does not involve the construction of housing and therefore would not directly induce growth in population or housing. Construction workers would be drawn from the local labor pool, and, therefore, the project would not indirectly induce substantial growth. No further analysis is required.

- **Public Services:** The proposed project would not increase the permanent population of the area and therefore would not create a need for additional school services or park space. While the proposed project would result in minor increase in calls for fire and police protection services; however, given the nature of the commercial uses proposed, the increase would not adversely affect the ability of service providers to maintain response standards.

- **Recreation:** The proposed project would not increase the permanent population of the area and therefore would not contribute to increased demand on recreation facilities or use of existing facilities. No further analysis is needed.

- **Utilities and Service Systems:** The project would connect to existing utility infrastructure in the area and would treat stormwater on-site to minimize the volume and velocity of runoff into the storm sewer system. Further, as documented in the initial study, there is adequate water, sewer, and solid waste disposal capacity to serve the project. No additional analysis is required.



SITE SUMMARY

		AREA	PARKING
A	OFFICE / RETAIL	10,200 RETAIL GROUND FLOOR 9,860 OFFICE SECOND FLOOR 20,060 S.F. TOTAL	86 STALLS PROVIDED
B	FAST FOOD / RETAIL	2,550 S.F. 1,350 S.F.	40 STALLS PROVIDED
C	RETAIL BLDG.	6,600 S.F.	30 STALLS PROVIDED
	TOTAL	30,560 S.F.	156 STALLS PROVIDED

Source: Wickert, 2017

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Exhibit 3
Site Plan

A.2 - Initial Study

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Creekside Plaza
Rezone (Z10-0009)/Planned Development (PD10-0005)/ Tentative Parcel Map (P10-0012)
Initial Study
El Dorado County, California

Prepared for:
El Dorado County
Community Development Agency
Development Services Division—Planning
2850 Fairlane Court, Building C
Placerville, CA 95667
530.621.5355

Contact: Rob Peters, Associate Planner

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Walnut Creek, CA 94597

Contact: Janna Waligorski, Project Manager
Mary Bean, Project Director

Report Date: January 25, 2017

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SECTION 1: INTRODUCTION

1.1 - Purpose

The purpose of this Initial Study is to identify any potential environmental impacts from implementation of the Creekside Plaza project (project) in El Dorado County, California. Pursuant to California Environmental Quality Act (CEQA) Guidelines Section 15367, El Dorado County (County) is the Lead Agency in the preparation of this Initial Study and any additional environmental documentation required for the project. The County has discretionary authority over the project. The intended use of this document is to disclose the project's potential environmental impacts and to provide the basis for input from public agencies, organizations, and interested members of the public. Any impacts identified herein as potentially significant requiring additional impact analysis will be addressed in the project's forthcoming Focused Environmental Impact Report (EIR).

The remainder of this section provides a brief description of the project location and the characteristics of the project. Section 2 includes an environmental checklist providing an overview of the potential impacts that may result from project implementation. Section 2 also elaborates on the information contained in the environmental checklist, along with justification for the responses provided in the environmental checklist.

1.2 - Project Location

The project site consists of three parcels (assessor's parcel numbers 327-211-14, 327-211-16 and 327-211-25) and 0.18 acre of existing Forni Road Right of Way, totaling approximately 4.3 acres, located at the northwest corner of the intersection of Forni Road and Missouri Flat Road in the Diamond Springs area outside the incorporated city of Placerville, in El Dorado County, California (Exhibit 1). The project site is located within the El Dorado—Diamond Springs Community Region. The project site is located within the Placerville Quadrangle, Section 24, Township 10 North, Range 10 East on the USGS 7.5-minute topographic map.

1.3 - Project Background

A previous iteration of the project was originally processed pursuant to CEQA with a Mitigated Negative Declaration (MND). The El Dorado County Board of Supervisors certified the MND and approved the associated project entitlements in February 2012. Following these actions, a local community organization filed suit against the County, contending that the MND was legally inadequate. In light of this development, and at the applicant's request, the County rescinded certification of the MND and approval of the project. The applicant has now elected to initiate the preparation of a Focused EIR in order to maximize legal defensibility. This Initial Study is based upon the County's original Mitigated Negative Declaration prepared for the project. Appropriate updates have been made, as necessary, to the project description and applicable regulations. As previously indicated, any impacts identified herein as potentially significant requiring additional impact analysis will be addressed in the project's forthcoming Focused EIR. In addition, any mitigation measures

identified herein will be carried forward into the project's Mitigation Monitoring and Reporting Program along with those identified in the forthcoming Focused EIR.

1.4 - Existing Conditions

The project site is undeveloped and is dominated by a stream channel within a southeast to northwest oriented ravine that is fed from a culvert located under Forni Road (Exhibit 2). According to the soils map, as well as the submitted archaeological report, portions of the area were placer mined at one time and tailing piles are present along the stream channel. Since then, a portion of the site has been graded and filled flat on the south side of the creek, adjacent to Missouri Flat Road. The Slope Map submitted under the project's previous iteration shows that approximately 30 percent of the parcel contains slopes below 10 percent, and an estimated 22 percent contains slopes over 30 percent. The majority of those steeply sloped portions adjoin the areas previously filled and graded with imported soil. On-site elevations range between 1,723 to 1,761 feet above mean sea level.

On-site vegetation is comprised of riparian trees and oaks along the ravine with the remainder covered by annual non-native grasses or disturbed, gravel areas. An Oak Canopy Cover Analysis (Appendix A.2) was conducted for the project site indicating that approximately 0.78-acre or 18.1 percent of the 4.3-acre site is covered by oak canopy. In addition, as indicated in the Canopy Cover Analysis (Appendix A.2) total tree canopy cover on-site includes approximately 2.47 acres or 57.4 percent of the 4.3-acre site. On-site tree species, besides oaks, consist predominately of riparian trees such as willows and cottonwoods.

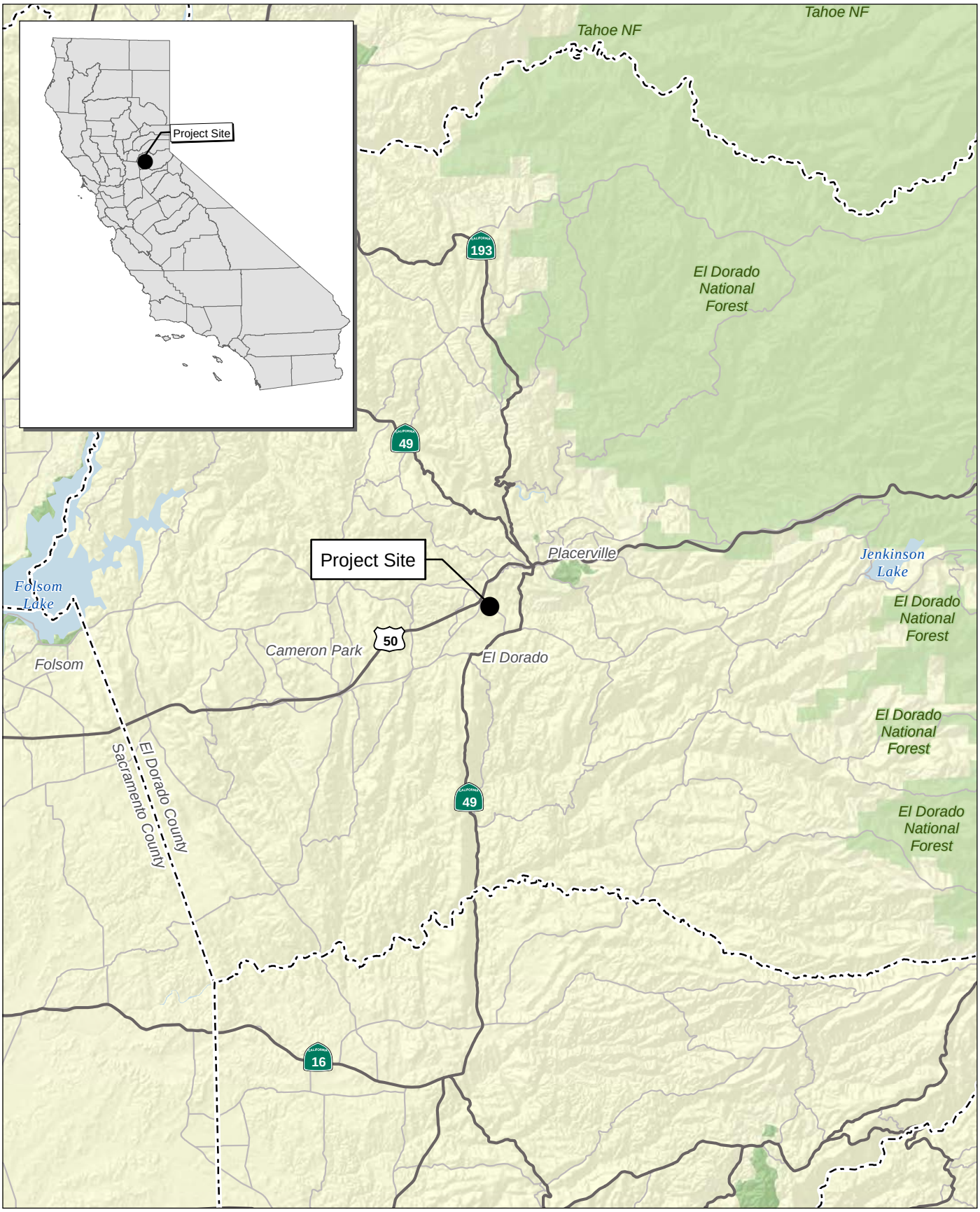
1.4.1 - Land Use Designation and Zoning

The project site is designated as Commercial (C) by the El Dorado County General Plan. The project site is zoned Community Commercial with a Design Review—Community combining zone (CC-DC) by the El Dorado County zoning map.

The parcel was rezoned from one-acre residential (R1A) to CC-DC as part of the Targeted General Plan Amendment and Zoning Ordinance Update (TGPA-ZOU) that the Board of Supervisors adopted on December 15, 2015. This targeted amendment and update modernized the General Plan implementation tool and included revisions of the text and the Zone District Map to bring it into conformance with the General Plan. The Board's stated objectives for the TGPA-ZOU are to (1) reduce constraints to the development of moderately priced housing, (2) support jobs creation, (3) capture more sales tax revenues, (4) protect and promote agriculture and natural resources, and (5) meet the requirements of Government Code 65860.

1.4.2 - Surrounding Land Uses

Surrounding land uses are existing single-family residential development to the north, and northwest, while commercial uses are located to the west, south, and east (Exhibit 2). This portion of Missouri Flat Road has been developed with commercial retail and office land uses, although some residential housing still exists along Forni Road and Road 2233. The Herbert Green Middle School is located to the northeast of the project site off Forni Road.



Source: Census 2000 Data, The CaSIL, FCS GIS 2013.

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5 2.5 0 5 Miles

Exhibit 1
Regional Location Map

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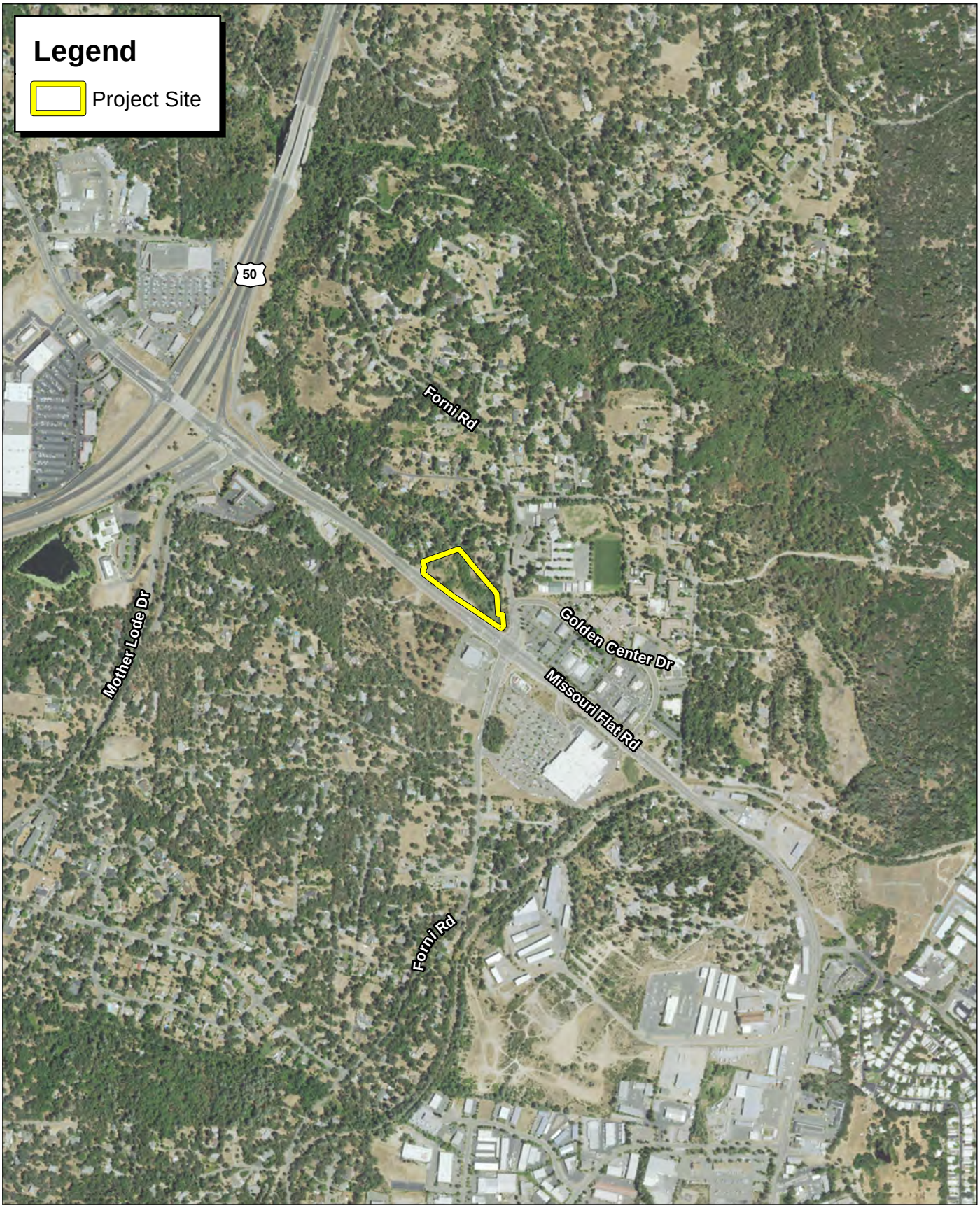

Source: ESRI Imagery, 2015

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1,000 500 0 1,000
Feet

Exhibit 2
Local Vicinity Map
Aerial Base

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1.5 - Project Description

The proposed project is requesting approval of three related actions:

- Rezone of the site from Community Commercial—Design Review—Community (CC-DC) combining zone to Community Commercial-Planned Development (CC-PD) and Open Space-Planned Development (OS-PD), as shown in Exhibit 3.
- Tentative Parcel Map to subdivide the site into four parcels, as shown in Table 1 and Exhibit 3, including three buildable parcels and one 1.14-acre open space parcel, as well as a general vacation of a 0.22-acre portion of Forni Road Right of Way.
- Development Plan for a proposed commercial center containing three buildings totaling 30,560 square feet (at maximum buildout) (Exhibit 3).

Table 1 provides a summary of the Development Plan for the project.

Table 1: Development Plan Summary

Parcel Number	Parcel Acreage	Project Component	Use	Building Square Footage	Parking Stalls
3	1.56	Building A	Office	9,860	86
			Retail	10,200	
2	0.90	Building B	Fast Food	2,550	40
			Retail	1,350	
1	0.72	Building C	Retail	6,600	30
A	1.14	Open Space Area	Open Space	—	—
Total	**4.32**	—	—	**30,560**	**156**
Source: Wickert, 2017.					

As indicated in Table 1 and illustrated on Exhibit 3, Building A is located in the northernmost section of the property and would contain 20,060 square feet of office and retail space in two-stories. Building B is located southeast of Building A and would contain a retail store of 1,350 square feet and a 2,550-square-foot fast-food restaurant with drive thru. The third building, Building C, would be located in the southern most section of the site. Building C would contain 6,600 square feet of retail space. The Development Plan includes bike racks, monument signs, three trash enclosures, and wrought-iron fencing; 156 parking stalls; and 15-foot-tall pole lights.

The three commercial buildings would be located on the south and southwestern portions of the property between Missouri Flat Road and the on-site riparian area. A proposed retaining wall would divide the proposed developed area from the on-site riparian area. Boulders, trees, and other landscaping elements would complement the functionality of the retaining wall by providing a high quality aesthetic barrier to soften or shield views from along Forni Road and beyond. Additional

landscaping located along project frontages would reduce any potential aesthetic impacts from viewers along local roadways.

1.5.1 - Landscaping

A total of 35,202 square feet of shade would be provided on-site. Additionally, a total of 77 shade trees would be provided, 50 percent of which would be evergreen species. Note that landscaping configuration is subject to change but would be consistent with county requirements.

1.5.2 - General Plan Designation and Zoning

The project site is designated as Commercial (C) by the County of El Dorado 2004 General Plan. The purpose of the Commercial land use category is to provide a full range of commercial retail, office, and service uses to serve the residents, businesses, and visitors of El Dorado County (County of El Dorado 2004; 2009). The acceptable floor area ratio (FAR) for the Commercial designation is 0.85.

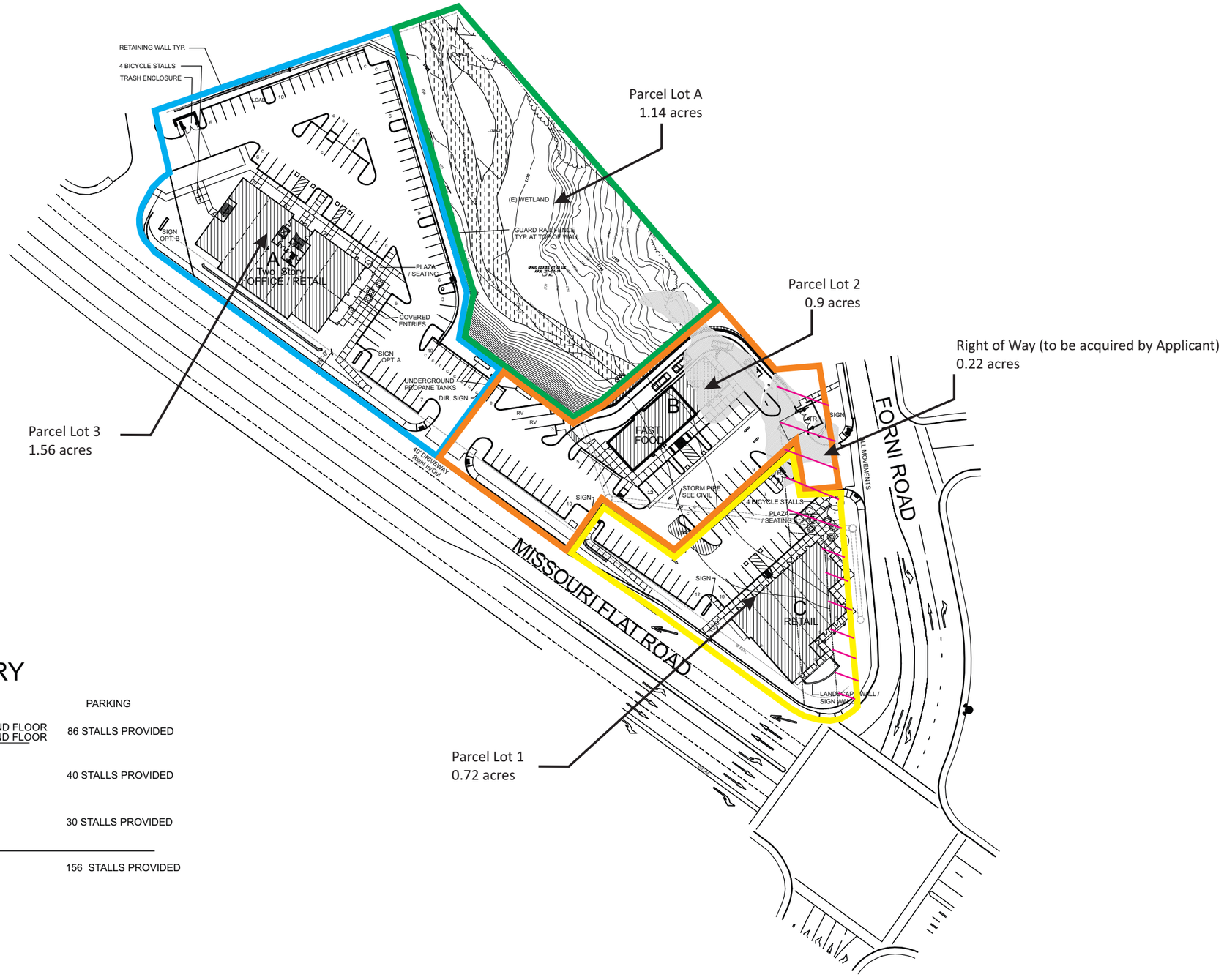
The project site is zoned Community Commercial with a Design Review—Community combining zone (CC-DC) by the El Dorado County zoning map. The project proposes to rezone the portions of three subject parcels to be developed from the current CC-DC zoning to Community Commercial-Planned Development (CC-PD) and Open Space—Planned Development (OS-PD).

The rezone would also be requested in order to establish a contiguous open space parcel, which would become a Conservation Easement. The parcel would be protected in perpetuity by creating the easement with a third-party conservator, who would hold the easement and ensure that the conditions of the United States Army Corps of Engineers (USACE) permit and the easement are enforced. The Applicant would also provide an endowment for the management of the preserved area. The conservation easement is discussed in full within Impact Section 4, Biological Resources of this Initial Study.

Planned developments, such as that proposed for the project, provide for innovative planning and development techniques and encourage balanced growth to better reflect the character and scale of the community in which it occurs while minimizing impacts on the surrounding areas, to provide more efficient utilization of the land, and to allow for flexibility of development while providing for general public benefits (County of El Dorado 2004; 2009).

1.5.3 - Transportation/Circulation/Parking

The primary access to the site would be from encroachments onto Missouri Flat Road, Forni Road, and Road 2233, all of which are maintained by the County. The Diamond Springs-El Dorado Fire Protection District (Fire District) and the El Dorado County Transportation Division (TD) have previously reviewed the proposed on-site and off-site access and circulation proposed for the project. The Fire District found the proposed driveway circulation plans to be adequate for safe emergency ingress/egress and access width and surfacing. The TD has recommended conditions of approval to assure the three encroachments would be constructed to county standards for size, line-of-sight, turn-lane safety, and surfacing.



SITE SUMMARY

		AREA	PARKING
A	OFFICE / RETAIL	10,200 RETAIL GROUND FLOOR 9,860 OFFICE SECOND FLOOR 20,060 S.F. TOTAL	86 STALLS PROVIDED
B	FAST FOOD / RETAIL	2,550 S.F. 1,350 S.F.	40 STALLS PROVIDED
C	RETAIL BLDG.	6,600 S.F.	30 STALLS PROVIDED
	TOTAL	30,560 S.F.	156 STALLS PROVIDED

Source: Wickert, 2017

Exhibit 3
Site Plan

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The project proposes to share 156 parking stalls among the project parcels, and the submitted site plans show there would be adequate parking.

1.5.4 - Utilities and Infrastructure

There are existing phone and electrical facilities which would be extended near the parcel boundaries to the project. Domestic water service is available at the site and would be upgraded as required by the El Dorado Irrigation District (EID) and the Fire District. The project would connect to existing EID wastewater water and sewer facilities which consist of an existing 10-inch water line in Forni Road and 6-inch sewer line and lift station located to the north on an adjoining parcel, which would be extended to provide water and sewer service to the project. The existing on-site storm drainage that feeds the on-site wetlands would be rerouted underground, extending from Forni Road, through the parking lot to an outfall northwest of Building B. Re-routing would follow one of the two routes shown on Exhibit 4. On-site stormwater is proposed to be collected through a series of stormwater pipes and conveyed to the northerly portion of the site where it will be filtered through a continuous deflective separation (CDS) device, in order to ensure water quality is preserved.

1.5.5 - Population

No housing is proposed and the project would not be anticipated to impact population.

1.5.6 - Construction Considerations

Construction of the project would consist of on-site road encroachment, site fill and grading improvements, utility installation, trenching, and construction of facility structures. Project construction would take approximately 1 year. On-site earthwork would consist of approximate 2,041 cubic yards of cut and 44,697 cubic yards of imported fill.

1.6 - Project Approvals

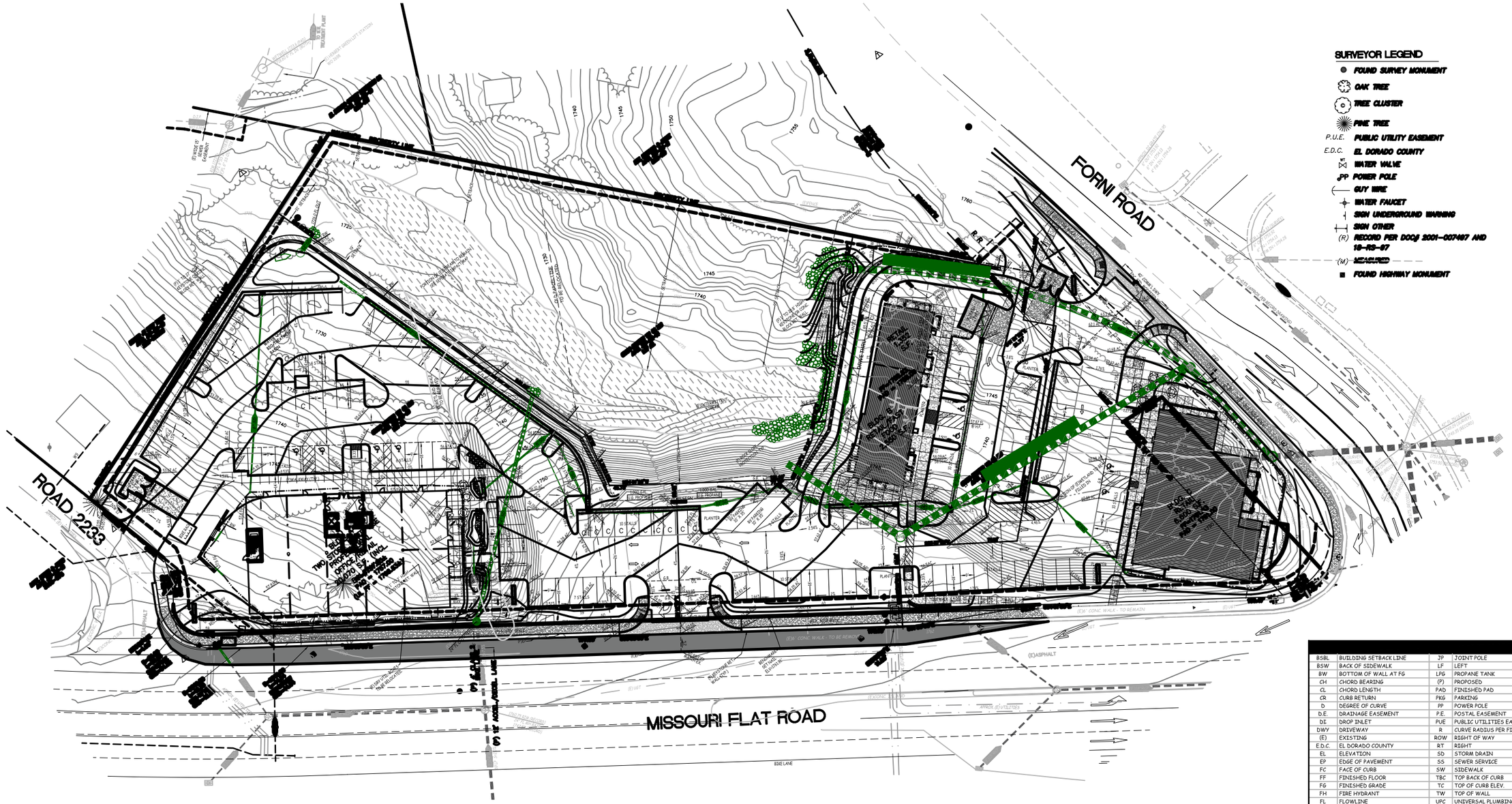
The project requires the following discretional approvals from the El Dorado Development Services Department:

- Rezone (Z10-0009)
- Development Plan (PD10-0005)
- Tentative Parcel Map (P10-0012)

Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement) include the following:

- Department of Transportation-Grading and encroachment permits.
- Environmental Health Division-Yearly permit for food service.
- Air Quality Management District-Fugitive Dust Plan.
- Hazardous Materials/Solid Waste Division-Trash and recycling dumpsters; hazardous waste storage and disposal.

- Building Services-Building permits.
- El Dorado County Resource Conservation District-Grading permit review.
- Diamond Springs-El Dorado Fire Protection District-Building permit review.
- El Dorado Irrigation District-Water and sewer installation review.
- U.S. Army Corps of Engineers-Section 404 Permit, Nationwide 39 Permit.
- California Department of Fish and Game-1602 Permit.
- Regional Water Quality Control Board-Section 401 Permit.



Source: Wickert, 2017

Exhibit 4
Grading and Drainage Plan

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SECTION 2: ENVIRONMENTAL CHECKLIST AND ENVIRONMENTAL EVALUATION

Environmental Factors Potentially Affected					
The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.					
☐	Aesthetics	☐	Agriculture and Forestry Resources	☒	Air Quality
☐	Biological Resources	☐	Cultural Resources	☐	Geology/Soils
☒	Greenhouse Gas Emissions	☐	Hazards/Hazardous Materials	☐	Hydrology/Water Quality
☐	Land Use/Planning	☐	Mineral Resources	☐	Noise
☐	Population/Housing	☐	Public Services	☐	Recreation
☒	Transportation/Traffic	☐	Utilities/Services Systems	☐	Mandatory Findings of Significance

Environmental Determination

On the basis of this initial evaluation:

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

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

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

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

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

Date: _____ Signed: _____

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Aesthetics *Would the project:*				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic building within a state scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Environmental Evaluation

Regulatory Setting

Federal Laws, Regulations, and Policies

No federal regulations are applicable to aesthetics in relation to the proposed project.

State Laws, Regulations, and Policies

In 1963, the California State Legislature established the California Scenic Highway Program, a provision of the Streets and Highways Code, to preserve and enhance the natural beauty of California (Caltrans, 2015). The state highway system includes designated scenic highways and those that are eligible for designation as scenic highways. State Route 89 (SR-89) is an officially designated state scenic corridor in the vicinity of the project site.

Local Laws, Regulations, and Policies

The County has several standards and ordinances that address issues relating to visual resources. Many of these can be found in the County Zoning Ordinance (Title 130 of the County Code). The Zoning Ordinance consists of descriptions of the zoning districts, including identification of uses allowed by right or requiring a special-use permit and specific development standards that apply in particular districts based on parcel size and land use density. These development standards often involve limits on the allowable size of structures, required setbacks, and design guidelines. Included are requirements for setbacks and allowable exceptions, the location of public utility distribution and transmission lines, architectural supervision of structures facing a state highway, height limitations on structures and fences, outdoor lighting, and wireless communication facilities.

Visual resources are classified as (1) scenic resources or (2) scenic views. Scenic resources include specific features of a viewing area (or viewshed) such as trees, rock outcroppings, and historic buildings. They are specific features that act as the focal point of a viewshed and are usually foreground elements. Scenic views are elements of the broader viewshed such as mountain ranges, valleys, and ridgelines. They are usually middle ground or background elements of a viewshed that can be seen from a range of viewpoints, often along a roadway or other corridor.

A list of the County's scenic views and resources is presented in Table 5.3-1 of the El Dorado County General Plan EIR (p. 5.3-3). This list includes areas along highways where viewers can see large water bodies (e.g., Lake Tahoe and Folsom Reservoir), river canyons, rolling hills, forests, or historic structures or districts that are reminiscent of El Dorado County's heritage.

Several highways in El Dorado County have been designated by the Caltrans as scenic highways or are eligible for such designation. These include U.S. 50 from the eastern limits of the Government Center interchange (Placerville Drive/Forni Road) in Placerville to South Lake Tahoe, all of SR-89 within the County, and those portions of SR-88 along the southern border of the County.

Rivers in El Dorado County include the American, Cosumnes, Rubicon, and Upper Truckee. A large portion of El Dorado County is under the jurisdiction of the USFS, which under the Wild and Scenic Rivers Act may designate rivers or river sections to be Wild and Scenic Rivers. To date, no river sections in El Dorado County have been nominated for or granted Wild and Scenic River status.

Would the project:

a) Have a substantial adverse effect on a scenic vista?

No impact. The project site and vicinity is not identified by the County as a scenic view or resource (El Dorado County 2004). No impacts would occur.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic building within a state scenic highway?

No impact. The project site is not located near any roadway that is classified as a State Scenic Highway (California Department of Transportation 2016). This condition precludes the possibility of damaging scenic resources within a state scenic highway. No impacts would occur.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

Less than significant impact. The DEIR for the General Plan identified and examined the potential impacts that implementation of the General Plan would have to the visual character of the areas of the County. Section 5.3-2 states that the County shall mitigate the potential significant impacts by designing new streets and roads within new developments to minimize visual impacts, preserve rural character, and ensure neighborhood quality to the maximum extent possible consistent with the needs of emergency access, on-street parking, and vehicular and pedestrian safety. The proposed project is designed and conditioned to provide appropriate access, on-site parking, and bike lanes,

and sidewalks to provide pedestrian safety. In addition, the project clusters the development area to permit open space areas to partially buffer outside-in views from adjoining areas to the north.

The proposed project would not be anticipated to significantly degrade the visual character or quality of the site and its surroundings in ways not anticipated for lands designated by the General Plan for commercial land uses. The project would be consistent with the visual character of other commercial developments along Missouri Flat Road.

The property would continue to provide the natural visual character and quality that currently exist by keeping the scenic areas of the property primarily intact post construction. The project design, proposed construction materials, and colors of the physical elements were analyzed by the County for consistency with the Missouri Flat Design Guidelines, adopted by the Board of Supervisors June 3, 2008 (El Dorado County Board of Supervisors 2008). The project was found to be substantially consistent with the recommendations of those Guidelines. Impacts would be less than significant.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Less than significant impact. Section 5.3-3 of the DEIR for the General Plan states the potential significant impacts would be mitigated by including design features, namely directional shielding for street lighting, parking lot lighting, and other significant lighting sources, that could reduce the effects from nighttime lighting. If approved as proposed, the project would allow new lighting. These impacts would not be expected to be any more than any typical publicly utilized facility lighting and typical within a land use area designated by the General Plan for commercial within the County. Use of pole lighting, security lighting, and spot lighting for buildings would be required to meet the County lighting ordinance and must be shielded to avoid potential glare affecting day or nighttime views for those that live or travel through the area. According to the Missouri Flat Development Guidelines, pedestrian light poles along sidewalks should be 10 to 15 feet high unless bollards are used. Light poles, standards and fixtures should be between 10 and 15 feet in height. The project would comply with the aforementioned guidelines by establishing lighting fixtures of 15 feet (County of El Dorado 2008). The project would also be required to comply with the County Zoning Ordinance Chapter 130.34 Outdoor Lighting. As such, the project would be required to utilize hooded or screen lighting to direct the source of light downward and focus it onto the project site. The Applicant is also required to submit a Lighting Plan to the County for approval. Thus, impacts would be less than significant.

Finding

For the Aesthetics category, the thresholds of significance have not been exceeded. As conditioned and with adherence to County Code, no significant environmental impacts not anticipated by the General Plan for commercial uses to aesthetics would result from the project. No further analysis is needed.

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
2. Agriculture and Forestry Resources *In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:*				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Environmental Evaluation

Regulatory Setting

Federal Laws, Regulations, and Policies

No federal regulations are applicable to agricultural and forestry resources in relation to the proposed project.

State Laws, Regulations, and Policies

Farmland Mapping and Monitoring Program

The Farmland Mapping and Monitoring Program (FMMP), administered by the California Department of Conservation (CDC), produces maps and statistical data for use in analyzing impacts on California's agricultural resources (CDC 2008). FMMP rates and classifies agricultural land according to soil quality, irrigation status, and other criteria. Important Farmland categories are as follows (CDC 2013a):

- **Prime Farmland:** Farmland with the best combination of physical and chemical features able to sustain long-term agricultural production. These lands have the soil quality, growing season, and moisture supply needed to produce sustained high yields. Prime Farmland must have been used for irrigated agricultural production at some time during the 4 years before the FMMP's mapping date.
- **Farmland of Statewide Importance:** Farmland similar to Prime Farmland, but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Farmland of Statewide Importance must have been used for irrigated agricultural production at some time during the 4 years before the FMMP's mapping date.
- **Unique Farmland**: Farmland of lesser quality soils used for the production of the State's leading agricultural crops. These lands are usually irrigated but might include non-irrigated orchards or vineyards, as found in some climatic zones. Unique Farmland must have been cropped at some time during the 4 years before the FMMP's mapping date.
- **Farmland of Local Importance:** Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.

California Land Conservation Act of 1965 (Williamson Act)

The California Land Conservation Act of 1965 (commonly referred to as the Williamson Act) allows local governments to enter into contracts with private landowners for the purpose of preventing conversion of agricultural land to non-agricultural uses (CDC 2013b). In exchange for restricting their property to agricultural or related open space use, landowners who enroll in Williamson Act contracts receive property tax assessments that are substantially lower than the market rate.

Z'berg-Nejedly Forest Practice Act

Logging on private and corporate land in California is regulated by the 1973 Z'berg-Nejedly Forest Practice Act. This Act established the Forest Practice Rules (FPRs) and a politically appointed Board of Forestry to oversee their implementation. The California Department of Forestry (CAL FIRE) works under the direction of the Board of Forestry and is the lead government agency responsible for approving logging plans and for enforcing the FPRs.

Would the project:

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

No impact. Review of the Important Farmland GIS map layer for El Dorado County developed under the Farmland Mapping and Monitoring Program indicates that the project site contains BhC (Boomer gravelly loam with 3 to 15 percent slopes), DfC (Diamond Springs very sandy loam with 9 to 15 percent slopes), and PrD, (Placer Diggings with 2 to 75 percent slopes). None of those three soil types are classified as unique and soils of local importance but not as statewide important farmland or prime farmland. Review of the General Plan Land Use Map for the project area indicates that the project site is designated for commercial uses and is not located within or adjacent to lands designated with the Agricultural Districts (A) General Plan Land Use Overlay. Additionally, the project site is designated for commercial development and zoned for residential use. As such, no project related impacts would occur.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

No impact. The property is not located within a Williamson Act contract, and the project would not conflict with existing zoning for agricultural use, as the site is currently zoned for community commercial (CC) land uses. Thus, the project would not affect any properties under a Williamson Act contract. No impacts would occur.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

No impact. The project site is designated by the County General Plan for commercial uses and is currently zoned for residential uses**.** No conversion of timber or forest lands would occur as a result of the project. No impacts would occur.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No impact. Neither the General Plan nor the Zoning Ordinance designate the site as an important Timberland Preserve Zone and the underlying soil types are not those known to support timber production. No impacts would occur.

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

No impact. The project would not result in conversion of existing lands designated by the General Plan and zoned for agricultural uses. The project site is designated for commercial uses by the General Plan. No impacts would occur.

Finding

This project would have no known significant impact on agricultural lands, would not convert agricultural lands to non-agricultural uses, and would not affect properties subject to a Williamson Act contract. For the Agriculture category, the thresholds of significance have not been exceeded. Impacts would be less than significant and no further analysis is required.

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
3. Air Quality *Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.* *Would the project:*				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☒	☐	☐	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?	☒	☐	☐	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

Environmental Evaluation

Regulatory Setting

Federal Laws, Regulations, and Policies

The Clean Air Act is implemented by the U.S. Environmental Protection Agency (EPA) and sets ambient air limits, the National Ambient Air Quality Standards (NAAQS), for six criteria pollutants: particulate matter of aerodynamic radius of 10 micrometers or less (PM_{10}), particulate matter of aerodynamic radius of 2.5 micrometers or less ($PM_{2.5}$), carbon monoxide (CO), nitrogen dioxide (NO_2), ground-level ozone, and lead. Of these criteria pollutants, particulate matter and ground-level ozone pose the greatest threats to human health.

State Laws, Regulations, and Policies

The California Air Resources Board (ARB) sets standards for criteria pollutants in California that are more stringent than the NAAQS and include the following additional contaminants: visibility-reducing particles, hydrogen sulfide, sulfates, and vinyl chloride. The proposed project is located within the Mountain Counties Air Basin, which comprises seven air districts: the Northern Sierra Air Quality Management District (AQMD), Placer County Air Pollution Control District (APCD), Amador County APCD, Calaveras County APCD, the Tuolumne County APCD, the Mariposa County APCD, and a portion of the El Dorado County AQMD, which consists of the western portion of El Dorado County.

The El Dorado County Air Pollution Control District manages air quality for attainment and permitting purposes within the west slope portion of El Dorado County.

The EPA and ARB regulate various stationary sources, area sources, and mobile sources. EPA has regulations involving performance standards for specific sources that may release toxic air contaminants (TACs), known as hazardous air pollutants (HAPs) at the federal level. In addition, EPA has regulations involving emission criteria for off-road sources such as emergency generators, construction equipment, and vehicles. The ARB is responsible for setting emission standards for vehicles sold in California and for other emission sources, such as consumer products and certain off-road equipment. ARB also establishes passenger vehicle fuel specifications.

Air quality in the project area is regulated by the El Dorado County Air Quality Management District. The ARB and local air districts are responsible for overseeing stationary source emissions, approving permits, maintaining emissions inventories, maintaining air quality stations, overseeing agricultural burning permits, and reviewing air quality-related sections of environmental documents required to comply with CEQA. The AQMD regulates air quality through the federal and state Clean Air Acts, district rules, and its permit authority. National and state ambient air quality standards (AAQS) have been adopted by the Environmental Protection Agency and State of California, respectively, for each criteria pollutant: ozone, particulate matter, CO, NO_2, and sulfur dioxide (SO_2).

The Environmental Protection Agency and the State also designate regions as "attainment" (within standards) or "nonattainment" (exceeds standards) based on the ambient air quality. The County is in nonattainment status for both federal and state ozone standards and for the state PM_{10} standard, and is in attainment or unclassified status for other pollutants (California Air Resources Board 2013). County thresholds are included in Table 2.

Table 2: El Dorado County Thresholds for Criteria Pollutants

Criteria Pollutant	El Dorado County Threshold	
Reactive Organic Gasses (ROG)	82 lbs/day	
Nitrogen Oxides (NO_X)	82 lbs/day	
Carbon Monoxide (CO)	8-hour average: 6 parts per million (ppm)	1-hour average: 20 ppm
Particulate Matter (PM_{10}):	Annual geometric mean: 30 µg/m^3	24-hour average: 50 µg/m^3
Particulate Matter ($PM_{2.5}$):	Annual arithmetic mean: 15 µg/m^3	24-hour average: 65 µg/m^3
Ozone	8-hour average: 0.12 ppm	1-hour average: .09

The guide includes a table (Table 5.2) listing project types with potentially significant emissions. ROG and NO_X emissions may be assumed to not be significant if:

- The project encompasses 12 acres or less of ground that is being worked at one time during construction;

- At least one of the recommended mitigation measures related to such pollutants is incorporated into the construction of the project;
- The project proponent commits to pay mitigation fees in accordance with the provisions of an established mitigation fee program in the district (or such program in another air pollution control district that is acceptable to District); or
- Daily average fuel use is less than 337 gallons per day for equipment from 1995 or earlier, or 402 gallons per day for equipment from 1996 or later.

If the project meets one of the conditions above, APCD assumed that exhaust emissions of other air pollutants from the operation of equipment and vehicles are also not significant.

For fugitive dust (PM_{10}), if dust suppression measures will prevent visible emissions beyond the boundaries of the project, further calculations to determine PM emissions are not necessary. For the other criteria pollutants, including CO, PM_{10}, SO_2, NO_2, sulfates, lead, and H_2S, a project is considered to have a significant impact on air quality if it will cause or contribute significantly to a violation of the applicable national or state ambient air quality standard(s).

Naturally occurring asbestos (NOA) is also a concern in El Dorado County because it is known to be present in certain soils and can pose a health risk if released into the air. The AQMD has adopted an El Dorado County Naturally Occurring Asbestos Review Area Map that identifies those areas more likely to contain NOA (El Dorado County 2005).

Discussion: The El Dorado County Air Pollution Control District (APCD) has developed a Guide to Air Quality Assessment (2002) to evaluate project specific impacts and help determine if air quality mitigation measures are needed, or if potentially significant impacts could result. A substantial adverse effect on air quality would occur if:

- Emissions of ROG and NO_X will result in construction or operation emissions greater than 82lbs/day (Table 3.2);
- Emissions of PM_{10}, CO, SO_2, and NO_X, as a result of construction or operation emissions, will result in ambient pollutant concentrations in excess of the applicable National or State Ambient Air Quality Standard (AAQS). Special standards for ozone, CO, and visibility apply in the Lake Tahoe Air Basin portion of the County; or
- Emissions of toxic air contaminants cause cancer risk greater than 1 in 1 million (10 in 1 million if best available control technology for toxics is used) or a non-cancer Hazard Index greater than 1. In addition, the project must demonstrate compliance with all applicable District, State and EPA regulations governing toxic and hazardous emissions.

a. **Air Quality Plan:** El Dorado County has adopted the Rules and Regulations of the El Dorado County Air Quality Management District (2000) establishing rules and standards for the reduction of stationary source air pollutants (ROG/VOC, NO_X, and O_3). The El Dorado County/State Clean Air Act Plan has set a schedule for implementing and funding transportation contract measures to limit mobile source emissions. The project would not

conflict with or obstruct implementation of either plan. Roadway improvements to existing access roads will require an encroachment permit and grading permit and will undergo review to determine if any further actions or approvals are needed, including any measures for sediment control. Any activities associated with future plans for grading and construction would require a Fugitive Dust Mitigation Plan for grading and construction activities. Such a plan would address grading measures and operation of equipment to minimize and reduce the level of defined particulate matter exposure and/or emissions to a less than significant level. Therefore, the potential impacts of the project would be anticipated to be less than significant.

b-c. **Air Quality Standards and Cumulative Impacts:** Minor roadway improvements to existing access roads are proposed as part of the project. Although this would contribute air pollutants due to construction, these impacts would be minimal. Existing regulations implemented at issuance of building and grading permits would ensure that any construction related PM_{10} dust emissions would be reduced to acceptable levels. The El Dorado County AQMD reviewed the application materials for this project and determined that by implementing typical conditions including Rule 215 (Architectural Coating) and 501 and 523 (New Paint Source), which are included in the list of recommended conditions, the project would have a less than significant impact. The conditions would be implemented, reviewed, and approved by the AQMD prior to and concurrently with any grading, improvement, or building permit approvals. With full review for consistency with General Plan Policies, impacts would be anticipated to be less than significant.

d. **Sensitive Receptors:** The CEQA Guidelines (14 CCR 15000) identify sensitive receptors as facilities that house or attract children, the elderly, people with illnesses, or others that are especially sensitive to the effects of air pollutants. Hospitals, schools, and convalescent hospitals are examples of sensitive receptors. No sources of substantial pollutant concentrations would be emitted by the existing single-unit residences, or during construction or following construction of improvements to the existing access roads. There would be no impact.

e. **Objectionable Odors:** Table 3-1 of the Guide to Air Quality Assessment (AQMD, 2002) does not list the proposed use of the parcels as a use known to create objectionable odors. The requested Parcel Map would not generate or produce objectionable odors, as it would create residential lots with existing single-unit residential and associated accessory uses. There would be no impact.

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.

Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?

Less than significant impact. El Dorado County has adopted the Rules and Regulations of the El Dorado County Air Pollution Control District (February 15, 2000), establishing rules and standards for

the reduction of stationary source air pollutants (reactive organic gases/volatile organic compounds, oxides of nitrogen, and ozone). Any activities associated with the grading and construction of this project would pose a less than significant impact on air quality because the El Dorado County Air Quality Management District (AQMD) would require that the project implement a Fugitive Dust Plan during grading and construction activities. Such a plan would address grading measures and operation of equipment to minimize and reduce the level of defined particulate matter exposure and/or emissions below a level of significance. Nonetheless, the project's compliance with the applicable rules and standards should be fully analyzed and potential impacts will be disclosed in the Focused EIR.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Potentially significant impact. The project would create air quality impacts that may contribute to an existing or projected air quality violation during construction. Construction activities (project related and those anticipated in the future) include grading and site improvements for roadway expansion, utilities, driveways, home, and building pad construction, and associated on-site activities. These activities are typically intermittent and for short time frames in days. Construction related activities would generate PM_{10} dust emissions that would exceed either the state or federal ambient air quality standards for PM_{10}. This is a temporary but potentially significant effect. As such, without quantification and appropriate mitigation, as warranted, potentially significant impacts could occur. This impact will be analyzed and addressed in the Focused EIR.

Operational air quality impacts would be minor but would contribute to existing or projected air quality violations. Source emissions would be from vehicle trip emissions, natural gas combustion for space and water heating, landscape equipment, and consumer products. As such, without quantification and appropriate mitigation, as warranted, potentially significant impacts could occur. This impact will be analyzed and addressed in the Focused EIR.

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

Potentially significant impact. The project vicinity is designated as non-attainment for ozone and particulate matter (PM_{10} and $PM_{2.5}$). Construction and operational air quality emissions would contribute to increases of criteria pollutants. Source emissions would be from construction activities, vehicle trip emissions, natural gas combustion for space and water heating, landscape equipment, and consumer products. As such, without quantification and appropriate mitigation, as warranted, potentially significant impacts could occur. This impact will be analyzed and addressed in the Focused EIR.

d) Expose sensitive receptors to substantial pollutant concentrations?

Less than significant impact. The El Dorado County AQMD previously reviewed the project and identified that sensitive receptors exist in the area at the adjacent Herbert Green Middle School site to the northeast across Forni Road. AQMD Rules 214 (Architectural Coatings), 223.1 (Fugitive Dust-

Construction, Bulk Material Handling, Blasting, Other Earthmoving Activities and Carryout and Trackout Prevention), 224 (Cutback and Emulsified Asphalt Paving Materials), 300 (Open Burning), Fugitive Dust Plan, as well as implementing typical conditions for the development of the site as it relates to pollutant concentrations based on Environmental Management rules, regulations, and standards, would be required to be implemented during project development. As conditioned by the AQMD, and with adherence to County Codes required during the grading, encroachment and building permit processes, the proposed project would not be expected to expose sensitive receptors to substantial pollutant concentrations. Nonetheless, potential impacts will be fully analyzed in the Focused EIR.

e) Create objectionable odors affecting a substantial number of people?

Less than significant impact. Office/retail/restaurant uses are not classified as an odor generating facility within Table 3.1 of the El Dorado County AQMD CEQA Guide. The proposed project would not create significant levels of odors as measured by current standards. Impacts would be less than significant.

Finding

The proposed project is not expected to significantly affect the implementation of regional air quality regulations or management plans nor is it expected to result in significant impacts related to exposure of sensitive receptors or creation of objectionable odors. However, the proposed project may have the potential to result in significant impacts related to existing or projected air quality violations and a cumulatively considerable net increase of criteria pollutants for which the project region is non-attainment. As such, the project's air quality emissions will be quantified and further analyzed in the Focused EIR.

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

Environmental Evaluation

Regulatory Setting

Federal Laws, Regulations, and Policies

Endangered Species Act

The Endangered Species Act (ESA) (16 U.S. Code [USC] Section 1531, et seq.; 50 Code of Federal Regulations [CFR] Parts 17 and 222) provides for conservation of species that are endangered or threatened throughout all or a substantial portion of their range, as well as protection of the habitats on which they depend. The U.S. Fish and Wildlife Service (USFWS) and the National Marine

Fisheries Service (NMFS) share responsibility for implementing the ESA. In general, USFWS manages terrestrial and freshwater species, whereas NMFS manages marine and anadromous species.

Section 9 of the ESA and its implementing regulations prohibit the "take" of any fish or wildlife species listed under the ESA as endangered or threatened, unless otherwise authorized by federal regulations. The ESA defines the term "take" to mean "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (16 USC Section 1532). Section 7 of the ESA (16 USC Section 1531*,* et seq.) outlines the procedures for federal interagency cooperation to conserve federally listed species and designated critical habitats. Section 10(a)(1)(B) of the ESA provides a process by which nonfederal entities may obtain an incidental take permit from USFWS or NMFS for otherwise lawful activities that incidentally may result in "take" of endangered or threatened species, subject to specific conditions. A habitat conservation plan (HCP) must accompany an application for an incidental take permit.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 USC, Chapter 7, Subchapter II) protects migratory birds. Most actions that result in take, or the permanent or temporary possession of, a migratory bird constitute violations of the MBTA. The MBTA also prohibits destruction of occupied nests. USFWS is responsible for overseeing compliance with the MBTA.

Bald and Golden Eagle Protection Act

The federal Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c), first enacted in 1940, prohibits "taking" bald eagles, including their parts, nests, or eggs. The Act provides criminal penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof." The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." The definition for "Disturb" includes injury to an eagle, a decrease in its productivity, or nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior. In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present.

Clean Water Act

Clean Water Act (CWA) section 404 regulates the discharge of dredged and fill materials into waters of the U.S., which include all navigable waters, their tributaries, and some isolated waters, as well as some wetlands adjacent to the aforementioned waters (33 CFR Section 328.3). Areas typically not considered to be jurisdictional waters include non-tidal drainage and irrigation ditches excavated on dry land, artificially irrigated areas, artificial lakes or ponds used for irrigation or stock watering, small artificial waterbodies such as swimming pools, vernal pools, and water-filled depressions (33 CFR Part 328). Areas meeting the regulatory definition of waters of the U.S. are subject to the jurisdiction of USACE under the provisions of CWA Section 404. Construction activities involving placement of fill into jurisdictional waters of the U.S. are regulated by USACE through permit requirements. No USACE permit is effective in the absence of state water quality certification pursuant to Section 401 of CWA.

Section 401 of the CWA requires an evaluation of water quality when a proposed activity requiring a federal license or permit could result in a discharge to waters of the U.S. In California, the State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards (RWQCBs) issue water quality certifications. Each RWQCB is responsible for implementing Section 401 in compliance with the CWA and its water quality control plan (also known as a Basin Plan). Applicants for a federal license or permit to conduct activities that may result in the discharge to waters of the U.S. (including wetlands or vernal pools) must also obtain a Section 401 water quality certification to ensure that any such discharge will comply with the applicable provisions of the CWA.

State Laws, Regulations, and Policies

California Fish and Game Code

The California Fish and Game Code includes various statutes that protect biological resources, including the Native Plant Protection Act of 1977 (NPPA) and the California Endangered Species Act (CESA). The NPPA (California Fish and Game Code Sections 1900–1913) authorizes the Fish and Game Commission to designate plants as endangered or rare and prohibits take of any such plants, except as authorized in limited circumstances.

CESA (California Fish and Game Code Sections 2050–2098) prohibits state agencies from approving a project that would jeopardize the continued existence of a species listed under CESA as endangered or threatened. Section 2080 of the California Fish and Game Code prohibits the take of any species that is state listed as endangered or threatened, or designated as a candidate for such listing. California Department of Fish and Wildlife (CDFW) may issue an incidental take permit authorizing the take of listed and candidate species if that take is incidental to an otherwise lawful activity, subject to specified conditions.

California Fish and Game Code Sections 3503, 3513, and 3800 protect native and migratory birds, including their active or inactive nests and eggs, from all forms of take. In addition, Section 3511, 4700, 5050, and 5515 identify species that are fully protected from all forms of take. Section 3511 lists fully protected birds, Section 5515 lists fully protected fish, Section 4700 lists fully protected mammals, and Section 5050 lists fully protected amphibians.

Streambed Alteration Agreement

Sections 1601 to 1606 of the California Fish and Game Code require that a Streambed Alteration Application be submitted to CDFW for any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake. As a general rule, this requirement applies to any work undertaken within the 100-year floodplain of a stream or river containing fish or wildlife resources.

California Native Plant Protection Act

The California Native Plant Protection Act (California Fish and Game Code Section 1900–1913) prohibits the taking, possessing, or sale of any plants with a state designation of rare, threatened, or endangered (as defined by CDFW). The California Native Plant Society (CNPS) maintains a list 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 Plants of California (CNPS 2001). Potential impacts to populations of CNPS-listed plants receive consideration under CEQA review.

Forest Practice Act

Logging on private and corporate land in California is regulated by the Z'berg-Nejedly Forest Practices Act (FPA), which took effect January 1, 1974. The act established the Forest Practice Rules (FPRs) and a politically appointed Board of Forestry to oversee their implementation. CAL FIRE works under the direction of the Board of Forestry and is the lead government agency responsible for approving logging plans and for enforcing the FPRs. A Timber Harvest Plan (THP) must be prepared by a Registered Professional Forester (RPF) for timber harvest on virtually all non-federal land. The FPA also established the requirement that all non-federal forests cut in the State be regenerated with at least 300 stems per acre on high site lands, and 150 trees per acre on low site lands.

Local Laws, Regulations, and Policies

The County General Plan also include policies that contain specific, enforceable requirements and/or restrictions and corresponding performance standards that address potential impacts on special-status plant species or create opportunities for habitat improvement. The El Dorado County General Plan designates the Important Biological Corridor (IBC) (Exhibits 5.12-14, 5.12-5 and 5.12-7: El Dorado County 2003). Lands located within the overlay district are subject to the following provisions, given that they do not interfere with agricultural practices:

- 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).

Would the project:

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

Less than significant impact with mitigation incorporated. A Biological Resource Assessment Update (BRA Update) was prepared for the project by Salix Consulting, Inc., dated June 7, 2016 (Appendix A.1). The BRA Update is a review and update of a previously prepared Biological Resource Assessment for the Creekside Plaza Study Area, dated February 14, 2011 (2011 BRA) (Appendix A.1). The BRA Update indicates that current on-site conditions—including habitat types, geology and soils, hydrology, vegetation, and wildlife—are similar to those reported in the 2011 BRA. The project site's habitat types consist of approximately 0.7 acre of ruderal vegetation, 2.5 acres of foothill woodland and 1.1 acres of riparian area (Exhibit 5). The parcel does not fall within designated critical habitat or core areas for the red-legged and yellow-legged frog species. The project site is located within Rare Plant Mitigation Area 2, which are areas not known to contain listed species but are within the EID service area.

The BRA Update included a search of the California Natural Diversity Database (CNDDB), the United States Fish and Wildlife Service (USFWS) Information for Planning and Conservation database, and the CNPS Inventory for special-status species occurring on and within the project vicinity.

As noted in the BRA Update and consistent with the 2011 BRA, 14 special-status plant species were identified as occurring in the project vicinity (see Table 3 of the BRA Update); however, there is no likelihood for these plant species to occur on-site, due to the absence of suitable habitat or substrates.

As noted in the BRA Update (see Table 4 of the BRA), nine special-status wildlife species were identified as occurring in the project vicinity; however, on-site assessment indicated that the potential for these species to occur on the project site is either none or unlikely, due to absence of suitable habitat. This assessment was also consistent with the 2011 BRA.

The project would include habitat modification to a portion of the on-site 0.50 acre of Waters of the U.S (Exhibit 6). The USACE has issued a Preliminary Jurisdictional Determination (Appendix A.3). Through implementation of the USACE, CDFW, RWQCB, and County requirements, impacts to the wetland habitat would not be considered significant.

Consistent with the 2011 BRA, the BRA Update confirmed that mitigation should be required to reduce or avoid impacts to nesting raptors and migratory birds. However, Mitigation Measure BIO-1, inclusive of the update recommended in the BRA Update, would ensure impacts to nesting raptors and migratory birds would be less than significant.

Overall, consistent with the 2011 BRA, the BRA Update found that the project would not have a substantial adverse effect, either directly or through habitat modification, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, and regulations or by the CDFW or USFWS after implementation of regulatory requirements and mitigation.

MM BIO-1 **Pre-construction Survey Required**: If vegetation removal is conducted within the nesting period for most migratory bird species and nesting raptor species (between March 1 and August 15), a pre-construction survey for active bird nests shall be conducted no more than 15 days prior to initiation of ground-disturbing activities by a qualified biologist. If vegetation removal activities are delayed or suspended more than one month after the pre-construction survey, the area shall be re-surveyed. If active bird nests are identified, vegetation removal in these areas shall be postponed until after the nesting season, or a qualified biologist has determined the young have fledged and are independent of the nest site. No known active nests shall be disturbed without a permit or other authorization from the United States Fish and Wildlife Service or the California Department of Fish and Wildlife.

Monitoring Responsibility: Planning Services.

Monitoring Requirement: The applicant shall conduct all construction activities outside the nesting season or perform a pre-construction survey and obtain all necessary permits prior to initiation of construction activities. This requirement shall be noted on all grading plans. Planning Services shall review the surveys prior to issuance of a grading permit and/or removal of any trees within the entire project parcel.

b-c) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less than significant impact with mitigation incorporated. As indicated in the BRA Update, approximately 1.1 acres of riparian habitat occurs on-site. Within this riparian habitat, 0.50 acre of Waters of the U.S. are present.

The 2011 BRA determined that the unnamed tributary to Weber Creek within the project boundaries, the associated riparian habitat, and the oak woodland, were potential important habitats present at the site. The 2011 BRA's wetland delineation determined that portions of the proposed development area would occur within the 50-foot setback riparian area shown on the submitted site plan for the construction and installation of the retaining walls and parking areas. Approximately 299 feet of the identified intermittent stream and associated riparian area are proposed to be filled with soil beginning at the culvert under Forni Road then northwest into the project area. That portion would be routed through a 48-inch-diameter culvert installed underground and routed to the west of proposed Building C, continue to just north of proposed Building B, then back into the remaining creek bed, eventually to join the waters of Weber Creek. The project has the potential to adversely affect water quality downstream, both during construction and during operation of the project. This impact would be significant. The applicant would implement mitigation requiring a Water Quality Certification, Section 401 permit to ensure downstream water quality impacts would be less than significant.



Source: Salix Consulting, 2015

FirstCarbon SOLUTIONS

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Feet

Exhibit 5
Habitat Types

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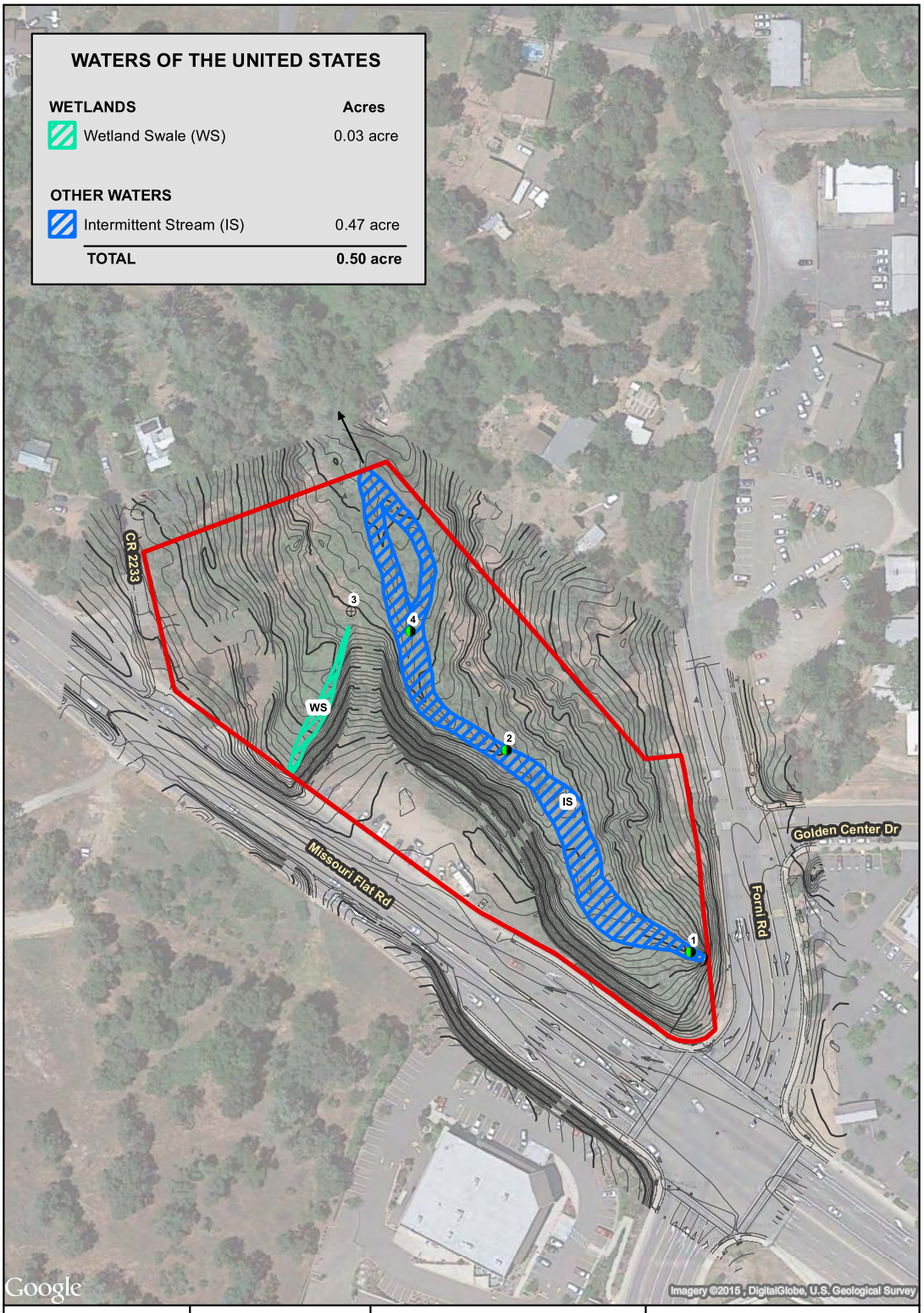

Source: Salix Consulting, 2015

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Exhibit 6
Wetlands

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North Fork Associates delineated Waters of the United States for the project site in July of 2006. The USACE verified the revised delineation on September 9, 2008; however, the verification expired in 2013. Therefore Salix, Inc. prepared an updated wetland delineation, dated November 2015 (Appendix A.3). The USACE has again provided verification of the wetland delineation (Appendix A.3) on April 16, 2016. The letter provided concurrence of preliminary determination of the approximately 0.50 acre of wetlands and other water bodies present within the project site as potential Waters of the United States regulated under Section 404 of the Clean Water Act.

As indicated in the USACE's letter, work within the potentially jurisdictional Waters of the United States should not start until USACE has permitted authorization for the activity. In addition, an approved jurisdictional delineation may later be necessary. Through the required Section 404 permit process, the USACE will analyze the project's potential impacts to jurisdictional features, including any potential impacts from undergrounding utilities (such as connection to the sewer line and lift station located on the northern adjoining parcel) through the wetland area.

The project applicants have initiated the permit application process for the project with the USACE, and they in turn are developing mitigation measures through the 404 Permit process. The USACE permit will define terms and conditions, including mitigation, for the fill activities. The project may also be regulated by potential Streambed Alteration Agreements to be obtained from the CDFW, if applicable, pursuant to Sections 1602 of the California Fish and Game Code, as well as a potential California Water Quality Certification, Section 401 permit from the Regional Water Quality Control Board. All three agencies would require review of the development plans prior to issuance of a grading and/or building permit. The following Mitigation Measures are recommended to be included into the project's Conditions of Approval in order to reduce the impacts to the unnamed creek area to a less than significant level:

In summary, the project will affect the bed, bank, and channel of a stream, including the adjacent riparian habitat. The project as proposed will affect 0.5 acre of riparian habitat, including nearly 300 linear feet of stream channel. In addition, construction and operation of the project could result in downstream water quality impacts. These impacts are considered potentially significant. However, implementation of the following mitigation measures would ensure the project impacts would be reduced to less than significant.

MM BIO-2 **Streambed Alteration Agreement**: A Streambed Alteration Agreement, pursuant to Fish and Game Code 1602, shall be obtained by the applicants, from the California Department of Fish and Wildlife (CDFW), if applicable, for each stream crossing and any other activities affecting the bed, bank, or associated riparian vegetation of any stream on the site. Appropriate mitigation measures shall be developed in coordination with CDFW in the context of the agreement process. Authorization prior to placement of any fill is required from the United States Army Corps of Engineers (USACE) if any impacts are proposed to jurisdictional riparian habitat. This authorization may require mitigation as deemed necessary by the USACE. The Agreement shall address the following to the satisfaction of the CDFW:

a. The applicant will purchase credits in the National Fish and Wildlife Foundation Fund for impacts to the stream and riparian habitat. Credits will be obtained at a minimum ratio of 1:1. This must be done before County permits are issued.

b. The applicant will:
   i. Set aside the unimpacted portion of the stream and adjacent riparian habitat (approximately 0.9 acre) in separate legal parcel;
   ii. Place the preserved parcel in a Conservation Easement;
   iii. Obtain an approved 501(c)(3) non-profit organization to hold the Conservation Easement;
   iv. Provide a Long-term Operations and Management Plan describing activities for managing the preserved parcel, and
   v. Provide a long-term funding mechanism to be approved by the Department of Fish and Game.
   vi. Provisions a. through e. must be completed before County permits are issued.

c. The applicant will provide an approved restoration plan for riparian planting. Elements of that plan will include:
   i. A map of locations and species for the plants installed in the restoration area;
   ii. A discussion of performance standards stating that 80 percent of the planted trees will be alive at the end of the five-year monitoring;
   iii. The method for determining whether plantings are alive at the end of each monitoring year (that is, each tree will be counted and determined to be dead or alive; dead trees will be replanted)
   iv. A discussion contingency measures that could be used in the event that the restoration plantings fail. These measures could include, but are not limited to, making additional plantings and extending the monitoring period or purchasing additional credits in an acceptable fund or mitigation bank.
   v. Submission of annual reports for the restoration project to the CDFW.
   vi. This plan must be approved by the CDFW before County permits are issued.

Monitoring Responsibility: Planning Services

Monitoring Requirement: The applicant shall provide a copy of the 1602 Streambed Alteration Agreement to Development Services prior to issuance of the grading permit. If it has been determined by Fish and Game that said permit does not apply after their review of the development plans for the project, the applicant shall provide Planning Services with verification from Fish and Game that no Agreement is needed for the project, prior to issuance of a building and/or grading permit for the project area.

MM BIO-3 **Wetland Delineation Verification**: Prior to placement of fill material in on-site Waters of the U.S. The applicants shall request authorization from the United States Army Corps of Engineers (USACE) through the Section 404 Permit process. Along with the request, the applicants shall provide project construction and development drawings or maps, including, for example, wetland areas, denoting all proposed

improvements in relation to the Ordinary High Water Mark (OHWM). Applicant shall strive to avoid adverse and minimize impacts to Waters of the United States, and to achieve a goal of no net loss of wetlands functions and values. Applicant shall propose to the USACE appropriate mitigation for unavoidable losses to Waters of the U.S. using USACE mitigation guidelines and regulations. The USACE Section 404 permit will define terms and conditions, including mitigation, for the fill activities.

Monitoring Responsibility: Planning Services

Monitoring Requirement: The applicant shall provide either a copy of the USACE permit or no permit required letter and provide Planning Services with a copy prior to issuance of a building, and/or grading permit for the project area.

MM BIO-4 **Water Quality Certification**: A Water Quality Certification, Section 401 permit, if applicable, shall be obtained by the applicant from the Regional Water Quality Control Board for applicable project improvements. Appropriate mitigation measures shall be developed in coordination with in the context of the agreement process. Additionally, the following shall be included to the satisfaction of the Regional Water Quality Control Board:

a. The applicant will prepare a Storm Water Pollution Prevention Plan for approval. That plan will describe methods for ensuring downstream water quality during construction and will be implemented before construction begins.
b. Work areas will be separated by buffers and orange construction fencing to delineate the preserved riparian areas. No grading will be allowed within the fenced-off buffer zones.
c. Waste and construction materials will be placed where they will not run off into the stream, or they will immediately be removed off-site.
d. The project will include a Continuous Deflection Separation system to remove oil and other substances from runoff within the project area before it is discharged to Weber Creek. This system will be maintained by the property owner as described in the Contech Stormwater Solutions technical manuals.

Monitoring Responsibility: Planning Services

Monitoring Requirement: The applicant shall provide a copy of the Section 401 permit to Development Services prior to issuance of the grading permit. If it has been determined by the Regional Water Quality Control Board that said permit does not apply after their review of the development plans for the project, the applicant shall provide Planning Services with confirmation from them of that determination prior to issuance of a building and/or grading permit for the project area. The Storm Water Pollution Prevention Plan shall be reviewed and approved by Building Services or DOT prior to issuance of a grading permit.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?

Less than significant impact with mitigation incorporated. Review of the California Department of Fish and Game California Wildlife Habitat Relationship System indicates that there are no mapped critical deer migration corridors on the project site. The 2011 BRA found that the project would not substantially interfere with the movement of any native resident or migratory fish or wildlife species or with any established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites. The project has the potential to impact migratory birds as discussed under checklist question a) above. As conditioned, mitigated (MM BIO-1), and with adherence to County Code, impacts would be less than significant.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Less than significant impact. El Dorado County Code and General Plan Policies pertaining to the protection of biological resources include protection of rare plants, setbacks to riparian areas, and mitigation of impacted oak woodlands. Rare plants were discussed above in the Special-status Species section. As indicated therein, no rare plants are present on-site.

County Zoning Ordinance Section 130.30.030.G—Setback Requirements and Exceptions, Protection of Wetlands and Sensitive Riparian Habitat

Zoning Ordinance Section 130.30.030.G requires preparation of a biological resource evaluation (BRE) for all discretionary development that has the potential to impact wetlands or sensitive riparian habitat. The BRE shall establish the area of avoidance and any buffers or setbacks required to reduce impacts to a less than significant level. The BRE may also identify mitigation measures to be employed to reduce identified impacts, including compliance with state or federal permit requirements.

As indicated in the 2011 BRA, the project site has severe constraints to development, including the relative narrowness of the project site and the steeply graded slope along Missouri Flat Road. As such, the project includes a request to reduce the on-site wetland setback for the project to no setback. To support this request, as indicated in the 2011 BRA and the BRA Update, the on-site wetlands, nor any other area of the project, do not support plants or animals identified as threatened, endangered, or of special-status on both the Federal or State lists, and the identified wetlands were identified to be seasonal in nature.

The project biological consultant has recommended that the setbacks to the wetland features be waived, because the wetlands are of low habitat value and they are stable from erosion, provided that appropriate stormwater Best Management Practices (BMPs) are in place to catch runoff. Table 3 provides a list of examples of the BMPs that the project would be required to adhere as a part of the grading permit requirements by County Code. The TD Plan Checker will review the submitted grading plan and verify that the plan includes BMPs consistent with the County's California Stormwater Pollution Prevention Plan issued by the State Water Resources Control Board, prior to grading permit issuance.

Table 3: Required Stormwater Best Management Practices (BMPs)

Erosion Control	Sediment Control	Tracking Control	Non Storm Water Management
Hydroseeding	Silt Fence	Stabilized Construction Entrance	Water Conservation Practices
Straw Mulch	Fiber Rolls	Waste Management	Vehicle and Equipment Cleaning
Geotextiles and Mats	Gravel Bag Berm	Material Delivery and Storage	Vehicle and Equipment Maintenance
Erosion Control	Street Sweeping and Vacuuming	Material Use	Non Storm Water Management

With the incorporation of BMPs and mitigation measures (MM BIO-2 through BIO-5) to minimize impacts on the wetlands, the request to reduce the required setbacks could be found to be consistent with the County Zoning Ordinance Section 130.30.030.G. Therefore, impacts would be less than significant.

General Plan Policy 7.4.4.4—Oak Canopy Protection

Policy 7.4.4.4 establishes the native oak tree canopy retention and replacement standards. Impacts to oak woodlands have been addressed in the current El Dorado County General Plan EIR. As indicated in the Interim Interpretive Guidelines for El Dorado County General Plan Policy 7.4.4.4 (Option A), if the project site contains 10 to 19 percent of existing oak canopy cover, then 90 percent of existing canopy must be retained and removed oak canopy must be replaced at a 1:1 ratio. Option B of Policy 7.4.4.4, which allows for the payment of a mitigation fee instead of retention and replacement, is not currently available, because the County does not currently have an adopted Oak Woodland Management Plan (OWMP) which would establish the provisions for conservation in-lieu fees.

As indicated in the Oak Canopy Cover Analysis (Appendix A.2), the project contains 0.78 acre or 18.1 percent oak canopy, and therefore, would be required to retain 90 percent or 0.70 acre of on-site oak canopy per General Plan Policy 7.4.4.4. However, the project as proposed would not maintain the required amount, and therefore would not be consistent with General Plan Policy 7.4.4.4.

Currently, the County is preparing an EIR that evaluates proposed updates to specific policies in the County's General Plan, including Policy 7.4.4.4, referred to as the Biological Resources Policy Update, and the proposed adoption of an Oak Resource Management Plan (ORMP). The goal of the Biological Resources Policy Update is to clarify and refine the intent and scope of the updated policies, ensuring the consistency of all the related biological policies, considering changes in state law, and finally harmonizing the General Plan Policies.

Revisions to Policy 7.4.4.4 would include updates to oak woodland and oak tree mitigation requirements in an ORMP instead of an OWMP. The Draft ORMP reflects the following revisions to the requirements previously contained in Policy 7.4.4.4, including but not limited to:

- Use of 'oak woodland' as a measurement
- Development of a 2-tiered mitigation approach that incorporates oak woodland mitigation (Policy 7.4.4.4) and oak tree mitigation (including heritage trees (Policy 7.4.5.2).
- Removal of the necessity for two oak woodland mitigation options (previously defined as Option A and Option B) and removal of retention standards by incorporating an incentive-based approach for oak woodland impact avoidance.

The Draft ORMP identifies standards for oak woodland and native oak tree impact determination, mechanisms to mitigate impacts, technical report submittal requirements, minimum qualifications for technical report preparation, mitigation monitoring and reporting requirements, and projects or actions that are exempt from mitigation requirements. The Draft ORMP also establishes an in-lieu fee payment option for impacts to oak woodlands and individual native oak tree.

Under the Draft ORMP, mitigation for impacts to oak woodlands is based on the percent of oak woodland impacted on-site. Projects impacting 0 to 50 percent of on-site oak woodland, are required to mitigate for such impacts at a 1:1 ratio; projects impacting 50.1 to 75 percent of on-site oak woodlands are required to mitigate at a 1.5:1 ratio; and projects impacting 75.1 to 100 percent of on-site oak woodlands are required to mitigate at a 2:1 ratio. Based on an Oak Canopy Mitigation Plan previously prepared for the project, approximately 61 percent of on-site oak woodlands would require removal for construction of the project. While exact impacts will need to be reanalyzed, in accordance with the Draft ORMP, it is likely that the project will be required to mitigation for oak canopy removal at a 1.5:1 ratio. In addition, as outlined in the Draft ORMP, a deed restriction or conservation easement shall be placed over retained on-site woodlands, and those woodlands retained on-site shall not be counted towards the impacted amount or the towards the required mitigation. Mitigation at the applicable ratio would be implemented using one or more of the following options, as outlined in the Draft ORMP:

1. Deed restriction or conservation easement acquisition (Off-site), and/or acquisition in fee title by a land conservation organization (off-site);
2. In-lieu fee payment;
3. Replacement planting on-site within an area subject to a deed restriction or conservation easement;
4. Replacement planting off-site within an area subject to a conservation easement; or
5. A combination of numbers 1 through 4 above.

Because the project would not be consistent with the current requirements of the interim guidelines of Policy 7.4.4.4, mitigation measure BIO-5 would require that the project is not approved until the Draft ORMP is approved and a project specific technical report and mitigation plan addressing impacts to oak woodlands is prepared in accordance with the approved ORMP and approved by the County. Implementation of this mitigation would ensure that impacts to oak woodlands would be less than significant.

MM BIO-5 Alteration of on-site oak trees, or the implementation of on-site work that may affect on-site oak trees, including their canopy or root systems, shall not occur until the County's Draft Oak Resource Management Plan (ORMP) is approved and its related CEQA documentation is certified. In addition, a project specific technical report and mitigation plan addressing impacts to on-site oak woodlands consistent with the guidelines and regulations of adopted ORMP must be prepared and approved by the County prior to project approval. The technical report must disclose the percentage of impacted oak woodland on-site and the related mitigation plan must indicate the appropriate mitigation ratio and mitigation type, consistent with the requirements of the ORMP.

Monitoring Responsibility: Planning Services.

Monitoring Requirement: The applicant shall provide a project specific technical report and mitigation plan addressing impacts to on-site oak woodlands prior to on-site work which may affect oak trees, including their canopy or root systems. The applicant shall also provide evidence of implementation of mitigation through provision to the County evidence of a deed restriction or conservation acquisition, in-lieu fee payment, on-site replacement planting and deed restriction or conservation easement; on-site replacement planting, or any combination thereof, consistent with the OWMP.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Less than significant impact. This project, as designed, would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. Impacts would be less than significant.

Finding

For the Biological Resources category, as conditioned, mitigated and with adherence to County Code, the thresholds of significance would not be exceeded.

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
5. Cultural Resources *Would the project:*				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource or Tribal Cultural Resource (TCR) pursuant to §15064.5 or Public Resources Code 21074?	☐	☐	☒	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

Environmental Evaluation

Regulatory Setting

Federal Laws, Regulations, and Policies

The National Register of Historic Places

The National Register of Historic Places (NRHP) is the nation's master inventory of known historic resources. The NRHP is administered by the National Park Service and includes listings of buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archaeological, or cultural significance at the national, state, or local level. The criteria for listing in the NRHP include resources that:

a) Are associated with events that have made a significant contribution to the broad patterns of history (events);

b) Are associated with the lives of persons significant in our past (persons);

c) Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction (architecture); or

d) Have yielded or may likely yield information important in prehistory or history (information potential).

State Laws, Regulations, and Policies

California Register of Historical Resources

Public Resources Code Section 5024.1 establishes the CRHR. The register lists all California properties considered to be significant historical resources. The CRHR includes all properties listed as or determined to be eligible for listing in the NRHP, including properties evaluated under Section 106 of the National Historic Preservation Act. The criteria for listing are similar to those of the NRHP. Criteria for listing in the CRHR include resources that:

1. Are associated with the events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. Are associated with the lives of persons important in our past;
3. Embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of an important creative individual, or possess high artistic values; or
4. Have yielded, or may be likely to yield, information important in prehistory or history.

The regulations set forth the criteria for eligibility as well as guidelines for assessing historical integrity and resources that have special considerations.

The California Register of Historic Places

The California Register of Historic Places (CRHP) program encourages public recognition and protection of resources of architectural, historical, archaeological and cultural significance, identifies historical resources for state and local planning purposes, determines eligibility for state historic preservation grant funding, and affords certain protections under the California Environmental Quality Act. The criteria for listing in the CRHP include resources that:

a) Are associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States.
b) Are associated with the lives of persons important to local, California or national history.
c) Embody the distinctive characteristics of a type, period, region or method of construction or represents the work of a master or possesses high artistic values.
d) Have yielded, or have the potential to yield, information important to the prehistory or history of the local area, California or the nation.

The State Office of Historic Preservation sponsors the California Historical Resources Information System (CHRIS), a statewide system for managing information on the full range of historical resources identified in California. CHRIS provides an integrated database of site-specific archaeological and historical resources information. The State Office of Historic Preservation also maintains the CRHR, which identifies the State's architectural, historical, archaeological and cultural resources. The CRHR includes properties listed in or formally determined eligible for the National Register and lists selected California Registered Historical Landmarks.

Public Resources Code (Section 5024.1[B]) states that any agency proposing a project that could potentially impact a resource listed on the CRHR must first notify the State Historic Preservation Officer, and must work with the officer to ensure that the project incorporates "prudent and feasible measures that will eliminate or mitigate the adverse effects."

California Health and Safety Code Section 7050.5 requires that, in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the County in which the human remains are discovered has determined that the remains are not subject to the provisions of Section 27491 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of any death. If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission.

Section 5097.98 of the California Public Resources Code stipulates that whenever the commission receives notification of a discovery of Native American human remains from a county coroner pursuant to subdivision (c) of Section 7050.5 of the Health and Safety Code, it shall immediately notify those persons it believes to be most likely descended from the deceased Native American. The decedents may, with the permission of the owner of the land, or his or her authorized representative, inspect the site of the discovery of the Native American remains and may recommend to the owner or the person responsible for the excavation work means for treating or disposing, with appropriate dignity, the human remains and any associated grave goods. The descendants shall complete their inspection and make their recommendation within 24 hours of their notification by the Native American Heritage Commission. The recommendation may include the scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

CEQA and CEQA Guidelines

Section 21083.2 of CEQA requires that the lead agency determine whether a project may have a significant effect on unique archaeological resources. A unique archaeological resource is defined in CEQA as an archaeological artifact, object, or site about which it can be clearly demonstrated that there is a high probability that it:

- Contains information needed to answer important scientific research questions, and there is demonstrable public interest in that information;
- Has a special or particular quality, such as being the oldest of its type or the best available example of its type; or
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.
- Although not specifically inclusive of paleontological resources, these criteria may also help to define "a unique paleontological resource or site."

Measures to avoid, conserve, preserve, or mitigate significant effects on these resources are also provided under CEQA Section 21083.2.

Section 15064.5 of the CEQA Guidelines notes that "a project with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment." Substantial adverse changes include physical changes to the historic resource or to its immediate surroundings, such that the significance of the historic resource would be materially impaired. Lead agencies are expected to identify potentially feasible measures to mitigate significant adverse changes in the significance of a historic resource before they approve such projects. Historic resources are those that are:

- Listed in, or determined to be eligible for listing in, the California Register of Historical Resources (CRHR) (Public Resources Code Section 5024.1[k]);
- Included in a local register of historic resources (Public Resources Code Section 5020.1) or identified as significant in an historic resource survey meeting the requirements of Public Resources Code Section 5024.1(g); or
- Determined by a lead agency to be historically significant.

CEQA Guidelines Section 15064.5 also prescribes the processes and procedures found under Health and Safety Code Section 7050.5 and Public Resources Code Section 5097.95 for addressing the existence of, or probable likelihood of, Native American human remains, as well as the unexpected discovery of any human remains within the project site. This includes consultation with the appropriate Native American tribes.

CEQA Guidelines Section 15126.4 provides further guidance about minimizing effects to historical resources through the application of mitigation measures. Mitigation measures must be legally binding and fully enforceable.

The lead agency having jurisdiction over a project is also responsible to ensure that paleontological resources are protected in compliance with CEQA and other applicable statutes. Paleontological and historical resource management is also addressed in Public Resources Code Section 5097.5, "Archaeological, Paleontological, and Historical Sites." This statute defines as a misdemeanor any unauthorized disturbance or removal of a fossil site or remains on public land and specifies that state agencies may undertake surveys, excavations, or other operations as necessary on state lands to preserve or record paleontological resources. This statute would apply to any construction or other related project impacts that would occur on state-owned or state-managed lands. The County General Plan contains policies describing specific, enforceable measures to protect cultural resources and the treatment of resources when found.

Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

Less than significant impact. The Cultural Resource Assessment dated March 25, 2009, along with the Cultural Resources Assessment Supplemental Letter, dated April 29, 2016 (Appendix B), determined that no significant prehistoric or historic archaeological sites, features, or artifacts were present on the proposed project site. In the event sub-surface historical, cultural, or archaeological sites or materials are disturbed during earth disturbances and grading activities on the site, standard conditions of approval would be included to reduce impacts to a less than significant level. Impacts would be less than significant.

b-c) Cause a substantial adverse change in the significance of an archaeological resource or Tribal Cultural Resource pursuant to §15064.5 or Public Resources Code 21074? Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less than significant impact. According to the submitted Cultural Resources Study and the Cultural Resources Assessment Supplemental Letter no significant prehistoric or historic archaeological sites, features, or artifacts were found and the project site does not contain any known paleontological sites or known fossil strata/locales. Further, as detailed in Appendix B to this initial study, no Tribal Cultural Resources (TCRs) were identified on the site as part of the NAHC Sacred Lands File search or through subsequent outreach and correspondence with Native American representatives. In the event sub-surface historical, cultural, or archaeological sites or materials are disturbed during earth disturbances and grading activities on the site, standard Conditions of Approval would be included to reduce impacts to a less than significant level.

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

Less than significant impact. There is a small likelihood of human remain discovery on the project site. During all grading activities, standard conditions of approval would be required that address accidental discovery of human remains. Impacts would be less than significant.

Finding

No significant cultural resources were identified on the project site. Standard conditions of approval would be required with requirements for accidental discovery during project construction. This project would result in a less than significant impact within the Cultural Resources category.

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
6. Geology and Soils *Would the project:*				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

Environmental Evaluation

Regulatory Setting

Federal Laws, Regulations, and Policies

National Earthquake Hazards Reduction Act

The National Earthquake Hazards Reduction Act of 1977 (Public Law 95-124) and creation of the National Earthquake Hazards Reduction Program (NEHRP) established a long-term earthquake risk-reduction program to better understand, predict, and mitigate risks associated with seismic events. The following four federal agencies are responsible for coordinating activities under NEHRP: USGS,

National Science Foundation (NSF), Federal Emergency Management Agency (FEMA), and National Institute of Standards and Technology (NIST). Since its inception, NEHRP has shifted its focus from earthquake prediction to hazard reduction. The current program objectives (NEHRP 2009) are to:

1. Develop effective measures to reduce earthquake hazards;
2. Promote the adoption of earthquake hazard reduction activities by federal, state, and local governments; national building standards and model building code organizations; engineers; architects; building owners; and others who play a role in planning and constructing buildings, bridges, structures, and critical infrastructure or "lifelines";
3. Improve the basic understanding of earthquakes and their effects on people and infrastructure through interdisciplinary research involving engineering; natural sciences; and social, economic, and decision sciences; and
4. Develop and maintain the USGS seismic monitoring system (Advanced National Seismic System); the NSF-funded project aimed at improving materials, designs, and construction techniques (George E. Brown Jr. Network for Earthquake Engineering Simulation); and the global earthquake monitoring network (Global Seismic Network).

Implementation of NEHRP objectives is accomplished primarily through original research, publications, and recommendations and guidelines for state, regional, and local agencies in the development of plans and policies to promote safety and emergency planning.

State Laws, Regulations, and Policies

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (Public Resources Code Section 2621, et seq.) was passed to reduce the risk to life and property from surface faulting in California. The Alquist-Priolo Act prohibits construction of most types of structures intended for human occupancy on the surface traces of active faults and strictly regulates construction in the corridors along active faults (earthquake fault zones). It also defines criteria for identifying active faults, giving legal weight to terms such as "active," and establishes a process for reviewing building proposals in and adjacent to earthquake fault zones. Under the Alquist-Priolo Act, faults are zoned and construction along or across them is strictly regulated if they are "sufficiently active" and "well defined." Before a project can be permitted, cities and counties are required to have a geologic investigation conducted to demonstrate that the proposed buildings would not be constructed across active faults.

Historical seismic activity and fault and seismic hazards mapping in the project vicinity indicate that the area has relatively low potential for seismic activity (El Dorado County 2003). No active faults have been mapped in the project area, and none of the known faults have been designated as an Alquist-Priolo Earthquake Fault Zone.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 (Public Resources Code Sections 2690–2699.6) establishes statewide minimum public safety standards for mitigation of earthquake hazards. While the Alquist-Priolo Act addresses surface fault rupture, the Seismic Hazards Mapping Act addresses other

earthquake-related hazards, including strong ground shaking, liquefaction, and seismically induced landslides. Its provisions are similar in concept to those of the Alquist-Priolo Act. The State is charged with identifying and mapping areas at risk of strong ground shaking, liquefaction, landslides, and other seismic hazards, and cities and counties are required to regulate development within mapped seismic hazard zones. In addition, the act addresses not only seismically induced hazards but also expansive soils, settlement, and slope stability.

Mapping and other information generated pursuant to the SHMA is to be made available to local governments for planning and development purposes. The State requires (1) local governments to incorporate site-specific geotechnical hazard investigations and associated hazard mitigation, as part of the local construction permit approval process; and (2) the agent for a property seller or the seller if acting without an agent, must disclose to any prospective buyer if the property is located within a Seismic Hazard Zone. Under the Seismic Hazards Mapping Act, cities and counties may withhold the development permits for a site within seismic hazard zones until appropriate site-specific geologic and/or geotechnical investigations have been carried out and measures to reduce potential damage have been incorporated into the development plans.

California Building Standards Code

Title 24 CCR, also known as the California Building Standards Code (CBC), specifies standards for geologic and seismic hazards other than surface faulting. These codes are administered and updated by the California Building Standards Commission. CBC specifies criteria for open excavation, seismic design, and load-bearing capacity directly related to construction in California.

Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

No impact. According to the California Department of Conservation, Division of Mines and Geology, there are no Alquist-Priolo fault zones within or near the project site (California Department of Conservation 2014). The nearest such faults are located in Alpine and Butte Counties, as well as in the Emerald Bay and Echo Lake Areas of Lake Tahoe. There would be no impact.

ii) Strong seismic ground shaking?

Less than significant impact. El Dorado County is considered an area with low potential for seismic activity. Any potential impacts due to seismic impacts would be addressed through compliance with the Uniform Building Code. All structures would be built to meet the construction standards of the UBC for the appropriate seismic zone. The potential for seismic ground shaking in the project area would be considered less than significant.

iii) Seismic-related ground failure, including liquefaction?

Less than significant impact. El Dorado County is considered an area with low potential for seismic activity. The potential areas for liquefaction on the project site would be the wetlands. Areas of the wetlands that would be filled as part of the project would be filled with engineered soil to reduce or eliminate the potential liquefaction. Remaining areas of wetlands would be preserved as open space and would not be developed for human residency or use. Therefore, impacts would be less than significant

iv) Landslides?

Less than significant impact. All grading activities on-site would be required to comply with the El Dorado County Grading, Erosion Control and Sediment Ordinance. Compliance with the Ordinance would reduce potential landslide impacts to less than significant.

b) Result in substantial soil erosion or the loss of topsoil?

Less than significant impact. The three buildings proposed on-site would be located primarily within areas that have previously been graded, which would reduce the need for extensive grading throughout the site. According to the 2011 BRA, portions of the area were placer mined at one time. Since then, much of the site has been graded to minimize the topography within the areas south of the creek. The northwestern portion of the site near the proposed Building C does not appear to have experienced any grading, and as a result, would need to be graded. All grading activities exceeding 250 cubic yards of graded material or grading completed for the purpose of supporting a structure must meet the provisions contained in the *County of El Dorado—Grading, Erosion, and Sediment Control Ordinance A*dopted by the County of El Dorado Board of Supervisors, August 10, 2010 (Ordinance #4949). According to the Soil Survey for El Dorado County, the project site contains BhC (Boomer gravelly loam with 3 to 15 percent slopes), DfC (Diamond Springs very sandy loam with 9 to 15 percent slopes), and PrD, (Placer Diggings with 2 to 75 percent slopes). BhC and DfC soils have medium to rapid surface runoff and slight to moderate erosion hazards. Prd soils are stony, cobbly, and gravelly and are typically near streambeds and are located within the project site along the unnamed creek. This area would not be developed. All grading activities on-site would comply with the El Dorado County Grading, Erosion Control and Sediment Ordinance including the implementation of pre- and post-construction BMPs. The implemented BMPs are required to be consistent with the County's California Stormwater Pollution Prevention Plan issued by the State Water Resources Control Board to eliminate run-off and erosion and sediment controls. Implementation of these BMPs would reduce potential significant impacts of soil erosion or the loss of topsoil to a less than significant level.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Less than significant impact. As stated above, the project site contains BhC, DfC, and PrD soils. The Soil Survey for El Dorado County lists all three as having low shrink-swell potential (USDA 2013). On-site grading to occur as part of the project would ensure that all geologic units and soils are stable

and suitable for building. The retaining wall and adjacent slopes to be created along the northern part of the development would be engineered to ensure the risk of landslide or lateral spreading is minimized. The site would not be subject to off-site landslide, lateral spreading, subsidence, liquefaction or collapse, nor does it have expansive soils. The project would be required to comply with the El Dorado County Grading, Erosion and Sediment Control Ordinance and the development plans for the proposed buildings would be required to implement the Uniform Building Code Seismic construction standards. As such, impacts would be less than significant.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Less than significant impact. As stated above, the project site contains BhC, DfC, and PrD soils. The Soil Survey for El Dorado County lists all three as having low shrink-swell potential. Therefore, construction of the proposed project would not pose a substantial risk to life and property due to expansive soils. Impacts are less than significant.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No impact. The project proposes to connect to the existing El Dorado Irrigation District sewer facilities. No septic tanks or alternative wastewater disposal systems are proposed on-site. There would be no impacts related to septic systems.

Finding

All grading activities would be required to comply with the El Dorado County Grading, Erosion Control and Sediment Ordinance which would address potential impacts related to soil erosion, landslides and other geologic impacts. All development would also be required to comply with the Uniform Building Code which would address potential seismic related impacts. The project would connect to existing public sewer facilities. For the Geology and Soils category, impacts would be less than significant. No further analysis is required.

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
7. Greenhouse Gas Emissions *Would the project:*				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☒	☐	☐	☐
b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	☒	☐	☐	☐

Environmental Evaluation

Background/Science

Cumulative greenhouse gas (GHG) emissions are believed to contribute to an increased greenhouse effect and global climate change, which may result in sea level rise, changes in precipitation, habitat, temperature, wildfires, air pollution levels, and changes in the frequency and intensity of weather-related events. While criteria pollutants and toxic air contaminants are pollutants of regional and local concern (see Section 3, Air Quality, above); GHG are global pollutants. The primary land-use related GHG are carbon dioxide (CO_2), methane (CH_4) and nitrous oxides (N_2O). The individual pollutant's ability to retain infrared radiation represents its "global warming potential" and is expressed in terms of CO_2 equivalents; therefore, CO_2 is the benchmark having a global warming potential of 1. Methane has a global warming potential of 21 and thus has a global warming effect per metric ton of CH_4 that is 21 times greater than CO_2. Nitrous oxide has a global warming potential of 310. Emissions are expressed in annual metric tons of CO_2 equivalent units of measure (i.e., MT CO_2e/yr). The three other main GHG are hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. While these compounds have significantly higher global warming potentials (ranging in the thousands), all three typically are not a concern in land-use development projects and are usually only used in specific industrial processes.

GHG Sources

The primary man-made source of CO_2 is the burning of fossil fuels, of which the two largest sources are coal burning to produce electricity and petroleum burning in combustion engines. The primary sources of man-made CH_4 are natural gas systems losses (during production, processing, storage, transmission and distribution), enteric fermentation (digestion from livestock) and landfill off-gassing. The primary source of man-made N_2O is agricultural soil management (fertilizers), with fossil fuel combustion a very distant second. In El Dorado County, the primary source of GHG is fossil fuel combustion mainly in the transportation sector (estimated at 70 percent of countywide GHG emissions). A distant second are residential sources (approximately 20 percent), and commercial/ industrial sources are third (approximately 7 percent). The remaining sources are waste/landfill (approximately 3 percent) and agricultural (<1 percent).

Regulatory Setting

Federal Laws, Regulations, and Policies

At the federal level, EPA has developed regulations to reduce GHG emissions from motor vehicles and has developed permitting requirements for large stationary emitters of GHGs. On April 1, 2010, the EPA and the National Highway Traffic Safety Administration (NHTSA) established a program to reduce GHG emissions and improve fuel economy standards for new model year 2012–2016 cars and light trucks. On August 9, 2011, EPA and the NHTSA announced standards to reduce GHG emissions and improve fuel efficiency for heavy-duty trucks and buses.

Federal Laws, Regulations, and Policies

In September 2006, Governor Arnold Schwarzenegger signed Assembly Bill (AB) 32, the California Climate Solutions Act of 2006 (Stats. 2006, ch. 488) (Health & Safety Code, Section 38500, et seq.). AB 32 requires a statewide GHG emissions reduction to 1990 levels by the year 2020. AB 32 requires the ARB to implement and enforce the statewide cap. When AB 32 was signed, California's annual GHG emissions were estimated at 600 million metric tons of CO_2 equivalent (MMT CO_2e) while 1990 levels were estimated at 427 MMT CO_2e. Setting 427 MMT CO_2e as the emissions target for 2020, current (2006) GHG emissions levels must be reduced by 29 percent. ARB adopted the AB 32 Scoping Plan in December 2008 establishing various actions the State would implement to achieve this reduction (ARB 2008). The Scoping Plan recommends a community-wide GHG reduction goal for local governments of 15 percent.

In June 2008, the California Governor's Office of Planning and Research's (OPR) issued a Technical Advisory (OPR, 2008) providing interim guidance regarding a proposed project's GHG emissions and contribution to global climate change. In the absence of adopted local or statewide thresholds, OPR recommends the following approach for analyzing GHG emissions: Identify and quantify the project's GHG emissions, assess the significance of the impact on climate change; and if the impact is found to be significant, identify alternatives and/or mitigation measures that would reduce the impact to less than significant levels (CEC 2006).

Would the project:

a-b) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

Potentially significant impact. The project would generate the emission of greenhouse gases that my directly or indirectly have a significant impact on the environment. In addition, the project may conflict with an applicable plan, policy or regulation adopted for the purposes of reducing the emissions of greenhouse gases. As such, without quantification and appropriate mitigation, as warranted, potentially significant impacts could occur. These potential impacts will be analyzed and addressed in the Focused EIR.

Finding

It may result in significant impacts to greenhouse gas emissions and may conflict with applicable plan, policy or regulation regarding greenhouse gas emission reductions. As such, the project's greenhouse gas emissions will be quantified and further analyzed in the Focused EIR.

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
8. Hazards and Hazardous Materials *Would the project:*				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐

Environmental Evaluation

Regulatory Setting

Hazardous materials and hazardous wastes are subject to extensive federal, state, and local regulations to protect public health and the environment. These regulations provide definitions of hazardous materials; establish reporting requirements; set guidelines for handling, storage, transport, and disposal of hazardous wastes; and require health and safety provisions for workers and the public. The major federal, state, and regional agencies enforcing these regulations are the EPA and the Occupational Safety and Health Administration (OSHA); California Department of Toxic Substances Control (DTSC); California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA); California Governor's Office of Emergency Services (Cal OES); and El Dorado County APCD.

Federal Laws, Regulations, and Policies

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, also called the Superfund Act; 42 USC Section 9601, et seq.) is intended to protect the public and the environment from the effects of past hazardous waste disposal activities and new hazardous material spills. Under CERCLA, the EPA has the authority to seek the parties responsible for hazardous materials releases and to ensure their cooperation in site remediation. CERCLA also provides federal funding (through the "Superfund") for the remediation of hazardous materials contamination. The Superfund Amendments and Reauthorization Act of 1986 (Public Law 99-499) amends some provisions of CERCLA and provides for a Community Right-to-Know program.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act of 1976 (RCRA; 42 USC Section 6901, et seq.), as amended by the Hazardous and Solid Waste Amendments of 1984, is the primary federal law for the regulation of solid waste and hazardous waste in the United States. These laws provide for the "cradle-to-grave" regulation of hazardous wastes, including generation, transportation, treatment, storage, and disposal. Any business, institution, or other entity that generates hazardous waste is required to identify and track its hazardous waste from the point of generation until it is recycled, reused, or disposed of.

The EPA has primary responsibility for implementing RCRA, but individual states are encouraged to seek authorization to implement some or all RCRA provisions. California received authority to implement the RCRA program in August 1992. DTSC is responsible for implementing the RCRA program in addition to California's own hazardous waste laws, which are collectively known as the Hazardous Waste Control Law.

Energy Policy Act of 2005

Title XV, Subtitle B of the Energy Policy Act of 2005 (the Underground Storage Tank Compliance Act of 2005) contains amendments to Subtitle I of the Solid Waste Disposal Act, the original legislation that created the Underground Storage Tank (UST) Program. As defined by law, a UST is "any one or combination of tanks, including pipes connected thereto, that is used for the storage of hazardous

substances and that is substantially or totally beneath the surface of the ground." In cooperation with the EPA, the SWRCB oversees the UST Program. The intent is to protect public health and safety and the environment from releases of petroleum and other hazardous substances from tanks. The four primary program elements include leak prevention (implemented by Certified Unified Program Agencies (CUPAs), described in more detail below), cleanup of leaking tanks, enforcement of UST requirements, and tank integrity testing.

Spill Prevention, Control, and Countermeasure Rule

The EPA's Spill Prevention, Control, and Countermeasure (SPCC) Rule (40 CFR, Part 112) apply to facilities with a single above-ground storage tank (AST) with a storage capacity greater than 660 gallons, or multiple tanks with a combined capacity greater than 1,320 gallons. The rule includes requirements for oil spill prevention, preparedness, and response to prevent oil discharges to navigable waters and adjoining shorelines. The rule requires specific facilities to prepare, amend, and implement SPCC Plans.

Occupational Safety and Health Administration

OSHA is responsible at the federal level for ensuring worker safety. OSHA sets federal standards for implementation of workplace training, exposure limits, and safety procedures for the handling of hazardous substances (as well as other hazards). OSHA also establishes criteria by which each state can implement its own health and safety program.

Federal Communications Commission Requirements

There is no federally mandated radio frequency (RF) exposure standard; however, pursuant to the Telecommunications Act of 1996 (47 USC Section 224), the Federal Communications Commission (FCC) established guidelines for dealing with RF exposure, as presented below. The exposure limits are specified in 47 CFR Section 1.1310 in terms of frequency, field strength, power density, and averaging time. Facilities and transmitters licensed and authorized by FCC must either comply with these limits or an applicant must file an environmental assessment with FCC to evaluate whether the proposed facilities could result in a significant environmental effect.

FCC has established two sets of RF radiation exposure limits—Occupational/Controlled and General Population/Uncontrolled. The less-restrictive Occupational/Controlled limit applies only when a person (worker) is exposed as a consequence of his or her employment and is "fully aware of the potential exposure and can exercise control over his or her exposure"; otherwise, the General Population limit applies (47 CFR Section 1.1310).

The FCC exposure limits generally apply to all FCC-licensed facilities (47 CFR Section 1.1307[b][1]). Unless exemptions apply, as a condition of obtaining a license to transmit, applicants must certify that they comply with FCC environmental rules, including those that are designed to prevent exposing persons to radiation above FCC RF limits (47 CFR Section1.1307[b]). Licensees at co-located sites (e.g., towers supporting multiple antennas, including antennas under separate ownerships) must take the necessary actions to bring the accessible areas that exceed the FCC exposure limits into compliance. This is a shared responsibility of all licensees whose transmission power density levels account for 5.0 or more percent of the applicable FCC exposure limits (47CFR 1.1307[b][3]).

Code of Federal Regulations (14 CFR) Part 77

14 CFR Part 77.9 is designed to promote air safety and the efficient use of navigable airspace. Implementation of the code is administered by the Federal Aviation Administration (FAA). If an organization plans to sponsor any construction or alterations that might affect navigable airspace, a Notice of Proposed Construction or Alteration (FAA Form 7460-1) must be filed. The code provides specific guidance regarding FAA notification requirements.

State Laws, Regulations, and Policies

Safe Drinking Water and Toxic Enforcement Act of 1986—Proposition 65

The Safe Drinking Water and Toxic Enforcement Act of 1986, more commonly known as Proposition 65, protects the State's drinking water sources from contamination with chemicals known to cause cancer, birth defects, or other reproductive harm. Proposition 65 also requires businesses to inform the public of exposure to such chemicals in the products they purchase, in their homes or workplaces, or that are released into the environment. In accordance with Proposition 65, the California Governor's Office publishes, at least annually, a list of such chemicals. OEHHA, an agency under the California Environmental Protection Agency (CalEPA), is the lead agency for implementation of the Proposition 65 program. Proposition 65 is enforced through the California Attorney General's Office; however, district and city attorneys and any individual acting in the public interest may also file a lawsuit against a business alleged to be in violation of Proposition 65 regulations.

The Unified Program

The Unified Program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of six environmental and emergency response programs. CalEPA and other state agencies set the standards for their programs, while local governments (CUPAs) implement the standards. For each county, the CUPA regulates/oversees the following:

- Hazardous materials business plans;
- California accidental release prevention plans or federal risk management plans;
- The operation of USTs and ASTs;
- Universal waste and hazardous waste generators and handlers;
- On-site hazardous waste treatment;
- Inspections, permitting, and enforcement;
- Proposition 65 reporting; and
- Emergency response.

Hazardous Materials Business Plans

Hazardous materials business plans are required for businesses that handle hazardous materials in quantities greater than or equal to 55 gallons of a liquid, 500 pounds of a solid, or 200 cubic feet (cf) of compressed gas, or extremely hazardous substances above the threshold planning quantity (40 CFR, Part 355, Appendix A) (Cal OES 2015). Business plans are required to include an inventory of the hazardous materials used/stored by the business, a site map, an emergency plan, and a training program for employees (Cal OES 2015). In addition, business plan information is provided electronically to a statewide information management system, verified by the applicable CUPA, and

transmitted to agencies responsible for the protection of public health and safety (i.e., local fire department, hazardous material response team, and local environmental regulatory groups) (Cal OES 2015).

California Occupational Safety and Health Administration

Cal/OSHA assumes primary responsibility for developing and enforcing workplace safety regulations in California. Cal/OSHA regulations pertaining to the use of hazardous materials in the workplace (CCR Title 8) include requirements for safety training, availability of safety equipment, accident and illness prevention programs, warnings about exposure to hazardous substances, and preparation of emergency action and fire prevention plans.

Hazard communication program regulations that are enforced by Cal/OSHA require workplaces to maintain procedures for identifying and labeling hazardous substances, inform workers about the hazards associated with hazardous substances and their handling, and prepare health and safety plans to protect workers at hazardous waste sites. Employers must also make material safety data sheets available to employees and document employee information and training programs. In addition, Cal/OSHA has established maximum permissible RF radiation exposure limits for workers (Title 8 CCR Section 5085[b]), and requires warning signs where RF radiation might exceed the specified limits (Title 8 CCR Section 5085 [c]).

California Accidental Release Prevention

The purpose of the California Accidental Release Prevention (CalARP) program is to prevent accidental releases of substances that can cause serious harm to the public and the environment, to minimize the damage if releases do occur, and to satisfy community right-to-know laws. In accordance with this program, businesses that handle more than a threshold quantity of regulated substance are required to develop a risk management plan (RMP). This RMP must provide a detailed analysis of potential risk factors and associated mitigation measures that can be implemented to reduce accident potential. CUPAs implement the CalARP program through review of RMPs, facility inspections, and public access to information that is not confidential or a trade secret.

California Department of Forestry and Fire Protection Wildland Fire Management

The Office of the State Fire Marshal and CAL FIRE administer state policies regarding wildland fire safety. Construction contractors must comply with the following requirements in the Public Resources Code during construction activities at any sites with forest-, brush-, or grass-covered land:

- Earthmoving and portable equipment with internal combustion engines must be equipped with a spark arrestor to reduce the potential for igniting a wildland fire (Public Resources Code Section 4442).
- Appropriate fire-suppression equipment must be maintained from April 1 to December 1, the highest-danger period for fires (Public Resources Code Section 4428).
- On days when a burning permit is required, flammable materials must be removed to a distance of 10 feet from any equipment that could produce a spark, fire, or flame, and the construction contractor must maintain the appropriate fire suppression equipment (Public Resources Code Section 4427).

- On days when a burning permit is required, portable tools powered by gasoline-fueled internal combustion engines must not be used within 25 feet of any flammable materials (Public Resources Code Section 4431).

California Highway Patrol

The California Highway Patrol (CHP), along with Caltrans, enforces and monitors hazardous materials and waste transportation laws and regulations in California. These agencies determine container types used and license hazardous waste haulers for hazardous waste transportation on public roads. All motor carriers and drivers involved in transportation of hazardous materials must apply for and obtain a hazardous materials transportation license from CHP.

Local Laws, Regulations, and Policies

A map of the fuel loading in the County (General Plan Figure HS-1) shows the fire hazard severity classifications of the SRAs in El Dorado County, as established by CDF. The classification system provides three classes of fire hazards: Moderate, High, and Very High. Fire Hazard Ordinance (Chapter 8.08) requires defensible space as described by the State Public Resources Code, including the incorporation and maintenance of a 30-foot fire break or vegetation fuel clearance around structures in fire hazard zones. The County's requirements on emergency access, signing and numbering, and emergency water are more stringent than those required by state law (Patton 2002). The Fire Hazard Ordinance also establishes limits on campfires, fireworks, smoking, and incinerators for all discretionary and ministerial developments.

A substantial adverse effect due to Hazards and Hazardous Materials would occur if implementation of the project would:

- Expose people and property to hazards associated with the use, storage, transport, and disposal of hazardous materials where the risk of such exposure could not be reduced through implementation of Federal, State, and local laws and regulations.
- Expose people and property to risks associated with wildland fires where such risks could not be reduced through implementation of proper fuel management techniques, buffers and landscape setbacks, structural design features and emergency access; or
- Expose people to safety hazards as a result of former on-site mining operations.

Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less than significant impact. The project would involve transportation, use and disposal of hazardous materials such as construction materials, paints, fuels, landscaping materials, and building cleaning supplies. The majority of the use of these hazardous materials would occur primarily during construction. Any uses of hazardous materials would be required to comply with all applicable federal, state and local standards associated with the handling and storage of hazardous materials. Prior to any use of hazardous materials, the project would be required to obtain, as applicable, a

Hazardous Materials Business Plan through the Environmental Management-Hazardous Materials and Solid Waste Division of El Dorado County. The project includes conditions of approval required by the Division to insure the project follows proper procedures for any materials considered to be hazardous. As such, impacts would be less than significant.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less than significant impact. As discussed in a) the project would be required to obtain a Hazardous Materials Business Plan through the Environmental Management-Hazardous Materials and Solid Waste Division of El Dorado County, thereby reducing any potential impacts relating to upset and accident conditions. Thus, impacts would be less than significant.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Less than significant impact. As proposed, the project would not be anticipated to emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste. As discussed in the previous section, the project is conditioned to assure hazardous chemicals and solid wastes are handled per County, State, and Federal regulations. Therefore, impacts would be less than significant.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No impact. No parcels within El Dorado County are included on the Cortese List which lists known hazardous sites in California. In addition, the project site is not listed on the California Department of Toxic Substances Control's EnviroStor database. No impacts would occur.

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

No impact. As shown on the El Dorado County Zoning Map, the project is not located within an Airport Safety (AA) District overlay. The project site is not located within two miles of a public airport. As such the project would not be subject to any land use limitations contained within any adopted Comprehensive Land Use Plan and there would be no immediate hazard for people working in the project area or safety hazard resulting from airport operations and aircraft over-flights in the vicinity of the project site. No impacts would occur.

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

No impact. As previously discussed in e), the project is not located within two miles of a private airstrip and no impacts would occur.

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less than significant impact. As discussed in Section 16, Transportation/Traffic of this Initial Study, the project would impact the existing road systems. Pursuant to the conditions of approval recommended by TD, the project would be required to make encroachment improvements and construct turn lanes to insure public safety and adequate emergency vehicle circulation, which would address the additional impacts to the road systems. Because such improvements are required, no mitigation is needed. Impacts would be less than significant.

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

Less than significant impact. The degree of hazard in wildland areas depends on weather variables such as temperature, wind, and moisture, the amount of dryness and arrangement of vegetation, slope steepness, and accessibility to human activities, accessibility of firefighting equipment, and fuel clearance around structures. The Diamond Springs-El Dorado Fire Protection District has previously reviewed the project and determined that the submitted site plans show adequate interior roadways to allow emergency vehicle circulation. The project has been conditioned to assure any new and existing fire hydrant deliver adequate water pressure, and to provide District-approved locks on any gates on buildings. To insure that wildfire hazard impacts are reduced to a less than significant level, the District has recommended conditions of approval for the project. As conditioned, the Fire District has determined that impacts would be reduced to a less than significant level.

Finding

The proposed project is not anticipated to expose the area to hazards relating to the use, storage, transport, or disposal of hazardous materials. Any proposed use of hazardous materials would be subject to review and approval of a Hazardous Materials Business Plan issued by the Hazardous Materials and Solid Waste Division. The Diamond Springs-El Dorado Fire Protection District would require conditions of approval to reduce potential hazards relating to wild fires. For the Hazards and Hazardous Materials category, impacts would be less than significant.

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
9. Hydrology and Water Quality *Would the project:*				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

Environmental Evaluation

Regulatory Setting

Federal Laws, Regulations, and Policies

Clean Water Act

The Clean Water Act (CWA) is the primary federal law that protects the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. The key sections pertaining to water quality regulation for the proposed project are CWA Section 303 and Section 402.

Section 303(d)—Listing of Impaired Water Bodies

Under CWA Section 303(d), states are required to identify "impaired water bodies" (those not meeting established water quality standards), identify the pollutants causing the impairment, establish priority rankings for waters on the list, and develop a schedule for the development of control plans to improve water quality. The EPA then approves the State's recommended list of impaired waters or adds and/or removes waterbodies.

Section 402—National Pollutant Discharge Elimination System Permits for Stormwater Discharge

CWA Section 402 regulates construction-related stormwater discharges to surface waters through the National Pollutant Discharge Elimination System (NPDES), which is officially administered by EPA. In California, EPA has delegated its authority to the SWRCB, which in turn delegates implementation responsibility to the nine RWQCBs, as discussed below in reference to the Porter-Cologne Water Quality Control Act.

The NPDES program provides for both general (those that cover a number of similar or related activities) and individual (activity- or project-specific) permits.

General Permit for Construction Activities

Most construction projects that disturb 1.0 or more acre of land are required to obtain coverage under SWRCB's General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order 2009-0009-DWQ as amended by 2010-0014-DWQ and 2012-0006-DWQ). The general permit requires that the applicant file a public notice of intent to discharge stormwater and prepare and implement a Stormwater Pollution Prevention Plan (SWPPP). A SWPPP must include a site map and a description of the proposed construction activities, demonstrate compliance with relevant local ordinances and regulations, and present a list of BMPs that will be implemented to prevent soil erosion and protect against discharge of sediment and other construction-related pollutants to surface waters. Permittees are further required to monitor construction activities and report compliance to ensure that BMPs are correctly implemented and are effective in controlling the discharge of construction-related pollutants.

Municipal Stormwater Permitting Program

The SWRCB regulates stormwater discharges from municipal separate storm sewer systems (MS4s) through its Municipal Storm Water Permitting Program (SWRCB 2013). Permits are issued under two phases depending on the size of the urbanized area/municipality. Phase I MS4 permits are issued for medium municipalities (population between 100,000 and 250,000 people) and large

municipalities (population of 250,000 or more people), and are often issued to a group of co-permittees within a metropolitan area. Phase I permits have been issued since 1990. Beginning in 2003, the SWRCB began issuing Phase II MS4 permits for smaller municipalities (population less than 100,000).

El Dorado County is covered under two SWRCB Regional Boards. The West Slope Phase II Municipal Separate Storm Sewer Systems (MS4) NPDES Permit is administered by the Central Valley RWQCB (Region Five). The Lake Tahoe Phase I MS4 NPDES Permit is administered by the Lahontan RWQCB (Region Six). The current West Slope MS4 NPDES Permit was adopted by the SWRCB on February 5, 2013. The Permit became effective on July 1, 2013 for a term of 5 years and focuses on the enhancement of surface water quality within high priority urbanized areas. The current Lake Tahoe MS4 NPDES Permit was adopted and took effect on December 6, 2011 for a term of 5 years. The Permit incorporated the Lake Tahoe Total Maximum Daily Load (TMDL) and the Lake Clarity Crediting Program (LCCP) to account for the reduction of fine sediment particles and nutrients discharged to Lake Tahoe.

On May 19, 2015, the El Dorado County Board of Supervisors formally adopted revisions to the Storm Water Quality Ordinance (Ordinance 4992). Previously applicable only to the Lake Tahoe Basin, the ordinance establishes legal authority for the entire unincorporated portion of the County. The purpose of the ordinance is to (1) protect health, safety, and general welfare, (2) enhance and protect the quality of Waters of the State by reducing pollutants in stormwater discharges to the maximum extent practicable and controlling non-stormwater discharges to the storm drain system, and (3) cause the use of BMPs to reduce the adverse effects of polluted runoff discharges on Waters of the State.

National Flood Insurance Program

FEMA administers the National Flood Insurance Program (NFIP) to provide subsidized flood insurance to communities complying with FEMA regulations that limit development in floodplains. The NFIP regulations permit development within special flood hazard zones provided that residential structures are raised above the base flood elevation of a 100-year flood event. Non-residential structures are required either to provide flood proofing construction techniques for that portion of structures below the 100-year flood elevation or to elevate above the 100-year flood elevation. The regulations also apply to substantial improvements of existing structures.

State Laws, Regulations, and Policies

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (known as the Porter-Cologne Act), passed in 1969, dovetails with the CWA (see discussion of the CWA above). It established the SWRCB and divided the State into nine regions, each overseen by an RWQCB. SWRCB is the primary State agency responsible for protecting the quality of the State's surface water and groundwater supplies; however, much of the SWRCB's daily implementation authority is delegated to the nine RWQCBs, which are responsible for implementing CWA Sections 401, 402, and 303[d]. In general, SWRCB manages water rights and regulates statewide water quality, whereas RWQCBs focus on water quality within their respective regions.

The Porter-Cologne Act requires RWQCBs to develop water quality control plans (also known as basin plans) that designate beneficial uses of California's major surface-water bodies and groundwater basins and establish specific narrative and numerical water quality objectives for those waters. Beneficial uses represent the services and qualities of a waterbody (i.e., the reasons that the waterbody is considered valuable). Water quality objectives reflect the standards necessary to protect and support those beneficial uses. Basin plan standards are primarily implemented by regulating waste discharges so that water quality objectives are met. Under the Porter-Cologne Act, basin plans must be updated every 3 years.

A substantial adverse effect on Hydrology and Water Quality would occur if the implementation of the project would:

- Expose residents to flood hazards by being located within the 100-year floodplain as defined by the Federal Emergency Management Agency;
- Cause substantial change in the rate and amount of surface runoff leaving the project site ultimately causing a substantial change in the amount of water in a stream, river or other waterway;
- Substantially interfere with groundwater recharge;
- Cause degradation of water quality (temperature, dissolved oxygen, turbidity and/or other typical stormwater pollutants) in the project area; or
- Cause degradation of groundwater quality in the vicinity of the project site.

Would the project:

a) Violate any water quality standards or waste discharge requirements?

Less than significant impact. Any grading, encroachment, and improvement plans required by the TD and Development Services would be required to be prepared and designed to meet the County of El Dorado Grading, Erosion, and Sediment Control Ordinance. These standards require that erosion and sediment control be implemented into the design of the project. Project related construction activities would be required to adhere to the El Dorado County Grading, Erosion Control and Sediment Ordinance, which would require the implementation and execution of BMPs to minimize degradation of water quality during construction. The project is conditioned for review and permitting by the Regional Water Quality Control Board. Furthermore, any potential impacts to the creek from the extension of the sewer line or other improvements would be addressed through the USACE Section 404 permitting process as previously discussed in Impact Section 4, Biological Resources of this Initial Study. As conditioned and mitigated, and with adherence to County Code, impacts would be less than significant.

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

Less than significant impact. Potable water in the project area is provided by EID. There is an existing 10-inch water line within Forni Road which would be extended to serve the project. As a local water provider, the EID does not utilize groundwater supplies, thereby precluding impacts from the use of groundwater. The Environmental Health Division reviewed the project proposal and found there is no evidence that the project would substantially reduce or alter the quantity of groundwater in the vicinity, or materially interfere with groundwater recharge in the area of the proposed project. Impacts would be less than significant.

c) Substantially alter the existing drainage pattern of area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

Less than significant impact. As discussed in the previously submitted *Preliminary Drainage Report*, dated December 2010, (Drainage Report) (Appendix C), no adverse increase in the overall runoff and flows are expected. The Drainage Report for the Creekside Plaza Project was reviewed by TD and found to show that the preliminary plan demonstrates proper drainage considerations. Any potential impacts to the creek from the alteration of drainage patterns, would be addressed through the USACE Section 404 permitting and Regional Water Quality Control Board Lake and Streambed Alteration Agreement processes as previously discussed in Impact Section 4, Biological Resources of this Initial Study. The project is conditioned to require compliance with the County's California Stormwater Pollution Prevention Plan issued by the State Water Resources Control Board, as well as any applicable requirements of the California Water Quality Control Board. Furthermore, the project would be required to conform to the El Dorado County Grading, Erosion Control and Sediment Ordinance. Impacts would be less than significant.

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

Less than significant impact. As discussed in the submitted *Preliminary Drainage Report*, dated December 2010, (Drainage Report), no adverse increase in the overall runoff and flows are expected. Furthermore, the Drainage Report was reviewed by TD and found to show that the preliminary plan shows proper drainage considerations. The project is not located within a flood zone. The project would be required to conform to the El Dorado County Grading, Erosion Control and Sediment Ordinance. Impacts would be less than significant.

e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Less than significant impact. As previously discussed under impact question c) impacts would be less than significant.

f) Otherwise substantially degrade water quality?

Less than significant impact. As previously discussed in under impact question c), impacts would be less than significant.

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

No impact. The project site is not located within any mapped 100-year flood areas as shown on Firm Panel Number 06017C0775E, revised September 26, 2008, and would not result in the construction of any structures that would impede or redirect flood flows. No dams are located in the project area which would result in potential hazards related to dam failures. No impacts would occur.

h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

No impact. The project site is not located within any mapped 100-year flood areas as shown on Firm Panel Number 06017C0775E, revised September 26, 2008, and would not result in the construction of any structures that would impede or redirect flood flows. No dams are located in the project area which would result in potential hazards related to dam failures. No impacts would occur.

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

No impact. The subject property is not located adjacent to or downstream from a dam or levee that has the potential to fail and inundate the project site with floodwaters. No impacts would occur.

j) Inundation by seiche, tsunami, or mudflow?

No impact. The proposed project is not located near a coastal area or adjacent to a large body of water such as a lake, bay, or estuary, volcanoes, or other volcanic features, and the site is located on relatively stable soils nor surrounded by steep terrain. Because of the project location, there is no potential for impacts from seiche or tsunami, or from mudflow at this site.

Finding

The proposed project would require encroachment and grading permits through DOT, as well as the permits required by the USACE, CDFW, and Regional Water Quality Control Board that would address erosion and sediment control. As conditioned, and mitigated, and with adherence to County Code, no significant hydrological impacts are expected with the development of the project either directly or indirectly. For the Hydrology category, impacts would be less than significant.

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

Environmental Evaluation

Regulatory Setting

California State law requires that each City and County adopt a general plan "for the physical development of the City and any land outside its boundaries which bears relation to its planning." Typically, a general plan is designed to address the issues facing the City or County for the next 15 to 20 years. The general plan expresses the community's development goals and incorporates public policies relative to the distribution of future public and private land uses. The El Dorado County General Plan was adopted in 2004. The 2013–2021 Housing Element was adopted in 2013.

Would the project:

a) Physically divide an established community?

Less than significant impact. The project would not result in the physical division of an established community as it proposes commercial uses on lands designated by the General Plan for commercial uses. The project proposes retail, office, and restaurant related uses, which would be compatible with the project site's General Plan Commercial land use designation and surrounding commercial land uses. The project site is currently zoned Community Commercial—Design Review—Community (CC-DC) combining zone, and the project proposes a modification to rezone to a Community Commercial—Planned Development (CC-PD) zone , along with the creation of an Open Space-Planned Development (OS-PD) zone to cover the proposed open space area along the on-site riparian corridor. The project would be consistent with this zoning. Impacts would be less than significant.

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

Less than significant impact. The current Community Commercial with a Design Control combining zone (CC-DC) is consistent with the existing commercial General Plan land use designation. The project proposes a rezone of the project site to General Commercial-Planned Development (CG-PD) and Open Space-Planned Development (OS-PD) parcel. This rezone would be consistent with the General Plan and the on-site wetland features.

The project site currently has a commercial land use designation, and is located inside the El Dorado–Diamond Springs Community Region boundary line. The applicant has proposed to designate 1.14 acres of the project site as open space (26.5 percent of the overall 4.3 acres). Designation of the open space area on the tentative map is considered beneficial, but much of the area could be considered developable in the future should the property owner apply for future entitlements. In order to ensure that the open space character is maintained, the separate contiguous parcel of open space shall be rezoned and converted into an open space easement. With incorporation of this project element, the open space area would be preserved from future potential development. The County of El Dorado shall be responsible for the oversight and enforcement of easement requirements, including maintenance of the agreement.

With the implementation of the conservation easement and all required regulatory permitting for impacts to the on-site wetlands, the final parcel map would not violate any restrictions imposed by the USACE 404 Permit process, the Fish and Game 1602 Permit process, or the Water Quality Certification, Section 401 Permit, from the Regional Water Quality Control Board.

As a condition of approval, the applicant is required to designate on the final parcel map the Open Space-Planned Development zoning for the on-site are to remain undeveloped.

The proposed Rezone, Development Plan, and Tentative Parcel Map, as conditioned, would be consistent with the specific, fundamental, and mandatory land use development goals, objectives, and policies of the General Plan and are consistent with the development standards contained within the El Dorado County Zoning and Subdivision Ordinances. As such, impacts would be less than significant.

c) Conflict with any applicable habitat conservation plan or natural communities conservation plan?

No impact. The project site is not within the boundaries of an adopted Habitat Conservation Plan (HCCP), or a Natural Community Conservation Plan (NCCP), or any other conservation plan including the El Dorado County Integrated Natural Resource Management Plan. As such, the proposed project would not conflict with an adopted conservation plan. No impact would occur.

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
11. Mineral Resources *Would the project:*				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Environmental Evaluation

Regulatory Setting

Federal Laws, Regulations, and Policies

No federal laws, regulations, or policies apply to mineral resources and the Proposed Project.

State Laws, Regulations, and Policies

Surface Mining and Reclamation Act

The Surface Mining and Reclamation Act of 1975 (SMARA) requires that the State Mining and Geology Board identify, map, and classify aggregate resources throughout California that contain regionally significant mineral resources. Designations of land areas are assigned by CDC and California Geological Survey following analysis of geologic reports and maps, field investigations, and using information about the locations of active sand and gravel mining operations. Local jurisdictions are required to enact planning procedures to guide mineral conservation and extraction at particular sites and to incorporate mineral resource management policies into their general plans.

The California Mineral Land Classification System represents the relationship between knowledge of mineral deposits and their economic characteristics (grade and size). The nomenclature used with the California Mineral Land Classification System is important in communicating mineral potential information in activities such as mineral land classification, and usage of these terms are incorporated into the criteria developed for assigning mineral resource zones. Lands classified Mineral Resource Zone (MRZ)-2 are areas that contain identified mineral resources. Areas classified as MRZ-2a or MRZ-2b (referred to hereafter as MRZ-2) are considered important mineral resource areas.

Local Laws, Regulations, and Policies

El Dorado County in general is considered a mining region capable of producing a wide variety of mineral resources. Metallic mineral deposits, including gold, are considered the most significant extractive mineral resources. Exhibit 5.9-6 shows the MRZ-2 areas within the County based on

designated Mineral Resource (-MR) overlay areas. The -MR overlay areas are based on mineral resource mapping published in the mineral land classification reports referenced above. The majority of the County's important mineral resource deposits are concentrated in the western third of the County.

According to General Plan Policy 2.2.2.7, before authorizing any land uses within the -MR overlay zone that will threaten the potential to extract minerals in the affected area, the County shall prepare a statement specifying its reasons for considering approval of the proposed land use and shall provide for public and agency notice of such a statement consistent with the requirements of Public Resources Code section 2762. Furthermore, before finally approving any such proposed land use, the County shall balance the mineral values of the threatened mineral resource area against the economic, social, or other values associated with the proposed alternative land uses. Where the affected minerals are of regional significance, the County shall consider the importance of these minerals to their market region as a whole and not just their importance to the County.

Where the affected minerals are of Statewide significance, the County shall consider the importance of these minerals to the State and nation as a whole. The County may approve the alternative land use if it determines that the benefits of such uses outweigh the potential or certain loss of the affected mineral resources in the affected regional, statewide, or national market.

A substantial adverse effect on Mineral Resources would occur if the implementation of the project would:

- Result in obstruction of access to, and extraction of mineral resources classified MRZ-2x, or result in land use compatibility conflicts with mineral extraction operations.

Would the project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No impact. The project site is not mapped within a Mineral Resource Zone (MRZ) by the State of California Division of Mines and Geology or in the El Dorado County General Plan "Figure CO-1 Important Mineral Resource Areas." No impacts would occur.

b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

No impact. The Western portion of El Dorado County is divided into four, 15-minute quadrangles (Folsom, Placerville, Georgetown, and Auburn) mapped by the State of California Division of Mines and Geology showing the location of MRZs. Those areas designated MRZ-2a contain discovered mineral deposits that have been measured or indicate reserves calculated. Land in this category is considered to contain mineral resources of known economic importance to the County and/or State. Review of the mapped areas of the County indicates that this site does not contain any mineral resources of known local or statewide economic value. No impacts would occur.

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

Environmental Evaluation

Regulatory Setting

No federal or state laws, regulations, or policies for construction-related noise and vibration that apply to the Proposed Project. However, the Federal Transit Administration (FTA) Guidelines for Construction Vibration in Transit Noise and Vibration Impact Assessment state that for evaluating daytime construction noise impacts in outdoor areas, a noise threshold of 90 dBA L_{eq} and 100 dBA L_{eq} should be used for residential and commercial/industrial areas, respectively (FTA 2006).

For construction vibration impacts, the FTA guidelines use an annoyance threshold of 80 VdB for infrequent events (fewer than 30 vibration events per day) and a damage threshold of 0.12 inch per second (in/sec) PPV for buildings susceptible to vibration damage (FTA 2006).

Would the project:

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

Less than significant impact. The project would not expose persons to noise levels exceeding the performance standards contained in Table 130.37.060.2 of the Zoning Ordinance, due to the type and location of the project as well as adherence to current Building Code construction standards. Potential impacts from excessive noise levels into the project site would be less than significant.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Less than significant impact. The project may generate intermittent groundborne vibration or shaking events during project construction. These potential impacts would be limited to project construction. The closest off-site structures are located approximately 170 feet from the proposed project footprint. At this distance, vibration levels from even heavy construction equipment would attenuate to levels that would be less than significant. In addition, adherence to the time limitations of construction activities to 7:00 a.m. to 7:00 p.m., Monday through Friday and 8:00 a.m. to 5:00 p.m. on weekends and federally recognized holidays would help minimize construction-related vibration impacts in the project area. Impacts would be less than significant.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Less than significant impact. The project would include construction activities for the grading of the site and construction of structural features. Section 130.37.020.I of the Zoning Code provides an exemption for construction activities during daylight hours provided that all construction equipment is fitted with factory-installed muffling devices and maintained in good working order. Adherence to the limitations of construction would reduce potentially significant impacts to a less than significant level.

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

Less than significant impact. The project would not increase the ambient noise levels in the area in excess of the established noise thresholds for lands designated by the General Plan for commercial uses, and that adjoin Missouri Flat and Forni Roads. The proposed office/retail/restaurant-related uses would not be anticipated to exceed the established General Plan noise thresholds. Impacts would be less than significant.

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

Less than significant impact. The proposed project is not located within an airport land use plan or within 2 miles of a public airport or private landing strip. No impacts would occur.

Finding

For the Noise category, the thresholds of significance have not been exceeded and no significant environmental impacts would result from the project.

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
13. Population and Housing *Would the project:*				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Environmental Evaluation

Regulatory Setting

No federal or state laws, regulations, or policies apply to population and housing and the proposed project.

A substantial adverse effect on Population and Housing would occur if the implementation of the project would:

- Create substantial growth or concentration in population;
- Create a more substantial imbalance in the County's current jobs-to-housing ratio; or
- Conflict with adopted goals and policies set forth in applicable planning documents.

Would the project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No impact. The project would not induce substantial population growth in an area that is proposed for lands designated by the General Plan for commercial uses. No impacts would occur.

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

No impact. The General Plan designates the project site for commercial uses, and no residences are currently present on-site. Therefore, no existing housing stock would be displaced by the proposed project. No impacts would occur.

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No impact. There are no residential features located on-site. Thus, no persons would be displaced necessitating the construction of replacement housing elsewhere. No impacts would occur.

Finding

No impacts to population and housing would be expected for this commercial complex either directly or indirectly. For the Population and Housing category, the thresholds of significance have not been exceeded.

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
14. Public Services *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:*				
a) Fire protection?	☐	☐	☒	☐
b) Police protection?	☐	☐	☒	☐
c) Schools?	☐	☐	☒	☐
d) Parks?	☐	☐	☒	☐
e) Other public facilities?	☐	☐	☒	☐

Environmental Evaluation

Regulatory Setting

Federal Laws, Regulations, and Policies

California Fire Code

The California Fire Code (Title 24 CCR, Part 9) establishes minimum requirements to safeguard public health, safety, and general welfare from the hazards of fire, explosion, or dangerous conditions in new and existing buildings. Chapter 33 of the CCR contains requirements for fire safety during construction and demolition.

A substantial adverse effect on Public Services would occur if the implementation of the project would:

- Substantially increase or expand the demand for fire protection and emergency medical services without increasing staffing and equipment to meet the Department's/District's goal of 1.5 firefighters per 1,000 residents and 2.0 firefighters per 1,000 residents, respectively;
- Substantially increase or expand the demand for public law enforcement protection without increasing staffing and equipment to maintain the Sheriff's Department goal of one sworn officer per 1,000 residents;
- Substantially increase the public school student population exceeding current school capacity without also including provisions to adequately accommodate the increased demand in services;
- Place a demand for library services in excess of available resources;
- Substantially increase the local population without dedicating a minimum of 5 acres of developed parklands for every 1,000 residents; or
- Be inconsistent with County adopted goals, objectives, or policies.

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

a) Fire protection?

Less than significant impact. The Diamond Springs-El Dorado Fire Protection District and Cal Fire currently provide fire protection services to the project area. Development of the project would result in a minor increase in the demand for fire protection services, but would not prevent either agency from meeting its response times for the project or its designated service area any more than exists today. The Fire District would review the project improvement plans, and conformance with their conditions of approval must be proven prior to issuance of final occupancy for a building permit. Upon fulfillment of the conditions of approval, impacts would be less than significant.

b) Police protection?

Less than significant impact. Police services would continue to be provided by the El Dorado County Sheriff's Department. Because of the size and scope of the project, the demand for additional police protection would be very low. Impacts would be less than significant.

c) Schools?

Less than significant impact. The construction of three buildings proposed to include retail, office, and fast-food buildings would not result in any permanent population-related increases that would substantially contribute to increased demand on schools that could, in turn, result in the significant need for new or expanded facilities. Impacts would be less than significant.

d) Parks?

Less than significant impact. The construction of three buildings proposed to include retail, office, and fast-food buildings would not result in any permanent, population-related increase that would substantially contribute to increased demand on parks that could, in turn, result in the significant need for new or expanded facilities. In addition, the project also includes the conservation of open space in perpetuity, by proposing a Conservation Easement. The easement would ensure that this parcel of land would remain as open space and would not be impacted by development in the future. Impacts would be less than significant.

e) Other public facilities?

Less than significant impact. The proposed project does not include the development of residential uses. As such, the construction of three buildings proposed to include retail, office, and fast-food buildings would not result in any permanent, population-related increases that would substantially contribute to increased demand on other public facilities, such as libraries, that could in turn result in the significant need for new or expanded facilities. Impacts would be less than significant.

Finding

Impacts to public services would be limited by the project size and type. For the Public Services category, the thresholds of significance have not been exceeded.

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
15. Recreation				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Regulatory Setting

National Trails System

The National Trails System Act of 1968 authorized The National Trails System (NTS) in order to provide additional outdoor recreation opportunities and to promote the preservation of access to the outdoor areas and historic resources of the nation. The Appalachian and Pacific Crest National Scenic Trails were the first two components, and the System has grown to include 20 national trails.

The National Trails System includes four classes of trails:

1. National Scenic Trails (NSTs) provide outdoor recreation and the conservation and enjoyment of significant scenic, historic, natural, or cultural qualities. The Pacific Coast Trail falls under this category. The Pacific Crest Trail passes through the Desolation Wilderness area along the western plan area boundary.
2. National Historic Trails (NHTs) follow travel routes of national historic significance. The National Park Service has designated two NHT alignments that pass through El Dorado County, the California NHT and the Pony Express National Historic Trail. The California Historic Trail is a route of approximately 5,700 miles, including multiple routes and cutoffs, extending from Independence and Saint Joseph, Missouri, and Council Bluffs, Iowa, to various points in California and Oregon. The Pony Express NHT commemorates the route used to relay mail via horseback from Missouri to California before the advent of the telegraph.
3. National Recreation Trails (NRTs) are in, or reasonably accessible to, urban areas on federal, state, or private lands. In El Dorado County there are 5 NRTs.

State Laws, Regulations, and Policies

The California Parklands Act

The California Parklands Act of 1980 (Public Resources Code Section 5096.141–5096.143) recognizes the public interest for the State to acquire, develop, and restore areas for recreation and to aid local

governments to do the same. The California Parklands Act also identifies the necessity of local agencies to exercise vigilance to see that the parks, recreation areas, and recreational facilities they now have are not lost to other uses.

The California state legislature approved the California Recreational Trail Act of 1974 (Public Resources Code Section 2070-5077.8) requiring that the Department of Parks and Recreation prepare a comprehensive plan for California trails. The California Recreational Trails Plan is produced for all California agencies and recreation providers that manage trails. The Plan includes information on the benefits of trails, how to acquire funding, effective stewardship, and how to encourage cooperation among different trail users.

The 1975 Quimby Act (California Government Code Section 66477) requires residential subdivision developers to help mitigate the impacts of property improvements by requiring them to set aside land, donate conservation easements, or pay fees for park improvements. The Quimby Act gave authority for passage of land dedication ordinances to cities and counties for parkland dedication or in-lieu fees paid to the local jurisdiction. Quimby exactions must be roughly proportional and closely tied (nexus) to a project's impacts as identified through traffic studies required by CEQA. The exactions only apply to the acquisition of new parkland; they do not apply to the physical development of new park facilities or associated operations and maintenance costs.

The County implements the Quimby Act through Section 16.12.090 of the County Code. The County Code sets standards for the acquisition of land for parks and recreational purposes, or payments of fees in lieu thereof, on any land subdivision. Other projects, such as ministerial residential or commercial development, could contribute to the demand for park and recreation facilities without providing land or funding for such facilities.

Local Laws, Regulations, and Policies

The 2004 El Dorado County General Plan Parks and Recreation Element establishes goals and policies that address needs for the provision and maintenance of parks and recreation facilities in the County, with a focus on providing recreational opportunities and facilities on a regional scale, securing adequate funding sources, and increasing tourism and recreation-based businesses. The Recreation Element describes the need for 1.5 acres of regional parkland, 1.5 acres of community parkland, and 2 acres of neighborhood parkland per 1,000 residents. Another 95 acres of park land are needed to meet the General Plan guidelines.

A substantial adverse effect on Recreational Resources would occur if the implementation of the project would:

- Substantially increase the local population without dedicating a minimum of 5 acres of developed parklands for every 1,000 residents; or
- Substantially increase the use of neighborhood or regional parks in the area such that substantial physical deterioration of the facility would occur.

Environmental Evaluation

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

No impact. The project is a commercial/open space development and does not include the provision of housing on- or off-site. As such, the proposed project does not include any increase in permanent population that would contribute to increased demand on recreation facilities or contribute to increased use of existing facilities. No impact would occur.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

No impact. The project is a commercial/open space development and does not include the provision of housing on- or off-site. The project does not include recreational facilities, nor would it require the expansion of existing recreational facilities. No impact would occur.

Finding

No impacts to recreation would be expected for this commercial complex either directly or indirectly. For the Recreation category, the thresholds of significance have not been exceeded.

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
16. Transportation/Traffic *Would the project:*				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☒	☐	☐	☐
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☒	☐	☐	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
e) Result in inadequate emergency access?	☐	☐	☒	☐
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☒	☐

Environmental Evaluation

Regulatory Setting

Federal Laws, Regulations, and Policies

No federal laws, regulations, or policies apply to transportation/traffic and the proposed project.

State Laws, Regulations, and Policies

Caltrans manages the state highway system and ramp interchange intersections. This state agency is also responsible for highway, bridge, and rail transportation planning, construction, and maintenance.

Local Laws, Regulations, and Policies

According to the transportation element of the County General Plan, Level of Service (LOS) for County-maintained roads and state highways within the unincorporated areas of the County shall not be worse than LOS E in the Community Regions or LOS D in the Rural Centers and Rural Regions. Level of Service is defined in the latest edition of the Highway Capacity Manual (Transportation Research Board, National Research Council). There are some roadway segments that are excepted from these standards and are allowed to operate at LOS F, although none of these are located in the Lake Tahoe Basin. According to Policy TC-Xe, "worsen" is defined as any of the following number of project trips using a road facility at the time of issuance of a use and occupancy permit for the development project:

a) A two percent increase in traffic during a.m., p.m. peak hour, or daily

b) The addition of 100 or more daily trips, or

c) The addition of 10 or more trips during the a.m. or p.m. peak hour.

On June 7, 2016, voter-approved ballot Measure E modified General Plan Policies TC-Xa, TC-Xf, and TC-Xg, and identified implementation measures for said policies.

Would the project:

a-b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

Potentially significant impact. Missouri Flat Road and Forni Road are County-maintained roadways. The project is located in the El Dorado-Diamond Springs Community Region. The project proposes three new encroachments: one each onto Forni Road, Missouri Flat Road, and Road 2233. The project proposes to share the interior access driveways.

The development of this project will attract traffic to the project site. The amount of additional traffic on a particular section of the street network is dependent upon two factors:

- Trip Generation—the number of new trips generated by the project.
- Trip Distribution and Assignment—the specific routes that the new traffic takes.

Trip Generation

Trip generation is determined by identifying the type and size of land use being developed. Recognized sources of trip generation data may then be used to calculate the total number of trip ends resulting from the day-to-day operation of businesses in the project.

The trip generation for this project was calculated using trip generation rates published in the Trip Generation Manual, 9th Edition (Institute of Transportation Engineers 2012). Applicable rates are found in categories 820 (Shopping Center), 710 (Professional Office) and 934 (Fast Food Restaurant with Drive-Through), shown in Table 4.

Table 4: Trip Generation

Land Use	Unit Quantity	Size	Trips Per Unit						
				AM Peak Hour			PM Peak Hour		
			Daily	In	Out	Total	In	Out	Total
Fast Food with Drive-Through—Bldg B	KSF	2.55	496.12	51%	49%	45.42	52%	48%	32.65
Professional Office—Bldg A	KSF	9.86	128.32	88%	12%	11.75	17%	83%	8.44
Retail—Shopping Center—Bldgs A,B, and C	KSF	18.14	42.70	62%	38%	0.96	48%	52%	3.71
Fast Food with Drive-Through—Bldg B	–	—	**1,265**	59	57	**116**	43	40	**83**
Professional Office—Bldg A	—	—	**226**	19	11	**30**	43	747	**89**
Retail—Shopping Center—Bldgs A,B, and C	—	—	**774**	11	7	**17**	32	35	**67**
Sub-Total Trips	—	—	**2,265**	88	75	163	119	121	240
Pass-by Trips									
Fast Food with Drive-through—Bldg B *(49% Daily, 49% AM, 50% PM)*			(620)	(29)	(28)	(57)	(22)	(20)	(42)
Professional Office—Bldg A			(0)	(0)	(0)	(0)	(0)	(0)	(0)
Retail—Shopping Center—Bldgs A, B, and C			(0)	(0)	(0)	(0)	(0)	(0)	(0)
Total Pass-by Trips			**(620)**	(29)	(28)	**(57)**	(22)	(20)	**(42)**
Net New Trips			**1,645**	**60**	**47**	**106**	**97**	**107**	**198**

Notes:
KSF=thousand square feet
Numbers may not match due to rounding.

As indicated in Table 4, the project would be expected to result in 1,645 net new trips, including 106 in the AM peak hour and 198 in PM peak hour. In addition, the TD has determined that this project trips the threshold of the General Plan requiring completion of a Traffic Study. As such, the project would have the potential to result in significant impacts to adjacent intersections and roadway level of service. Without quantification and appropriate mitigation, as warranted, potentially significant impacts could occur. Therefore, this impact will be analyzed and addressed in the Focused EIR.

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

No impact. The project would not result in a change in established air traffic patterns for publicly or privately operated airports or landing field in the project vicinity. No impacts would occur.

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less than significant impact. The project proposal and submitted traffic analysis have been reviewed by the TD for design features, such as sharp curves, dangerous intersection or incompatible uses that would increase hazards. The project will be conditioned to reduce known or potential hazards created by the additional traffic encroaching onto the existing local road systems to less than significant levels. Impacts would be less than significant.

e) Result in inadequate emergency access?

Less than significant impact. The project was reviewed by the Diamond Springs-El Dorado Fire Protection District for the adequacy of the interior project road circulation and availability of adequate emergency ingress and egress in the project design. The Fire District requires unobstructed widths of the apparatus access roads. The Fire District did not respond with any concerns pertaining to the proposed project's emergency ingress and egress capabilities as was shown on the submitted site plan. Impacts would be less than significant.

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

Less than significant impact. The project has been conditioned by the TD to include Class 2 bike lane improvements on Forni and Missouri Flat Roads along the project frontage. The project proposes bike racks at two locations shown on the site plan within the project boundaries to support alternative transportation. These racks would provide the minimum of eight bicycle spaces/racks (5 percent of the total 156 parking spaces) required to be located within 100 feet each building, pursuant to Section 5.105.4.1 and 2 of the 1020 California Green Building Standards Code), at locations determined by the applicants but conveniently accessible from adjoining streets and distributed proportionally for use by all three proposed buildings. It has been determined by DOT that the project site plan shows the project would adequately satisfy these requirements.

Bus Stop/Public Transit: The Diamond Springs and El Dorado Community Advisory Committee has recommended that a bus turnout/bus stop along Missouri Flat Road be added to the project plans. The El Dorado County Transit Authority has recommended a condition of approval be added to require this of the project as well. The El Dorado County Transportation Commission are also supporting the addition of the bus stop to the project requirements. At the request of the El Dorado County Transit Authority, the TD supports the placement of a bus turnout and shelter along the Missouri Flat Road project frontage, and determined the following:

> Development of this parcel is the last of the four parcel intersection of Missouri Flat and Forni Road Intersection. A bus turnout and shelter exist on the southbound Missouri Flat Road just south of the intersection. This project will provide the northbound compliment of the existing bus stop. These improvements are in accordance with General Plan Goal TC-2 to provide alternative transit systems to automobile use and are especially important for those who cannot or do not drive.

TD has recommended a condition of approval for the inclusion of a bus turnout and shelter.

The project would not conflict with adopted plans, policies, or programs relating to alternative transportation. Impacts would be less than significant.

Finding

The proposed project would generate traffic trips that may result in unacceptable level of service at adjacent intersections and roadways. As such, the project's potential traffic impacts will be quantitatively assessed and further analyzed in the Focused EIR.

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
17. Utilities and Service Systems *Would the project:*				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☒	☐
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

Regulatory Setting

Federal Laws, Regulations, and Policies

Energy Policy Act of 2005

The Energy Policy Act of 2005, intended to reduce reliance on fossil fuels, provides loan guarantees or tax credits for entities that develop or use fuel-efficient and/or energy efficient technologies (EPA 2014). The act also increases the amount of biofuel that must be mixed with gasoline sold in the United States (EPA 2014).

State Laws, Regulations, and Policies

California Integrated Waste Management Act of 1989

The California Integrated Waste Management Act of 1989 (Public Resources Code, Division 30) requires all California cities and counties to implement programs to reduce, recycle, and compost wastes by at least 50 percent by 2000 (Public Resources Code Section 41780). The State, acting through the California Integrated Waste Management Board, determines compliance with this mandate. Per-capita disposal rates are used to determine whether a jurisdiction's efforts are meeting the intent of the Act.

California Solid Waste Reuse and Recycling Access Act of 1991

The California Solid Waste Reuse and Recycling Access Act of 1991 (Public Resources Code Sections 42900-42911) requires that all development projects applying for building permits include adequate, accessible areas for collecting and loading recyclable materials.

California Integrated Energy Policy

Senate Bill 1389, passed in 2002, requires the California Energy Commission (CEC) to prepare an Integrated Energy Policy Report for the governor and legislature every 2 years (CEC 2015a). The report analyzes data and provides policy recommendations on trends and issues concerning electricity and natural gas, transportation, energy efficiency, renewable energy, and public interest energy research (CEC 2015a). The 2014 Draft Integrated Energy Policy Report Update includes policy recommendations, such as increasing investments in electric vehicle charging infrastructure at workplaces, multi-unit dwellings, and public sites (CEC 2015b).

Title 24–Building Energy Efficiency Standards

Title 24—Building Energy Efficiency Standards of the California Building Code are intended to ensure that building construction, system design, and installation achieve energy efficiency and preserve outdoor and indoor environmental quality (CEC 2012). The standards are updated on an approximately 3-year cycle. The 2013 standards went into effect on July 1, 2014.

Urban Water Management Planning Act

California Water Code Sections 10610, et seq. requires that all public water systems providing water for municipal purposes to more than 3,000 customers, or supplying more than 3,000 acre-feet per year, prepare an urban water management plan.

Other Standards and Guidelines

Leadership in Energy & Environmental Design

Leadership in Energy & Environmental Design (LEED) is a green building certification program, operated by the U.S. Green Building Council (USGBC) that recognizes energy efficient and/or environmentally friendly (green) components of building design (USGBC 2015). To receive LEED certification, a building project must satisfy prerequisites and earn points related to different aspects of green building and environmental design (USGBC 2015). The four levels of LEED certification are related to the number of points a project earns: (1) certified (40–49 points), (2) silver (50–59 points), (3) gold (60–79 points), and (4) platinum (80+ points) (USGBC 2015). Points or credits may be obtained for various criteria, such as indoor and outdoor water use reduction, and construction and

demolition (C&D) waste management planning. Indoor water use reduction entails reducing consumption of building fixtures and fittings by at least 20 percent from the calculated baseline and requires all newly installed toilets, urinals, private lavatory faucets, and showerheads that are eligible for labeling to be WaterSense labeled (USGBC 2014). Outdoor water use reduction may be achieved by showing that the landscape does not require a permanent irrigation system beyond a maximum 2-year establishment period, or by reducing the project's landscape water requirement by at least 30 percent from the calculated baseline for the site's peak watering month (USGBC 2014). C&D waste management points may be obtained by diverting at least 50 percent of C&D material and three material streams, or generating less than 2.5 pounds of construction waste per square foot of the building's floor area (USGBC 2014).

A substantial adverse effect on Utilities and Service Systems would occur if the implementation of the project would:

- Breach published national, state, or local standards relating to solid waste or litter control;
- Substantially increase the demand for potable water in excess of available supplies or distribution capacity without also including provisions to adequately accommodate the increased demand, or is unable to provide an adequate on-site water supply, including treatment, storage and distribution;
- Substantially increase the demand for the public collection, treatment, and disposal of wastewater without also including provisions to adequately accommodate the increased demand, or is unable to provide for adequate on-site wastewater system; or
- Result in demand for expansion of power or telecommunications service facilities without also including provisions to adequately accommodate the increased or expanded demand.

Environmental Evaluation

Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

Less than significant impact. The project would connect to existing EID wastewater sewer facilities which consist of a 6-inch sewer line and lift station located to the north on an adjoining parcel, which would be extended to provide sewer service to the project. As indicated by the EID in the June 16, 2016 Facility Improvement Letter (FIL) (Appendix D) the adjacent facilities have the capacity to serve the project's wastewater. The project would construct connection the existing facilities, located within the Forni Road right-of-way. Project design must be in conformance with EID's Water, Sewer and Recycled Water Design Construction Standards. The project is conditioned to require compliance with the County's California Stormwater Pollution Prevention Plan issued by the State Water Resources Control Board, as well as any applicable requirements of the California Water Quality Control Board. As such, impacts related to wastewater treatment would be less than significant.

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Less than significant impact. The commercial development would be served by EID for water and sewer services. There is an existing 10-inch water line in Forni Road and a 6-inch line at Missouri Flat Road, and an existing 6-inch sewer line and lift station located to the north on an adjoining parcel would be extended to provide water and sewer service to the project. The EID FIL prepared for the project indicated that the existing infrastructure would have adequate capacity to serve the project. Any potential impacts to the creek from the extension of the sewer line would be addressed through the USACE Section 404 permitting process as previously discussed in Impact Section 4, Biological Resources of this Initial Study. Impacts would be less than significant.

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Less than significant impact. According to the submitted *Preliminary Drainage Report for Creekside Plaza,* dated February 8, 2010, off-site stormwater would be routed through the project inside an underground four-foot diameter pipe and into the existing creek channel. The on-site stormwater is proposed to be collected through a series of stormwater pipes and conveyed to the northerly portion of the site where it will be filtered through a CDS (a filtering device), in order to ensure water quality is preserved. No new off-site stormwater facilities would be required. Construction of stormwater infrastructure would be required to abide by all applicable mitigation measures identified for the project. All grading activities exceeding 250 cubic yards of graded material or grading completed for the purpose of supporting a structure must meet the provisions contained in the County of El Dorado—Grading, Erosion, and Sediment Control Ordinance adopted by the County of El Dorado Board of Supervisors, August 10, 2010 (Ordinance #4949). All drainage facilities would be required to be constructed in compliance with standards contained in the County of El Dorado Drainage Manual. As such, impacts would be less than significant.

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

Less than significant impact. The commercial development would be served by EID for water and sewer services. There is an existing 10-inch water line in Forni Road and a 6-inch line at Missouri Flat Road, and a 6-inch sewer line and lift station located to the north on an adjoining parcel that would be extended to provide water and sewer service to the project. The FIL that was prepared for the project by EID indicated that the existing infrastructure would have adequate capacity to serve the project. Any potential impacts to the creek from the extension of the sewer line would be addressed through the USACE Section 404 permitting process as previously discussed in Impact Section 4, Biological Resources of this Initial Study. Impacts would be less than significant.

e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Less than significant impact. The commercial development would be served by EID for water and sewer services. There is an existing 10-inch water line in Forni Road and a 6-inch line at Missouri Flat Road, and a 6-inch sewer line and lift station located to the north on an adjoining parcel that would be extended to provide water and sewer service to the project. The FIL that was prepared for the project by EID indicated that the existing infrastructure would have adequate capacity to serve the project. Any potential impacts to the creek from the extension of the sewer line would be addressed through the USACE Section 404 permitting process as previously discussed in Impact Section 4, Biological Resources of this Initial Study. Impacts would be less than significant.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Less than significant impact. Solid waste within El Dorado County is hauled to the El Dorado Material Recovery Facility for sorting. Materials that are not recyclable are trucked to Forward Landfill in Stockton or Kiefer Landfill in Sacramento. Recyclable materials are distributed to a facility in Benicia and green wastes are sent to a processing facility in Sacramento. Pursuant to El Dorado County Environmental Management Solid Waste Division staff, these facilities have sufficient capacity to serve the County. Impacts would be less than significant.

g) Comply with federal, state, and local statutes and regulations related to solid waste?

Less than significant impact. County Ordinance No. 4319 requires that new development provide areas for adequate, accessible, and convenient storing, collecting, and loading of solid waste and recyclables. On-site solid waste collection would be handled through the local waste management contractor. The El Dorado County Hazardous Materials and Solid Waste Division has recommended a condition of approval that requires that the applicants provide sufficient space for both trash and recycling dumpsters. The containers would be required to be located within a fenced enclosure area. Adequate space for the three trash enclosures required for the three proposed buildings has been demonstrated on the submitted site plan. As conditioned, impacts would be less significant.

Finding

As conditioned, adequate water, sewer system, and solid waste disposal would be available to serve the project. For the Utilities and Service Systems category, impacts would be less than significant.

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
18. Mandatory Findings of Significance				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☒	☐	☐	☐
c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

Environmental Evaluation

Would the project:

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?

Less than significant impact with mitigation incorporated. No substantial evidence contained in the project record has been found to indicate that this project would have the potential to significantly degrade the quality of the environment, with the exception of potential impacts on wetlands. As conditioned and mitigated, and with adherence to County permit requirements, this project and the typical uses expected to follow would not have the potential to substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of California history or pre-history. Impacts from the project, including those to on-site wetlands, would be less than significant with the

implementation of mitigation and conditions of approval, including applicable permitting from El Dorado County, DOT, USACE, CDFW, and RWCB.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

Potentially significant impact. Cumulative impacts are defined in Section 15355 of the CEQA Guidelines as "two or more individual effects, which when considered together, would be considerable or which would compound or increase other environmental impacts."

The project would not involve development or changes in land use that would result in an excessive increase in population growth. Impacts due to increased demand for public services associated with the project would be offset by the payment of fees as required by service providers to extend the necessary infrastructure services. The project would not require an increase in the wastewater treatment capacity of the County. Further, as discussed throughout this environmental document, the project would not contribute to a substantial decline in water quality, noise, biological resources, agricultural resources, or cultural resources under cumulative conditions.

As previous indicated, the project may contribute substantially to increased traffic in the area. This potential cumulative impact will be analyzed and addressed in the forthcoming Focused EIR.

In addition, the project would result in the generation of greenhouse gases, which could contribute to global climate change. This potential cumulative impact as well as potential cumulative air quality emission impacts will be discussed further in the forthcoming Focused EIR.

c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?

Potentially significant impact. The majority of impacts identified in this Initial Study would be either less than significant after mitigation or less than significant and do not require mitigation and, therefore, would not result in environmental effects that cause substantial adverse effects on human beings either directly or indirectly. Impacts would be less than significant.

However, this Initial Study indicates that further analysis and determination of potential impacts related to air quality, greenhouse gas emissions, and transportation are warranted. Such impacts, if significant, could have the potential to result in substantial adverse effects on human beings. As such, these impacts will be analyzed and disclosed in the forthcoming Focused EIR.

Finding

It has been determined that the proposed project, as mitigated and conditioned, may result significant environmental impacts related to air quality, greenhouse gas emissions and transportation and as such, may contribute to related cumulative impacts. Therefore, these impacts will be analyzed and disclosed in the forthcoming Focused EIR.

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SECTION 3: REFERENCES

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Wickert, Brian (architect). 2016. Master Plan Map. April 28.

SECTION 4: LIST OF PREPARERS

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Phone: 925.357.2562
Fax: 925.357.2572

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Project Managers..... Janna Waligorski and Andrew Hill
Air Quality Analyst ..... George Lu
Senior Biologist ..... Brian Mayerle
Noise Analyst ..... Phil Ault
Cultural Resource Analyst ..... Dana DePietro, PhD
Environmental Analyst..... Liz Westmoreland
Environmental Analyst..... Brian Leung
GIS/Graphics ..... John De Martino
Editor/Publications ..... Ed Livingston
Word Processor ..... Ericka Rodriquez
Reprographics ..... Octavio Perez

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A.3 - Comments

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Robert Peters <robert.peters@edcgov.us>

Fwd: Creekside Plaza project (Richard Boylan email 2/4/17)

1 message

Rommel Pabalinas <rommel.pabalinas@edcgov.us> Mon, Feb 6, 2017 at 12:32 PM
To: Robert Peters <robert.peters@edcgov.us>

---------- Forwarded message ---------
From: **Anne Novotny** <anne.novotny@edcgov.us>
Date: Mon, Feb 6, 2017 at 11:22 AM
Subject: Fwd: Creekside Plaza project (Richard Boylan email 2/4/17)
To: Roger P Trout <roger.trout@edcgov.us>, Rommel Pabalinas <rommel.pabalinas@edcgov.us>

Roger & Mel - FYI

--Anne

Anne Novotny
Senior Planner

County of El Dorado
Community Development Agency
Long Range Planning Division
2850 Fairlane Court
Placerville, CA 95667
(530) 621-5931 / (530) 642-0508
anne.novotny@edcgov.us

---------- Forwarded message ---------
From: **Richard Boylan PhD** <drboylan@outlook.com>
Date: Sat, Feb 4, 2017 at 6:13 PM
Subject: Creekside Plaza project, Diamond Springs area
To:

Friends,

Developer Grado is trying to push through his Creekside Plaza strip mall in Diamond Springs despite previous community opposition and despite Measure Y, Measure E, and serious CEQA problems.

The County will present this Project to the community on Feb. 15 at 6:00 pm at 6831 Mother Lode Drive, west Placerville (the Developer's church)!

See the attached Fact Sheet for why this project should never happen. A project map is also attached.

Please consider coming the 15th to the County presentation and objecting. They need to know that the community is not going to just roll over for this cavalier Developer and his kid-killer project.

Rich

Richard Boylan, Ph.D.

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==========

Rommel (Mel) Pabalinas, Senior Planner
El Dorado County Community Development Agency-
Development Services Division-Planning Services
Planning Division
2850 Fairlane Court
Placerville, CA 95667
Main Line 530-621-5355
Direct line 530-621-5363
Fax 530-642-0508

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2 attachments

CreeksidePlaza Fact Sheet.rtf
12K

Creekside Plaza map.pdf
200K

Citizens Fact Sheet on proposed Creekside Plaza Project

The Creekside Plaza Project site consists of three parcels (4.3 acres), located at the northwest corner of the intersection of Forni Road and Missouri Flat Road in the Diamond Springs area.

The property was rezoned in December, 2015 from *one-acre residential* to Community Commercial as part of the Targeted General Plan Amendment and Zoning Ordinance Update. The project proposes to divide the 4 acres into three commercial buildings, one of them two-story, another a fast-food eatery, and a bit of open space.

The project has a number of admitted **negative environmental and public effects**.

-**Air Pollution**: The area where the project is located is an air basin which has degraded below acceptable levels for ozone and particulates in the air (smog).

-**Greenhouse Gases Emissions**: The project will create significant greenhouse gases (haze) and worsen the problem in El Dorado county.

-**Traffic**: Creekside Plaza is projected to generate 1645 net new auto trips, including 198 during the afternoon peak hour. The County says this project's traffic will lower the Missouri Flat Rd.-Forni Rd. intersection to Level of Service F – gridlock. Most troubling is that the project is across the street from Herbert Green School which *already* has lengthy traffic gridlock morning and afternoon when parents drop off and pick up students. The Project proposes to site a Burger King eatery right across narrow Forni Road from Herbert Green, tempting hungry kids to dart across the street amid dense moving and double-parked traffic, made only worse by new traffic trying to go into Creekside Plaza. As already pointed out at a previous community meeting, this project has real potential to be a kid-killer.

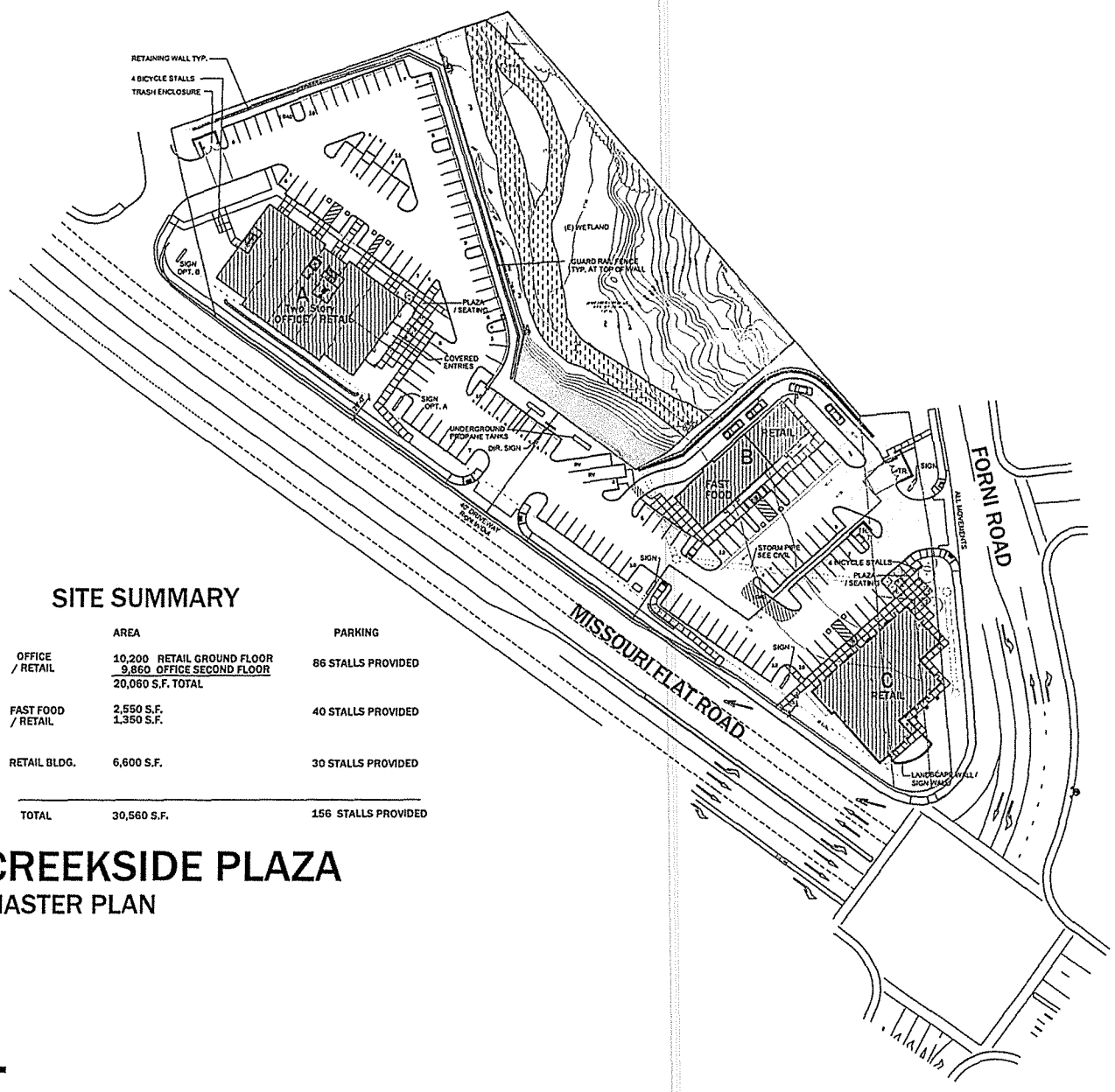
-**Environment**: The project site is oak woodlands, a seasonal creek, stream-side habitat, and wetlands. The creek drains into Weber Creek and then the American River and Folsom Lake, i.e. our water supply. The project will affect steam bed, creek banks and channel, and adjacent habitat. The Army Corps of Engineers finds that the project could harm water quality downstream. The Corps considers these impacts significant and spells out in detail what the Developer has to do to reduce damage to the environment. The project would create a continuing problem of erosion and polluted storm water runoff into the creek and drinking supply. These would have to be prevented.

The Corps requires that the wetlands on the property be preserved, and spells out enforceable mitigation measures. But Developer Grado proposes to cover 300 feet of creek bed with dirt so he can build on top of it, and run the creek underground through a large pipe! The Developer proposes to build a 30-foot high retaining wall halfway into streambed, which presents a hazard for school kids climbing on it and falling three stories down.

For these and other reasons, members of the community oppose the Creekside Plaza Project.

Let the County know how you feel. Email County planner Robert Peters: robert.peters@edcgov.us and your Supervisors.

- Fact Sheet by Richard Boylan, Ph.D., Diamond Springs



SITE SUMMARY

		AREA	PARKING
A	OFFICE / RETAIL	10,200 RETAIL GROUND FLOOR 9,860 OFFICE SECOND FLOOR 20,060 S.F. TOTAL	86 STALLS PROVIDED
B	FAST FOOD / RETAIL	2,550 S.F. 1,350 S.F.	40 STALLS PROVIDED
C	RETAIL BLDG.	6,600 S.F.	30 STALLS PROVIDED
	TOTAL	30,560 S.F.	156 STALLS PROVIDED

CREEKSIDE PLAZA
MASTER PLAN

Exhibit 1

BRIAN WICKERT- ARCHITECT
P.O. BOX 2106
SHINGLE SPRINGS, CA 95682
PH: 530-401-3390

GRADO EQUITIES VII LLC

CREEKSIDE PLAZA

MASTER PLAN

NORTH

SCALE 1" = 40'
DATE 1-2-17

SHT A-1

Robert Peters <robert.peters@edcgov.us>

Creekside Plaza meeting

1 message

Richard Boylan PhD <drboylan@outlook.com> Mon, Feb 13, 2017 at 2:42 PM
To: "robert.peters@edcgov.us" <robert.peters@edcgov.us>

Mr. Peters,

I wish to protest the holding of the public scoping meeting for the proposed Creekside Plaza project at the Seventh-Day Adventist Church, Mother Lode Drive.

That church is where the project developer is a member and major donor and built the SDA School next door. Thus it is not a neutral site at which to discuss the project.

Please find a suitable and neutral location for the meeting. Thank you.

Richard Boylan, Ph.D.

Diamond Springs, CA

COMMENT CARD

CREEKSIDE PLAZA EIR - SCOPING MEETING

February 15, 2017
6:00 p.m. to 7:30 p.m.
Placerville Seventh-Day Adventist Church
6831 Mother Lode Drive
Placerville, CA 95667

Please provide us with comments on the scope of environmental issues and alternatives to consider in the EIR. Feel free to use the back of the card as needed.

Name: DR. RICHARD BOYLAN

Address: 6731 JUNIPER LANE

PLACERVILLE, CA 95667

Email: DRBOYLAN@OUTLOOK.COM

Comments: (SEE ATTACHED SHEET.)

Please send all comments to:
Robert Peters, Associate Planner
County of El Dorado Development Services Division
2850 Fairlane Court
Placerville, CA 95667
Email: Robert.Peters@edcgov.us

Citizens Fact Sheet on proposed Creekside Plaza Project

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-**Environment**: The project site is oak woodlands, a seasonal creek, stream-side habitat, and wetlands. The creek drains into Weber Creek and then the American River and Folsom Lake, i.e. our water supply. The project will affect steam bed, creek banks and channel, and adjacent habitat. The Army Corps of Engineers finds that the project could harm water quality downstream. The Corps considers these impacts significant and spells out in detail what the Developer has to do to reduce damage to the environment. The project would create a continuing problem of erosion and polluted storm water runoff into the creek and drinking supply. These would have to be prevented.

The Corps requires that the wetlands on the property be preserved, and spells out enforceable mitigation measures. But Developer Grado proposes to cover 300 feet of creek bed with dirt so he can build on top of it, and run the creek underground through a large pipe! The Developer proposes to build a 30-foot high retaining wall halfway into streambed, which presents a hazard for school kids climbing on it and falling three stories down.

For these and other reasons, members of the community oppose the Creekside Plaza Project.

Let the County know how you feel. Email County planner Robert Peters: robert.peters@edcgov.us and your Supervisors.

- Fact Sheet by Richard Boylan, Ph.D., Diamond Springs
PRBOYLAN @ OUTLOOK.COM

Robert Peters <robert.peters@edcgov.us>

SCH # 2011092017 - Creekside Plaza NOP DEIR Caltrans Comment Letter.

1 message

Jacobson, Jennifer@DOT <Jennifer.Jacobson@dot.ca.gov> Mon, Feb 27, 2017 at 3:38 PM
To: "robert.peters@edcgov.us" <robert.peters@edcgov.us>
Cc: "state.clearinghouse@opr.ca.gov" <state.clearinghouse@opr.ca.gov>

Dear Robert Peters,

Thank you for including the California Department of Transportation (Caltrans) in the review of the Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) for the Proposed Creekside Plaza Project. Caltrans' new mission, vision, and goals signal a modernization of our approach to California's transportation system. We review this project for impacts to the State Highway System (SHS) in keeping with our mission, vision and goals for sustainability/livability economy, and safety/health. We provide these comments consistent with the state's smart mobility goals that support a vibrant economy, and build communities, not sprawl.

The proposed project consists of three parcels located at the northwest corner of the intersection of Fomi Road and Missouri Flat Road in the Diamond Springs area outside the incorporated city of Placerville, in El Dorado County. The project location is approximately 0.5 mile from the U.S. Route (US) 50/Missouri Flat Road Interchange and approximately 1 mile from State Route (SR) 49.

The proposed project is requesting approval of rezoning the site from Community Commercial –Design Review, Community combing zone to Community Commercial-Planned Development and Open Space-Planned Development; Tentative Parcel Map to subdivide the site into four parcels; Development Plan for a proposed commercial center containing three building totaling 30,560 square feet. The attached comments are based on the NOP.

The original signed letter is en route via USPS.

Please feel free to contact me with questions or concems.

Thank you,

Jennifer Jacobson

Transportation Planner

Caltrans District 3 – Regional Planning South

916-274-0639

CT_Comment_Letter_02272017- Creekside Plaza DEIR.pdf
882K

DEPARTMENT OF TRANSPORTATION
DISTRICT 3
2379 GATEWAY OAKS DR
SACRAMENTO, CA 95833
PHONE (916) 274-0635
FAX (530) 741-4245
TTY 711
www.dot.ca.gov/dist3

Serious drought.
Help save water!

February 27, 2017

Mr. Robert Peters
Associate Planner
County of El Dorado, Development Services Division
2850 Fairlane Court
Placerville, CA 95667

GTS # 03-ED-2017-00052
Creekside Plaza Project

Dear Mr. Peters:

Thank you for including the California Department of Transportation (Caltrans) in the review of the Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) for the Proposed Creekside Plaza Project. Caltrans' new mission, vision, and goals signal a modernization of our approach to California's transportation system. We review this project for impacts to the State Highway System (SHS) in keeping with our mission, vision and goals for sustainability/livability economy, and safety/health. We provide these comments consistent with the state's smart mobility goals that support a vibrant economy, and build communities, not sprawl.

The proposed project consists of three parcels located at the northwest corner of the intersection of Forni Road and Missouri Flat Road in the Diamond Springs area outside the incorporated city of Placerville, in El Dorado County. The project location is approximately 0.5 mile from the U.S. Route (US) 50/Missouri Flat Road Interchange and approximately 1 mile from State Route (SR) 49.

The proposed project is requesting approval of rezoning the site from Community Commercial – Design Review, Community combing zone to Community Commercial-Planned Development and Open Space-Planned Development; Tentative Parcel Map to subdivide the site into four parcels; Development Plan for a proposed commercial center containing three building totaling 30,560 square feet. The following comments are based on the NOP.

Transportation Circulation

Operational concerns for all road users that may increase the potential for future collisions should be identified in the DEIR and fully mitigated, including the US 50/Missouri Flat Road Interchange.

We would like to reiterate that we had no comments on the Transportation Impact Study (TIS) proposed Scope of Work (SOW), as the TIS SOW evaluates the appropriate ramp intersections and the 2035 with/without project horizon scenario.

Vehicles Miles Traveled (VMT)

Caltrans seeks to reduce vehicle trips and new VMT associated with development and recommends appropriate measures to avoid, minimize, or mitigate transportation impacts through smart mobility community design and innovative multimodal demand reduction strategies.

If you have any questions regarding these comments or require additional information, please contact Jennifer Jacobson, Intergovernmental Review Coordinator, at (916) 274-0639 or jennifer.jacobson@dot.ca.gov.

Sincerely,

ERIC FREDERICKS, Chief
Office of Transportation Planning – South Branch

c: Scott Morgan, State Clearinghouse

RECEIVED

FEB 27 2017

EL DORADO COUNTY
DEVELOPMENT SERVICES DEPT

21 February 2017

Robert Peters
County of El Dorado
Development Services Division
2850 Fairlane Court
Placerville, CA 95667

CERTIFIED MAIL
91 7199 9991 7035 8421 4534

COMMENTS TO REQUEST FOR REVIEW FOR THE NOTICE OF PREPARATION FOR THE DRAFT ENVIRONMENTAL IMPACT REPORT, CREEKSIDE PLAZA (Z10-0009/PD10-0005/P10-0012) PROJECT, EL DORADO COUNTY

Pursuant to the County of El Dorado Development Services Division's 27 January 2017 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Request for Review for the Notice of Preparation for the Draft Environment Impact Report* for the Creekside Plaza (Z10-0009/PD10-0005/P10-0012) Project, located in El Dorado County.

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

I. Regulatory Setting

Basin Plan

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

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

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

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

Antidegradation Considerations

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

In part it states:

> *Any discharge of waste to high quality waters must apply best practicable treatment or control not only to prevent a condition of pollution or nuisance from occurring, but also to maintain the highest water quality possible consistent with the maximum benefit to the people of the State.*
>
> *This information must be presented as an analysis of the impacts and potential impacts of the discharge on water quality, as measured by background concentrations and applicable water quality objectives.*

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

II. Permitting Requirements

Construction Storm Water General Permit

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

requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP).

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

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

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

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

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

Industrial Storm Water General Permit

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

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

Clean Water Act Section 404 Permit

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACOE). If a Section 404 permit is required by the USACOE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water

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

drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements.

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

Clean Water Act Section 401 Permit – Water Quality Certification

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

Waste Discharge Requirements – Discharges to Waters of the State

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

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

Dewatering Permit

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

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

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

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

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

Regulatory Compliance for Commercially Irrigated Agriculture

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

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

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

Low or Limited Threat General NPDES Permit

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

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

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

NPDES Permit

If the proposed project discharges waste that could affect the quality of the waters of the State, other than into a community sewer system, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. A complete Report of Waste Discharge must be submitted with the Central Valley Water Board to obtain a NPDES Permit.

For more information regarding the NPDES Permit and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/help/business_help/permit3.shtml

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

Stephanie Tadlock

Stephanie Tadlock
Environmental Scientist

Robert Peters <robert.peters@edcgov.us>

Fwd: PUBLIC NOTICE-Z10-0009/PD10-0005/P10-0012 Creekside Plaza Notice of Preparation DEIR

1 message

Amy Phillips <amy.phillips@edcgov.us> Mon, Feb 27, 2017 at 4:04 PM
To: Robert Peters <robert.peters@edcgov.us>

Hi Rob,

Conditions #45 and #48 of the COAs appear to cover the post-construction stormwater quality requirements. The Drainage and Utility Plans show water quality features as well. Do we have any additional plans that include a statement or show calculations for how the project is meeting the water quality requirements?

Thank you,

---------- Forwarded message ---------
From: **Planning Unknown** <planning@edcgov.us>
Date: Thu, Jan 26, 2017 at 3:09 PM
Subject: PUBLIC NOTICE-Z10-0009/PD10-0005/P10-0012 Creekside Plaza Notice of Preparation DEIR
To:

PUBLIC NOTICE

Notice of Preparation of a Draft Environmental Impact Report for the Proposed Creekside Plaza Project (Z10-0009/PD10-0005/P10-0012) is attached.

The document is also available at the following link:

http://edcapps.edcgov.us/Planning/ProjectInquiryDisplay.asp?ProjectID=18455

--

Amy A. Phillips, CPSWQ, CPESC, QSD
Storm Water Coordinator - West Slope

County of El Dorado
Community Development Agency
Long Range Planning Division
2850 Fairlane Court, Placerville, CA 95667
(530) 621-5921
amy.phillips@edcgov.us

20170127_CreeksidePlazaNOP.pdf
799K

RECEIVED
06 2017
EL DORADO COUNTY
DEVELOPMENT SERVICES DEPT

27 February 2017

Robert Peters
County of El Dorado Development Services Division
2850 Fair Lane Court
Placerville, CA 95667

CERTIFIED MAIL
91 7199 9991 7035 8422 0887

COMMENTS TO REQUEST FOR REVIEW OF THE NOTICE OF PREPARATION FOR A DRAFT ENVIRONMENTAL IMPACT REPORT, FOR THE CREEKSIDE PLAZA REZONE PROJECT, SCH#2011092017, EL DORADO COUNTY

Pursuant to the County of El Dorado Development Services Division's 27 January 2017 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Notice of Preparation for a Draft Environmental Impact Report* for the Creekside Plaza Rezone Project, located in El Dorado County.

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

I. Regulatory Setting

Basin Plan

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

The Basin Plan is subject to modification as necessary, considering applicable laws, policies, technologies, water quality conditions and priorities. The original Basin Plans were adopted in 1975, and have been updated and revised periodically as required, using Basin Plan amendments. Once the Central Valley Water Board has adopted a Basin Plan amendment in noticed public hearings, it must be approved by the State Water Resources Control Board (State Water Board), Office of Administrative Law (OAL) and in some cases,

the United States Environmental Protection Agency (USEPA). Basin Plan amendments only become effective after they have been approved by the OAL and in some cases, the USEPA. Every three (3) years, a review of the Basin Plan is completed that assesses the appropriateness of existing standards and evaluates and prioritizes Basin Planning issues.

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

Antidegradation Considerations

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

In part it states:

> *Any discharge of waste to high quality waters must apply best practicable treatment or control not only to prevent a condition of pollution or nuisance from occurring, but also to maintain the highest water quality possible consistent with the maximum benefit to the people of the State.*
>
> *This information must be presented as an analysis of the impacts and potential impacts of the discharge on water quality, as measured by background concentrations and applicable water quality objectives.*

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

II. Permitting Requirements

Construction Storm Water General Permit

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

(SWPPP).

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

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

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

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

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

Industrial Storm Water General Permit

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

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

Clean Water Act Section 404 Permit

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACOE). If a Section 404 permit is required by the USACOE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water

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

drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements.

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

Clean Water Act Section 401 Permit – Water Quality Certification

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

Waste Discharge Requirements – Discharges to Waters of the State

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

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

Dewatering Permit

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

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

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

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

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

Regulatory Compliance for Commercially Irrigated Agriculture

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

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

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

Low or Limited Threat General NPDES Permit

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

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

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

NPDES Permit

If the proposed project discharges waste that could affect the quality of the waters of the State, other than into a community sewer system, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. A complete Report of Waste Discharge must be submitted with the Central Valley Water Board to obtain a NPDES Permit.

For more information regarding the NPDES Permit and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/help/business_help/permit3.shtml

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

Stephanie Tadlock

Stephanie Tadlock
Environmental Scientist

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

Robert Peters <robert.peters@edcgov.us>

"Creekside Plaza NOP Comment"

1 message

Donna Ellis <donna-e@att.net> Fri, Feb 24, 2017 at 5:58 PM
Reply-To: Donna Ellis <donna-e@att.net>
To: "Robert.Peters@edcgov.us" <Robert.Peters@edcgov.us>

My name is Donna Ellis and I live at 3720 Marinko Ct., off of Arroyo Vista which is off of Forni Rd just past Herbert Green School and a block away from this proposed plaza. I use Forni Rd. and Missouri Flat Rd. on a daily basis.

I AM INTENSELY AGAINST THE PLAZA GOING IN ON THE CORNER OF FORNI RD AND MISSOURI FLAT RD. It is ALREADY a VERY busy intersection with MANY people running red lights, speeding and even racing on a daily basis. The entry/exit proposed for Missouri Flat will further increase the accident risks and congestion through the intersection due to drivers turning into and out of the Plaza.

The Forni Rd. entry/exit is directly across from Golden Center Dr. which already has safety issues with a blind hill to the right and the parents dropping off and picking up the students going to Herbert Green School and the school buses coming and going! This Plaza puts the children, their parents and others at unnecessary risk for accidents. Forni Rd. already has increased traffic and risks for those who live on/off of it in the vicinity of the Plaza I have a difficult enough time pulling onto Forni Rd. from Arroyo due to the blind curves (left and right) and fast moving traffic, I DON'T want MORE traffic on this NARROW two lane road.

This area is just TOO CRAMPED for large of a complex and the drive-thru fast food will guarantee CONSTANT in and out traffic. THERE ARE JUST TOO MANY SAFETY ISSUES FOR THIS TO BE A GOOD IDEA.

There is commercial property further north on Missouri Flat that would not congest an already hectic intersection!

PLEASE DO NOT OKAY THIS PROJECT!!!!

COMMENT CARD

CREEKSIDE PLAZA EIR - SCOPING MEETING

February 15, 2017
6:00 p.m. to 7:30 p.m.
Placerville Seventh-Day Adventist Church
6831 Mother Lode Drive
Placerville, CA 95667

Please provide us with comments on the scope of environmental issues and alternatives to consider in the EIR. Feel free to use the back of the card as needed.

Name: Marcy Guthrie

Address: 3783 Foreni Rd.

Email: mguthrie@mlusd.net

Comments: 530 622 6464 ex 2216

Please send all comments to:
Robert Peters, Associate Planner
County of El Dorado Development Services Division
2850 Fairlane Court
Placerville, CA 95667
Email: Robert.Peters@edcgov.us

EDC COB <edc.cob@edcgov.us>

Creekside strip mall

1 message

renee hargrove <writeon@internet49.com> **Tue, Feb 28, 2012 at 8:06 AM**
To: edc.cob@edcgov.us

With regard to the proposed Creekside strip mall, I continue to question why El Dorado County needs more retail space when there are so many vacancies. Plus, if there are favored developers who do not pay the appropriate fees, is that not taking revenue out of County coffers when it could be spent on road maintenance, **economic** development, job creation/security (after all, there are employees who are furloughed because of lack of funding) and other much-need services?

It seems counter-productive to favor developers when citizens are struggling with employment. I sincerely doubt that new strip malls are going to employ any more citizens than using existing ones. For instance, why not "encourage" the absentee owners of the strip mall on Broadway, anchored by The Dollar Tree and Grocery Outlet, to repair that property and rent it out? I am aware that there was a revitalization plan for that area...why was that stymied?

If more strip malls and unchecked development ensues, it seems that traffic will increase, more roadways will be built and everyone will be going around in circles to nowhere. Has anyone noticed the increased vehicular speed and running of red lights everywhere? Another case in point is the safety of the children at Herbert Green School and pedestrians everywhere. Along with that goes distracted drivers who are texting, talking on their cell phones and checking their GPS while driving. Are they going to be looking out for the children as they hurry from one strip mall to another? Doubtful.

I am here to vote for revitalization and smart, planned use of existing retail and commercial space and properties. Our county is beginning to look bedraggled with darkened commercial/retail buildings, unkempt grounds, bankrupt businesses who failed because of decreased revenue from shoppers, and more. Not to mention, I personally do not want El Dorado County to look like Folsom where there are a million food places and the same retail recipe around the big box stores. Why not preserve charm and the unique qualities that exist here? What about honoring heritage and inventiveness? I am against cookie-cutter development.

Thank you for your attention. Renee' Hargrove, Placerville

Robert Peters <robert.peters@edcgov.us>

Creekside Plaza

1 message

Paula Hutson <paula.hutson1@outlook.com> Sat, Feb 25, 2017 at 12:21 PM
To: "robert.peters@edcgov.us" <robert.peters@edcgov.us>

I've lived across the street from where the new development is proposed on Missouri Flat and Forni Rd. My parcel #327-140-30-100 4085 Hutson Ln Placerville. I gave up a right away going thru the Best Western Hotel and in developing it they gave us nothing but trouble. They excavated into my property and we've had to listen to car horns going off, plus the noise of garbage being emptied and the containers are very near to our house instead of put further to the rear of their property. In the morning I can hear traffic going by on Missouri Flat Rd so I can only imagine more noise and disturbance from more cars and pollution coming to that site. I'll simply say the Creekside plan will be too congested and there will be more accidents happening there.

Robert Peters <robert.peters@edcgov.us>

Mother Lode USD EIR Creekside Plaza Project 2-27-17

1 message

Marcy Guthrie <mguthrie@mlusd.net> Mon, Feb 27, 2017 at 11:50 AM
To: "Robert.Peters@edcgov.us" <Robert.Peters@edcgov.us>

Dear Robert,

Please find a letter with 2 attachments to you regarding the EIR for the Creekside Plaza Project. Please confirm you have received this email and attachment.

Thank you,

Marcy M. Guthrie, Ed.D.

Superintendent, Mother Lode Union School District

3783 Forni Road

Placerville, CA 95667

(530) 622-6464 ex. 2216

(530) 503-7414

mguthrie@mlusd.net

The Mission of Mother Lode Union School District is the successful education of every student.

We Are Mother Lode

Mother Lode USD Letter EIR Creekside Plaza Project.pdf
1168K

-MOTHER LODE UNION School District).
3783 Forni Road * Placerville CA 95667 * (530) 622-6464 * Fax (530) 622-6163
Marcy M. Guthrie Ed.D., Superintendent
Board of Trustees
John Parker, President
Gene Bist Sr., Clerk
Janet VanderLinden, Member
Cathy Wilson, Member
Chuck Wolfe, Member

Via electronic mail to Robert.Peters@edcgov.us

February 27, 2017

Robert Peters, Associate Planner
County of El Dorado Development Services Division
2850 Fairlane Court
Placerville, CA 95667

RE: Notice of Preparation of a Draft Environmental Impact Report for the Proposed Creekside Plaza Project (Z10-0009/PD10-0005/P10-0012)

Dear Mr. Robert Peters:

This letter is written regarding the Preparation of a Draft Environmental Impact Report for the Proposed Creekside Plaza Project (CPP) on behalf of the Mother Lode Union School District (MLUSD). MLUSD acknowledges the CCP has been in various stages of development since 2010 with concerns raised by my predecessor, retired superintendent Tim Smith (attachment 1), attorney Marsha A. Burch representing The Friends of Herbert Green Middle School Neighborhood (attachment 2) and numerous others who expressed concerns in 2012.

MLUSD also acknowledges that the current proposed plans have addressed some of the concerns raised in 2012. However, MLUSD continues to have concerns relative to student safety, traffic and transportation, air quality greenhouse gas emissions and respectfully requests the EIR be completed to address all of these continuing concerns.

Safety

Herbert C. Green Middle School, formerly Mother Lode Union School, located at 3781 Forni Road has served our children and community for 61 years. Much relative to local development, including the General Plan (GP) and Zoning has changed in 61 years, some for the good and some for the not-so-good. MLUSD's concern for student safety is first as foremost. Parents and community members entrust us to ensure we keep their children safe and secure while providing a high quality education. The CCP brings increased traffic, especially at Missouri Flat and Forni Roads, but also at Gold Center Drive and Forni Road. This compromises our ability to meet our parent and community expectations as children and adults frequently walk in and around these intersections.

There has already been a considerable amount of development around our school. Consider all of the development that has been added around Mother Lode Union School and Herbert C. Green Middle School since 1956:

The Mission of the Mother Lode Union School District is the successful education of every student.

1) Gold Country Assisted Living complex and facilities
2) Schools Credit Union, various dental-orthodontic and other offices & numerous restaurants both dine-in, take-out and fast-food (Taqueria El Carnival, Grand China, Subway, McDonalds, et al.)
3) WalMart and Panda Express
4) Walgreen's and Goodwill

Traffic and Transportation

According to the DEIR document, "... the [CPP] project will generate 1,645 net new trips including 106 in the AM peak hours and 198 in PM peak hours. This increase in traffic could adversely impact roadways and intersections in the area. As such, traffic modeling will be conducted to quantify potential impacts, which will be analyzed and addressed in the EIR."

The two (2) ways into the CPP are off of Forni and Missouri Flat Roads. MLUSD sees this as a significant concern even with the ".22-acre portion of Forni Road right of way" (DEIR). The fast-food restaurant proposed is positioned to be very close to the Forni Road entrance. Based upon what we know and have experienced with similar drive-thru fast-food restaurants (i.e., McDonalds on Missouri Flat Road) during peak AM and PM hours, it would take four cars in the drive thru cue to create a back-up on Forni Road. The CPP requires an EIR on Traffic and Circulation (attachment 2 p.

In June of 2016, MLUSD taxpayers supported Measure C and we have plans to mitigate the traffic congestion, improve safety and circulation in the Herbert C. Green and District Office parking lot. MLUSD is concerned that the use our general obligation bond Measure C funds, a promise to our taxpayers, intended to mitigate traffic congestion and improve safety and circulation on Missouri Flat and Forni Roads will be wasted as a result of this project.

Air Quality & Greenhouse Gas Emissions

According to the DEIR, "The air basin in which the project is located is in non-attainment for ozone and particulate matter ($PM_{10}$and $PM_{2.5}$). Construction and operation of the project would contribute to an increase in these pollutants and could exacerbate non-attainment status."

The CPP requires an EIR on Air Quality (attachment 2 p. 3-6), and Greenhouse Gas Emissions (attachment 2, p.10).

Our students, staff and community will be subject to compromised air quality and exposure to an increase in greenhouse gas emissions. The Journal of Thoracic Disease published *The impact of PM2.5 on the human respiratory system* on Jan. 18, 2016 (see link) https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4740125/

MLUSD is not opposed to growth and development as we know we can and do benefit from both. MLUSD wishes to honor the expectations of parents and community members who entrust us to ensure we keep their children safe and secure while providing a high quality education.

Respectfully,

MGuthrie

Marcy M. Guthrie, Ed.D.
Superintendent

Attachments (2)

The Mission of the Mother Lode Union School District is the successful education of every student.

Attachment 1

MOTHER LODE UNION School District

3783 Forni Road * Placerville CA 95667
Tim Smith, Superintendent
(530) 622-6464 * Fax (530) 622-6163

DATE DISTRIBUTION
DATE 2/27/12

Board of Trustees
John Parker, President
Gene Bist, Clerk
Shaun Verner, Member
James Haynie, Member
Janet VanderLinden, Member

2012 FEB 27 AM 10:

CLERK OF THE BOARD OF SUPERVISORS
EL DORADO COUNTY

February 23, 2012

Board of Supervisors
County of El Dorado
330 Fair Lane
Placerville, CA 95667

Re Creekside Plaza (Project), Rezone Z10-0009/Planned Development PD10-0005/Parcel Map, P10-0012 Creekside Plaza

Dear Supervisors,

I am writing this letter regarding the Creekside Plaza Project (CPP) on behalf of the Mother Lode Union School District (MLUSD). Since learning of the CCP, the MLUSD has had concerns relative to student safety and traffic congestion, both of which will be impacted as a result of the proposed development. I am requesting the Board of Supervisors consider the MLUSD concerns and requests before taking action to approve the CPP.
I want to start by stating that the MLUSD is not opposed to development, and that in fact is supportive of development. The District recognizes the positive effects developments have on schools and the community in general, thus we are not suggesting or advocating the termination of the CPP.

The MLUSD began to consider the impact of the project in the spring of 2011 when we met with Tom Dougherty, Project Planner. Since then, we have attended meetings and public hearings held by the El Dorado County Planning Commission to communicate the MLUSD concerns regarding student safety and traffic congestion related to the CPP.

The following are the primary concerns of the MLUSD:

1. Risk of students being injured and traffic accidents due to increased traffic and congestion related to the CPP.

2. A left hand turn lane into the CPP on Forni Road with two vehicle stacking capacity, which will not mitigate traffic congestion related to the development.

3. A lack of specificity on the improvements to the school frontage on Forni Road, as stated in the mitigation plan.

4. A thirty foot retaining wall behind the development, without a specific plan to mitigate potential safety hazards related to the wall.

The MLUSD is requesting the following to address the above mentioned concerns:

1. Utilize the 50 foot right-of-way on Forni Road to assist in the mitigation of the traffic congestion related to the CPP.

2. Clearly state what improvements will be made to the school frontage on Forni Road. The MLUSD proposes a side walk and a right hand turn lane into the school parking lot on Forni Road.

3. Include a barrier fence on the retaining wall behind the CPP.

I have personally witnessed the daily traffic congestion, near accidents, and several accidents involving vehicles on Forni Road for years. We are fortunate that no students have been injured as a result of accidents, to date. The traffic related to the school site has been significantly impacted by the multitude of surrounding developments on Missouri Flat and Golden Center Drive. Adding additional traffic to Forni Road without utilizing the County right-of-way to mitigate the problem is not a good decision for the MLUSD or the community. It is the opinion of the MLUSD that any development with an entrance on Forni Road will require the 50 foot right-of-way to mitigate traffic to an already congested roadway.

Due to the potentially significant impacts to the students and stakeholders of the MLUSD, I am requesting the Board of Supervisors table the CPP development plan until the above concerns have been addressed.

Respectfully,

Tim Smith
Superintendent
Mother Lode Union School District

Attachment 2

25

MARSHA A. BURCH
ATTORNEY AT LAW

LATE DISTRIBUTION
Date 8:17 pm, Feb 27, 2012

131 South Auburn Street
GRASS VALLEY, CA 95945

Telephone:
(530) 272-8411
Facsimile:
(530) 272-9411

mburchlaw@gmail.com

February 27, 2012

Via electronic mail
edc.cob@edcgov.us

El Dorado County Board of Supervisors
Suzanne Allen de Sanchez, Clerk
330 Fairlane Court
Placerville, CA 95667

Re: Mitigated Negative Declaration for the Creekside Plaza Project
Rezone Z10-0009/Planned Development PD10-0005/Parcel Map,
P10-0012 Creekside Plaza
State Clearinghouse # 2011092017

Dear Supervisors:

We appreciate the opportunity to provide the following comments on behalf of Friends of the Herbert Green Middle School Neighborhood ("Friends") regarding the above-reference project. These comments are intended to supplement comments submitted previously by other concerned citizens and agencies.

As explained below, the Initial Study and Mitigated Negative Declaration (referred to together herein as "MND") for the Project does not comply with the California Environmental Quality Act ("CEQA") (Public Resources Code § 21000 *et seq.*) in certain essential respects. An Environmental Impact Report ("EIR") must be prepared for the Project.

An overarching concern in this case is the fact that the MND ignores potentially significant adverse impacts with little justification and almost no documentation. After review of the MND, we firmly believe that the environmental review has been truncated by avoiding full disclosure of the Project's impacts, and also relying upon future regulatory action to fully "mitigate" impacts, with little or no analysis.

It is especially surprising that the MND does not include traffic as a potentially significant effect on the environment. (MND, p. 3.) Information in the record, including the traffic analyses done for the Project show that the Project will indeed have

significant impacts, and the County pretends that this is not an issue, relying heavily on impact fees that may or may not ever result in the necessary improvements being constructed. This fatal flaw in the MND is set forth in the traffic section of this letter.

The Project also deviates from various General Plan ("GP") policies, and County staff is recommending that these deviations be allowed, based upon conclusory analyses. The Project will violate the prohibition of development on slopes greater than 30% and will also violate the 50-foot wetland setback requirements, and these deviations alone are evidence that the Project may have a significant environmental impact. The County may be able to satisfy itself with respect to the criteria used to determine whether a waiver should be granted, but this does not satisfy CEQA.

There are several areas of impact where substantial evidence in the record supports a fair argument that the Project may have a significant environmental impact and that a full EIR is required.

In a recent development in the administrative process, the applicant is now seeking a reasonable use determination in order to avoid mitigating impacts to oak woodlands. This issue is discussed in some detail below. In summary, if the County determines that mitigation for impacts to the oak canopy is infeasible, it may only do so after preparation of an EIR and a finding of overriding considerations. This simply drives home the fact that this Project may not be approved with a MND.

I. Standard for use of a Negative Declaration

The standard in reviewing an agency's decision not to prepare an EIR for a project is subject to the "fair argument test" and is *not* reviewed under the substantial evidence test that governs review of agency determinations under Public Resources Code sections 21168 and 21168.5. The "substantial evidence test" that generally applies to review of an agency's compliance with CEQA provides that if any substantial evidence in the record supports the agency's determination, then the determination will remain undisturbed.

In stark contrast, an agency's decision to omit the preparation of an EIR will not stand if *any* substantial evidence in the record would support a fair argument that the Project *may* have a significant effect on the environment. (*No Oil, Inc. v. city of Los Angeles* (1974) 13 Cal.3d 68, 75; *Friends of "B" Street v. City of Hayward* (1980) 106 Cal.App.3d 988, 1000-1003; Pub. Resources Code § 21151.)

There is substantial evidence to support a fair argument that each of the Project impacts discussed below *may* be significant. A full EIR should be prepared for other reasons as well. The cumulative impacts of the Project are significant. Where a project's impacts are cumulatively considerable, adoption of a mitigated negative declaration is inappropriate unless the evidence in the record demonstrates that the mitigation measures will reduce all impacts to a level of insignificance. (See *San Bernardino Valley Audubon Society v. Metropolitan Water District* (1999) 71 Cal.App.4th 382, 391.) In this case it does not. Finally, the Initial Study simply does not contain enough information to fulfill its purpose as an informational document.

II. The Project Description is Insufficient

"An accurate, stable and finite project description is the sine qua non of an informative and legally sufficient EIR." (*County of Inyo v. County of Los Angeles* (1977) 71 Cal.App.3d 185, 193.) A complete project description is necessary to ensure that all of the project's environmental impacts are considered. (*City of Santee v. County of San Diego* (1989) 214 Cal.App.3d 1438, 1450.)

The MND does not provide a complete, consistent project description sufficient to support environmental analysis.

The Project description in the MND describes the surrounding land uses, and omits any mention of the Herbert Green Middle School ("School"). (MND, p. 4.) The Staff Report lists the "Project Issues" and there is no mention of the School, nor any reference to the traffic congestion and safety issues resulting from heavy traffic during times of the day when students are coming to and leaving the School. (December 8, 2011 Revised Staff Report, p. 5.) The maps and diagrams associated with the Project do not include the School. The environmental analysis avoids the issue of the School directly across the road from the Project, and does so because the traffic and safety impacts around the School will be tremendous, and there is no way for the County to justify its decision to certify the MND when a full EIR is so obviously required.

During a public Board meeting on May 10, 2010, Supervisor Jack Sweeney addressed the terrible traffic problems in front of the School, and made an argument that children should be walking to school to alleviate the problem. The fact is, children will not be walking to school, and this may be due in part to the obvious danger to pedestrians in the area. We request that the relevant portion of the tape and/or transcript of the May 10, 2010, meeting be included in the record of proceedings for the Project. (Public Res. Code § 21167.6(e).)

III. The Direct Impacts of the Project are Not Adequately Addressed

The MND does not adequately address the Project's potential significant impacts, attempting to avoid the analysis by pointing to various regulatory programs, or by simply ignoring the facts.

A. Air Quality

The MND concludes that the Project's air quality impacts will be less than significant. The MND offers two bases for this conclusion: (1) so long as all of the air quality regulations are followed, impacts will be insignificant; and (2) the 2004 General Plan EIR ("GP EIR") considered air quality impacts and "mitigation in the form of General Plan policies have been developed to mitigate impacts to less than significant levels." (MND, p. 11.)

1. MND is inappropriately "tiered" from the 2004 GP EIR

Where a lead agency intends to rely on an earlier environmental document for its analysis of a project's impact, the Initial Study, at the very least, should summarize,

with supporting citations, the specific relevant conclusions of the existing documents. Only then can the public determine whether the agency's reliance on extant data is in fact proper. (See *Emmington v. Solano County Redevelopment Agency* (1987) 195 Cal.App.3rd 491, 501-503.)

Public Resources Code section 21068.5 defines "tiering" as:

> [T]he coverage of general matters and environmental effects in an environmental impact report prepared for a policy, plan, program or ordinance followed by narrower or site-specific **environmental impact reports** which incorporate by reference the discussion in any prior environmental impact report and which concentrate on the environmental effects which (a) are *capable of being mitigated*, or (b) were *not analyzed as significant effects on the environment in the prior environmental impact report*. (Emphasis added.)

The 2004 GP EIR was adopted with a statement of overriding considerations because there were multiple areas of impact found to be significant and unavoidable, including impacts to air quality. Where a programmatic or master EIR is approved with a statement of overriding considerations, a lead agency **may not** tier from that document with a negative declaration or a mitigated negative declaration. (*Communities for a Better Environment v. California Resources Agency* (2002) 103 Cal.App.4th 98, 124-125.)

Accordingly, the County's attempt to tier a mitigated negative declaration from an EIR that was approved with a statement of overriding considerations is a violation of CEQA.

2. Impact analyses and mitigation measures are insufficient

The El Dorado County Air Quality Management District ("AQMD") CEQA Guide[1] covers the issue of cumulative impacts, and a Project that proposes to change zoning to a use that will increase pollutant emissions is considered by the AQMD to have a significant impact. (AQMD CEQA Guide, Chapt. 8, p. 2.) The AQMD recently commented on the proposed Tilden Park Project and described this aspect of their CEQA Guide. (We request that all of the comment letters submitted to the County on the Tilden Park project be included in the record of proceedings for this Project, including the September 3, 2010, letter from the AQMD. These comment letters are relevant to this Project because it will also involve a zoning change and the issues raised are similar [Pub. Res. Code § 21167.6(e)(10)].)

The County claims that if the Project is held to various AQMD requirements, then the impacts will be mitigated to a level of insignificance. (MND, pp. 10-12.) There is no evidence whatsoever to support this conclusion. And, "[i]f there is a disagreement among expert opinion supported by facts over the significance of an effect on the environment, the Lead Agency shall treat the effect as significant and prepare and EIR." (CEQA Guidelines § 15064(g).) The experts at the AQMD have developed standards that conclude that the Project will have a significant impact, and the MND does not

1 http://www.edcgov.us/Government/AirQualityManagement/Guide_to_Air_Quality_Assessment.aspx

even discuss those standards.

Despite the potentially significant impacts, the MND concludes that if future development in the Project area is held to compliance with requirements of the AQMD, then any air quality impacts will have been reduced to a level of insignificance. (MND, p. 12.) There is no evidence that the County went through any of the analyses required by the AQMD in order to make this finding.

It bears noting here that the County did not do any modeling or develop any data with respect to the pollution emissions that the Project will generate. The El Dorado County AQMD CEQA Guide describes the level of analysis necessary with respect to various types of emissions. With respect to ROG and NOx, the AQMD indicates that if the Project can demonstrate consistency with the AQAP for ROG and NOx emissions, the Project may be categorized as not having a cumulative air quality impact with respect to ozone. This requires being able to say that the Project does not require a change in the existing land use designation and projected emissions. That is a statement that *cannot* be made with respect to the Project.

For other pollutants, including CO, PM_{10}, SO_2, NO_2 and TACs, there is no applicable air quality plan containing growth elements. (AQMD CEQA Guide, Chapter 8, p. 2.) For CO, if there exists the possibility of CO "hotspots" caused by the proposed project in conjunction with other nearby projects, "for example, modeling will ordinarily be required if the proposed project and one or more other large projects jointly change traffic density levels to service level E or lower on the same roadway links..." (*Id.* at 2.) The Project *does* lower the level of service to E at area intersections. (December 8, 2011, Revised Staff Report, p. 12.) There was no modeling done for the Project. There is simply not enough analysis of this impact to support the conclusion that it has been mitigated to a level of insignificance.

For PM_{10}, SO_2 and NO_2, the Mountain Counties are in non-attainment for state standards. The impacts of PM_{10} emissions can be significant cumulatively even where the project-specific emissions are not. The AQMD requires, at a minimum, dispersion modeling in order to determine whether a project will result in significant emissions of these constituents. (AQMD CEQA Guide, Chapter 8, p. 3.) There is no evidence of any dispersion modeling or other data collected for the Project.

The AQMD describes in detail what is required for an adequate CEQA analysis of air quality impacts. (AQMD CEQA Guide, Chapter 8, pp. 3-6.) The adequate cumulative impacts analysis begins as follows:

1. Either one of the following two elements:
    a. A list of past, present, and reasonably anticipated future projects producing related or cumulative impacts, including those projects outside the control of the agency, or
    b. A summary of projections contained in an adopted general plan or related planning document that is designed to evaluate regional or area-wide conditions;
2. A summary of the expected environmental effects to be produced by those projects with specific reference to additional information stating where that

information is available; and
3. An analysis of the cumulative impacts of the relevant projects. (AQMD CEQA Guide, Chapter 8, p. 4.)

The County did not even begin to meet these requirements for the air quality cumulative impacts analysis. The MND simply acknowledges that this is a potentially significant impact, but fails to follow through by concluding that compliance with standard regulations will mitigate the impacts to a less than significant level.

The conclusion is not based on substantial evidence, and also defers the development and adoption of mitigation measures to the future. The deferral of analysis and development of mitigation measures for air quality impacts is a violation of CEQA, as the MND does not meet the standards for any exception to the rule. In *Gentry v. City of Murrieta* the court of appeal explained that CEQA's normal requirement that mitigation be adopted prior to project approval may be met if an agency prepares a draft EIR that (1) analyzes the "whole" of the project; (2) identifies and disclosed with particularity the project's potentially significant impacts; (3) establishes measurable performance standards that will clearly reduce all of the identified impacts to less-than-significant levels; and (4) describes a range of particularized mitigation measures that, when taken in combination, are able to meet the specified performance standards. (*Gentry v. City of Murrieta* (1995) 36 Cal.App.4th 1359, 1394-1395, comparing and contrasting *Sacramento Old City Assn. v. City Council* (1991) 229 Cal.App.3d 1011 with *Sundstrom v. County of Mendocino* (1988) 202 Cal.App.3d 296.) The *Gentry* court further explained that promises by a lead agency to implement future recommendations that other agencies might make after project approval is not sufficient to find that a proposed project's potentially significant effects have been mitigated to less-than-significant levels. (*Id.*)

The MND's air quality section is insufficient under all applicable legal authority.

B. Biological Resources

The MND concludes that the Project's impacts to biological resources will be less than significant with mitigation measures, and does so in the face of the fact that the Project will destroy 300 feet of stream channel and will be excused from the required 50-foot setbacks, in addition to developing on a greater than 30% slope and removing oak woodlands.

The evidence in the record is clear; the Project will have significant impacts to wetlands and oak woodland. These potentially significant impacts require the preparation of an EIR.

1. Impacts to wetlands

Despite the County's attempt to bury its head in the sand, there is substantial evidence showing that the Project may have significant impacts on biological resources. The MND acknowledges that the Project will "affect the bed, bank, and channel of a stream, including the adjacent riparian habitat. The project as proposed will affect 0.5 acre of riparian habitat, including nearly 300 linear feet of stream channel. This impact

is considered significant." (MND, p. 14.) The "mitigation" for these impacts is compliance with a "permit" to be issued from the California Department of Fish and Game ("CDFG"). (*Id.*) It is illegal to rely upon conditions that may or may not be imposed by another agency to support a conclusion that an impact will be insignificant. (*Gentry v. City of Murrieta* (1995) 36 Cal.App.4th 1359, 1394-1395.)

The potentially significant impacts to wetlands and riparian habitat trigger the requirement for a full EIR. The threshold for requiring an EIR is extremely low because to end the environmental inquiry at this point precludes evaluating alternatives to the Project that could avoid some or all of the impacts. Additionally, relying on another agency to enforce terms of a permit or agreement is improper.

Similarly, the MND acknowledges that the Project will impact wetlands, and concludes the impact will be insignificant by claiming "[t]he area of Corps jurisdiction is much less than the area covered by Department of Fish and Game Jurisdiction. Consequently, the mitigation measures for impacts to streams and riparian impacts would compensate for impacts to waters of the United States." (MND, p. 16.) The MND goes on to suggest mitigation requiring the "Applicant to *strive to avoid* adverse [sic] and minimize impacts to waters of the united States, and to achieve a goal of no net loss of wetlands functions and values." (*Id.*, emphasis added.) This "mitigation measure" is unenforceable and improperly defers development of an actual measure for mitigation, not to mention having no performance criteria.

The MND continues on the path of attempting to foist development and enforcement of mitigation measures onto other agencies by claiming that the California Regional Water Quality Control Board ("RWQCB") will handle any issues of water quality impacts. (MND, p. 16.)

The evidence in the record shows that the Project will have tremendous impacts to the stream, wetlands and riparian habitat, and yet analysis of these impacts, as well as development of mitigation measures, is deferred to the future and assumed to be the responsibility of other agencies. Additionally, the Project will include waivers of the 50-foot setback requirement as well as a waiver of the prohibition on development on slopes greater than 30% (and possibly oak woodland mitigation). These waivers effectively gut the GP requirements that would go some distance toward mitigating impacts to wetlands as well as water quality. This approach fails to fulfill the requirements of CEQA and an EIR must be prepared in order to fully evaluate the impacts to biological resources and consider alternatives and mitigation measures.

2. Impacts to oak canopy

With respect to oak canopy, the Project was found to require removal of more than 10% of the oak canopy on site, and so Option B of Policy 7.4.4.4 was determined to be the method of mitigation. The Third District Court of Appeal recently struck down Option B as violating CEQA, and so the MND now makes the impossible switch to Option A, claiming that despite the removal of more than half of the oak canopy, the Project proponent will be able to retain 90% of the oak canopy. (MND, p. 18.)

There is no analysis of how the Project proponent will achieve this, which is astonishing in light of the fact that the development takes up nearly all of the area on the site.

There is nothing in the analysis or discussion in the MND or the staff reports that would support a conclusion that it is feasible for 90% of the oak canopy to be retained on the site. The impact will go unmitigated, and so it will not be possible to certify the MND.

C. Greenhouse Gas Emissions

Based upon a finding that the greenhouse gases generated by the project would be small relative to the global emissions, the MND concludes that the Project's impacts would be less than significant. (MND, p. 23.) This conclusory analysis falls short of CEQA's requirements.

The MND discusses interim guidance on the issue of evaluating climate change impacts, issued in 2008 by the Office of Planning and Research. This area of the law has evolved since 2008, and the MND does not comply. The CEQA Guidelines (effective on March 18, 2010) clarified how greenhouse gas ("GHG") emissions should be analyzed and mitigated under CEQA. These Guideline requirements are *not optional.* The adopted changes to the CEQA Guidelines include the following:

- A lead agency should make a good–faith effort to calculate or estimate the amount of GHG emissions resulting from a project. Although a lead agency retains discretion to determine the model or methodology used for such analysis, the lead agency is required to support its decision to employ a particular model or methodology with substantial evidence (14 CCR § 15064.4(a));
- The following factors should be considered when assessing the potential significant impacts from GHG emissions on the environment: (i) the extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting; (ii) whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and (iii) the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions (14 CCR § 15064.4(b));
- When adopting thresholds of significance, a lead agency may adopt thresholds previously adopted or recommended by other public agencies or recommended by experts, provided the decision to adopt such thresholds is supported by substantial evidence (14 CCR § 15064.7(c));
- Lead agencies must consider feasible means, supported by substantial evidence and subject to monitoring and reporting, of mitigating the significant effects of GHG emissions related to a project (14 CCR § 15126.4(c));
- If an Environmental Impact Report is required, then the EIR should evaluate any potentially significant impacts of locating development in areas susceptible to hazardous conditions such as floodplains, coastlines and wildfire risk areas, in addition to considering any significant environmental effects the project might cause by bringing development and people into the area affected (14 CCR § 15126.2(a)); and Appendix G (the sample form with questions a lead agency

should consider in its Initial Study) has been modified to include analysis related to whether the project will generate GHG emissions and whether the project would conflict with any applicable plan, policy or regulation adopted for the purpose of reducing GHG emissions.

The County has not evaluated any of the areas required under CEQA. None of the Project's emissions have been quantified, and none of the required analysis has been done. At this time, the County has the opportunity and the obligation to evaluate the GHG emission impacts of the Project and develop and adopt feasible mitigation measures for the entire Project area.

D. **Land Use Planning**

In the section on Land Use Planning, the MND notes that a Project would have a significant impact if it would "[r]esult in a use substantially incompatible with the existing surrounding land uses." (MND, p. 27.) The MND discusses the GP land use designations of the Project site, oddly ignoring all surrounding land uses. There is, again, no mention of the School.

The School is an existing use and several comment letters have been, and will be, submitted regarding the extremely dangerous conditions for students and others around the School. During the January 26, 2012, Planning Commission hearing, Commissioner Pratt opined that the traffic and safety problem is the School's problem, and that the School should mitigate any impacts "on site." Not only does this position completely violate the letter and spirit of CEQA, it is a shocking statement by a public official.

The County has apparently decided to whistle past the graveyard and pretend that this risk to children and their families and teachers is not an issue. It is an issue; it is a traffic issue, a safety issue and a land use incompatibility issue, and it does not even appear in discussion in the MND. A full EIR is required because of the traffic, safety and incompatibility issues that will be created by the Project.

E. **Traffic and Circulation**

The MND finds that the Project will **not** have a significant impact on traffic, then oddly goes on to discuss how the impacts will be reduced to a level of insignificance through mitigation measures, including the payment of traffic mitigation fees.

The School is ignored, and subsection (d) of this section of the MND includes a conclusion that the Project will not result in any substantial increase in hazards. (MND, p. 33.) Substantial evidence in the record reveals that the Project will increase hazards to motorists and pedestrians as a result of uses that will be incompatible with the adjacent School.

Additionally, the proposed mitigation measures are inadequate. The MND notes that the "traffic study recommended signalization of two intersections." Strangely concluding, "[t]he impacts have been mitigated and meet General Plan consistency requirements." (MND, p. 33.)

Significant impacts at the Missouri Flat Road/Enterprise Drive intersection will, according to the MND, be mitigated to a level of insignificance by the construction of the Diamond Springs Parkway (CIP project # 72334.) (MND, p. 34.) Unfortunately, the Parkway is "included in the ten-year CIP."

Thus, the "mitigation" will occur if and when the County Capital Improvements Program ("CIP") has sufficient funds to build the Parkway. Payment of mitigation fees to go toward capital improvement programs is an acceptable form of mitigation, but it must be shown that the improvements will actually be completed and mitigate the impacts if the County wishes to make a conclusion of less than significant impact. (See *Endangered Habitats League, Inc. v. County of Orange* (2005) 131 Cal.App.4th 777; *Anderson First Coalition v. City of Anderson* (2005) 130 Cal.App.4th 1173; and *Napa Citizens for Honest Government v. Board of Supervisors* (2001) 91 Cal.App.4th 342.) The County may not make a finding of insignificant impacts with respect to the Missouri Flat Road/Enterprise Drive intersection.

The MND goes on to say that significant impacts were also noted at Forni Road/Golden Center Drive, and that the traffic study suggested signalization. (MND, p. 34.) Then, without any discussion, the MND concludes that signalization is infeasible and so some additional turn lanes will "mitigate the impacts." There is no evidence to support this claim, not to mention the fact that a finding of infeasibility may only be made in the context of a statement of overriding considerations, which may only be adopted after preparation of a full EIR.

The payment of fees and future annexation into a community services district will not reduce the significant impacts to a level of insignificance before Project construction. The tremendous impacts to traffic are either completely ignored, or "mitigated" through illegal means. A full EIR must be prepared with a complete analysis of traffic impacts.

F. Mandatory findings of significance

There are two mandatory findings of significance that must be made for the Project. The Project may indeed substantially reduce the habitat of a fish or wildlife species. The MND acknowledges that the Project will destroy 300 linear feet of stream, and then makes the assumption that other agencies will require mitigation for the impacts. There is no evidence that the CDFG, the Army Corps of Engineers or the RWQCB will step in and ensure that the impacts are mitigated to a level of insignificance. Those agencies will enforce their policies and requirements, but there is no reason to believe that the impacts will be mitigated to the level assumed by the County.

The second mandatory finding relates to cumulative impacts. The County failed to do an adequate analysis to be able to make a determination regarding cumulative impacts. Section 15130(b)(1) of the CEQA Guidelines provides two options for considering potentially significant cumulative adverse impacts. This analysis can be based on either: (1) A list of past, present and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control

of the agency; or (2) A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or areawide conditions contributing to the cumulative impact. Any such planning document shall be referenced and made available to the public at a location specified by the lead agency.

The County did not perform the required analysis under either of the options, and so the MND contains an insufficient review of the Project's cumulative impacts.

IV. Conclusion

Because of the issues raised above, we believe that the MND fails to meet the requirements of the California Environmental Quality Act and the Project is inconsistent with the General Plan and its approval will violate the planning laws. For these reasons, we believe the document should be withdrawn and a revised environmental document, a full EIR, should be prepared.

Very truly yours,

// Marsha A. Burch //

Marsha A. Burch
Attorney

cc: Friends of the Herbert Green Middle School Neighborhood

STATE OF CALIFORNIA
NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
Phone (916) 373-3710
Fax (916) 373-5471
Email: nahc@nahc.ca.gov
Website: http://www.nahc.ca.gov
Twitter: @CA_NAHC

Edmund G. Brown Jr., Governor

RECEIVED
FEB 02 2017
EL DORADO COUNTY
DEVELOPMENT SERVICES DEPT

January 31, 2017

Rob Peters
El Dorado County Community Development

Sent by Email: Robert.peters@edcgov.us

RE: SCH#2011092017, Creekside Plaza Rezone, Planned Development, and Parcel Map, El Dorado County

Dear Mr. Peters:

The Native American Heritage Commission has received the Notice of Preparation (NOP) for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code § 21000 et seq.), specifically Public Resources Code section 21084.1, states that a project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, § 15064.5 (b) (CEQA Guidelines Section 15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an environmental impact report (EIR) shall be prepared. (Pub. Resources Code § 21080 (d); Cal. Code Regs., tit. 14, § 15064 subd.(a)(1) (CEQA Guidelines § 15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources with the area of project effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code § 21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code § 21084.3 (a)). **AB 52 applies to any project for which a notice of preparation or a notice of negative declaration or mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements.** If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. § 800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments. **Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.**

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or

tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

a. A brief description of the project.
b. The lead agency contact information.
c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code § 21080.3.1 (d)).
d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code § 21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code § 21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or environmental impact report. (Pub. Resources Code § 21080.3.1(b)).
   a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code § 65352.4 (SB 18). (Pub. Resources Code § 21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:
   a. Alternatives to the project.
   b. Recommended mitigation measures.
   c. Significant effects. (Pub. Resources Code § 21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:
   a. Type of environmental review necessary.
   b. Significance of the tribal cultural resources.
   c. Significance of the project's impacts on tribal cultural resources.
   d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code § 21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code sections 6254 (r) and 6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code § 21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:
   a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
   b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code section 21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code § 21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:
   a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
   b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code § 21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code section 21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code section 21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code § 21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code section 21084.3 (b). (Pub. Resources Code § 21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:
    a. Avoidance and preservation of the resources in place, including, but not limited to:
        i. Planning and construction to avoid the resources and protect the cultural and natural context.
        ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
    b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
        i. Protecting the cultural character and integrity of the resource.
        ii. Protecting the traditional use of the resource.
        iii. Protecting the confidentiality of the resource.
    c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
    d. Protecting the resource. (Pub. Resource Code § 21084.3 (b)).
    e. Please note that a federally recognized California Native American tribe or a nonfederally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code § 815.3 (c)).
    f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code § 5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An environmental impact report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:
    a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code sections 21080.3.1 and 21080.3.2 and concluded pursuant to Public Resources Code section 21080.3.2.
    b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
    c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code section 21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code § 21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code § 65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code § 65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code section 65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code sections 5097.9 and 5097.993 that are within the city's or county's jurisdiction. (Gov. Code § 65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
    a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have been already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
    b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

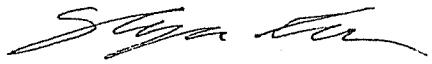
3. Contact the NAHC for:
    a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.

b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
   a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, section 15064.5(f) (CEQA Guidelines section 15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
   b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
   c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code section 7050.5, Public Resources Code section 5097.98, and Cal. Code Regs., tit. 14, section 15064.5, subdivisions (d) and (e) (CEQA Guidelines section 15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions, please contact me at my email address: sharaya.souza@nahc.ca.gov.

Sincerely,



Sharaya Souza
Staff Services Analyst
cc: State Clearinghouse

COMMENT CARD

CREEKSIDE PLAZA EIR - SCOPING MEETING

February 15, 2017
6:00 p.m. to 7:30 p.m.
Placerville Seventh-Day Adventist Church
6831 Mother Lode Drive
Placerville, CA 95667

Please provide us with comments on the scope of environmental issues and alternatives to consider in the EIR. Feel free to use the back of the card as needed.

Name: Anton Nemeth

Address: 4280 Patterson Drive #21
Diamond Springs CA 95619

Email: dotales13@yahoo.com not .com

Comments: Primary concern is traffic, chemical and noise impact on Herbert Green Campus. Traffic concerns include impact on children walking and R

Please send all comments to:
Robert Peters, Associate Planner
County of El Dorado Development Services Division
2850 Fairlane Court
Placerville, CA 95667
Email: Robert.Peters@edcgov.us

biking to school. Second, as the County has
a most unfortunate habit of discounting
aggregate effects, what negative impact
will this project ~~have~~ might have on
Measure C plans already in place for
traffic mitigation as well as measure
Y compliance. Other factors apply as
well.

Robert Peters <robert.peters@edcgov.us>

CREEKSIDE PLAZA PROJECT

1 message

Carol Nordquist <cenordquist@sbcglobal.net> Fri, Feb 24, 2017 at 3:19 PM
To: Robert.Peters@edcgov.us
Cc: "cenordquist@sbcglobal.net" <cenordquist@sbcglobal.net>, "jpnordquist@sbcglobal.net" <jpnordquist@sbcglobal.net>

Greetings,

Please let us know if you receive this email. We look forward to hearing from you regarding the next steps.

Thank you,
John and Carol Nordquist

Document4.docx
131K

Creekside Plaza

February 24, 2017

NAME: JOHN and CAROL NORDQUIST
ADDRESS: 6771 Oak Lane, Placerville, CA 95667
Email: cenordquist@sbcglobal.net

We built our family home on Oak Lane in 1972. We have lived through the variety of land use changes to Missouri Flat and its impacts on our family members' daily lives. We have been first-hand witnesses as the Missouri Flat through fare "strip mall corridor" and Forni Road intersection with its increased intrusions of traffic usage, noise pollution, air pollution, and safety issues for students of Herbert Green Middle School, elderly walkers from Gold County Retirement Community and transient walkers who frequently use Missouri Flat (without a sidewalk between Highway 50 and Forni Road) has become a MAJOR NUISANCE.

Environmental Issues and Alternatives comments to consider:

1. AESTHETICS

   The Mother Lode Union School District recently completed a Facilities Master Plan based on it construction and student growth needs. As part of this plan the District will restructure the entrance, exit and parking facilities for both Herbert Green Middle School and the District Office facilities. This design included not only accessing of the school and the district facilities but also the aesthetics of the front of these facilities. It would be ignorant of the

County if the proposed Creekside Plaza project did not address this body of work in its review process and planning. Has the school district study and resulting Facilities Master Plan been reviewed for its contents and application to the proposed project?

3. AIR QUALITY

The daily cumulative effect of all traffic emissions and the proposed and real business emissions, has the potential of a negative impact on school students who have health respiratory issues and the elderly Gold County Retirement Center population.

"The air basin in which the project is located is in non-attainment for ozone and particulate matter (PM10 and PM2.5). Construction and operation of the project would contribute to an increased in these pollutants and could exacerbate non-attainment status." The Journal of Thoracic Disease Public *the Impact of PM2.5 on the human respiratory system* on January 18, 2016 (see link) https://www.ncbi.nim.nih.gov/pmc/articles/PMC4740125/" Memo from Dr. Marcy Guthrie, Superintendent, Mother Lode Union School District, February 9, 2017.

12. NOISE POLLUTION/NUISANCE

The current volume of traffic in the area increases road noise by ambulances, fire trucks and emergency equipment, cars, trucks, and any vehiclar traffic has had a direct impact and intrusion on the noise pollution we experience in our DAILY lives both inside our home and outside. IT IS A DAILY DISTURBANCE - A fast food establishment has the potential to increase the noise level

we currently experience. The early and late opening hours of the business would be an additional intrusion into our daily lives.

LIGHT POLLUTION - Depending on the working hours of the fast food business, the general community around the project will experience light pollution.

14. PUBLIC SERVICES

The public services of police/sheriff, increasing fire equipment, increasing ambulances, public transportation and school districts' buses places significant use and pressure on the Missouri Flat and Forni Road intersection. The question is, to what degree are the traffic demands of the proposed Creekside project going to exacerbate the current traffic intrusion, congestion and air pollut ion at the Missouri Flat and Forni Road intersection?

16. TRANSPORTATION/TRAFFIC

We, as home owners for 45 years near this proposed project, are impacted on a daily basis by the increasing intrusion of traffic on Missouri Flat Road and Forni Road. **WE HAVE IN THIS PAST YEAR BEGUN TO AVOID USING THE FORNI RD./MISSOURI FLAT INTERSECTION ESPECIALLY DURING THE HOURS OF 7-10AM AND 2-6PM DUE TO:**

- the increased vehiclar usage of Missouri Flat Road as a main corridor between Highway 50 and Pleasant Valley Road
    - large delivery trucks in and out of Walmart , and other businesses along Missouri Flat Road
    - El Dorado High School, Mother Lode Union School District and El Dorado County Office of

Education school buses daily use of Missouri Flat Road

- Increased use of Missouri Flat and Forni Road by County fire trucks/equipment and ambulances and screening sirens to access Gold Country Retirement Community ederly for emergencies at all hours of the day and night plus ambulances' use of Missouri Flat as a main corridor route to Marshall Hospital.
- Law enforcement, fire truck equipment, and ambulances make regular use of Missouri Flat as a main connection road between Highway 50 to Pleasant Valley and its secondary arteries.
- Cars lined up on Forni Road (sometimes extending from the driveway of HGMSchool out to Missouri Flat Road) to deliver and pick up students Monday – Friday.
- "Event" parking from HGMSchool extracurricular activities along both sides of Forni Road in front and beyond the school increases congestion and single lane passage to use Forni Road in a safe manner.
- The placement of Walgreen's, Goodwill Store, Schools Credit Union, Walmart, dentists, and all businesses along Golden Center Drive have all created an unacceptable intrusion in the form of traffic congestion, traffic noise and air pollution in the neighborhood/Oak Lane near this intersection.
- We have witnessed numerous traffic violations and accidents by those that use the Forni Road/Missouri Flat intersection. It has been a

safety hazard due to the number of drivers turning right onto either Missouri Flat or Forni Road "rolling" through a "red" light. There is little or no patrolling of these ungoing violators. A study of traffic violations of the intersection should be performed before any business adds more traffic to this project.

We recognize Missouri Flat's development over the years as a "strip mall". However, we as home owners and El Dorado County taxpayers for the past 45 years, believe there are some serious flaws to be addressed on the proposed project. We have already stated our comments about problems in each envionmental area of deep concern and, in addition, suggest the following alternatives to part of the project:

1. **Do not approve the use of Parcel Lot 1 for ANY BUSINESS. Leave it as a GREEN SPACE for many reasons: pollution, traffic congestion, noise pollution and plainly said, some trees and vegation for eyes to see and enjoy along Missouri Flat –**

2. **DO NOT APPROVE OR ALLOW THE RIGHT OF WAY ON FORNI ROAD TO BE ACQUIRED BY THE APPLICANT DUE TO THE SIGNIFICANT IMPACT OF CONGESTION IN THE IMMEDIATE AREA OF FORNI ROAD, GOLDEN CENTER DRIVE AND HERBERT GREEN MIDDLE SCHOOL. THERE IS ENOUGH TRAFFIC JUGGLING FOR LANES THROUGHOUT THE DAY. THE ACCESS WOULD ONLY ADD TO THE CONGESTION AND BE A SIGNIFICANT IMPACT UPON HUMAN AND ROAD SAFETY. RIGHT TURNS ONTO MISSOURI FLAT FROM FORNI ROAD WOULD SIGNIFICANTLY INCREASE THE**

CONGESTION AND MAY LEAD TO A SIGNIFICANT IMPACT UPON ROAD SAFETY.

3. WE STRONLY OPPOSE ANY BUSINESS BEING PLACED ON THE CORNER OF FORNI ROAD AND MISSOURI FLAT FOR THIS PROJECT. IT WOULD INCREASE THE DAILY TRAFFIC VOLUME AND WE, AS LOCAL HOME OWNERS, WOULD REAP THE NEGATIVE IMPACT OF A FAST FOOD BUSINESS BEING OPEN LATE INTO THE EVENING HOURS IN MANY REGARDS.

Robert Peters <robert.peters@edcgov.us>

Creekside plaza project

1 message

linda Rusk <fat.pig101@hotmail.com> Fri, Feb 17, 2017 at 1:17 PM
To: "Robert.Peters@edcgov.us" <Robert.Peters@edcgov.us>

Mr. Peters,
I was unable to attend the meeting on the 15th but would like to express an opinion re the project.
I feel there is already enough traffic on Missouri flat road as it would take away from the main reason most of us live here, which is peace and quiet.
Thank you for consideration,
Linda Rusk

Sent from my iPhone

Robert Peters <robert.peters@edcgov.us>

Creekside Plaza NOP Comments

1 message

SOC admin <edcsoc@live.com> Mon, Feb 27, 2017 at 4:54 PM
To: "robert.peters@edcgov.us" <robert.peters@edcgov.us>

Hi Rob,

Please add attached into the Creekside Plaza NOP Comments.

Please acknowledge receipt.

Thanks,

Sue Taylor

Save Our County

3 attachments

- **Nexus to TGPA.pdf**
  38K
- **NOP Comments for Creekside 2-17-17.pdf**
  189K
- **Superintendent letter 2-23-12.pdf**
  1783K

'Nexus to TGPA/ZOU'

The Creekside Project being proposed has a nexus to the flaws in the 2004 General Plan, and that plan as amended by the TGPA/ZOU in 2015. Due to the County's current procedures it is difficult to determine which General Plan policies are being used in projects being brought before the Board of Supervisors at this time. This project was considered in 2011 and later withdrawn due to litigation that was filed and the decision of the developer to withdraw the project.

The 2004 general plan "update" began in 2010. It was publicly noticed. Many project applicants or their agents actively participated in the plan update process. We question the legal rights of an applicant who had notice of the general plan update, to still claim the right to get approval of their project under the 2004 General Plan, which was so dramatically amended in 2015.

Other projects seeking approval are doing so under the general plan as amended in 2015 by the TGPA/ZOU. The theory is that this plan is in place now, and it is the only plan that can and should be used. We believe that this interpretation of land use law is on a much more solid foundation.

A) The TGPA/ZOU lawsuit alleges inadequacies in both the 2004 General Plan, and the plan as amended by the TGPA in 2015.

On January 13, 2016 Rural Communities United filed suit against El Dorado County alleging many flaws in both the 2004 general plan, and that plan as amended by the Targeted General Plan Amendment in 2015.

The suit alleges that both the 2004 General Plan, and that plan as amended by the TGPA in 2015, are inadequate bases for approving projects, because many of the mandatory plan policies designed to mitigate the impacts of development projects have not been implemented in the timeframe required by the plan. As a result, the balance between development and impact mitigation, that the court found justified the validity of the 2004 general plan, has been lost through implementation that has placed a higher priority on development approval than timely mitigation implementation. (See *RCU v. El Dorado*, PC 20160024, filed Jan. 13, 2016, El Dorado County Superior Court, Dept. 9, p. 20, para. 46-48.)

In addition, the suit alleges that both the 2004 General Plan, and that plan as amended by the TGPA in 2015, is missing required fire safety provisions in the Public Health, Safety, and Noise Element. (See *RCU v. El Dorado*, PC 20160024, filed Jan. 13, 2016, El Dorado County Superior Court, Dept. 9, p. 27, para. 66.)

Also, the suit alleges that the application of the new Traffic Demand Model to the 2004 General Plan, and that plan as amended by the TGPA/ZOU, exacerbates inconsistencies between the development potential of the Land Use Element and level of service requirements of the Circulation Element. (See *RCU v. El Dorado*, PC 20160024, filed Jan. 13, 2016, El Dorado County Superior Court, Dept. 9, p. 26-27, para. 63.)

Finally, the suit alleges that provisions of the TGPA relating to traffic congestion, fire safety, and greenhouse gas reduction fail to conform to constitutional requirement that land use regulations reasonable balance competing regional interest. (See *RCU v. El Dorado*, PC 20160024, filed Jan. 13, 2016, El Dorado County Superior Court, Dept. 9, p. 30-31, para. 75-78.)

B) Projects approved under these general plans are subject to challenge if they have a nexus to these inadequacies.

Land use law allows approvals of only those projects that are consistent with the existing general plan, and that do not have a nexus to the legally substandard aspects of the general plan. (Neighborhood Action Group v. County of Calaveras (1984) 156 Cal.App.3d 1176; Garat v. City of Riverside (1991) 2 Cal.App.4th 259.)

The proposed project has a nexus to the flaws in the 2004 General Plan, and that plan as amended by the TGPA in 2015. Such as the Oak policies and the requirements of Traffic requirements of Measures Y or Measure E.

C) If the court in the TGPA/ZOU case finds the 2004 and 2015 General Plans invalid, projects approved under them and timely challenged will similarly be struck down.

It is likely that controversial projects with a nexus to flaws in the applicable general plan will be challenged in court on that ground. If the court in the TGAP/ZOU case finds that the County's general plan is invalid, the court is likely to also invalidate the approval of projects with a nexus to those flaws.

D) We strongly encourage the county to avoid approving projects with a nexus to the alleged flaws in the 2004 and 2015 general plans, pending resolution of that case.

With every project approval that irreparably harms the landscape at issue in the TGPA/ZOU case, the County runs a greater and greater risk that the court in the TGPA/ZOU case will enjoin project approvals pending resolution of that case. We strongly encourage the County to table such approvals pending resolution of the TGPA/ZOU. If the project applicants insist on seeking approval, we strongly encourage the county to deny the projects, without prejudice, so that the modified projects can re-apply after resolution of the TGPA/ZOU case.

E) We strongly encourage project applicants to avoid moving projects forward that are relying on allegedly flawed aspects of these general plans, pending the resolution of the TGPA/ZOU lawsuit.

Once a project applicant is aware that the project has a nexus to alleged flaws in the applicable general plan, we strongly encourage the applicants to request that the project processing be suspended pending resolution of the TGPA/ZOU. There is no need for project applicants to waste their time and money trying to defend a project approval that is destined to fail, based upon indefensible general plan decisions that have already been made by the County. The prudent applicant will suspend project processing pending resolution of the TGPA/ZOU case.

F) We strongly encourage planning staff to focus its efforts on moving forward projects for approval that do not rely upon the alleged flaws in the 2004 and 2015 general plans, and that do not rely on the zoning ordinance update.

The County should avoid approving projects that prejudice resources or public hearing rights at issue in the TGPA/ZOU lawsuit. Instead, the County should focus on processing and approving projects that will not trigger an injunction based upon the TGPA/ZOU case.

February 27, 2017

Robert Peters, Associate Planner
County of El Dorado Development Services Division
2850 Fairlane Court
Placerville, CA 95667
via email: Robert.Peters@edcgov.us

Subject: NOP Comments, Creekside Plaza

Dear Rob,

An overarching concern in this case is the fact that the Initial Study ignores potentially significant adverse impacts with little justification and almost no documentation. After review of the 1-15-17 Initial Study, we firmly believe that the environmental review has been truncated by avoiding full disclosure of the Project's impacts, and also relying upon future regulatory action to fully "mitigate" impacts, with little or no analysis.

Aesthetics

The 2011 Environmental Checklist for this project shows that Aesthetics are impacted because the project will substantially degrade the existing visual character quality of the site and its surroundings. The Checklist includes conditions on the project that would make the impact Less Than Significant, therefore the EIR will need to analyze this impact and include these conditions as mitigations.

The project will also create a new source of substantial light or glare which would adversely affect day or nighttime views in the area. This should be reviewed due to the close proximity to residential parcels.

Under the Project Description, the NOP states, "Additional landscaping located along project frontages would reduce any potential aesthetic impacts from viewers along local roadways." The Preliminary Landscape Plan is dated 1-21-11 and does not match the Site Plan provided with the NOP.

Aesthetics should be fully analyzed in the EIR.

Biological

Excerpts from the 1-15-17 Initial Study:

"Because the project would not be consistent with the current requirements of the interim guidelines of Policy 7.4.4.4, mitigation measure BIO-5 **would require that the project is not approved until the Draft ORMP is approved** and a project specific technical report and mitigation plan addressing impacts to oak woodlands is prepared in accordance with the approved ORMP and approved by the County" This is a significant

issue that must be included in the potential environmental impact to be studied and addressed by the appropriate agencies.

Also from the 1-15-17 Initial Study:

"In summary, the project will affect the bed, bank, and channel of a stream, including the adjacent riparian habitat. The project as proposed will affect 0.5 acre of riparian habitat, including nearly 300 linear feet of stream channel. In addition, construction and operation of the project could result in downstream water quality impacts. These impacts are considered potentially significant."

Despite the County's attempt to bury its head in the sand, there is substantial evidence showing that the Project may have significant impacts on biological resources. The 1-15-17 Initial Study acknowledges that the Project will "affect the bed, bank, and channel of a stream, including the adjacent riparian habitat. The project as proposed will affect 0.5 acre of riparian habitat, including nearly 300 linear feet of stream channel." The "mitigation" for these impacts is compliance with a "permit" to be issued from the California Department of Fish and Game ("CDFG"). (Id.) It is illegal to rely upon conditions that may or may not be imposed by another agency to support a conclusion that an impact will be insignificant. (Gentry v. City of Murrieta (1995) 36 Cal.App.4th 1359, 1394-1395.) The potentially significant impacts to wetlands and riparian habitat trigger the requirement for a full EIR. The threshold for requiring an EIR is extremely low because to end the environmental inquiry at this point precludes evaluating alternatives to the Project that could avoid some or all of the impacts. Additionally, relying on another agency to enforce terms of a permit or agreement is improper.

It is a clear violation of CEQA to mitigate impacts with policies that are not yet implemented and, thus, preclude the public from participating in the process.

Biological Resources should be fully analyzed in the EIR.

Cultural

Given the location of the creek, it is very likely that there will be cultural resources in this location.

Cultural Resources should be fully analyzed in the EIR.

Geological Soils

Excerpt from the 1-15-17 Initial Study:

"1.5.6 - Construction Considerations Construction of the project would consist of on-site road encroachment, site fill and grading improvements, utility installation, trenching, and construction of facility structures. Project construction would take approximately 1 year. On-site earthwork would consist of approximate 2,041 cubic yards of cut and 44,697 cubic yards of imported fill."

This is a massive amount of dirt to be moved and the environmental review should include the impact being created by removing this amount of dirt from inside a 10-mile radius of the project Also, the existing fill is not clean soil. It will have to be removed and replaced or the foundations of the proposed structures will need to reach native soil.

The mitigation from the Initial Study relies on typical construction methods for a typical project in order to guarantee reduced risk to life and property. The issue with this project is that it is not typical. Given the 27' retaining wall, approximate 2,041 cubic yards of cut and 44,697 cubic yards of imported fill, the natural stream running through the entire project with a wetland running perpendicular to the stream, there is no guarantee using typical building standards that there will be enough mitigation to guarantee reduction of risk to life and property.

Geological Soils should be fully analyzed in the EIR.

Hydrology and Water

Excerpt from the 1-15-17 Initial Study:
"In addition, construction and operation of the project could result in downstream water quality impacts. These impacts are considered potentially significant."

Cross drainage should not be allowed between the parcels since it is very likely this developer will split the lots after development.

The 2011 Environmental Checklist regarding Hydrology and Water Quality Resources states, *"No significant hydrological impacts are expected with the development of the project either directly or indirectly".* This is similar to the 2017 Initial Study. The project is being placed directly on and against the creek. With the proposed project and commercial development there will be an enormous amount of increased impermeable surfaces collecting pollutants related to commercial and road uses which runoff will greatly alter the quantity and quality of the adjacent creek. By merely paying a fee to Fish and Game and dedicating an undevelopable piece of land to Army Corp of Engineers is inadequate in addressing the cumulative effect to hydrology and water quality. Not addressing lot development and runoff is **a potentially significant impact** to the Hydrology and Water Quality in the area above ground, to the creek, to existing residents, structures and properties downstream and surrounding this development.

GP Policy 7.3.3.4 requires a 50 foot setback from intermittent streams and wetlands. Allowing a reduction to zero sets a future precedent undermining the intent of the El Dorado County General Plan. **This is a significant impact** not only to this project but also in considering the cumulative effect of future projects.

Hydrology and Water should be fully analyzed in the EIR.

Land Use and Planning
See attached document titled Nexus to TGPA.pdf.

Public Utilities
Excerpt from the 1-15-17 Initial Study:
"As indicated in the USACE's letter, work within the potentially jurisdictional Waters of the United States should not start until USACE has permitted authorization for the activity. In addition, an approved jurisdictional delineation may later be necessary. Through the required Section 404 permit process, the USACE will analyze the project's potential impacts to jurisdictional features, including any potential impacts from undergrounding utilities (such as connection to the sewer line and lift station located on the northern adjoining parcel) through the wetland area."

Sewer and water impacts have been conditioned based on future conditions, which is a clear violation of CEQA.

Public Utility should be fully analyzed in the EIR.

Public Services
Commercial development creates a need for additional fire and law enforcement response in the area.

Public Services should be fully analyzed in the EIR in order for police and fire agencies to provide comment.

Hazards and Hazardous Materials
Refer to the attached 2011 letter from Mother Lode Union School District Superintendent Tim Smith. The specific primary concerns of the Mother Lode Union School District were:

1. Risk of students being injured and traffic accidents due to increased traffic and congestion related to the CPP.
2. A left hand turn lane into the CPP on Forni Road with two vehicle stacking capacity, which will not mitigate traffic congestion related to the development.
3. A lack of specificity n the improvements to the school frontage on Forni Road, as stated in the mitigation plan.
4. A thirty foot retaining wall behind the development, without a specific plan to mitigate potential safety hazards related to the wall.

Other hazards would include traffic congestion in front of the school that could prevent emergency vehicles from responding to the health and safety of the children.

The school children will be exposed to hazardous construction materials, paints, fuels, landscaping materials, and other materials used during construction.

Hazards and Hazardous Materials should be fully analyzed in the EIR.

Mineral Resource

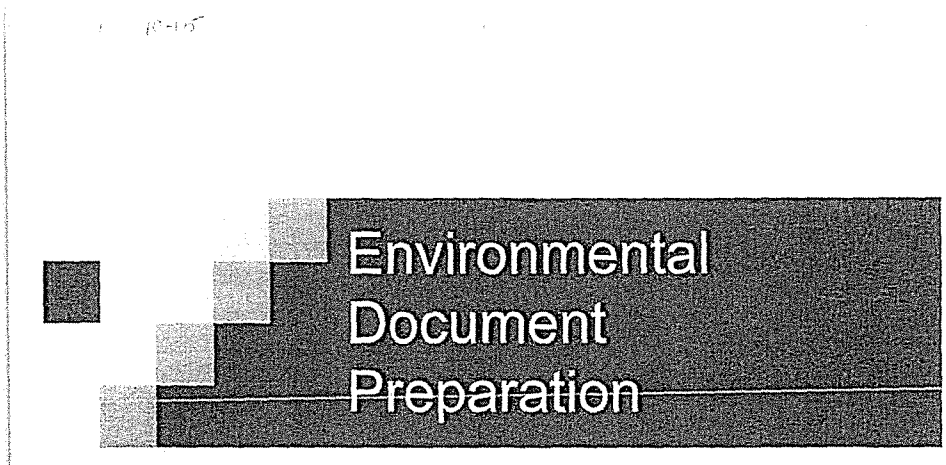
According to XI. MINERAL RESOURCES, a. it does not state that the availability of a known mineral resource must be mapped. Even though the site is not listed on any specific list the 1-15-17 Initial Study states, "According to the soils map, as well as the submitted archaeological report, portions of the area were placer mined at one time and tailing piles are present along the stream channel."

Since the area was once placer mined, there is a potential for the project to negatively impact a mineral resource; therefore, Mineral Resource should be fully analyzed in the EIR.

Mitigation Monitoring

The phrase " Monitoring Responsibility: Planning Services" is used at least five times in the 1-15-17 Initial Study. County Staff consistently states at public meetings that they do not have enough resources to enforce any type of monitoring and/or enforcement of policies or mitigations. The 1-15-17 Initial Study relies on Planning Services staff to monitor mitigations. This is unacceptable as there are no guarantees that County staff will ever have enough resources to do so.

The screenshots below are from a presentation given to an ad hoc subcommittee in 2008. At that time the County did not have a mitigation measure monitoring program. It is now 2017. The County still does not have a mitigation measure monitoring program. The County is currently in a financial debt crisis, with a best estimate of recovery in 5 years. It is unacceptable to use a nonexistent resource to monitor mitigations for negative impacts.



- El Dorado County has no adopted mitigation measure monitoring program
  - No funds or staff resources to ensure that mitigation measures are effectively implemented
  - Staff must rely on applicant to assist with mitigation monitoring by submitting site photos of mitigation measure implementation

Thank you,

Sue Taylor
Save Our County

COMMENT CARD

CREEKSIDE PLAZA EIR - SCOPING MEETING

February 15, 2017
6:00 p.m. to 7:30 p.m.
Placerville Seventh-Day Adventist Church
6831 Mother Lode Drive
Placerville, CA 95667

Please provide us with comments on the scope of environmental issues and alternatives to consider in the EIR. Feel free to use the back of the card as needed.

Name: Bob Smart

Address: 4520 Lon Ct

Email: rSmart41@comcast.net

Comments: Weber Creek is a known animal corridor supposed to cross Hwy 50. Animals work there way along 50 trying to find a safe Crossing and have crossed Missouri Flat just north of Forni & dropped into Weber Cr. - Historically it an important

Please send all comments to:
Robert Peters, Associate Planner
County of El Dorado Development Services Division
2850 Fairlane Court
Placerville, CA 95667
Email: Robert.Peters@edcgov.us

route. Deer/animal kill records will show this.

(2) Once completed, the bike lane on Weber Cr. bridge will bring peds & bikes to sidewalk on Miss. Flat Rd to head south toward Herbert Green School. Need to provide for bikes/peds to get to Forni. Road.

(3) DS-El do Adv. Committee has asked for a bus stop on Miss. Flat to allow passengers ... forward prior

COMMENT CARD

CREEKSIDE PLAZA EIR - SCOPING MEETING

February 15, 2017
6:00 p.m. to 7:30 p.m.
Placerville Seventh-Day Adventist Church
6831 Mother Lode Drive
Placerville, CA 95667

Please provide us with comments on the scope of environmental issues and alternatives to consider in the EIR. Feel free to use the back of the card as needed.

Name: DAVID TUCKER (MLUSD)

Address: 154 ARGONAUT DR.
DIAMOND SPRINGS CA, 95619

Email: dvdtucker953@gmail.com

Comments: (1) I AM CONCERNED ABOUT ~~FAST~~ FOOD DRIVE THRU TRAFFIC WANTING TO TURN LF. ON SOUTH MISSOURI FLAT, (2) ~~TURN LANE INTO PROJECT FROM MISSOURI FLAT~~. (3) BESIDES PEAK TRAFFIC DURING

Please send all comments to:
Robert Peters, Associate Planner
County of El Dorado Development Services Division
2850 Fairlane Court
Placerville, CA 95667
Email: Robert.Peters@edcgov.us

HG SCHOOL DROP OFF & PICK UP I THINK YOU NEED TO HAVE 3 LANES FROM GOLDEN CENTER DR. TO ARROYO VISTA WAY

COMMENT CARD

CREEKSIDE PLAZA EIR - SCOPING MEETING

February 15, 2017
6:00 p.m. to 7:30 p.m.
Placerville Seventh-Day Adventist Church
6831 Mother Lode Drive
Placerville, CA 95667

Please provide us with comments on the scope of environmental issues and alternatives to consider in the EIR. Feel free to use the back of the card as needed.

Name: Chuck Wolfe

Address: PO Box 664
El Dorado

Email: CTWOLFE@HUGHES.NET

Comments: The traffic impact of a fast food drive thru will overwhelm the congestion already at the school as well as create more particulate for the kids and staff. (See over)

Please send all comments to:
Robert Peters, Associate Planner
County of El Dorado Development Services Division
2850 Fairlane Court
Placerville, CA 95667
Email: Robert.Peters@edcgov.us

This property should be mixed use to lower traffic, GHG and particulate contributions. Surrounding the school with commercial buildings makes the community less connected and less walkable.

Appendix B:
Air Quality and Greenhouse Gas Supporting Data

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CalEEMod Output

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Creekside Plaza BAU **B-79**

Creekside Plaza 2020 ..... **B-89**

3810 0003 Creekside AQ-GHG

El Dorado-Mountain County County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	9.86	1000sqft	0.00	9,860.00	0
Parking Lot	156.00	Space	1.40	0.00	0
Fast Food Restaurant with Drive Thru	2.55	1000sqft	0.06	2,550.00	0
Strip Mall	10.20	1000sqft	0.23	10,200.00	0
Strip Mall	1.35	1000sqft	0.03	1,350.00	0
Strip Mall	6.60	1000sqft	0.15	6,600.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	1			**Operational Year**	2018
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Land Use - Based on project description

Construction Phase - Project construction would take approximately 1 year

Demolition -

Grading - Onsite earthwork would consist of approximate 2,041 cubic yards of cut and 44,697 cubic yards of imported fill.

Vehicle Trips - Traffic Impact Analysis for Creekside Plaza

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation - Compliance with Title 24 requirements

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	4.00	28.00
tblConstructionPhase	PhaseEndDate	12/29/2017	12/28/2017
tblConstructionPhase	PhaseEndDate	12/29/2017	12/15/2017
tblConstructionPhase	PhaseStartDate	12/16/2017	12/15/2017
tblConstructionPhase	PhaseStartDate	12/16/2017	12/3/2017
tblGrading	MaterialExported	0.00	44,697.00
tblGrading	MaterialImported	0.00	2,041.00
tblLandUse	LandUseSquareFeet	62,400.00	0.00
tblLandUse	LotAcreage	0.23	0.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblVehicleTrips	ST_TR	2.37	2.46
tblVehicleTrips	ST_TR	42.04	49.97
tblVehicleTrips	SU_TR	0.98	1.05
tblVehicleTrips	SU_TR	20.43	25.24
tblVehicleTrips	WD_TR	496.12	496.08
tblVehicleTrips	WD_TR	11.01	22.92
tblVehicleTrips	WD_TR	44.32	42.67

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.8095	3.2930	4.0779	4.5800e-003	0.1402	0.1666	0.3067	0.0553	0.1590	0.2143	0.0000	394.2755	394.2755	0.0539	0.0000	395.4064
Total	**0.8095**	**3.2930**	**4.0779**	**4.5800e-003**	**0.1402**	**0.1666**	**0.3067**	**0.0553**	**0.1590**	**0.2143**	**0.0000**	**394.2755**	**394.2755**	**0.0539**	**0.0000**	**395.4064**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.8095	3.2930	4.0779	4.5800e-003	0.0903	0.1666	0.2568	0.0312	0.1590	0.1903	0.0000	394.2753	394.2753	0.0539	0.0000	395.4061
Total	**0.8095**	**3.2930**	**4.0779**	**4.5800e-003**	**0.0903**	**0.1666**	**0.2568**	**0.0312**	**0.1590**	**0.1903**	**0.0000**	**394.2753**	**394.2753**	**0.0539**	**0.0000**	**395.4061**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**35.60**	**0.00**	**16.27**	**43.49**	**0.00**	**11.21**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2017	1/27/2017	5	20	
2	Site Preparation	Site Preparation	1/28/2017	1/31/2017	5	2	
3	Grading	Grading	2/1/2017	3/10/2017	5	28	
4	Building Construction	Building Construction	3/11/2017	12/15/2017	5	200	
5	Paving	Paving	12/3/2017	12/15/2017	5	10	
6	Architectural Coating	Architectural Coating	12/15/2017	12/28/2017	5	10	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 10.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 45,840; Non-Residential Outdoor: 15,280 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	174	0.41
Grading	Rubber Tired Dozers	1	6.00	255	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	6.00	226	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45

Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	125	0.42
Paving	Paving Equipment	1	8.00	130	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Demolition	5	13.00	0.00	34.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	5,587.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	10.00	5.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	2.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.7500e-003	0.0000	3.7500e-003	5.7000e-004	0.0000	5.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0272	0.2659	0.2087	2.4000e-004		0.0161	0.0161		0.0150	0.0150	0.0000	22.2938	22.2938	5.6600e-003	0.0000	22.4126
Total	**0.0272**	**0.2659**	**0.2087**	**2.4000e-004**	**3.7500e-003**	**0.0161**	**0.0198**	**5.7000e-004**	**0.0150**	**0.0156**	**0.0000**	**22.2938**	**22.2938**	**5.6600e-003**	**0.0000**	**22.4126**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.0000e-004	4.2000e-003	0.0122	1.0000e-005	2.7000e-004	4.0000e-005	3.1000e-004	7.0000e-005	4.0000e-005	1.1000e-004	0.0000	0.8590	0.8590	1.0000e-005	0.0000	0.8591
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.4000e-004	5.4000e-004	5.5600e-003	1.0000e-005	1.0200e-003	1.0000e-005	1.0300e-003	2.7000e-004	1.0000e-005	2.8000e-004	0.0000	0.8921	0.8921	5.0000e-005	0.0000	0.8931
Total	**9.4000e-004**	**4.7400e-003**	**0.0177**	**2.0000e-005**	**1.2900e-003**	**5.0000e-005**	**1.3400e-003**	**3.4000e-004**	**5.0000e-005**	**3.9000e-004**	**0.0000**	**1.7511**	**1.7511**	**6.0000e-005**	**0.0000**	**1.7522**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.4600e-003	0.0000	1.4600e-003	2.2000e-004	0.0000	2.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0272	0.2659	0.2087	2.4000e-004		0.0161	0.0161		0.0150	0.0150	0.0000	22.2938	22.2938	5.6600e-003	0.0000	22.4125
Total	**0.0272**	**0.2659**	**0.2087**	**2.4000e-004**	**1.4600e-003**	**0.0161**	**0.0175**	**2.2000e-004**	**0.0150**	**0.0152**	**0.0000**	**22.2938**	**22.2938**	**5.6600e-003**	**0.0000**	**22.4125**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.0000e-004	4.2000e-003	0.0122	1.0000e-005	2.7000e-004	4.0000e-005	3.1000e-004	7.0000e-005	4.0000e-005	1.1000e-004	0.0000	0.8590	0.8590	1.0000e-005	0.0000	0.8591
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.4000e-004	5.4000e-004	5.5600e-003	1.0000e-005	1.0200e-003	1.0000e-005	1.0300e-003	2.7000e-004	1.0000e-005	2.8000e-004	0.0000	0.8921	0.8921	5.0000e-005	0.0000	0.8931
Total	**9.4000e-004**	**4.7400e-003**	**0.0177**	**2.0000e-005**	**1.2900e-003**	**5.0000e-005**	**1.3400e-003**	**3.4000e-004**	**5.0000e-005**	**3.9000e-004**	**0.0000**	**1.7511**	**1.7511**	**6.0000e-005**	**0.0000**	**1.7522**

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.8000e-003	0.0000	5.8000e-003	2.9500e-003	0.0000	2.9500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3100e-003	0.0242	0.0159	2.0000e-005		1.3100e-003	1.3100e-003		1.2000e-003	1.2000e-003	0.0000	1.5895	1.5895	4.9000e-004	0.0000	1.5997
Total	**2.3100e-003**	**0.0242**	**0.0159**	**2.0000e-005**	**5.8000e-003**	**1.3100e-003**	**7.1100e-003**	**2.9500e-003**	**1.2000e-003**	**4.1500e-003**	**0.0000**	**1.5895**	**1.5895**	**4.9000e-004**	**0.0000**	**1.5997**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	3.0000e-005	3.4000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0549	0.0549	0.0000	0.0000	0.0550
Total	**3.0000e-005**	**3.0000e-005**	**3.4000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0549**	**0.0549**	**0.0000**	**0.0000**	**0.0550**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.2600e-003	0.0000	2.2600e-003	1.1500e-003	0.0000	1.1500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3100e-003	0.0242	0.0159	2.0000e-005		1.3100e-003	1.3100e-003		1.2000e-003	1.2000e-003	0.0000	1.5895	1.5895	4.9000e-004	0.0000	1.5997
Total	**2.3100e-003**	**0.0242**	**0.0159**	**2.0000e-005**	**2.2600e-003**	**1.3100e-003**	**3.5700e-003**	**1.1500e-003**	**1.2000e-003**	**2.3500e-003**	**0.0000**	**1.5895**	**1.5895**	**4.9000e-004**	**0.0000**	**1.5997**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	3.0000e-005	3.4000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0549	0.0549	0.0000	0.0000	0.0550
Total	**3.0000e-005**	**3.0000e-005**	**3.4000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0549**	**0.0549**	**0.0000**	**0.0000**	**0.0550**

3.4 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0723	0.0000	0.0723	0.0359	0.0000	0.0359	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0264	0.2770	0.1845	2.0000e-004		0.0149	0.0149		0.0137	0.0137	0.0000	18.2786	18.2786	5.6000e-003	0.0000	18.3962
Total	**0.0264**	**0.2770**	**0.1845**	**2.0000e-004**	**0.0723**	**0.0149**	**0.0872**	**0.0359**	**0.0137**	**0.0496**	**0.0000**	**18.2786**	**18.2786**	**5.6000e-003**	**0.0000**	**18.3962**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0828	0.6894	1.9969	1.6100e-003	0.0445	6.4500e-003	0.0510	0.0121	5.9400e-003	0.0180	0.0000	141.1514	141.1514	8.7000e-004	0.0000	141.1696
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	4.7000e-004	4.7900e-003	1.0000e-005	8.8000e-004	1.0000e-005	8.9000e-004	2.3000e-004	1.0000e-005	2.4000e-004	0.0000	0.7686	0.7686	4.0000e-005	0.0000	0.7694
Total	**0.0832**	**0.6898**	**2.0017**	**1.6200e-003**	**0.0454**	**6.4600e-003**	**0.0519**	**0.0123**	**5.9500e-003**	**0.0183**	**0.0000**	**141.9200**	**141.9200**	**9.1000e-004**	**0.0000**	**141.9390**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0282	0.0000	0.0282	0.0140	0.0000	0.0140	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0264	0.2770	0.1845	2.0000e-004		0.0149	0.0149		0.0137	0.0137	0.0000	18.2785	18.2785	5.6000e-003	0.0000	18.3961
Total	**0.0264**	**0.2770**	**0.1845**	**2.0000e-004**	**0.0282**	**0.0149**	**0.0431**	**0.0140**	**0.0137**	**0.0277**	**0.0000**	**18.2785**	**18.2785**	**5.6000e-003**	**0.0000**	**18.3961**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0828	0.6894	1.9969	1.6100e-003	0.0445	6.4500e-003	0.0510	0.0121	5.9400e-003	0.0180	0.0000	141.1514	141.1514	8.7000e-004	0.0000	141.1696
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	4.7000e-004	4.7900e-003	1.0000e-005	8.8000e-004	1.0000e-005	8.9000e-004	2.3000e-004	1.0000e-005	2.4000e-004	0.0000	0.7686	0.7686	4.0000e-005	0.0000	0.7694
Total	**0.0832**	**0.6898**	**2.0017**	**1.6200e-003**	**0.0454**	**6.4600e-003**	**0.0519**	**0.0123**	**5.9500e-003**	**0.0183**	**0.0000**	**141.9200**	**141.9200**	**9.1000e-004**	**0.0000**	**141.9390**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2955	1.9109	1.4311	2.2000e-003		0.1226	0.1226		0.1182	0.1182	0.0000	184.5473	184.5473	0.0387	0.0000	185.3605
Total	**0.2955**	**1.9109**	**1.4311**	**2.2000e-003**		**0.1226**	**0.1226**		**0.1182**	**0.1182**	**0.0000**	**184.5473**	**184.5473**	**0.0387**	**0.0000**	**185.3605**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.8500e-003	0.0445	0.1175	1.0000e-004	3.1200e-003	6.0000e-004	3.7300e-003	8.9000e-004	5.5000e-004	1.4500e-003	0.0000	9.0741	9.0741	7.0000e-005	0.0000	9.0756
Worker	3.3800e-003	4.1700e-003	0.0428	1.0000e-004	7.8700e-003	6.0000e-005	7.9400e-003	2.0900e-003	6.0000e-005	2.1500e-003	0.0000	6.8622	6.8622	3.5000e-004	0.0000	6.8696
Total	**0.0102**	**0.0487**	**0.1602**	**2.0000e-004**	**0.0110**	**6.6000e-004**	**0.0117**	**2.9800e-003**	**6.1000e-004**	**3.6000e-003**	**0.0000**	**15.9363**	**15.9363**	**4.2000e-004**	**0.0000**	**15.9452**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2955	1.9109	1.4311	2.2000e-003		0.1226	0.1226		0.1182	0.1182	0.0000	184.5471	184.5471	0.0387	0.0000	185.3603
Total	**0.2955**	**1.9109**	**1.4311**	**2.2000e-003**		**0.1226**	**0.1226**		**0.1182**	**0.1182**	**0.0000**	**184.5471**	**184.5471**	**0.0387**	**0.0000**	**185.3603**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.8500e-003	0.0445	0.1175	1.0000e-004	3.1200e-003	6.0000e-004	3.7300e-003	8.9000e-004	5.5000e-004	1.4500e-003	0.0000	9.0741	9.0741	7.0000e-005	0.0000	9.0756
Worker	3.3800e-003	4.1700e-003	0.0428	1.0000e-004	7.8700e-003	6.0000e-005	7.9400e-003	2.0900e-003	6.0000e-005	2.1500e-003	0.0000	6.8622	6.8622	3.5000e-004	0.0000	6.8696
Total	**0.0102**	**0.0487**	**0.1602**	**2.0000e-004**	**0.0110**	**6.6000e-004**	**0.0117**	**2.9800e-003**	**6.1000e-004**	**3.6000e-003**	**0.0000**	**15.9363**	**15.9363**	**4.2000e-004**	**0.0000**	**15.9452**

3.6 Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.9300e-003	0.0605	0.0452	7.0000e-005		3.6700e-003	3.6700e-003		3.3800e-003	3.3800e-003	0.0000	6.1129	6.1129	1.8400e-003	0.0000	6.1515
Paving	1.8300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.7600e-003**	**0.0605**	**0.0452**	**7.0000e-005**		**3.6700e-003**	**3.6700e-003**		**3.3800e-003**	**3.3800e-003**	**0.0000**	**6.1129**	**6.1129**	**1.8400e-003**	**0.0000**	**6.1515**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2000e-004	2.7000e-004	2.7800e-003	1.0000e-005	5.1000e-004	0.0000	5.2000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4460	0.4460	2.0000e-005	0.0000	0.4465
Total	**2.2000e-004**	**2.7000e-004**	**2.7800e-003**	**1.0000e-005**	**5.1000e-004**	**0.0000**	**5.2000e-004**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.4460**	**0.4460**	**2.0000e-005**	**0.0000**	**0.4465**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.9300e-003	0.0605	0.0452	7.0000e-005		3.6700e-003	3.6700e-003		3.3800e-003	3.3800e-003	0.0000	6.1129	6.1129	1.8400e-003	0.0000	6.1515
Paving	1.8300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.7600e-003**	**0.0605**	**0.0452**	**7.0000e-005**		**3.6700e-003**	**3.6700e-003**		**3.3800e-003**	**3.3800e-003**	**0.0000**	**6.1129**	**6.1129**	**1.8400e-003**	**0.0000**	**6.1515**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2000e-004	2.7000e-004	2.7800e-003	1.0000e-005	5.1000e-004	0.0000	5.2000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4460	0.4460	2.0000e-005	0.0000	0.4465
Total	**2.2000e-004**	**2.7000e-004**	**2.7800e-003**	**1.0000e-005**	**5.1000e-004**	**0.0000**	**5.2000e-004**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.4460**	**0.4460**	**2.0000e-005**	**0.0000**	**0.4465**

3.7 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3541					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6600e-003	0.0109	9.3400e-003	1.0000e-005		8.7000e-004	8.7000e-004		8.7000e-004	8.7000e-004	0.0000	1.2766	1.2766	1.3000e-004	0.0000	1.2795
Total	**0.3558**	**0.0109**	**9.3400e-003**	**1.0000e-005**		**8.7000e-004**	**8.7000e-004**		**8.7000e-004**	**8.7000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.3000e-004**	**0.0000**	**1.2795**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	4.0000e-005	4.3000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0686	0.0686	0.0000	0.0000	0.0687
Total	**3.0000e-005**	**4.0000e-005**	**4.3000e-004**	**0.0000**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0686**	**0.0686**	**0.0000**	**0.0000**	**0.0687**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3541					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6600e-003	0.0109	9.3400e-003	1.0000e-005		8.7000e-004	8.7000e-004		8.7000e-004	8.7000e-004	0.0000	1.2766	1.2766	1.3000e-004	0.0000	1.2795
Total	**0.3558**	**0.0109**	**9.3400e-003**	**1.0000e-005**		**8.7000e-004**	**8.7000e-004**		**8.7000e-004**	**8.7000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.3000e-004**	**0.0000**	**1.2795**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	4.0000e-005	4.3000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0686	0.0686	0.0000	0.0000	0.0687
Total	**3.0000e-005**	**4.0000e-005**	**4.3000e-004**	**0.0000**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0686**	**0.0686**	**0.0000**	**0.0000**	**0.0687**

3810 0003 Creekside AQ-GHG

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	9.86	1000sqft	0.00	9,860.00	0
Parking Lot	156.00	Space	1.40	0.00	0
Fast Food Restaurant with Drive Thru	2.55	1000sqft	0.06	2,550.00	0
Strip Mall	10.20	1000sqft	0.23	10,200.00	0
Strip Mall	1.35	1000sqft	0.03	1,350.00	0
Strip Mall	6.60	1000sqft	0.15	6,600.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	1			**Operational Year**	2018
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Based on project description

Construction Phase - Project construction would take approximately 1 year

Demolition -

Grading - Onsite earthwork would consist of approximate 2,041 cubic yards of cut and 44,697 cubic yards of imported fill.

Vehicle Trips - Traffic Impact Analysis for Creekside Plaza

Energy Use -

Land Use Change -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Energy Mitigation - Compliance with Title 24 requirements

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	4.00	28.00
tblConstructionPhase	PhaseEndDate	12/29/2017	12/28/2017
tblConstructionPhase	PhaseEndDate	12/29/2017	12/15/2017
tblConstructionPhase	PhaseStartDate	12/16/2017	12/15/2017
tblConstructionPhase	PhaseStartDate	12/16/2017	12/3/2017
tblGrading	MaterialExported	0.00	44,697.00
tblGrading	MaterialImported	0.00	2,041.00
tblLandUse	LandUseSquareFeet	62,400.00	0.00
tblLandUse	LotAcreage	0.23	0.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblVehicleTrips	ST_TR	2.37	2.46
tblVehicleTrips	ST_TR	42.04	49.97
tblVehicleTrips	SU_TR	0.98	1.05
tblVehicleTrips	SU_TR	20.43	25.24
tblVehicleTrips	WD_TR	496.12	496.08
tblVehicleTrips	WD_TR	11.01	22.92
tblVehicleTrips	WD_TR	44.32	42.67

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	75.8214	64.9300	143.8459	0.1296	8.5345	2.1398	10.0610	3.4762	2.0381	4.8805	0.0000	12,633.8207	12,633.8207	0.8723	0.0000	12,652.1397
Total	**75.8214**	**64.9300**	**143.8459**	**0.1296**	**8.5345**	**2.1398**	**10.0610**	**3.4762**	**2.0381**	**4.8805**	**0.0000**	**12,633.8207**	**12,633.8207**	**0.8723**	**0.0000**	**12,652.1397**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	75.8214	64.9300	143.8459	0.1296	5.3865	2.1398	6.9131	1.9128	2.0381	3.3171	0.0000	12,633.8207	12,633.8207	0.8723	0.0000	12,652.1397
Total	**75.8214**	**64.9300**	**143.8459**	**0.1296**	**5.3865**	**2.1398**	**6.9131**	**1.9128**	**2.0381**	**3.3171**	**0.0000**	**12,633.8207**	**12,633.8207**	**0.8723**	**0.0000**	**12,652.1397**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**36.89**	**0.00**	**31.29**	**44.97**	**0.00**	**32.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2017	1/27/2017	5	20	
2	Site Preparation	Site Preparation	1/28/2017	1/31/2017	5	2	
3	Grading	Grading	2/1/2017	3/10/2017	5	28	
4	Building Construction	Building Construction	3/11/2017	12/15/2017	5	200	
5	Paving	Paving	12/3/2017	12/15/2017	5	10	
6	Architectural Coating	Architectural Coating	12/15/2017	12/28/2017	5	10	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 10.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 45,840; Non-Residential Outdoor: 15,280 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	174	0.41
Grading	Rubber Tired Dozers	1	6.00	255	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	6.00	226	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	125	0.42
Paving	Paving Equipment	1	8.00	130	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	34.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	5,587.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	10.00	5.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	2.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3749	0.0000	0.3749	0.0568	0.0000	0.0568			0.0000			0.0000
Off-Road	2.7216	26.5855	20.8712	0.0245		1.6062	1.6062		1.5022	1.5022		2,457.4682	2,457.4682	0.6235		2,470.5620
Total	**2.7216**	**26.5855**	**20.8712**	**0.0245**	**0.3749**	**1.6062**	**1.9811**	**0.0568**	**1.5022**	**1.5590**		**2,457.4682**	**2,457.4682**	**0.6235**		**2,470.5620**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0473	0.3843	1.1101	9.8000e-004	0.0282	3.9200e-003	0.0321	7.6300e-003	3.6000e-003	0.0112		94.8110	94.8110	5.8000e-004		94.8231
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0511	0.0473	0.6107	1.3600e-003	0.1068	8.2000e-004	0.1076	0.0283	7.5000e-004	0.0291		107.7237	107.7237	5.0700e-003		107.8303
Total	**0.0984**	**0.4316**	**1.7207**	**2.3400e-003**	**0.1350**	**4.7400e-003**	**0.1397**	**0.0360**	**4.3500e-003**	**0.0403**		**202.5347**	**202.5347**	**5.6500e-003**		**202.6534**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1462	0.0000	0.1462	0.0221	0.0000	0.0221			0.0000			0.0000
Off-Road	2.7216	26.5855	20.8712	0.0245		1.6062	1.6062		1.5022	1.5022	0.0000	2,457.4682	2,457.4682	0.6235		2,470.5620
Total	**2.7216**	**26.5855**	**20.8712**	**0.0245**	**0.1462**	**1.6062**	**1.7524**	**0.0221**	**1.5022**	**1.5244**	**0.0000**	**2,457.4682**	**2,457.4682**	**0.6235**		**2,470.5620**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0473	0.3843	1.1101	9.8000e-004	0.0282	3.9200e-003	0.0321	7.6300e-003	3.6000e-003	0.0112		94.8110	94.8110	5.8000e-004		94.8231
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0511	0.0473	0.6107	1.3600e-003	0.1068	8.2000e-004	0.1076	0.0283	7.5000e-004	0.0291		107.7237	107.7237	5.0700e-003		107.8303
Total	**0.0984**	**0.4316**	**1.7207**	**2.3400e-003**	**0.1350**	**4.7400e-003**	**0.1397**	**0.0360**	**4.3500e-003**	**0.0403**		**202.5347**	**202.5347**	**5.6500e-003**		**202.6534**

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	2.3109	24.2288	15.9299	0.0171		1.3067	1.3067		1.2022	1.2022		1,752.1239	1,752.1239	0.5369		1,763.3977
Total	**2.3109**	**24.2288**	**15.9299**	**0.0171**	**5.7996**	**1.3067**	**7.1063**	**2.9537**	**1.2022**	**4.1559**		**1,752.1239**	**1,752.1239**	**0.5369**		**1,763.3977**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0315	0.0291	0.3758	8.4000e-004	0.0657	5.0000e-004	0.0662	0.0174	4.6000e-004	0.0179		66.2915	66.2915	3.1200e-003		66.3571
Total	**0.0315**	**0.0291**	**0.3758**	**8.4000e-004**	**0.0657**	**5.0000e-004**	**0.0662**	**0.0174**	**4.6000e-004**	**0.0179**		**66.2915**	**66.2915**	**3.1200e-003**		**66.3571**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.2618	0.0000	2.2618	1.1519	0.0000	1.1519			0.0000			0.0000
Off-Road	2.3109	24.2288	15.9299	0.0171		1.3067	1.3067		1.2022	1.2022	0.0000	1,752.1239	1,752.1239	0.5369		1,763.3977
Total	**2.3109**	**24.2288**	**15.9299**	**0.0171**	**2.2618**	**1.3067**	**3.5686**	**1.1519**	**1.2022**	**2.3541**	**0.0000**	**1,752.1239**	**1,752.1239**	**0.5369**		**1,763.3977**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0315	0.0291	0.3758	8.4000e-004	0.0657	5.0000e-004	0.0662	0.0174	4.6000e-004	0.0179		66.2915	66.2915	3.1200e-003		66.3571
Total	**0.0315**	**0.0291**	**0.3758**	**8.4000e-004**	**0.0657**	**5.0000e-004**	**0.0662**	**0.0174**	**4.6000e-004**	**0.0179**		**66.2915**	**66.2915**	**3.1200e-003**		**66.3571**

3.4 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.1606	0.0000	5.1606	2.5629	0.0000	2.5629			0.0000			0.0000
Off-Road	1.8844	19.7889	13.1786	0.0141		1.0661	1.0661		0.9808	0.9808		1,439.1894	1,439.1894	0.4410		1,448.4496
Total	**1.8844**	**19.7889**	**13.1786**	**0.0141**	**5.1606**	**1.0661**	**6.2267**	**2.5629**	**0.9808**	**3.5438**		**1,439.1894**	**1,439.1894**	**0.4410**		**1,448.4496**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.5523	45.1120	130.2915	0.1147	3.3081	0.4600	3.7681	0.8958	0.4231	1.3189		11,128.3399	11,128.3399	0.0675		11,129.7578
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0315	0.0291	0.3758	8.4000e-004	0.0657	5.0000e-004	0.0662	0.0174	4.6000e-004	0.0179		66.2915	66.2915	3.1200e-003		66.3571
Total	**5.5838**	**45.1411**	**130.6673**	**0.1156**	**3.3739**	**0.4605**	**3.8343**	**0.9132**	**0.4235**	**1.3368**		**11,194.6314**	**11,194.6314**	**0.0706**		**11,196.1149**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.0126	0.0000	2.0126	0.9995	0.0000	0.9995			0.0000			0.0000
Off-Road	1.8844	19.7889	13.1786	0.0141		1.0661	1.0661		0.9808	0.9808	0.0000	1,439.1894	1,439.1894	0.4410		1,448.4496
Total	**1.8844**	**19.7889**	**13.1786**	**0.0141**	**2.0126**	**1.0661**	**3.0788**	**0.9995**	**0.9808**	**1.9804**	**0.0000**	**1,439.1894**	**1,439.1894**	**0.4410**		**1,448.4496**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.5523	45.1120	130.2915	0.1147	3.3081	0.4600	3.7681	0.8958	0.4231	1.3189		11,128.3399	11,128.3399	0.0675		11,129.7578
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0315	0.0291	0.3758	8.4000e-004	0.0657	5.0000e-004	0.0662	0.0174	4.6000e-004	0.0179		66.2915	66.2915	3.1200e-003		66.3571
Total	**5.5838**	**45.1411**	**130.6673**	**0.1156**	**3.3739**	**0.4605**	**3.8343**	**0.9132**	**0.4235**	**1.3368**		**11,194.6314**	**11,194.6314**	**0.0706**		**11,196.1149**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.9546	19.1088	14.3110	0.0220		1.2257	1.2257		1.1823	1.1823		2,034.2860	2,034.2860	0.4268		2,043.2497
Total	**2.9546**	**19.1088**	**14.3110**	**0.0220**		**1.2257**	**1.2257**		**1.1823**	**1.1823**		**2,034.2860**	**2,034.2860**	**0.4268**		**2,043.2497**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0610	0.4172	0.9462	1.0300e-003	0.0324	5.9800e-003	0.0384	9.2000e-003	5.5000e-003	0.0147		100.4005	100.4005	7.7000e-004		100.4167
Worker	0.0393	0.0364	0.4698	1.0500e-003	0.0822	6.3000e-004	0.0828	0.0218	5.8000e-004	0.0224		82.8644	82.8644	3.9000e-003		82.9464
Total	**0.1003**	**0.4536**	**1.4160**	**2.0800e-003**	**0.1146**	**6.6100e-003**	**0.1212**	**0.0310**	**6.0800e-003**	**0.0371**		**183.2649**	**183.2649**	**4.6700e-003**		**183.3631**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.9546	19.1088	14.3110	0.0220		1.2257	1.2257		1.1823	1.1823	0.0000	2,034.2860	2,034.2860	0.4268		2,043.2497
Total	**2.9546**	**19.1088**	**14.3110**	**0.0220**		**1.2257**	**1.2257**		**1.1823**	**1.1823**	**0.0000**	**2,034.2860**	**2,034.2860**	**0.4268**		**2,043.2497**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0610	0.4172	0.9462	1.0300e-003	0.0324	5.9800e-003	0.0384	9.2000e-003	5.5000e-003	0.0147		100.4005	100.4005	7.7000e-004		100.4167
Worker	0.0393	0.0364	0.4698	1.0500e-003	0.0822	6.3000e-004	0.0828	0.0218	5.8000e-004	0.0224		82.8644	82.8644	3.9000e-003		82.9464
Total	**0.1003**	**0.4536**	**1.4160**	**2.0800e-003**	**0.1146**	**6.6100e-003**	**0.1212**	**0.0310**	**6.0800e-003**	**0.0371**		**183.2649**	**183.2649**	**4.6700e-003**		**183.3631**

3.6 Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1857	12.0981	9.0308	0.0133		0.7333	0.7333		0.6755	0.6755		1,347.6575	1,347.6575	0.4052		1,356.1677
Paving	0.3668					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.5525**	**12.0981**	**9.0308**	**0.0133**		**0.7333**	**0.7333**		**0.6755**	**0.6755**		**1,347.6575**	**1,347.6575**	**0.4052**		**1,356.1677**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0511	0.0473	0.6107	1.3600e-003	0.1068	8.2000e-004	0.1076	0.0283	7.5000e-004	0.0291		107.7237	107.7237	5.0700e-003		107.8303
Total	**0.0511**	**0.0473**	**0.6107**	**1.3600e-003**	**0.1068**	**8.2000e-004**	**0.1076**	**0.0283**	**7.5000e-004**	**0.0291**		**107.7237**	**107.7237**	**5.0700e-003**		**107.8303**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1857	12.0981	9.0308	0.0133		0.7333	0.7333		0.6755	0.6755	0.0000	1,347.6575	1,347.6575	0.4052		1,356.1677
Paving	0.3668					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.5525**	**12.0981**	**9.0308**	**0.0133**		**0.7333**	**0.7333**		**0.6755**	**0.6755**	**0.0000**	**1,347.6575**	**1,347.6575**	**0.4052**		**1,356.1677**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0511	0.0473	0.6107	1.3600e-003	0.1068	8.2000e-004	0.1076	0.0283	7.5000e-004	0.0291		107.7237	107.7237	5.0700e-003		107.8303
Total	**0.0511**	**0.0473**	**0.6107**	**1.3600e-003**	**0.1068**	**8.2000e-004**	**0.1076**	**0.0283**	**7.5000e-004**	**0.0291**		**107.7237**	**107.7237**	**5.0700e-003**		**107.8303**

3.7 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	70.8228					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297		282.0721
Total	**71.1551**	**2.1850**	**1.8681**	**2.9700e-003**		**0.1733**	**0.1733**		**0.1733**	**0.1733**		**281.4481**	**281.4481**	**0.0297**		**282.0721**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	7.8600e-003	7.2700e-003	0.0940	2.1000e-004	0.0164	1.3000e-004	0.0166	4.3600e-003	1.2000e-004	4.4700e-003		16.5729	16.5729	7.8000e-004		16.5893
Total	**7.8600e-003**	**7.2700e-003**	**0.0940**	**2.1000e-004**	**0.0164**	**1.3000e-004**	**0.0166**	**4.3600e-003**	**1.2000e-004**	**4.4700e-003**		**16.5729**	**16.5729**	**7.8000e-004**		**16.5893**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	70.8228					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733	0.0000	281.4481	281.4481	0.0297		282.0721
Total	**71.1551**	**2.1850**	**1.8681**	**2.9700e-003**		**0.1733**	**0.1733**		**0.1733**	**0.1733**	**0.0000**	**281.4481**	**281.4481**	**0.0297**		**282.0721**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	7.8600e-003	7.2700e-003	0.0940	2.1000e-004	0.0164	1.3000e-004	0.0166	4.3600e-003	1.2000e-004	4.4700e-003		16.5729	16.5729	7.8000e-004		16.5893
Total	**7.8600e-003**	**7.2700e-003**	**0.0940**	**2.1000e-004**	**0.0164**	**1.3000e-004**	**0.0166**	**4.3600e-003**	**1.2000e-004**	**4.4700e-003**		**16.5729**	**16.5729**	**7.8000e-004**		**16.5893**

3810 0003 Creekside AQ-GHG

El Dorado-Mountain County County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	9.86	1000sqft	0.00	9,860.00	0
Parking Lot	156.00	Space	1.40	0.00	0
Fast Food Restaurant with Drive Thru	2.55	1000sqft	0.06	2,550.00	0
Strip Mall	10.20	1000sqft	0.23	10,200.00	0
Strip Mall	1.35	1000sqft	0.03	1,350.00	0
Strip Mall	6.60	1000sqft	0.15	6,600.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	1			**Operational Year**	2018
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Based on project description

Construction Phase - Project construction would take approximately 1 year

Grading - Onsite earthwork would consist of approximate 2,041 cubic yards of cut and 44,697 cubic yards of imported fill.

Vehicle Trips - Traffic Impact Analysis for Creekside Plaza

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation - Compliance with Title 24 requirements

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	4.00	28.00
tblConstructionPhase	PhaseEndDate	12/29/2017	12/28/2017
tblConstructionPhase	PhaseEndDate	12/29/2017	12/15/2017
tblConstructionPhase	PhaseStartDate	12/16/2017	12/15/2017
tblConstructionPhase	PhaseStartDate	12/16/2017	12/3/2017
tblGrading	MaterialExported	0.00	44,697.00
tblGrading	MaterialImported	0.00	2,041.00
tblLandUse	LandUseSquareFeet	62,400.00	0.00
tblLandUse	LotAcreage	0.23	0.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblVehicleTrips	ST_TR	2.37	2.46
tblVehicleTrips	ST_TR	42.04	49.97
tblVehicleTrips	SU_TR	0.98	1.05
tblVehicleTrips	SU_TR	20.43	25.24
tblVehicleTrips	WD_TR	496.12	496.08
tblVehicleTrips	WD_TR	11.01	22.92
tblVehicleTrips	WD_TR	44.32	42.67

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	75.8272	70.3553	166.6884	0.1295	8.5345	2.1399	10.0635	3.4762	2.0382	4.8828	0.0000	12,591.9403	12,591.9403	0.8724	0.0000	12,610.2598
Total	**75.8272**	**70.3553**	**166.6884**	**0.1295**	**8.5345**	**2.1399**	**10.0635**	**3.4762**	**2.0382**	**4.8828**	**0.0000**	**12,591.9403**	**12,591.9403**	**0.8724**	**0.0000**	**12,610.2598**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	75.8272	70.3553	166.6884	0.1295	5.3865	2.1399	6.9155	1.9128	2.0382	3.3194	0.0000	12,591.9403	12,591.9403	0.8724	0.0000	12,610.2598
Total	**75.8272**	**70.3553**	**166.6884**	**0.1295**	**5.3865**	**2.1399**	**6.9155**	**1.9128**	**2.0382**	**3.3194**	**0.0000**	**12,591.9403**	**12,591.9403**	**0.8724**	**0.0000**	**12,610.2598**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**36.89**	**0.00**	**31.28**	**44.97**	**0.00**	**32.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2017	1/27/2017	5	20	
2	Site Preparation	Site Preparation	1/28/2017	1/31/2017	5	2	
3	Grading	Grading	2/1/2017	3/10/2017	5	28	
4	Building Construction	Building Construction	3/11/2017	12/15/2017	5	200	
5	Paving	Paving	12/3/2017	12/15/2017	5	10	
6	Architectural Coating	Architectural Coating	12/15/2017	12/28/2017	5	10	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 10.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 45,840; Non-Residential Outdoor: 15,280 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	174	0.41
Grading	Rubber Tired Dozers	1	6.00	255	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	6.00	226	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	125	0.42
Paving	Paving Equipment	1	8.00	130	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	34.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	5,587.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	10.00	5.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	2.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3749	0.0000	0.3749	0.0568	0.0000	0.0568			0.0000			0.0000
Off-Road	2.7216	26.5855	20.8712	0.0245		1.6062	1.6062		1.5022	1.5022		2,457.4682	2,457.4682	0.6235		2,470.5620
Total	**2.7216**	**26.5855**	**20.8712**	**0.0245**	**0.3749**	**1.6062**	**1.9811**	**0.0568**	**1.5022**	**1.5590**		**2,457.4682**	**2,457.4682**	**0.6235**		**2,470.5620**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0535	0.4305	1.3049	9.8000e-004	0.0282	3.9400e-003	0.0321	7.6300e-003	3.6200e-003	0.0113		94.5155	94.5155	5.9000e-004		94.5279
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0462	0.0586	0.5686	1.2100e-003	0.1068	8.2000e-004	0.1076	0.0283	7.5000e-004	0.0291		96.0255	96.0255	5.0700e-003		96.1321
Total	**0.0997**	**0.4891**	**1.8735**	**2.1900e-003**	**0.1350**	**4.7600e-003**	**0.1397**	**0.0360**	**4.3700e-003**	**0.0403**		**190.5410**	**190.5410**	**5.6600e-003**		**190.6599**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1462	0.0000	0.1462	0.0221	0.0000	0.0221			0.0000			0.0000
Off-Road	2.7216	26.5855	20.8712	0.0245		1.6062	1.6062		1.5022	1.5022	0.0000	2,457.4682	2,457.4682	0.6235		2,470.5620
Total	**2.7216**	**26.5855**	**20.8712**	**0.0245**	**0.1462**	**1.6062**	**1.7524**	**0.0221**	**1.5022**	**1.5244**	**0.0000**	**2,457.4682**	**2,457.4682**	**0.6235**		**2,470.5620**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0535	0.4305	1.3049	9.8000e-004	0.0282	3.9400e-003	0.0321	7.6300e-003	3.6200e-003	0.0113		94.5155	94.5155	5.9000e-004		94.5279
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0462	0.0586	0.5686	1.2100e-003	0.1068	8.2000e-004	0.1076	0.0283	7.5000e-004	0.0291		96.0255	96.0255	5.0700e-003		96.1321
Total	**0.0997**	**0.4891**	**1.8735**	**2.1900e-003**	**0.1350**	**4.7600e-003**	**0.1397**	**0.0360**	**4.3700e-003**	**0.0403**		**190.5410**	**190.5410**	**5.6600e-003**		**190.6599**

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	2.3109	24.2288	15.9299	0.0171		1.3067	1.3067		1.2022	1.2022		1,752.1239	1,752.1239	0.5369		1,763.3977
Total	**2.3109**	**24.2288**	**15.9299**	**0.0171**	**5.7996**	**1.3067**	**7.1063**	**2.9537**	**1.2022**	**4.1559**		**1,752.1239**	**1,752.1239**	**0.5369**		**1,763.3977**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0284	0.0361	0.3499	7.5000e-004	0.0657	5.0000e-004	0.0662	0.0174	4.6000e-004	0.0179		59.0926	59.0926	3.1200e-003		59.1582
Total	**0.0284**	**0.0361**	**0.3499**	**7.5000e-004**	**0.0657**	**5.0000e-004**	**0.0662**	**0.0174**	**4.6000e-004**	**0.0179**		**59.0926**	**59.0926**	**3.1200e-003**		**59.1582**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.2618	0.0000	2.2618	1.1519	0.0000	1.1519			0.0000			0.0000
Off-Road	2.3109	24.2288	15.9299	0.0171		1.3067	1.3067		1.2022	1.2022	0.0000	1,752.1239	1,752.1239	0.5369		1,763.3977
Total	**2.3109**	**24.2288**	**15.9299**	**0.0171**	**2.2618**	**1.3067**	**3.5686**	**1.1519**	**1.2022**	**2.3541**	**0.0000**	**1,752.1239**	**1,752.1239**	**0.5369**		**1,763.3977**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0284	0.0361	0.3499	7.5000e-004	0.0657	5.0000e-004	0.0662	0.0174	4.6000e-004	0.0179		59.0926	59.0926	3.1200e-003		59.1582
Total	**0.0284**	**0.0361**	**0.3499**	**7.5000e-004**	**0.0657**	**5.0000e-004**	**0.0662**	**0.0174**	**4.6000e-004**	**0.0179**		**59.0926**	**59.0926**	**3.1200e-003**		**59.1582**

3.4 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.1606	0.0000	5.1606	2.5629	0.0000	2.5629			0.0000			0.0000
Off-Road	1.8844	19.7889	13.1786	0.0141		1.0661	1.0661		0.9808	0.9808		1,439.1894	1,439.1894	0.4410		1,448.4496
Total	**1.8844**	**19.7889**	**13.1786**	**0.0141**	**5.1606**	**1.0661**	**6.2267**	**2.5629**	**0.9808**	**3.5438**		**1,439.1894**	**1,439.1894**	**0.4410**		**1,448.4496**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	6.2799	50.5304	153.1599	0.1147	3.3081	0.4624	3.7705	0.8958	0.4253	1.3211		11,093.6584	11,093.6584	0.0690		11,095.1081
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0284	0.0361	0.3499	7.5000e-004	0.0657	5.0000e-004	0.0662	0.0174	4.6000e-004	0.0179		59.0926	59.0926	3.1200e-003		59.1582
Total	**6.3083**	**50.5664**	**153.5098**	**0.1155**	**3.3739**	**0.4629**	**3.8368**	**0.9132**	**0.4258**	**1.3390**		**11,152.7510**	**11,152.7510**	**0.0722**		**11,154.2663**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.0126	0.0000	2.0126	0.9995	0.0000	0.9995			0.0000			0.0000
Off-Road	1.8844	19.7889	13.1786	0.0141		1.0661	1.0661		0.9808	0.9808	0.0000	1,439.1894	1,439.1894	0.4410		1,448.4496
Total	**1.8844**	**19.7889**	**13.1786**	**0.0141**	**2.0126**	**1.0661**	**3.0788**	**0.9995**	**0.9808**	**1.9804**	**0.0000**	**1,439.1894**	**1,439.1894**	**0.4410**		**1,448.4496**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	6.2799	50.5304	153.1599	0.1147	3.3081	0.4624	3.7705	0.8958	0.4253	1.3211		11,093.6584	11,093.6584	0.0690		11,095.1081
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0284	0.0361	0.3499	7.5000e-004	0.0657	5.0000e-004	0.0662	0.0174	4.6000e-004	0.0179		59.0926	59.0926	3.1200e-003		59.1582
Total	**6.3083**	**50.5664**	**153.5098**	**0.1155**	**3.3739**	**0.4629**	**3.8368**	**0.9132**	**0.4258**	**1.3390**		**11,152.7510**	**11,152.7510**	**0.0722**		**11,154.2663**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.9546	19.1088	14.3110	0.0220		1.2257	1.2257		1.1823	1.1823		2,034.2860	2,034.2860	0.4268		2,043.2497
Total	**2.9546**	**19.1088**	**14.3110**	**0.0220**		**1.2257**	**1.2257**		**1.1823**	**1.1823**		**2,034.2860**	**2,034.2860**	**0.4268**		**2,043.2497**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0763	0.4517	1.3632	1.0300e-003	0.0324	6.0900e-003	0.0385	9.2000e-003	5.6000e-003	0.0148		99.5052	99.5052	8.0000e-004		99.5219
Worker	0.0355	0.0451	0.4374	9.3000e-004	0.0822	6.3000e-004	0.0828	0.0218	5.8000e-004	0.0224		73.8658	73.8658	3.9000e-003		73.9477
Total	**0.1118**	**0.4968**	**1.8006**	**1.9600e-003**	**0.1146**	**6.7200e-003**	**0.1213**	**0.0310**	**6.1800e-003**	**0.0372**		**173.3709**	**173.3709**	**4.7000e-003**		**173.4697**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.9546	19.1088	14.3110	0.0220		1.2257	1.2257		1.1823	1.1823	0.0000	2,034.2860	2,034.2860	0.4268		2,043.2497
Total	**2.9546**	**19.1088**	**14.3110**	**0.0220**		**1.2257**	**1.2257**		**1.1823**	**1.1823**	**0.0000**	**2,034.2860**	**2,034.2860**	**0.4268**		**2,043.2497**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0763	0.4517	1.3632	1.0300e-003	0.0324	6.0900e-003	0.0385	9.2000e-003	5.6000e-003	0.0148		99.5052	99.5052	8.0000e-004		99.5219
Worker	0.0355	0.0451	0.4374	9.3000e-004	0.0822	6.3000e-004	0.0828	0.0218	5.8000e-004	0.0224		73.8658	73.8658	3.9000e-003		73.9477
Total	**0.1118**	**0.4968**	**1.8006**	**1.9600e-003**	**0.1146**	**6.7200e-003**	**0.1213**	**0.0310**	**6.1800e-003**	**0.0372**		**173.3709**	**173.3709**	**4.7000e-003**		**173.4697**

3.6 Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1857	12.0981	9.0308	0.0133		0.7333	0.7333		0.6755	0.6755		1,347.6575	1,347.6575	0.4052		1,356.1677
Paving	0.3668					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.5525**	**12.0981**	**9.0308**	**0.0133**		**0.7333**	**0.7333**		**0.6755**	**0.6755**		**1,347.6575**	**1,347.6575**	**0.4052**		**1,356.1677**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0462	0.0586	0.5686	1.2100e-003	0.1068	8.2000e-004	0.1076	0.0283	7.5000e-004	0.0291		96.0255	96.0255	5.0700e-003		96.1321
Total	**0.0462**	**0.0586**	**0.5686**	**1.2100e-003**	**0.1068**	**8.2000e-004**	**0.1076**	**0.0283**	**7.5000e-004**	**0.0291**		**96.0255**	**96.0255**	**5.0700e-003**		**96.1321**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1857	12.0981	9.0308	0.0133		0.7333	0.7333		0.6755	0.6755	0.0000	1,347.6575	1,347.6575	0.4052		1,356.1677
Paving	0.3668					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.5525**	**12.0981**	**9.0308**	**0.0133**		**0.7333**	**0.7333**		**0.6755**	**0.6755**	**0.0000**	**1,347.6575**	**1,347.6575**	**0.4052**		**1,356.1677**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0462	0.0586	0.5686	1.2100e-003	0.1068	8.2000e-004	0.1076	0.0283	7.5000e-004	0.0291		96.0255	96.0255	5.0700e-003		96.1321
Total	**0.0462**	**0.0586**	**0.5686**	**1.2100e-003**	**0.1068**	**8.2000e-004**	**0.1076**	**0.0283**	**7.5000e-004**	**0.0291**		**96.0255**	**96.0255**	**5.0700e-003**		**96.1321**

3.7 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	70.8228					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297		282.0721
Total	**71.1551**	**2.1850**	**1.8681**	**2.9700e-003**		**0.1733**	**0.1733**		**0.1733**	**0.1733**		**281.4481**	**281.4481**	**0.0297**		**282.0721**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	7.1000e-003	9.0200e-003	0.0875	1.9000e-004	0.0164	1.3000e-004	0.0166	4.3600e-003	1.2000e-004	4.4700e-003		14.7732	14.7732	7.8000e-004		14.7896
Total	**7.1000e-003**	**9.0200e-003**	**0.0875**	**1.9000e-004**	**0.0164**	**1.3000e-004**	**0.0166**	**4.3600e-003**	**1.2000e-004**	**4.4700e-003**		**14.7732**	**14.7732**	**7.8000e-004**		**14.7896**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	70.8228					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733	0.0000	281.4481	281.4481	0.0297		282.0721
Total	**71.1551**	**2.1850**	**1.8681**	**2.9700e-003**		**0.1733**	**0.1733**		**0.1733**	**0.1733**	**0.0000**	**281.4481**	**281.4481**	**0.0297**		**282.0721**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	7.1000e-003	9.0200e-003	0.0875	1.9000e-004	0.0164	1.3000e-004	0.0166	4.3600e-003	1.2000e-004	4.4700e-003		14.7732	14.7732	7.8000e-004		14.7896
Total	**7.1000e-003**	**9.0200e-003**	**0.0875**	**1.9000e-004**	**0.0164**	**1.3000e-004**	**0.0166**	**4.3600e-003**	**1.2000e-004**	**4.4700e-003**		**14.7732**	**14.7732**	**7.8000e-004**		**14.7896**

3810 0003 Creekside AQ-GHG Operations

El Dorado-Mountain County

County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	9.86	1000sqft	0.00	9,860.00	0
Parking Lot	156.00	Space	1.40	0.00	0
Fast Food Restaurant with Drive Thru	2.55	1000sqft	0.06	2,550.00	0
Strip Mall	10.20	1000sqft	0.23	10,200.00	0
Strip Mall	1.35	1000sqft	0.03	1,350.00	0
Strip Mall	6.60	1000sqft	0.15	6,600.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	1			**Operational Year**	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	405	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Unmitigated GHG
RPS

Land Use - Based on project description

Construction Phase - Project construction would take approximately 1 year

Grading - Onsite earthwork would consist of approximate 2,041 cubic yards of cut and 44,697 cubic yards of imported fill.

Vehicle Trips - Traffic Impact Analysis for Willow Creek Plaza

Energy Use - Based on RPS

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation - Compliance with 2013 and 2016 Title 24 requirements

Water Mitigation -

Waste Mitigation -

Operational Off-Road Equipment - -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	4.00	28.00
tblConstructionPhase	PhaseEndDate	12/29/2017	12/28/2017
tblConstructionPhase	PhaseEndDate	12/29/2017	12/15/2017
tblConstructionPhase	PhaseStartDate	12/16/2017	12/15/2017
tblConstructionPhase	PhaseStartDate	12/16/2017	12/3/2017
tblGrading	MaterialExported	0.00	44,697.00
tblGrading	MaterialImported	0.00	2,041.00
tblLandUse	LandUseSquareFeet	62,400.00	0.00
tblLandUse	LotAcreage	0.23	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	405
tblProjectCharacteristics	OperationalYear	2014	2019
tblVehicleTrips	DV_TP	19.00	35.00
tblVehicleTrips	PB_TP	4.00	11.00
tblVehicleTrips	PR_TP	77.00	54.00
tblVehicleTrips	ST_TR	2.37	2.46
tblVehicleTrips	ST_TR	42.04	49.97
tblVehicleTrips	SU_TR	0.98	1.05
tblVehicleTrips	SU_TR	20.43	25.24
tblVehicleTrips	WD_TR	496.12	496.08
tblVehicleTrips	WD_TR	11.01	22.92
tblVehicleTrips	WD_TR	44.32	42.67

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.8095	3.2930	4.0779	4.5800e-003	0.1402	0.1666	0.3067	0.0553	0.1590	0.2143	0.0000	394.2755	394.2755	0.0539	0.0000	395.4064
Total	**0.8095**	**3.2930**	**4.0779**	**4.5800e-003**	**0.1402**	**0.1666**	**0.3067**	**0.0553**	**0.1590**	**0.2143**	**0.0000**	**394.2755**	**394.2755**	**0.0539**	**0.0000**	**395.4064**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.8095	3.2930	4.0779	4.5800e-003	0.0903	0.1666	0.2568	0.0312	0.1590	0.1903	0.0000	394.2753	394.2753	0.0539	0.0000	395.4061
Total	**0.8095**	**3.2930**	**4.0779**	**4.5800e-003**	**0.0903**	**0.1666**	**0.2568**	**0.0312**	**0.1590**	**0.1903**	**0.0000**	**394.2753**	**394.2753**	**0.0539**	**0.0000**	**395.4061**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**35.60**	**0.00**	**16.27**	**43.49**	**0.00**	**11.21**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1549	2.0000e-005	1.7300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5200e-003
Energy	3.4500e-003	0.0314	0.0264	1.9000e-004		2.3900e-003	2.3900e-003		2.3900e-003	2.3900e-003	0.0000	119.9132	119.9132	6.7900e-003	1.9000e-003	120.6439
Mobile	1.0666	1.4298	7.3383	0.0145	1.0071	0.0181	1.0251	0.2697	0.0167	0.2863	0.0000	1,028.0283	1,028.0283	0.0465	0.0000	1,029.0041
Waste						0.0000	0.0000		0.0000	0.0000	11.6923	0.0000	11.6923	0.6910	0.0000	26.2032
Water						0.0000	0.0000		0.0000	0.0000	1.2281	5.0999	6.3280	0.1265	3.0500e-003	9.9311
Total	**1.2250**	**1.4612**	**7.3664**	**0.0147**	**1.0071**	**0.0205**	**1.0275**	**0.2697**	**0.0191**	**0.2887**	**12.9203**	**1,153.0447**	**1,165.9651**	**0.8708**	**4.9500e-003**	**1,185.7858**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1549	2.0000e-005	1.7100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.2900e-003	3.2900e-003	1.0000e-005	0.0000	3.4700e-003
Energy	2.7000e-003	0.0246	0.0207	1.5000e-004		1.8700e-003	1.8700e-003		1.8700e-003	1.8700e-003	0.0000	102.2025	102.2025	5.9100e-003	1.6100e-003	102.8253
Mobile	1.0536	1.3539	7.0453	0.0135	0.9376	0.0170	0.9546	0.2511	0.0157	0.2668	0.0000	961.3513	961.3513	0.0440	0.0000	962.2745
Waste						0.0000	0.0000		0.0000	0.0000	8.7692	0.0000	8.7692	0.5183	0.0000	19.6524
Water						0.0000	0.0000		0.0000	0.0000	0.9824	3.8229	4.8053	0.1012	2.4400e-003	7.6862
Total	**1.2113**	**1.3785**	**7.0677**	**0.0137**	**0.9376**	**0.0189**	**0.9565**	**0.2511**	**0.0176**	**0.2687**	**9.7517**	**1,067.3800**	**1,077.1316**	**0.6693**	**4.0500e-003**	**1,092.4418**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**1.12**	**5.66**	**4.06**	**6.69**	**6.90**	**7.48**	**6.91**	**6.90**	**7.61**	**6.95**	**24.52**	**7.43**	**7.62**	**23.13**	**18.18**	**7.87**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2017	1/27/2017	5	20	
2	Site Preparation	Site Preparation	1/28/2017	1/31/2017	5	2	
3	Grading	Grading	2/1/2017	3/10/2017	5	28	
4	Building Construction	Building Construction	3/11/2017	12/15/2017	5	200	
5	Paving	Paving	12/3/2017	12/15/2017	5	10	
6	Architectural Coating	Architectural Coating	12/15/2017	12/28/2017	5	10	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 10.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 45,840; Non-Residential Outdoor: 15,280 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	174	0.41
Grading	Rubber Tired Dozers	1	6.00	255	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	6.00	226	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	125	0.42
Paving	Paving Equipment	1	8.00	130	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	34.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	5,587.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	10.00	5.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	2.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.7500e-003	0.0000	3.7500e-003	5.7000e-004	0.0000	5.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0272	0.2659	0.2087	2.4000e-004		0.0161	0.0161		0.0150	0.0150	0.0000	22.2938	22.2938	5.6600e-003	0.0000	22.4126
Total	**0.0272**	**0.2659**	**0.2087**	**2.4000e-004**	**3.7500e-003**	**0.0161**	**0.0198**	**5.7000e-004**	**0.0150**	**0.0156**	**0.0000**	**22.2938**	**22.2938**	**5.6600e-003**	**0.0000**	**22.4126**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.0000e-004	4.2000e-003	0.0122	1.0000e-005	2.7000e-004	4.0000e-005	3.1000e-004	7.0000e-005	4.0000e-005	1.1000e-004	0.0000	0.8590	0.8590	1.0000e-005	0.0000	0.8591
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.4000e-004	5.4000e-004	5.5600e-003	1.0000e-005	1.0200e-003	1.0000e-005	1.0300e-003	2.7000e-004	1.0000e-005	2.8000e-004	0.0000	0.8921	0.8921	5.0000e-005	0.0000	0.8931
Total	**9.4000e-004**	**4.7400e-003**	**0.0177**	**2.0000e-005**	**1.2900e-003**	**5.0000e-005**	**1.3400e-003**	**3.4000e-004**	**5.0000e-005**	**3.9000e-004**	**0.0000**	**1.7511**	**1.7511**	**6.0000e-005**	**0.0000**	**1.7522**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.4600e-003	0.0000	1.4600e-003	2.2000e-004	0.0000	2.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0272	0.2659	0.2087	2.4000e-004		0.0161	0.0161		0.0150	0.0150	0.0000	22.2938	22.2938	5.6600e-003	0.0000	22.4125
Total	**0.0272**	**0.2659**	**0.2087**	**2.4000e-004**	**1.4600e-003**	**0.0161**	**0.0175**	**2.2000e-004**	**0.0150**	**0.0152**	**0.0000**	**22.2938**	**22.2938**	**5.6600e-003**	**0.0000**	**22.4125**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.0000e-004	4.2000e-003	0.0122	1.0000e-005	2.7000e-004	4.0000e-005	3.1000e-004	7.0000e-005	4.0000e-005	1.1000e-004	0.0000	0.8590	0.8590	1.0000e-005	0.0000	0.8591
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.4000e-004	5.4000e-004	5.5600e-003	1.0000e-005	1.0200e-003	1.0000e-005	1.0300e-003	2.7000e-004	1.0000e-005	2.8000e-004	0.0000	0.8921	0.8921	5.0000e-005	0.0000	0.8931
Total	**9.4000e-004**	**4.7400e-003**	**0.0177**	**2.0000e-005**	**1.2900e-003**	**5.0000e-005**	**1.3400e-003**	**3.4000e-004**	**5.0000e-005**	**3.9000e-004**	**0.0000**	**1.7511**	**1.7511**	**6.0000e-005**	**0.0000**	**1.7522**

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.8000e-003	0.0000	5.8000e-003	2.9500e-003	0.0000	2.9500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3100e-003	0.0242	0.0159	2.0000e-005		1.3100e-003	1.3100e-003		1.2000e-003	1.2000e-003	0.0000	1.5895	1.5895	4.9000e-004	0.0000	1.5997
Total	**2.3100e-003**	**0.0242**	**0.0159**	**2.0000e-005**	**5.8000e-003**	**1.3100e-003**	**7.1100e-003**	**2.9500e-003**	**1.2000e-003**	**4.1500e-003**	**0.0000**	**1.5895**	**1.5895**	**4.9000e-004**	**0.0000**	**1.5997**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	3.0000e-005	3.4000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0549	0.0549	0.0000	0.0000	0.0550
Total	**3.0000e-005**	**3.0000e-005**	**3.4000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0549**	**0.0549**	**0.0000**	**0.0000**	**0.0550**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.2600e-003	0.0000	2.2600e-003	1.1500e-003	0.0000	1.1500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3100e-003	0.0242	0.0159	2.0000e-005		1.3100e-003	1.3100e-003		1.2000e-003	1.2000e-003	0.0000	1.5895	1.5895	4.9000e-004	0.0000	1.5997
Total	**2.3100e-003**	**0.0242**	**0.0159**	**2.0000e-005**	**2.2600e-003**	**1.3100e-003**	**3.5700e-003**	**1.1500e-003**	**1.2000e-003**	**2.3500e-003**	**0.0000**	**1.5895**	**1.5895**	**4.9000e-004**	**0.0000**	**1.5997**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	3.0000e-005	3.4000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0549	0.0549	0.0000	0.0000	0.0550
Total	**3.0000e-005**	**3.0000e-005**	**3.4000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0549**	**0.0549**	**0.0000**	**0.0000**	**0.0550**

3.4 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0723	0.0000	0.0723	0.0359	0.0000	0.0359	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0264	0.2770	0.1845	2.0000e-004		0.0149	0.0149		0.0137	0.0137	0.0000	18.2786	18.2786	5.6000e-003	0.0000	18.3962
Total	**0.0264**	**0.2770**	**0.1845**	**2.0000e-004**	**0.0723**	**0.0149**	**0.0872**	**0.0359**	**0.0137**	**0.0496**	**0.0000**	**18.2786**	**18.2786**	**5.6000e-003**	**0.0000**	**18.3962**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0828	0.6894	1.9969	1.6100e-003	0.0445	6.4500e-003	0.0510	0.0121	5.9400e-003	0.0180	0.0000	141.1514	141.1514	8.7000e-004	0.0000	141.1696
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	4.7000e-004	4.7900e-003	1.0000e-005	8.8000e-004	1.0000e-005	8.9000e-004	2.3000e-004	1.0000e-005	2.4000e-004	0.0000	0.7686	0.7686	4.0000e-005	0.0000	0.7694
Total	**0.0832**	**0.6898**	**2.0017**	**1.6200e-003**	**0.0454**	**6.4600e-003**	**0.0519**	**0.0123**	**5.9500e-003**	**0.0183**	**0.0000**	**141.9200**	**141.9200**	**9.1000e-004**	**0.0000**	**141.9390**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0282	0.0000	0.0282	0.0140	0.0000	0.0140	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0264	0.2770	0.1845	2.0000e-004		0.0149	0.0149		0.0137	0.0137	0.0000	18.2785	18.2785	5.6000e-003	0.0000	18.3961
Total	**0.0264**	**0.2770**	**0.1845**	**2.0000e-004**	**0.0282**	**0.0149**	**0.0431**	**0.0140**	**0.0137**	**0.0277**	**0.0000**	**18.2785**	**18.2785**	**5.6000e-003**	**0.0000**	**18.3961**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0828	0.6894	1.9969	1.6100e-003	0.0445	6.4500e-003	0.0510	0.0121	5.9400e-003	0.0180	0.0000	141.1514	141.1514	8.7000e-004	0.0000	141.1696
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	4.7000e-004	4.7900e-003	1.0000e-005	8.8000e-004	1.0000e-005	8.9000e-004	2.3000e-004	1.0000e-005	2.4000e-004	0.0000	0.7686	0.7686	4.0000e-005	0.0000	0.7694
Total	**0.0832**	**0.6898**	**2.0017**	**1.6200e-003**	**0.0454**	**6.4600e-003**	**0.0519**	**0.0123**	**5.9500e-003**	**0.0183**	**0.0000**	**141.9200**	**141.9200**	**9.1000e-004**	**0.0000**	**141.9390**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2955	1.9109	1.4311	2.2000e-003		0.1226	0.1226		0.1182	0.1182	0.0000	184.5473	184.5473	0.0387	0.0000	185.3605
Total	**0.2955**	**1.9109**	**1.4311**	**2.2000e-003**		**0.1226**	**0.1226**		**0.1182**	**0.1182**	**0.0000**	**184.5473**	**184.5473**	**0.0387**	**0.0000**	**185.3605**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.8500e-003	0.0445	0.1175	1.0000e-004	3.1200e-003	6.0000e-004	3.7300e-003	8.9000e-004	5.5000e-004	1.4500e-003	0.0000	9.0741	9.0741	7.0000e-005	0.0000	9.0756
Worker	3.3800e-003	4.1700e-003	0.0428	1.0000e-004	7.8700e-003	6.0000e-005	7.9400e-003	2.0900e-003	6.0000e-005	2.1500e-003	0.0000	6.8622	6.8622	3.5000e-004	0.0000	6.8696
Total	**0.0102**	**0.0487**	**0.1602**	**2.0000e-004**	**0.0110**	**6.6000e-004**	**0.0117**	**2.9800e-003**	**6.1000e-004**	**3.6000e-003**	**0.0000**	**15.9363**	**15.9363**	**4.2000e-004**	**0.0000**	**15.9452**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2955	1.9109	1.4311	2.2000e-003		0.1226	0.1226		0.1182	0.1182	0.0000	184.5471	184.5471	0.0387	0.0000	185.3603
Total	**0.2955**	**1.9109**	**1.4311**	**2.2000e-003**		**0.1226**	**0.1226**		**0.1182**	**0.1182**	**0.0000**	**184.5471**	**184.5471**	**0.0387**	**0.0000**	**185.3603**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.8500e-003	0.0445	0.1175	1.0000e-004	3.1200e-003	6.0000e-004	3.7300e-003	8.9000e-004	5.5000e-004	1.4500e-003	0.0000	9.0741	9.0741	7.0000e-005	0.0000	9.0756
Worker	3.3800e-003	4.1700e-003	0.0428	1.0000e-004	7.8700e-003	6.0000e-005	7.9400e-003	2.0900e-003	6.0000e-005	2.1500e-003	0.0000	6.8622	6.8622	3.5000e-004	0.0000	6.8696
Total	**0.0102**	**0.0487**	**0.1602**	**2.0000e-004**	**0.0110**	**6.6000e-004**	**0.0117**	**2.9800e-003**	**6.1000e-004**	**3.6000e-003**	**0.0000**	**15.9363**	**15.9363**	**4.2000e-004**	**0.0000**	**15.9452**

3.6 Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.9300e-003	0.0605	0.0452	7.0000e-005		3.6700e-003	3.6700e-003		3.3800e-003	3.3800e-003	0.0000	6.1129	6.1129	1.8400e-003	0.0000	6.1515
Paving	1.8300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.7600e-003**	**0.0605**	**0.0452**	**7.0000e-005**		**3.6700e-003**	**3.6700e-003**		**3.3800e-003**	**3.3800e-003**	**0.0000**	**6.1129**	**6.1129**	**1.8400e-003**	**0.0000**	**6.1515**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2000e-004	2.7000e-004	2.7800e-003	1.0000e-005	5.1000e-004	0.0000	5.2000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4460	0.4460	2.0000e-005	0.0000	0.4465
Total	**2.2000e-004**	**2.7000e-004**	**2.7800e-003**	**1.0000e-005**	**5.1000e-004**	**0.0000**	**5.2000e-004**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.4460**	**0.4460**	**2.0000e-005**	**0.0000**	**0.4465**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.9300e-003	0.0605	0.0452	7.0000e-005		3.6700e-003	3.6700e-003		3.3800e-003	3.3800e-003	0.0000	6.1129	6.1129	1.8400e-003	0.0000	6.1515
Paving	1.8300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.7600e-003**	**0.0605**	**0.0452**	**7.0000e-005**		**3.6700e-003**	**3.6700e-003**		**3.3800e-003**	**3.3800e-003**	**0.0000**	**6.1129**	**6.1129**	**1.8400e-003**	**0.0000**	**6.1515**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2000e-004	2.7000e-004	2.7800e-003	1.0000e-005	5.1000e-004	0.0000	5.2000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4460	0.4460	2.0000e-005	0.0000	0.4465
Total	**2.2000e-004**	**2.7000e-004**	**2.7800e-003**	**1.0000e-005**	**5.1000e-004**	**0.0000**	**5.2000e-004**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.4460**	**0.4460**	**2.0000e-005**	**0.0000**	**0.4465**

3.7 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3541					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6600e-003	0.0109	9.3400e-003	1.0000e-005		8.7000e-004	8.7000e-004		8.7000e-004	8.7000e-004	0.0000	1.2766	1.2766	1.3000e-004	0.0000	1.2795
Total	**0.3558**	**0.0109**	**9.3400e-003**	**1.0000e-005**		**8.7000e-004**	**8.7000e-004**		**8.7000e-004**	**8.7000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.3000e-004**	**0.0000**	**1.2795**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	4.0000e-005	4.3000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0686	0.0686	0.0000	0.0000	0.0687
Total	**3.0000e-005**	**4.0000e-005**	**4.3000e-004**	**0.0000**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0686**	**0.0686**	**0.0000**	**0.0000**	**0.0687**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3541					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6600e-003	0.0109	9.3400e-003	1.0000e-005		8.7000e-004	8.7000e-004		8.7000e-004	8.7000e-004	0.0000	1.2766	1.2766	1.3000e-004	0.0000	1.2795
Total	**0.3558**	**0.0109**	**9.3400e-003**	**1.0000e-005**		**8.7000e-004**	**8.7000e-004**		**8.7000e-004**	**8.7000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.3000e-004**	**0.0000**	**1.2795**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	4.0000e-005	4.3000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0686	0.0686	0.0000	0.0000	0.0687
Total	**3.0000e-005**	**4.0000e-005**	**4.3000e-004**	**0.0000**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0686**	**0.0686**	**0.0000**	**0.0000**	**0.0687**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Diversity

Increase Transit Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.0536	1.3539	7.0453	0.0135	0.9376	0.0170	0.9546	0.2511	0.0157	0.2668	0.0000	961.3513	961.3513	0.0440	0.0000	962.2745
Unmitigated	1.0666	1.4298	7.3383	0.0145	1.0071	0.0181	1.0251	0.2697	0.0167	0.2863	0.0000	1,028.0283	1,028.0283	0.0465	0.0000	1,029.0041

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Fast Food Restaurant with Drive Thru	1,265.00	1,841.18	1383.94	1,274,704	1,186,749
General Office Building	225.99	24.26	10.35	305,652	284,562
Parking Lot	0.00	0.00	0.00		
Strip Mall	435.23	509.69	257.45	647,543	602,862
Strip Mall	57.60	67.46	34.07	85,704	79,791
Strip Mall	281.62	329.80	166.58	418,998	390,087
Total	2,265.46	2,772.39	1,852.40	2,732,601	2,544,051

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Fast Food Restaurant with Drive Thru	9.50	7.30	7.30	2.20	78.80	19.00	29	21	50
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	54	35	11
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.456583	0.078851	0.189597	0.160849	0.074758	0.010700	0.011077	0.000966	0.001372	0.000777	0.008826	0.000741	0.004904

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	75.4369	75.4369	5.4000e-003	1.1200e-003	75.8968
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	85.7344	85.7344	6.1400e-003	1.2700e-003	86.2570
NaturalGas Mitigated	2.7000e-003	0.0246	0.0207	1.5000e-004		1.8700e-003	1.8700e-003		1.8700e-003	1.8700e-003	0.0000	26.7656	26.7656	5.1000e-004	4.9000e-004	26.9285
NaturalGas Unmitigated	3.4500e-003	0.0314	0.0264	1.9000e-004		2.3900e-003	2.3900e-003		2.3900e-003	2.3900e-003	0.0000	34.1789	34.1789	6.6000e-004	6.3000e-004	34.3869

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	10246.5	6.0000e-005	5.0000e-004	4.2000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.5468	0.5468	1.0000e-005	1.0000e-005	0.5501
Strip Mall	50094	2.7000e-004	2.4600e-003	2.0600e-003	1.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	2.6732	2.6732	5.0000e-005	5.0000e-005	2.6895
Strip Mall	77418	4.2000e-004	3.7900e-003	3.1900e-003	2.0000e-005		2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004	0.0000	4.1313	4.1313	8.0000e-005	8.0000e-005	4.1565
Fast Food Restaurant with Drive Thru	300008	1.6200e-003	0.0147	0.0124	9.0000e-005		1.1200e-003	1.1200e-003		1.1200e-003	1.1200e-003	0.0000	16.0095	16.0095	3.1000e-004	2.9000e-004	16.1070
General Office Building	202722	1.0900e-003	9.9400e-003	8.3500e-003	6.0000e-005		7.6000e-004	7.6000e-004		7.6000e-004	7.6000e-004	0.0000	10.8180	10.8180	2.1000e-004	2.0000e-004	10.8838
Total		**3.4600e-003**	**0.0314**	**0.0264**	**1.8000e-004**		**2.4000e-003**	**2.4000e-003**		**2.4000e-003**	**2.4000e-003**	**0.0000**	**34.1789**	**34.1789**	**6.6000e-004**	**6.3000e-004**	**34.3869**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	33312.5	1.8000e-004	1.6300e-003	1.3700e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	1.7777	1.7777	3.0000e-005	3.0000e-005	1.7885
Strip Mall	51483	2.8000e-004	2.5200e-003	2.1200e-003	2.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	2.7473	2.7473	5.0000e-005	5.0000e-005	2.7641
Strip Mall	6813.92	4.0000e-005	3.3000e-004	2.8000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.3636	0.3636	1.0000e-005	1.0000e-005	0.3658
Fast Food Restaurant with Drive Thru	275149	1.4800e-003	0.0135	0.0113	8.0000e-005		1.0300e-003	1.0300e-003		1.0300e-003	1.0300e-003	0.0000	14.6830	14.6830	2.8000e-004	2.7000e-004	14.7724
General Office Building	134810	7.3000e-004	6.6100e-003	5.5500e-003	4.0000e-005		5.0000e-004	5.0000e-004		5.0000e-004	5.0000e-004	0.0000	7.1940	7.1940	1.4000e-004	1.3000e-004	7.2378
Total		**2.7100e-003**	**0.0246**	**0.0207**	**1.5000e-004**		**1.8700e-003**	**1.8700e-003**		**1.8700e-003**	**1.8700e-003**	**0.0000**	**26.7656**	**26.7656**	**5.1000e-004**	**4.9000e-004**	**26.9285**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Fast Food Restaurant with Drive Thru	66504	12.2171	8.7000e-004	1.8000e-004	12.2916
General Office Building	121771	22.3699	1.6000e-003	3.3000e-004	22.5063
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	101244	18.5990	1.3300e-003	2.8000e-004	18.7124
Strip Mall	156468	28.7439	2.0600e-003	4.3000e-004	28.9192
Strip Mall	20709	3.8043	2.7000e-004	6.0000e-005	3.8275
Total		**85.7343**	**6.1300e-003**	**1.2800e-003**	**86.2570**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Fast Food Restaurant with Drive Thru	62326.7	11.4497	8.2000e-004	1.7000e-004	11.5195
General Office Building	107105	19.6758	1.4100e-003	2.9000e-004	19.7957
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	135556	24.9023	1.7800e-003	3.7000e-004	25.0541
Strip Mall	17941.2	3.2959	2.4000e-004	5.0000e-005	3.3160
Strip Mall	87712.7	16.1133	1.1500e-003	2.4000e-004	16.2115
Total		**75.4369**	**5.4000e-003**	**1.1200e-003**	**75.8968**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1549	2.0000e-005	1.7100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.2900e-003	3.2900e-003	1.0000e-005	0.0000	3.4700e-003
Unmitigated	0.1549	2.0000e-005	1.7300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5200e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0354					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1194					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.6000e-004	2.0000e-005	1.7300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5200e-003
Total	**0.1549**	**2.0000e-005**	**1.7300e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.3300e-003**	**3.3300e-003**	**1.0000e-005**	**0.0000**	**3.5200e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0354					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1194					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.6000e-004	2.0000e-005	1.7100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.2900e-003	3.2900e-003	1.0000e-005	0.0000	3.4700e-003
Total	**0.1549**	**2.0000e-005**	**1.7100e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.2900e-003**	**3.2900e-003**	**1.0000e-005**	**0.0000**	**3.4700e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	4.8053	0.1012	2.4400e-003	7.6862
Unmitigated	6.3280	0.1265	3.0500e-003	9.9311

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Fast Food Restaurant with Drive Thru	0.774011 / 0.049405	1.0467	0.0253	6.1000e-004	1.7659
General Office Building	1.75245 / 1.07409	2.9886	0.0573	1.3800e-003	4.6206
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	1.34442 / 0.823997	2.2927	0.0439	1.0600e-003	3.5447
Total		**6.3280**	**0.1265**	**3.0500e-003**	**9.9311**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Fast Food Restaurant with Drive Thru	0.619209 / 0.039524	0.7860	0.0202	4.9000e-004	1.3610
General Office Building	1.40196 / 0.859268	2.2745	0.0458	1.1100e-003	3.5793
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	1.07553 / 0.659198	1.7449	0.0352	8.5000e-004	2.7459
Total		**4.8053**	**0.1012**	**2.4500e-003**	**7.6862**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	8.7692	0.5183	0.0000	19.6524
Unmitigated	11.6923	0.6910	0.0000	26.2032

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Fast Food Restaurant with Drive Thru	29.37	5.9618	0.3523	0.0000	13.3609
General Office Building	9.17	1.8614	0.1100	0.0000	4.1716
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	19.06	3.8690	0.2287	0.0000	8.6707
Total		**11.6923**	**0.6910**	**0.0000**	**26.2032**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Fast Food Restaurant with Drive Thru	22.0275	4.4714	0.2643	0.0000	10.0207
General Office Building	6.8775	1.3961	0.0825	0.0000	3.1287
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	14.295	2.9018	0.1715	0.0000	6.5030
Total		**8.7692**	**0.5183**	**0.0000**	**19.6524**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

3810 0003 Creekside AQ-GHG

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	9.86	1000sqft	0.00	9,860.00	0
Parking Lot	156.00	Space	1.40	0.00	0
Fast Food Restaurant with Drive Thru	2.55	1000sqft	0.06	2,550.00	0
Strip Mall	10.20	1000sqft	0.23	10,200.00	0
Strip Mall	1.35	1000sqft	0.03	1,350.00	0
Strip Mall	6.60	1000sqft	0.15	6,600.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	1			**Operational Year**	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	405	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Unmitigated GHG and AQ
RPS

Land Use - Based on project description

Construction Phase - Project construction would take approximately 1 year

Grading - Onsite earthwork would consist of approximate 2,041 cubic yards of cut and 44,697 cubic yards of imported fill.

Vehicle Trips - Traffic Impact Analysis for Willow Creek Plaza

Energy Use - Based on RPS

Energy Mitigation - Compliance with 2013 and 2016 Title 24 requirements

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	4.00	28.00
tblConstructionPhase	PhaseEndDate	12/29/2017	12/28/2017
tblConstructionPhase	PhaseEndDate	12/29/2017	12/15/2017
tblConstructionPhase	PhaseStartDate	12/16/2017	12/15/2017
tblConstructionPhase	PhaseStartDate	12/16/2017	12/3/2017
tblGrading	MaterialExported	0.00	44,697.00
tblGrading	MaterialImported	0.00	2,041.00
tblLandUse	LandUseSquareFeet	62,400.00	0.00
tblLandUse	LotAcreage	0.23	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	405
tblProjectCharacteristics	OperationalYear	2014	2019
tblVehicleTrips	DV_TP	19.00	35.00
tblVehicleTrips	PB_TP	4.00	11.00
tblVehicleTrips	PR_TP	77.00	54.00
tblVehicleTrips	ST_TR	2.37	2.46
tblVehicleTrips	ST_TR	42.04	49.97
tblVehicleTrips	SU_TR	0.98	1.05
tblVehicleTrips	SU_TR	20.43	25.24
tblVehicleTrips	WD_TR	496.12	496.08
tblVehicleTrips	WD_TR	11.01	22.92
tblVehicleTrips	WD_TR	44.32	42.67

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.8498	1.8000e-004	0.0192	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0408	0.0408	1.1000e-004		0.0432
Energy	0.0189	0.1720	0.1445	1.0300e-003		0.0131	0.0131		0.0131	0.0131		206.4424	206.4424	3.9600e-003	3.7800e-003	207.6988
Mobile	8.7224	9.3466	49.5525	0.1106	7.4600	0.1283	7.5883	1.9909	0.1184	2.1093		8,648.3732	8,648.3732	0.3649		8,656.0369
Total	**9.5912**	**9.5189**	**49.7162**	**0.1117**	**7.4600**	**0.1415**	**7.6015**	**1.9909**	**0.1315**	**2.1224**		**8,854.8564**	**8,854.8564**	**0.3690**	**3.7800e-003**	**8,863.7789**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.8498	1.8000e-004	0.0190	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0403	0.0403	1.1000e-004		0.0426
Energy	0.0148	0.1347	0.1132	8.1000e-004		0.0102	0.0102		0.0102	0.0102		161.6658	161.6658	3.1000e-003	2.9600e-003	162.6497
Mobile	8.6267	8.8536	47.1432	0.1034	6.9452	0.1211	7.0663	1.8535	0.1117	1.9652		8,085.5419	8,085.5419	0.3453		8,092.7924
Total	**9.4914**	**8.9885**	**47.2753**	**0.1042**	**6.9452**	**0.1314**	**7.0767**	**1.8535**	**0.1220**	**1.9756**		**8,247.2479**	**8,247.2479**	**0.3485**	**2.9600e-003**	**8,255.4846**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**1.04**	**5.57**	**4.91**	**6.65**	**6.90**	**7.12**	**6.90**	**6.90**	**7.22**	**6.92**	**0.00**	**6.86**	**6.86**	**5.57**	**21.69**	**6.86**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Diversity

Increase Transit Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	8.6267	8.8536	47.1432	0.1034	6.9452	0.1211	7.0663	1.8535	0.1117	1.9652		8,085.5419	8,085.5419	0.3453		8,092.7924
Unmitigated	8.7224	9.3466	49.5525	0.1106	7.4600	0.1283	7.5883	1.9909	0.1184	2.1093		8,648.3732	8,648.3732	0.3649		8,656.0369

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Fast Food Restaurant with Drive Thru	1,265.00	1,841.18	1383.94	1,274,704	1,186,749
General Office Building	225.99	24.26	10.35	305,652	284,562
Parking Lot	0.00	0.00	0.00		
Strip Mall	435.23	509.69	257.45	647,543	602,862
Strip Mall	57.60	67.46	34.07	85,704	79,791
Strip Mall	281.62	329.80	166.58	418,998	390,087
Total	2,265.46	2,772.39	1,852.40	2,732,601	2,544,051

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Fast Food Restaurant with Drive Thru	9.50	7.30	7.30	2.20	78.80	19.00	29	21	50
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	54	35	11
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.456583	0.078851	0.189597	0.160849	0.074758	0.010700	0.011077	0.000966	0.001372	0.000777	0.008826	0.000741	0.004904

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0148	0.1347	0.1132	8.1000e-004		0.0102	0.0102		0.0102	0.0102		161.6658	161.6658	3.1000e-003	2.9600e-003	162.6497
NaturalGas Unmitigated	0.0189	0.1720	0.1445	1.0300e-003		0.0131	0.0131		0.0131	0.0131		206.4424	206.4424	3.9600e-003	3.7800e-003	207.6988

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	137.244	1.4800e-003	0.0135	0.0113	8.0000e-005		1.0200e-003	1.0200e-003		1.0200e-003	1.0200e-003		16.1463	16.1463	3.1000e-004	3.0000e-004	16.2446
Strip Mall	212.104	2.2900e-003	0.0208	0.0175	1.2000e-004		1.5800e-003	1.5800e-003		1.5800e-003	1.5800e-003		24.9534	24.9534	4.8000e-004	4.6000e-004	25.1053
Strip Mall	28.0726	3.0000e-004	2.7500e-003	2.3100e-003	2.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004		3.3027	3.3027	6.0000e-005	6.0000e-005	3.3228
Fast Food Restaurant with Drive Thru	821.938	8.8600e-003	0.0806	0.0677	4.8000e-004		6.1200e-003	6.1200e-003		6.1200e-003	6.1200e-003		96.6986	96.6986	1.8500e-003	1.7700e-003	97.2871
General Office Building	555.402	5.9900e-003	0.0545	0.0457	3.3000e-004		4.1400e-003	4.1400e-003		4.1400e-003	4.1400e-003		65.3414	65.3414	1.2500e-003	1.2000e-003	65.7390
Total		**0.0189**	**0.1720**	**0.1445**	**1.0300e-003**		**0.0131**	**0.0131**		**0.0131**	**0.0131**		**206.4424**	**206.4424**	**3.9500e-003**	**3.7900e-003**	**207.6988**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.0186683	2.0000e-004	1.8300e-003	1.5400e-003	1.0000e-005		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004		2.1963	2.1963	4.0000e-005	4.0000e-005	2.2096
Strip Mall	0.0912672	9.8000e-004	8.9500e-003	7.5200e-003	5.0000e-005		6.8000e-004	6.8000e-004		6.8000e-004	6.8000e-004		10.7373	10.7373	2.1000e-004	2.0000e-004	10.8027
Strip Mall	0.141049	1.5200e-003	0.0138	0.0116	8.0000e-005		1.0500e-003	1.0500e-003		1.0500e-003	1.0500e-003		16.5940	16.5940	3.2000e-004	3.0000e-004	16.6950
Fast Food Restaurant with Drive Thru	0.753832	8.1300e-003	0.0739	0.0621	4.4000e-004		5.6200e-003	5.6200e-003		5.6200e-003	5.6200e-003		88.6862	88.6862	1.7000e-003	1.6300e-003	89.2259
General Office Building	0.369342	3.9800e-003	0.0362	0.0304	2.2000e-004		2.7500e-003	2.7500e-003		2.7500e-003	2.7500e-003		43.4520	43.4520	8.3000e-004	8.0000e-004	43.7165
Total		**0.0148**	**0.1347**	**0.1132**	**8.0000e-004**		**0.0102**	**0.0102**		**0.0102**	**0.0102**		**161.6658**	**161.6658**	**3.1000e-003**	**2.9700e-003**	**162.6497**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.8498	1.8000e-004	0.0190	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0403	0.0403	1.1000e-004		0.0426
Unmitigated	0.8498	1.8000e-004	0.0192	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0408	0.0408	1.1000e-004		0.0432

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1940					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.6540					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.8200e-003	1.8000e-004	0.0192	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0408	0.0408	1.1000e-004		0.0432
Total	**0.8498**	**1.8000e-004**	**0.0192**	**0.0000**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**		**0.0408**	**0.0408**	**1.1000e-004**		**0.0432**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1940					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.6540					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.7900e-003	1.8000e-004	0.0190	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0403	0.0403	1.1000e-004		0.0426
Total	**0.8498**	**1.8000e-004**	**0.0190**	**0.0000**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**		**0.0403**	**0.0403**	**1.1000e-004**		**0.0426**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

3810 0003 Creekside AQ-GHG

El Dorado-Mountain County County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	9.86	1000sqft	0.00	9,860.00	0
Parking Lot	156.00	Space	1.40	0.00	0
Fast Food Restaurant with Drive Thru	2.55	1000sqft	0.06	2,550.00	0
Strip Mall	10.20	1000sqft	0.23	10,200.00	0
Strip Mall	1.35	1000sqft	0.03	1,350.00	0
Strip Mall	6.60	1000sqft	0.15	6,600.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	1			**Operational Year**	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	405	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Unmitigated GHG and AQ
RPS

Land Use - Based on project description

Construction Phase - Project construction would take approximately 1 year

Grading - Onsite earthwork would consist of approximate 2,041 cubic yards of cut and 44,697 cubic yards of imported fill.

Vehicle Trips - Traffic Impact Analysis for Willow Creek Plaza

Energy Use - Based on RPS

Energy Mitigation - Compliance with 2013 and 2016 Title 24 requirements

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	4.00	28.00
tblConstructionPhase	PhaseEndDate	12/29/2017	12/28/2017
tblConstructionPhase	PhaseEndDate	12/29/2017	12/15/2017
tblConstructionPhase	PhaseStartDate	12/16/2017	12/15/2017
tblConstructionPhase	PhaseStartDate	12/16/2017	12/3/2017
tblGrading	MaterialExported	0.00	44,697.00
tblGrading	MaterialImported	0.00	2,041.00
tblLandUse	LandUseSquareFeet	62,400.00	0.00
tblLandUse	LotAcreage	0.23	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	405
tblProjectCharacteristics	OperationalYear	2014	2019
tblVehicleTrips	DV_TP	19.00	35.00
tblVehicleTrips	PB_TP	4.00	11.00
tblVehicleTrips	PR_TP	77.00	54.00
tblVehicleTrips	ST_TR	2.37	2.46
tblVehicleTrips	ST_TR	42.04	49.97
tblVehicleTrips	SU_TR	0.98	1.05
tblVehicleTrips	SU_TR	20.43	25.24
tblVehicleTrips	WD_TR	496.12	496.08
tblVehicleTrips	WD_TR	11.01	22.92
tblVehicleTrips	WD_TR	44.32	42.67

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.8498	1.8000e-004	0.0192	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0408	0.0408	1.1000e-004		0.0432
Energy	0.0189	0.1720	0.1445	1.0300e-003		0.0131	0.0131		0.0131	0.0131		206.4424	206.4424	3.9600e-003	3.7800e-003	207.6988
Mobile	8.0454	10.5878	57.4753	0.1010	7.4600	0.1290	7.5890	1.9909	0.1190	2.1099		7,914.8183	7,914.8183	0.3651		7,922.4847
Total	**8.9142**	**10.7600**	**57.6390**	**0.1021**	**7.4600**	**0.1421**	**7.6021**	**1.9909**	**0.1321**	**2.1230**		**8,121.3015**	**8,121.3015**	**0.3691**	**3.7800e-003**	**8,130.2266**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.8498	1.8000e-004	0.0190	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0403	0.0403	1.1000e-004		0.0426
Energy	0.0148	0.1347	0.1132	8.1000e-004		0.0102	0.0102		0.0102	0.0102		161.6658	161.6658	3.1000e-003	2.9600e-003	162.6497
Mobile	7.9532	10.0287	55.4295	0.0945	6.9452	0.1217	7.0670	1.8535	0.1123	1.9658		7,402.0861	7,402.0861	0.3454		7,409.3392
Total	**8.8179**	**10.1636**	**55.5617**	**0.0953**	**6.9452**	**0.1321**	**7.0773**	**1.8535**	**0.1226**	**1.9761**		**7,563.7921**	**7,563.7921**	**0.3486**	**2.9600e-003**	**7,572.0314**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**1.08**	**5.54**	**3.60**	**6.61**	**6.90**	**7.08**	**6.90**	**6.90**	**7.19**	**6.92**	**0.00**	**6.86**	**6.86**	**5.56**	**21.69**	**6.87**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Diversity

Increase Transit Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	7.9532	10.0287	55.4295	0.0945	6.9452	0.1217	7.0670	1.8535	0.1123	1.9658		7,402.0861	7,402.0861	0.3454		7,409.3392
Unmitigated	8.0454	10.5878	57.4753	0.1010	7.4600	0.1290	7.5890	1.9909	0.1190	2.1099		7,914.8183	7,914.8183	0.3651		7,922.4847

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Fast Food Restaurant with Drive Thru	1,265.00	1,841.18	1383.94	1,274,704	1,186,749
General Office Building	225.99	24.26	10.35	305,652	284,562
Parking Lot	0.00	0.00	0.00		
Strip Mall	435.23	509.69	257.45	647,543	602,862
Strip Mall	57.60	67.46	34.07	85,704	79,791
Strip Mall	281.62	329.80	166.58	418,998	390,087
Total	2,265.46	2,772.39	1,852.40	2,732,601	2,544,051

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Fast Food Restaurant with Drive Thru	9.50	7.30	7.30	2.20	78.80	19.00	29	21	50
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	54	35	11
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.456583	0.078851	0.189597	0.160849	0.074758	0.010700	0.011077	0.000966	0.001372	0.000777	0.008826	0.000741	0.004904

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0148	0.1347	0.1132	8.1000e-004		0.0102	0.0102		0.0102	0.0102		161.6658	161.6658	3.1000e-003	2.9600e-003	162.6497
NaturalGas Unmitigated	0.0189	0.1720	0.1445	1.0300e-003		0.0131	0.0131		0.0131	0.0131		206.4424	206.4424	3.9600e-003	3.7800e-003	207.6988

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	137.244	1.4800e-003	0.0135	0.0113	8.0000e-005		1.0200e-003	1.0200e-003		1.0200e-003	1.0200e-003		16.1463	16.1463	3.1000e-004	3.0000e-004	16.2446
Strip Mall	212.104	2.2900e-003	0.0208	0.0175	1.2000e-004		1.5800e-003	1.5800e-003		1.5800e-003	1.5800e-003		24.9534	24.9534	4.8000e-004	4.6000e-004	25.1053
Strip Mall	28.0726	3.0000e-004	2.7500e-003	2.3100e-003	2.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004		3.3027	3.3027	6.0000e-005	6.0000e-005	3.3228
Fast Food Restaurant with Drive Thru	821.938	8.8600e-003	0.0806	0.0677	4.8000e-004		6.1200e-003	6.1200e-003		6.1200e-003	6.1200e-003		96.6986	96.6986	1.8500e-003	1.7700e-003	97.2871
General Office Building	555.402	5.9900e-003	0.0545	0.0457	3.3000e-004		4.1400e-003	4.1400e-003		4.1400e-003	4.1400e-003		65.3414	65.3414	1.2500e-003	1.2000e-003	65.7390
Total		**0.0189**	**0.1720**	**0.1445**	**1.0300e-003**		**0.0131**	**0.0131**		**0.0131**	**0.0131**		**206.4424**	**206.4424**	**3.9500e-003**	**3.7900e-003**	**207.6988**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.0186683	2.0000e-004	1.8300e-003	1.5400e-003	1.0000e-005		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004		2.1963	2.1963	4.0000e-005	4.0000e-005	2.2096
Strip Mall	0.0912672	9.8000e-004	8.9500e-003	7.5200e-003	5.0000e-005		6.8000e-004	6.8000e-004		6.8000e-004	6.8000e-004		10.7373	10.7373	2.1000e-004	2.0000e-004	10.8027
Strip Mall	0.141049	1.5200e-003	0.0138	0.0116	8.0000e-005		1.0500e-003	1.0500e-003		1.0500e-003	1.0500e-003		16.5940	16.5940	3.2000e-004	3.0000e-004	16.6950
Fast Food Restaurant with Drive Thru	0.753832	8.1300e-003	0.0739	0.0621	4.4000e-004		5.6200e-003	5.6200e-003		5.6200e-003	5.6200e-003		88.6862	88.6862	1.7000e-003	1.6300e-003	89.2259
General Office Building	0.369342	3.9800e-003	0.0362	0.0304	2.2000e-004		2.7500e-003	2.7500e-003		2.7500e-003	2.7500e-003		43.4520	43.4520	8.3000e-004	8.0000e-004	43.7165
Total		**0.0148**	**0.1347**	**0.1132**	**8.0000e-004**		**0.0102**	**0.0102**		**0.0102**	**0.0102**		**161.6658**	**161.6658**	**3.1000e-003**	**2.9700e-003**	**162.6497**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.8498	1.8000e-004	0.0190	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0403	0.0403	1.1000e-004		0.0426
Unmitigated	0.8498	1.8000e-004	0.0192	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0408	0.0408	1.1000e-004		0.0432

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1940					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.6540					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.8200e-003	1.8000e-004	0.0192	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0408	0.0408	1.1000e-004		0.0432
Total	**0.8498**	**1.8000e-004**	**0.0192**	**0.0000**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**		**0.0408**	**0.0408**	**1.1000e-004**		**0.0432**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1940					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.6540					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.7900e-003	1.8000e-004	0.0190	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0403	0.0403	1.1000e-004		0.0426
Total	**0.8498**	**1.8000e-004**	**0.0190**	**0.0000**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**		**0.0403**	**0.0403**	**1.1000e-004**		**0.0426**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

3810 0003 Creekside AQ-GHG BAU

El Dorado-Mountain County County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	9.86	1000sqft	0.00	9,860.00	0
Parking Lot	156.00	Space	1.40	0.00	0
Fast Food Restaurant with Drive Thru	2.55	1000sqft	0.06	2,550.00	0
Strip Mall	10.20	1000sqft	0.23	10,200.00	0
Strip Mall	1.35	1000sqft	0.03	1,350.00	0
Strip Mall	6.60	1000sqft	0.15	6,600.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	1			**Operational Year**	2005
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Based on project description

Construction Phase - Operations only

Off-road Equipment - Operations only

Trips and VMT - Operations only

Vehicle Trips - December 2014 Traffic Impact Analysis for Willow Creek Plaza

Vechicle Emission Factors - 2020 Fleet Mix

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	1.00
tblLandUse	LandUseSquareFeet	62,400.00	0.00
tblLandUse	LotAcreage	0.23	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblProjectCharacteristics	OperationalYear	2014	2005
tblTripsAndVMT	WorkerTripNumber	2.00	0.00
tblVehicleEF	HHD	1.5390e-003	9.5300e-004
tblVehicleEF	LDA	0.40	0.46
tblVehicleEF	LDT1	0.18	0.08
tblVehicleEF	LDT2	0.22	0.19
tblVehicleEF	LHD1	0.03	0.07
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	MCY	0.01	8.9300e-003
tblVehicleEF	MDV	0.11	0.16
tblVehicleEF	MH	5.5550e-003	4.9130e-003
tblVehicleEF	MHD	8.9800e-003	0.01
tblVehicleEF	OBUS	9.4900e-004	1.3800e-003
tblVehicleEF	SBUS	1.2040e-003	7.4000e-004
tblVehicleEF	UBUS	4.0700e-004	7.8000e-004
tblVehicleTrips	ST_TR	2.37	2.46
tblVehicleTrips	ST_TR	42.04	49.97
tblVehicleTrips	SU_TR	0.98	1.05
tblVehicleTrips	SU_TR	20.43	25.24
tblVehicleTrips	WD_TR	496.12	496.08
tblVehicleTrips	WD_TR	11.01	22.92
tblVehicleTrips	WD_TR	44.32	42.67

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.0000	3.3300e-003	3.3300e-003	2.0000e-005	0.0000	3.6600e-003
Energy											0.0000	169.9461	169.9461	6.7900e-003	1.9000e-003	170.6767
Mobile											0.0000	1,393.4558	1,393.4558	0.1481	0.0000	1,396.5663
Waste											11.6923	0.0000	11.6923	0.6910	0.0000	26.2032
Water											1.2281	8.0762	9.3042	0.1265	3.0500e-003	12.9074
Total											**12.9203**	**1,571.4813**	**1,584.4016**	**0.9724**	**4.9500e-003**	**1,606.3572**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.0000	3.3300e-003	3.3300e-003	2.0000e-005	0.0000	3.6600e-003
Energy											0.0000	169.9461	169.9461	6.7900e-003	1.9000e-003	170.6767
Mobile											0.0000	1,393.4558	1,393.4558	0.1481	0.0000	1,396.5663
Waste											11.6923	0.0000	11.6923	0.6910	0.0000	26.2032
Water											1.2281	8.0762	9.3042	0.1265	3.0500e-003	12.9054
Total											**12.9203**	**1,571.4813**	**1,584.4016**	**0.9724**	**4.9500e-003**	**1,606.3553**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.0000	1,393.4558	1,393.4558	0.1481	0.0000	1,396.5663
Unmitigated											0.0000	1,393.4558	1,393.4558	0.1481	0.0000	1,396.5663

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Fast Food Restaurant with Drive Thru	1,265.00	1,841.18	1383.94	1,274,704	1,274,704
General Office Building	225.99	24.26	10.35	397,575	397,575
Parking Lot	0.00	0.00	0.00		
Strip Mall	435.23	509.69	257.45	647,543	647,543
Strip Mall	57.60	67.46	34.07	85,704	85,704
Strip Mall	281.62	329.80	166.58	418,998	418,998
Total	2,265.46	2,772.39	1,852.40	2,824,523	2,824,523

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Fast Food Restaurant with Drive Thru	9.50	7.30	7.30	2.20	78.80	19.00	29	21	50
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.456027	0.079225	0.189471	0.160757	0.074654	0.010795	0.011376	0.000953	0.001380	0.000780	0.008930	0.000740	0.004913

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated											0.0000	135.7672	135.7672	6.1400e-003	1.2700e-003	136.2899
Electricity Unmitigated											0.0000	135.7672	135.7672	6.1400e-003	1.2700e-003	136.2899
NaturalGas Mitigated											0.0000	34.1789	34.1789	6.6000e-004	6.3000e-004	34.3869
NaturalGas Unmitigated											0.0000	34.1789	34.1789	6.6000e-004	6.3000e-004	34.3869

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Fast Food Restaurant with Drive Thru	300008											0.0000	16.0095	16.0095	3.1000e-004	2.9000e-004	16.1070
General Office Building	202722											0.0000	10.8180	10.8180	2.1000e-004	2.0000e-004	10.8838
Parking Lot	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	10246.5											0.0000	0.5468	0.5468	1.0000e-005	1.0000e-005	0.5501
Strip Mall	50094											0.0000	2.6732	2.6732	5.0000e-005	5.0000e-005	2.6895
Strip Mall	77418											0.0000	4.1313	4.1313	8.0000e-005	8.0000e-005	4.1565
Total												**0.0000**	**34.1789**	**34.1789**	**6.6000e-004**	**6.3000e-004**	**34.3869**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Fast Food Restaurant with Drive Thru	300008											0.0000	16.0095	16.0095	3.1000e-004	2.9000e-004	16.1070
General Office Building	202722											0.0000	10.8180	10.8180	2.1000e-004	2.0000e-004	10.8838
Parking Lot	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	10246.5											0.0000	0.5468	0.5468	1.0000e-005	1.0000e-005	0.5501
Strip Mall	50094											0.0000	2.6732	2.6732	5.0000e-005	5.0000e-005	2.6895
Strip Mall	77418											0.0000	4.1313	4.1313	8.0000e-005	8.0000e-005	4.1565
Total												**0.0000**	**34.1789**	**34.1789**	**6.6000e-004**	**6.3000e-004**	**34.3869**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Fast Food Restaurant with Drive Thru	66504	19.3468	8.7000e-004	1.8000e-004	19.4213
General Office Building	121771	35.4246	1.6000e-003	3.3000e-004	35.5610
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	101244	29.4530	1.3300e-003	2.8000e-004	29.5664
Strip Mall	156468	45.5183	2.0600e-003	4.3000e-004	45.6936
Strip Mall	20709	6.0245	2.7000e-004	6.0000e-005	6.0477
Total		**135.7672**	**6.1300e-003**	**1.2800e-003**	**136.2899**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Fast Food Restaurant with Drive Thru	66504	19.3468	8.7000e-004	1.8000e-004	19.4213
General Office Building	121771	35.4246	1.6000e-003	3.3000e-004	35.5610
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	101244	29.4530	1.3300e-003	2.8000e-004	29.5664
Strip Mall	156468	45.5183	2.0600e-003	4.3000e-004	45.6936
Strip Mall	20709	6.0245	2.7000e-004	6.0000e-005	6.0477
Total		**135.7672**	**6.1300e-003**	**1.2800e-003**	**136.2899**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.0000	3.3300e-003	3.3300e-003	2.0000e-005	0.0000	3.6600e-003
Unmitigated											0.0000	3.3300e-003	3.3300e-003	2.0000e-005	0.0000	3.6600e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping											0.0000	3.3300e-003	3.3300e-003	2.0000e-005	0.0000	3.6600e-003
Total											**0.0000**	**3.3300e-003**	**3.3300e-003**	**2.0000e-005**	**0.0000**	**3.6600e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping											0.0000	3.3300e-003	3.3300e-003	2.0000e-005	0.0000	3.6600e-003
Total											**0.0000**	**3.3300e-003**	**3.3300e-003**	**2.0000e-005**	**0.0000**	**3.6600e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	9.3042	0.1265	3.0500e-003	12.9054
Unmitigated	9.3042	0.1265	3.0500e-003	12.9074

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Fast Food Restaurant with Drive Thru	0.774011 / 0.049405	1.5143	0.0253	6.1000e-004	2.2334
General Office Building	1.75245 / 1.07409	4.4082	0.0573	1.3800e-003	6.0402
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	1.34442 / 0.823997	3.3818	0.0439	1.0600e-003	4.6338
Total		**9.3042**	**0.1265**	**3.0500e-003**	**12.9074**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Fast Food Restaurant with Drive Thru	0.774011 / 0.049405	1.5143	0.0253	6.1000e-004	2.2330
General Office Building	1.75245 / 1.07409	4.4082	0.0573	1.3800e-003	6.0393
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	1.34442 / 0.823997	3.3818	0.0439	1.0600e-003	4.6331
Total		**9.3042**	**0.1265**	**3.0500e-003**	**12.9054**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	11.6923	0.6910	0.0000	26.2032
Mitigated	11.6923	0.6910	0.0000	26.2032

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Fast Food Restaurant with Drive Thru	29.37	5.9618	0.3523	0.0000	13.3609
General Office Building	9.17	1.8614	0.1100	0.0000	4.1716
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	19.06	3.8690	0.2287	0.0000	8.6707
Total		**11.6923**	**0.6910**	**0.0000**	**26.2032**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Fast Food Restaurant with Drive Thru	29.37	5.9618	0.3523	0.0000	13.3609
General Office Building	9.17	1.8614	0.1100	0.0000	4.1716
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	19.06	3.8690	0.2287	0.0000	8.6707
Total		**11.6923**	**0.6910**	**0.0000**	**26.2032**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

3810 0003 Creekside AQ-GHG 2020

El Dorado-Mountain County County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	9.86	1000sqft	0.00	9,860.00	0
Parking Lot	156.00	Space	1.40	0.00	0
Fast Food Restaurant with Drive Thru	2.55	1000sqft	0.06	2,550.00	0
Strip Mall	10.20	1000sqft	0.23	10,200.00	0
Strip Mall	1.35	1000sqft	0.03	1,350.00	0
Strip Mall	6.60	1000sqft	0.15	6,600.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	1			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	491.65	**CH4 Intensity (lb/MWhr)**	0.022	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Based on Renewable Portfolio Standard

Land Use - Based on project description

Construction Phase - Operations only

Off-road Equipment - Operations only

Trips and VMT - Operations only

Vehicle Trips - December 2014 Traffic Impact Analysis for Willow Creek Plaza

Vechicle Emission Factors - Emissions of light duty autos adjusted to reflect clean car standards as determined by Pavley II (3% reduction).

Energy Use - Based on Renewable Portfolio Standard

Mobile Land Use Mitigation -

Energy Mitigation - Compliance with 2013 Title 24 requirements

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	1.00
tblLandUse	LandUseSquareFeet	62,400.00	0.00
tblLandUse	LotAcreage	0.23	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.022
tblProjectCharacteristics	CO2IntensityFactor	641.35	491.65
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2020
tblTripsAndVMT	WorkerTripNumber	2.00	0.00
tblVehicleEF	LDA	8.6950e-003	8.4340e-003
tblVehicleEF	LDA	6.2840e-003	6.0950e-003
tblVehicleEF	LDA	229.41	222.53
tblVehicleEF	LDA	52.06	50.50
tblVehicleEF	LDA	0.07	0.07
tblVehicleEF	LDA	0.10	0.10
tblVehicleEF	LDT1	0.02	0.02
tblVehicleEF	LDT1	0.02	0.02
tblVehicleEF	LDT1	281.87	273.42
tblVehicleEF	LDT1	62.97	61.09
tblVehicleEF	LDT1	0.19	0.19
tblVehicleEF	LDT1	0.22	0.21
tblVehicleEF	LDT2	0.01	0.01
tblVehicleEF	LDT2	9.7190e-003	9.4270e-003
tblVehicleEF	LDT2	347.61	337.19
tblVehicleEF	LDT2	77.22	74.90
tblVehicleEF	LDT2	0.13	0.12
tblVehicleEF	LDT2	0.19	0.19
tblVehicleTrips	ST_TR	2.37	2.46
tblVehicleTrips	ST_TR	42.04	49.97
tblVehicleTrips	SU_TR	0.98	1.05
tblVehicleTrips	SU_TR	20.43	25.24
tblVehicleTrips	WD_TR	496.12	496.08
tblVehicleTrips	WD_TR	11.01	22.92
tblVehicleTrips	WD_TR	44.32	42.67

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5200e-003
Energy											0.0000	138.2561	138.2561	5.3100e-003	1.6900e-003	138.8901
Mobile											0.0000	1,007.1276	1,007.1276	0.0440	0.0000	1,008.0524
Waste											11.6923	0.0000	11.6923	0.6910	0.0000	26.2032
Water											1.2281	6.1911	7.4191	0.1264	3.0400e-003	11.0165
Total											**12.9203**	**1,151.5781**	**1,164.4985**	**0.8668**	**4.7300e-003**	**1,184.1656**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.0000	3.2900e-003	3.2900e-003	1.0000e-005	0.0000	3.4700e-003
Energy											0.0000	120.4228	120.4228	4.6800e-003	1.4500e-003	120.9705
Mobile											0.0000	941.6779	941.6779	0.0416	0.0000	942.5520
Waste											11.6923	0.0000	11.6923	0.6910	0.0000	26.2032
Water											0.9824	4.6408	5.6232	0.1011	2.4300e-003	8.4998
Total											**12.6747**	**1,066.7447**	**1,079.4195**	**0.8384**	**3.8800e-003**	**1,098.2289**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.90**	**7.37**	**7.31**	**3.27**	**17.97**	**7.26**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Diversity

Increase Transit Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.0000	941.6779	941.6779	0.0416	0.0000	942.5520
Unmitigated											0.0000	1,007.1276	1,007.1276	0.0440	0.0000	1,008.0524

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Fast Food Restaurant with Drive Thru	1,265.00	1,841.18	1383.94	1,274,704	1,186,749
General Office Building	225.99	24.26	10.35	397,575	370,142
Parking Lot	0.00	0.00	0.00		
Strip Mall	435.23	509.69	257.45	647,543	602,862
Strip Mall	57.60	67.46	34.07	85,704	79,791
Strip Mall	281.62	329.80	166.58	418,998	390,087
Total	2,265.46	2,772.39	1,852.40	2,824,523	2,629,631

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Fast Food Restaurant with Drive	9.50	7.30	7.30	2.20	78.80	19.00	29	21	50
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.456027	0.079225	0.189471	0.160757	0.074654	0.010795	0.011376	0.000953	0.001380	0.000780	0.008930	0.000740	0.004913

5.0 Energy Detail

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated											0.0000	92.8827	92.8827	4.1600e-003	9.4000e-004	93.2628
Electricity Unmitigated											0.0000	104.0773	104.0773	4.6600e-003	1.0600e-003	104.5032
NaturalGas Mitigated											0.0000	27.5401	27.5401	5.3000e-004	5.0000e-004	27.7077
NaturalGas Unmitigated											0.0000	34.1789	34.1789	6.6000e-004	6.3000e-004	34.3869

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Fast Food Restaurant with Drive Thru	300008											0.0000	16.0095	16.0095	3.1000e-004	2.9000e-004	16.1070
General Office Building	202722											0.0000	10.8180	10.8180	2.1000e-004	2.0000e-004	10.8838
Parking Lot	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	10246.5											0.0000	0.5468	0.5468	1.0000e-005	1.0000e-005	0.5501
Strip Mall	50094											0.0000	2.6732	2.6732	5.0000e-005	5.0000e-005	2.6895
Strip Mall	77418											0.0000	4.1313	4.1313	8.0000e-005	8.0000e-005	4.1565
Total												**0.0000**	**34.1789**	**34.1789**	**6.6000e-004**	**6.3000e-004**	**34.3869**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Fast Food Restaurant with Drive Thru	277746											0.0000	14.8216	14.8216	2.8000e-004	2.7000e-004	14.9118
General Office Building	141905											0.0000	7.5726	7.5726	1.5000e-004	1.4000e-004	7.6187
Parking Lot	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	35065.8											0.0000	1.8712	1.8712	4.0000e-005	3.0000e-005	1.8826
Strip Mall	54192.6											0.0000	2.8919	2.8919	6.0000e-005	5.0000e-005	2.9095
Strip Mall	7172.55											0.0000	0.3828	0.3828	1.0000e-005	1.0000e-005	0.3851
Total												**0.0000**	**27.5401**	**27.5401**	**5.4000e-004**	**5.0000e-004**	**27.7077**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Fast Food Restaurant with Drive Thru	66504	14.8310	6.6000e-004	1.5000e-004	14.8917
General Office Building	121771	27.1560	1.2200e-003	2.8000e-004	27.2671
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	101244	22.5783	1.0100e-003	2.3000e-004	22.6707
Strip Mall	156468	34.8937	1.5600e-003	3.5000e-004	35.0365
Strip Mall	20709	4.6183	2.1000e-004	5.0000e-005	4.6372
Total		**104.0773**	**4.6600e-003**	**1.0600e-003**	**104.5032**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Fast Food Restaurant with Drive Thru	62763.2	13.9967	6.3000e-004	1.4000e-004	14.0540
General Office Building	108637	24.2271	1.0800e-003	2.5000e-004	24.3263
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	137741	30.7174	1.3700e-003	3.1000e-004	30.8431
Strip Mall	18230.4	4.0655	1.8000e-004	4.0000e-005	4.0822
Strip Mall	89126.4	19.8760	8.9000e-004	2.0000e-004	19.9573
Total		**92.8827**	**4.1500e-003**	**9.4000e-004**	**93.2628**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.0000	3.2900e-003	3.2900e-003	1.0000e-005	0.0000	3.4700e-003
Unmitigated											0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5200e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping											0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5200e-003
Total											**0.0000**	**3.3300e-003**	**3.3300e-003**	**1.0000e-005**	**0.0000**	**3.5200e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping											0.0000	3.2900e-003	3.2900e-003	1.0000e-005	0.0000	3.4700e-003
Total											**0.0000**	**3.2900e-003**	**3.2900e-003**	**1.0000e-005**	**0.0000**	**3.4700e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	5.6232	0.1011	2.4300e-003	8.4998
Unmitigated	7.4191	0.1264	3.0400e-003	11.0165

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Fast Food Restaurant with Drive Thru	0.774011 / 0.049405	1.2181	0.0253	6.1000e-004	1.9364
General Office Building	1.75245 / 1.07409	3.5090	0.0572	1.3800e-003	5.1383
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	1.34442 / 0.823997	2.6920	0.0439	1.0600e-003	3.9419
Total		**7.4191**	**0.1264**	**3.0500e-003**	**11.0165**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Fast Food Restaurant with Drive Thru	0.619209 / 0.039524	0.9121	0.0202	4.8000e-004	1.4864
General Office Building	1.40196 / 0.859268	2.6659	0.0458	1.1000e-003	3.9687
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	1.07553 / 0.659198	2.0452	0.0351	8.4000e-004	3.0447
Total		**5.6232**	**0.1011**	**2.4200e-003**	**8.4998**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	11.6923	0.6910	0.0000	26.2032
Mitigated	11.6923	0.6910	0.0000	26.2032

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Fast Food Restaurant with Drive Thru	29.37	5.9618	0.3523	0.0000	13.3609
General Office Building	9.17	1.8614	0.1100	0.0000	4.1716
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	19.06	3.8690	0.2287	0.0000	8.6707
Total		**11.6923**	**0.6910**	**0.0000**	**26.2032**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Fast Food Restaurant with Drive Thru	29.37	5.9618	0.3523	0.0000	13.3609
General Office Building	9.17	1.8614	0.1100	0.0000	4.1716
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	19.06	3.8690	0.2287	0.0000	8.6707
Total		**11.6923**	**0.6910**	**0.0000**	**26.2032**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Appendix C:
Traffic Impact Analysis

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TRAFFIC IMPACT ANALYSIS

FOR

CREEKSIDE PLAZA
Missouri Flat Road at Forni Road
El Dorado County CA

Prepared For:

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September 25, 2017

3486-03

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TRAFFIC IMPACT ANALYSIS FOR
CREEKSIDE PLAZA
Missouri Flat Road at Forni Road
El Dorado County

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TRAFFIC IMPACT ANALYSIS FOR
CREEKSIDE PLAZA
Missouri Flat Road at Forni Road
El Dorado County

EXECUTIVE SUMMARY

- **Project Description.** The Creekside Plaza project consists of three buildings located in the northwest quadrant of the Missouri Flat Road / Forni Road intersection. One building will be two-stories and consist of mixed uses including 10,200 square feet of retail uses on the ground floor and 9,860 square feet of professional office on the second floor. A second building will consist of 6,600 square feet of retail uses. The third building will include 1,350 square feet of retail uses and a fast food restaurant with drive-through totaling 2,550 square feet (sf). The project is expected to generate approximately 1,646 new daily trips, with 106 new trips occurring during the a.m. peak hour and 198 new trips generated during the p.m. peak hour. Access to the site will be from three access driveways. One driveway will provide full access by adding a fourth leg to the Forni Road / Golden Center Drive intersection. Two driveways are along Missouri Flat Road with the southern driveway consisting of right-in and right-out only movements. The northern driveway will have access from Road 2233 which has full access onto Missouri Flat Road.

- **Existing Setting.** The study areas addressed traffic conditions at eleven existing intersections on Missouri Flat Road. Traffic volume data was obtained from the traffic study prepared for the *Diamond Springs / El Dorado Area Mobility and Livable Community Plan (DSEDAMLCP)* and from counts conducted in July 2014. New traffic counts were also completed during the first week of May 2017. Each study intersection was reviewed to determine the percentage increase or decrease in traffic volumes between 2014 and 2017. Eight intersections experienced increases in traffic volumes of 8.0% or less while three intersections, Missouri Flat Road at Industrial Drive, Missouri Flat Road at Enterprise Drive and Missouri Flat Road at Pleasant Valley Road experienced traffic volume increases of up to 11.4%.

  Generally accepted practice is to conduct peak hour traffic counts for one day during the mid-week (Tuesday, Wednesday or Thursday) during a typical week. Traffic counts will vary on a daily basis and the FHWA's *Traffic Monitoring Guide* identifies that volumes within a 10% variance are acceptable. The majority of intersections meet the FHWA criteria; therefore, the traffic volumes used in preparation of the December 2014 report were used as the basis for existing conditions.

  Intersection Level of Service calculations were made using *Synchro-SimTraffic* software. In addition, intersections that have two-way left-turn-lanes (TWLTL) were also analyzed using Synchro 2010 LOS methodology as SimTraffic is not able to analyze two-stage gap acceptance at these intersections. Missouri Flat Road was divided into three roadway

segments between US 50 and Pleasant Valley Road, and these roadway segments were analyzed using the methods presented in the *Highway Capacity Manual 2010 (HCM)*.

Intersections

All intersections, except the Missouri Flat Road / China Garden Road and Missouri Flat Road / Enterprise Drive intersections operate within acceptable El Dorado County LOS thresholds.

- Missouri Flat Road / China Garden Road: The eastbound driveway opposite China Garden Road and the China Garden Road approach will operate at LOS F in the a.m. peak hour. While this intersection is at the boundary of a segment allowed to operate at LOS F a conservative approach was undertaken assuming the LOS E threshold. The intersection does not meet the peak hour signal warrant including both volume and delay. Therefore, this is not considered a significant impact.

  As a result of the mitigations identified in the *El Dorado County Public Safety Facility Project Draft EIR,* side street approaches to the Missouri Flat Road / China Garden Road intersection will be limited to right turns only. The DEIR noted two alternative mitigations for this intersection, installation of a traffic signal or limiting minor street access to right turns only. County staff determined that a signal at China Garden Road is not the preferred alternative based on the installation of a future traffic signal at Industrial Drive as part of the *El Dorado County Public Safety Facility Project*. Implementation of a right-turn only along China Garden Road will result in LOS D (31.5 spv) conditions for side street traffic. Due to access considerations, the County has determined that the right-in, right-out reconfiguration of the intersection will be modified once Diamond Springs Parkway is completed.

- Missouri Flat Road / Enterprise Drive: The eastbound approach of the intersection operates at LOS F and the intersection meets the peak hour signal warrant. Signalization of the intersection will result in LOS A conditions in the a.m. peak hour (7.9 spv) and LOS B in the p.m. peak hour (11.0 spv). The County's 20-Year Capital Improvement Program (CIP) identifies approximately $35.3 million for Traffic Signal and Intersection Operational Improvements. This intersection should be programmed for improvement as part of this CIP. When installed, this signal should be coordinated with adjacent signals. This will require installation of signal interconnect cable or other type of communication.

Queues

Under current conditions nine movements have queues that exceed the available storage. These include:

Missouri Flat Road / WB US 50 ramps
- NB left turn lane

Missouri Flat Road / EB US 50 ramps
- NB through lane
- SB left turn lane
- SB through lane

Missouri Flat Road / Mother Lode Drive
- SB through

Missouri Flat Road / Forni Road
- SB right turn
- EB left turn

Missouri Flat Road / SR 49
- EB left turn
- WB right turn

Roadway Segments
All roadway segments will operate within the County level of service threshold, at LOS E or better.

- **Existing Plus Project Impacts.** The operation of the proposed project will increase the volume of traffic on the study area circulation system.

  Intersections
  All intersections except the Missouri Flat Road / China Garden Road and Missouri Flat Road / Enterprise Drive intersections will operate within acceptable El Dorado County LOS thresholds. The following mitigations are noted:

  - The project shall contribute its fair share to the cost of regional circulation improvements via the existing countywide traffic impact mitigation (TIM) fee program.

  - Missouri Flat Road / China Garden Road: The eastbound driveway opposite China Garden Road and the China Garden Road approach will continue to operate at LOS F in the a.m. peak hour. The intersection will not meet the peak hour signal warrant including both volume and delay, but will add ten or more trips through the intersection. Since the signal warrant is not met, this is not considered a significant impact.

    As noted in the Existing Conditions, side street approaches to the Missouri Flat Road / China Garden Road intersection will be limited to right turns only once Diamond Springs Parkway is completed. Implementation of the right-turn only restrictions along China Garden Road will result in LOS D (32.7 spv) conditions for side street traffic.

  - Missouri Flat Road at Enterprise Drive: The intersection will operate at LOS F during both peak hours, meet the peak hour traffic signal warrant and add 10 or more project trips through the intersection. This is considered a significant impact. The improvements for this impacted intersection are included in the 20 year time frame of the County's CIP. The County's 20-year CIP includes approximately $35.3 million for traffic signal and intersection operational improvements. The project's TIM fees will be used to fund this future improvement.

  - The project should construct the following improvements at the Forni Road / Golden Center Drive / Project intersection:

- Install a crosswalk along the north side of the intersection to indicate the preferred crossing location for pedestrians. The installation of a crosswalk on the north side will reduce the number of potential conflicts with motor vehicles as most vehicles at this intersection travel between Missouri Flat Road and Forni Road;
- Sidewalk should be installed along the entire project frontage on Forni Road;
- A pathway / sidewalk should be constructed connecting the pedestrian crossing on the north side of Golden Center Drive into the project site;
- Install a No Parking Zone along the Forni Road project frontage to maximize sight distance at the driveway;
- Install a crosswalk across the project driveway;
- A speed survey should be conducted by County staff to identify an appropriate speed limit along Forni Road in the project vicinity. Currently, the roadway is not signed, indicating a 55 mph prima facie speed. Signs in advance of the Herbert Green Middle School provide a 25 mph speed limit when children are present. The portion of Forni Road between Missouri Flat Road and Heady Lane is reflective of entering into an urbanized area where a 55 mph speed on a two-lane roadway is impractical.

The following on-site mitigations should be constructed:

- A crosswalk at the drive-through lane entrance should be installed to provide pedestrian access to the fast food restaurant;
- Landscaping adjacent to the drive-through entrance should be limited to vegetation no higher than 2 feet to provide visibility of the crosswalk area for inbound traffic from the Forni Road driveway;
- Landscaping adjacent to the drive-through exit should be limited to vegetation no higher than 2 feet to maintain visibility for exiting vehicles;
- Install a stop sign with limit line at the drive-through exit;
- Install a crosswalk 25 feet behind the limit line;
- Truck access should be limited to off-hours as the drive aisle could be blocked while trucks are loading / unloading.
- Install "Do Not Block" markings at internal intersections where blocking would hinder traffic flow.

Queues

Under Existing plus Project conditions nine movements have queues that exceed the available storage. These include:

Missouri Flat Road / WB US 50 ramps
- NB left turn lane

Missouri Flat Road / EB US 50 ramps
- NB through lane
- SB left turn lane
- SB through lane

Missouri Flat Road / Mother Lode Drive
- SB through

Missouri Flat Road / Forni Road
- SB right turn
- EB left turn

Missouri Flat Road / SR 49
- EB left turn
- WB right turn

These locations are the same as under Existing Conditions; therefore, no mitigations are necessary.

Roadway Segments
All roadway segments will continue to operate within the County level of service threshold, at LOS E or better.

- **Year 2035 Background Conditions.** Year 2035 traffic forecasts were based on the most recent Countywide traffic model modified to include the four-lane section of Missouri Flat Road south of Diamond Springs Parkway. Projected 2035 roadway volumes were reviewed and approved by County staff.

  Roadways in 2035 are generally projected to remain with their current lane configurations with the following changes to the roadway network:

  - The Diamond Springs Parkway, north of China Garden Road, will connect Missouri Flat Road to Diamond Road (SR 49) and is projected to be completed by 2035. This roadway will include two through lanes in each direction with turn lanes at key intersections. Missouri Flat Road will become the west and south legs of the Missouri Flat Road / Diamond Springs Parkway intersection.

  - Missouri Flat Road south of Diamond Springs Parkway will be widened to include two through lanes in each direction.

  - Installation of a traffic signal at the Missouri Flat Road / Industrial Drive intersection as identified in the *El Dorado County Public Safety Facility Project Draft EIR*.

  - Side street approaches to the Missouri Flat Road / China Garden Road intersection will be limited to right turns only as a result of the mitigations identified in the *El Dorado County Public Safety Facility Project Draft EIR*. The DEIR noted two alternative mitigations for this intersection, installation of a traffic signal or limiting minor street access to right turns only. County staff determined that a signal at China Garden Road is not the preferred alternative based on the installation of the traffic signal at Industrial Drive as noted above.

  The Missouri Flat Road / Diamond Springs Parkway intersection will include two left turn lanes and a through-right lane along the northbound approach, a left turn lane, two through lanes and a right turn lane along the eastbound approach, a single lane along the southbound approach and a left turn lane, a through lane and a through-right lane on the westbound approach. The intersection will be signalized and was analyzed as part of the 2035 conditions.

Intersections

All intersections, except the Missouri Flat Road / Road 2233 and Missouri Flat Road / Enterprise Drive intersections operate within acceptable El Dorado County LOS thresholds.

- Missouri Flat Road at Road 2233: The east leg of the intersection will operate at LOS F in the p.m. peak hour. This intersection will not meet the peak hour signal warrant. Although operating at LOS F the approach is projected to serve a single left turning vehicle in the peak hour. No recommendations are made for this intersection.

- Missouri Flat Road / Enterprise Drive intersection: This intersection will operate with the eastbound Enterprise Drive approach operating at LOS F. The intersection will continue to meet the peak hour signal warrant. The roadway is identified to be widened to four lanes and with signalization identified in the Existing Conditions the intersection will operate at LOS A (8.0 spv) in the p.m. peak hour.

Queues

Under 2035 conditions ten movements have queues that will exceed the available storage. These include:

Missouri Flat Road / WB US 50 ramps
- NB left turn lane
- NB through lane

Missouri Flat Road / EB US 50 ramps
- NB through lane
- SB left turn lane

Missouri Flat Road / Mother Lode Drive
- SB through

Missouri Flat Road / Forni Road
- SB left turn
- SB right turn
- EB left turn

Missouri Flat Road / Golden Center Drive
- NB left turn
- SB left turn

Roadway Segments

All roadway segments will continue to operate within the County level of service threshold, at LOS C or better.

- **2035 Plus Project Conditions.** The trips generated by the proposed project were superimposed onto the Year 2035 background conditions, and resulting peak hour Levels of Service were calculated.

Intersections

All intersections, except the Missouri Flat Road / Enterprise Drive intersection will operate within acceptable El Dorado County LOS thresholds.

- Missouri Flat Road / Enterprise Drive intersection: This intersection will operate with the eastbound Enterprise Drive approach operating at LOS F. The intersection will continue to meet the peak hour signal warrant. The roadway is identified to be widened to four lanes and with signalization identified in the Existing Conditions the intersection will operate at LOS A (8.0 spv) in the p.m. peak hour.

Queues

Under 2035 plus Project conditions ten movements have queues that will exceed the available storage. These are identified below. Where queues that exceed available storage are new relative to the 2035 conditions they are highlighted in yellow:

Missouri Flat Road / WB US 50 ramps
- NB left turn lane
- NB through lane
- WB left turn

Missouri Flat Road / EB US 50 ramps
- NB through lane
- SB left turn lane

Missouri Flat Road / Mother Lode Drive
- NB left turn
- SB through

Missouri Flat Road / Forni Road
- NB left turn
- SB left turn
- SB right turn
- EB left turn

Missouri Flat Road / Golden Center Drive
- NB left turn
- SB left turn

Missouri Flat Road / Pleasant Valley Road
- EB left turn

The left turn lanes along the **Westbound US 50 off-ramps at Missouri Flat Road** are projected to have queues of up to 502 feet in the p.m. peak hour. The westbound ramp currently provides for dual left turn lanes of about 415 feet each. The off-ramp extends an additional 1,000 feet with single lanes for right and left turning vehicles prior to reaching US 50. This provides adequate storage for this projected queue.

The northbound left turn lane at the **Missouri Flat Road / Mother Lode Drive** intersection is projected to require storage of about 167 feet. The existing left turn lane is about 140 feet. The left turn bay taper provides about 30 feet of additional storage before a left turning vehicle will block the northbound through lane. This provides the additional storage needed to accommodate the projected turn length and no mitigations are necessary.

The northbound left turn lane at the **Missouri Flat Road / Forni Road** intersection is projected to require storage of about 258 feet. The existing left turn lane is about 250 feet. The left turn bay taper provides about 25 feet of additional storage before a left turning vehicle will block the northbound through lane. This provides the additional storage needed to accommodate the projected turn length and no mitigations are necessary.

The eastbound left turn lane at the **Missouri Flat Road / Pleasant Valley Road** intersection is projected to require storage of about 165 feet. The existing dual left turn lane is about 130 feet. The left turn bay taper provides about 50 feet of additional storage before a left turning vehicle will block the eastbound through lane. This provides the additional storage needed to accommodate the projected turn length and no mitigations are necessary.

Roadway Segments
All roadway segments will continue to operate within the County level of service threshold, at LOS C or better.

Mid-Afternoon Analysis

A mid-afternoon analysis was conducted at four intersections in the vicinity of the Herbert Green Middle School. This analysis considered level of service and queuing at Forni Road / Golden Center Drive, Missouri Flat Road / Forni Road, Missouri Flat Road / Golden Center Drive and Missouri Flat Road / Road 2233.

Existing Conditions - Intersections
Under Existing conditions each intersection will operate within County LOS thresholds, at LOS D or better.

Existing Conditions - Queues
Three movements at the two adjacent signalized intersections will exceed the available storage. These include:

Missouri Flat Road / Forni Road	Missouri Flat Road / Golden Center Drive
- EB left turn lane	- NB left turn lane
	- SB left turn lane

Existing plus Project Conditions - Intersections
Under Existing plus Project conditions each intersection will continue to operate within County LOS thresholds, at LOS D or better.

Existing plus Project Conditions - Queues
Three movements at the two adjacent signalized intersections will exceed the available storage. These include:

Missouri Flat Road / Forni Road	Missouri Flat Road / Golden Center Drive
- EB left turn lane	- NB left turn lane
	- SB left turn lane

These locations are the same as under Existing conditions; therefore, no mitigations are necessary.

2035 Conditions - Intersections

Under 2035 conditions each intersection will operate within County LOS thresholds, at LOS E or better.

2035 Conditions - Queues

Five movements at the two adjacent signalized intersections will exceed the available storage. These include:

Missouri Flat Road / Forni Road
- SB left turn lane
- SB right turn lane
- EB left turn lane

Missouri Flat Road / Golden Center Drive
- NB left turn lane
- SB left turn lane

2035 plus Project Conditions - Intersections

Under 2035 plus Project conditions each intersection will continue to operate within County LOS thresholds, at LOS D or better.

2035 plus Project Conditions - Queues

Five movements at the two adjacent signalized intersections will exceed the available storage. These include:

Missouri Flat Road / Forni Road
- SB left turn lane
- SB right turn lane
- EB left turn lane

Missouri Flat Road / Golden Center Drive
- NB left turn lane
- SB left turn lane

These locations are the same as under 2035 conditions; therefore, no mitigations are necessary.

TRAFFIC IMPACT ANALYSIS FOR
CREEKSIDE PLAZA
Missouri Flat Road at Forni Road
El Dorado County

INTRODUCTION

Study Purpose and Objectives

This study evaluates the traffic impacts associated with the construction of the Creekside Plaza project. The Creekside Plaza project will consist of three buildings. One building will be two-stories and consist of mixed uses including 10,200 square feet of retail uses on the ground floor and 9,860 square feet of professional office on the second floor. A second building will consist of 6,600 square feet of retail uses. The third building will include 1,350 square feet of retail uses and a fast food restaurant with drive-through totaling 2,550 square feet (sf). The project is located in the northwest quadrant of the Missouri Flat Road / Forni Road intersection.

The scope of this traffic analysis has been identified through consideration of El Dorado County traffic study guidelines in consultation with El Dorado County Department of Transportation (DOT). Based on direction from DOT this study addresses the following scenarios:

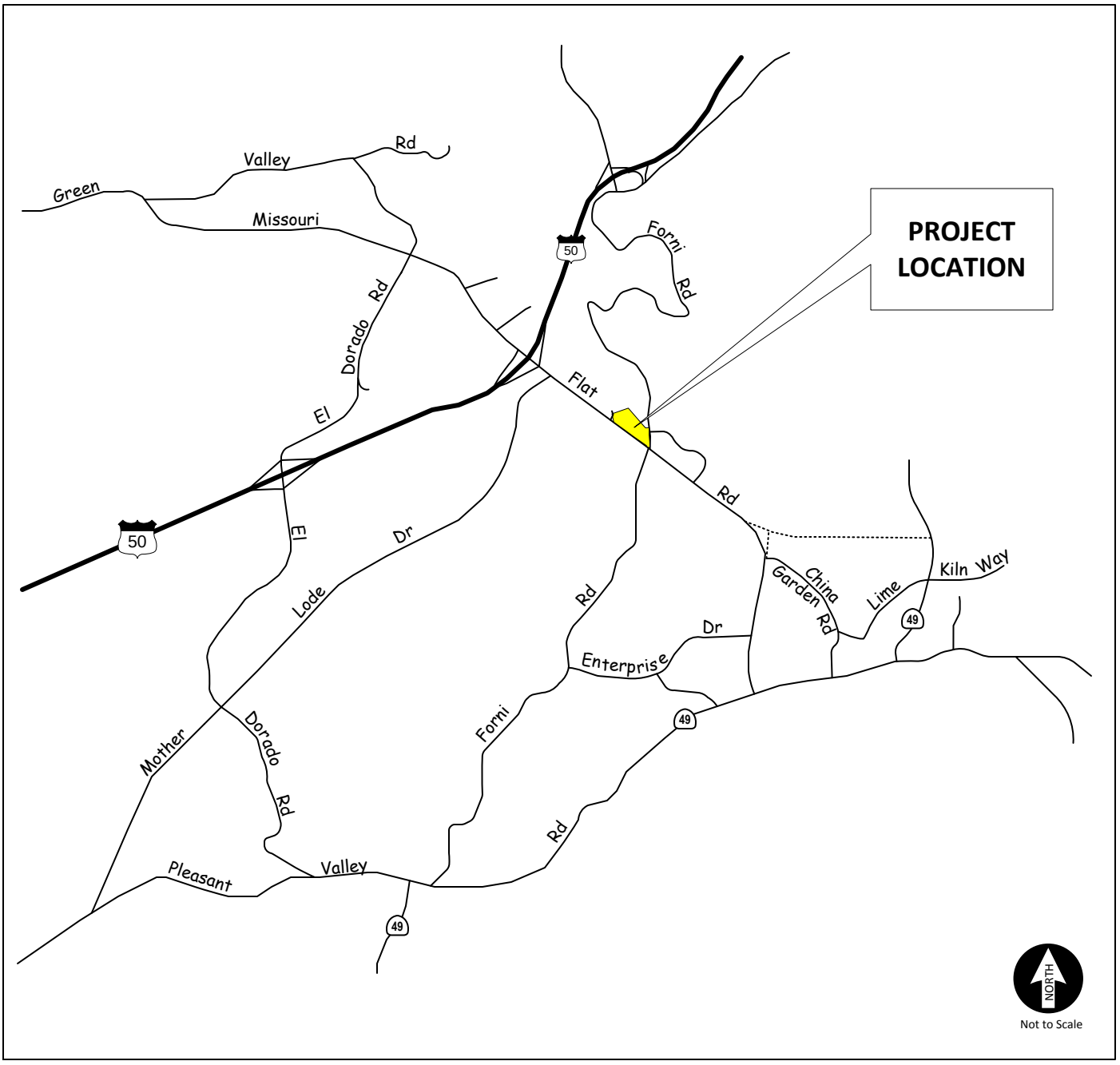
1. Existing Traffic Conditions
2. Existing Plus Project Conditions
3. 2035 Traffic Conditions
4. 2035 Plus Project Conditions

The objective of this study is to identify those roads and street intersections that may be impacted by development of this project based on El Dorado County significance criteria.

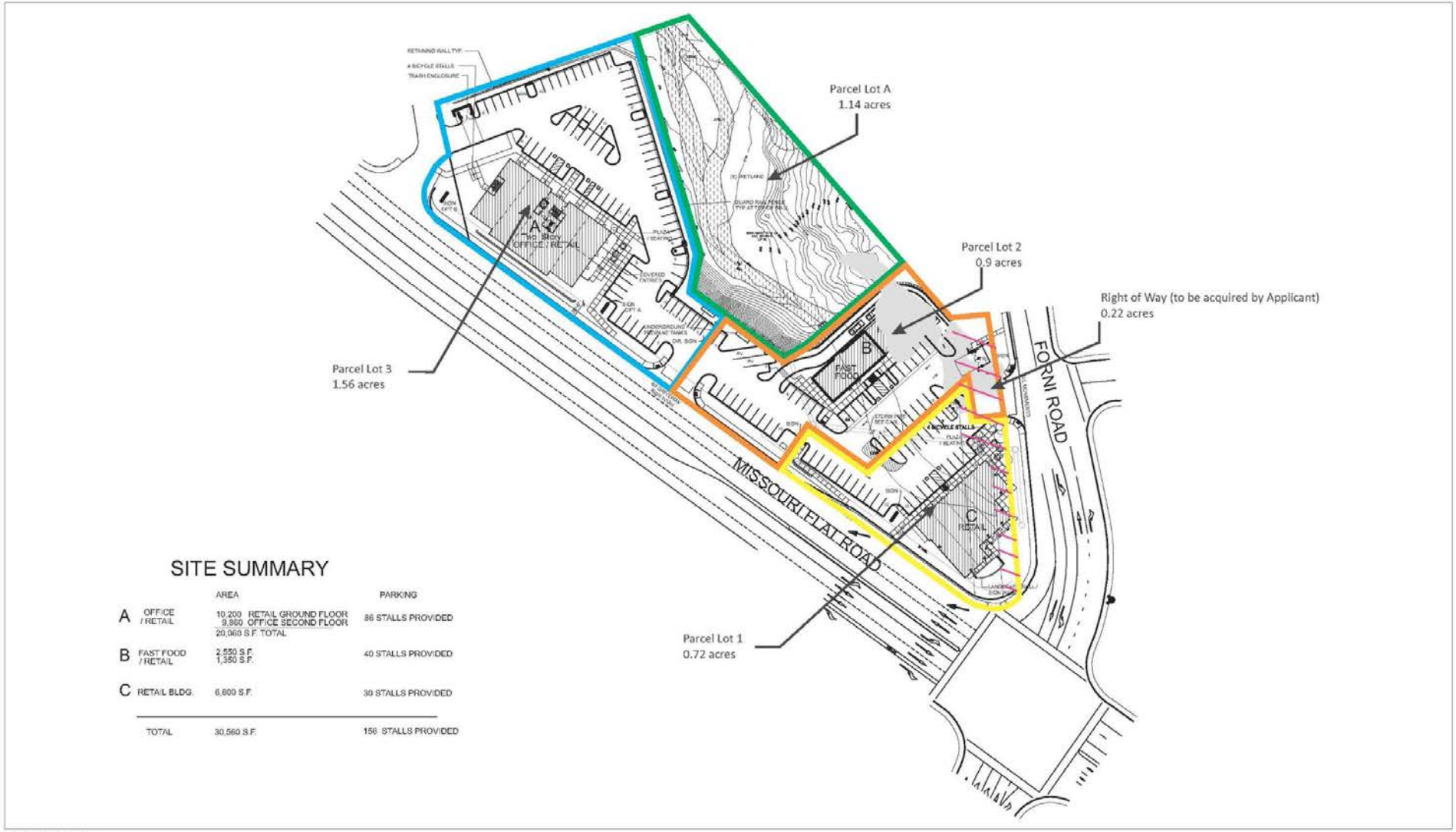
Project Description

The proposed project includes three buildings on the site. One building will be two-stories and consist of mixed uses including 10,200 square feet of retail uses on the ground floor and 9,860 square feet of professional office on the second floor. A second building will consist of 6,600 square feet of retail uses. The third building will include 1,350 square feet of retail uses and a fast food restaurant with drive-through totaling 2,550 square feet (sf). The project is located in the northwest quadrant of the Missouri Flat Road / Forni Road intersection, shown in Figure 1. Access to the site will include three locations, two along Missouri Flat Road and one along Forni Road. A right-in, right-out driveway will be provided along Missouri Flat Road about midway along the project frontage. A second full access will be provided via the existing Road 2233 intersection with Missouri Flat Road. A driveway will be constructed providing access to and from Road 2233. A third access will be provided at the Forni Road / Golden Center Drive

intersection. The project will construct the fourth leg of the existing intersection. The project will also extend the third northbound lane along Missouri Flat Road. Currently, a third lane exists departing the Forni Road intersection and includes a lane drop about 200' north of the intersection. This lane will be extended along the project frontage to Road 2233 where the lane will become a mandatory right turn. Figure 2 illustrates the project site with the proposed access locations.



VICINITY MAP



Source: Wickert. 2017

SITE PLAN

EXISTING SETTING

Study Area

This study addresses traffic conditions at eleven (11) existing intersections and three roadway segments generally along Missouri Flat Road and shown in Figure 3. The limits of the study area were based on previous traffic studies for the project site prepared by Kimley Horn Associates in 2009 and KD Anderson & Associates, Inc. in 2014. The limits of the study were reviewed with El Dorado County DOT and DOT's traffic engineering consultant (DKS Associates [DKS]). The text that follows describes the roadway facilities included in this analysis.

The quality of traffic flow is typically governed by the operation of major intersections and the daily volume of traffic along the roadways. The physical characteristics of the study intersections are described in the text which follows.

Study Area Intersections

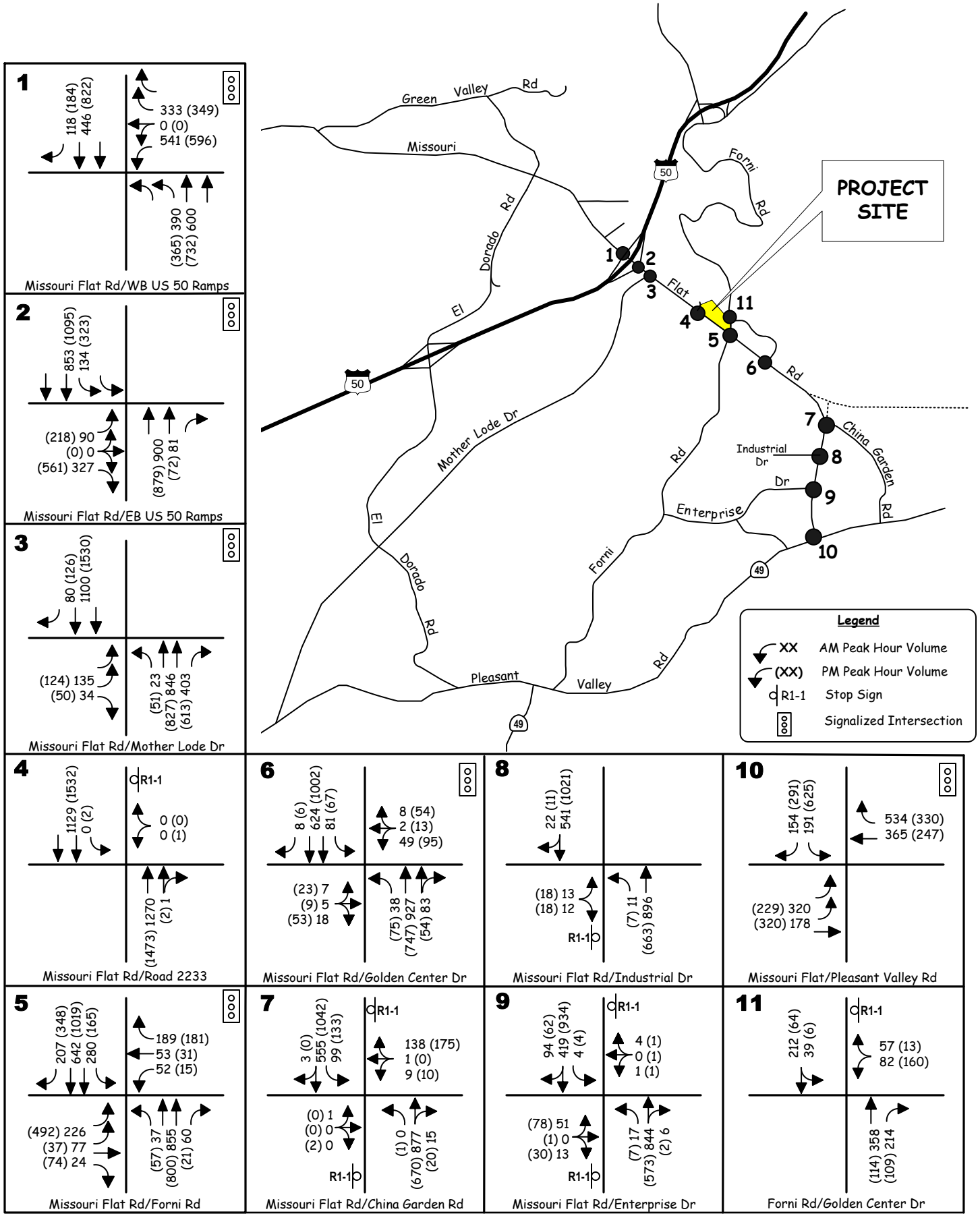
The **Missouri Flat Road / Westbound US 50 ramps** intersection is controlled by a coordinated traffic signal. The Missouri Flat Road approaches feature dual northbound left turn lanes and a separate southbound right turn lane. The four lane exit from US 50 is configured with a dual left turn lane and dual right turn lanes.

The **Missouri Flat Road / Eastbound US 50 ramps** intersection is controlled by a coordinated traffic signal. The Missouri Flat Road approaches feature dual southbound left turn lanes and a separate northbound right turn lane. The three lane exit from US 50 is configured with a separate left turn lane and right turn lanes, as well as a combined left, thru and right turn lane.

The **Missouri Flat Road / Mother Lode Drive** intersection is signalized and located roughly 250 feet from the Eastbound US 50 ramps intersection. The Missouri Flat Road approaches have separate left turn and right turn lanes. The eastbound Mother Lode Drive approach has three lanes configured as dual left turns and a separate right turn lane.

The **Missouri Flat Road / Road 2233** intersection is stop controlled along Road 2233 and is located roughly 1,600 feet south of the Mother Lode Drive intersection. The Missouri Flat Road approaches include two lanes in each direction with a TWLTL extending from Perks Court just south of Mother Lode Drive to 250' south of the Road 2233 intersection. The Road 2233 approach has a single lane for traffic entering the intersection.

The **Missouri Flat Road / Forni Road** intersection is also signalized and located roughly ½ mile south of the Mother Lode Drive intersection. The Missouri Flat Road approaches each include separate left turn and right turn lanes. The Forni Road approaches have separate left turn, through and right turn lanes, and a second left turn lane has been provided on the eastbound approach.



EXISTING TRAFFIC VOLUMES AND LANE CONFIGURATIONS

The **Missouri Flat Road / Golden Center Drive** intersection is located about 1,100 feet south of Forni Road. This signalized intersection includes separate left turn lanes on the Missouri Flat Road approaches and a separate right turn lane on the southbound approach. The Golden Center Drive approaches are single lanes which operate with permitted phasing.

The **Missouri Flat Road / China Garden Road** intersection is located about 2,100 feet south of Golden Center Drive. This unsignalized intersection includes single lanes along Missouri Flat Road with a separate left turn lane on the southbound approach. A TWLTL is present on the northbound approach of Missouri Flat Road and north of the southbound left turn lane. The China Garden Road approach consists of a single lane which is stop controlled. A driveway is present along the west side of the intersection.

The **Missouri Flat Road / Industrial Drive** intersection is located about 600 feet south of China Garden Road. This unsignalized intersection includes single lanes along Missouri Flat Road with a TWLTL present along Missouri Flat Road. The Industrial Drive approach consists of a single lane which is stop controlled.

The **Missouri Flat Road / Enterprise Drive** intersection is located along a two lane section of Missouri Flat Road. A TWLTL is available on Missouri Flat Road. The eastbound Enterprise Drive approach is controlled by a stop sign. A driveway is present along the east side of the intersection.

The **Missouri Flat Road / (SR 49) Pleasant Valley Road** intersection is located at the southern end of Missouri Flat Road roughly two miles from the project site. This tee intersection is controlled by an actuated traffic signal. The Pleasant Valley Road approaches have single through lanes in each direction, with dual eastbound left turn lanes and a separate westbound right turn lane. The two lane southbound approach on Missouri Flat Road is configured as separate left turn and right turn lanes, and the right turn "overlaps" the eastbound left turn phase.

The **Forni Road / Golden Center Drive** intersection is located about 300 feet east of Missouri Flat Road. This unsignalized intersection includes a single lane along westbound Forni Road, a through lane and a right turn lane along eastbound Forni Road. The Golden Center Drive approach consists of a single lane which is stop controlled.

The **Missouri Flat Road / Diamond Springs Parkway** intersection is a future intersection that is part of the Diamond Springs Parkway project. This intersection when completed will consist of a left turn lane, two through lanes and a right turn lane along the eastbound (Missouri Flat Road) and westbound (Diamond Springs Parkway) approaches. The northbound Missouri Flat Road approach will consist of dual left turn lanes and a through-right lane. The opposing southbound approach will consist of a left turn lane and a through-right lane. This intersection will be signalized.

Study Area Roadways

The **Mother Lode Drive to Golden Center Drive** segment is a four-lane roadway between Mother Lode Drive and Golden Center Drive. The segment includes a two-way-left-turn lane (TWLTL) from Perks Court to just north of Forni Road. The roadway includes a raised median with left turn lanes between Mother Lode Drive and Perks Court and from Forni Road to Golden Center Drive.

The **Golden Center Drive and China Garden Road** segment is generally a two-lane roadway with TWLTL between Golden Center Drive and China Garden Road. Upon departing the Golden Center Drive intersection to the south, a lane drop is present reducing the southbound direction to one lane. Similarly, the approach to the Golden Center Drive intersection consists of a single lane with TWLTL that widens to two lanes just prior to the intersection. The TWLTL changes into a northbound left turn lane at the intersection. This also occurs in the southbound direction at China Garden Road with the TWLTL becoming a dedicated left turn lane at the intersection.

The **China Garden Road and Pleasant Valley Road** segment is a two-lane roadway with TWLTL between China Garden Road and Pleasant Valley Road. About 500' from the Pleasant Valley Road intersection the TWLTL is removed while a right turn only lane is added.

Analysis Criteria

Level of Service Methodology. *Level of Service Analysis* has been employed to provide a basis for describing existing traffic conditions and for evaluating the significance of project traffic impacts. Level of Service measures the *quality* of traffic flow and is represented by letter designations from "A" to "F", with a grade of "A" referring to the best conditions, and "F" representing the worst conditions. The guidelines and analyses used for this report follow El Dorado County standards.

Local agencies adopt minimum Level of Service standards for their facilities. El Dorado County identifies LOS E as the acceptable Level of Service on roadways and state highways within the unincorporated areas of the County in the Community Regions and LOS D in the Rural Centers and Rural Regions except as specified in the General Plan. The County's General Plan allows some roadway segments to operate at LOS F. Two segments are along Missouri Flat Road, from US 50 to Mother Lode Drive and from Mother Lode Drive to China Garden Road. Intersections and roadway segments in these segments may operate at LOS F. The analysis techniques presented in the *2010 Highway Capacity Manual* were used to calculate Level of Service and to provide a basis for describing existing traffic conditions and evaluating the significance of project traffic impacts.

Intersections. Various software programs have been developed to assist in calculating intersection Level of Service, and the level of sophistication of each program responds to factors that affect the overall flow of traffic. In this case, Synchro-SimTraffic software was used for intersection analysis in order to account for the effects of closely spaced traffic signals along

Missouri Flat Road. The files originally developed for the El Dorado County Transportation Commission's *Diamond Springs and El Dorado Area Mobility and Livable Community Plan (DSEDAMLCP)* were obtained and, in consultation with El Dorado County DOT and KAI, applicable adjustments were made to reflect current geometry and operational characteristics. The software is a stochastic model, i.e. randomness is present when running the simulations. The results will vary within each scenario and between scenarios. This may result in some intersections having lower delays in the Plus Project scenario than in the No Project scenario. The simulation results contained herein reflect the average of the mean 10 one-hour simulation runs selected from a 20-run sample. Each run employed a 10-minute seeding period.

SimTraffic is not able to currently analyze two-stage gap analysis with two-way-left-turn-lanes (TWLTL). According to Trafficware, the program architecture "needs considerable changes to the driver lane choice, gap acceptance methods." They are continuing to look into these elements while the FHWA continues to look into new algorithms through their Next Generation Simulation Program. Since TWLTL analysis is unavailable using SimTraffic, intersections with TWLTL's were evaluated using Synchro 2010 methodology which does analyze gap acceptance with two-way-left-turn-lanes.

The intersection Levels of Service presented in this analysis are based on the weighted average total delay per vehicle for the intersection as a whole at signalized intersections and at locations controlled by all-way stops. The average delay experienced by motorists yielding the right of way is the basis for identification of Level of Service at locations controlled by side street stop signs. Applicable Level of Service thresholds based on average delay are shown in Table 1.

Intersection Level of Service Thresholds of Significance. A traffic impact is considered to be significant under El Dorado County guidelines if the project causes an intersection to change from LOS E to LOS F. Worsening of conditions at facilities already operating at unacceptable levels of service is also considered a significant impact. The County's General Plan Policy TC-Xe defines worsen as any of the following conditions:

a. a 2% increase in traffic during the a.m. peak hour, p.m. peak hour or daily trips, or
b. the addition of 100 or more daily trips, or
c. the addition of 10 or more trips during the a.m. peak hour or the p.m. peak hour.

The County's current General Plan Policy TC-Xf notes that for all residential subdivisions of five or more parcels that worsens traffic on a County road as defined in Policies TC-Xe [A], [B] or [C] "the County shall condition the project to construct all road improvements necessary to maintain or attain Level of Service standards detailed in this Transportation and Circulation Element based on existing traffic plus traffic generated from the development plus forecasted traffic growth at 10-years from project submittal." For all other discretionary projects that worsen traffic "the County shall condition the project to construct all road improvements necessary to maintain or attain adopted LOS standards."

However, the El Dorado County Superior Court issued a ruling in July 2017 that found certain provisions in Measure E unconstitutional. The court ruled that the previous language contained in Measure Y was still valid as detailed below:

At the time of approval of a tentative map for a single family residential subdivision of five or more parcels that worsens (defined as a project that triggers Policy TC-Xe [A] or [B] or [C]) traffic on the County road system, the County shall do one of the following:

1) condition the project to construct all road improvements necessary to maintain or attain Level of Service standards detailed in this Transportation and Circulation Element based on existing traffic plus traffic generated from the development plus forecasted traffic growth at 10-years from project submittal; or

(2) ensure the commencement of construction of the necessary road improvements are included in the County's 10-year CIP.

For all other discretionary projects that worsen (defined as a project that triggers Policy TC-Xe [A] or [B] or [C] traffic on the County road system, the County shall do one of the following:

(1) condition the project to construct all road improvements necessary to maintain or attain Level of Service standards as detailed in this Transportation and Circulation Element; or
(2) ensure the construction of the necessary road improvements are included in the County's 20-year CIP.

Consistent with Measure E, the County has determined that under current General Plan Policy four scenarios should be analyzed. These include:

- Existing Conditions
- Existing plus Project Conditions
- 2035 Conditions
- 2035 plus Project Conditions

TABLE 1
LEVEL OF SERVICE DEFINITIONS

Level of Service	Signalized Intersection	Unsignalized Intersection	Roadway (Daily)
"A"	Uncongested operations, all queues clear in a single-signal cycle. Delay ≤ 10.0 sec	Little or no delay. Delay ≤ 10 sec/veh	Completely free flow.
"B"	Uncongested operations, all queues clear in a single cycle. Delay > 10.0 sec and ≤ 20.0 sec	Short traffic delays. Delay > 10 sec/veh and ≤ 15 sec/veh	Free flow, presence of other vehicles noticeable.
"C"	Light congestion, occasional backups on critical approaches. Delay > 20.0 sec and ≤ 35.0 sec	Average traffic delays. Delay > 15 sec/veh and ≤ 25 sec/veh	Ability to maneuver and select operating speed affected.
"D"	Significant congestion of critical approaches but intersection functional. Cars required to wait through more than one cycle during short peaks. No long queues formed. Delay > 35.0 sec and ≤ 55.0 sec	Long traffic delays. Delay > 25 sec/veh and ≤ 35 sec/veh	Unstable flow, speeds and ability to maneuver restricted.
"E"	Severe congestion with some long standing queues on critical approaches. Blockage of intersection may occur if traffic signal does not provide for protected turning movements. Traffic queue may block nearby intersection(s) upstream of critical approach(es). Delay > 55.0 sec and ≤ 80.0 sec	Very long traffic delays, failure, extreme congestion. Delay > 35 sec/veh and ≤ 50 sec/veh	At or near capacity, flow quite unstable.
"F"	Total breakdown, stop-and-go operation. Delay > 80.0 sec	Intersection blocked by external causes. Delay > 50 sec/veh	Forced flow, breakdown.
Sources: 2010 Highway Capacity Manual, Transportation Research Board (TRB) Special Report 209.			

Roadway Segments.

Two-Lane Roadway Segments. Missouri Flat Road was analyzed using methods presented in the *Highway Capacity Manual 2010 (HCM)*. A two-lane highway is an undivided roadway with one lane in each direction. Passing a slower vehicle requires use of the opposing lane as sight distance and gaps in the opposing traffic stream permit. As volumes and geometric restrictions increase, the ability to pass decreases and platoons form. Motorists in platoons are subject to delay because they are unable to pass. The HCM divides these roadways into three types: Class I, Class II and Class III. They are defined as follows:

- *Class I two-lane highways* are highways where motorists expect to travel at relatively high speeds. Two-lane highways that are major intercity routes, primary connectors of major traffic generators, daily commuter routes, or major links in state or national

highway networks are generally assigned to Class I. These facilities serve mostly long-distance trips or provide the connections between facilities that serve long-distance trips.

- *Class II two-lane highways* are highways where motorists do not necessarily expect to travel at high speeds. Two-lane highways functioning as access routes to Class I facilities, serving as scenic or recreational routes (and not as primary arterials), or passing through rugged terrain (where high-speed operation would be impossible) are assigned to Class II. Class II facilities most often serve relatively short trips, the beginning or ending portions of longer trips, or trips for which sightseeing plays a significant role.

- *Class III two-lane highways* are highways serving moderately developed areas. They may be portions of a Class I or Class II highway that pass through small towns or developed recreational areas. On such segments, local traffic often mixes with through traffic, and the density of unsignalized roadside access points is noticeably higher than in a purely rural area. Class III highways may also be longer segments passing through more spread-out recreational areas, also with increased roadside densities. Such segments are often accompanied by reduced speed limits that reflect the higher activity level.

Levels of Service. Three measures of effectiveness are incorporated into the methodology to determine automobile LOS:

1. Average Travel Speed (ATS) reflects mobility on a two-lane highway. It is defined as the highway segment length divided by the average travel time taken by vehicles to traverse it during a designated time interval.

2. Percent Time Spent Following (PTSF) represents the freedom to maneuver and the comfort and convenience of travel. It is the average percentage of time that vehicles must travel in platoons behind slower vehicles due to the inability to pass. Because this characteristic is difficult to measure in the field, a surrogate measure is the percentage of vehicles traveling at headways of less than 3.0 at a representative location within the highway segment. PTSF also represents the approximate percentage of vehicles traveling in platoons.

3. Percent of free-flow speed (PFFS) represents the ability of vehicles to travel at or near the posted speed limit.

Speed and delay due to passing restrictions are both important to motorists on Class I two-lane highways; therefore, LOS is defined in terms of both ATS and PTSF. Travel speed is not a significant issue on Class II highways; therefore, LOS is defined in only terms of PTSF. High speeds are not expected on Class III highways and since the length of the Class III segments may be generally limited, passing restrictions are also not a major concern. In Class III segments drivers are expected to want to travel at or near the speed limit. Therefore, PFFS is used to define LOS. The LOS criteria for two-lane highways are shown in Table 2.

TABLE 2
AUTOMOBILE LOS FOR TWO-LANE HIGHWAYS†

LOS	Class I Highways		Class II Highways	Class III Highways
	ATS (mi / hr)	PTSF (%)	PTSF (%)	PFFS (%)
A	>55	≤35	≤40	>91.7
B	>50-55	>35-50	>40-55	>83.3 – 91.7
C	>45-50	>50-65	>55-70	>75.0 – 83.3
D	>40-45	>65-80	>70-85	>66.7 – 75.0
E	≤40	>80	>85	≤66.7

† HCM 2010, Chapter 15, December 2010

Multi-lane Highway Roadway Segments. Multi-lane highways were analyzed for this traffic impact study using methods presented in the *Highway Capacity Manual 2010*. Multi-lane highways usually have a total of four or six lanes, counting both directions and are typically located in suburban communities, leading into central cities, or along high-volume rural corridors connecting two cities or two significant activities that generate a substantial number of daily trips.

Multi-lane highways in suburban and rural settings have different operational characteristics from freeways, urban streets, and two-lane highways. They are not completely access controlled and can have at-grade intersections and traffic signals. They also may be divided highways or include TWLTL's. Free flow speed (FFS) and density describe the operating characteristics of multi-lane highways. FFS is impacted by the lane width, the lateral clearance, the type of median and the number of access points on a segment.

The capacity of a multilane highway is the maximum sustained hourly flow rate at which vehicles reasonably can be expected to traverse a uniform segment under prevailing roadway and traffic conditions. Level of Service on multilane highways is defined based on density of traffic. Table 3 defines the LOS based on the FFS and the density in passenger cars per mile per lane (pcpmpl)

TABLE 3
AUTOMOBILE LOS FOR MULTI-LANE HIGHWAYS‡

LOS	Free Flow Speed (mph)	Density (pcpmpl)
A	All	>0-11
B	All	>11 – 18
C	All	>18 – 26
D	All	>26 – 35
E	60	>35 – 40
	55	>35 – 41
	50	>35 – 43
	45	>35 – 45
F	Demand Exceeds Capacity	
	60	>40
	55	>41
	50	>43
	45	>45

‡ HCM 2010, Chapter 14, December 2010

Intersection Queuing Analysis. The quality of traffic flow can also be affected by queuing at signalized intersections. For this study, the lengths of peak period queues have been identified and compared to available storage in order to determine whether spillover from turn lanes can affect adjoining travel or extend through adjacent intersections. 95th percentile queue lengths have been calculated as a byproduct of the Synchro-SimTraffic simulation. Those locations where the 95th percentile queue exceeds the available storage have also been noted.

Traffic Signal Warrants. The extent to which existing or projected traffic volumes may justify signalization at un-signalized intersections has been determined based on consideration of traffic signal warrant presented in the *Manual of Uniform Traffic Control Devices, 2014.* For this analysis, the volume thresholds associated with Warrant 3 (Peak Hour Volume) have been assessed. The "rural" criteria have been employed based on speed limits in excess of 40 mph.

Public Transit

The El Dorado County Transit Authority (EDCTA) offers local fixed route, regional commuter route, dial-a-ride and para-transit services. Three local fixed routes pass the project site on Missouri Flat Road. These include the Placerville East (PE), Placerville West (PW) and Diamond Springs (DS) routes. The DS route travels along Missouri Flat Road and Pleasant Valley Road. It loops along Racquet Way to return to Missouri Flat Road on its way to Folsom Lake College. The route also loops along Golden Center Drive and Forni Road in the

northbound direction to Folsom Lake College. The route operates from about 7:00 a.m. to about 6:00 p.m. Monday through Friday at one-hour headways. Transit passengers can also use other routes to travel to the Missouri Flat Road Transit Center where they can transfer to the DS route.

The PE and PW routes generally provide transit access paralleling the US 50 corridor from Missouri Flat Road to the east side of the City along Broadway. The PW route begins on the east side of the City and terminates at the Missouri Flat Transfer Center. The PE route begins at the Missouri Flat Transfer Center and travels east where it terminates at the Broadway and Pint View Drive intersection. Both routes operate Monday through Friday, with the first departure for both routes at 7:00 a.m. The PW route's last bus terminates at Missouri Flat Transit Center at 5:00 p.m. The last bus along the PE route begins at 5:00 and ends service at about 5:45 p.m.

EDCTA also operates commuter routes to downtown Sacramento Monday through Friday. A park-n-ride lot is available along Commerce Way, between Enterprise Drive and Pleasant Valley Road. Four inbound routes to Sacramento are operated from the Commerce Way lot between 5:30 a.m. and 6:00 a.m. Ten return trips from Sacramento are available but are 'request only' stops.

The *Western El Dorado County Short-Range and Long-Range Transit Plan Study* has identified the following improvements for transit service in the Diamond Springs area. Short Range improvements include beginning the route schedule at 6:00 a.m., extending the existing weekday route schedule by one hour at the end of the day and instituting Saturday service between 9:00 a.m. and 5:00 p.m. Long Range improvements include revising the route as a result of the construction of Diamond Springs Parkway between Missouri Flat Road and Diamond Road.

Bicycle and Pedestrian Facilities

Designated bicycle facilities exist in the vicinity of the project. Class II bike lanes are present along Missouri Flat Road from Plaza Drive south to Golden Center Drive. Narrow paved shoulders are present intermittently along Forni Road and are not designated bicycle lanes. Future bicycle improvements in the vicinity include a Class 3 bicycle route along Forni Road from Enterprise Drive to Missouri Flat Road, a Class 2 bicycle lane along the future Diamond Springs Parkway between Diamond Road and Missouri Flat Road and a Class 1 bicycle path along Missouri Flat Road from Forni Road to the US 50 interchange. The US 50 Corridor Bike Route is also projected to be extended west of Missouri Flat Road along the El Dorado Trail.

Sidewalk is present along the east side of Missouri Flat Road, from Plaza Drive to south of Golden Center Drive. Sidewalk is present along the south side of Forni Road, from the US 50 interchange to south of Golden Center Drive. Sidewalk is also present along the perimeters of each of the retail developments in the Missouri Flat Road / Forni Road intersection. Sidewalk is not present along the project frontage (i.e. west side) of Forni Road. The DSEDAMLCP study identifies sidewalk installation south of the proposed Diamond Springs Parkway to complete pedestrian connectivity along Missouri Flat Road.

Existing Traffic Operating Conditions

Traffic Volume Counts. New traffic counts were completed during the first week of May 2017. These counts were compared to the traffic volumes used in the previous Creekside traffic study completed in December 2014. The 2014 study used peak hour traffic volume counts presented in the Diamond Springs El Dorado Area Mobility and Livable Community Plan technical report, as well as supplemental traffic counts conducted on July 22, 2014. The July counts were adjusted based on turning movement counts that were conducted at adjacent intersections while school was in session.

Each study intersection was reviewed to determine the percentage increase or decrease in traffic volumes between 2014 and 2017. Eight intersections experienced increases in traffic volumes of 8.0% or less while three intersections, Missouri Flat Road at Industrial Drive, Missouri Flat Road at Enterprise Drive and Missouri Flat Road at Pleasant Valley Road experienced traffic volume increases of up to 11.4%.

Generally accepted practice is to conduct peak hour traffic counts for one day during the mid-week (Tuesday, Wednesday or Thursday) during a typical week. Traffic counts will vary on a daily basis and the FHWA's *Traffic Monitoring Guide* identifies that volumes within a 10% variance are acceptable. The majority of intersections meet the FHWA criteria.

Based on direction received from the applicant, and after discussion of the variance in traffic volumes between 2014 and 2017 the traffic volumes used in preparation of the December 2014 report were used as the basis for existing conditions.

Traffic count data from 2014 and 2017 are included in the Appendix. The intersection turning movements are presented in Figure 3.

Intersection Levels of Service. Table 4 summarizes current operating Levels of Service at the study area intersections developed based on the mean for 10 simulation runs conducted for each time period. All study intersections except the eastbound approach of the Missouri Flat Road / Enterprise Drive intersection and the eastbound and westbound approaches of the Missouri Flat Road / China Garden Road intersection currently operate with acceptable Levels of Service during the a.m. and p.m. peak hours. The eastbound approach along Enterprise Drive operates at LOS F (99.1 seconds per vehicle [spv]) in the a.m. peak hour and LOS F (250.8 spv) in the p.m. peak hour. The eastbound driveway opposite China Garden Road operates at LOS F (185.9 spv) while the westbound China Garden Road approach operates at LOS F (55.9 spv) in the a.m. peak hour.

Traffic Signal Warrants. The Missouri Flat Road / Enterprise Drive intersection meets the peak hour signal warrant in the p.m. peak hour while the Missouri Flat Road / China Garden Road intersection meets the volume portion of the peak hour warrant in the a.m. and p.m. peak hours.

TABLE 4
EXISTING PEAK HOUR LEVELS OF SERVICE AT INTERSECTIONS

Location	Control	AM Peak Hour		PM Peak Hour		Traffic Signal Warranted?
		LOS	Average Delay	LOS	Average Delay	
1. Missouri Flat Rd / WB US 50 ramps	Signal	B	18.7	B	17.6	N/A
2. Missouri Flat Rd / EB US 50 ramps	Signal	B	16.3	C	21.0	N/A
3. Missouri Flat Rd / Mother Lode Dr	Signal	A	8.0	A	8.3	N/A
4. Missouri Flat Rd / Road 2233	WB Stop					No
SB Left		---	---	(B)	(14.0)	
WB		---	---	(E)	(38.7)	
5. Missouri Flat Rd / Forni Rd	Signal	C	20.3	C	22.4	N/A
6. Missouri Flat Rd / Golden Center Dr	Signal	B	13.7	C	21.1	N/A
7. Missouri Flat Rd / China Garden Rd	WB Stop					No*
NB Left		---	---	(B)	(10.6)	
SB Left		(B)	(11.2)	(A)	(9.8)	
EB		(F)	(185.9)	(C)	(18.6)	
WB		(F)	(55.9)	(E)	(43.5)	
8. Missouri Flat Rd / Industrial Dr	EB Stop					No
NB Left		(A)	(8.9)	(B)	(10.9)	
EB		(C)	(17.8)	(C)	(24.5)	
9. Missouri Flat Rd / Enterprise Dr						Yes**
NB Left	EB Stop	(A)	(8.7)	(B)	(10.5)	
SB Left		(B)	(10.2)	(A)	(8.7)	
EB		(F)	(99.1)	(F)	(250.8)	
WB		(C)	(23.7)	(E)	(40.0)	
10. Missouri Flat Rd /SR 49 (Pleasant Valley Rd)	Signal	B	17.0	B	15.9	N/A
11. Forni Rd / Golden Center Dr	WB Stop					No
SB Left		A	6.2	A	2.8	
WB		B	12.3	A	6.9	

* meets volume portion of peak hour warrant in AM and PM peak hours
** meets peak hour warrant in PM peak hour
(xx) – delay and level of service using Synchro 2010 including TWLTL analysis
Red indicated threshold exceeded

Intersection Queues. Table 5 presents information regarding current peak period queuing in lanes at signalized study intersections. In each case, the available storage has been presented along with current peak hour traffic volumes and the 95th percentile queue length. On multiple lane approaches the longest queue amongst a group of common lanes has been noted.

Most intersections have lane storage capacity that can accommodate peak period queues. Those 95th percentile queues with length exceeding the available storage have been highlighted. The 95th percentile queue exceeds available storage in nine locations.

TABLE 5
EXISTING PEAK HOUR QUEUES AT SIGNALIZED INTERSECTIONS

Location	Capacity (feet)	AM Peak Hour		PM Peak Hour	
		VPH	Queue (feet)	VPH	Queue (feet)
1. Missouri Flat Road / WB US 50 ramps					
NB left turn	160	390 (2)	167	365 (2)	163
NB through	360	600 (2)	299	732 (2)	223
SB through	520	446 (2)	194	822 (2)	223
WB left turn	410	541 (2)	218	596 (2)	217
WB right turn	410	333 (2)	124	349 (2)	143
2. Missouri Flat Road / EB US 50 ramps					
NB through	160	900 (2)	202	879 (2)	187
NB right turn	140	81	77	72	85
SB left	160	134 (2)	187	323 (2)	217
SB through	380	853 (2)	362	1,095 (2)	415
EB left+through+right turn	540	417 (3)	145	779 (3)	209
3. Missouri Flat Road / Mother Lode Drive					
NB left turn	150	23	49	51	76
NB through	2,300	846 (2)	164	827 (2)	163
SB through	140	1,100 (2)	99	1,530 (2)	166
SB right turn	130	80	<25	126	72
5. Missouri Flat Road / Forni Road					
NB left turn	250	37	50	57	87
NB through	1,000	855 (2)	259	800 (2)	243
NB right turn	160	60	122	21	57
SB left turn	300	280	270	165	191
SB through	2,300	642 (2)	205	1,019 (2)	274
SB right turn	150	207	121	348	183
EB left turn	195	226	129	492	232
WB left turn	190	52	90	15	42
6. Missouri Flat Road / Golden Center Drive					
NB left turn	120	38	62	75	112
SB left turn	160	81	121	67	142
10. Missouri Flat Road / SR 49 (Pleasant Valley Rd)					
SB left turn	600	191	152	625	237
SB right turn	600	154	68	291	91
EB left turn	160	320 (2)	165	229 (2)	154
WB right turn	190	534	224	330	138

Highlighted values indicate queue length in excess of available storage

Existing Roadway Segment Levels of Service. Table 6 summarizes the Levels of Service based on the current traffic volumes on study area roads with the existing roadway configuration. Applicable Level of Service thresholds and roadway classifications are presented. The Levels of Service along Missouri Flat Road were computed using the HCS two-lane roadway and multilane highways methodologies. The multilane segments operate at LOS C or better while the two-lane roadway segment operates within acceptable LOS thresholds, operating at LOS E.

TABLE 6
EXISTING MISSOURI FLAT ROAD SEGMENT LEVELS OF SERVICE

Roadway	Location	Facility Classification	AM				PM			
			ATS	PTSF	Density	LOS	ATS	PTSF	Density	LOS
Missouri Flat Rd	Mother Lode Dr to Golden Center Dr	Multi Lane								
	NB	Highway	---	---	16.6	B	---	---	18.4	C
	SB		---	---	17.0	B	---	---	20.1	C
	Golden Center Dr to China Garden Rd	Multi Lane								
	NB	Highway	---	---	13.2	B	---	---	12.6	B
	SB		---	---	12.7	B	---	---	15.3	B
	China Garden Rd to Pleasant Valley Rd	Class I Highway								
	NB		21.8	88.4	---	E	20.6	85.1	---	E
	SB		21.9	85.9	---	E	20.4	92.3	---	E

PROJECT CHARACTERISTICS

The development of this project will attract traffic to the project site. The amount of additional traffic on a particular section of the street network is dependent upon two factors:

- Trip Generation, the number of new trips generated by the project, and
- Trip Distribution and Assignment, the specific routes that the new traffic takes.

Trip Generation

Trip generation is determined by identifying the type and size of land use being developed. Recognized sources of trip generation data may then be used to calculate the total number of trip ends resulting from the day to day operation of the businesses in the project.

The trip generation for this project was calculated using trip generation rates published in the *Trip Generation Manual* (Institute of Transportation Engineers, 9th Edition, 2012). Applicable rates are found in categories 820 (Shopping Center), 710 (Professional Office) and 934 (Fast Food Restaurant with Drive-Through), as shown in Table 7.

TABLE 7
TRIP GENERATION

Land Use	Unit Quantity	Size	Trips Per Unit						
				AM Peak Hour			PM Peak Hour		
			Daily	In	Out	Total	In	Out	Total
Fast Food with Drive-Through – Bldg B	KSF	2.55	496.12	51%	49%	45.42	52%	48%	32.65
Professional Office– Bldg A	KSF	9.86	22.89	88%	12%	11.75	17%	83%	8.44
Retail – Shopping Center – Bldgs A, B and C	KSF	18.15	42.70	62%	38%	0.96	48%	52%	3.71
Fast Food with Drive-Through – Bldg B			**1,265**	59	57	**116**	43	40	**83**
Professional Office– Bldg A			**226**	19	11	**30**	15	74	**89**
Retail – Shopping Center – Bldgs A, B and C			**775**	11	7	**17**	32	35	**67**
Sub-Total Trips			**2,266**	88	75	163	91	149	240
Pass-By Trips									
Fast Food with Drive-Through – Bldg B *(49% Daily, 49% AM, 50% PM)*			(620)	(29)	(28)	(57)	(22)	(20)	(42)
Professional Office– Bldg A			(0)	(0)	(0)	(0)	(0)	(0)	(0)
Retail – Shopping Center – Bldgs A, B and C			(0)	(0)	(0)	(0)	(0)	(0)	(0)
Total Pass-By Trips			**(620)**	(29)	(28)	**(57)**	(22)	(20)	**(42)**
Net New Trips			**1,646**	**60**	**47**	**106**	**69**	**129**	**198**

KSF – thousand square feet Numbers may not match due to rounding

Trips generated by retail commercial projects fit into two categories. Some trips will be made by patrons who would not otherwise be on the local street system and who go out of their way to reach the site. These are "new" trips. Other trips will be made by patrons who are already in the roadway network and stop by the site as part of a trip made for another purpose. These "pass-by" trips do not add traffic to the overall system.

ITE research has suggested typical "pass-by" percentages for various retail land uses. The ITE *Trip Generation Handbook, 2nd Edition* noted that about 50% of all traffic for fast food restaurants with drive-through capabilities is pass-by. Table 7 presents the "pass-by" trips used for this study. Internally captured trips, those that visit the different uses within the site were assumed not to be present. Application of these rates yields a total of 620 daily 'pass-by' trips, 57 'pass-by' a.m. peak hour trips and 42 'pass-by' p.m. peak hour trips. After accounting for this traffic, the project is expected to generate 1,646 'new' daily trips, 106 'new' a.m. peak hour trips and 198 'new' p.m. peak hour trips.

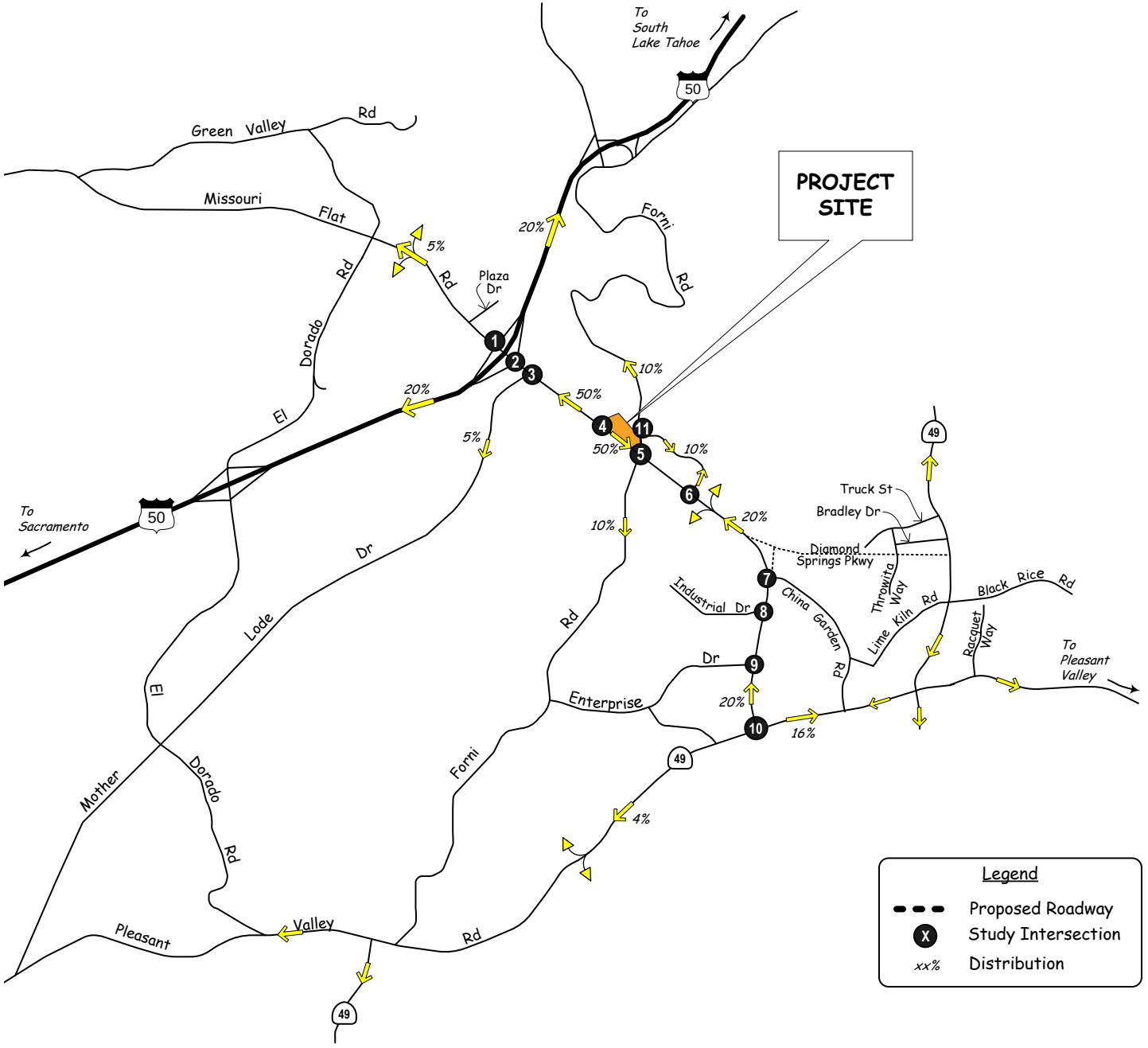
Trip Distribution & Assignment

Two trip distribution patterns were applied to trips related to the Project. One pattern was applied to Existing (i.e., Existing Plus Project) and another pattern was applied to Long-Term (2035) Conditions. Table 8 presents the project trip distributions.

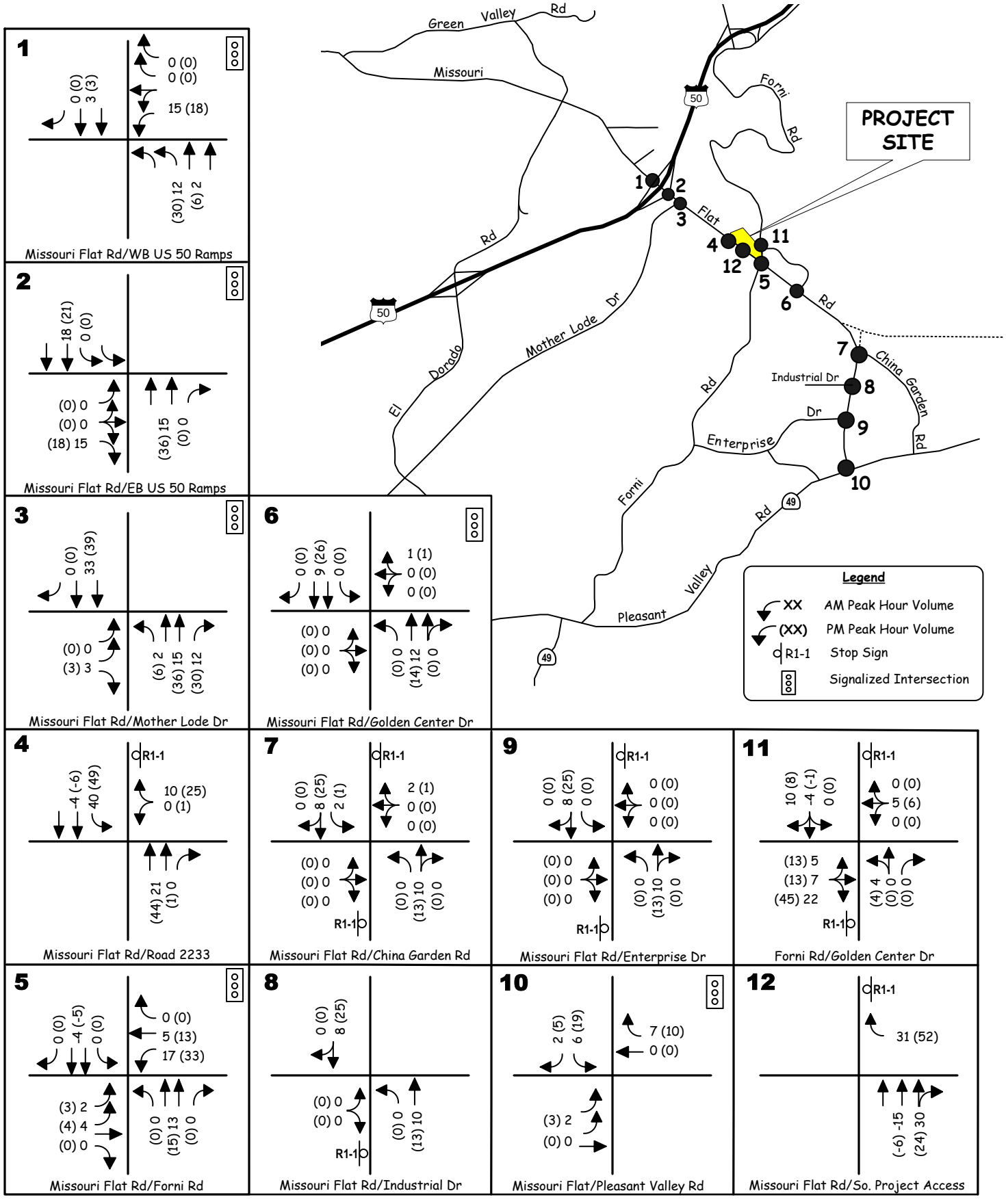
Existing. To evaluate the traffic related effects of the Project, trips that would be generated by the Project were distributed onto the roadway network. Trip distribution simulates the geographical pattern of travel, matching trips generated by one type of land use (e.g. residential) with trips generated by other types of land uses (e.g., education, employment, and shopping). The traffic distribution is shown in Figure 4 while the generated traffic volumes are shown in Figure 5.

TABLE 8
PROJECT TRIP DISTRIBUTION

Direction	Route	Distribution	
		Existing	2035
North	Missouri Flat Road, north of US 50	5%	5%
South	Along Pleasant Valley Road	20%	6%
West	US 50 west of Missouri Flat Road	20%	20%
	Mother Lode Drive west of Missouri Flat Road	5%	5%
	Forni Road west of Missouri Flat Road	10%	10%
East	US 50 east of Missouri Flat Road	20%	20%
	Forni Road east of Missouri Flat Road	10%	10%
	Diamond Springs Parkway	---	14%
Internal along Missouri Flat Road	Golden Center Drive	10%	10%
Total		100%	100%



EXISTING PROJECT TRIP DISTRIBUTION



PROJECT ONLY
TRAFFIC VOLUMES EXISTING SCENARIOS

PROJECT TRAFFIC IMPACTS

Existing Plus Project Conditions

Traffic Volumes The impacts of developing the project uses on the project site have been identified by superimposing project traffic onto existing background conditions. Figure 6 displays the "Existing Plus Project" traffic volumes at each study intersection in both a.m. and p.m. peak hours.

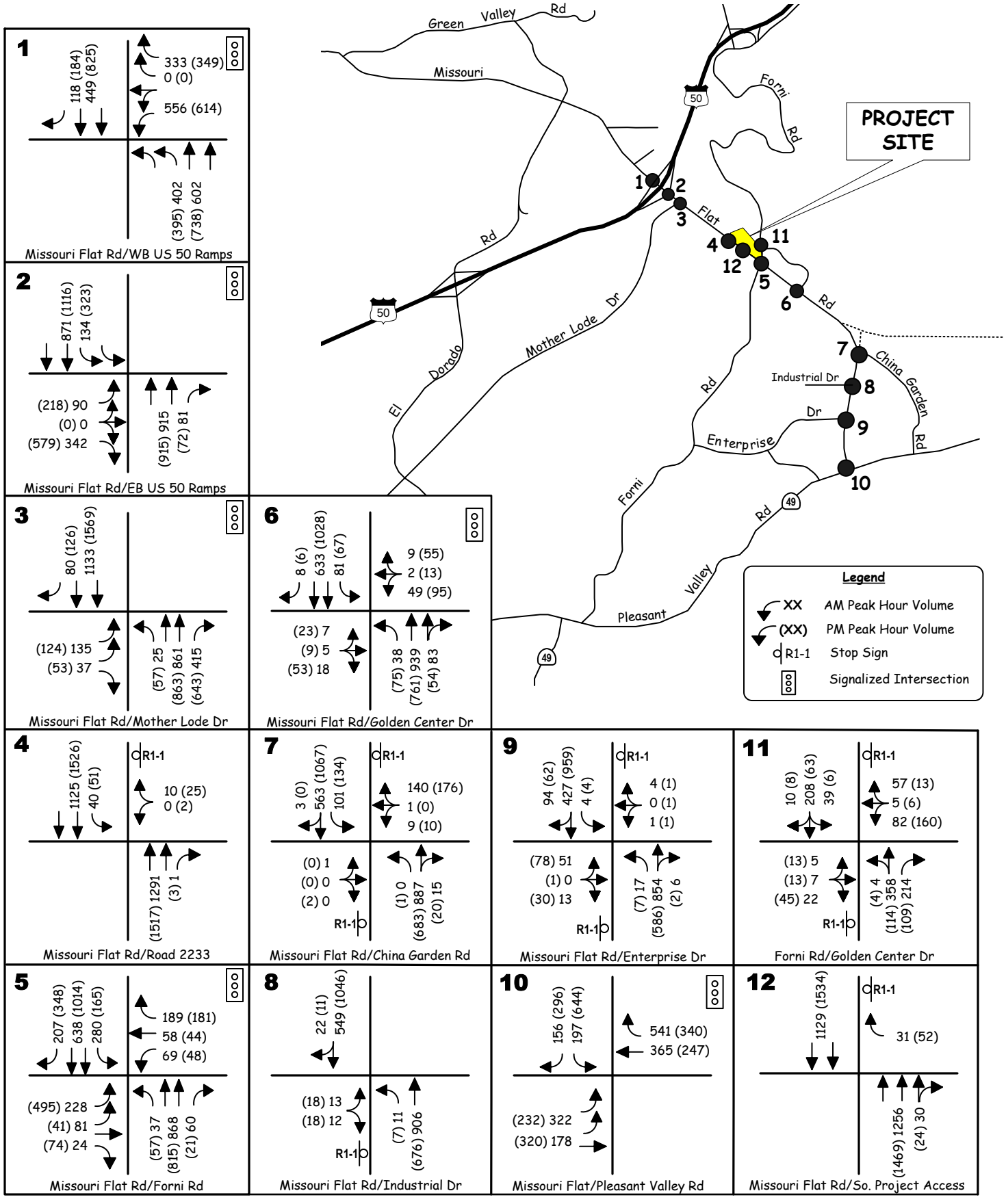
Circulation System Improvements. Figure 6 also presents the intersection geometry and traffic controls resulting from implementation of the project's planned improvements along Missouri Flat Road. Currently, three northbound lanes depart the Missouri Flat Road / Forni Road intersection. The third lane is dropped about 200' north of the intersection. The third lane will be extended along the project frontage with a mandatory right turn at Road 2233. Full access along Road 2233 will remain while the proposed access point along Missouri Flat Road will provide right-in, right-out access only. A third access, along Forni Road will be constructed and become the fourth leg of the existing Forni Road / Golden Center Drive intersection.

Intersection Levels of Service. Intersection Levels of Service were calculated and used as the basis for evaluating project impacts. Table 9 displays the peak hour Levels of Service at each study intersection and compares existing Levels of Service with those accompanying the project. All intersections except the Missouri Flat Road / China Garden Road intersection and the Missouri Flat Road / Enterprise Drive intersection will continue to operate above the minimum El Dorado County standard (i.e., LOS E or better).

The Missouri Flat Road / China Garden Road intersection and the Missouri Flat Road / Enterprise Drive intersection will operate with the side streets at LOS F; the China Garden Road intersection will operate with the eastbound driveway (195.5 spv) and westbound approach (59.8 spv) at LOS F in the a.m. peak hour. The Enterprise Drive intersection will operate with the eastbound approach at LOS F (107.4 spv) in the a.m. peak hour and p.m. peak hour (288.8 spv).

Traffic Signal Warrants. Existing Plus Project traffic volumes at unsignalized intersections were compared to peak hour warrant requirements to determine whether traffic signals may be needed. The Missouri Flat Road / Enterprise Drive intersection will meet the peak hour signal warrant in the p.m. peak hour. The Missouri Flat Road / China Garden Road intersection will meet the volume portion of the peak hour warrant in the a.m. and p.m. peak hours.

Intersection Queues. Table 10 identifies peak period queues assuming the addition of project trips. Project trips and the SimTraffic software may change the length of some queues. Those 95th percentile queues with lengths exceeding the available storage have been highlighted. Under Existing Plus Project conditions nine locations will exceed the available storage.



EXISTING PLUS PROJECT
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

TABLE 9
PEAK HOUR INTERSECTION LEVELS OF SERVICE
EXISTING PLUS PROJECT CONDITIONS

Location	Control	AM Peak Hour				PM Peak Hour				Traffic Signal Warranted?
		Existing		Ex Plus Project		Existing		Ex Plus Project		
		LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	
1. Missouri Flat Rd / WB US 50 ramps	Signal	B	18.7	B	17.0	B	17.6	B	18.0	N/A
2. Missouri Flat Rd / EB US 50 ramps	Signal	B	16.3	B	16.7	C	21.0	C	21.7	N/A
3. Missouri Flat Rd / Mother Lode Dr	Signal	A	8.0	A	8.3	A	8.3	A	8.5	N/A
4. Missouri Flat Rd/ Road 2233	WB Stop									No
SB Left		---	---	(B)	(13.2)	(B)	(14.0)	(C)	(15.8)	
WB		---	---	(B)	(14.7)	(E)	(38.7)	(C)	(20.0) ◊	
5. Missouri Flat Rd / Forni Rd	Signal	C	20.3	C	20.8	C	22.4	C	22.9	N/A
6. Missouri Flat Rd / Golden Center Dr	Signal	B	13.7	B	13.5	C	21.1	C	21.3	N/A
7. Missouri Flat Rd / China Garden Rd	EB/WB Stop									No*
NB Left		---	---	---	---	(B)	(10.6)	(B)	(10.7)	
SB Left		(B)	(11.2)	(B)	(11.3)	(A)	(9.8)	(A)	(9.9)	
EB		(F)	(185.9)	(F)	(195.5)	(C)	(18.6)	(C)	(19.1)	
WB		(F)	(55.9)	(F)	(59.8)	(E)	(43.5)	(E)	(49.2)	
8. Missouri Flat Rd/ Industrial Dr	EB Stop									No
NB Left		(A)	(8.9)	(A)	(8.9)	(B)	(10.9)	(B)	(11.1)	
EB		(C)	(17.8)	(C)	(18.0)	(C)	(24.5)	(D)	(25.4)	

* meets volume portion of peak hour warrant in AM and PM peak hours
** meets peak hour warrant in PM peak hour
◊ decrease in delay due to additional capacity with turn lane added
(xx) – delay and level of service using Synchro 2010 including TWLTL analysis
Red indicated threshold exceeded

TABLE 9 (cont'd)
PEAK HOUR INTERSECTION LEVELS OF SERVICE
EXISTING PLUS PROJECT CONDITIONS

Location	Control	AM Peak Hour				PM Peak Hour				Traffic Signal Warranted?
		Existing		Ex Plus Project		Existing		Ex Plus Project		
		LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	
9. Missouri Flat Rd / Enterprise Dr	EB/WB Stop									Yes**
NB Left		(A)	(8.7)	(A)	(8.8)	(B)	(10.5)	(B)	(10.7)	
SB Left		(B)	(10.2)	(B)	(10.2)	(A)	(8.7)	(A)	(8.8)	
EB		(F)	(99.1)	(F)	(107.4)	(F)	(250.8)	(F)	(288.8)	
WB		(C)	(23.7)	(C)	(24.2)	(E)	(40.0)	(E)	(42.2)	
10. Missouri Flat Rd/Pleasant Valley Rd (SR 49)	Signal	B	17.0	B	16.6	B	15.9	B	17.2	N/A
11. Forni Rd / Golden Center Dr	WB Stop									No
NB Left		---	---	A	2.7	---	---	A	2.6	
SB Left		---	---	A	6.2	---	---	A	3.9	
EB		A	6.2	A	7.1	A	2.8	A	4.8	
WB		A	12.3	B	13.7	A	6.9	A	6.8	
12. Missouri Flat Road / Project Access	WB Stop	---	---			---	---			No
WB				A	6.1			A	6.8	

* meets volume portion of peak hour warrant in AM and PM peak hours
** meets peak hour warrant in PM peak hour
(xx) – delay and level of service using Synchro 2010 including TWLTL analysis
Red indicated threshold exceeded

TABLE 10
EXISTING PLUS PROJECT PEAK HOUR QUEUES AT SIGNALIZED INTERSECTIONS

Location	Capacity (feet)	AM Peak Hour				PM Peak Hour			
		VPH			Ex Plus Project Queue (feet)	VPH			Ex Plus Project Queue (feet)
		Existing	Project Only	Total		Existing	Project Only	Total	
1. Missouri Flat Road / WB US 50 ramps									
NB left turn	160	390 (2)	12	402	169	365 (2)	30	395	166
NB through	360	600 (2)	2	602	284	732 (2)	6	738	256
SB through	520	446 (2)	3	449	139	822 (2)	3	825	246
WB left turn	410	541 (2)	15	556	228	596 (2)	18	614	240
WB right turn	410	333 (2)	0	333	130	349 (2)	0	349	150
2. Missouri Flat Road / EB US 50 ramps									
NB through	160	900 (2)	15	915	201	879 (2)	36	915	187
NB right turn	140	81	0	81	70	72	0	72	84
SB left	160	134 (2)	0	134	193	323 (2)	0	323	216
SB through	380	853 (2)	18	871	358	1,095 (2)	21	1,116	431
EB left+through+right turn	540	417 (3)	15	432	149	779 (3)	18	797	229
3. Missouri Flat Road / Mother Lode Drive									
NB left turn	150	23	2	25	58	51	6	57	82
NB through	2,300	846 (2)	15	861	177	827 (2)	36	863	165
SB through	140	1,100 (2)	33	1,133	105	1,530 (2)	37	1,567	162
SB right turn	130	80	0	80	<25	126	0	126	64

Highlighted values indicate queue length in excess of available storage

TABLE 10 (cont'd)
EXISTING PLUS PROJECT PEAK HOUR QUEUES AT SIGNALIZED INTERSECTIONS

Location	Capacity (feet)	AM Peak Hour				PM Peak Hour			
		VPH			Ex Plus Project Queue (feet)	VPH			Ex Plus Project Queue (feet)
		Existing	Project Only	Total		Existing	Project Only	Total	
5. Missouri Flat Road / Forni Road									
NB left turn	250	37	0	37	84	57	0	57	70
NB through	1,000	855 (2)	13	868	259	800 (2)	15	815	253
NB right turn	160	60	0	60	120	21	0	21	79
SB left turn	300	280	0	280	272	165	0	165	182
SB through	2,300	642 (2)	-4	638	195	1,019 (2)	-6	1,013	271
SB right turn	150	207	0	207	118	348	0	348	184
EB left turn	195	226	2	228	139	492	3	495	232
WB left turn	190	52	17	69	99	15	33	48	78
6. Missouri Flat Road / Golden Center Drive									
NB left turn	120	38	0	38	72	75	0	75	116
SB left turn	160	81	0	81	112	67	0	67	145
10. Missouri Flat Road / SR 49 (Pleasant Valley Rd)									
SB left turn	600	191	6	197	152	625	6	627	238
SB right turn	600	154	2	156	78	291	2	293	102
EB left turn	160	320	2	322	165	229	3	232	142
WB right turn	190	534	7	541	229	330	10	340	147

Highlighted values indicate queue length in excess of available storage

Existing plus Project Roadway Segment Levels of Service. Table 11 summarizes the Levels of Service based on the Existing plus Project traffic volumes on study area roads with the modified roadway configurations as a result of the project. Applicable Level of Service thresholds and roadway classifications are presented. The Levels of Service along Missouri Flat Road were computed using the HCS two-lane roadway and multilane highways methodologies. The multilane segments operate at LOS C or better while the two-lane roadway segment operates within acceptable LOS thresholds, operating at LOS E.

TABLE 11
EXISTING PLUS PROJECT MISSOURI FLAT ROAD SEGMENT LEVELS OF SERVICE

Roadway	Location	Facility Classification	AM				PM			
			ATS	PTSF	Density	LOS	ATS	PTSF	Density	LOS
Missouri Flat Road	Mother Lode Dr to Golden Center Dr	Multi Lane Highway								
	NB		---	---	17.0	B	---	---	19.3	C
	SB		---	---	17.4	B	---	---	20.6	C
	Golden Center Dr to China Garden Rd	Multi Lane Highway								
	NB		---	---	13.4	B	---	---	12.7	B
	SB		---	---	12.8	B	---	---	15.6	B
	China Garden Rd to Pleasant Valley Rd	Class I Highway								
	NB		21.6	89.0	---	E	20.3	85.7	---	E
	SB		21.7	86.6	---	E	20.0	92.6	---	E

CUMULATIVE IMPACTS (2035)

The analysis of the long range 2035 cumulative condition is intended to consider the impact of this project within the context of buildout of the General Plan circulation element occurring in 2035.

Year 2035 Forecasts / Conditions

Roadway Conditions

Roadways in 2035 are generally projected to remain with their current lane configurations with the following changes to the roadway network:

- The Diamond Springs Parkway, north of China Garden Road, will connect Missouri Flat Road to Diamond Road (SR 49) and is projected to be completed by 2035. This roadway will include two through lanes in each direction with turn lanes at key intersections. Missouri Flat Road will become the west and south legs of the Missouri Flat Road / Diamond Springs Parkway intersection.

- Missouri Flat Road south of Diamond Springs Parkway will be widened to include two through lanes in each direction.

- Installation of a traffic signal at the Missouri Flat Road / Industrial Drive intersection as identified in the *El Dorado County Public Safety Facility Project Draft EIR*.

- Side street approaches to the Missouri Flat Road / China Garden Road intersection will be limited to right turns only as a result of the mitigations identified in the *El Dorado County Public Safety Facility Project Draft EIR*. The DEIR noted two alternative mitigations for this intersection, installation of a traffic signal or limiting minor street access to right turns only. County staff determined that a signal at China Garden Road is not the preferred alternative based on the installation of the traffic signal at Industrial Drive as noted above.

The Missouri Flat Road / Diamond Springs Parkway intersection will include two left turn lanes and a through-right lane along the northbound approach, a left turn lane, two through lanes and a right turn lane along the eastbound approach, a single lane along the southbound approach and a left turn lane, a through lane and a through-right lane on the westbound approach. The intersection will be signalized and was analyzed as part of the 2035 conditions.

2035 Traffic Forecasts

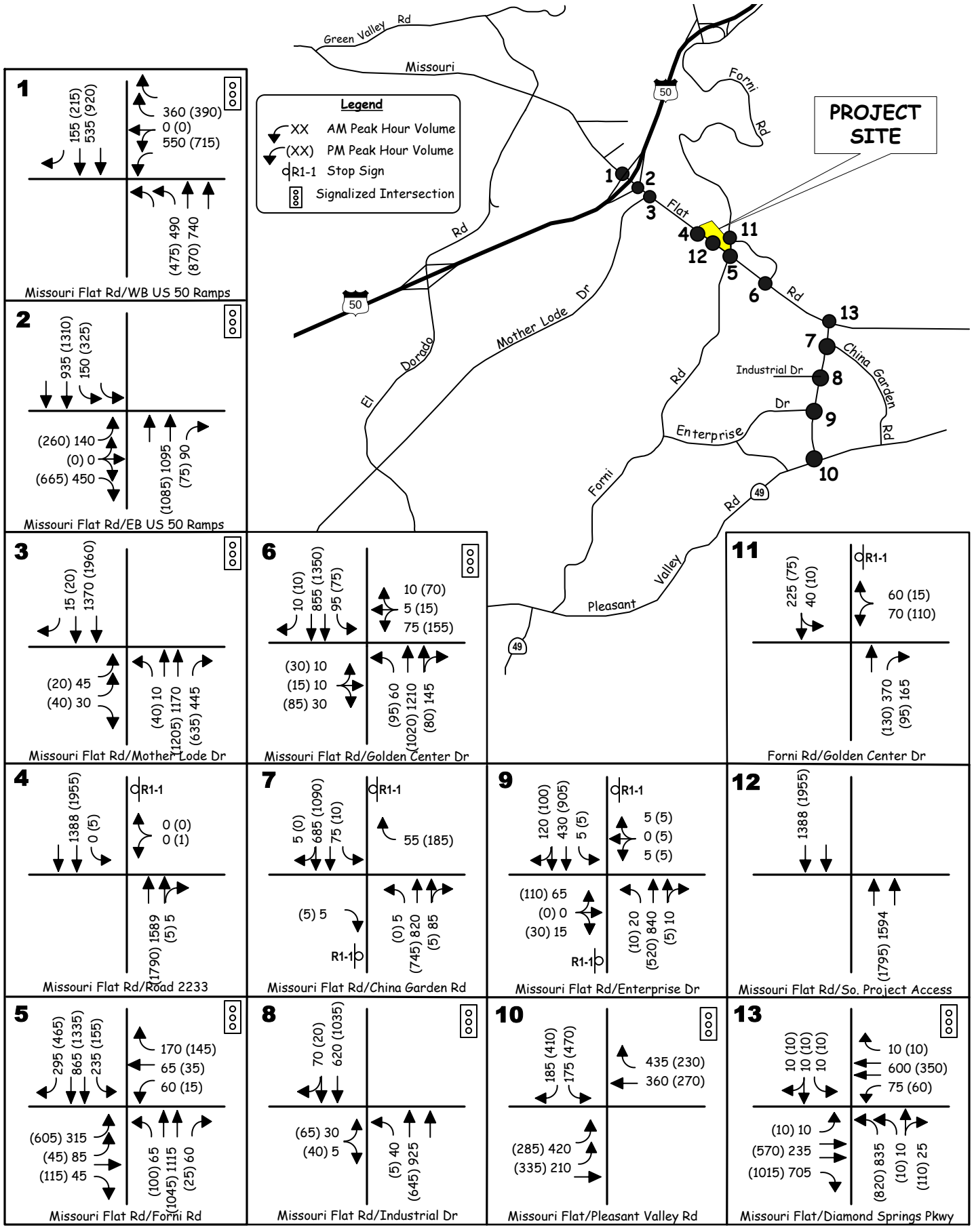
Year 2035 traffic forecasts were based on the most recent Countywide traffic model modified to include the four-lane section of Missouri Flat Road south of Diamond Springs Parkway. Projected 2035 roadway volumes were reviewed and approved by County staff.

Two methods were used to develop forecasts of future year peak hour intersection turning movement traffic volumes for this traffic impact study:

> **Method #1** was used at existing intersections that would not have legs added to the intersection in the future, and would not experience substantial unbalanced increases in traffic volumes (substantial increases in traffic volumes on some legs of the intersection, but not on other legs of the intersection). At these intersections, existing turning movement count data are available, and can be increased by application of model-generated growth factors. The intersection of Missouri Flat and Forni Road is an example of an intersection in this category.
>
> **Method #2** was used at new intersections, intersections that would have added legs in the future, or would experience substantial unbalanced increases in traffic volumes. At these intersections, existing turning movement count data are not available, or cannot be validly increased by application of model-generated growth factors. The intersection of Diamond Springs Parkway and Missouri Flat Road is example of an intersection in this category.

Method #1. In Method #1, peak hour traffic volumes from the travel model was used to generate growth factors. These growth factors were applied to existing peak hour intersection turning movement traffic volumes. The development of future year intersection turning movement traffic volumes requires that the turning movements at each intersection "balance". To achieve the balance, inbound traffic volumes must equal the outbound traffic volumes, and the volumes must be distributed among the various left-turn, through, and right-turn movements at each intersection. The "balancing" of future year intersection turning movement traffic volumes was conducted using methods described in the Transportation Research Board's (TRB's) National Cooperative Highway Research Program (NCHRP) Report 255, *Highway Traffic Data for Urbanized Area Project Planning and Design*. The NCHRP 255 method applies the desired peak hour directional volumes to the intersection turning movement volumes, using an iterative process to balance and adjust the resulting forecasts to match the desired peak hour directional volumes.

Method #2. In Method #2, where the road configuration is expected to change between the current year and 2035 the model forecasts were used to determine approach and departure volumes at the new intersections. As noted in the County's TIS Guidelines the forecasted model volumes were reviewed for reasonableness and adjusted as necessary. Balancing of the future turning movement traffic volumes were again conducted using the methods from NCHRP 255. Intersection turning movements are presented in Figure 7.



2035 TRAFFIC VOLUMES AND LANE CONFIGURATIONS

2035 Intersection Levels of Service. The identified Year 2035 volumes were used to recalculate operating Levels of Service at the study intersections. Table 12 displays the a.m. and p.m. peak hour Levels of Service at each study intersection in the 2035 condition.

Two intersections will operate with LOS F conditions. These include the Missouri Flat Road / Road 2233 intersection which will operate with the westbound approach at LOS F in the p.m. peak hour (58.0 spv) and the eastbound driveway at LOS F in the a.m. peak hour (51.8 spv) and p.m. peak hour (94.8 spv) and the Missouri Flat Road / Enterprise Drive intersection which will operate at LOS F along the eastbound approach in the p.m. peak hour (200.5 spv).

Traffic Signal Warrants. 2035 traffic volumes at unsignalized intersections were compared to peak hour warrant requirements to determine whether traffic signals may be needed. The Missouri Flat Road / Enterprise Drive intersection will meet both portions of the warrant in the p.m. peak hour. The Missouri Flat Road / China Garden Road intersection will meet the volume portion of the peak hour warrant in the p.m. peak hour. No other intersections will meet any portion of the peak hour warrant.

2035 Intersection Queues. Table 13 identifies peak period queues for the Year 2035 base condition. Project trips will result in additional queuing throughout the study area with ten locations projected to exceed the available storage. The most extensive queues are projected to occur in the northbound through lane of the US 50 / Missouri Flat Road interchange where the queue is projected to be about 425'. This will extend into the adjacent eastbound ramps intersection. Additionally, the southbound left turn queue along Missouri Flat Road at the eastbound on-ramp is expected to be about 186'. Although this will exceed the lane storage it is expected that the queue can be contained within the taper into the turn lanes. The Missouri Flat Road / Forni Road intersection is also expected to have queues exceeding the available storage. This will occur in the southbound left turn lane where the longest queue is expected to be about 341'. The southbound right turn lane will also exceed the available turn lane, extending about 232'. The northbound left turn lane at Missouri Flat Road and Golden Center Drive is projected to reach 194'; however, vehicles can queue into the existing two-way-left-turn-lane south of the intersection.

2035 Roadway Segment Levels of Service. Table 14 summarizes the Levels of Service based on the projected 2035 traffic volumes on study area roads with the future roadway configuration. Missouri Flat Road will be widened to four lanes from Diamond Springs Parkway south to Pleasant Valley Road. Applicable Level of Service thresholds and roadway classifications are presented. The Levels of Service along Missouri Flat Road were computed using the HCS multilane highways methodology. All segments are projected to operate at LOS C or better.

TABLE 12
PEAK HOUR INTERSECTION LEVELS OF SERVICE
2035 PLUS PROJECT CONDITIONS

Location	Control	AM Peak Hour				PM Peak Hour				Traffic Signal Warranted?
		2035		2035 Plus Project		2035		2035 Plus Project		
		LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	
1. Missouri Flat Rd / WB US 50 ramps	Signal	B	19.1	B	16.3	C	20.1	C	23.3	N/A
2. Missouri Flat Rd / EB US 50 ramps	Signal	B	13.4	B	14.6	C	23.9	C	25.8	N/A
3. Missouri Flat Rd / Mother Lode Dr	Signal	A	8.9	B	12.4	B	12.6	B	17.4	N/A
4. Missouri Flat Rd / Road 2233	WB Stop									No
SB Left		---	---	(C)	(17.8)	(C)	(17.4)	(C)	(24.1)	
WB		---	---	(C)	(16.6)	(F)†	(58.0)	(C)	(20.9) ◊	
5. Missouri Flat Rd / Forni Rd	Signal	C	29.2	C	31.8	D	45.6	E	56.1	N/A
6. Missouri Flat Rd / Golden Center Dr	Signal	C	22.3	C	23.5	C	34.8	D	36.7	N/A
7. Missouri Flat Rd / China Garden Rd	WB Stop									No*
NB Left		A	7.9	B	12.3	---	---	---	---	
SB Left		B	14.6	C	16.6	B	10.8	B	11.0	
EB Right		A	7.2	A	8.9	B	13.5	A	9.8	
WB Right		A	9.5	A	9.6	B	10.4	B	13.8	
8. Missouri Flat Rd/ Industrial Dr	Signal	A	4.4	A	4.2	A	4.0	A	4.2	N/A

* meets volume portion of peak hour warrant in AM and PM peak hours
** meets peak hour warrant in AM and PM peak hour
◊ decrease in delay due to additional capacity with turn lane added
(xx) – delay and level of service using Synchro 2010 including TWLTL analysis
† - LOS F acceptable along Missouri Flat Road from US 50 to China Garden Road
Red indicated threshold exceeded

TABLE 12 (cont'd)
PEAK HOUR INTERSECTION LEVELS OF SERVICE
2035 PLUS PROJECT CONDITIONS

Location	Control	AM Peak Hour				PM Peak Hour				Traffic Signal Warranted?
		2035		2035 Plus Project		2035		2035 Plus Project		
		LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	
9. Missouri Flat Rd / Enterprise Dr	EB / WB									Yes**
NB Left	Stop	(A)	(8.7)	(A)	(8.7)	(B)	(10.6)	(B)	(10.7)	
SB Left		(A)	(9.8)	(A)	(9.9)	(A)	(8.6)	(A)	(8.6)	
EB		(D)	(32.3)	(D)	(32.9)	(F)	(200.5)	(F)	(208.4)	
WB		(C)	(21.9)	(C)	(22.1)	(D)	(29.0)	(D)	(29.5)	
10. Missouri Flat Rd / Pleasant Valley Rd (SR 49)	Signal	B	15.0	B	16.1	B	12.6	B	13.2	N/A
11. Forni Rd / Golden Center Dr	WB Stop									No
SB Left		A	5.4	A	6.7	A	3.3	A	3.0	
WB		A	9.6	B	11.7	A	5.1	A	5.7	
12. Missouri Flat Rd / Project Access	WB Stop									N/A
WB		---	---	A	8.7	---	---	B	11.3	
13. Missouri Flat Road / Diamond Springs Pkwy	Signal	B	16.4	B	16.8	B	17.0	B	17.5	N/A

* meets volume portion of peak hour warrant in AM and PM peak hours
** meets peak hour warrant in AM and PM peak hour
(xx) – delay and level of service using Synchro 2010 including TWLTL analysis
Red indicated threshold exceeded

TABLE 13
2035 PEAK HOUR QUEUES AT SIGNALIZED INTERSECTIONS

Location	Capacity (feet)	AM Peak Hour		PM Peak Hour	
		VPH	Queue (feet)	VPH	Queue (feet)
1. Missouri Flat Road / WB US 50 ramps					
NB left turn	160	490 (2)	168	475 (2)	166
NB through	360	740 (2)	424	870 (2)	246
SB through	520	535 (2)	158	920 (2)	290
WB left turn	410	550 (2)	199	715 (2)	307
WB right turn	410	360 (2)	147	390 (2)	188
2. Missouri Flat Road / EB US 50 ramps					
NB through	160	1,095 (2)	197	1,085 (2)	189
NB right turn	140	90	37	75	<25
SB left	160	150 (2)	95	325 (2)	186
SB through	380	935 (2)	103	1,310 (2)	351
EB left+through+right turn	540	590 (3)	166	925 (3)	278
3. Missouri Flat Road / Mother Lode Drive					
NB left turn	150	10	67	40	148
NB through	2,300	1,170 (2)	281	1,205 (2)	543
SB through	140	1,370 (2)	185	1,960 (2)	205
SB right turn	130	15	35	20	<25
5. Missouri Flat Road / Forni Road					
NB left turn	250	65	216	100	206
NB through	1,000	1,115 (2)	423	1,045 (2)	361
NB right turn	160	60	155	25	84
SB left turn	300	235	341	155	332
SB through	2,300	865 (2)	402	1,335 (2)	533
SB right turn	150	295	205	465	232
EB left turn	200	315 (2)	183	605 (2)	246
WB left turn	185	60	103	15	46
6. Missouri Flat Road / Golden Center Drive					
NB left turn	120	60	156	95	194
SB left turn	160	95	172	75	182

Highlighted values indicate queue length in excess of available storage

TABLE 13 (cont'd)
2035 PEAK HOUR QUEUES AT SIGNALIZED INTERSECTIONS

Location	Capacity (feet)	AM Peak Hour		PM Peak Hour	
		VPH	Queue (feet)	VPH	Queue (feet)
8. Missouri Flat Road / Industrial Drive					
NB left turn	200	40	58	5	<25
EB left-right	500	35	54	105	86
10. Missouri Flat Road / SR 49 (Pleasant Valley Rd)					
SB left turn	600	175	118	470	198
SB right turn	600	185	81	410	122
EB left turn	160	420 (2)	149	285 (2)	118
WB right turn	190	435	150	230	82
13. Missouri Flat Road / Diamond Springs Parkway					
NB left	275	835 (2)	249	820 (2)	235
EB through	1,600	235 (2)	113	570 (2)	101
EB right (free)	250	705	<25	1,015	40
WB left	500	75	92	60	59

Highlighted values indicate queue length in excess of available storage

TABLE 14
2035 MISSOURI FLAT ROAD SEGMENT LEVELS OF SERVICE

Roadway	Location	Facility Classification	2035 AM		2035 PM	
			Density	LOS	Density	LOS
Missouri Flat Rd	Mother Lode Dr to Golden Center Dr	Multi-Lane				
	NB	Highway	20.1	C	23.2	C
	SB		17.3	B	24.7	C
	Golden Center Dr to China Garden Rd	Multi-Lane				
	NB	Highway	17.5	B	14.8	B
	SB		11.9	B	19.7	C
	China Garden Rd to Pleasant Valley Rd	Multi-Lane				
	NB	Highway	11.8	B	8.8	A
	SB		8.5	A	13.0	B

2035 Plus Project

Trip Distribution & Assignment. A new trip distribution pattern was applied to trips related to the Project in the future. Table 8 presents the project trip distributions for 2035 conditions. The Long-Term scenario considers the completion of the Diamond Springs Parkway (DSP), between Missouri Flat Road and Diamond Road. Project traffic that is projected to use Missouri Flat Road and Pleasant Valley Road to get to the project site in the short term will be able to use DSP by 2035 to access the site directly. Figure 8 presents the modified trip distribution with DSP completed.

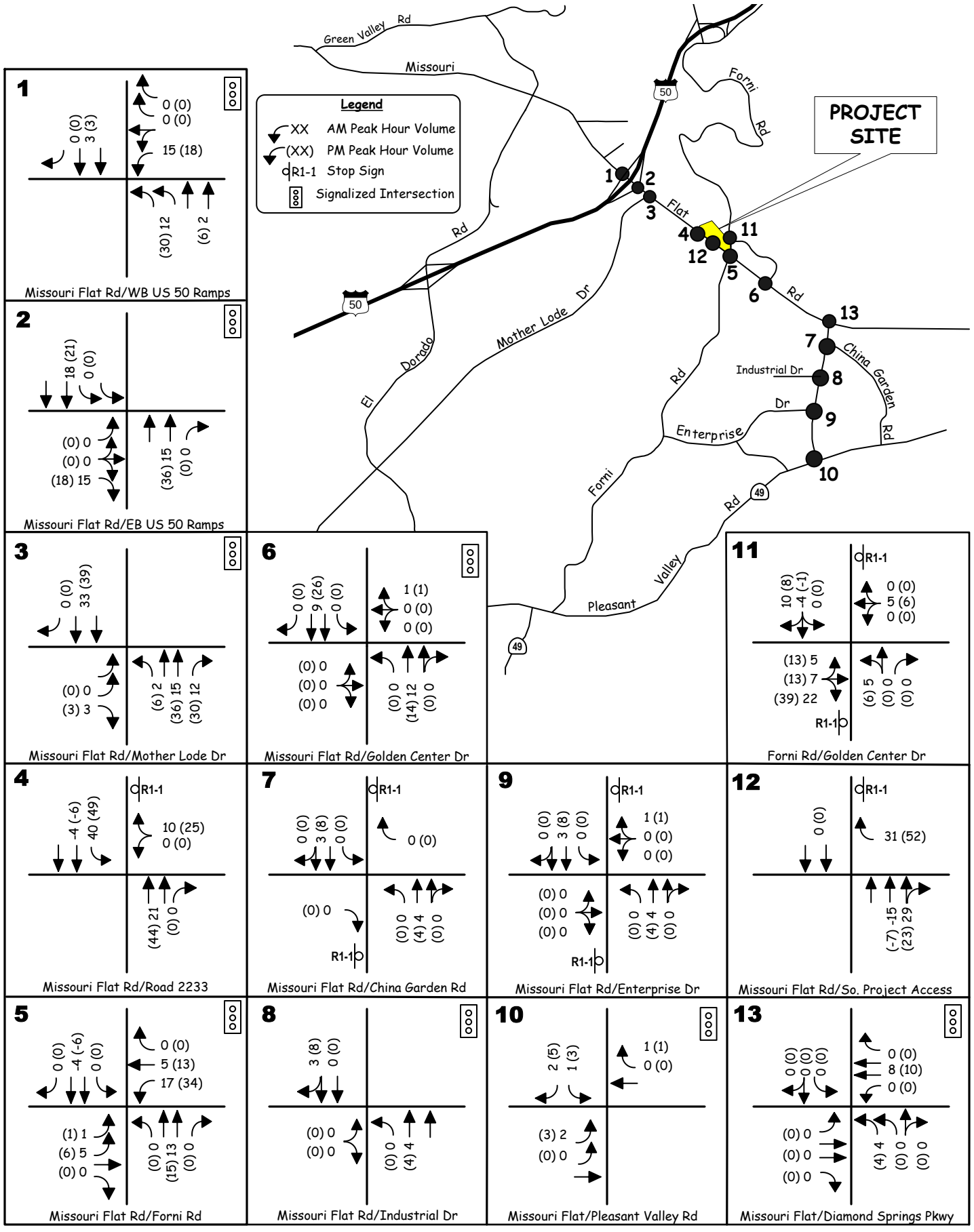
Intersection Levels of Service. The Year 2035 plus Project volumes were used to recalculate operating Levels of Service at the study intersections. Figure 8 displays the "2035 Project Only" traffic volumes while Figure 9 present the "2035 Plus Project traffic" traffic volumes at each study intersection in both a.m. and p.m. peak hours. Table 12 displays the a.m. and p.m. peak hour Levels of Service at each study intersection. One intersection will operate at LOS F conditions with the proposed project. This is the Missouri Flat Road / Enterprise Drive intersection which will operate with the eastbound approach at LOS F (58.0 spv).

Traffic Signal Warrants. 2035 Plus Project traffic volumes at unsignalized intersections were compared to peak hour warrant requirements to determine whether traffic signals may be needed. The Missouri Flat Road / Enterprise Drive intersection will continue to meet the both conditions of the peak hour signal warrant in the p.m. peak hour. The Missouri Flat Road / China Garden Road intersection will continue to meet the volume portion of the peak hour warrant in the p.m. peak hour. No other intersections will meet any portion of the peak hour warrant.

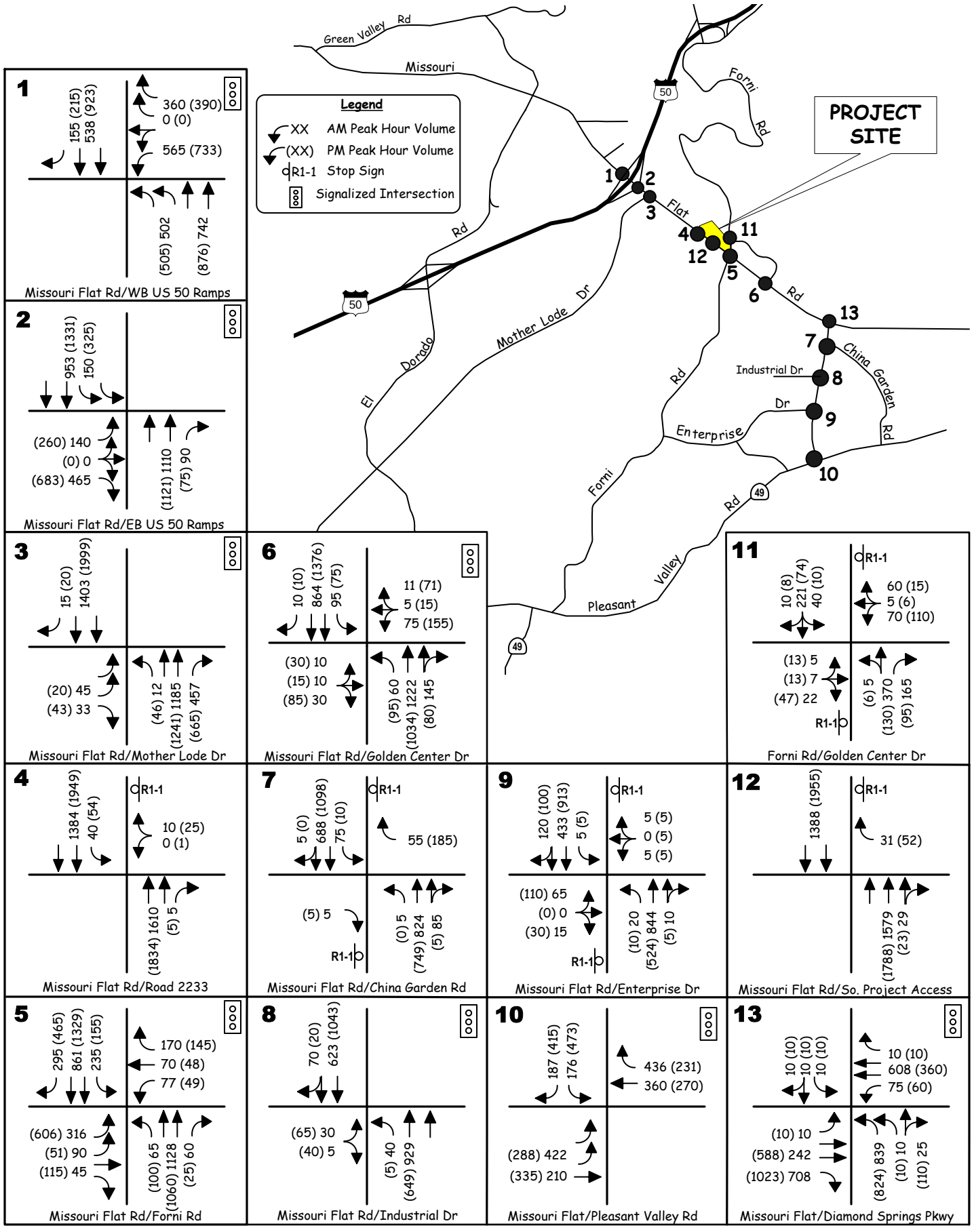
Intersection Queues. Table 13 identifies peak period queues for the Year 2035 plus Project condition assuming the addition of project trips**.** Project trips will result in additional queuing throughout the study area with fourteen locations projected to exceed the available storage. Queues will continue to occur in the vicinity of the US 50 / Missouri Flat Road interchange where the westbound US 50 off-ramp left turn queue is projected to reach about 502'. The dual left and right turn lanes are about 410' while the two-lane off-ramp is about 1,500'. The 502' queue can be contained along the off-ramp.

The queue in the northbound through lane along Missouri Flat Road at the Eastbound US 50 Ramps intersection is projected to be about 185'. This will extend into the adjacent eastbound ramps intersection similarly to the existing conditions. The southbound left turn queue along Missouri Flat Road is expected to be about 192'. Similar to the 2035 No Project conditions it is expected that the queue can be contained within the taper into the turn lanes. The southbound through lane at Mother Lode Drive is expected to exceed the available length to the Eastbound Ramps intersection by up to 67'. The Missouri Flat Road / Forni Road intersection is also expected to have queues exceeding the available storage. This will occur in the southbound left turn lane where the longest queue is expected to be about 355'. The southbound right turn lane will also exceed the available turn lane, extending about 228'. The northbound left turn lane at Missouri Flat Road and Golden Center Drive is projected to reach 203'; however, vehicles can queue into the existing two-way-left-turn-lane south of the intersection.

2035 plus Project Roadway Segment Levels of Service. Table 14 summarizes the Levels of Service based on the projected 2035 traffic volumes on study area roads as a result of the project and the future widening project along Missouri Flat Road. Applicable Level of Service thresholds and roadway classifications are presented. The Levels of Service along Missouri Flat Road are projected to operate at LOS C or better.



PROJECT ONLY TRAFFIC VOLUMES
2035 SCENARIO



2035 PLUS PROJECT
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

TABLE 13
2035 PLUS PROJECT PEAK HOUR QUEUES AT SIGNALIZED INTERSECTIONS

Location	Capacity (feet)	AM Peak Hour				PM Peak Hour			
		VPH			2035 Plus Project Queue (feet)	VPH			2035 Plus Project Queue (feet)
		2035	Project Only	Total		2035	Project Only	Total	
1. Missouri Flat Rd / WB US 50 ramps									
NB left turn	160	490 (2)	12	502	163	475 (2)	30	505	164
NB through	360	740 (2)	2	742	441	870 (2)	6	876	300
SB through	520	535 (2)	3	538	162	920 (2)	3	923	289
WB left turn	410	550 (2)	15	565	196	715 (2)	18	733	502
WB right turn	410	360 (2)	0	360	148	390 (2)	0	390	307
2. Missouri Flat Rd / EB US 50 ramps									
NB through	160	1,095 (2)	15	1,110	192	1,085 (2)	36	1,121	185
NB right turn	140	90	0	90	35	75	0	75	<25
SB left	160	150 (2)	0	150	101	325 (2)	0	325	192
SB through	380	935 (2)	18	953	127	1,310 (2)	21	1,311	377
EB left+through+right turn	540	590 (3)	15	605	177	925 (3)	18	943	316
3. Missouri Flat Rd / Mother Lode Drive									
NB left turn	150	10	2	12	68	40	6	46	167
NB through	2,300	1,170 (2)	15	1,185	503	1,205 (2)	36	1,241	768
SB through	140	1,370 (2)	33	1,403	192	1,960 (2)	39	1,999	207
SB right turn	130	15	0	15	<25	20	0	20	35
5. Missouri Flat Rd / Forni Rd									
NB left turn	250	65	0	65	203	100	0	100	258
NB through	1,000	1,115 (2)	13	1,128	449	1,045 (2)	15	1,060	423
NB right turn	160	60	0	60	156	25	0	25	109
SB left turn	300	235	0	235	355	155	0	155	324
SB through	2,300	865 (2)	-4	861	404	1,335 (2)	-6	1,329	450
SB right turn	150	295	0	295	209	465	0	465	228
EB left turn	200	315 (2)	1	316	186	605 (2)	1	606	234
WB left turn	185	60	17	77	116	15	34	49	83

Highlighted values indicate queue length in excess of available storage

TABLE 13 (cont'd)
2035 PLUS PROJECT PEAK HOUR QUEUES AT SIGNALIZED INTERSECTIONS

Location	Capacity (feet)	AM Peak Hour VPH 2035	AM Peak Hour VPH Project Only	AM Peak Hour VPH Total	AM Peak Hour 2035 Plus Project Queue (feet)	PM Peak Hour VPH 2035	PM Peak Hour VPH Project Only	PM Peak Hour VPH Total	PM Peak Hour 2035 Plus Project Queue (feet)
6. Missouri Flat Rd / Golden Center Drive									
NB left turn	120	60	0	60	152	95	0	95	203
SB left turn	160	95	0	95	183	75	0	75	183
8. Missouri Flat Road / Industrial Drive									
NB left turn	200	40	0	40	57	5	0	5	<25
EB left-right	500	35	0	35	55	105	0	105	81
10. Missouri Flat Rd / SR 49 (Pleasant Valley Rd)									
SB left turn	600	175	1	176	116	470	3	473	209
SB right turn	600	185	2	187	73	410	5	415	132
EB left turn	160	420 (2)	2	422	165	285 (2)	3	288	130
WB right turn	190	435	1	436	177	230	1	231	106
13. Missouri Flat Rd / Diamond Springs Pkwy									
NB left	275	835 (2)	4	839	259	820 (2)	4	824	270
EB through	1,600	235 (2)	7	242	111	570 (2)	18	588	183
EB right (free)	250	705	3	708	<25	1,015	8	1,023	28
WB left	500	75	0	75	95	60	0	60	80

Highlighted values indicate queue length in excess of available storage

TABLE 14
2035 PLUS PROJECT MISSOURI FLAT ROAD SEGMENT LEVELS OF SERVICE

Roadway	Location	Facility Classification	2035 plus Project AM		2035 plus Project PM	
			Density	LOS	Density	LOS
Missouri Flat Rd	Mother Lode Dr to Golden Center Dr	Multi-Lane				
	NB	Highway	20.4	C	24.1	C
	SB		17.8	B	25.2	C
	Golden Center Dr to China Garden Rd	Multi-Lane				
	NB	Highway	17.6	B	14.9	B
	SB		12.0	B	20.0	C
	China Garden Rd to Pleasant Valley Rd	Multi-Lane				
	NB	Highway	11.8	B	8.8	A
	SB		8.6	A	13.1	B

Mid-Afternoon Traffic Operating Conditions

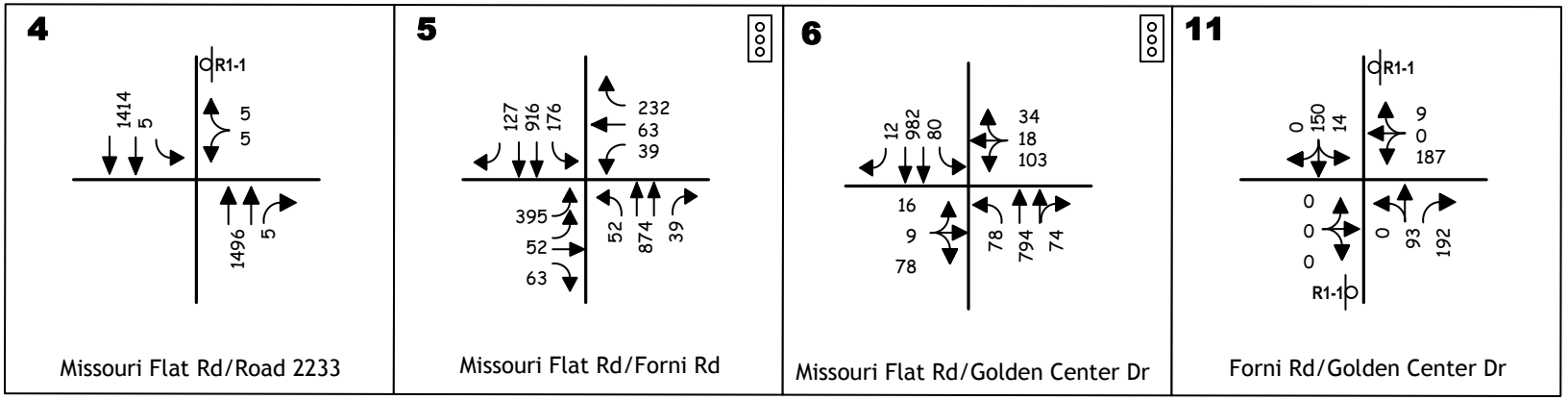
Herbert Green Middle School is located north of the project site, in the northeast quadrant of the Forni Road / Golden Center Drive intersection. School related traffic typically coincides with peak hour traffic in the morning, but school site traffic peaks in the mid-afternoon and not in the late afternoon/early evening commuter period. It is possible that traffic conditions in the nearby area could worsen during this time period. Four intersections identified by DKS Associates, Inc. the County's traffic consultant were analyzed for mid-afternoon conditions. These included Forni Road / Golden Center Drive, Missouri Flat Road / Forni Road, Missouri Flat Road / Golden Center Drive and Missouri Flat Road / Road 2233.

Existing Conditions

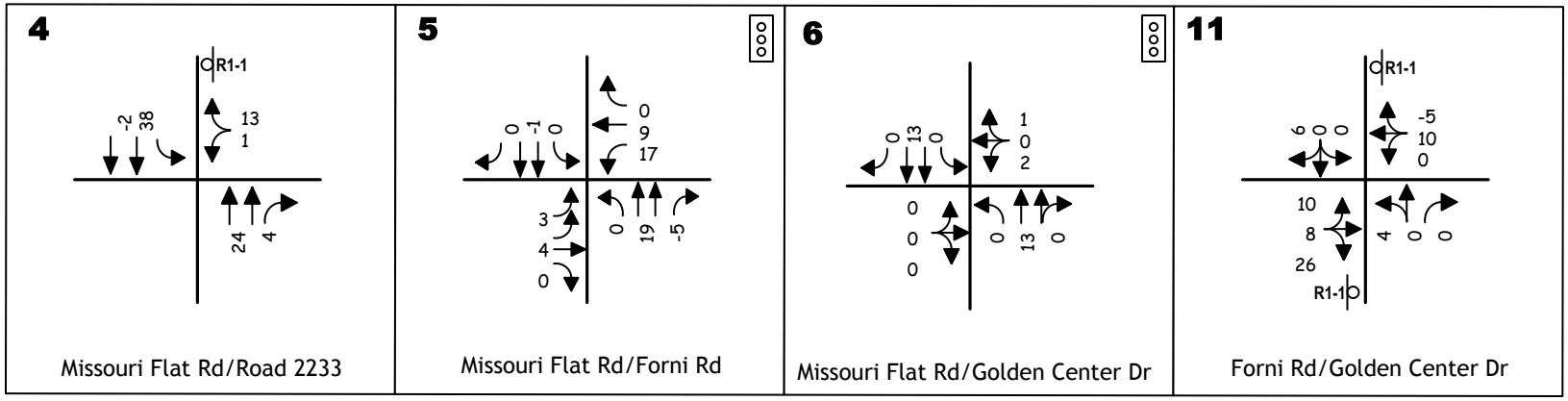
Traffic Volumes. Traffic counts were completed during the mid-week in the first week of May 2017. This included bicycle and pedestrian counts to consider those students that may walk or ride to school as well as other facility users in the surrounding area, such as residents from Gold Country Retirement Center along Golden Center Drive. A large number of students (65) were observed crossing Golden Center Drive as many parents park along Golden Center Drive rather than enter the school parking lot.

Traffic count data is included in the Appendix. Road 2233 was not counted due to the minimum number of residences. To account for side street traffic at this location five vehicle trips were assumed for each movement into and out of the site. This would equate to about twenty residences, overstating the actual number of residences and providing a conservative analysis of traffic conditions. The intersection turning movements are presented in Figure 10.

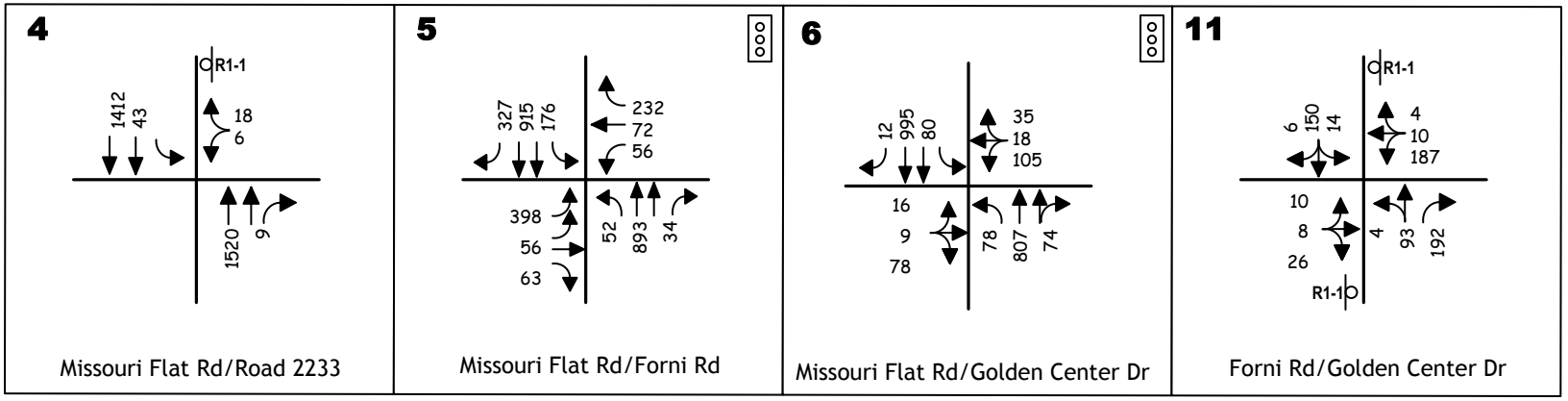
EXISTING
MID-DAY VOLUMES



PROJECT TRAFFIC
MID-DAY



EXISTING PLUS
PROJECT TRAFFIC
MID-DAY



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EXISTING MID-AFTERNOON TRAFFIC VOLUMES AND LANE CONFIGURATION

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Figure 10

Intersection Levels of Service. Table 15 summarizes current operating Levels of Service at the study area intersections. Unlike the a.m. and p.m. peak hour scenarios that simulated traffic along Missouri Flat Road between US 50 and Pleasant Valley Road, this mid-day analysis is specific to four intersections. Therefore, the analysis techniques presented in the *2010 Highway Capacity Manual* were used to calculate Level of Service using Synchro software.

TABLE 15
MID-AFTERNOON PEAK HOUR LEVELS OF SERVICE AT INTERSECTIONS

Location	Control	Existing Mid-Afternoon Peak Hour		Existing + Project Mid-Afternoon Peak Hour		Traffic Signal Warranted?
		LOS	Average Delay	LOS	Average Delay	
4. Missouri Flat Rd / Road 2233	WB Stop					No
SB Left		B	13.8	C	15.0	
WB		D	27.4	D	29.0	
5. Missouri Flat Rd / Forni Rd	Signal	C	24.8	C	25.8	N/A
6. Missouri Flat Rd / Golden Center Dr	Signal	B	17.6	B	17.7	N/A
11. Forni Rd / Golden Center Dr	WB Stop					No
NB Left		---	---	A	7.7	
SB Left		A	7.6	A	7.6	
EB		---	---	B	11.0	
WB		C	19.5	C	24.8	

In the period immediately after school the Forni Road / Golden Center Drive intersection can back up. This is an effect of the congestion associated with the drop-off / pick-up zone inside Herbert Green Middle School (HGMS) and is typical of schools where access to the school zones is limited. At HGMS most traffic enters and exits the site along Forni Road from the south. Congestion occurs when the number of parents arriving to pick up students exceeds the available parking and loading supply. Under those circumstances waiting motorists can form queues that extend back into the adjoining street. This results in short term delays. However, over an entire hour these delays become contributory, but not necessarily significant to the overall operation of the intersection.

All study intersections currently operate with acceptable Levels of Service during the afternoon, at LOS D or better.

Traffic Signal Warrants. Neither of the two intersections meet the peak hour traffic signal warrant. Warrant 5, "School Crossing" was also reviewed to determine whether the intersection currently meets the warrant for signalization. A full analysis was not undertaken as this is beyond the scope of the Creekside Plaza project; however, the intersection would not appear to meet the criteria for a traffic signal. The CA MUTCD notes that implementation of other

measures should be considered such as warning signs, flashers, speed zones and school crossing guards. Warning signs and speed zones are already present along the approaches. Further enhancements, if appropriate, could include a crossing guard at the end of school.

Intersection Queues. Table 16 presents information regarding current peak period queuing in lanes at signalized study intersections. In each case, the available storage has been presented along with current peak hour traffic volumes and the 95th percentile queue length. On multiple lane approaches the longest queue amongst a group of common lanes has been noted.

Most intersections have lane storage capacity that can accommodate peak period queues. Those 95th percentile queues with length exceeding the available storage have been highlighted. The 95th percentile queue exceeds available storage in three locations.

TABLE 16
MID-AFTERNOON PEAK HOUR QUEUES AT SIGNALIZED INTERSECTIONS

Location	Capacity (feet)	Existing Mid-Afternoon Peak Hour		Existing + Project Mid-Afternoon Peak Hour	
		VPH	Queue (feet)	VPH	Queue (feet)
5. Missouri Flat Road / Forni Road					
NB left turn	250	52	81	52	81
NB through	1,000	874 (2)	399	893 (2)	414
NB right turn	160	39	<25	34	<25
SB left turn	300	176	250	176	250
SB through	2,300	916 (2)	383	915 (2)	383
SB right turn	150	327	75	327	75
EB left turn	195	395	247	398	251
WB left turn	190	39	66	56	102
6. Missouri Flat Road / Golden Center Drive					
NB left turn	120	78	181	78	181
SB left turn	160	80	174	80	174

Highlighted values indicate queue length in excess of available storage

Existing plus Project Conditions

Trip Generation. Trip generation for mid-afternoon was calculated using trip generation rates published in Trip Generation (Institute of Transportation Engineers, 9th Edition, 2012). Applicable rates for hourly variation of traffic for an average weekday were used in conjunction with the projected daily traffic to project mid-afternoon project traffic conditions. Hourly

variation values are available for fast food and shopping center traffic, and the higher rate was also used for the professional office portion of the site. The trip generation is shown in Table 17 and is presented in Figure 10.

TABLE 17
TRIP GENERATION

Land Use	Unit Quantity	Size	Trips Per Unit				
			Daily	Hourly Variation	Mid-Afternoon Peak Hour		
					In	Out	Total
Fast Food with Drive-Through – Bldg B	KSF	2.55	496.12	7.6%	51%	49%	37.71
Professional Office– Bldg A	KSF	9.86	22.89	7.7%	50%	50%	1.76
Retail – Shopping Center – Bldgs A, B and C	KSF	18.15	42.70	7.7%	50%	50%	3.29
Fast Food with Drive-Through – Bldg B					49	47	96
Professional Office– Bldg A					9	8	17
Retail – Shopping Center – Bldgs A, B and C					30	30	60
Sub-Total Trips					88	85	**173**
Pass-By Trips							
Fast Food with Drive-Through – Bldg B *(49% Daily, 49% AM, 50% PM)*					(24)	(23)	(47)
Professional Office– Bldg A					(0)	(0)	(0)
Retail – Shopping Center – Bldgs A, B and C					(0)	(0)	(20)
Total Pass-By Trips					**(24)**	(23)	**(47)**
Net New Trips					**64**	**63**	**126**

KSF – thousand square feet Numbers may not match due to rounding

Intersection Levels of Service. Intersection Levels of Service were calculated and used as the basis for evaluating project impacts. Projected traffic volumes are presented in Figure 10. Table 15 displays the peak hour Levels of Service at each study intersection and compares existing Levels of Service with those accompanying the project. All intersections will continue to operate above the minimum El Dorado County standard (i.e., LOS E or better).

Traffic Signal Warrants. Existing Plus Project traffic volumes at unsignalized intersections were compared to peak hour warrant requirements to determine whether traffic signals may be needed. Neither of the two intersections will meet the peak hour warrant.

Intersection Queues. Table 16 identifies peak period queues assuming the addition of project trips. Those 95th percentile queues with lengths exceeding the available storage have been highlighted. Under Existing Plus Project conditions three locations will exceed the available storage.

Year 2035 Forecasts / Conditions

Traffic Volumes. Traffic forecasts were developed for the mid-afternoon period based on the p.m. peak hour annual rate increases. Intersection turning movement volumes were developed using the NCHRP 255 methodology. Intersection turning movements are presented in Figure 11.

Intersection Levels of Service. The identified Year 2035 volumes were used to recalculate operating Levels of Service at the study intersections. Table 18 displays the a.m. and p.m. peak hour Levels of Service at each study intersection in the 2035 condition. All intersections will operate within the County LOS threshold, at LOS E or better.

Traffic Signal Warrants. 2035 traffic volumes at unsignalized intersections were compared to peak hour warrant requirements to determine whether traffic signals may be needed. Neither of the two intersections will meet the peak hour warrant.

Intersection Queues. Table 19 presents information regarding current peak period queuing in 2035 mid-afternoon conditions. The available storage has been presented along with current peak hour traffic volumes and the 95th percentile queue length. Those 95th percentile queues with length exceeding the available storage have been highlighted with the 95th percentile queue exceeding available storage in five locations.

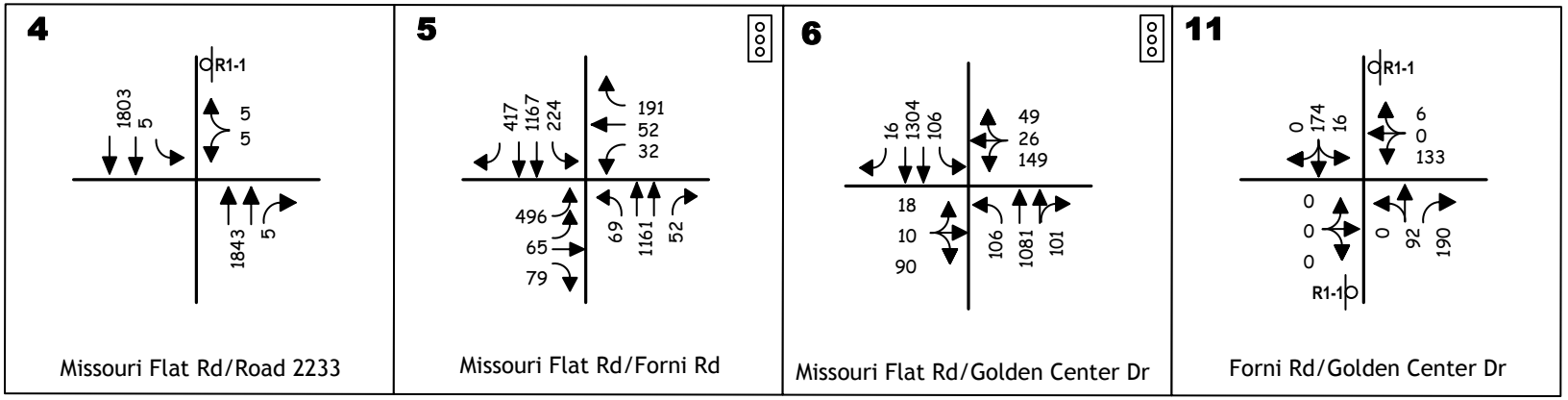
Year 2035 plus Project Conditions

Intersection Levels of Service. Intersection Levels of Service were calculated and used as the basis for evaluating project impacts. Trip generation and 2035 plus Project volumes are presented in Figure 11. Table 18 displays the peak hour Levels of Service at each study intersection under 2035 plus Project conditions. All intersections will continue to operate above the minimum El Dorado County standard (i.e., LOS E or better).

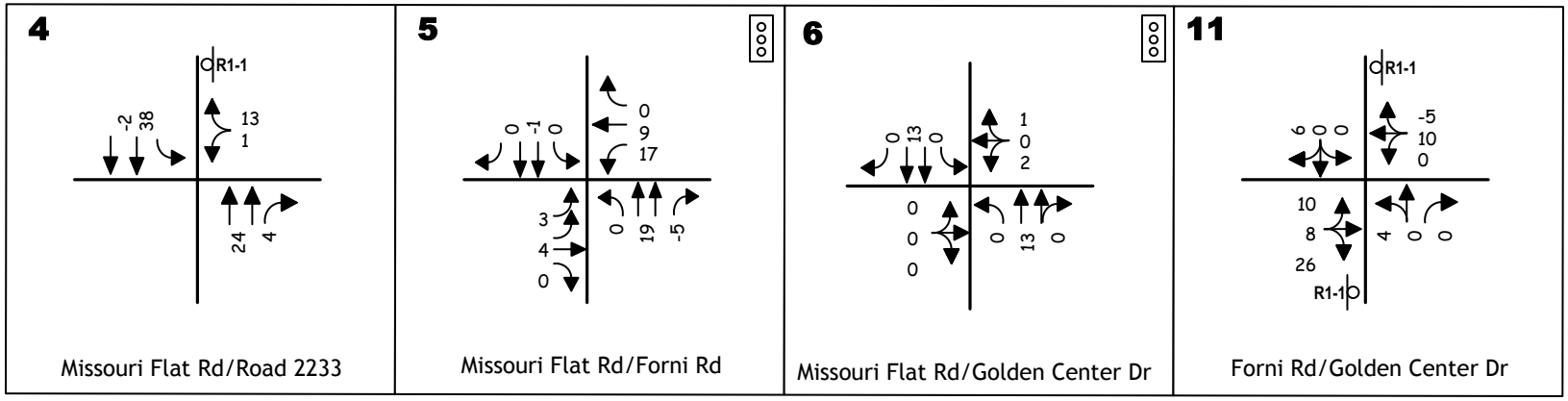
Traffic Signal Warrants. 2035 plus Project traffic volumes at unsignalized intersections were compared to peak hour warrant requirements to determine whether traffic signals may be needed. Neither of the two intersections will meet the peak hour warrant.

Intersection Queues. Table 19 identifies peak period queues assuming the addition of project trips. Those 95th percentile queues with lengths exceeding the available storage have been highlighted. The five locations exceeding the available storage identified under the 2035 No Project condition will continue to exceed the available storage under the 'plus Project' condition.

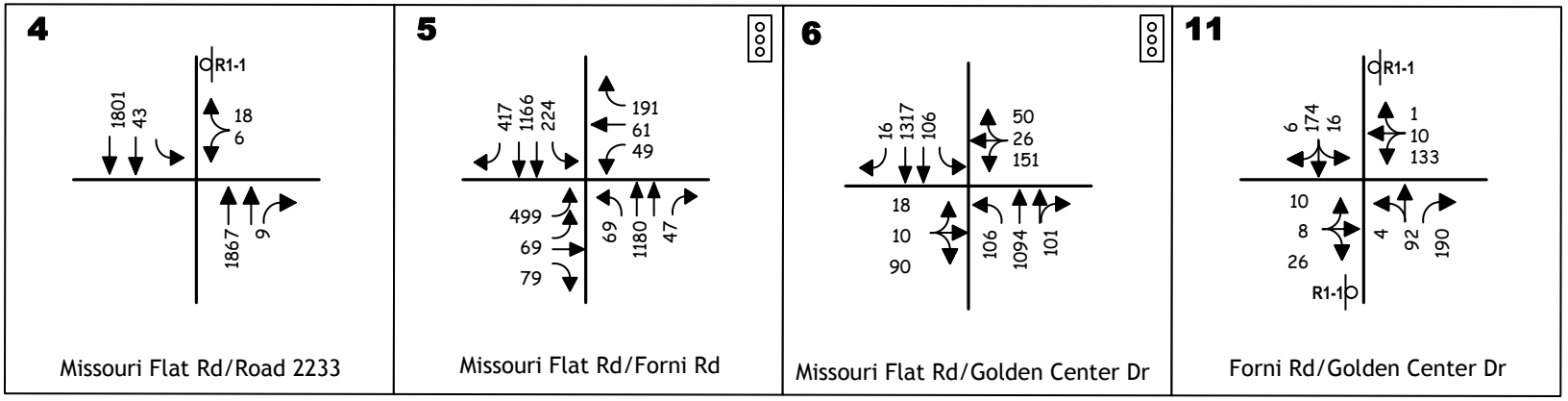
EXISTING
MID-DAY VOLUMES



PROJECT TRAFFIC
MID-DAY



EXISTING PLUS
PROJECT TRAFFIC
MID-DAY



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2035 MID-AFTERNOON TRAFFIC VOLUMES AND LANE CONFIGURATION

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Figure 11

TABLE 18
2035 MID-AFTERNOON PEAK HOUR LEVELS OF SERVICE AT INTERSECTIONS

Location	Control	2035 Mid-Afternoon Peak Hour		2035 + Project Mid-Afternoon Peak Hour		Traffic Signal Warranted?
		LOS	Average Delay	LOS	Average Delay	
7. Missouri Flat Rd / Road 2233	WB Stop					No
SB Left		C	17.3	C	19.6	
WB		E	40.1	D	34.5	
8. Missouri Flat Rd / Forni Rd	Signal	C	30.5	C	31.5	N/A
9. Missouri Flat Rd / Golden Center Dr	Signal	C	29.2	C	29.7	N/A
12. Forni Rd / Golden Center Dr	WB Stop					No
NB Left		---	---	A	7.7	
SB Left		A	7.6	A	7.6	
EB		---	---	B	11.3	
WB		C	17.2	C	20.8	

TABLE 19
2035 MID-AFTERNOON PEAK HOUR QUEUES AT SIGNALIZED INTERSECTIONS

Location	Capacity (feet)	2035 Mid-Afternoon Peak Hour		2035 + Project Mid-Afternoon Peak Hour	
		VPH	Queue (feet)	VPH	Queue (feet)
5. Missouri Flat Road / Forni Road					
NB left turn	250	69	118	69	118
NB through	1,000	1,161 (2)	655	1,180 (2)	670
NB right turn	160	52	<25	47	<25
SB left turn	300	224	338	224	338
SB through	2,300	1,167 (2)	572	1,166 (2)	571
SB right turn	150	417	156	417	155
EB left turn	195	496	336	499	338
WB left turn	190	32	56	49	86
6. Missouri Flat Road / Golden Center Drive					
NB left turn	120	106	245	106	245
SB left turn	160	106	233	106	233

Highlighted values indicate queue length in excess of available storage

ON-SITE TRANSPORTATION REVIEW

An on-site review of the facilities was conducted based on the County's TIS Guidelines.

Accident Review of Local Roadways. County staff was contacted to obtain accident history in the area adjacent to the project location. The County noted that there have been accidents at the Missouri Flat Road / Forni Road intersection and the Missouri Flat Road / Golden Center Drive intersection. The accident rate is below the County threshold to investigate improvements; therefore, no additional action to address safety is currently being considered at these locations. The County identified that Forni Road, near the intersection of Oak Lane had an accident rate of 2.13 which is above their threshold for improvements. The County has made improvements to the sight distance at the intersection and this intersection is now being monitored. No other locations were identified.

Site Circulation / Driveway Locations. The project consists of three buildings, one situated on the north side of the site, one situated on the south side and the third more centrally situated but on the southern side of the site. The northerly building, Building A, is planned to include about 20,060 square feet of office and retail uses while the southerly building. The southerly building, Building C will include about 6,600 square feet of retail uses. The central building, Building B, will include 1,350 square feet of retail uses and a 2,550 square foot fast food restaurant with drive through lane. The site will have three access driveways, one along Road 2233 allowing full access at Missouri Flat Road, a right-in, right-out driveway along Missouri Flat Road and a full access driveway at the existing Forni Road / Golden Center Drive intersection. The site is linear and a single drive/parking aisle is provided in the center portion of the site.

The site's northern driveway provides access onto Missouri Flat Road via Road 2233. This road is a low volume road providing access for about five residences. Full access is provided at Missouri Flat Road and it is expected that southbound site traffic will enter via this access. Due to the traffic volumes along Missouri Flat Road it is expected that most southbound traffic will exit the site via Forni Road during the peak hours to use the traffic signal at Missouri Flat Road to head south. Northbound traffic is expected to use the right-in, right-out driveway and the Road 2233 intersection to travel north on Missouri Flat Road. Aside from the residences along Road 2233 there are no other driveways in the immediate proximity.

The project is designed to provide the minimum 25' throat depth at each of the driveways. The worst on-site queues are projected to occur during the 2035 p.m. peak hour. At each of the three locations the outbound queues are projected to be 62' or less. The longest queue of 62' is projected to occur during the 2035 plus Project scenario for outbound right turns at the Missouri Flat Road / Project Access driveway. Adequate queuing is available at the driveways, although the outbound queues could create short delays for customers transiting the site. Two RV parking spaces are identified on the site plan near the Missouri Flat Road right-in, right-out driveway. The location of these spaces allows these vehicles to enter the site via a right turn from Missouri Flat Road and proceed directly into the stalls. Approaching from the north RV's can enter the site via Road 2233 and also proceed to these stalls. Upon exiting, these vehicles will back up to

the driveway then proceed to the Forni Road driveway. There would likely be a short time where traffic is blocked from entering or exiting the site via this driveway.

Sight Distance. A sight distance analysis was completed at the proposed project driveways at the Forni Road / Golden Center Drive intersection and at the proposed right-in, right-out driveway on Missouri Flat Road.

Available sight distance was evaluated using the standards documented in the Caltrans *Highway Design Manual* (HDM). Based on the locations of the driveways "**Minimum Stopping Sight** Distance" (MSSD) and "**Corner Sight Distance**" (CSD) was considered. These criteria are documented in Tables 201.1 and 405.1A of the HDM; the HDM notes that the MSSD criterion is used for CSD evaluation at driveways.

Missouri Flat Road Right-In/Right-Out Driveway. The posted speed limit along Missouri Flat Road is 45 miles per hour (mph). The corresponding minimum sight distance standard for this speed is 360 feet. Missouri Flat Road is generally a four-lane roadway. Northbound departing the Forni Road intersection Missouri Flat Road will have three northbound lanes extending to Road 2233. This third lane will a provide deceleration and acceleration lane for project traffic. The lane will end with a mandatory right turn at Road 2233. Any landscaping over 2 feet in height and signage should be placed outside of the sight lines to provide adequate sight distance.

Forni Road Driveway. This driveway will become the fourth leg of the Forni Road / Golden Center Drive intersection. Corner sight distance criterion was used to determine the minimum sight distance required with a prima facie 55 mph speed along Forni Road. The minimum required sight distance is 430 feet. From the project driveway Forni Road has an uphill grade with an approximately 600-foot radius curve to the east beginning about 175 feet north of the driveway. Additionally, the grade of the project site appears to be below the roadway; thus, the sight distance should be longer than the minimum requirement to account for the lower eye height of the driver. While Caltrans notes that driveways can the MSSD criterion CSD criterion was considered based on the existing conditions. The current available sight distance is about 400 feet which corresponds to about a 36 mph design speed.

Site review. An on-site review of sight distance was also completed to determine whether any visibility issues may be present. Based on the proposed plan the drive aisles appear to provide adequate sight distance for site uses. Pedestrian access within the site is generally along the Missouri Flat Road and Forni Road perimeters, with sidewalk also provided at the fast food restaurant. The entrance and exit to the fast food drive-through lane was reviewed. The entry is located near the Forni Road driveway and vehicles entering the drive-through from Forni Road have to make a right turn enter the drive-through lane. This area should have unconstrained sight lines. Vehicles exiting the drive-through lane exit into the main drive-aisle. Parking is proposed on both sides of the lane with curbing / landscaping separating the drive through lane from the parking spaces. Sight lines to allow exiting motorists to view drive aisle traffic should be provided. A crosswalk is proposed across the exit; however, this should be situated about 25' behind the "intersection" to allow pedestrians to cross behind a vehicle waiting to exit the drive-through lane.

Parking and Drive-Through Requirements. Parking requirements were reviewed to determine needed parking due to the zoning code and requirements relative to projected parking demand. Parking requirements relate to vehicles parked for extended periods of time for employees and customers within the office and retail uses as well as short-term parking and drive-through storage for the fast food restaurant site. Table 130.35.030.1 of the County's zoning code identifies off-street parking requirements for various uses. Table 20 displays the parking space requirements for each use type and the projected parking needs for the project. Based on the zoning code 96 stalls are required. The project proposes to provide 156 spaces.

TABLE 20
PARKING REQUIREMENTS PER ZONING CODE

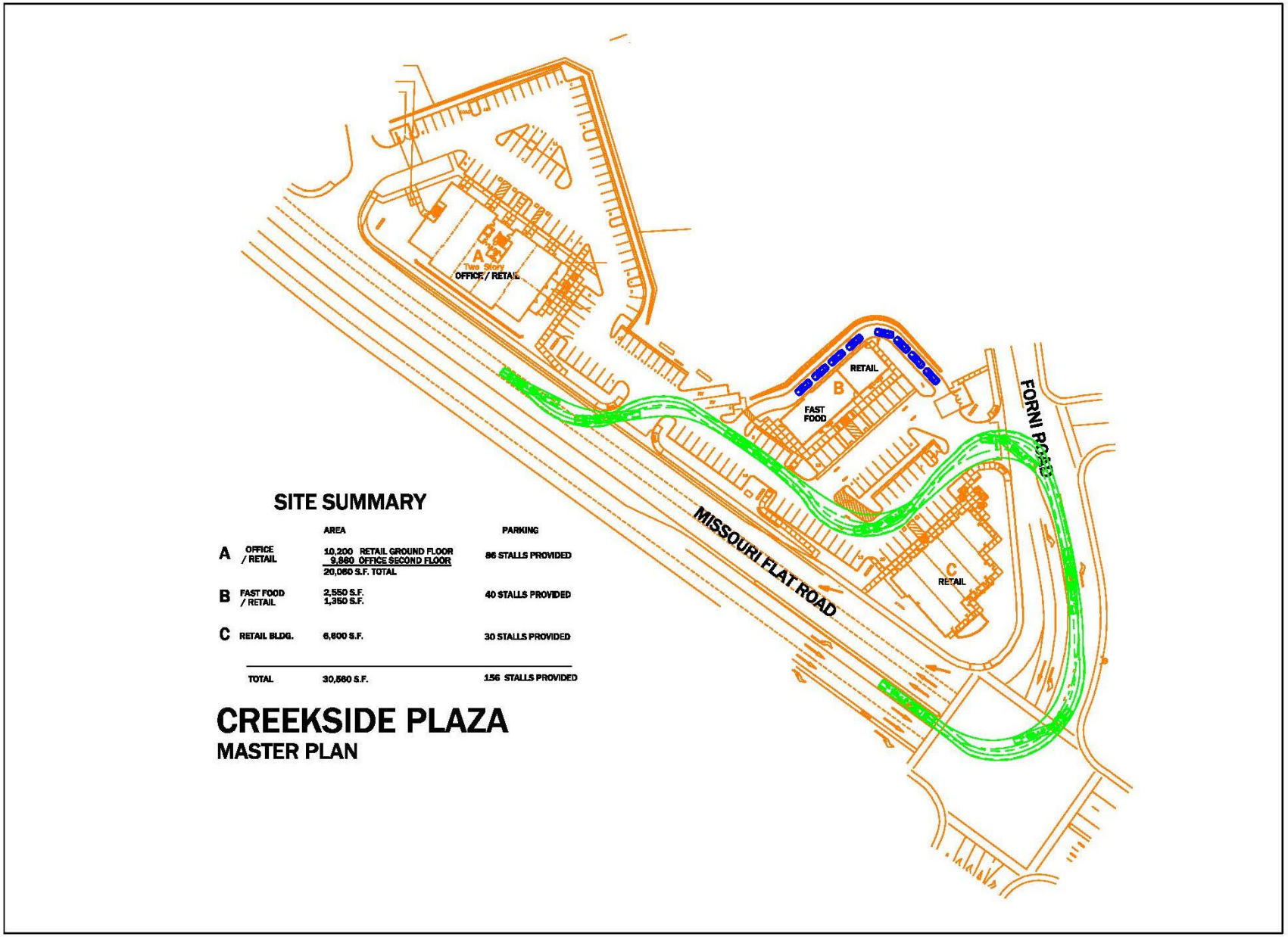
Use Type	Parking Space Requirement	Size	Parking Required
General Office	1 per 250 sf (AUA)	10,200 sf	41
Retail / Shopping Center	1 per 400 sf (GFA)	17,810 sf	45
Restaurant with drive-through	1 per 300 sf (GFA) plus 1 RV space for every 20 spaces	2,550 sf	10
		Total Stalls Required	**96**

AUA – active use area
GFA – gross floor area

The County's Parking and Loading Standards identifies requirements for fast food restaurants with drive-through facilities. The drive-through facility shall be located at the rear or side of a commercial site with the stacking lane physically separated from other on-site circulation. A minimum of four cars per drive-through window in addition to the car receiving service is required.

The project proposes to have the fast food restaurant in the northeast corner of the site. The drive-through lane is entered from the rear of the building with the service window on the side of the building. Based on the proposed site plan the stacking lane is about 185 feet long from the service window to the entrance. The reader board is about 87 feet from the entrance. Eight vehicles will be able to queue in the drive-through lane, four between the service window and menu board and 4 between the menu board and the entrance.

It is expected that a California Legal truck (CA-Legal) is the design vehicle that will need access to the fast food restaurant. An AutoTurn assessment was completed and is shown in Figure 12. A CA-Legal truck will be able to enter the site from Forni Road and exit via the Missouri Flat Road driveway. Truck access should be limited to off-hours as the drive aisle could be blocked while trucks are loading / unloading.


BRIAN WICKERT- ARCHITECT
P.O. BOX 2106
SHINGLE SPRINGS, CA 95682
PH: 530-401-3390
SITE SUMMARY
AREA
PARKING
A OFFICE / RETAIL
10,200 RETAIL GROUND FLOOR
9,860 OFFICE SECOND FLOOR
20,060 S.F. TOTAL
86 STALLS PROVIDED
B FAST FOOD / RETAIL
2,550 S.F.
1,350 S.F.
40 STALLS PROVIDED
C RETAIL BLDG.
6,600 S.F.
30 STALLS PROVIDED
TOTAL
30,560 S.F.
156 STALLS PROVIDED
CREEKSIDE PLAZA
MASTER PLAN
A
Two story
OFFICE / RETAIL
B
RETAIL
FAST FOOD
C
RETAIL
MISSOURI FLAT ROAD
FORNI ROAD
GRADO EQUITIES VII LLC
CREEKSIDE PLAZA
MASTER PLAN
NORTH
SCALE 1" = 40'
DATE 1-2-17
SHT A-1

FINDINGS / RECOMMENDATIONS / MITIGATIONS

The preceding analysis has identified project impacts that may occur without mitigation. The text that follows identifies a strategy for mitigating the impacts of the proposed project. Recommendations are identified for facilities that have deficiencies in the roadway network without the project. If the project causes a significant impact, mitigations are identified for the facility.

Existing Conditions

Intersections

All intersections, except the Missouri Flat Road / China Garden Road and Missouri Flat Road / Enterprise Drive intersections operate within acceptable El Dorado County LOS thresholds.

- Missouri Flat Road / China Garden Road: The eastbound driveway opposite China Garden Road and the China Garden Road approach will operate at LOS F in the a.m. peak hour. While this intersection is at the boundary of a segment allowed to operate at LOS F a conservative approach was undertaken assuming the LOS E threshold. The intersection does not meet the peak hour signal warrant including both volume and delay. Therefore, this is not considered a significant impact.

  As a result of the mitigations identified in the *El Dorado County Public Safety Facility Project Draft EIR,* side street approaches to the Missouri Flat Road / China Garden Road intersection will be limited to right turns only. The DEIR noted two alternative mitigations for this intersection, installation of a traffic signal or limiting minor street access to right turns only. County staff determined that a signal at China Garden Road is not the preferred alternative based on the installation of a future traffic signal at Industrial Drive as part of the *El Dorado County Public Safety Facility Project*. Implementation of a right-turn only along China Garden Road will result in LOS D (31.5 spv) conditions for side street traffic. Due to access considerations, the County has determined that the right-in, right-out reconfiguration of the intersection will be modified once Diamond Springs Parkway is completed.

- Missouri Flat Road / Enterprise Drive: The eastbound approach of the intersection operates at LOS F and the intersection meets the peak hour signal warrant. Signalization of the intersection will result in LOS A conditions in the a.m. peak hour (7.9 spv) and LOS B in the p.m. peak hour (11.0 spv). The County's 20-Year Capital Improvement Program (CIP) identifies approximately $35 million for Traffic Signal and Intersection Operational Improvements. This intersection should be programmed for improvement as part of this CIP. When installed, this signal should be coordinated with adjacent signals. This will require installation of signal interconnect cable or other type of communication.

Queues

Under current conditions nine movements have queues that exceed the available storage. These include:

Missouri Flat Road / WB US 50 ramps
- NB left turn lane

Missouri Flat Road / EB US 50 ramps
- NB through lane
- SB left turn lane
- SB through lane

Missouri Flat Road / Mother Lode Drive
- SB through

Missouri Flat Road / Forni Road
- SB right turn
- EB left turn

Missouri Flat Road / SR 49
- EB left turn
- WB right turn

Roadway Segments

All roadway segments will operate within the County level of service threshold, at LOS E or better.

Existing Plus Project Conditions - Mitigations

Intersections

All intersections except the Missouri Flat Road / China Garden Road and Missouri Flat Road / Enterprise Drive intersections will operate within acceptable El Dorado County LOS thresholds. The following mitigations are noted:

- The project shall contribute its fair share to the cost of regional circulation improvements via the existing countywide traffic impact mitigation (TIM) fee program.

- Missouri Flat Road / China Garden Road: The eastbound driveway opposite China Garden Road and the China Garden Road approach will continue to operate at LOS F in the a.m. peak hour. The intersection will not meet the peak hour signal warrant including both volume and delay, but will add ten or more trips through the intersection. Since the signal warrant is not met, this is not considered a significant impact.

  As noted in the Existing Conditions, side street approaches to the Missouri Flat Road / China Garden Road intersection will be limited to right turns only once Diamond Springs Parkway is completed. Implementation of the right-turn only restrictions along China Garden Road will result in LOS D (32.7 spv) conditions for side street traffic.

- Missouri Flat Road at Enterprise Drive: The intersection will operate at LOS F during both peak hours, meet the peak hour traffic signal warrant and add 10 or more project trips through the intersection. This is considered a significant impact. The improvements for this

impacted intersection are included in the 20-year time frame of the County's CIP. The County's 20-year CIP includes approximately $35.3 million for traffic signal and intersection operational improvements. The project's TIM fees will be used to fund this future improvement.

- The project should construct the following improvements at the Forni Road / Golden Center Drive / Project intersection:
    - Install a crosswalk along the north side of the intersection to indicate the preferred crossing location for pedestrians. The installation of a crosswalk on the north side will reduce the number of potential conflicts with motor vehicles as most vehicles at this intersection travel between Missouri Flat Road and Forni Road;
    - Sidewalk should be installed along the entire project frontage on Forni Road;
    - A pathway / sidewalk should be constructed connecting the pedestrian crossing on the north side of Golden Center Drive into the project site;
    - Install a No Parking Zone along the Forni Road project frontage to maximize sight distance at the driveway;
    - Install a crosswalk across the project driveway;
    - A speed survey should be conducted by County staff to identify an appropriate speed limit along Forni Road in the project vicinity. Currently, the roadway is not signed, indicating a 55 mph prima facie speed. Signs in advance of the Herbert Green Middle School provide a 25 mph speed limit when children are present. The portion of Forni Road between Missouri Flat Road and Heady Lane is reflective of entering into an urbanized area where a 55 mph speed on a two-lane roadway is impractical.

The following on-site mitigations should be constructed:

- A crosswalk at the drive-through lane entrance should be installed provide pedestrian access to the fast food restaurant;
- Landscaping adjacent to the drive-through entrance should be limited to vegetation no higher than 2 feet to provide visibility of the crosswalk area for inbound traffic from the Forni Road driveway;
- Landscaping adjacent to the drive-through exit should be limited to vegetation no higher than 2 feet to maintain visibility for exiting vehicles;
- Install a stop sign with limit line at the drive-through exit;
- Install a crosswalk 25 feet behind the limit line.
- Truck access should be limited to off-hours as the drive aisle could be blocked while trucks are loading / unloading.
- Install "Do Not Block" markings at internal intersections where blocking would hinder traffic flow.

Queues

Under Existing plus Project conditions nine movements have queues that exceed the available storage. These include:

Missouri Flat Road / WB US 50 ramps
- NB left turn lane

Missouri Flat Road / EB US 50 ramps
- NB through lane
- SB left turn lane
- SB through lane

Missouri Flat Road / Mother Lode Drive
- SB through

Missouri Flat Road / Forni Road
- SB right turn
- EB left turn

Missouri Flat Road / SR 49
- EB left turn
- WB right turn

These locations are the same as under Existing Conditions; therefore, no mitigations are necessary.

Roadway Segments
All roadway segments will continue to operate within the County level of service threshold, at LOS E or better.

2035 Conditions - Recommendations

Intersections
All intersections, except the Missouri Flat Road / Road 2233 and Missouri Flat Road / Enterprise Drive intersections operate within acceptable El Dorado County LOS thresholds.

- Missouri Flat Road at Road 2233: The east leg of the intersection will operate at LOS F in the p.m. peak hour. This intersection will not meet the peak hour signal warrant. Although operating at LOS F the approach is projected to serve a single left turning vehicle in the peak hour. No recommendations are made for this intersection.

- Missouri Flat Road / Enterprise Drive intersection: This intersection will operate with the eastbound Enterprise Drive approach operating at LOS F. The intersection will continue to meet the peak hour signal warrant. The roadway is identified to be widened to four lanes and with signalization identified in the Existing Conditions the intersection will operate at LOS A (8.0 spv) in the p.m. peak hour.

Queues
Under 2035 conditions ten movements have queues that will exceed the available storage. These include:

Missouri Flat Road / WB US 50 ramps
- NB left turn lane
- NB through lane

Missouri Flat Road / EB US 50 ramps
- NB through lane
- SB left turn lane

Missouri Flat Road / Mother Lode Drive
- SB through

Missouri Flat Road / Forni Road
- SB left turn
- SB right turn
- EB left turn

Missouri Flat Road / Golden Center Drive
- NB left turn
- SB left turn

Roadway Segments
All roadway segments will continue to operate within the County level of service threshold, at LOS C or better.

2035 plus Project Conditions - Mitigations

Intersections
All intersections, except the Missouri Flat Road / Enterprise Drive intersection will operate within acceptable El Dorado County LOS thresholds.

- Missouri Flat Road / Enterprise Drive intersection: This intersection will operate with the eastbound Enterprise Drive approach operating at LOS F. The intersection will continue to meet the peak hour signal warrant. The roadway is identified to be widened to four lanes and with signalization identified in the Existing Conditions the intersection will operate at LOS A (8.0 spv) in the p.m. peak hour.

Queues
Under 2035 plus Project conditions ten movements have queues that will exceed the available storage. These are identified below. Where queues that exceed available storage are new relative to the 2035 conditions they are highlighted in yellow:

Missouri Flat Road / WB US 50 ramps
- NB left turn lane
- NB through lane
- WB left turn

Missouri Flat Road / EB US 50 ramps
- NB through lane
- SB left turn lane

Missouri Flat Road / Mother Lode Drive
- NB left turn
- SB through

Missouri Flat Road / Forni Road
- NB left turn
- SB left turn
- SB right turn
- EB left turn

Missouri Flat Road / Golden Center Drive
- NB left turn
- SB left turn

Missouri Flat Road / Pleasant Valley Road
- EB left turn

The left turn lanes along the **Westbound US 50 off-ramps at Missouri Flat Road** are projected have queues of up to 502 feet in the p.m. peak hour. The westbound ramp currently provides for dual left turn lanes of about 415 feet each. The off-ramp extends an additional 1,000 feet with single lanes for right and left turning vehicles prior to reaching US 50. This provides adequate storage for this projected queue.

The northbound left turn lane at the **Missouri Flat Road / Mother Lode Drive** intersection is projected to require storage of about 167 feet. The existing left turn lane is about 140 feet. The left turn bay taper provides about 30 feet of additional storage before a left turning vehicle will block the northbound through lane. This provides the additional storage needed to accommodate the projected turn length and no mitigations are necessary.

The northbound left turn lane at the **Missouri Flat Road / Forni Road** intersection is projected to require storage of about 258 feet. The existing left turn lane is about 250 feet. The left turn bay taper provides about 25 feet of additional storage before a left turning vehicle will block the northbound through lane. This provides the additional storage needed to accommodate the projected turn length and no mitigations are necessary.

The eastbound left turn lane at the **Missouri Flat Road / Pleasant Valley Road** intersection is projected to require storage of about 165 feet. The existing dual left turn lane is about 130 feet. The left turn bay taper provides about 50 feet of additional storage before a left turning vehicle will block the eastbound through lane. This provides the additional storage needed to accommodate the projected turn length and no mitigations are necessary.

Roadway Segments

All roadway segments will continue to operate within the County level of service threshold, at LOS C or better.

Mid-Afternoon Analysis

A mid-afternoon analysis was conducted at four intersections In the vicinity of the Herbert Green Middle School. This analysis considered level of service and queuing at Forni Road / Golden Center Drive, Missouri Flat Road / Forni Road, Missouri Flat Road / Golden Center Drive and Missouri Flat Road / Road 2233.

Existing Conditions - Intersections

Under existing conditions each intersection will operate within County LOS thresholds, at LOS D or better.

Existing Conditions - Queues

Three movements at the two adjacent signalized intersections will exceed the available storage. These include:

Missouri Flat Road / Forni Road
- EB left turn lane

Missouri Flat Road / Golden Center Drive
- NB left turn lane
- SB left turn lane

Existing plus Project Conditions - Intersections

Under Existing plus Project conditions each intersection will continue to operate within County LOS thresholds, at LOS D or better.

Existing plus Project Conditions - Queues

Three movements at the two adjacent signalized intersections will exceed the available storage. These include:

Missouri Flat Road / Forni Road	Missouri Flat Road / Golden Center Drive
- EB left turn lane	- NB left turn lane
	- SB left turn lane

These locations are the same as under Existing Conditions; therefore, no mitigations are necessary.

2035 Conditions - Intersections

Under 2035 conditions each intersection will operate within County LOS thresholds, at LOS E or better.

2035 Conditions - Queues

Five movements at the two adjacent signalized intersections will exceed the available storage. These include:

Missouri Flat Road / Forni Road	Missouri Flat Road / Golden Center Drive
- SB left turn lane	- NB left turn lane
- SB right turn lane-	- SB left turn lane
- EB left turn lane	

2035 plus Project Conditions - Intersections

Under 2035 plus Project conditions each intersection will continue to operate within County LOS thresholds, at LOS D or better.

2035 plus Project Conditions - Queues

Five movements at the two adjacent signalized intersections will exceed the available storage. These include:

Missouri Flat Road / Forni Road	Missouri Flat Road / Golden Center Drive
- SB left turn lane	- NB left turn lane
- SB right turn lane-	- SB left turn lane
- EB left turn lane	

These locations are the same as under 2035 Conditions; therefore, no mitigations are necessary.

REFERENCES

1. Transportation Research Board, *Highway Capacity Manual*, 2010
2. Caltrans *Highway Design Manual*, 2016
3. California *Manual of Uniform Traffic Control Devices*, 2014
4. Institute of Transportation Engineers. 2012. *Trip Generation*, 9th Edition. Washington, D.C.
5. Telephone and E-mail correspondence, Natalie Porter, El Dorado County, March through July 2017
6. Telephone and E-mail correspondence, Katie Jackson, El Dorado County, September 2016 through May, 2017
7. Telephone and E-mail correspondence, Claudia Wade, El Dorado County, May 2017
8. *Diamond Springs and El Dorado Area Mobility and Livable Community Plan Draft Technical Report,* Fehr & Peers, Inc. February 2014
9. *The Crossing Traffic Impact Study,* KD Anderson & Associates, Inc. May 2014
10. *Diamond Springs Parkway DEIR*, Michael Brandman Associates, June 2010
11. *El Dorado County Bicycle Transportation Plan*, El Dorado County Transportation Commission, November 2010
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13. *Traffic Monitoring Guide,* Federal Highway Administration, September 2013
14. *Trip Generation Handbook*, Institute of Transportation Engineers, 2nd Edition, 2004
15. *El Dorado County Public Safety Facility Project Draft EIR*, Raney Planning and Management, February 2016
16. National Cooperative Highway Research Program (NCHRP) Report 255, *Highway Traffic Data for Urbanized Area Project Planning and Design,* December 1982

APPENDICES

(under separate cover)

TECHNICAL APPENDIX

FOR

CREEKSIDE PLAZA
TRAFFIC IMPACT ANALYSIS
Missouri Flat Road at Forni Road
El Dorado County CA

Prepared For:

GRADO EQUITIES VII, LLC.
4330 Golden Center Drive, Suite D
Placerville, CA 95667

Prepared By:

KD Anderson & Associates, Inc.
3853 Taylor Road, Suite G
Loomis, CA 95650
(916) 660-1555

September 25, 2017

3486-03

Prepared by NDS/ATD

VOLUME

Missouri Flat Rd Bet. Mother Lode Dr & Rd 2233

Day: Thursday
Date: 5/4/2017

City: Placerville
Project #: CA17_7368_001

3486-02

DAILY TOTALS	NB	SB	EB	WB	Total
	18,906	18,727	0	0	37,633

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00	28		27						55		**12:00**	352		314						666	
00:15	13		29						42		**12:15**	324		331						655	
00:30	8		20						28		**12:30**	337		347						684	
00:45	10	59	9	85					19	144	**12:45**	349	1362	382	1374					731	2736
01:00	8		12						20		**13:00**	398		364						762	
01:15	10		7						17		**13:15**	345		320						665	
01:30	10		9						19		**13:30**	317		346						663	
01:45	6	34	4	32					10	66	**13:45**	369	1429	363	1393					732	2822
02:00	8		5						13		**14:00**	317		341						658	
02:15	7		3						10		**14:15**	372		340						712	
02:30	4		12						16		**14:30**	371		383						754	
02:45	8	27	2	22					10	49	**14:45**	375	1435	359	1423					734	2858
03:00	6		11						17		**15:00**	372		354						726	
03:15	16		8						24		**15:15**	330		386						716	
03:30	7		10						17		**15:30**	338		407						745	
03:45	26	55	12	41					38	96	**15:45**	333	1373	391	1538					724	2911
04:00	30		10						40		**16:00**	342		379						721	
04:15	23		16						39		**16:15**	342		405						747	
04:30	31		27						58		**16:30**	361		400						761	
04:45	60	144	20	73					80	217	**16:45**	312	1357	388	1572					700	2929
05:00	68		41						109		**17:00**	386		436						822	
05:15	100		35						135		**17:15**	398		390						788	
05:30	109		45						154		**17:30**	371		356						727	
05:45	140	417	78	199					218	616	**17:45**	316	1471	350	1532					666	3003
06:00	183		78						261		**18:00**	262		293						555	
06:15	206		95						301		**18:15**	222		281						503	
06:30	184		116						300		**18:30**	237		250						487	
06:45	219	792	190	479					409	1271	**18:45**	191	912	235	1059					426	1971
07:00	262		196						458		**19:00**	204		220						424	
07:15	335		327						662		**19:15**	199		215						414	
07:30	306		263						569		**19:30**	165		172						337	
07:45	351	1254	325	1111					676	2365	**19:45**	174	742	177	784					351	1526
08:00	301		286						587		**20:00**	127		176						303	
08:15	284		265						549		**20:15**	113		155						268	
08:30	323		289						612		**20:30**	112		144						256	
08:45	332	1240	312	1152					644	2392	**20:45**	101	453	131	606					232	1059
09:00	309		278						587		**21:00**	117		130						247	
09:15	265		252						517		**21:15**	90		102						192	
09:30	322		263						585		**21:30**	82		98						180	
09:45	306	1202	261	1054					567	2256	**21:45**	60	349	82	412					142	761
10:00	332		253						585		**22:00**	49		84						133	
10:15	288		302						590		**22:15**	49		84						133	
10:30	309		269						578		**22:30**	50		59						109	
10:45	315	1244	269	1093					584	2337	**22:45**	34	182	55	282					89	464
11:00	306		326						632		**23:00**	40		33						73	
11:15	313		284						597		**23:15**	34		32						66	
11:30	313		285						598		**23:30**	17		34						51	
11:45	330	1262	384	1279					714	2541	**23:45**	20	111	33	132					53	243
TOTALS		7730		6620						**14350**	**TOTALS**		11176		12107						**23283**
SPLIT %		53.9%		46.1%						**38.1%**	**SPLIT %**		48.0%		52.0%						**61.9%**

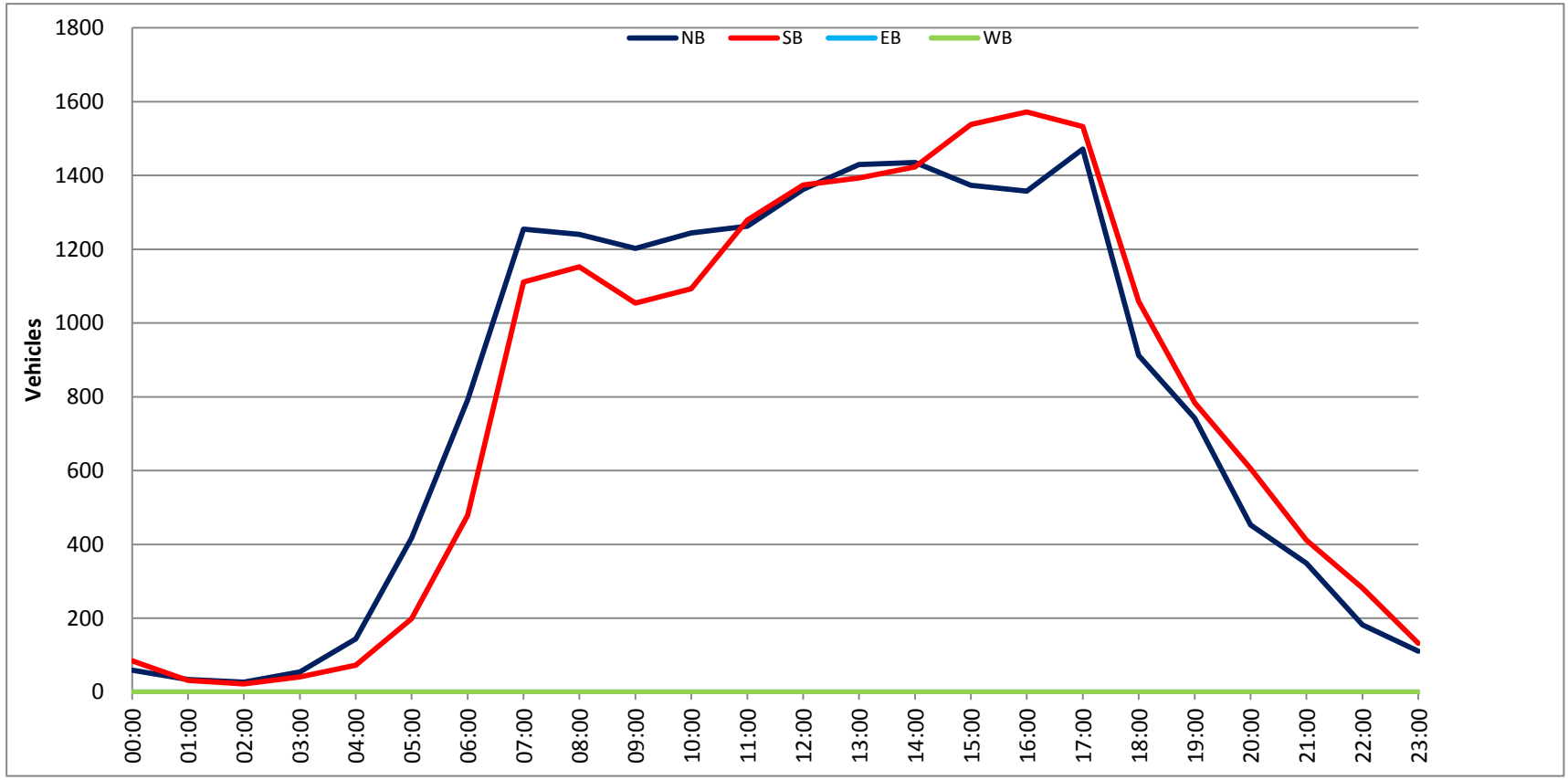
DAILY TOTALS	NB	SB	EB	WB	Total
	18,906	18,727	0	0	37,633

AM Peak Hour	11:45	11:45			**11:45**	**PM Peak Hour**	14:15	16:15			**16:30**
AM Pk Volume	1343	1376			**2719**	**PM Pk Volume**	1490	1629			**3071**
Pk Hr Factor	0.954	0.896			**0.952**	**Pk Hr Factor**	0.993	0.934			**0.934**
7 - 9 Volume	2494	2263	0	0	**4757**	**4 - 6 Volume**	2828	3104	0	0	**5932**
7 - 9 Peak Hour	07:15	07:15			**07:15**	**4 - 6 Peak Hour**	17:00	16:15			**16:30**
7 - 9 Pk Volume	1293	1201	0	0	**2494**	**4 - 6 Pk Volume**	1471	1629	0	0	**3071**
Pk Hr Factor	0.921	0.918	0.000	0.000	**0.922**	**Pk Hr Factor**	0.924	0.934	0.000	0.000	**0.934**

Prepared by NDS/ATD

Project #: CA17_7368_001 **City:** Placerville

Location: Missouri Flat Rd Bet. Mother Lode Dr & Rd **Date:** 5/4/2017



Prepared by NDS/ATD

VOLUME

Missouri Flat Rd Bet. Golden Center Dr & China Garden Rd

Day: Thursday
Date: 5/4/2017

City: Placerville
Project #: CA17_7368_002

3486-02

DAILY TOTALS	NB	SB	EB	WB	Total
	13,703	13,663	0	0	27,366

AM Period	NB		SB		EB		WB		TOTAL	
00:00	7		17						24	
00:15	3		29						32	
00:30	8		16						24	
00:45	7	25	7	69					14	94
01:00	6		12						18	
01:15	8		7						15	
01:30	8		8						16	
01:45	6	28	1	28					7	56
02:00	5		2						7	
02:15	6		3						9	
02:30	3		13						16	
02:45	7	21	3	21					10	42
03:00	5		8						13	
03:15	10		8						18	
03:30	6		7						13	
03:45	28	49	8	31					36	80
04:00	26		7						33	
04:15	22		14						36	
04:30	28		15						43	
04:45	59	135	15	51					74	186
05:00	67		23						90	
05:15	96		31						127	
05:30	93		25						118	
05:45	137	393	44	123					181	516
06:00	166		50						216	
06:15	171		64						235	
06:30	166		62						228	
06:45	198	701	99	275					297	976
07:00	200		107						307	
07:15	265		203						468	
07:30	245		158						403	
07:45	295	1005	181	649					476	1654
08:00	242		187						429	
08:15	251		179						430	
08:30	283		165						448	
08:45	273	1049	210	741					483	1790
09:00	252		200						452	
09:15	229		161						390	
09:30	215		174						389	
09:45	240	936	193	728					433	1664
10:00	230		190						420	
10:15	246		213						459	
10:30	236		190						426	
10:45	224	936	212	805					436	1741
11:00	232		213						445	
11:15	241		202						443	
11:30	231		211						442	
11:45	237	941	267	893					504	1834
TOTALS		6219		4414						10633
SPLIT %		58.5%		41.5%						38.9%

PM Period	NB		SB		EB		WB		TOTAL	
12:00	243		252						495	
12:15	250		246						496	
12:30	243		261						504	
12:45	259	995	254	1013					513	2008
13:00	262		273						535	
13:15	252		231						483	
13:30	234		261						495	
13:45	246	994	238	1003					484	1997
14:00	249		243						492	
14:15	231		266						497	
14:30	230		268						498	
14:45	224	934	269	1046					493	1980
15:00	288		247						535	
15:15	212		294						506	
15:30	240		305						545	
15:45	204	944	323	1169					527	2113
16:00	212		264						476	
16:15	213		287						500	
16:30	223		321						544	
16:45	207	855	297	1169					504	2024
17:00	256		315						571	
17:15	255		307						562	
17:30	219		285						504	
17:45	199	929	274	1181					473	2110
18:00	145		227						372	
18:15	136		244						380	
18:30	152		181						333	
18:45	129	562	179	831					308	1393
19:00	165		182						347	
19:15	132		169						301	
19:30	125		159						284	
19:45	110	532	150	660					260	1192
20:00	83		122						205	
20:15	92		139						231	
20:30	76		114						190	
20:45	75	326	111	486					186	812
21:00	82		101						183	
21:15	57		90						147	
21:30	62		76						138	
21:45	41	242	72	339					113	581
22:00	37		71						108	
22:15	40		62						102	
22:30	23		52						75	
22:45	17	117	42	227					59	344
23:00	16		35						51	
23:15	19		29						48	
23:30	9		31						40	
23:45	10	54	30	125					40	179
TOTALS		7484		9249						16733
SPLIT %		44.7%		55.3%						61.1%

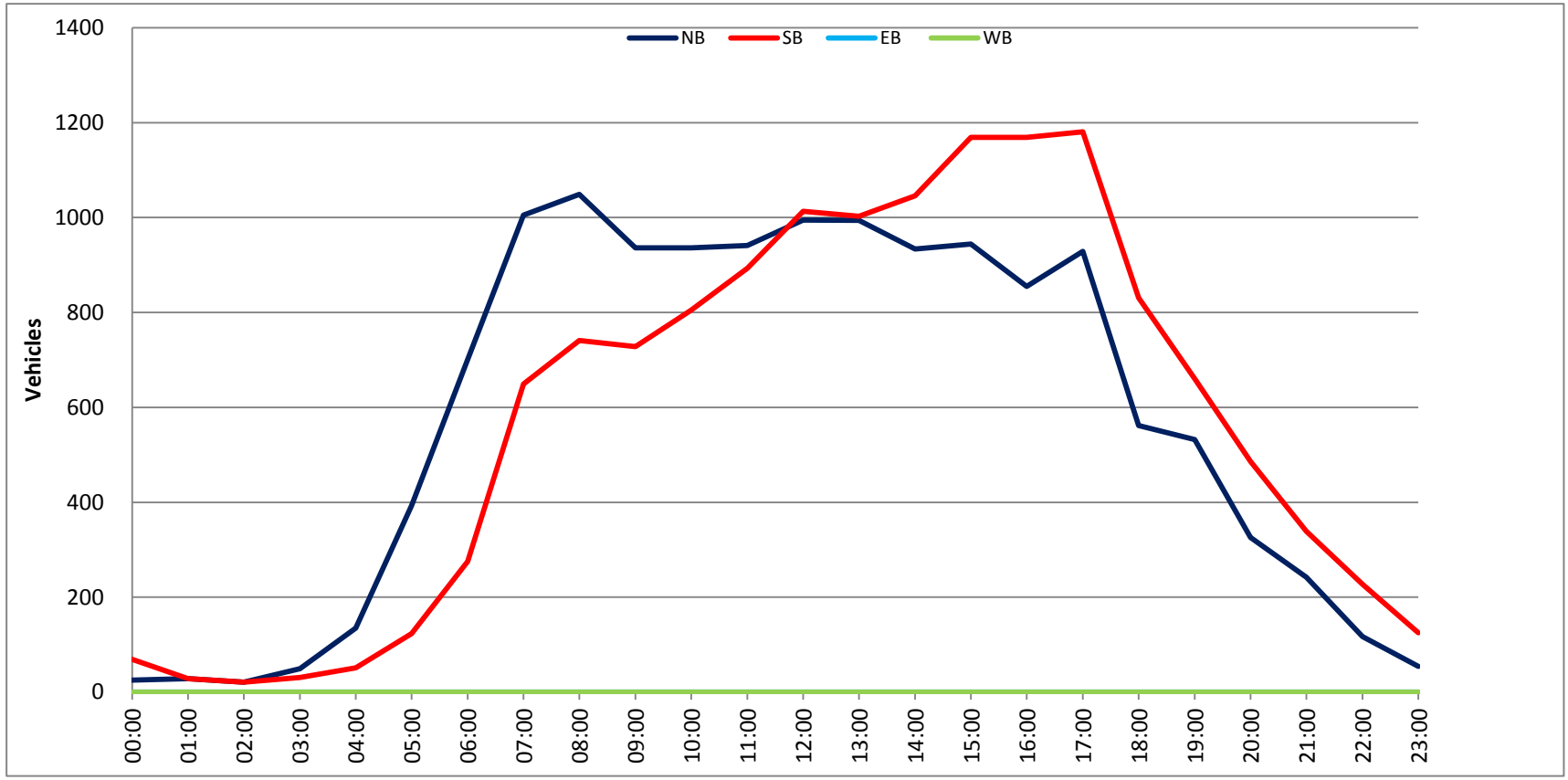
DAILY TOTALS	NB	SB	EB	WB	Total
	13,703	13,663	0	0	27,366

AM Peak Hour	07:45	11:45				11:45	PM Peak Hour	12:30	16:30				16:30
AM Pk Volume	1071	1026				1999	PM Pk Volume	1016	1240				2181
Pk Hr Factor	0.908	0.961				0.992	Pk Hr Factor	0.969	0.966				0.955
7 - 9 Volume	2054	1390	0	0		3444	4 - 6 Volume	1784	2350	0	0		4134
7 - 9 Peak Hour	07:45	08:00				08:00	4 - 6 Peak Hour	16:30	16:30				16:30
7 - 9 Pk Volume	1071	741	0	0		1790	4 - 6 Pk Volume	941	1240	0	0		2181
Pk Hr Factor	0.908	0.882	0.000	0.000		0.927	Pk Hr Factor	0.919	0.966	0.000	0.000		0.955

Prepared by NDS/ATD

Project #: CA17_7368_002 **City:** Placerville

Location: Missouri Flat Rd Bet. Golden Center Dr & **Date:** 5/4/2017



Prepared by NDS/ATD

VOLUME

Missouri Flat Rd Bet. China Garden Rd & Pleasant Valley Rd

Day: Thursday
Date: 5/4/2017

City: Placerville
Project #: CA17_7368_003

3486-02

DAILY TOTALS	NB	SB	EB	WB	Total
	11,481	11,592	0	0	23,073

AM Period	NB		SB		EB		WB		TOTAL	
00:00	2		17						19	
00:15	5		26						31	
00:30	7		16						23	
00:45	9	23	6	65					15	88
01:00	6		11						17	
01:15	6		6						12	
01:30	6		4						10	
01:45	5	23	2	23					7	46
02:00	5		2						7	
02:15	4		3						7	
02:30	1		9						10	
02:45	7	17	5	19					12	36
03:00	4		4						8	
03:15	10		10						20	
03:30	6		1						7	
03:45	26	46	8	23					34	69
04:00	24		3						27	
04:15	24		8						32	
04:30	32		13						45	
04:45	58	138	12	36					70	174
05:00	65		17						82	
05:15	96		20						116	
05:30	96		17						113	
05:45	118	375	29	83					147	458
06:00	145		43						188	
06:15	167		43						210	
06:30	155		52						207	
06:45	182	649	75	213					257	862
07:00	181		79						260	
07:15	219		164						383	
07:30	221		138						359	
07:45	258	879	131	512					389	1391
08:00	211		145						356	
08:15	234		135						369	
08:30	228		144						372	
08:45	244	917	169	593					413	1510
09:00	195		153						348	
09:15	202		142						344	
09:30	187		150						337	
09:45	205	789	139	584					344	1373
10:00	180		159						339	
10:15	196		169						365	
10:30	197		152						349	
10:45	181	754	162	642					343	1396
11:00	195		164						359	
11:15	186		175						361	
11:30	181		179						360	
11:45	192	754	213	731					405	1485
TOTALS		5364		3524						8888
SPLIT %		60.4%		39.6%						38.5%

PM Period	NB		SB		EB		WB		TOTAL	
12:00	204		211						415	
12:15	204		204						408	
12:30	179		219						398	
12:45	227	814	205	839					432	1653
13:00	206		217						423	
13:15	203		183						386	
13:30	190		218						408	
13:45	195	794	178	796					373	1590
14:00	200		225						425	
14:15	195		224						419	
14:30	185		242						427	
14:45	187	767	231	922					418	1689
15:00	239		217						456	
15:15	180		258						438	
15:30	192		254						446	
15:45	170	781	271	1000					441	1781
16:00	171		226						397	
16:15	171		258						429	
16:30	177		272						449	
16:45	160	679	271	1027					431	1706
17:00	209		284						493	
17:15	206		291						497	
17:30	177		247						424	
17:45	160	752	239	1061					399	1813
18:00	141		205						346	
18:15	106		223						329	
18:30	122		174						296	
18:45	109	478	151	753					260	1231
19:00	148		172						320	
19:15	110		149						259	
19:30	96		144						240	
19:45	100	454	146	611					246	1065
20:00	63		120						183	
20:15	68		116						184	
20:30	66		104						170	
20:45	64	261	94	434					158	695
21:00	67		97						164	
21:15	49		91						140	
21:30	50		64						114	
21:45	35	201	70	322					105	523
22:00	32		64						96	
22:15	31		52						83	
22:30	20		49						69	
22:45	16	99	39	204					55	303
23:00	13		28						41	
23:15	14		23						37	
23:30	4		29						33	
23:45	6	37	19	99					25	136
TOTALS		6117		8068						14185
SPLIT %		43.1%		56.9%						61.5%

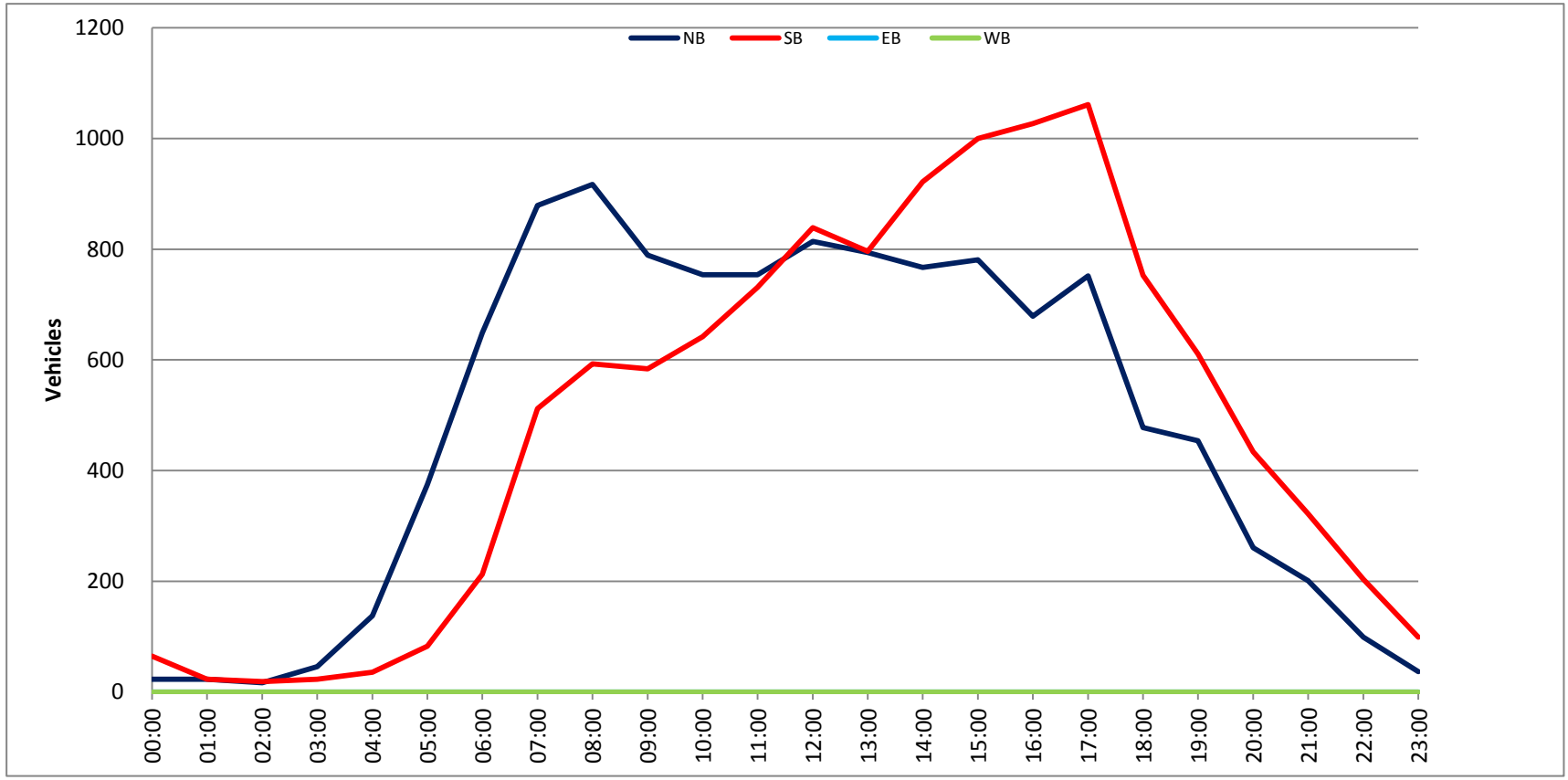
DAILY TOTALS	NB	SB	EB	WB	Total
	11,481	11,592	0	0	23,073

AM Peak Hour	07:45	11:45			11:45	PM Peak Hour	12:45	16:30			16:30
AM Pk Volume	931	847			1626	PM Pk Volume	826	1118			1870
Pk Hr Factor	0.902	0.967			0.980	Pk Hr Factor	0.910	0.960			0.941
7 - 9 Volume	1796	1105	0	0	2901	4 - 6 Volume	1431	2088	0	0	3519
7 - 9 Peak Hour	07:45	08:00			08:00	4 - 6 Peak Hour	16:30	16:30			16:30
7 - 9 Pk Volume	931	593	0	0	1510	4 - 6 Pk Volume	752	1118	0	0	1870
Pk Hr Factor	0.902	0.877	0.000	0.000	0.914	Pk Hr Factor	0.900	0.960	0.000	0.000	0.941

Prepared by NDS/ATD

Project #: CA17_7368_003 **City:** Placerville

Location: Missouri Flat Rd Bet. China Garden Rd & **Date:** 5/4/2017



National Data and Surveying Services

(323) 782-0090
info@ndsdata.com

3486-02

City of Placerville
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

File Name : 17-7367-001 Missouri Flat Rd & WB US-50 Ramps
Date : 5/4/2017

Unshifted Count = All Vehicles & Uturns

	Missouri Flat Rd Southbound					WB US-50 Ramps Westbound					Missouri Flat Rd Northbound					WB US-50 Ramps Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
6:00	0	17	17	0	34	42	0	17	0	59	118	36	0	0	154	0	0	0	0	0	247	0
6:15	0	30	24	0	54	36	0	17	0	53	126	33	0	0	159	0	0	0	0	0	266	0
6:30	0	29	17	0	46	52	0	38	0	90	118	62	0	0	180	0	0	0	0	0	316	0
6:45	0	54	23	0	77	72	1	44	0	117	115	64	0	0	179	0	0	0	0	0	373	0
Total	0	130	81	0	211	202	1	116	0	319	477	195	0	0	672	0	0	0	0	0	1202	0
7:00	0	76	31	0	107	124	0	41	0	165	99	78	0	0	177	0	0	0	0	0	449	0
7:15	0	79	26	0	105	154	0	51	0	205	134	114	0	0	248	0	0	0	0	0	558	0
7:30	0	99	28	0	127	138	0	49	0	187	130	83	0	0	213	0	0	0	0	0	527	0
7:45	0	94	20	0	114	156	0	56	0	212	113	120	0	0	233	0	0	0	0	0	559	0
Total	0	348	105	0	453	572	0	197	0	769	476	395	0	0	871	0	0	0	0	0	2093	0
8:00	0	103	26	0	129	120	0	49	0	169	114	94	0	0	208	0	0	0	0	0	506	0
8:15	0	95	25	0	120	150	0	84	0	234	103	107	0	0	210	0	0	0	0	0	564	0
8:30	0	134	28	0	162	112	0	90	0	202	111	171	0	0	282	0	0	0	0	0	646	0
8:45	0	150	32	0	182	137	1	91	0	229	105	169	0	0	274	0	0	0	0	0	685	0
Total	0	482	111	0	593	519	1	314	0	834	433	541	0	0	974	0	0	0	0	0	2401	0
16:00	0	208	38	1	247	156	1	73	0	230	102	140	0	0	242	0	0	0	0	0	719	1
16:15	0	176	33	0	209	153	1	67	0	221	87	160	0	0	247	0	0	0	0	0	677	0
16:30	0	192	51	0	243	169	1	88	0	258	90	154	0	0	244	0	0	0	0	0	745	0
16:45	0	198	44	0	242	142	0	80	0	222	88	137	0	0	225	0	0	0	0	0	689	0
Total	0	774	166	1	941	620	3	308	0	931	367	591	0	0	958	0	0	0	0	0	2830	1
17:00	0	182	44	0	226	188	0	101	0	289	125	155	0	0	280	0	0	0	0	0	795	0
17:15	0	189	40	0	229	158	0	99	0	257	106	174	0	0	280	0	0	0	0	0	766	0
17:30	0	190	32	0	222	138	0	64	0	202	99	150	0	0	249	0	0	0	0	0	673	0
17:45	0	181	45	0	226	141	1	77	0	219	78	129	0	0	207	0	0	0	0	0	652	0
Total	0	742	161	0	903	625	1	341	0	967	408	608	0	0	1016	0	0	0	0	0	2886	0
18:00	0	170	44	0	214	102	0	53	0	155	68	131	0	0	199	0	0	0	0	0	568	0
18:15	0	168	20	0	188	112	0	65	0	177	67	106	0	0	173	0	0	0	0	0	538	0
18:30	0	148	26	0	174	95	0	45	0	140	56	108	0	0	164	0	0	0	0	0	478	0
18:45	0	122	24	0	146	92	0	40	0	132	52	93	0	0	145	0	0	0	0	0	423	0
Total	0	608	114	0	722	401	0	203	0	604	243	438	0	0	681	0	0	0	0	0	2007	0
Grand Total	0	3084	738	1	3823	2939	6	1479	0	4424	2404	2768	0	0	5172	0	0	0	0	0	13419	1
Apprch %	0.0%	80.7%	19.3%	0.0%		66.4%	0.1%	33.4%	0.0%		46.5%	53.5%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%			
Total %	0.0%	23.0%	5.5%	0.0%	28.5%	21.9%	0.0%	11.0%	0.0%	33.0%	17.9%	20.6%	0.0%	0.0%	38.5%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	

AM PEAK HOUR	Missouri Flat Rd Southbound					WB US-50 Ramps Westbound					Missouri Flat Rd Northbound					WB US-50 Ramps Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
8:00	0	103	26	0	129	120	0	49	0	169	114	94	0	0	208	0	0	0	0	0	506
8:15	0	95	25	0	120	150	0	84	0	234	103	107	0	0	210	0	0	0	0	0	564
8:30	0	134	28	0	162	112	0	90	0	202	111	171	0	0	282	0	0	0	0	0	646
8:45	0	150	32	0	182	137	1	91	0	229	105	169	0	0	274	0	0	0	0	0	685
Total Volume	0	482	111	0	593	519	1	314	0	834	433	541	0	0	974	0	0	0	0	0	2401
% App Total	0.0%	81.3%	18.7%	0.0%		62.2%	0.1%	37.6%	0.0%		44.5%	55.5%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		
PHF	.000	.803	.867	.000	.815	.865	.250	.863	.000	.891	.950	.791	.000	.000	.863	.000	.000	.000	.000	.000	.876

PM PEAK HOUR	Missouri Flat Rd Southbound					WB US-50 Ramps Westbound					Missouri Flat Rd Northbound					WB US-50 Ramps Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	192	51	0	243	169	1	88	0	258	90	154	0	0	244	0	0	0	0	0	745
16:45	0	198	44	0	242	142	0	80	0	222	88	137	0	0	225	0	0	0	0	0	689
17:00	0	182	44	0	226	188	0	101	0	289	125	155	0	0	280	0	0	0	0	0	795
17:15	0	189	40	0	229	158	0	99	0	257	106	174	0	0	280	0	0	0	0	0	766
Total Volume	0	761	179	0	940	657	1	368	0	1026	409	620	0	0	1029	0	0	0	0	0	2995
% App Total	0.0%	81.0%	19.0%	0.0%		64.0%	0.1%	35.9%	0.0%		39.7%	60.3%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		
PHF	.000	.961	.877	.000	.967	.874	.250	.911	.000	.888	.818	.891	.000	.000	.919	.000	.000	.000	.000	.000	.942

National Data and Surveying Services

City of Placerville
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7367-001 Missouri Flat Rd & WB US-50 Ramps
Date : 5/4/2017

Bank 1 Count = Bikes & Peds

	Missouri Flat Rd Southbound					WB US-50 Ramps Westbound					Missouri Flat Rd Northbound					WB US-50 Ramps Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
6:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
7:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
7:15	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	2
7:30	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
7:45	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	1	0	0	6
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
16:00	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
16:15	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	0	3
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Total	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	3	0	0	7
17:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	2
17:15	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Total	0	2	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	2	2
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	1	0	2	1
Total	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	2	0	2	2
Grand Total	0	2	0	0	2	0	0	0	10	0	0	2	0	0	2	0	0	0	10	0	4	20
Apprch %	0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%				
Total %	0.0%	50.0%	0.0%		50.0%	0.0%	0.0%	0.0%		0.0%	0.0%	50.0%	0.0%		50.0%	0.0%	0.0%	0.0%		0.0%	100.0%	

AM PEAK HOUR	Missouri Flat Rd Southbound					WB US-50 Ramps Westbound					Missouri Flat Rd Northbound					WB US-50 Ramps Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
% App Total	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000

PM PEAK HOUR	Missouri Flat Rd Southbound					WB US-50 Ramps Westbound					Missouri Flat Rd Northbound					WB US-50 Ramps Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
17:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0
17:15	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	3	0	1
% App Total	0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.250	.000		.250	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.250

Missouri Flat Rd & WB US-50 Ramps

Date: 5/4/2017

Day: Thursday

Project #: 17-7367-001



Peak Hour Summary

AM Peak Hour	08:00 - 09:00
NOON Peak Hour	
PM Peak Hour	16:30 - 17:30

Southbound Approach

Missouri Flat Rd

AM	111	482	0	0	855 AM
NOON	0	0	0	0	0 NOON
PM	179	761	0	0	988 PM

Eastbound Approach

WB US-50 Ramps

	AM	NOON	PM
	545	0	589
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	AM	NOON	PM

CONTROL

Westbound Approach

	AM	NOON	PM
	314	0	368
	1	0	1
	519	0	657
	0	0	0
	0	0	0
	AM	NOON	PM

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	7:00 PM

Northbound Approach

AM	1001	0	433	541	0 AM
NOON	0	0	0	0	0 NOON
PM	1418	0	409	620	0 PM

Total Ins & Outs

	North Leg		
	593	855	AM
	0	0	NOON
	940	988	PM

West Leg			East Leg		
AM	NOON	PM	AM	NOON	PM
545	0	589	834	0	1026
0	0	0	0	0	0

	South Leg	
AM	1001	974
NOON	0	0
PM	1418	1029

Total Volume Per Leg

	North Leg	
	1448	AM
	0	NOON
	1928	PM

West Leg			East Leg		
AM	NOON	PM	AM	NOON	PM
545	0	589	834	0	1026

	South Leg	
AM	1975	
NOON	0	
PM	2447	

Missouri Flat Rd & WB US-50 Ramps

Date: 5/4/2017

Day: Thursday

Project #: 17-7367-001

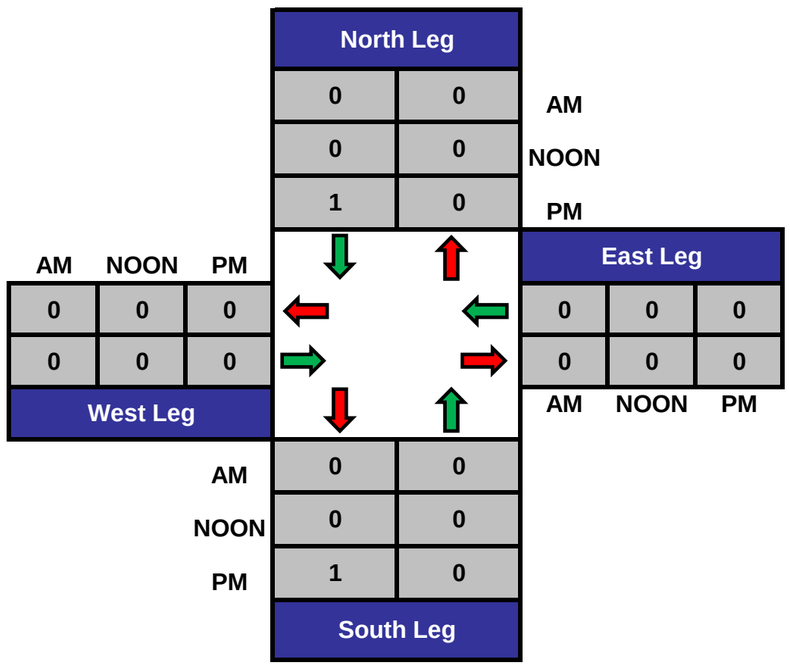


Peak Hour Summary

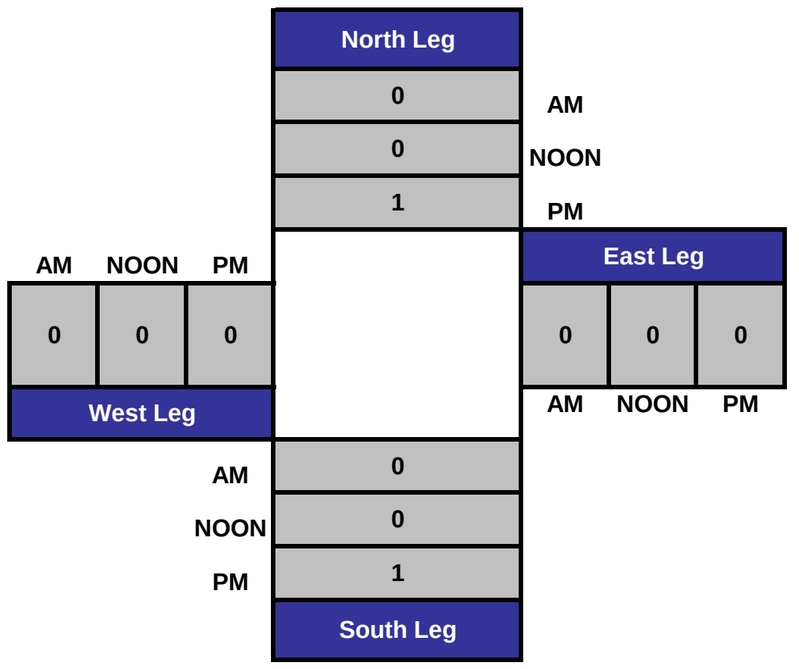
AM Peak Hour	08:00 - 09:00
NOON Peak Hour	
PM Peak Hour	16:30 - 17:30

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	7:00 PM

Total Ins & Outs



Total Volume Per Leg



National Data and Surveying Services

(323) 782-0090
info@ndsdata.com

3486-02

City of Placerville
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

File Name : 17-7367-002 Missouri Flat Rd & EB US-50 Ramps
Date : 5/4/2017

Unshifted Count = All Vehicles & Uturns

	Missouri Flat Rd Southbound					EB US-50 Ramps Westbound					Missouri Flat Rd Northbound					EB US-50 Ramps Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
6:00	8	55	0	0	63	0	0	0	0	0	0	150	6	0	156	5	0	25	0	30	249	0
6:15	12	52	0	0	64	0	0	0	0	0	0	147	10	0	157	9	0	49	0	58	279	0
6:30	7	72	0	0	79	0	0	0	0	0	0	157	11	0	168	23	0	42	0	65	312	0
6:45	18	111	0	0	129	0	0	0	0	0	0	161	20	0	181	18	0	76	0	94	404	0
Total	45	290	0	0	335	0	0	0	0	0	0	615	47	0	662	55	0	192	0	247	1244	0
7:00	19	162	0	0	181	0	0	0	0	0	0	159	11	0	170	18	0	48	0	66	417	0
7:15	18	228	0	0	246	0	0	0	0	0	0	231	13	0	244	17	0	100	0	117	607	0
7:30	40	196	0	0	236	0	0	0	0	0	0	197	21	0	218	18	0	83	0	101	555	0
7:45	30	216	0	0	246	0	0	0	0	0	0	215	26	0	241	23	0	127	0	150	637	0
Total	107	802	0	0	909	0	0	0	0	0	0	802	71	0	873	76	0	358	0	434	2216	0
8:00	42	185	0	0	227	0	0	0	0	0	0	183	19	0	202	19	0	105	0	124	553	0
8:15	41	193	0	0	234	0	0	0	0	0	0	189	21	0	210	26	0	79	0	105	549	0
8:30	40	212	0	0	252	0	0	0	0	0	0	240	20	0	260	33	0	88	0	121	633	0
8:45	48	244	0	0	292	0	0	0	0	0	0	239	16	0	255	44	0	88	0	132	679	0
Total	171	834	0	0	1005	0	0	0	0	0	0	851	76	0	927	122	0	360	0	482	2414	0
16:00	86	266	0	0	352	0	0	0	0	0	0	198	28	0	226	45	1	149	0	195	773	0
16:15	64	272	0	0	336	0	0	0	0	0	0	194	24	0	218	49	0	165	0	214	768	0
16:30	86	275	0	0	361	0	0	0	0	0	0	192	32	0	224	47	0	145	0	192	777	0
16:45	78	261	0	0	339	0	0	0	0	0	0	185	36	0	221	45	2	155	0	202	762	0
Total	314	1074	0	0	1388	0	0	0	0	0	0	769	120	0	889	186	3	614	0	803	3080	0
17:00	65	310	0	0	375	0	0	0	0	0	0	216	21	0	237	56	1	131	0	188	800	0
17:15	71	274	0	0	345	0	0	0	0	0	0	226	31	0	257	59	0	146	0	205	807	0
17:30	79	249	0	0	328	0	0	0	0	0	0	216	19	0	235	31	0	131	0	162	725	0
17:45	61	259	0	0	320	0	0	0	0	0	0	163	16	0	179	49	1	123	0	173	672	0
Total	276	1092	0	0	1368	0	0	0	0	0	0	821	87	0	908	195	2	531	0	728	3004	0
18:00	69	201	0	0	270	0	0	0	0	0	0	159	15	0	174	35	0	96	0	131	575	0
18:15	78	203	0	0	281	0	0	0	0	0	0	140	30	0	170	34	0	105	0	139	590	0
18:30	58	178	0	0	236	0	0	0	0	0	0	137	17	0	154	32	1	91	0	124	514	0
18:45	52	174	0	0	226	0	0	0	0	0	0	111	19	0	130	28	0	82	0	110	466	0
Total	257	756	0	0	1013	0	0	0	0	0	0	547	81	0	628	129	1	374	0	504	2145	0
Grand Total	1170	4848	0	0	6018	0	0	0	0	0	0	4405	482	0	4887	763	6	2429	0	3198	14103	0
Apprch %	19.4%	80.6%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	90.1%	9.9%	0.0%		23.9%	0.2%	76.0%	0.0%			
Total %	8.3%	34.4%	0.0%	0.0%	42.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	31.2%	3.4%	0.0%	34.7%	5.4%	0.0%	17.2%	0.0%	22.7%	100.0%	

AM PEAK HOUR	Missouri Flat Rd Southbound					EB US-50 Ramps Westbound					Missouri Flat Rd Northbound					EB US-50 Ramps Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
8:00	42	185	0	0	227	0	0	0	0	0	0	183	19	0	202	19	0	105	0	124	553
8:15	41	193	0	0	234	0	0	0	0	0	0	189	21	0	210	26	0	79	0	105	549
8:30	40	212	0	0	252	0	0	0	0	0	0	240	20	0	260	33	0	88	0	121	633
8:45	48	244	0	0	292	0	0	0	0	0	0	239	16	0	255	44	0	88	0	132	679
Total Volume	171	834	0	0	1005	0	0	0	0	0	0	851	76	0	927	122	0	360	0	482	2414
% App Total	17.0%	83.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	91.8%	8.2%	0.0%		25.3%	0.0%	74.7%	0.0%		
PHF	.891	.855	.000	.000	.860	.000	.000	.000	.000	.000	.000	.886	.905	.000	.891	.693	.000	.857	.000	.913	.889

PM PEAK HOUR	Missouri Flat Rd Southbound					EB US-50 Ramps Westbound					Missouri Flat Rd Northbound					EB US-50 Ramps Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	86	275	0	0	361	0	0	0	0	0	0	192	32	0	224	47	0	145	0	192	777
16:45	78	261	0	0	339	0	0	0	0	0	0	185	36	0	221	45	2	155	0	202	762
17:00	65	310	0	0	375	0	0	0	0	0	0	216	21	0	237	56	1	131	0	188	800
17:15	71	274	0	0	345	0	0	0	0	0	0	226	31	0	257	59	0	146	0	205	807
Total Volume	300	1120	0	0	1420	0	0	0	0	0	0	819	120	0	939	207	3	577	0	787	3146
% App Total	21.1%	78.9%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	87.2%	12.8%	0.0%		26.3%	0.4%	73.3%	0.0%		
PHF	.872	.903	.000	.000	.947	.000	.000	.000	.000	.000	.000	.906	.833	.000	.913	.877	.375	.931	.000	.960	.975

National Data and Surveying Services

City of Placerville
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7367-002 Missouri Flat Rd & EB US-50 Ramps
Date : 5/4/2017

Bank 1 Count = Bikes & Peds

	Missouri Flat Rd Southbound					EB US-50 Ramps Westbound					Missouri Flat Rd Northbound					EB US-50 Ramps Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	2
7:15	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	2
7:30	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
7:45	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	2	0	0	8
8:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Total	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	2
16:00	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	1	0	0	6
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Total	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	2	0	0	7
17:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	2
17:15	0	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Total	0	2	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	2	3
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
18:45	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	1	1
Total	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	2	0	1	3
Grand Total	0	2	0	0	2	0	0	0	15	0	0	1	0	0	1	0	0	0	8	0	3	23
Apprch %	0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%				
Total %	0.0%	66.7%	0.0%		66.7%	0.0%	0.0%	0.0%		0.0%	0.0%	33.3%	0.0%		33.3%	0.0%	0.0%	0.0%		0.0%	100.0%	

AM PEAK HOUR	Missouri Flat Rd Southbound					EB US-50 Ramps Westbound					Missouri Flat Rd Northbound					EB US-50 Ramps Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
8:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Total Volume	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0
% App Total	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000

PM PEAK HOUR	Missouri Flat Rd Southbound					EB US-50 Ramps Westbound					Missouri Flat Rd Northbound					EB US-50 Ramps Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
17:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0
17:15	0	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	1	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	2	0	1
% App Total	0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.250	.000		.250	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.250

Missouri Flat Rd & EB US-50 Ramps

Date: 5/4/2017

Day: Thursday

Project #: 17-7367-002



Peak Hour Summary

AM Peak Hour	08:00 - 09:00
NOON Peak Hour	
PM Peak Hour	16:30 - 17:30

Southbound Approach

Missouri Flat Rd

AM	0	834	171	0	973 AM
NOON	0	0	0	0	0 NOON
PM	0	1120	300	0	1026 PM

Eastbound Approach

EB US-50 Ramps

	AM	NOON	PM
	0	0	0
	0	0	0
	122	0	207
	0	0	3
	360	0	577
	AM	NOON	PM

Westbound Approach

	AM	NOON	PM
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	247	0	423
	AM	NOON	PM

CONTROL

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	7:00 PM

Northbound Approach

AM	1194	0	0	851	76 AM
NOON	0	0	0	0	0 NOON
PM	1697	0	0	819	120 PM

Total Ins & Outs

North Leg		
1005	973	AM
0	0	NOON
1420	1026	PM

West Leg			East Leg		
AM	NOON	PM			
0	0	0	0	0	0
482	0	787	247	0	423
			AM	NOON	PM

South Leg		
1194	927	AM
0	0	NOON
1697	939	PM

Total Volume Per Leg

North Leg		
1978		AM
0		NOON
2446		PM

West Leg			East Leg		
AM	NOON	PM			
482	0	787	247	0	423
			AM	NOON	PM

South Leg	
2121	AM
0	NOON
2636	PM

Missouri Flat Rd & EB US-50 Ramps

Date: 5/4/2017

Day: Thursday

Project #: 17-7367-002



Peak Hour Summary

AM Peak Hour	08:00 - 09:00
NOON Peak Hour	
PM Peak Hour	16:30 - 17:30

Southbound Approach (Missouri Flat Rd)

AM	0	0	0	0	0 AM
NOON	0	0	0	0	0 NOON
PM	0	1	0	0	0 PM

Eastbound Approach (EB US-50 Ramps)

	AM	NOON	PM
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	AM	NOON	PM

Westbound Approach

	AM	NOON	PM
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	AM	NOON	PM

CONTROL

Northbound Approach

AM	0	0	0	0	0 AM
NOON	0	0	0	0	0 NOON
PM	1	0	0	0	0 PM

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	7:00 PM

Total Ins & Outs

North Leg	0	0	AM
	0	0	NOON
	1	0	PM
West Leg: AM NOON PM	0 0 0		East Leg: 0 0 0 / AM NOON PM
	0 0 0		
South Leg	0	0	AM
	0	0	NOON
	1	0	PM

Total Volume Per Leg

North Leg	0		AM
	0		NOON
	1		PM
West Leg: AM NOON PM	0 0 0		East Leg: 0 0 0 / AM NOON PM
South Leg	0		AM
	0		NOON
	1		PM

National Data and Surveying Services

3486-02

City of Placerville
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7367-003 Missouri Flat Rd & Mother Lode Dr
Date : 5/4/2017

Unshifted Count = All Vehicles & Uturns

	Missouri Flat Rd Southbound					Mother Lode Dr Westbound					Missouri Flat Rd Northbound					Mother Lode Dr Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
6:00	0	75	5	0	80	0	0	0	0	0	5	143	38	0	186	12	0	2	0	14	280	0
6:15	0	92	7	0	99	0	0	0	0	0	4	140	58	0	202	18	0	3	0	21	322	0
6:30	0	111	5	0	116	0	0	0	0	0	2	152	40	0	194	16	0	6	0	22	332	0
6:45	0	178	8	0	186	0	0	0	0	0	4	149	65	0	218	25	0	5	0	30	434	0
Total	0	456	25	0	481	0	0	0	0	0	15	584	201	0	800	71	0	16	0	87	1368	0
7:00	0	194	16	0	210	0	0	0	0	0	7	159	91	0	257	18	0	11	0	29	496	0
7:15	0	312	17	0	329	0	0	0	0	0	7	221	110	0	338	20	0	21	0	41	708	0
7:30	0	254	21	0	275	0	0	0	0	0	9	191	106	0	306	28	0	6	0	34	615	0
7:45	0	331	16	0	347	0	0	0	0	0	7	197	145	0	349	37	0	13	0	50	746	0
Total	0	1091	70	0	1161	0	0	0	0	0	30	768	452	0	1250	103	0	51	0	154	2565	0
8:00	0	264	21	0	285	0	0	0	0	0	9	177	111	0	297	32	0	7	0	39	621	0
8:15	0	258	17	0	275	0	0	0	0	0	7	188	96	0	291	27	0	12	0	39	605	0
8:30	0	270	29	0	299	0	0	0	0	0	6	220	95	0	321	37	0	14	0	51	671	0
8:45	0	300	37	0	337	0	0	0	0	0	8	214	121	0	343	41	0	15	0	56	736	0
Total	0	1092	104	0	1196	0	0	0	0	0	30	799	423	0	1252	137	0	48	0	185	2633	0
16:00	0	377	35	0	412	0	0	0	0	0	11	180	162	0	353	42	0	12	0	54	819	0
16:15	0	391	43	0	434	0	0	0	0	0	11	186	144	1	342	36	0	15	0	51	827	1
16:30	0	372	40	0	412	0	0	0	0	0	11	177	172	0	360	71	0	13	0	84	856	0
16:45	0	381	42	0	423	0	0	0	0	0	14	157	138	0	309	46	0	17	0	63	795	0
Total	0	1521	160	0	1681	0	0	0	0	0	47	700	616	1	1364	195	0	57	0	252	3297	1
17:00	0	405	39	1	445	0	0	0	0	0	9	211	170	1	391	30	0	18	0	48	884	2
17:15	0	380	41	0	421	0	0	0	0	0	7	205	178	0	390	46	0	21	0	67	878	0
17:30	0	350	40	0	390	0	0	0	0	0	10	208	161	0	379	28	0	11	0	39	808	0
17:45	0	332	46	0	378	0	0	0	0	0	15	156	145	0	316	25	0	13	0	38	732	0
Total	0	1467	166	1	1634	0	0	0	0	0	41	780	654	1	1476	129	0	63	0	192	3302	2
18:00	0	269	35	0	304	0	0	0	0	0	16	144	98	3	261	35	0	14	0	49	614	3
18:15	0	275	28	0	303	0	0	0	0	0	4	129	91	0	224	39	0	10	0	49	576	0
18:30	0	240	27	0	267	0	0	0	0	0	10	128	102	0	240	27	0	7	0	34	541	0
18:45	0	234	26	0	260	0	0	0	0	0	6	99	89	0	194	28	0	7	0	35	489	0
Total	0	1018	116	0	1134	0	0	0	0	0	36	500	380	3	919	129	0	38	0	167	2220	3
Grand Total	0	6645	641	1	7287	0	0	0	0	0	199	4131	2726	5	7061	764	0	273	0	1037	15385	6
Apprch %	0.0%	91.2%	8.8%	0.0%		0.0%	0.0%	0.0%	0.0%		2.8%	58.5%	38.6%	0.1%		73.7%	0.0%	26.3%	0.0%			
Total %	0.0%	43.2%	4.2%	0.0%	47.4%	0.0%	0.0%	0.0%	0.0%	0.0%	1.3%	26.9%	17.7%	0.0%	45.9%	5.0%	0.0%	1.8%	0.0%	6.7%	100.0%	

AM PEAK HOUR	Missouri Flat Rd Southbound					Mother Lode Dr Westbound					Missouri Flat Rd Northbound					Mother Lode Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
7:15	0	312	17	0	329	0	0	0	0	0	7	221	110	0	338	20	0	21	0	41	708
7:30	0	254	21	0	275	0	0	0	0	0	9	191	106	0	306	28	0	6	0	34	615
7:45	0	331	16	0	347	0	0	0	0	0	7	197	145	0	349	37	0	13	0	50	746
8:00	0	264	21	0	285	0	0	0	0	0	9	177	111	0	297	32	0	7	0	39	621
Total Volume	0	1161	75	0	1236	0	0	0	0	0	32	786	472	0	1290	117	0	47	0	164	2690
% App Total	0.0%	93.9%	6.1%	0.0%		0.0%	0.0%	0.0%	0.0%		2.5%	60.9%	36.6%	0.0%		71.3%	0.0%	28.7%	0.0%		
PHF	.000	.877	.893	.000	.890	.000	.000	.000	.000	.000	.889	.889	.814	.000	.924	.791	.000	.560	.000	.820	.901

PM PEAK HOUR	Missouri Flat Rd Southbound					Mother Lode Dr Westbound					Missouri Flat Rd Northbound					Mother Lode Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	372	40	0	412	0	0	0	0	0	11	177	172	0	360	71	0	13	0	84	856
16:45	0	381	42	0	423	0	0	0	0	0	14	157	138	0	309	46	0	17	0	63	795
17:00	0	405	39	1	445	0	0	0	0	0	9	211	170	1	391	30	0	18	0	48	884
17:15	0	380	41	0	421	0	0	0	0	0	7	205	178	0	390	46	0	21	0	67	878
Total Volume	0	1538	162	1	1701	0	0	0	0	0	41	750	658	1	1450	193	0	69	0	262	3413
% App Total	0.0%	90.4%	9.5%	0.1%		0.0%	0.0%	0.0%	0.0%		2.8%	51.7%	45.4%	0.1%		73.7%	0.0%	26.3%	0.0%		
PHF	.000	.949	.964	.250	.956	.000	.000	.000	.000	.000	.732	.889	.924	.250	.927	.680	.000	.821	.000	.780	.965

National Data and Surveying Services

City of Placerville
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7367-003 Missouri Flat Rd & Mother Lode Dr
Date : 5/4/2017

Bank 1 Count = Bikes & Peds

	Missouri Flat Rd Southbound					Mother Lode Dr Westbound					Missouri Flat Rd Northbound					Mother Lode Dr Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
16:00	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Total	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
17:15	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Total	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	1
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
18:45	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0
Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	2	0	1	2
Grand Total	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	0	0	0	4	0	4	4
Apprch %	0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%				
Total %	0.0%	75.0%	0.0%		75.0%	0.0%	0.0%	0.0%		0.0%	0.0%	25.0%	0.0%		25.0%	0.0%	0.0%	0.0%		0.0%	100.0%	

PM PEAK HOUR	Missouri Flat Rd Southbound					Mother Lode Dr Westbound					Missouri Flat Rd Northbound					Mother Lode Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
17:15	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1
% App Total	0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.250	.000		.250	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.250

Missouri Flat Rd & Mother Lode Dr

Date: 5/4/2017

Day: Thursday

Project #: 17-7367-003



Peak Hour Summary

	AM	NOON	PM
AM Peak Hour	07:15 - 08:15		
NOON Peak Hour			
PM Peak Hour	16:30 - 17:30		

Southbound Approach

Missouri Flat Rd

AM	75	1161	0	0	903 AM
NOON	0	0	0	0	0 NOON
PM	162	1538	0	1	944 PM

Mother Lode Dr

Eastbound Approach

	AM	NOON	PM
	107	0	203
	0	0	0
	117	0	193
	0	0	0
	47	0	69

Westbound Approach

	AM	NOON	PM
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	472	0	658

CONTROL

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	7:00 PM

Northbound Approach

AM	1208	0	32	786	472 AM
NOON	0	0	0	0	0 NOON
PM	1608	1	41	750	658 PM

Total Ins & Outs

	North Leg		
	1236	903	AM
	0	0	NOON
	1701	944	PM

West Leg AM	West Leg NOON	West Leg PM		East Leg AM	East Leg NOON	East Leg PM
107	0	203		0	0	0
164	0	262		472	0	658

	South Leg	
AM	1208	1290
NOON	0	0
PM	1608	1450

Total Volume Per Leg

	North Leg	
	2139	AM
	0	NOON
	2645	PM

West Leg AM	West Leg NOON	West Leg PM		East Leg AM	East Leg NOON	East Leg PM
271	0	465		472	0	658

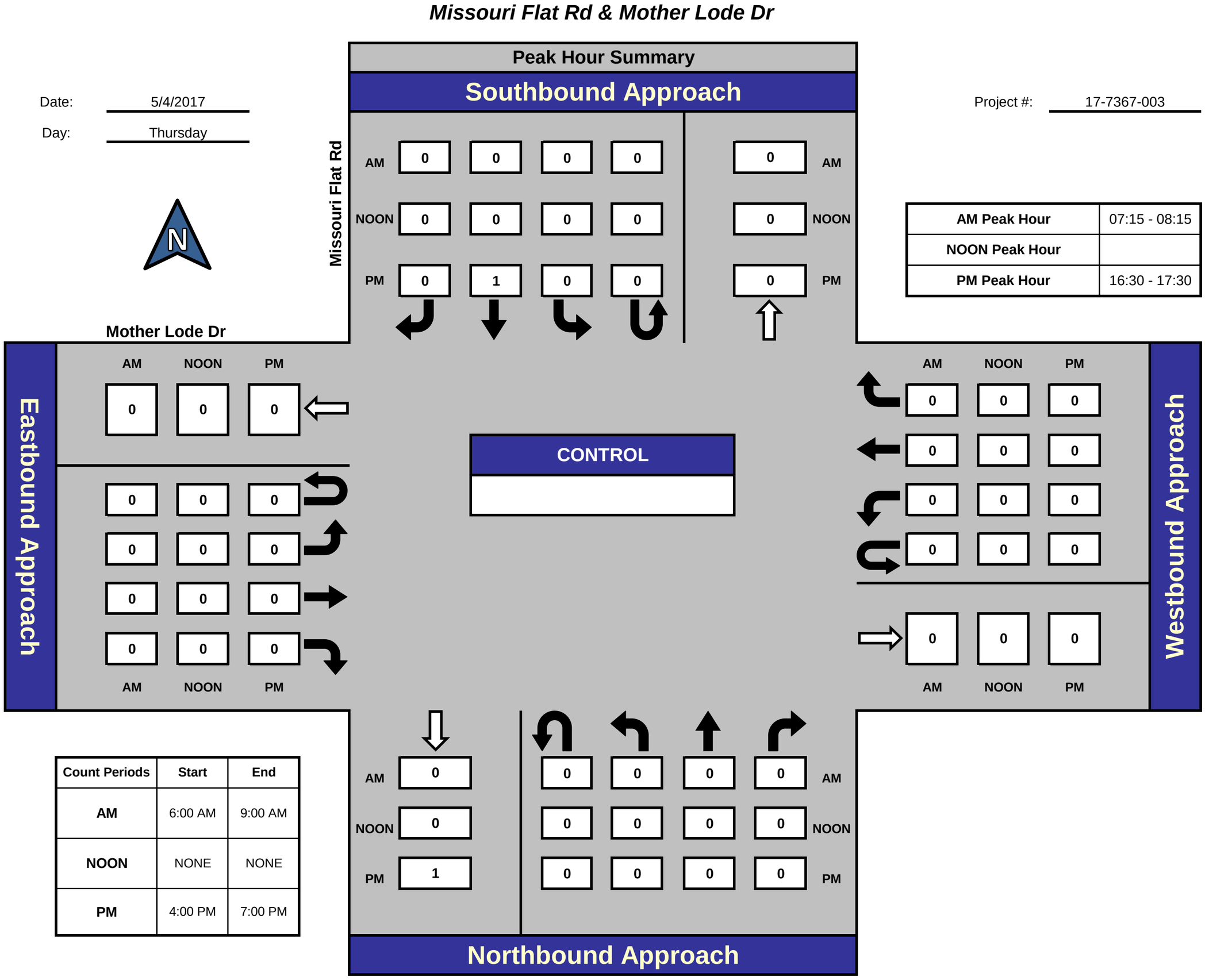
	South Leg
AM	2498
NOON	0
PM	3058

Missouri Flat Rd & Mother Lode Dr

Date: 5/4/2017

Day: Thursday

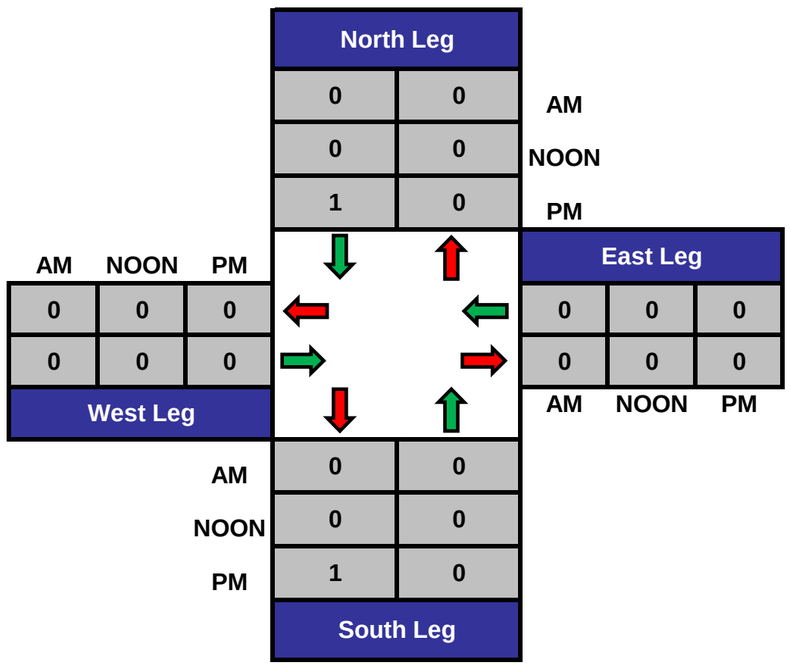
Project #: 17-7367-003



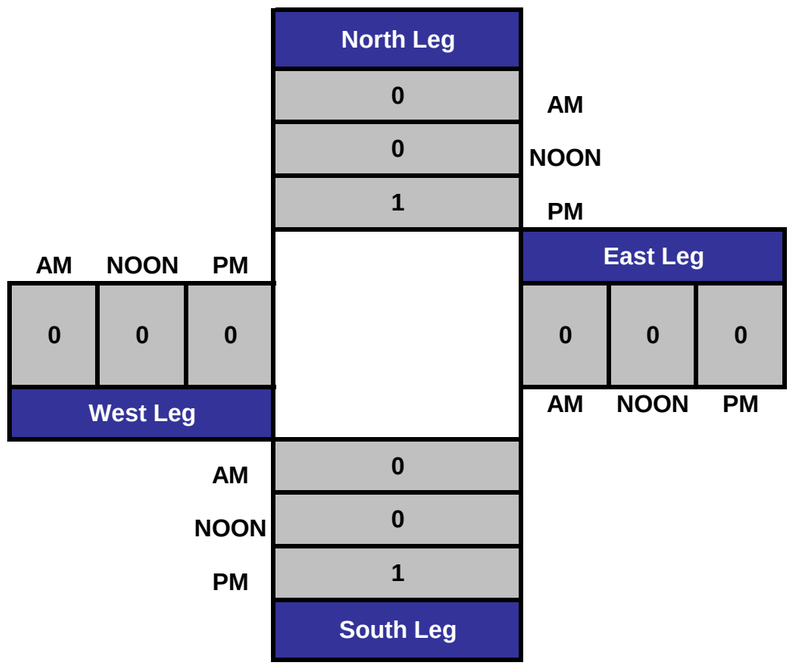
Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	7:00 PM

AM Peak Hour	07:15 - 08:15
NOON Peak Hour	
PM Peak Hour	16:30 - 17:30

Total Ins & Outs



Total Volume Per Leg



National Data and Surveying Services

(323) 782-0090
info@ndsdata.com

3486-02

City of Placerville
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

File Name : 17-7367-004 Missouri Flat Rd & Rd 2233
Date : 5/4/2017

Unshifted Count = All Vehicles & Uturns

	Missouri Flat Rd Southbound					Rd 2233 Westbound					Missouri Flat Rd Northbound					Rd 2233 Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
6:00	0	79	0	0	79	0	0	0	0	0	0	183	0	0	183	0	0	0	0	0	262	0
6:15	0	95	0	0	95	0	0	0	0	0	0	206	0	0	206	0	0	0	0	0	301	0
6:30	0	112	0	0	112	0	0	0	0	0	0	185	0	0	185	0	0	0	0	0	297	0
6:45	0	180	0	0	180	0	0	0	0	0	0	218	0	0	218	0	0	0	0	0	398	0
Total	0	466	0	0	466	0	0	0	0	0	0	792	0	0	792	0	0	0	0	0	1258	0
7:00	0	205	0	0	205	0	0	0	0	0	0	263	0	0	263	0	0	0	0	0	468	0
7:15	0	326	0	0	326	0	0	0	0	0	0	330	0	0	330	0	0	0	0	0	656	0
7:30	0	260	0	0	260	0	0	0	0	0	0	308	0	0	308	0	0	0	0	0	568	0
7:45	0	325	0	0	325	0	0	0	0	0	0	348	0	0	348	0	0	0	0	0	673	0
Total	0	1116	0	0	1116	0	0	0	0	0	0	1249	0	0	1249	0	0	0	0	0	2365	0
8:00	0	289	0	0	289	0	0	0	0	0	0	301	0	0	301	0	0	0	0	0	590	0
8:15	0	263	0	0	263	0	0	0	0	0	0	286	0	0	286	0	0	0	0	0	549	0
8:30	0	283	0	0	283	0	0	0	0	0	0	330	0	0	330	0	0	0	0	0	613	0
8:45	0	306	0	0	306	0	0	0	0	0	0	328	0	0	328	0	0	0	0	0	634	0
Total	0	1141	0	0	1141	0	0	0	0	0	0	1245	0	0	1245	0	0	0	0	0	2386	0
16:00	0	383	0	0	383	0	0	0	0	0	0	356	1	0	357	0	0	0	0	0	740	0
16:15	1	404	0	0	405	0	0	0	0	0	0	333	0	0	333	0	0	0	0	0	738	0
16:30	0	400	0	0	400	0	0	0	0	0	0	369	0	0	369	0	0	0	0	0	769	0
16:45	0	385	0	0	385	0	0	0	0	0	0	308	0	0	308	0	0	0	0	0	693	0
Total	1	1572	0	0	1573	0	0	0	0	0	0	1366	1	0	1367	0	0	0	0	0	2940	0
17:00	0	438	0	0	438	0	0	0	0	0	0	399	1	0	400	0	0	0	0	0	838	0
17:15	0	391	0	0	391	1	0	1	0	2	0	384	0	0	384	0	0	0	0	0	777	0
17:30	0	354	0	0	354	0	0	0	0	0	0	375	0	0	375	0	0	0	0	0	729	0
17:45	0	332	0	0	332	0	0	0	0	0	0	310	0	1	311	0	0	0	0	0	643	1
Total	0	1515	0	0	1515	1	0	1	0	2	0	1468	1	1	1470	0	0	0	0	0	2987	1
18:00	0	296	0	0	296	0	0	0	0	0	0	258	0	0	258	0	0	0	0	0	554	0
18:15	0	285	0	0	285	0	0	1	0	1	0	219	0	0	219	0	0	0	0	0	505	0
18:30	0	246	0	0	246	0	0	0	0	0	0	237	0	0	237	0	0	0	0	0	483	0
18:45	0	243	0	0	243	0	0	0	0	0	0	191	0	0	191	0	0	0	0	0	434	0
Total	0	1070	0	0	1070	0	0	1	0	1	0	905	0	0	905	0	0	0	0	0	1976	0
Grand Total	1	6880	0	0	6881	1	0	2	0	3	0	7025	2	1	7028	0	0	0	0	0	13912	1
Apprch %	0.0%	100.0%	0.0%	0.0%		33.3%	0.0%	66.7%	0.0%		0.0%	100.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%			
Total %	0.0%	49.5%	0.0%	0.0%	49.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	50.5%	0.0%	0.0%	50.5%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	

AM PEAK HOUR	Missouri Flat Rd Southbound					Rd 2233 Westbound					Missouri Flat Rd Northbound					Rd 2233 Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
7:15	0	326	0	0	326	0	0	0	0	0	0	330	0	0	330	0	0	0	0	0	656
7:30	0	260	0	0	260	0	0	0	0	0	0	308	0	0	308	0	0	0	0	0	568
7:45	0	325	0	0	325	0	0	0	0	0	0	348	0	0	348	0	0	0	0	0	673
8:00	0	289	0	0	289	0	0	0	0	0	0	301	0	0	301	0	0	0	0	0	590
Total Volume	0	1200	0	0	1200	0	0	0	0	0	0	1287	0	0	1287	0	0	0	0	0	2487
% App Total	0.0%	100.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	100.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		
PHF	.000	.920	.000	.000	.920	.000	.000	.000	.000	.000	.000	.925	.000	.000	.925	.000	.000	.000	.000	.000	.924

PM PEAK HOUR	Missouri Flat Rd Southbound					Rd 2233 Westbound					Missouri Flat Rd Northbound					Rd 2233 Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	400	0	0	400	0	0	0	0	0	0	369	0	0	369	0	0	0	0	0	769
16:45	0	385	0	0	385	0	0	0	0	0	0	308	0	0	308	0	0	0	0	0	693
17:00	0	438	0	0	438	0	0	0	0	0	0	399	1	0	400	0	0	0	0	0	838
17:15	0	391	0	0	391	1	0	1	0	2	0	384	0	0	384	0	0	0	0	0	777
Total Volume	0	1614	0	0	1614	1	0	1	0	2	0	1460	1	0	1461	0	0	0	0	0	3077
% App Total	0.0%	100.0%	0.0%	0.0%		50.0%	0.0%	50.0%	0.0%		0.0%	99.9%	0.1%	0.0%		0.0%	0.0%	0.0%	0.0%		
PHF	.000	.921	.000	.000	.921	.250	.000	.250	.000	.250	.000	.915	.250	.000	.913	.000	.000	.000	.000	.000	.918

National Data and Surveying Services

City of Placerville
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7367-004 Missouri Flat Rd & Rd 2233
Date : 5/4/2017

Bank 1 Count = Bikes & Peds

	Missouri Flat Rd Southbound					Rd 2233 Westbound					Missouri Flat Rd Northbound					Rd 2233 Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0
7:15	0	1	0	1	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1	4
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	1	1	0	0	0	3	0	0	1	0	0	1	0	0	0	0	0	2	4
8:00	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
16:00	0	1	0	0	1	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	1	5
16:15	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	1	0	0	1	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	1	11
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	2	0	0	1	0	0	1	0	0	0	0	0	1	2
17:30	0	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1
17:45	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3	0
Total	0	3	0	0	3	0	0	0	3	0	0	2	0	0	2	0	0	0	0	0	5	3
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2	0
Total	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2	0
Grand Total	0	5	0	1	5	0	0	0	20	0	0	5	0	0	5	0	0	0	0	0	10	21
Apprch %	0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%				
Total %	0.0%	50.0%	0.0%		50.0%	0.0%	0.0%	0.0%		0.0%	0.0%	50.0%	0.0%		50.0%	0.0%	0.0%	0.0%		0.0%	100.0%	

AM PEAK HOUR	Missouri Flat Rd Southbound					Rd 2233 Westbound					Missouri Flat Rd Northbound					Rd 2233 Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
7:15	0	1	0	1	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	0	1	1	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	1
% App Total	0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.250	.000		.250	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.250

PM PEAK HOUR	Missouri Flat Rd Southbound					Rd 2233 Westbound					Missouri Flat Rd Northbound					Rd 2233 Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	2	0	0	1	0	0	1	0	0	0	0	0	1
Total Volume	0	0	0	0	0	0	0	0	4	0	0	1	0	0	1	0	0	0	0	0	1
% App Total	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.000	.000		.000	.000	.250	.000		.250	.000	.000	.000		.000	.250

Missouri Flat Rd & Rd 2233

Date: 5/4/2017

Day: Thursday

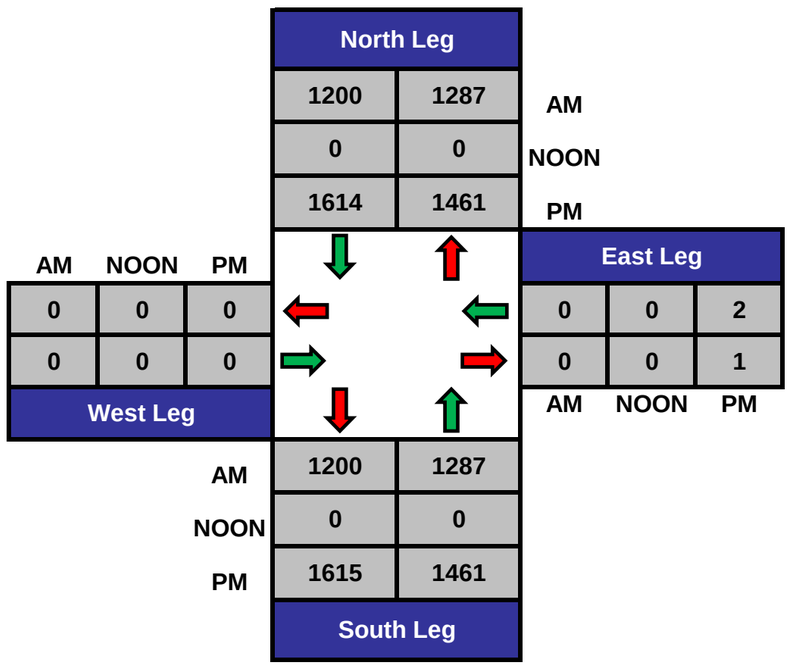
Project #: 17-7367-004



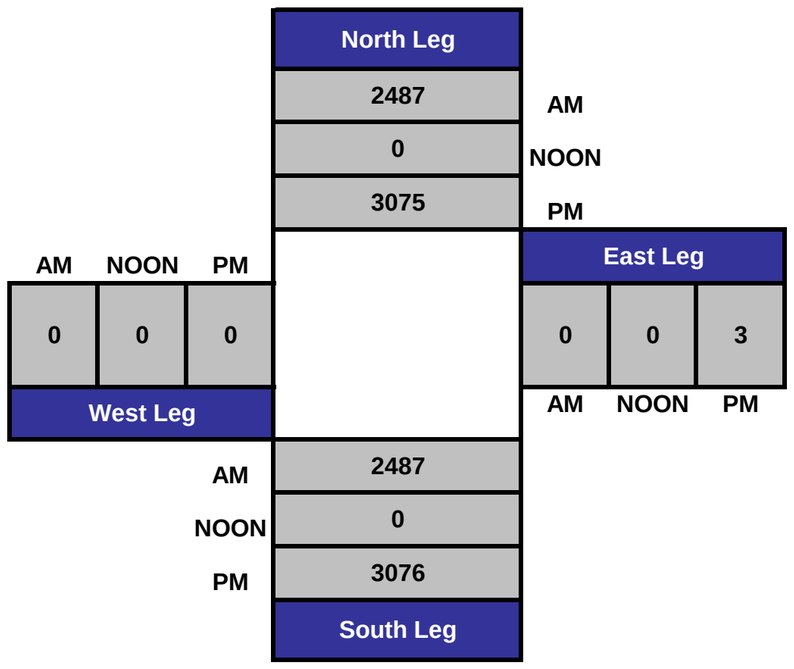
Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	7:00 PM

AM Peak Hour	07:15 - 08:15
NOON Peak Hour	
PM Peak Hour	16:30 - 17:30

Total Ins & Outs



Total Volume Per Leg

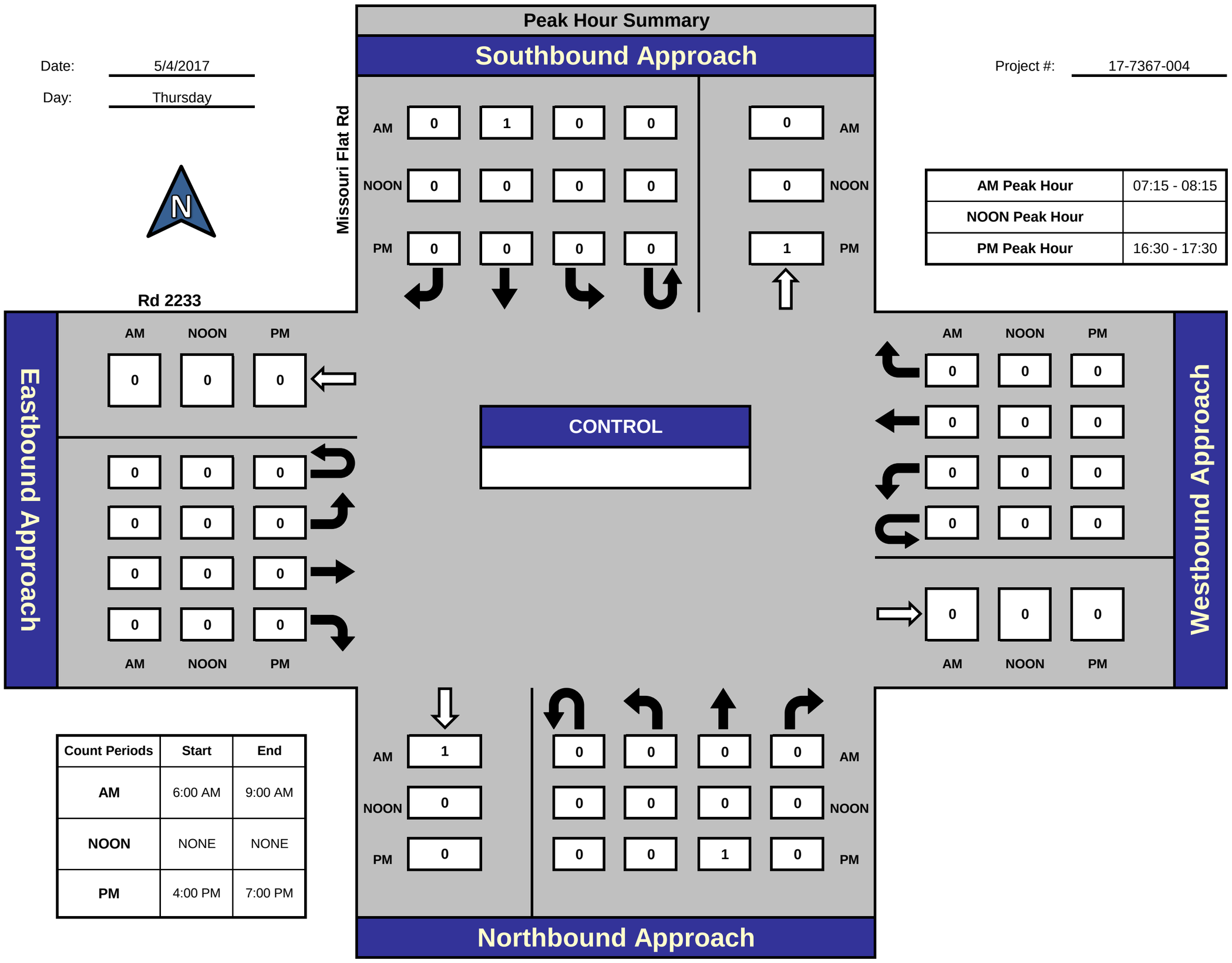


Missouri Flat Rd & Rd 2233

Date: 5/4/2017

Day: Thursday

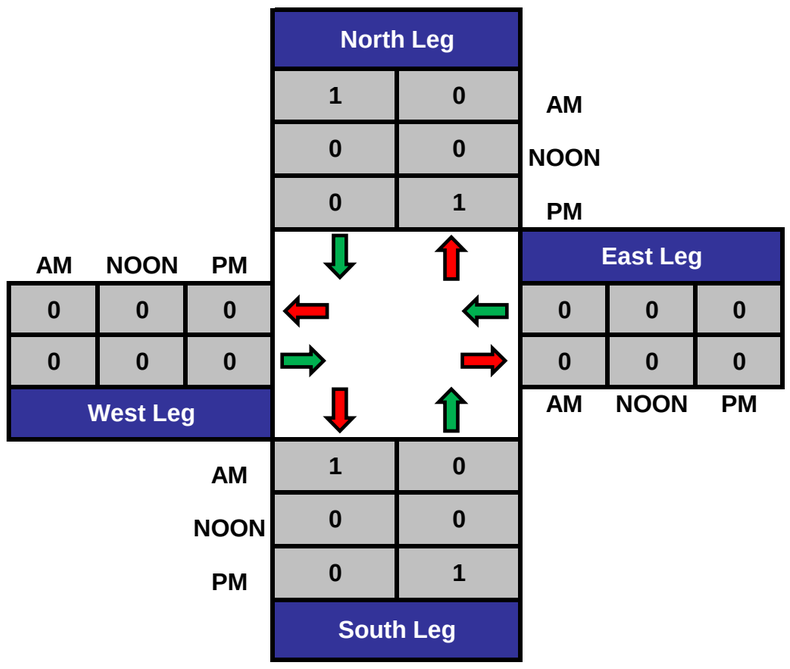
Project #: 17-7367-004



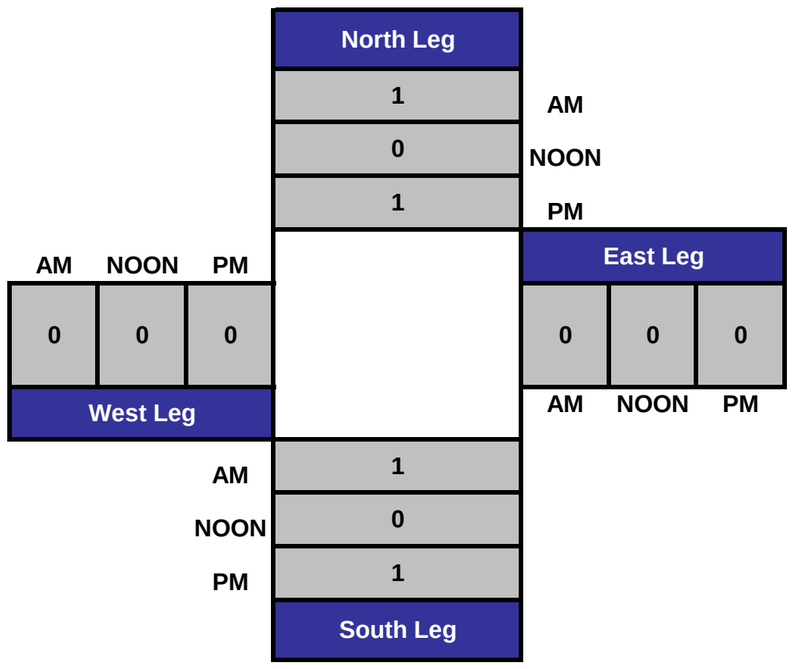
Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	7:00 PM

AM Peak Hour	07:15 - 08:15
NOON Peak Hour	
PM Peak Hour	16:30 - 17:30

Total Ins & Outs



Total Volume Per Leg



National Data and Surveying Services

3486-02

City of Placerville
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7367-005 Forni Rd & Golden Center Dr
Date : 5/4/2017

Unshifted Count = All Vehicles & Uturns

	Forni Rd Southbound					Golden Center Dr Westbound					Forni Rd Northbound					Golden Center Dr Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
6:00	0	7	0	0	7	5	0	0	0	5	0	7	7	0	14	0	0	0	0	0	26	0
6:15	0	6	0	0	6	4	0	2	0	6	0	4	7	0	11	0	0	0	0	0	23	0
6:30	1	7	0	0	8	3	0	0	0	3	0	2	10	0	12	0	0	0	0	0	23	0
6:45	0	22	0	0	22	5	0	4	0	9	0	24	16	0	40	0	0	0	0	0	71	0
Total	1	42	0	0	43	17	0	6	0	23	0	37	40	0	77	0	0	0	0	0	143	0
7:00	3	34	0	0	37	11	0	0	0	11	0	62	17	1	80	0	0	0	0	0	128	1
7:15	5	102	0	0	107	18	0	1	1	20	0	112	34	0	146	0	0	0	0	0	273	1
7:30	2	52	0	0	54	18	0	2	0	20	0	32	38	0	70	0	0	0	0	0	144	0
7:45	0	23	0	0	23	13	0	0	0	13	0	17	54	0	71	0	0	0	0	0	107	0
Total	10	211	0	0	221	60	0	3	1	64	0	223	143	1	367	0	0	0	0	0	652	2
8:00	3	17	0	0	20	9	0	1	0	10	0	10	47	0	57	0	0	0	0	0	87	0
8:15	0	12	0	0	12	14	0	1	0	15	0	7	33	0	40	0	0	0	0	0	67	0
8:30	1	18	0	0	19	18	0	0	0	18	0	8	36	0	44	0	0	0	0	0	81	0
8:45	3	13	0	0	16	24	0	2	0	26	0	15	44	0	59	0	0	0	0	0	101	0
Total	7	60	0	0	67	65	0	4	0	69	0	40	160	0	200	0	0	0	0	0	336	0
14:00	2	14	0	0	16	33	0	1	0	34	0	34	49	0	83	0	0	0	0	0	133	0
14:15	6	76	0	0	82	50	0	2	0	52	0	34	50	0	84	0	0	0	0	0	218	0
14:30	5	37	0	0	42	50	0	6	0	56	0	21	44	0	65	0	0	0	0	0	163	0
14:45	1	23	0	0	24	54	0	0	0	54	0	4	49	0	53	0	0	0	0	0	131	0
Total	14	150	0	0	164	187	0	9	0	196	0	93	192	0	285	0	0	0	0	0	645	0
15:00	3	14	0	0	17	40	0	6	0	46	0	15	44	0	59	0	0	0	0	0	122	0
15:15	2	26	0	0	28	35	0	6	0	41	0	13	39	0	52	0	0	0	0	0	121	0
15:30	2	15	0	0	17	48	0	4	0	52	0	14	35	1	50	0	0	0	0	0	119	1
15:45	3	14	0	0	17	40	0	4	1	45	0	15	45	0	60	0	0	0	0	0	122	1
Total	10	69	0	0	79	163	0	20	1	184	0	57	163	1	221	0	0	0	0	0	484	2
16:00	1	16	0	0	17	39	0	4	0	43	0	22	39	0	61	0	0	0	0	0	121	0
16:15	0	19	0	0	19	32	0	0	0	32	0	26	33	0	59	0	0	0	0	0	110	0
16:30	0	20	0	0	20	42	0	1	0	43	0	20	31	0	51	0	0	0	0	0	114	0
16:45	1	18	0	0	19	34	0	3	0	37	0	15	31	0	46	0	0	0	0	0	102	0
Total	2	73	0	0	75	147	0	8	0	155	0	83	134	0	217	0	0	0	0	0	447	0
17:00	0	20	0	0	20	44	0	2	0	46	0	18	26	0	44	0	0	0	0	0	110	0
17:15	3	15	0	0	18	41	0	3	0	44	0	22	36	0	58	0	0	0	0	0	120	0
17:30	4	14	0	0	18	36	0	0	0	36	0	18	26	0	44	0	0	0	0	0	98	0
17:45	3	14	0	0	17	22	0	3	0	25	0	15	22	1	38	0	0	0	0	0	80	1
Total	10	63	0	0	73	143	0	8	0	151	0	73	110	1	184	0	0	0	0	0	408	1
18:00	4	21	0	0	25	28	0	0	0	28	0	13	19	0	32	0	0	0	0	0	85	0
18:15	4	14	0	0	18	12	0	3	0	15	0	8	10	0	18	0	0	0	0	0	51	0
18:30	1	9	0	0	10	15	0	1	0	16	0	11	16	0	27	0	0	0	0	0	53	0
18:45	0	13	0	0	13	15	0	5	0	20	0	9	10	0	19	0	0	0	0	0	52	0
Total	9	57	0	0	66	70	0	9	0	79	0	41	55	0	96	0	0	0	0	0	241	0
Grand Total	63	725	0	0	788	852	0	67	2	921	0	647	997	3	1647	0	0	0	0	0	3356	5
Apprch %	8.0%	92.0%	0.0%	0.0%		92.5%	0.0%	7.3%	0.2%		0.0%	39.3%	60.5%	0.2%		0.0%	0.0%	0.0%	0.0%			
Total %	1.9%	21.6%	0.0%	0.0%	23.5%	25.4%	0.0%	2.0%	0.1%	27.4%	0.0%	19.3%	29.7%	0.1%	49.1%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	

AM PEAK HOUR	Forni Rd Southbound					Golden Center Dr Westbound					Forni Rd Northbound					Golden Center Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:00 to 08:00																					
Peak Hour For Entire Intersection Begins at 07:00																					
7:00	3	34	0	0	37	11	0	0	0	11	0	62	17	1	80	0	0	0	0	0	128
7:15	5	102	0	0	107	18	0	1	1	20	0	112	34	0	146	0	0	0	0	0	273
7:30	2	52	0	0	54	18	0	2	0	20	0	32	38	0	70	0	0	0	0	0	144
7:45	0	23	0	0	23	13	0	0	0	13	0	17	54	0	71	0	0	0	0	0	107
Total Volume	10	211	0	0	221	60	0	3	1	64	0	223	143	1	367	0	0	0	0	0	652
% App Total	4.5%	95.5%	0.0%	0.0%		93.8%	0.0%	4.7%	1.6%		0.0%	60.8%	39.0%	0.3%		0.0%	0.0%	0.0%	0.0%		
PHF	.500	.517	.000	.000	.516	.833	.000	.375	.250	.800	.000	.498	.662	.250	.628	.000	.000	.000	.000	.000	.597

NOON PEAK	Forni Rd Southbound					Golden Center Dr Westbound					Forni Rd Northbound					Golden Center Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 14:00 to 15:00																					
Peak Hour For Entire Intersection Begins at 14:00																					
14:00	2	14	0	0	16	33	0	1	0	34	0	34	49	0	83	0	0	0	0	0	133
14:15	6	76	0	0	82	50	0	2	0	52	0	34	50	0	84	0	0	0	0	0	218
14:30	5	37	0	0	42	50	0	6	0	56	0	21	44	0	65	0	0	0	0	0	163
14:45	1	23	0	0	24	54	0	0	0	54	0	4	49	0	53	0	0	0	0	0	131
Total Volume	14	150	0	0	164	187	0	9	0	196	0	93	192	0	285	0	0	0	0	0	645
% App Total	8.5%	91.5%	0.0%	0.0%		95.4%	0.0%	4.6%	0.0%		0.0%	32.6%	67.4%	0.0%		0.0%	0.0%	0.0%	0.0%		
PHF	.583	.493	.000	.000	.500	.866	.000	.375	.000	.875	.000	.684	.960	.000	.848	.000	.000	.000	.000	.000	.740

PM PEAK HOUR	Forni Rd Southbound					Golden Center Dr Westbound					Forni Rd Northbound					Golden Center Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:00 to 17:00																					
Peak Hour For Entire Intersection Begins at 16:00																					
16:00	1	16	0	0	17	39	0	4	0	43	0	22	39	0	61	0	0	0	0	0	121
16:15	0	19	0	0	19	32	0	0	0	32	0	26	33	0	59	0	0	0	0	0	110
16:30	0	20	0	0	20	42	0	1	0	43	0	20	31	0	51	0	0	0	0	0	114
16:45	1	18	0	0	19	34	0	3	0	37	0	15	31	0	46	0	0	0	0	0	102
Total Volume	2	73	0	0	75	147	0	8	0	155	0	83	134	0	217	0	0	0	0	0	447
% App Total	2.7%	97.3%	0.0%	0.0%		94.8%	0.0%	5.2%	0.0%		0.0%	38.2%	61.8%	0.0%		0.0%	0.0%	0.0%	0.0%		
PHF	.500	.913	.000	.000	.938	.875	.000	.500	.000	.901	.000	.798	.859	.000	.889	.000	.000	.000	.000	.000	.924

National Data and Surveying Services

City of Placerville
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7367-005 Forni Rd & Golden Center Dr
Date : 5/4/2017

Bank 1 Count = Bikes & Peds

	Forni Rd Southbound					Golden Center Dr Westbound					Forni Rd Northbound					Golden Center Dr Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
6:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
Total	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
7:00	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
7:15	0	0	0	0	0	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	20
7:30	0	0	0	0	0	0	0	0	4	0	0	1	0	0	1	0	0	0	0	0	1	4
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	28	0	0	1	0	0	1	0	0	0	0	0	1	28
14:00	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
14:15	0	0	0	0	0	0	0	0	61	0	0	0	0	0	0	0	0	0	0	0	0	61
14:30	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1
14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	0	1	0	0	0	65	0	0	0	0	0	0	0	0	0	0	0	1	65
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	1
15:30	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	1	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	1	2
16:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2	0
Total	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2	0
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0
Grand Total	1	1	0	1	2	0	0	0	98	0	0	4	0	0	4	0	0	0	0	0	6	99
Apprch %	50.0%	50.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%				
Total %	16.7%	16.7%	0.0%		33.3%	0.0%	0.0%	0.0%		0.0%	0.0%	66.7%	0.0%		66.7%	0.0%	0.0%	0.0%		0.0%	100.0%	

AM PEAK HOUR	Forni Rd Southbound					Golden Center Dr Westbound					Forni Rd Northbound					Golden Center Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:00 to 08:00																					
Peak Hour For Entire Intersection Begins at 07:00																					
7:00	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0	4	0	0	1	0	0	1	0	0	0	0	0	1
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	28	0	0	1	0	0	1	0	0	0	0	0	1
% App Total	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.000	.000		.000	.000	.250	.000		.250	.000	.000	.000		.000	.250

NOON PEAK	Forni Rd Southbound					Golden Center Dr Westbound					Forni Rd Northbound					Golden Center Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 14:00 to 15:00																					
Peak Hour For Entire Intersection Begins at 14:00																					
14:00	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	0	61	0	0	0	0	0	0	0	0	0	0	0	0
14:30	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	1	0	0	0	1	0	0	0	65	0	0	0	0	0	0	0	0	0	0	0	1
% App Total	100.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.250	.000	.000		.250	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.250

PM PEAK HOUR	Forni Rd Southbound					Golden Center Dr Westbound					Forni Rd Northbound					Golden Center Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:00 to 17:00																					
Peak Hour For Entire Intersection Begins at 16:00																					
16:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
% App Total	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000

Forni Rd & Golden Center Dr

Date: 5/4/2017

Day: Thursday

Project #: 17-7367-005



Peak Hour Summary

	AM	NOON	PM
AM Peak Hour	07:00 - 08:00		
NOON Peak Hour		14:00 - 15:00	
PM Peak Hour			16:00 - 17:00

Southbound Approach

Forni Rd

AM	0	211	10	0	226 AM
NOON	0	150	14	0	102 NOON
PM	0	73	2	0	91 PM

Eastbound Approach

Golden Center Dr

	AM	NOON	PM
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0

Westbound Approach

	AM	NOON	PM
	3	9	8
	0	0	0
	60	187	147
	1	0	0
	154	206	136

CONTROL

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	2:00 PM	4:00 PM
PM	4:00 PM	7:00 PM

Northbound Approach

AM	272	1	0	223	143 AM
NOON	337	0	0	93	192 NOON
PM	220	0	0	83	134 PM

Total Ins & Outs

North Leg		
221	226	AM
164	102	NOON
75	91	PM

West Leg			East Leg		
AM	NOON	PM			
0	0	0	64	196	155
0	0	0	154	206	136
			AM	NOON	PM

South Leg	
272	367 AM
337	285 NOON
220	217 PM

Total Volume Per Leg

North Leg	
447	AM
266	NOON
166	PM

West Leg			East Leg		
AM	NOON	PM			
0	0	0	218	402	291
			AM	NOON	PM

South Leg	
639	AM
622	NOON
437	PM

Forni Rd & Golden Center Dr

Date: 5/4/2017

Day: Thursday

Project #: 17-7367-005



Peak Hour Summary

AM Peak Hour	07:00 - 08:00
NOON Peak Hour	14:00 - 15:00
PM Peak Hour	16:00 - 17:00

Southbound Approach

Forni Rd

AM	0	0	0	0	1 AM
NOON	0	0	1	0	0 NOON
PM	0	0	0	0	0 PM

Golden Center Dr

	AM	NOON	PM
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0

Eastbound Approach

CONTROL

Westbound Approach

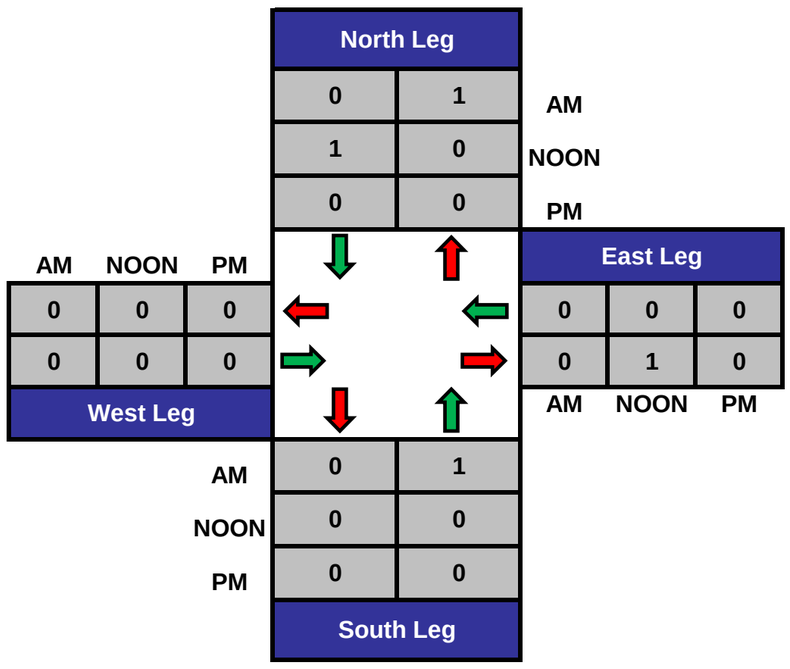
	AM	NOON	PM
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	1	0

Northbound Approach

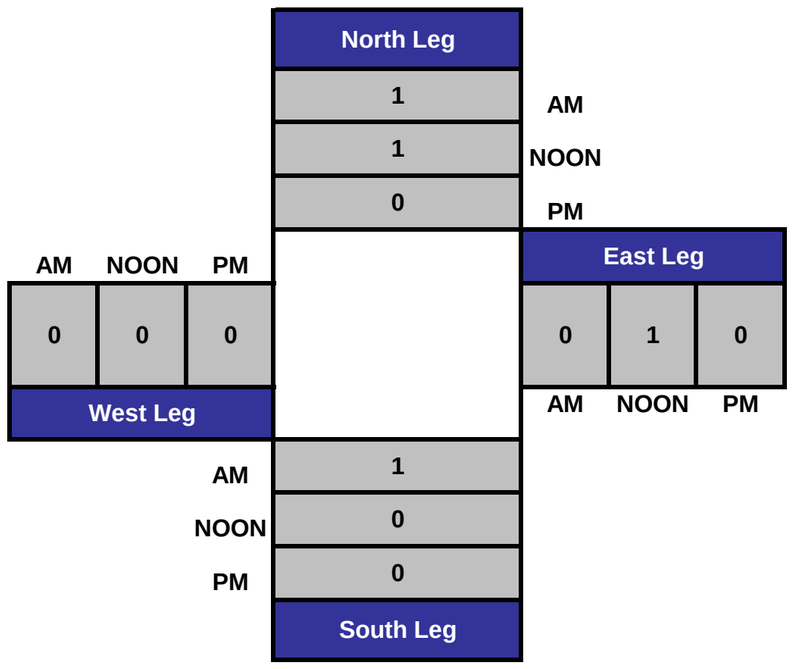
AM	0	0	0	1 0 AM
NOON	0	0	0	0 0 NOON
PM	0	0	0	0 0 PM

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	2:00 PM	4:00 PM
PM	4:00 PM	7:00 PM

Total Ins & Outs



Total Volume Per Leg



National Data and Surveying Services

3486-02

City of Placerville
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7367-006 Missouri Flat Rd & Forni Rd
Date : 5/4/2017

Unshifted Count = All Vehicles & Uturns

	Missouri Flat Rd Southbound					Forni Rd Westbound					Missouri Flat Rd Northbound					Forni Rd Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
6:00	12	51	17	0	80	1	2	9	0	12	1	162	2	0	165	12	0	2	0	14	271	0
6:15	10	65	18	0	93	1	1	8	0	10	1	162	1	0	164	37	0	4	0	41	308	0
6:30	9	78	26	0	113	2	2	6	0	10	2	159	2	0	163	17	1	5	0	23	309	0
6:45	26	113	38	0	177	3	4	20	0	27	2	157	6	0	165	41	7	3	0	51	420	0
Total	57	307	99	0	463	7	9	43	0	59	6	640	11	0	657	107	8	14	0	129	1308	0
7:00	50	112	42	0	204	6	5	34	0	45	2	164	18	0	184	53	13	3	0	69	502	0
7:15	77	163	60	0	300	37	15	65	0	117	4	206	27	1	238	48	40	8	0	96	751	1
7:30	44	166	70	0	280	19	16	37	0	72	8	224	12	1	245	57	10	4	0	71	668	1
7:45	53	208	57	1	319	2	7	24	1	34	8	234	11	0	253	80	8	6	0	94	700	2
Total	224	649	229	1	1103	64	43	160	1	268	22	828	68	2	920	238	71	21	0	330	2621	4
8:00	48	185	58	1	292	5	1	19	0	25	9	214	5	1	229	59	4	2	0	65	611	2
8:15	34	175	48	0	257	2	3	20	0	25	7	221	1	0	229	43	3	6	0	52	563	0
8:30	38	187	56	0	281	4	5	24	0	33	12	248	5	0	265	59	1	8	0	68	647	0
8:45	43	194	74	1	312	7	3	33	0	43	14	227	8	0	249	77	7	7	0	91	695	1
Total	163	741	236	2	1142	18	12	96	0	126	42	910	19	1	972	238	15	23	0	276	2516	3
14:00	62	211	70	1	344	7	8	33	0	48	18	201	9	1	229	76	13	16	0	105	726	2
14:15	49	220	67	0	336	18	26	73	0	117	12	225	17	0	254	79	18	20	0	117	824	0
14:30	43	226	94	3	366	13	14	61	0	88	13	211	10	0	234	96	13	13	0	122	810	3
14:45	39	247	76	2	364	5	13	60	1	79	10	192	5	0	207	125	7	17	0	149	799	3
Total	193	904	307	6	1410	43	61	227	1	332	53	829	41	1	924	376	51	66	0	493	3159	8
15:00	39	223	90	1	353	2	10	38	0	50	16	246	7	1	270	95	14	13	0	122	795	2
15:15	32	262	77	1	372	10	10	42	0	62	15	178	8	0	201	100	12	18	0	130	765	1
15:30	34	274	100	2	410	8	10	44	0	62	10	191	8	0	209	108	9	10	0	127	808	2
15:45	43	264	74	1	382	7	7	43	0	57	10	178	8	2	198	101	12	13	0	126	763	3
Total	148	1023	341	5	1517	27	37	167	0	231	51	793	31	3	878	404	47	54	0	505	3131	8
16:00	48	265	90	1	404	10	8	35	0	53	15	199	5	1	220	121	9	14	0	144	821	2
16:15	42	274	73	0	389	7	8	36	0	51	11	192	6	0	209	105	9	20	0	134	783	0
16:30	28	262	80	2	372	8	11	41	0	60	13	191	10	1	215	135	14	11	0	160	807	3
16:45	35	273	91	2	401	6	11	34	0	51	13	172	6	0	191	106	6	17	0	129	772	2
Total	153	1074	334	5	1566	31	38	146	0	215	52	754	27	2	835	467	38	62	0	567	3183	7
17:00	30	291	92	2	415	12	8	43	0	63	15	242	4	2	263	113	6	13	0	132	873	4
17:15	37	270	88	0	395	8	10	38	0	56	11	216	6	0	233	121	14	13	0	148	832	0
17:30	25	251	70	1	347	8	7	38	0	53	10	221	5	0	236	119	12	15	0	146	782	1
17:45	24	234	72	2	332	4	11	23	0	38	10	185	3	3	201	96	11	15	0	122	693	5
Total	116	1046	322	5	1489	32	36	142	0	210	46	864	18	5	933	449	43	56	0	548	3180	10
18:00	22	204	69	2	297	10	7	30	0	47	12	122	5	0	139	106	4	10	0	120	603	2
18:15	12	209	64	0	285	6	6	16	0	28	14	124	2	0	140	74	5	7	0	86	539	0
18:30	18	148	68	1	235	0	4	21	0	25	14	136	3	1	154	79	8	12	0	99	513	2
18:45	13	174	56	2	245	5	6	15	0	26	14	110	1	0	125	67	5	11	0	83	479	2
Total	65	735	257	5	1062	21	23	82	0	126	54	492	11	1	558	326	22	40	0	388	2134	6
Grand Total	1119	6479	2125	29	9752	243	259	1063	2	1567	326	6110	226	15	6677	2605	295	336	0	3236	21232	46
Apprch %	11.5%	66.4%	21.8%	0.3%		15.5%	16.5%	67.8%	0.1%		4.9%	91.5%	3.4%	0.2%		80.5%	9.1%	10.4%	0.0%			
Total %	5.3%	30.5%	10.0%	0.1%	45.9%	1.1%	1.2%	5.0%	0.0%	7.4%	1.5%	28.8%	1.1%	0.1%	31.4%	12.3%	1.4%	1.6%	0.0%	15.2%	100.0%	

AM PEAK HOUR	Missouri Flat Rd Southbound					Forni Rd Westbound					Missouri Flat Rd Northbound					Forni Rd Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
7:15	77	163	60	0	300	37	15	65	0	117	4	206	27	1	238	48	40	8	0	96	751
7:30	44	166	70	0	280	19	16	37	0	72	8	224	12	1	245	57	10	4	0	71	668
7:45	53	208	57	1	319	2	7	24	1	34	8	234	11	0	253	80	8	6	0	94	700
8:00	48	185	58	1	292	5	1	19	0	25	9	214	5	1	229	59	4	2	0	65	611
Total Volume	222	722	245	2	1191	63	39	145	1	248	29	878	55	3	965	244	62	20	0	326	2730
% App Total	18.6%	60.6%	20.6%	0.2%		25.4%	15.7%	58.5%	0.4%		3.0%	91.0%	5.7%	0.3%		74.8%	19.0%	6.1%	0.0%		
PHF	.721	.868	.875	.500	.933	.426	.609	.558	.250	.530	.806	.938	.509	.750	.954	.763	.388	.625	.000	.849	.909

NOON PEAK	Missouri Flat Rd Southbound					Forni Rd Westbound					Missouri Flat Rd Northbound					Forni Rd Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 14:15 to 15:15																					
Peak Hour For Entire Intersection Begins at 14:15																					
14:15	49	220	67	0	336	18	26	73	0	117	12	225	17	0	254	79	18	20	0	117	824
14:30	43	226	94	3	366	13	14	61	0	88	13	211	10	0	234	96	13	13	0	122	810
14:45	39	247	76	2	364	5	13	60	1	79	10	192	5	0	207	125	7	17	0	149	799
15:00	39	223	90	1	353	2	10	38	0	50	16	246	7	1	270	95	14	13	0	122	795
Total Volume	170	916	327	6	1419	38	63	232	1	334	51	874	39	1	965	395	52	63	0	510	3228
% App Total	12.0%	64.6%	23.0%	0.4%		11.4%	18.9%	69.5%	0.3%		5.3%	90.6%	4.0%	0.1%		77.5%	10.2%	12.4%	0.0%		
PHF	.867	.927	.870	.500	.969	.528	.606	.795	.250	.714	.797	.888	.574	.250	.894	.790	.722	.788	.000	.856	.979

PM PEAK HOUR	Missouri Flat Rd Southbound					Forni Rd Westbound					Missouri Flat Rd Northbound					Forni Rd Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	28	262	80	2	372	8	11	41	0	60	13	191	10	1	215	135	14	11	0	160	807
16:45	35	273	91	2	401	6	11	34	0	51	13	172	6	0	191	106	6	17	0	129	772
17:00	30	291	92	2	415	12	8	43	0	63	15	242	4	2	263	113	6	13	0	132	873
17:15	37	270	88	0	395	8	10	38	0	56	11	216	6	0	233	121	14	13	0	148	832
Total Volume	130	1096	351	6	1583	34	40	156	0	230	52	821	26	3	902	475	40	54	0	569	3284
% App Total	8.2%	69.2%	22.2%	0.4%		14.8%	17.4%	67.8%	0.0%		5.8%	91.0%	2.9%	0.3%		83.5%	7.0%	9.5%	0.0%		
PHF	.878	.942	.954	.750	.954	.708	.909	.907	.000	.913	.867	.848	.650	.375	.857	.880	.714	.794	.000	.889	.940

National Data and Surveying Services

City of Placerville
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7367-006 Missouri Flat Rd & Forni Rd
Date : 5/4/2017

Bank 1 Count = Bikes & Peds

	Missouri Flat Rd Southbound					Forni Rd Westbound					Missouri Flat Rd Northbound					Forni Rd Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	3
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
Total	0	0	0	0	0	0	0	0	1	0	0	0	0	4	0	0	1	0	1	1	1	6
8:00	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0	1	1
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	1	0	1	0	0	3	1	0	0	1	0	1	2	4
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	2
14:15	0	0	0	0	0	0	0	0	1	0	1	0	0	2	1	0	0	1	0	1	2	3
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	1	1	2
14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	4
Total	0	0	0	0	0	0	0	0	1	0	1	0	0	7	1	1	0	1	3	2	3	11
15:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
15:15	0	1	0	3	1	0	0	0	1	0	0	0	0	1	0	0	0	0	9	0	1	14
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
15:45	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	2
Total	0	2	0	4	2	0	0	0	1	0	0	0	0	1	0	0	0	0	12	0	2	18
16:00	0	0	0	1	0	0	0	0	0	0	0	0	0	3	0	0	0	0	1	0	0	5
16:15	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	4
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
Total	0	0	0	2	0	0	0	0	0	0	0	0	0	4	0	0	0	0	6	0	0	12
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	1	1
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	0	1	0	0	1	1	3
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	1	1	2
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	1	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	1	0	3	2	2	5
Grand Total	0	2	0	6	2	0	0	0	5	0	2	0	0	23	2	2	3	2	25	7	11	59
Apprch %	0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			100.0%	0.0%	0.0%			28.6%	42.9%	28.6%				
Total %	0.0%	18.2%	0.0%		18.2%	0.0%	0.0%	0.0%		0.0%	18.2%	0.0%	0.0%		18.2%	18.2%	27.3%	18.2%		63.6%	100.0%	

AM PEAK HOUR	Missouri Flat Rd Southbound					Forni Rd Westbound					Missouri Flat Rd Northbound					Forni Rd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0	1
Total Volume	0	0	0	0	0	0	0	0	1	0	1	0	0	4	1	0	1	0	1	1	2
% App Total	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			100.0%	0.0%	0.0%			0.0%	100.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.000	.000		.000	.250	.000	.000		.250	.000	.250	.000		.250	.500

NOON PEAK	Missouri Flat Rd Southbound					Forni Rd Westbound					Missouri Flat Rd Northbound					Forni Rd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 14:15 to 15:15																					
Peak Hour For Entire Intersection Begins at 14:15																					
14:15	0	0	0	0	0	0	0	0	1	0	1	0	0	2	1	0	0	1	0	1	2
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	1	1
14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0
15:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	1	0	0	0	0	1	0	1	0	0	6	1	1	0	1	2	2	3
% App Total	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			100.0%	0.0%	0.0%			50.0%	0.0%	50.0%			
PHF	.000	.000	.000		.000	.000	.000	.000		.000	.250	.000	.000		.250	.250	.000	.250		.500	.375

PM PEAK HOUR	Missouri Flat Rd Southbound					Forni Rd Westbound					Missouri Flat Rd Northbound					Forni Rd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	1
Total Volume	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0	2	1	1
% App Total	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000	.250	.000		.250	.250

Missouri Flat Rd & Forni Rd

Date: 5/4/2017

Day: Thursday

Project #: 17-7367-006



Peak Hour Summary

	AM Peak Hour	NOON Peak Hour	PM Peak Hour
	07:15 - 08:15	14:15 - 15:15	16:30 - 17:30

Southbound Approach — Missouri Flat Rd

AM	245	722	222	2	1269 AM
NOON	327	916	170	6	1507 NOON
PM	351	1096	130	6	1458 PM

Eastbound Approach — Forni Rd

	AM	NOON	PM
	313	441	443
	0	0	0
	244	395	475
	62	52	40
	20	63	54
	AM	NOON	PM

Westbound Approach

	AM	NOON	PM
	145	232	156
	39	63	40
	63	38	34
	1	1	0
	340	262	196
	AM	NOON	PM

CONTROL

Northbound Approach

AM	808	3	29	878	55 AM
NOON	1018	1	51	874	39 NOON
PM	1187	3	52	821	26 PM

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	2:00 PM	4:00 PM
PM	4:00 PM	7:00 PM

Total Ins & Outs

	North Leg		East Leg			West Leg			South Leg	
			AM	NOON	PM	AM	NOON	PM		
AM	1191	1269	248	334	230	313	441	443	808	965
NOON	1419	1507	340	262	196	326	510	569	1018	965
PM	1583	1458							1187	902

Total Volume Per Leg

	North Leg	East Leg			West Leg			South Leg
		AM	NOON	PM	AM	NOON	PM	
AM	2460	588	596	426	639	951	1012	1773
NOON	2926							1983
PM	3041							2089

Missouri Flat Rd & Forni Rd

Date: 5/4/2017

Day: Thursday

Project #: 17-7367-006



Peak Hour Summary

AM Peak Hour	07:15 - 08:15
NOON Peak Hour	14:15 - 15:15
PM Peak Hour	16:30 - 17:30

Southbound Approach — Missouri Flat Rd

AM	0	0	0	0	0 AM
NOON	0	0	0	0	1 NOON
PM	0	0	0	0	0 PM

Eastbound Approach — Forni Rd

	AM	NOON	PM
	1	1	0
	0	0	0
	0	1	0
	1	0	1
	0	1	0
	AM	NOON	PM

Westbound Approach

	AM	NOON	PM
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	1	0	1
	AM	NOON	PM

CONTROL

Northbound Approach

AM	0	0	1	0	0 AM
NOON	1	0	1	0	0 NOON
PM	0	0	0	0	0 PM

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	2:00 PM	4:00 PM
PM	4:00 PM	7:00 PM

Total Ins & Outs

North Leg		
0	0	AM
0	1	NOON
0	0	PM

West Leg			East Leg		
AM	NOON	PM	AM	NOON	PM
1	1	0	0	0	0
1	2	1	1	0	1

South Leg		
0	1	AM
1	1	NOON
0	0	PM

Total Volume Per Leg

North Leg
0 AM
1 NOON
0 PM

West Leg			East Leg		
AM	NOON	PM	AM	NOON	PM
2	3	1	1	0	1

South Leg
1 AM
2 NOON
0 PM

National Data and Surveying Services

3486-02

City of Placerville
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7367-007 Missouri Flat Rd & Golden Center Dr
Date : 5/4/2017

Unshifted Count = All Vehicles & Uturns

	Missouri Flat Rd Southbound					Golden Center Dr Westbound					Missouri Flat Rd Northbound					Golden Center Dr Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
6:00	7	47	1	0	55	3	0	0	0	3	0	154	12	0	166	0	1	1	0	2	226	0
6:15	4	63	1	0	68	3	0	1	0	4	8	154	8	0	170	1	0	0	0	1	243	0
6:30	9	65	1	2	77	5	0	0	0	5	1	155	11	0	167	0	0	1	0	1	250	2
6:45	8	100	1	5	114	6	1	0	0	7	8	163	15	0	186	0	0	0	0	0	307	5
Total	28	275	4	7	314	17	1	1	0	19	17	626	46	0	689	1	1	2	0	4	1026	7
7:00	11	108	1	1	121	11	1	3	0	15	6	184	9	0	199	1	1	2	0	4	339	1
7:15	26	177	0	0	203	17	1	10	0	28	6	244	24	0	274	2	2	6	0	10	515	0
7:30	26	150	2	0	178	13	2	2	0	17	14	212	21	0	247	2	0	1	0	3	445	0
7:45	33	179	0	2	214	4	2	2	0	8	15	256	23	0	294	1	2	4	0	7	523	2
Total	96	614	3	3	716	45	6	17	0	68	41	896	77	0	1014	6	5	13	0	24	1822	3
8:00	17	166	2	1	186	12	2	7	0	21	7	216	18	1	242	3	3	3	0	9	458	2
8:15	15	163	1	0	179	9	2	3	0	14	14	219	20	0	253	4	1	8	0	13	459	0
8:30	20	162	1	2	185	9	4	5	0	18	17	248	24	0	289	4	0	4	0	8	500	2
8:45	16	171	1	2	190	20	2	6	0	28	14	220	30	0	264	2	3	4	0	9	491	2
Total	68	662	5	5	740	50	10	21	0	81	52	903	92	1	1048	13	7	19	0	39	1908	6
14:00	23	198	3	0	224	22	4	9	0	35	20	212	21	0	253	6	3	9	0	18	530	0
14:15	19	231	2	6	258	38	3	22	0	63	14	194	15	0	223	7	2	9	0	18	562	6
14:30	14	216	2	0	232	28	4	11	0	43	10	212	14	0	236	7	1	16	0	24	535	0
14:45	18	237	0	2	257	13	6	11	0	30	17	182	16	0	215	4	2	15	0	21	523	2
Total	74	882	7	8	971	101	17	53	0	171	61	800	66	0	927	24	8	49	0	81	2150	8
15:00	19	206	2	3	230	25	6	8	0	39	22	249	21	0	292	3	2	19	0	24	585	3
15:15	17	253	5	4	279	18	3	8	0	29	23	166	23	0	212	3	4	19	0	26	546	4
15:30	13	258	2	4	277	30	4	7	0	41	15	193	20	2	230	4	2	22	0	28	576	6
15:45	14	265	3	6	288	30	5	11	0	46	16	186	10	0	212	6	1	18	0	25	571	6
Total	63	982	12	17	1074	103	18	34	0	155	76	794	74	2	946	16	9	78	0	103	2278	19
16:00	15	243	1	5	264	18	3	7	0	28	21	175	11	0	207	4	0	12	0	16	515	5
16:15	22	257	0	7	286	17	0	14	0	31	22	179	15	1	217	4	2	12	0	18	552	8
16:30	10	280	3	4	297	23	3	13	0	39	21	189	12	0	222	5	2	18	0	25	583	4
16:45	15	261	3	4	283	17	3	9	0	29	26	174	11	0	211	5	1	20	0	26	549	4
Total	62	1041	7	20	1130	75	9	43	0	127	90	717	49	1	857	18	5	62	0	85	2199	21
17:00	19	271	0	5	295	29	1	19	0	49	22	223	11	0	256	6	3	14	0	23	623	5
17:15	16	277	3	5	301	22	4	16	0	42	22	219	14	0	255	2	5	12	0	19	617	5
17:30	17	235	2	4	258	26	3	12	0	41	16	188	13	0	217	7	3	22	0	32	548	4
17:45	17	234	0	4	255	27	2	7	0	36	16	171	16	0	203	6	1	13	0	20	514	4
Total	69	1017	5	18	1109	104	10	54	0	168	76	801	54	0	931	21	12	61	0	94	2302	18
18:00	11	209	2	4	226	20	1	7	0	28	17	115	9	0	141	3	5	12	0	20	415	4
18:15	9	206	1	3	219	17	4	7	0	28	14	121	4	0	139	5	4	18	0	27	413	3
18:30	9	142	1	4	156	18	2	6	0	26	12	135	7	0	154	2	3	16	0	21	357	4
18:45	8	163	0	4	175	12	0	6	0	18	14	103	7	0	124	2	0	9	0	11	328	4
Total	37	720	4	15	776	67	7	26	0	100	57	474	27	0	558	12	12	55	0	79	1513	15
Grand Total	497	6193	47	93	6830	562	78	249	0	889	470	6011	485	4	6970	111	59	339	0	509	15198	97
Apprch %	7.3%	90.7%	0.7%	1.4%		63.2%	8.8%	28.0%	0.0%		6.7%	86.2%	7.0%	0.1%		21.8%	11.6%	66.6%	0.0%			
Total %	3.3%	40.7%	0.3%	0.6%	44.9%	3.7%	0.5%	1.6%	0.0%	5.8%	3.1%	39.6%	3.2%	0.0%	45.9%	0.7%	0.4%	2.2%	0.0%	3.3%	100.0%	

AM PEAK HOUR	Missouri Flat Rd Southbound					Golden Center Dr Westbound					Missouri Flat Rd Northbound					Golden Center Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
7:15	26	177	0	0	203	17	1	10	0	28	6	244	24	0	274	2	2	6	0	10	515
7:30	26	150	2	0	178	13	2	2	0	17	14	212	21	0	247	2	0	1	0	3	445
7:45	33	179	0	2	214	4	2	2	0	8	15	256	23	0	294	1	2	4	0	7	523
8:00	17	166	2	1	186	12	2	7	0	21	7	216	18	1	242	3	3	3	0	9	458
Total Volume	102	672	4	3	781	46	7	21	0	74	42	928	86	1	1057	8	7	14	0	29	1941
% App Total	13.1%	86.0%	0.5%	0.4%		62.2%	9.5%	28.4%	0.0%		4.0%	87.8%	8.1%	0.1%		27.6%	24.1%	48.3%	0.0%		
PHF	.773	.939	.500	.375	.912	.676	.875	.525	.000	.661	.700	.906	.896	.250	.899	.667	.583	.583	.000	.725	.928

NOON PEAK	Missouri Flat Rd Southbound					Golden Center Dr Westbound					Missouri Flat Rd Northbound					Golden Center Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 15:00 to 16:00																					
Peak Hour For Entire Intersection Begins at 15:00																					
15:00	19	206	2	3	230	25	6	8	0	39	22	249	21	0	292	3	2	19	0	24	585
15:15	17	253	5	4	279	18	3	8	0	29	23	166	23	0	212	3	4	19	0	26	546
15:30	13	258	2	4	277	30	4	7	0	41	15	193	20	2	230	4	2	22	0	28	576
15:45	14	265	3	6	288	30	5	11	0	46	16	186	10	0	212	6	1	18	0	25	571
Total Volume	63	982	12	17	1074	103	18	34	0	155	76	794	74	2	946	16	9	78	0	103	2278
% App Total	5.9%	91.4%	1.1%	1.6%		66.5%	11.6%	21.9%	0.0%		8.0%	83.9%	7.8%	0.2%		15.5%	8.7%	75.7%	0.0%		
PHF	.829	.926	.600	.708	.932	.858	.750	.773	.000	.842	.826	.797	.804	.250	.810	.667	.563	.886	.000	.920	.974

PM PEAK HOUR	Missouri Flat Rd Southbound					Golden Center Dr Westbound					Missouri Flat Rd Northbound					Golden Center Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	10	280	3	4	297	23	3	13	0	39	21	189	12	0	222	5	2	18	0	25	583
16:45	15	261	3	4	283	17	3	9	0	29	26	174	11	0	211	5	1	20	0	26	549
17:00	19	271	0	5	295	29	1	19	0	49	22	223	11	0	256	6	3	14	0	23	623
17:15	16	277	3	5	301	22	4	16	0	42	22	219	14	0	255	2	5	12	0	19	617
Total Volume	60	1089	9	18	1176	91	11	57	0	159	91	805	48	0	944	18	11	64	0	93	2372
% App Total	5.1%	92.6%	0.8%	1.5%		57.2%	6.9%	35.8%	0.0%		9.6%	85.3%	5.1%	0.0%		19.4%	11.8%	68.8%	0.0%		
PHF	.789	.972	.750	.900	.977	.784	.688	.750	.000	.811	.875	.902	.857	.000	.922	.750	.550	.800	.000	.894	.952

National Data and Surveying Services

City of Placerville
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7367-007 Missouri Flat Rd & Golden Center Dr
Date : 5/4/2017

Bank 1 Count = Bikes & Peds

	Missouri Flat Rd Southbound					Golden Center Dr Westbound					Missouri Flat Rd Northbound					Golden Center Dr Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
6:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
7:00	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	0	0	2	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	2
8:00	0	0	0	1	0	1	0	0	0	1	0	0	0	1	0	1	0	0	0	1	2	2
8:15	0	0	0	4	0	0	0	0	3	0	0	0	0	1	0	0	0	0	2	0	0	10
8:30	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Total	0	0	0	6	0	1	0	0	4	1	0	0	0	2	0	1	0	0	3	1	2	15
14:00	0	1	0	0	1	0	0	0	1	0	1	0	0	0	1	1	0	0	0	1	3	1
14:15	0	0	0	4	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	4
14:30	0	0	0	3	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	1	4
14:45	0	0	0	2	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	2
Total	0	1	0	9	1	0	1	0	2	1	1	2	0	0	3	1	0	0	0	1	6	11
15:00	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	2	1	2	2
15:15	0	2	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	1
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	2
Total	0	3	0	2	3	0	1	0	1	1	0	0	0	0	0	0	1	1	2	2	6	5
16:00	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1
16:15	0	1	0	1	1	0	0	0	1	0	0	0	0	2	0	0	0	0	0	0	1	4
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
16:45	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	3
Total	0	1	0	3	1	1	0	0	2	1	0	0	0	3	0	0	0	0	1	0	2	9
17:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	1	1
17:15	0	0	0	0	0	1	0	0	0	1	0	0	0	2	0	0	0	0	0	0	1	2
17:30	0	0	0	1	0	0	1	0	1	1	0	0	0	2	0	0	0	0	1	0	1	5
17:45	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	3
Total	0	1	0	2	1	1	1	0	1	2	1	0	0	4	1	0	0	0	4	0	4	11
18:00	0	0	0	5	0	1	0	0	1	1	0	0	0	0	0	0	0	0	1	0	1	7
18:15	0	0	0	1	0	1	0	0	1	1	0	0	0	1	0	0	0	0	0	0	1	3
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	5	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	1	6
Total	0	0	0	11	0	2	0	0	3	2	0	1	0	1	1	0	0	0	1	0	3	16
Grand Total	0	6	0	35	6	5	3	0	14	8	2	3	1	10	6	2	1	1	11	4	24	70
Apprch %	0.0%	100.0%	0.0%			62.5%	37.5%	0.0%			33.3%	50.0%	16.7%			50.0%	25.0%	25.0%				
Total %	0.0%	25.0%	0.0%		25.0%	20.8%	12.5%	0.0%		33.3%	8.3%	12.5%	4.2%		25.0%	8.3%	4.2%	4.2%		16.7%	100.0%	

AM PEAK HOUR	Missouri Flat Rd Southbound					Golden Center Dr Westbound					Missouri Flat Rd Northbound					Golden Center Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	0	0	0	1	0	1	0	0	0	1	0	0	0	1	0	1	0	0	0	1	2
Total Volume	0	0	0	3	0	1	0	0	0	1	0	0	0	1	0	1	0	0	0	1	2
% App Total	0.0%	0.0%	0.0%			100.0%	0.0%	0.0%			0.0%	0.0%	0.0%			100.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.250	.000	.000		.250	.000	.000	.000		.000	.250	.000	.000		.250	.250

NOON PEAK	Missouri Flat Rd Southbound					Golden Center Dr Westbound					Missouri Flat Rd Northbound					Golden Center Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 15:00 to 16:00																					
Peak Hour For Entire Intersection Begins at 15:00																					
15:00	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	2	1	2
15:15	0	2	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
Total Volume	0	3	0	2	3	0	1	0	1	1	0	0	0	0	0	0	1	1	2	2	6
% App Total	0.0%	100.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	50.0%	50.0%			
PHF	.000	.375	.000		.375	.000	.250	.000		.250	.000	.000	.000		.000	.000	.250	.250		.500	.750

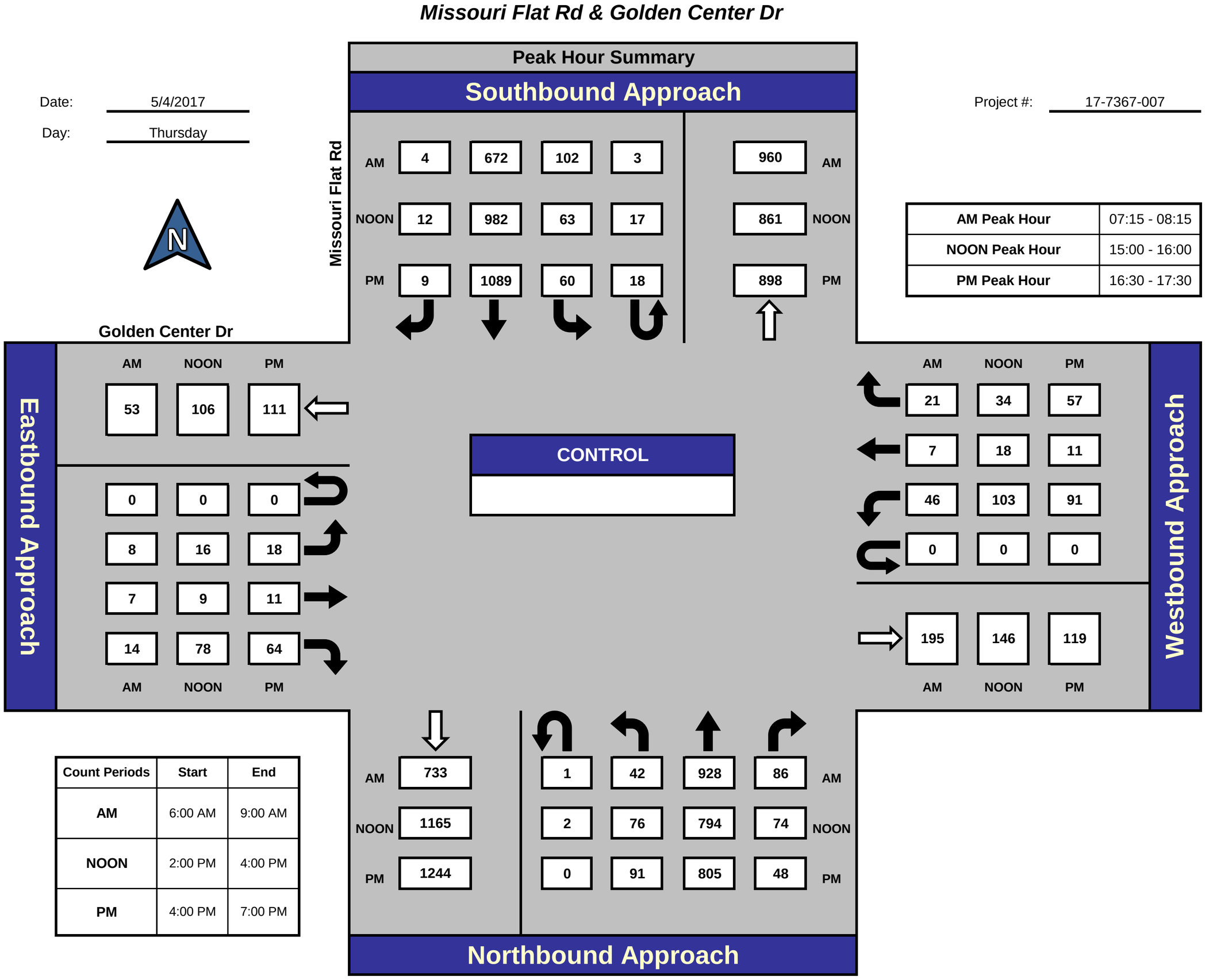
PM PEAK HOUR	Missouri Flat Rd Southbound					Golden Center Dr Westbound					Missouri Flat Rd Northbound					Golden Center Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
16:45	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	1
17:15	0	0	0	0	0	1	0	0	0	1	0	0	0	2	0	0	0	0	0	0	1
Total Volume	0	0	0	2	0	1	0	0	0	1	1	0	0	3	1	0	0	0	2	0	2
% App Total	0.0%	0.0%	0.0%			100.0%	0.0%	0.0%			100.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.250	.000	.000		.250	.250	.000	.000		.250	.000	.000	.000		.000	.500

Missouri Flat Rd & Golden Center Dr

Date: 5/4/2017

Day: Thursday

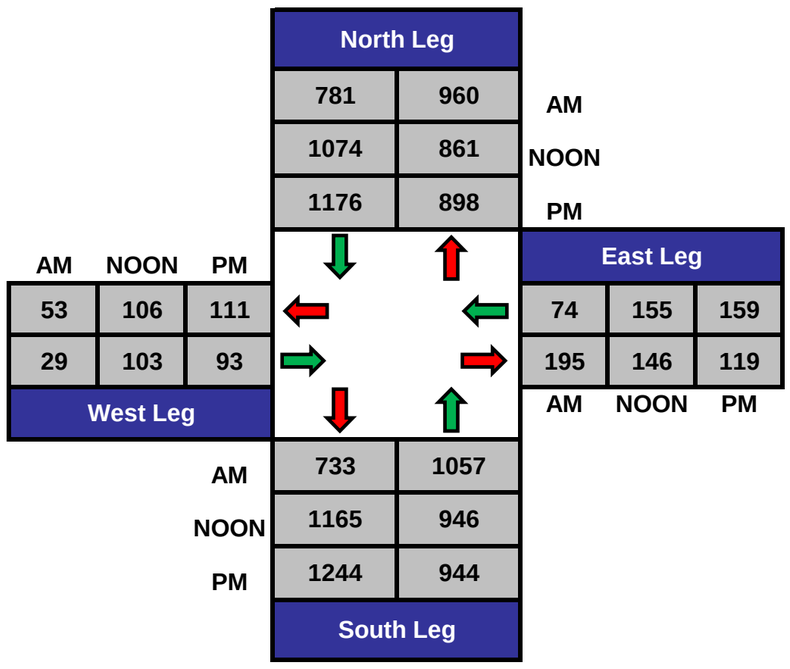
Project #: 17-7367-007



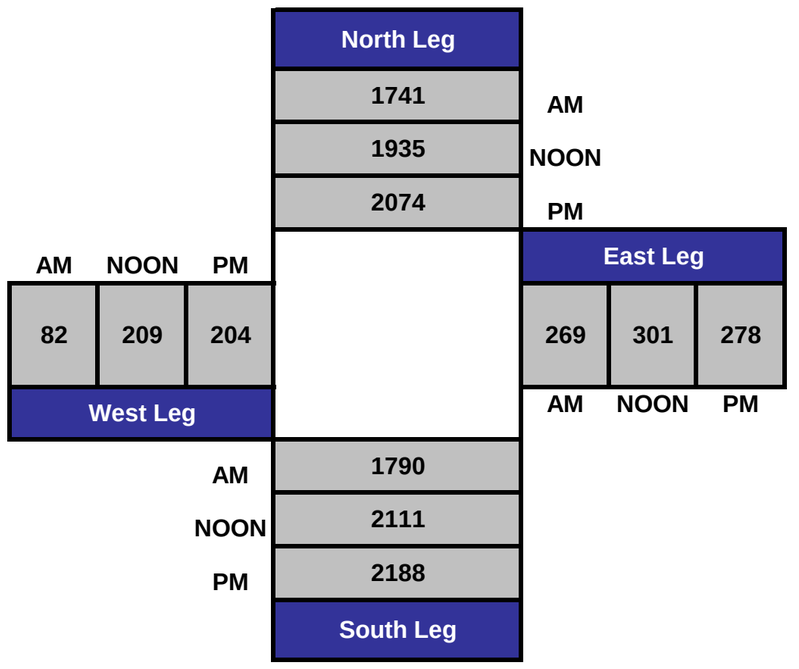
Peak Hour	
AM Peak Hour	07:15 - 08:15
NOON Peak Hour	15:00 - 16:00
PM Peak Hour	16:30 - 17:30

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	2:00 PM	4:00 PM
PM	4:00 PM	7:00 PM

Total Ins & Outs



Total Volume Per Leg



Missouri Flat Rd & Golden Center Dr

Date: 5/4/2017

Day: Thursday

Project #: 17-7367-007



Peak Hour Summary

AM Peak Hour	07:15 - 08:15
NOON Peak Hour	15:00 - 16:00
PM Peak Hour	16:30 - 17:30

Southbound Approach (Missouri Flat Rd)

AM	0	0	0	0	1 AM
NOON	0	3	0	0	0 NOON
PM	0	0	0	0	0 PM

Eastbound Approach (Golden Center Dr)

	AM	NOON	PM
	0	1	1
	0	0	0
	1	0	0
	0	1	0
	0	1	0

Westbound Approach

	AM	NOON	PM
	0	0	0
	0	1	0
	1	0	1
	0	0	0
	0	1	0

CONTROL

Northbound Approach

AM	1	0	0	0	0 AM
NOON	4	0	0	0	0 NOON
PM	1	0	1	0	0 PM

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	2:00 PM	4:00 PM
PM	4:00 PM	7:00 PM

Total Ins & Outs

	North Leg	East Leg	South Leg	West Leg
AM	0 1	1 1 1	1 0	0 1 1
NOON	3 0	0 1 0	4 0	1 2 0
PM	0 0	AM NOON PM	1 1	AM NOON PM

Total Volume Per Leg

	North Leg	East Leg	South Leg	West Leg
AM	1	1 2 1	1	1 3 1
NOON	3	AM NOON PM	4	AM NOON PM
PM	0		2	

National Data and Surveying Services

(323) 782-0090
info@ndsdata.com

3486-02

City of Placerville
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

File Name : 17-7367-008 Missouri Flat Rd & China Garden Rd
Date : 5/4/2017

Unshifted Count = All Vehicles & Uturns

	Missouri Flat Rd Southbound					China Garden Rd Westbound					Missouri Flat Rd Northbound					China Garden Rd Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
6:00	4	42	0	0	46	0	0	21	0	21	0	142	2	0	144	0	0	0	0	0	211	0
6:15	9	51	0	0	60	2	0	23	0	25	0	149	2	0	151	0	0	0	0	0	236	0
6:30	11	55	0	0	66	2	0	21	0	23	0	145	2	0	147	0	0	0	0	0	236	0
6:45	17	77	0	0	94	0	0	17	0	17	0	180	1	0	181	0	0	0	0	0	292	0
Total	41	225	0	0	266	4	0	82	0	86	0	616	7	0	623	0	0	0	0	0	975	0
7:00	14	88	0	0	102	3	1	25	0	29	0	177	4	0	181	0	0	0	0	0	312	0
7:15	27	171	0	0	198	2	0	39	0	41	0	218	0	0	218	0	0	0	0	0	457	0
7:30	20	140	1	0	161	3	0	37	0	40	0	208	1	0	209	0	0	0	0	0	410	0
7:45	33	142	0	0	175	2	0	43	0	45	1	249	2	0	252	0	0	0	0	0	472	0
Total	94	541	1	0	636	10	1	144	0	155	1	852	7	0	860	0	0	0	0	0	1651	0
8:00	36	156	1	0	193	0	0	41	0	41	0	201	3	0	204	0	0	0	0	0	438	0
8:15	27	137	0	0	164	3	1	36	0	40	0	215	6	0	221	1	0	1	0	2	427	0
8:30	28	139	0	0	167	2	0	44	0	46	0	225	4	0	229	0	0	0	0	0	442	0
8:45	25	173	0	0	198	6	0	50	0	56	1	226	8	0	235	0	0	0	0	0	489	0
Total	116	605	1	0	722	11	1	171	0	183	1	867	21	0	889	1	0	1	0	2	1796	0
16:00	40	220	0	0	260	4	0	37	0	41	0	179	6	0	185	0	0	1	0	1	487	0
16:15	35	252	1	0	288	4	0	34	0	38	0	175	10	0	185	0	0	0	0	0	511	0
16:30	39	279	0	0	318	6	0	37	0	43	1	179	6	0	186	0	0	2	0	2	549	0
16:45	30	269	0	1	300	0	0	42	0	42	0	168	5	0	173	0	0	0	0	0	515	1
Total	144	1020	1	1	1166	14	0	150	0	164	1	701	27	0	729	0	0	3	0	3	2062	1
17:00	31	282	0	0	313	5	0	41	0	46	0	211	7	0	218	0	0	1	0	1	578	0
17:15	23	285	1	0	309	3	0	43	0	46	0	217	3	0	220	0	0	0	0	0	575	0
17:30	30	246	0	1	277	4	0	31	0	35	0	174	8	0	182	0	0	0	0	0	494	1
17:45	39	245	0	0	284	0	0	29	0	29	0	174	4	0	178	0	0	0	0	0	491	0
Total	123	1058	1	1	1183	12	0	144	0	156	0	776	22	0	798	0	0	1	0	1	2138	1
18:00	28	199	0	0	227	3	0	15	0	18	0	124	3	0	127	0	0	0	0	0	372	0
18:15	22	217	0	0	239	0	0	16	0	16	0	122	5	0	127	0	0	0	0	0	382	0
18:30	16	169	0	0	185	2	0	17	0	19	0	130	3	0	133	0	0	0	0	0	337	0
18:45	18	159	0	0	177	2	0	13	0	15	0	118	1	0	119	0	0	0	0	0	311	0
Total	84	744	0	0	828	7	0	61	0	68	0	494	12	0	506	0	0	0	0	0	1402	0
Grand Total	602	4193	4	2	4801	58	2	752	0	812	3	4306	96	0	4405	1	0	5	0	6	10024	2
Apprch %	12.5%	87.3%	0.1%	0.0%		7.1%	0.2%	92.6%	0.0%		0.1%	97.8%	2.2%	0.0%		16.7%	0.0%	83.3%	0.0%			
Total %	6.0%	41.8%	0.0%	0.0%	47.9%	0.6%	0.0%	7.5%	0.0%	8.1%	0.0%	43.0%	1.0%	0.0%	43.9%	0.0%	0.0%	0.0%	0.0%	0.1%	100.0%	

AM PEAK HOUR	Missouri Flat Rd Southbound					China Garden Rd Westbound					Missouri Flat Rd Northbound					China Garden Rd Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
8:00	36	156	1	0	193	0	0	41	0	41	0	201	3	0	204	0	0	0	0	0	438
8:15	27	137	0	0	164	3	1	36	0	40	0	215	6	0	221	1	0	1	0	2	427
8:30	28	139	0	0	167	2	0	44	0	46	0	225	4	0	229	0	0	0	0	0	442
8:45	25	173	0	0	198	6	0	50	0	56	1	226	8	0	235	0	0	0	0	0	489
Total Volume	116	605	1	0	722	11	1	171	0	183	1	867	21	0	889	1	0	1	0	2	1796
% App Total	16.1%	83.8%	0.1%	0.0%		6.0%	0.5%	93.4%	0.0%		0.1%	97.5%	2.4%	0.0%		50.0%	0.0%	50.0%	0.0%		
PHF	.806	.874	.250	.000	.912	.458	.250	.855	.000	.817	.250	.959	.656	.000	.946	.250	.000	.250	.000	.250	.918

PM PEAK HOUR	Missouri Flat Rd Southbound					China Garden Rd Westbound					Missouri Flat Rd Northbound					China Garden Rd Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	39	279	0	0	318	6	0	37	0	43	1	179	6	0	186	0	0	2	0	2	549
16:45	30	269	0	1	300	0	0	42	0	42	0	168	5	0	173	0	0	0	0	0	515
17:00	31	282	0	0	313	5	0	41	0	46	0	211	7	0	218	0	0	1	0	1	578
17:15	23	285	1	0	309	3	0	43	0	46	0	217	3	0	220	0	0	0	0	0	575
Total Volume	123	1115	1	1	1240	14	0	163	0	177	1	775	21	0	797	0	0	3	0	3	2217
% App Total	9.9%	89.9%	0.1%	0.1%		7.9%	0.0%	92.1%	0.0%		0.1%	97.2%	2.6%	0.0%		0.0%	0.0%	100.0%	0.0%		
PHF	.788	.978	.250	.250	.975	.583	.000	.948	.000	.962	.250	.893	.750	.000	.906	.000	.000	.375	.000	.375	.959

National Data and Surveying Services

City of Placerville
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7367-008 Missouri Flat Rd & China Garden Rd
Date : 5/4/2017

Bank 1 Count = Bikes & Peds

	Missouri Flat Rd Southbound					China Garden Rd Westbound					Missouri Flat Rd Northbound					China Garden Rd Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0
8:00	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0
8:15	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	1	2	1	0	0	0	0	0	0	0	0	1	0	1	3
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1
17:00	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0
17:15	1	2	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2	0
Total	1	3	0	0	4	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	6	0
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	2	0	0	1	0	0	1	0	0	0	0	0	1	2
Total	0	0	0	0	0	0	0	0	2	0	0	1	0	0	1	0	0	0	0	0	1	2
Grand Total	1	4	0	0	5	0	0	3	5	3	0	2	0	0	2	0	0	0	1	0	10	6
Apprch %	20.0%	80.0%	0.0%			0.0%	0.0%	100.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%				
Total %	10.0%	40.0%	0.0%		50.0%	0.0%	0.0%	30.0%		30.0%	0.0%	20.0%	0.0%		20.0%	0.0%	0.0%	0.0%		0.0%	100.0%	

AM PEAK HOUR	Missouri Flat Rd Southbound					China Garden Rd Westbound					Missouri Flat Rd Northbound					China Garden Rd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
8:00	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
8:15	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	1	2	1	0	0	0	0	0	0	0	0	1	0	1
% App Total	0.0%	0.0%	0.0%			0.0%	0.0%	100.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.000	.250		.250	.000	.000	.000		.000	.000	.000	.000		.000	.250

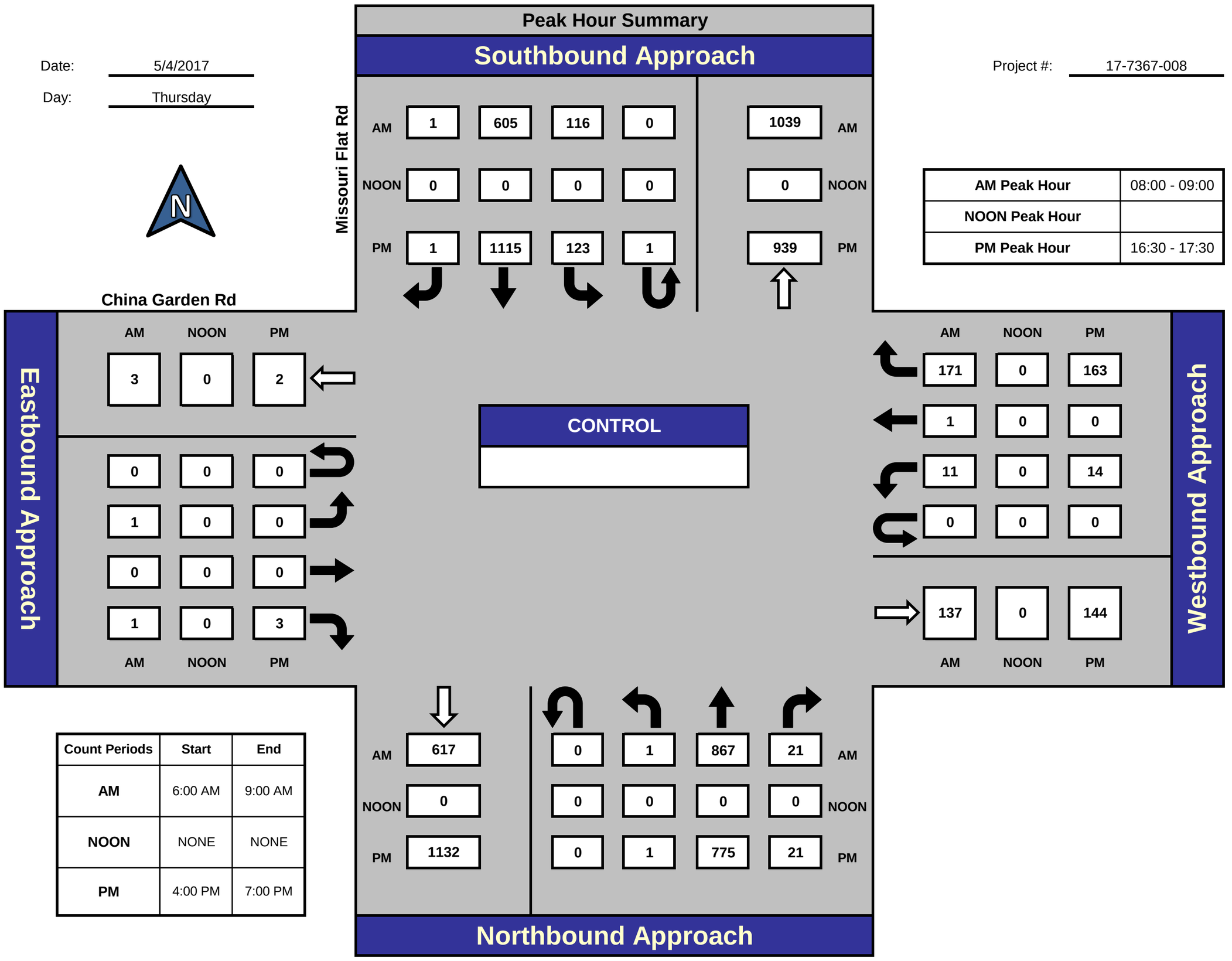
PM PEAK HOUR	Missouri Flat Rd Southbound					China Garden Rd Westbound					Missouri Flat Rd Northbound					China Garden Rd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
17:15	1	2	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Total Volume	1	2	0	0	3	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	4
% App Total	33.3%	66.7%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.250	.250	.000		.250	.000	.000	.000		.000	.000	.250	.000		.250	.000	.000	.000		.000	.333

Missouri Flat Rd & China Garden Rd

Date: 5/4/2017

Day: Thursday

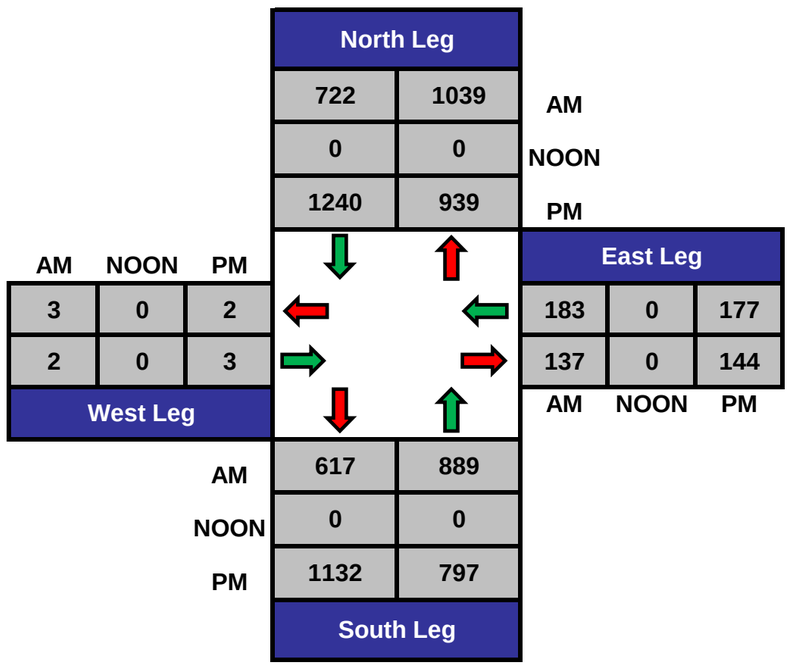
Project #: 17-7367-008



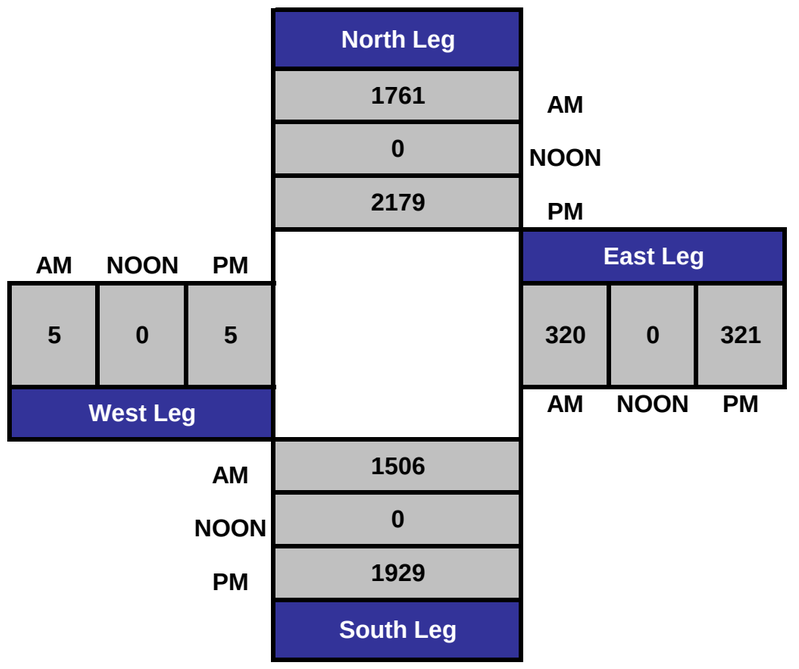
AM Peak Hour	08:00 - 09:00
NOON Peak Hour	
PM Peak Hour	16:30 - 17:30

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	7:00 PM

Total Ins & Outs



Total Volume Per Leg



Missouri Flat Rd & China Garden Rd

Date: 5/4/2017

Day: Thursday

Project #: 17-7367-008

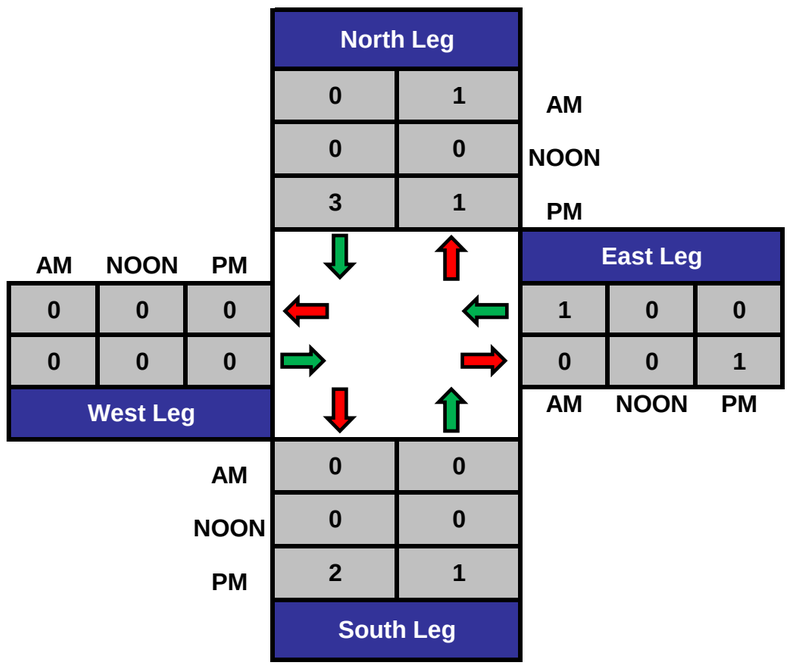


Peak Hour Summary

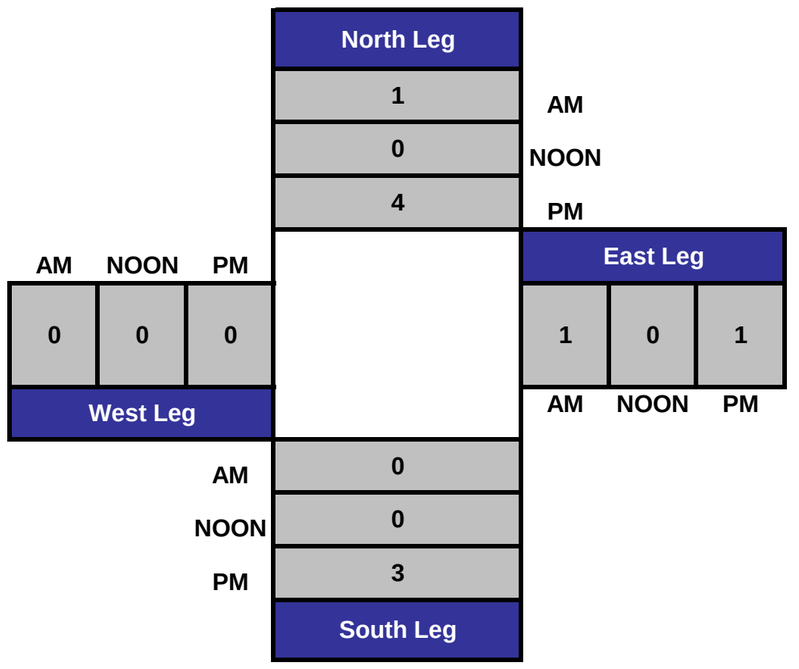
AM Peak Hour	08:00 - 09:00
NOON Peak Hour	
PM Peak Hour	16:30 - 17:30

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	7:00 PM

Total Ins & Outs



Total Volume Per Leg



National Data and Surveying Services

(323) 782-0090
info@ndsdata.com

3486-02

City of Placerville
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

File Name : 17-7367-009 Missouri Flat Rd & Industrial Dr
Date : 5/4/2017

Unshifted Count = All Vehicles & Uturns

	Missouri Flat Rd Southbound					Industrial Dr Westbound					Missouri Flat Rd Northbound					Industrial Dr Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
6:00	0	38	6	0	44	0	0	0	0	0	0	144	0	0	144	0	0	1	0	1	189	0
6:15	0	45	6	0	51	0	0	0	0	0	5	162	0	0	167	0	0	0	0	0	218	0
6:30	0	50	6	0	56	0	0	0	0	0	1	149	0	0	150	2	0	0	0	2	208	0
6:45	0	77	5	0	82	0	0	0	0	0	3	181	0	0	184	2	0	1	0	3	269	0
Total	0	210	23	0	233	0	0	0	0	0	9	636	0	0	645	4	0	2	0	6	884	0
7:00	0	80	9	0	89	0	0	0	0	0	4	181	0	0	185	4	0	3	0	7	281	0
7:15	0	156	19	0	175	0	0	0	0	0	4	214	0	0	218	2	0	1	0	3	396	0
7:30	0	147	4	0	151	0	0	0	0	0	2	218	0	0	220	1	0	0	0	1	372	0
7:45	0	133	12	0	145	0	0	0	0	0	4	256	0	0	260	5	0	3	0	8	413	0
Total	0	516	44	0	560	0	0	0	0	0	14	869	0	0	883	12	0	7	0	19	1462	0
8:00	0	150	10	0	160	0	0	0	0	0	4	207	0	0	211	5	0	6	0	11	382	0
8:15	0	131	4	0	135	0	0	0	0	0	1	228	0	0	229	5	0	6	0	11	375	0
8:30	0	138	5	0	143	0	0	0	0	0	1	229	0	0	230	4	0	3	0	7	380	0
8:45	0	172	7	0	179	0	0	0	0	0	8	235	0	0	243	4	0	4	0	8	430	0
Total	0	591	26	0	617	0	0	0	0	0	14	899	0	0	913	18	0	19	0	37	1567	0
16:00	0	228	8	0	236	0	0	0	0	0	4	180	0	0	184	10	0	9	0	19	439	0
16:15	1	254	2	0	257	0	0	0	0	0	2	177	0	0	179	4	0	4	0	8	444	0
16:30	1	274	4	0	279	0	0	0	0	0	3	167	0	0	170	9	0	0	0	9	458	0
16:45	0	269	5	0	274	0	0	0	0	0	0	162	0	0	162	8	0	5	0	13	449	0
Total	2	1025	19	0	1046	0	0	0	0	0	9	686	0	0	695	31	0	18	0	49	1790	0
17:00	0	278	4	0	282	0	0	0	0	0	0	205	0	0	205	6	0	3	0	9	496	0
17:15	0	292	2	0	294	0	0	0	0	0	0	213	0	0	213	5	0	1	0	6	513	0
17:30	0	251	1	0	252	0	0	0	0	0	2	175	0	0	177	4	0	0	0	4	433	0
17:45	0	251	0	0	251	0	0	0	0	0	1	166	0	0	167	2	0	2	0	4	422	0
Total	0	1072	7	0	1079	0	0	0	0	0	3	759	0	0	762	17	0	6	0	23	1864	0
18:00	0	202	0	0	202	0	0	0	0	0	0	128	0	0	128	4	0	2	0	6	336	0
18:15	0	222	3	0	225	0	0	0	0	0	0	122	0	0	122	1	0	1	0	2	349	0
18:30	0	175	0	0	175	0	0	0	0	0	1	132	0	0	133	2	0	3	0	5	313	0
18:45	0	156	1	0	157	0	0	0	0	0	0	115	0	0	115	0	0	1	0	1	273	0
Total	0	755	4	0	759	0	0	0	0	0	1	497	0	0	498	7	0	7	0	14	1271	0
Grand Total	2	4169	123	0	4294	0	0	0	0	0	50	4346	0	0	4396	89	0	59	0	148	8838	0
Apprch %	0.0%	97.1%	2.9%	0.0%		0.0%	0.0%	0.0%	0.0%		1.1%	98.9%	0.0%	0.0%		60.1%	0.0%	39.9%	0.0%			
Total %	0.0%	47.2%	1.4%	0.0%	48.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%	49.2%	0.0%	0.0%	49.7%	1.0%	0.0%	0.7%	0.0%	1.7%	100.0%	

AM PEAK HOUR	Missouri Flat Rd Southbound					Industrial Dr Westbound					Missouri Flat Rd Northbound					Industrial Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
8:00	0	150	10	0	160	0	0	0	0	0	4	207	0	0	211	5	0	6	0	11	382
8:15	0	131	4	0	135	0	0	0	0	0	1	228	0	0	229	5	0	6	0	11	375
8:30	0	138	5	0	143	0	0	0	0	0	1	229	0	0	230	4	0	3	0	7	380
8:45	0	172	7	0	179	0	0	0	0	0	8	235	0	0	243	4	0	4	0	8	430
Total Volume	0	591	26	0	617	0	0	0	0	0	14	899	0	0	913	18	0	19	0	37	1567
% App Total	0.0%	95.8%	4.2%	0.0%		0.0%	0.0%	0.0%	0.0%		1.5%	98.5%	0.0%	0.0%		48.6%	0.0%	51.4%	0.0%		
PHF	.000	.859	.650	.000	.862	.000	.000	.000	.000	.000	.438	.956	.000	.000	.939	.900	.000	.792	.000	.841	.911

PM PEAK HOUR	Missouri Flat Rd Southbound					Industrial Dr Westbound					Missouri Flat Rd Northbound					Industrial Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	1	274	4	0	279	0	0	0	0	0	3	167	0	0	170	9	0	0	0	9	458
16:45	0	269	5	0	274	0	0	0	0	0	0	162	0	0	162	8	0	5	0	13	449
17:00	0	278	4	0	282	0	0	0	0	0	0	205	0	0	205	6	0	3	0	9	496
17:15	0	292	2	0	294	0	0	0	0	0	0	213	0	0	213	5	0	1	0	6	513
Total Volume	1	1113	15	0	1129	0	0	0	0	0	3	747	0	0	750	28	0	9	0	37	1916
% App Total	0.1%	98.6%	1.3%	0.0%		0.0%	0.0%	0.0%	0.0%		0.4%	99.6%	0.0%	0.0%		75.7%	0.0%	24.3%	0.0%		
PHF	.250	.953	.750	.000	.960	.000	.000	.000	.000	.000	.250	.877	.000	.000	.880	.778	.000	.450	.000	.712	.934

National Data and Surveying Services

City of Placerville
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7367-009 Missouri Flat Rd & Industrial Dr
Date : 5/4/2017

Bank 1 Count = Bikes & Peds

	Missouri Flat Rd Southbound					Industrial Dr Westbound					Missouri Flat Rd Northbound					Industrial Dr Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
6:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
6:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
17:30	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0
17:45	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Total	0	3	0	0	3	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	4	0
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
Grand Total	0	4	0	0	4	0	0	0	0	0	1	0	0	0	1	0	0	0	4	0	5	4
Apprch %	0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			100.0%	0.0%	0.0%			0.0%	0.0%	0.0%				
Total %	0.0%	80.0%	0.0%		80.0%	0.0%	0.0%	0.0%		0.0%	20.0%	0.0%	0.0%		20.0%	0.0%	0.0%	0.0%		0.0%	100.0%	

AM PEAK HOUR	Missouri Flat Rd Southbound					Industrial Dr Westbound					Missouri Flat Rd Northbound					Industrial Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App Total	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000

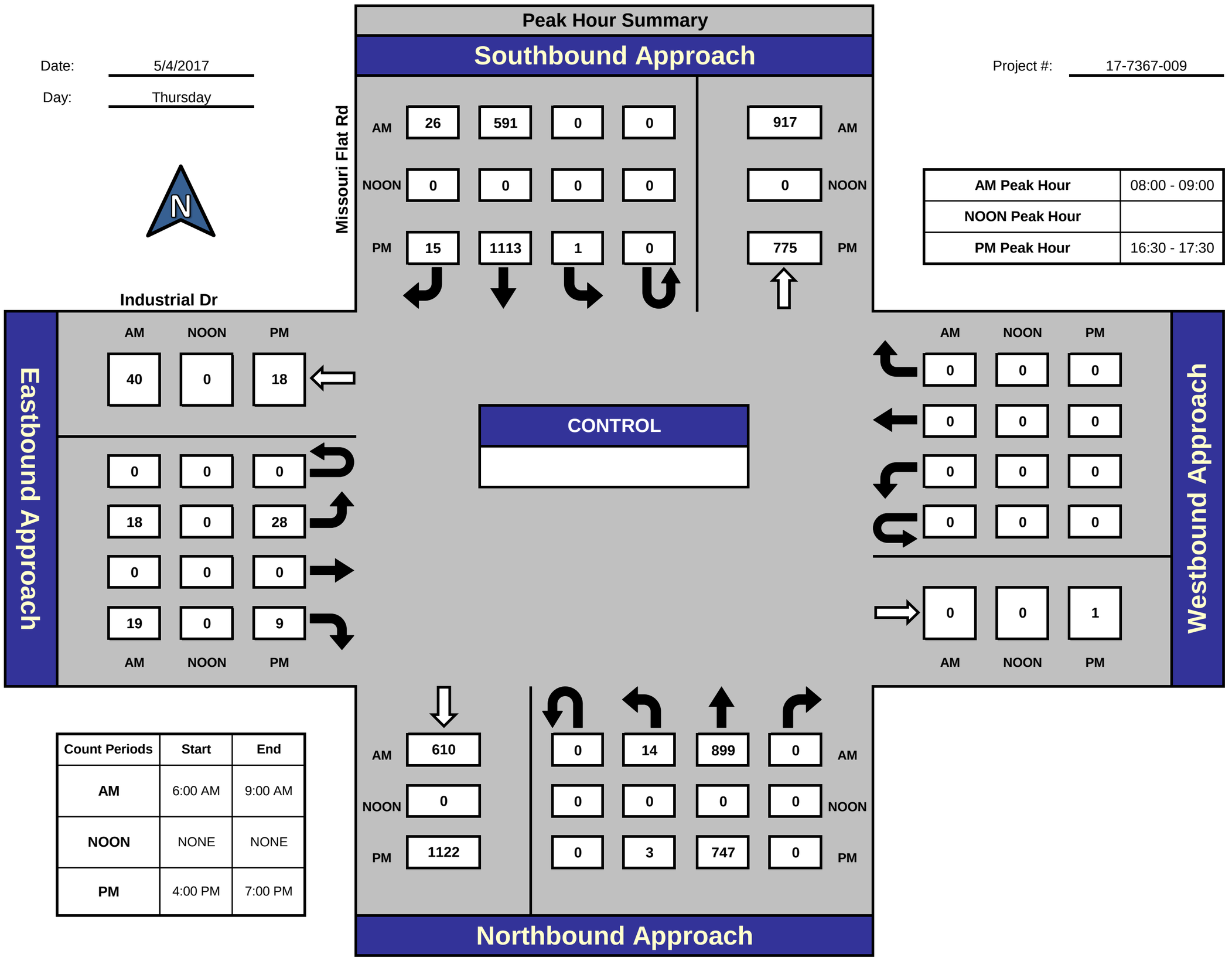
PM PEAK HOUR	Missouri Flat Rd Southbound					Industrial Dr Westbound					Missouri Flat Rd Northbound					Industrial Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total Volume	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
% App Total	0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.250	.000		.250	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.250

Missouri Flat Rd & Industrial Dr

Date: 5/4/2017

Day: Thursday

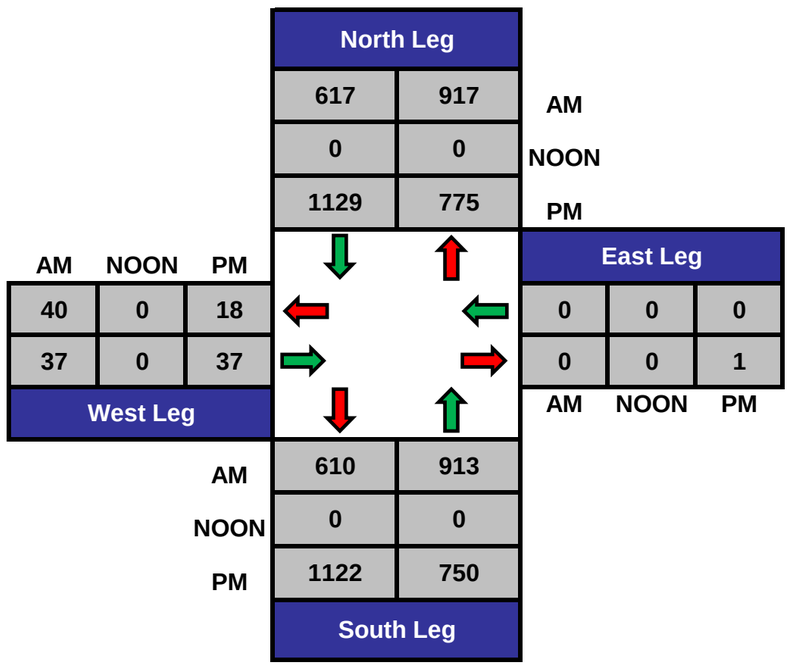
Project #: 17-7367-009



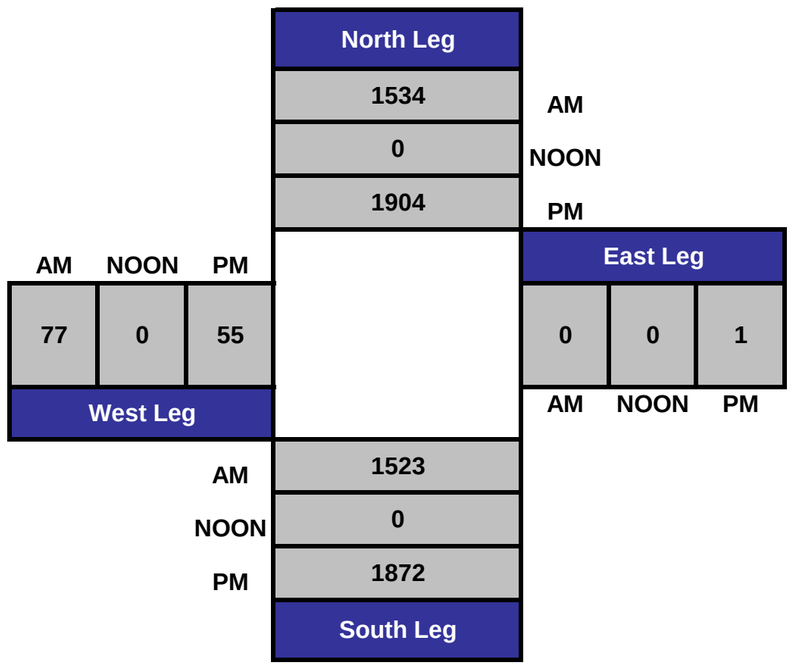
Peak Hour	
AM Peak Hour	08:00 - 09:00
NOON Peak Hour	
PM Peak Hour	16:30 - 17:30

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	7:00 PM

Total Ins & Outs



Total Volume Per Leg



Missouri Flat Rd & Industrial Dr

Date: 5/4/2017

Day: Thursday

Project #: 17-7367-009

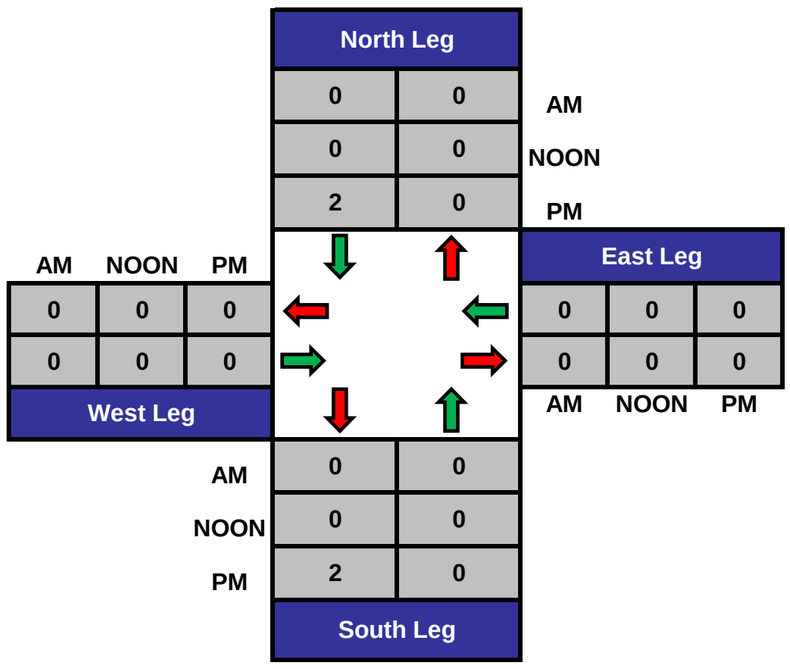


Peak Hour Summary

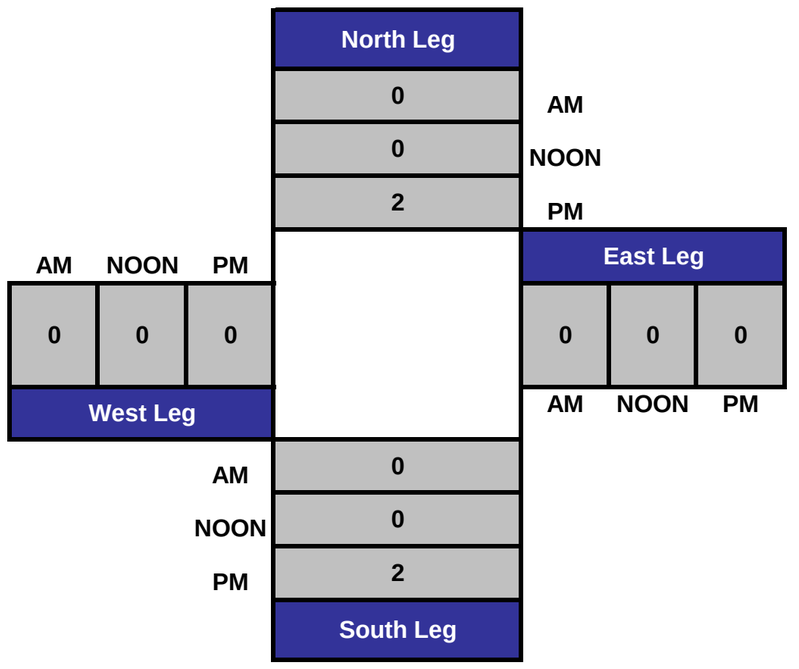
AM Peak Hour	08:00 - 09:00
NOON Peak Hour	
PM Peak Hour	16:30 - 17:30

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	7:00 PM

Total Ins & Outs



Total Volume Per Leg



National Data and Surveying Services

(323) 782-0090
info@ndsdata.com

3486-02

City of Placerville
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

File Name : 17-7367-010 Missouri Flat Rd & Enterprise Dr
Date : 5/4/2017

Unshifted Count = All Vehicles & Uturns

	Missouri Flat Rd Southbound					Enterprise Dr Westbound					Missouri Flat Rd Northbound					Enterprise Dr Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
6:00	0	30	8	0	38	0	0	0	0	0	2	142	0	0	144	1	0	0	0	1	183	0
6:15	0	42	3	0	45	0	0	0	0	0	3	166	0	0	169	4	0	0	0	4	218	0
6:30	0	42	5	0	47	0	0	0	0	0	4	152	0	0	156	1	0	1	0	2	205	0
6:45	0	54	16	0	70	0	0	0	0	0	1	182	0	0	183	0	0	1	0	1	254	0
Total	0	168	32	0	200	0	0	0	0	0	10	642	0	0	652	6	0	2	0	8	860	0
7:00	0	59	23	0	82	0	0	0	0	0	5	178	0	0	183	5	0	1	0	6	271	0
7:15	0	134	18	0	152	0	0	0	0	0	3	208	0	0	211	13	0	2	0	15	378	0
7:30	1	111	22	0	134	0	0	0	0	0	5	214	1	0	220	7	0	3	0	10	364	0
7:45	3	106	16	0	125	0	0	0	0	0	7	251	2	0	260	6	0	4	0	10	395	0
Total	4	410	79	0	493	0	0	0	0	0	20	851	3	0	874	31	0	10	0	41	1408	0
8:00	1	129	11	0	141	0	0	0	0	0	2	205	1	0	208	4	0	3	0	7	356	0
8:15	2	110	14	0	126	0	1	0	0	1	2	226	0	0	228	10	0	8	0	18	373	0
8:30	2	116	17	0	135	0	0	1	0	1	2	217	0	0	219	9	0	6	0	15	370	0
8:45	1	127	30	0	158	0	0	2	0	2	7	222	1	0	230	16	0	5	0	21	411	0
Total	6	482	72	0	560	0	1	3	0	4	13	870	2	0	885	39	0	22	0	61	1510	0
16:00	1	198	24	0	223	0	0	0	0	0	3	152	1	0	156	17	0	7	0	24	403	0
16:15	1	233	23	0	257	0	0	0	0	0	6	146	0	0	152	18	0	10	0	28	437	0
16:30	0	238	28	0	266	0	0	1	0	1	3	156	0	0	159	22	1	11	0	34	460	0
16:45	2	245	17	0	264	0	0	1	0	1	3	131	0	0	134	22	0	7	0	29	428	0
Total	4	914	92	0	1010	0	0	2	0	2	15	585	1	0	601	79	1	35	0	115	1728	0
17:00	1	260	13	0	274	1	0	1	0	2	0	191	0	0	191	20	0	7	0	27	494	0
17:15	0	276	16	0	292	0	0	0	0	0	2	182	0	0	184	17	0	5	0	22	498	0
17:30	0	238	10	0	248	3	0	0	0	3	2	151	1	0	154	13	0	6	0	19	424	0
17:45	0	217	17	0	234	0	0	0	0	0	2	149	0	0	151	9	0	8	0	17	402	0
Total	1	991	56	0	1048	4	0	1	0	5	6	673	1	0	680	59	0	26	0	85	1818	0
18:00	0	197	8	0	205	0	0	0	0	0	1	111	0	0	112	7	0	6	0	13	330	0
18:15	0	214	11	0	225	0	0	0	0	0	1	107	0	0	108	4	0	1	0	5	338	0
18:30	0	158	12	0	170	0	0	0	0	0	1	106	0	0	107	14	0	5	0	19	296	0
18:45	0	148	6	0	154	0	0	0	0	0	0	100	1	0	101	8	0	5	0	13	268	0
Total	0	717	37	0	754	0	0	0	0	0	3	424	1	0	428	33	0	17	0	50	1232	0
Grand Total	15	3682	368	0	4065	4	1	6	0	11	67	4045	8	0	4120	247	1	112	0	360	8556	0
Apprch %	0.4%	90.6%	9.1%	0.0%		36.4%	9.1%	54.5%	0.0%		1.6%	98.2%	0.2%	0.0%		68.6%	0.3%	31.1%	0.0%			
Total %	0.2%	43.0%	4.3%	0.0%	47.5%	0.0%	0.0%	0.1%	0.0%	0.1%	0.8%	47.3%	0.1%	0.0%	48.2%	2.9%	0.0%	1.3%	0.0%	4.2%	100.0%	

AM PEAK HOUR	Missouri Flat Rd Southbound					Enterprise Dr Westbound					Missouri Flat Rd Northbound					Enterprise Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
8:00	1	129	11	0	141	0	0	0	0	0	2	205	1	0	208	4	0	3	0	7	356
8:15	2	110	14	0	126	0	1	0	0	1	2	226	0	0	228	10	0	8	0	18	373
8:30	2	116	17	0	135	0	0	1	0	1	2	217	0	0	219	9	0	6	0	15	370
8:45	1	127	30	0	158	0	0	2	0	2	7	222	1	0	230	16	0	5	0	21	411
Total Volume	6	482	72	0	560	0	1	3	0	4	13	870	2	0	885	39	0	22	0	61	1510
% App Total	1.1%	86.1%	12.9%	0.0%		0.0%	25.0%	75.0%	0.0%		1.5%	98.3%	0.2%	0.0%		63.9%	0.0%	36.1%	0.0%		
PHF	.750	.934	.600	.000	.886	.000	.250	.375	.000	.500	.464	.962	.500	.000	.962	.609	.000	.688	.000	.726	.918

PM PEAK HOUR	Missouri Flat Rd Southbound					Enterprise Dr Westbound					Missouri Flat Rd Northbound					Enterprise Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	238	28	0	266	0	0	1	0	1	3	156	0	0	159	22	1	11	0	34	460
16:45	2	245	17	0	264	0	0	1	0	1	3	131	0	0	134	22	0	7	0	29	428
17:00	1	260	13	0	274	1	0	1	0	2	0	191	0	0	191	20	0	7	0	27	494
17:15	0	276	16	0	292	0	0	0	0	0	2	182	0	0	184	17	0	5	0	22	498
Total Volume	3	1019	74	0	1096	1	0	3	0	4	8	660	0	0	668	81	1	30	0	112	1880
% App Total	0.3%	93.0%	6.8%	0.0%		25.0%	0.0%	75.0%	0.0%		1.2%	98.8%	0.0%	0.0%		72.3%	0.9%	26.8%	0.0%		
PHF	.375	.923	.661	.000	.938	.250	.000	.750	.000	.500	.667	.864	.000	.000	.874	.920	.250	.682	.000	.824	.944

National Data and Surveying Services

City of Placerville
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7367-010 Missouri Flat Rd & Enterprise Dr
Date : 5/4/2017

Bank 1 Count = Bikes & Peds

	Missouri Flat Rd Southbound					Enterprise Dr Westbound					Missouri Flat Rd Northbound					Enterprise Dr Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
6:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0
6:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0
7:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	1	2
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
Total	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	3
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
18:00	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Grand Total	0	2	0	1	2	0	0	0	5	0	1	0	0	0	1	1	0	0	3	1	4	9
Apprch %	0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			100.0%	0.0%	0.0%			100.0%	0.0%	0.0%				
Total %	0.0%	50.0%	0.0%		50.0%	0.0%	0.0%	0.0%		0.0%	25.0%	0.0%	0.0%		25.0%	25.0%	0.0%	0.0%		25.0%	100.0%	

AM PEAK HOUR	Missouri Flat Rd Southbound					Enterprise Dr Westbound					Missouri Flat Rd Northbound					Enterprise Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
Total Volume	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0
% App Total	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000

PM PEAK HOUR	Missouri Flat Rd Southbound					Enterprise Dr Westbound					Missouri Flat Rd Northbound					Enterprise Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App Total	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000

Missouri Flat Rd & Enterprise Dr

Date: 5/4/2017

Day: Thursday

Project #: 17-7367-010



Peak Hour Summary

AM Peak Hour	08:00 - 09:00
NOON Peak Hour	
PM Peak Hour	16:30 - 17:30

Southbound Approach

Missouri Flat Rd

AM	72	482	6	0	912 AM
NOON	0	0	0	0	0 NOON
PM	74	1019	3	0	744 PM

Enterprise Dr

Eastbound Approach

	AM	NOON	PM
	86	0	82
	0	0	0
	39	0	81
	0	0	1
	22	0	30
	AM	NOON	PM

CONTROL

Westbound Approach

	AM	NOON	PM
	3	0	3
	1	0	0
	0	0	1
	0	0	0
	8	0	4
	AM	NOON	PM

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	7:00 PM

Northbound Approach

AM	504	0	13	870	2 AM
NOON	0	0	0	0	0 NOON
PM	1050	0	8	660	0 PM

Total Ins & Outs

North Leg		
560	912	AM
0	0	NOON
1096	744	PM

West Leg			East Leg		
AM	NOON	PM			
86	0	82	4	0	4
61	0	112	8	0	4
			AM	NOON	PM

South Leg		
504	885	AM
0	0	NOON
1050	668	PM

Total Volume Per Leg

North Leg		
1472		AM
0		NOON
1840		PM

West Leg			East Leg		
AM	NOON	PM			
147	0	194	12	0	8
			AM	NOON	PM

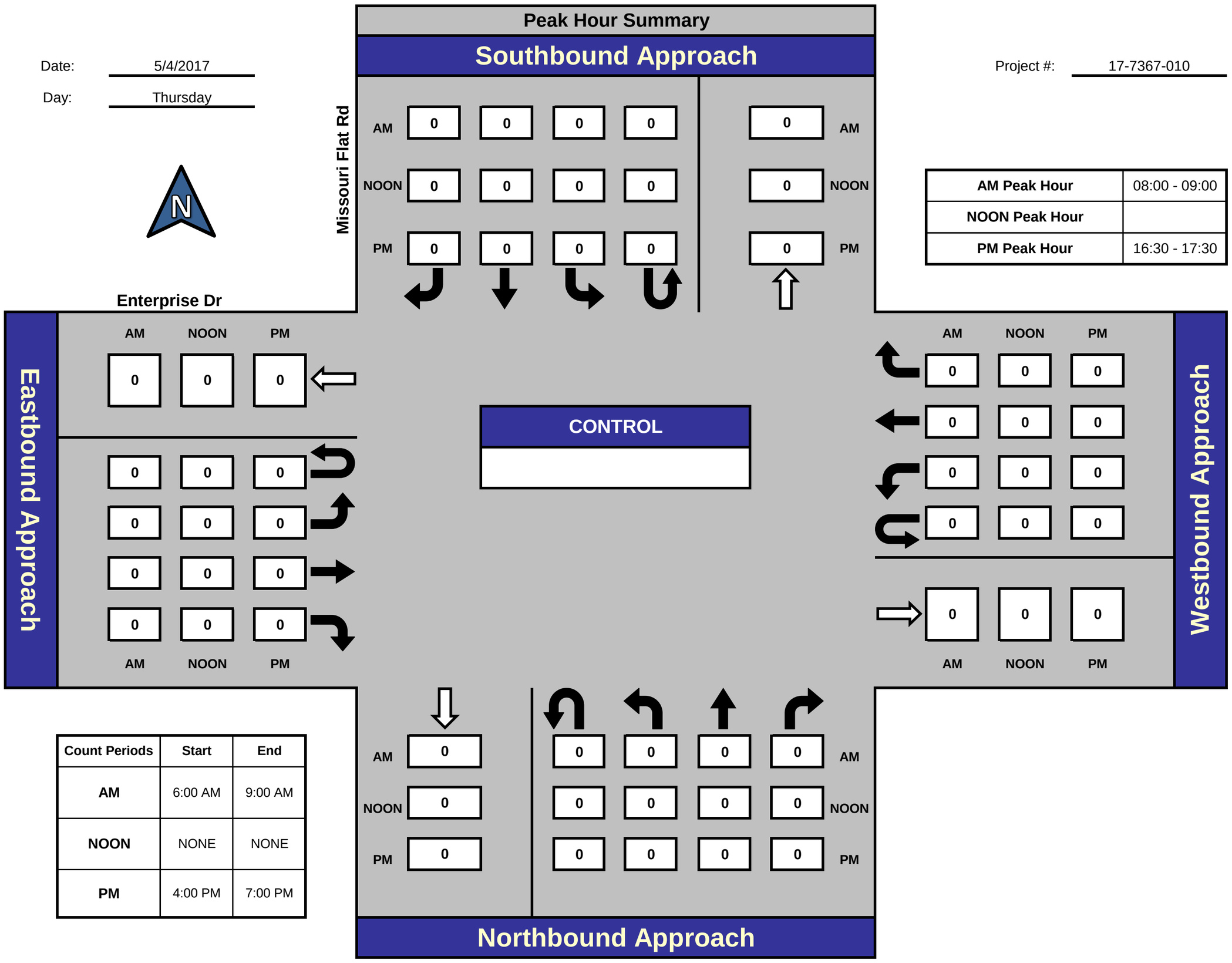
South Leg	
1389	AM
0	NOON
1718	PM

Missouri Flat Rd & Enterprise Dr

Date: 5/4/2017

Day: Thursday

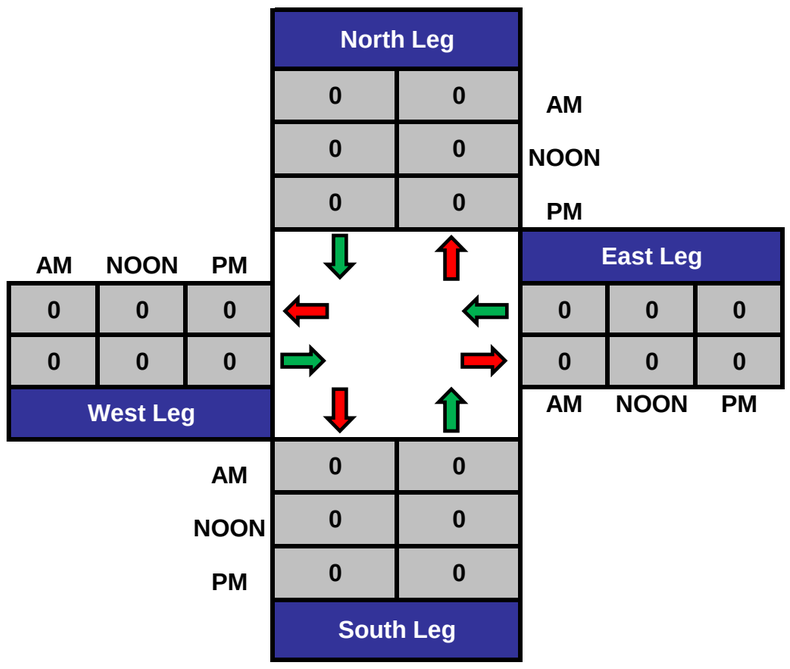
Project #: 17-7367-010



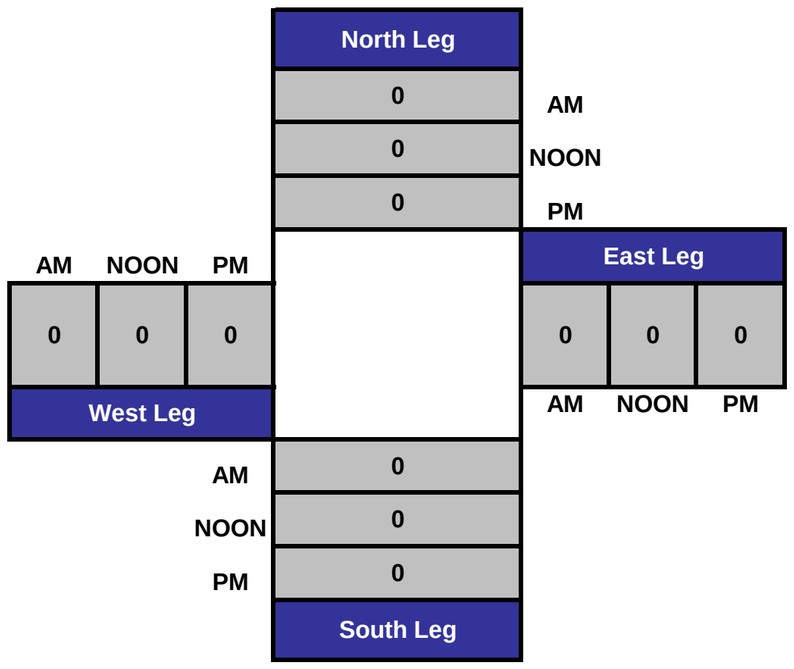
AM Peak Hour	08:00 - 09:00
NOON Peak Hour	
PM Peak Hour	16:30 - 17:30

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	7:00 PM

Total Ins & Outs



Total Volume Per Leg



National Data and Surveying Services

(323) 782-0090
info@ndsdata.com

3486-02

City of Placerville
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

File Name : 17-7367-011 Missouri Flat Rd & Pleasant Valley Rd
Date : 5/4/2017

Unshifted Count = All Vehicles & Uturns

	Missouri Flat Rd Southbound					Pleasant Valley Rd Westbound					Missouri Flat Rd Northbound					Pleasant Valley Rd Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
6:00	17	0	11	0	28	0	26	105	0	131	0	0	0	0	0	32	13	0	0	45	204	0
6:15	22	0	16	0	38	0	35	134	0	169	0	0	0	0	0	37	13	0	0	50	257	0
6:30	27	0	13	0	40	0	43	126	0	169	0	0	0	0	0	32	23	0	0	55	264	0
6:45	29	0	19	0	48	0	38	128	0	166	0	0	0	0	0	48	28	0	0	76	290	0
Total	95	0	59	0	154	0	142	493	0	635	0	0	0	0	0	149	77	0	0	226	1015	0
7:00	24	0	28	0	52	0	77	125	0	202	0	0	0	0	0	60	32	0	0	92	346	0
7:15	52	0	79	0	131	0	113	130	0	243	0	0	0	0	0	80	35	0	0	115	489	0
7:30	49	0	53	0	102	0	114	130	0	244	0	0	0	0	0	91	70	0	0	161	507	0
7:45	67	0	35	0	102	0	86	161	0	247	0	0	0	0	0	97	60	0	0	157	506	0
Total	192	0	195	0	387	0	390	546	0	936	0	0	0	0	0	328	197	0	0	525	1848	0
8:00	72	0	39	0	111	0	65	118	0	183	0	0	0	0	0	75	49	0	0	124	418	0
8:15	67	0	45	0	112	0	72	151	0	223	0	0	0	0	0	67	34	0	0	101	436	0
8:30	67	0	45	0	112	0	77	156	0	233	0	0	0	0	0	66	47	0	0	113	458	0
8:45	78	0	48	0	126	0	59	160	0	219	0	0	0	0	0	71	43	0	0	114	459	0
Total	284	0	177	0	461	0	273	585	0	858	0	0	0	0	0	279	173	0	0	452	1771	0
16:00	158	0	58	0	216	0	62	94	0	156	0	0	0	0	0	54	79	0	0	133	505	0
16:15	168	0	69	0	237	0	60	88	0	148	0	0	0	0	0	62	58	0	0	120	505	0
16:30	182	0	58	0	240	0	62	87	0	149	0	0	0	0	0	51	88	0	0	139	528	0
16:45	179	0	77	0	256	0	69	69	0	138	0	0	0	0	0	66	81	0	0	147	541	0
Total	687	0	262	0	949	0	253	338	0	591	0	0	0	0	0	233	306	0	0	539	2079	0
17:00	174	0	87	0	261	0	67	99	0	166	0	0	0	0	0	73	124	0	0	197	624	0
17:15	200	0	75	0	275	0	56	104	0	160	0	0	0	0	0	69	77	0	0	146	581	0
17:30	186	0	59	0	245	0	42	90	0	132	0	0	0	0	0	59	84	0	0	143	520	0
17:45	156	0	66	0	222	0	50	88	0	138	0	0	0	0	0	56	62	0	0	118	478	0
Total	716	0	287	0	1003	0	215	381	0	596	0	0	0	0	0	257	347	0	0	604	2203	0
18:00	146	0	43	0	189	0	32	77	0	109	0	0	0	0	0	46	56	0	0	102	400	0
18:15	149	0	67	0	216	0	35	64	0	99	0	0	0	0	0	47	61	0	0	108	423	0
18:30	114	0	42	0	156	0	37	60	0	97	0	0	0	0	0	38	40	0	0	78	331	0
18:45	101	0	37	0	138	0	30	70	0	100	0	0	0	0	0	37	39	0	0	76	314	0
Total	510	0	189	0	699	0	134	271	0	405	0	0	0	0	0	168	196	0	0	364	1468	0
Grand Total	2484	0	1169	0	3653	0	1407	2614	0	4021	0	0	0	0	0	1414	1296	0	0	2710	10384	0
Apprch %	68.0%	0.0%	32.0%	0.0%		0.0%	35.0%	65.0%	0.0%		0.0%	0.0%	0.0%	0.0%		52.2%	47.8%	0.0%	0.0%			
Total %	23.9%	0.0%	11.3%	0.0%	35.2%	0.0%	13.5%	25.2%	0.0%	38.7%	0.0%	0.0%	0.0%	0.0%	0.0%	13.6%	12.5%	0.0%	0.0%	26.1%	100.0%	

AM PEAK HOUR	Missouri Flat Rd Southbound					Pleasant Valley Rd Westbound					Missouri Flat Rd Northbound					Pleasant Valley Rd Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
7:15	52	0	79	0	131	0	113	130	0	243	0	0	0	0	0	80	35	0	0	115	489
7:30	49	0	53	0	102	0	114	130	0	244	0	0	0	0	0	91	70	0	0	161	507
7:45	67	0	35	0	102	0	86	161	0	247	0	0	0	0	0	97	60	0	0	157	506
8:00	72	0	39	0	111	0	65	118	0	183	0	0	0	0	0	75	49	0	0	124	418
Total Volume	240	0	206	0	446	0	378	539	0	917	0	0	0	0	0	343	214	0	0	557	1920
% App Total	53.8%	0.0%	46.2%	0.0%		0.0%	41.2%	58.8%	0.0%		0.0%	0.0%	0.0%	0.0%		61.6%	38.4%	0.0%	0.0%		
PHF	.833	.000	.652	.000	.851	.000	.829	.837	.000	.928	.000	.000	.000	.000	.000	.884	.764	.000	.000	.865	.947

PM PEAK HOUR	Missouri Flat Rd Southbound					Pleasant Valley Rd Westbound					Missouri Flat Rd Northbound					Pleasant Valley Rd Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	182	0	58	0	240	0	62	87	0	149	0	0	0	0	0	51	88	0	0	139	528
16:45	179	0	77	0	256	0	69	69	0	138	0	0	0	0	0	66	81	0	0	147	541
17:00	174	0	87	0	261	0	67	99	0	166	0	0	0	0	0	73	124	0	0	197	624
17:15	200	0	75	0	275	0	56	104	0	160	0	0	0	0	0	69	77	0	0	146	581
Total Volume	735	0	297	0	1032	0	254	359	0	613	0	0	0	0	0	259	370	0	0	629	2274
% App Total	71.2%	0.0%	28.8%	0.0%		0.0%	41.4%	58.6%	0.0%		0.0%	0.0%	0.0%	0.0%		41.2%	58.8%	0.0%	0.0%		
PHF	.919	.000	.853	.000	.938	.000	.920	.863	.000	.923	.000	.000	.000	.000	.000	.887	.746	.000	.000	.798	.911

National Data and Surveying Services

City of Placerville
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7367-011 Missouri Flat Rd & Pleasant Valley Rd
Date : 5/4/2017

Bank 1 Count = Bikes & Peds

	Missouri Flat Rd Southbound					Pleasant Valley Rd Westbound					Missouri Flat Rd Northbound					Pleasant Valley Rd Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0
Grand Total	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	2
Apprch %	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%				
Total %	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	100.0%	0.0%		100.0%	100.0%	

AM PEAK HOUR	Missouri Flat Rd Southbound					Pleasant Valley Rd Westbound					Missouri Flat Rd Northbound					Pleasant Valley Rd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App Total	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000

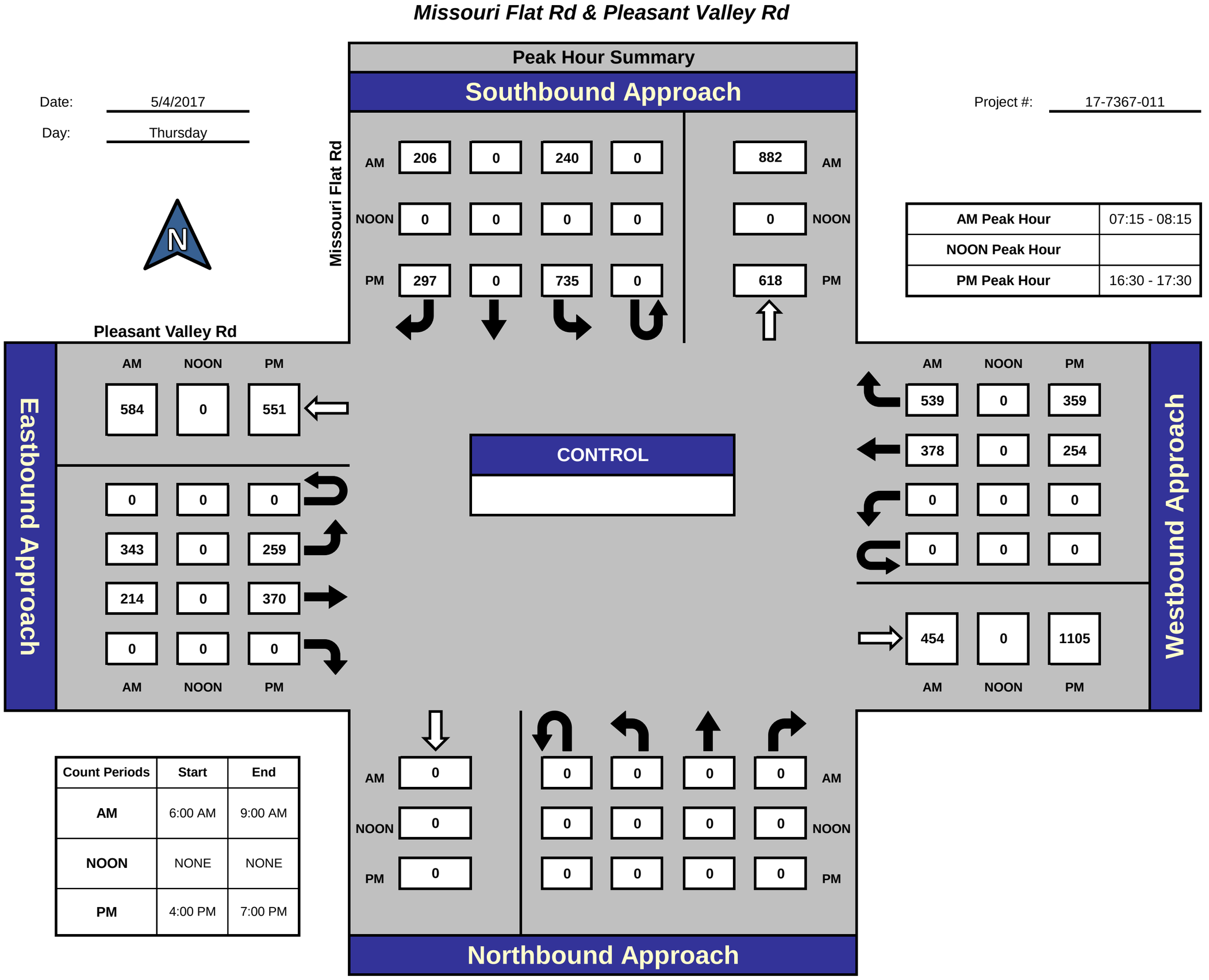
PM PEAK HOUR	Missouri Flat Rd Southbound					Pleasant Valley Rd Westbound					Missouri Flat Rd Northbound					Pleasant Valley Rd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App Total	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000

Missouri Flat Rd & Pleasant Valley Rd

Date: 5/4/2017

Day: Thursday

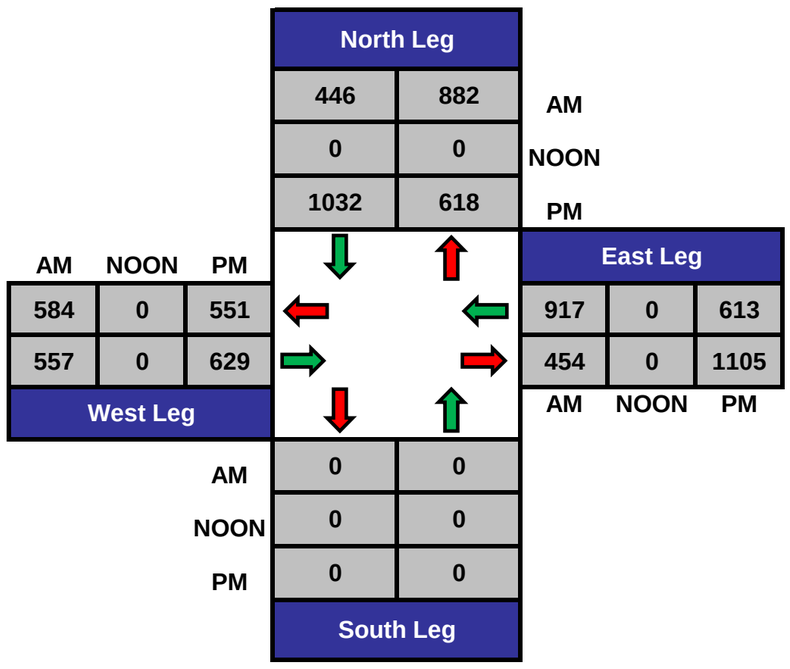
Project #: 17-7367-011



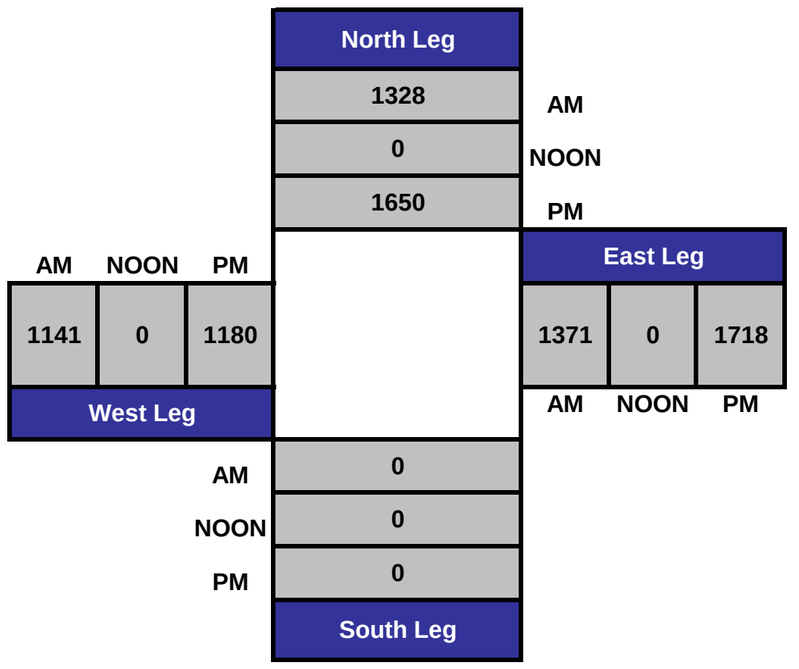
Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	7:00 PM

AM Peak Hour	07:15 - 08:15
NOON Peak Hour	
PM Peak Hour	16:30 - 17:30

Total Ins & Outs



Total Volume Per Leg

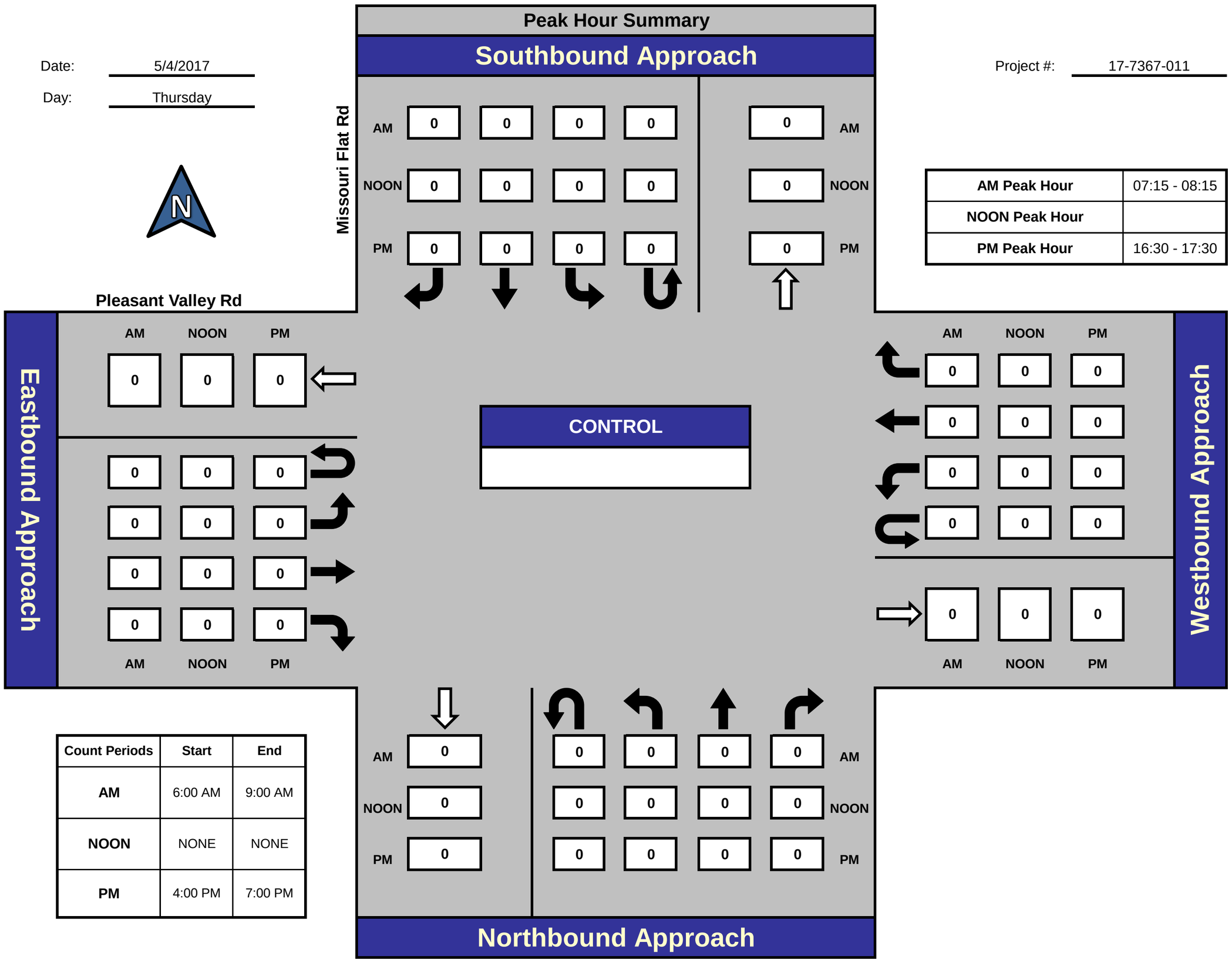


Missouri Flat Rd & Pleasant Valley Rd

Date: 5/4/2017

Day: Thursday

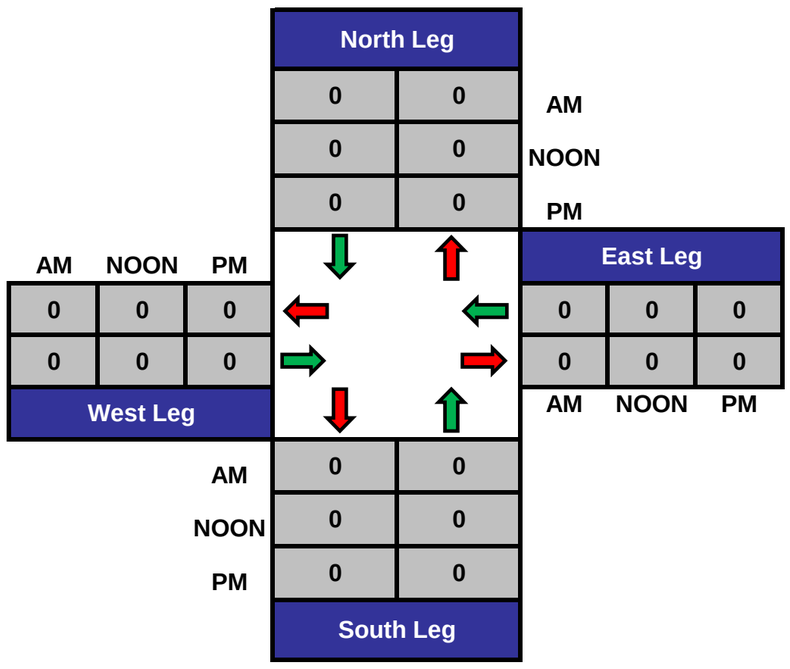
Project #: 17-7367-011



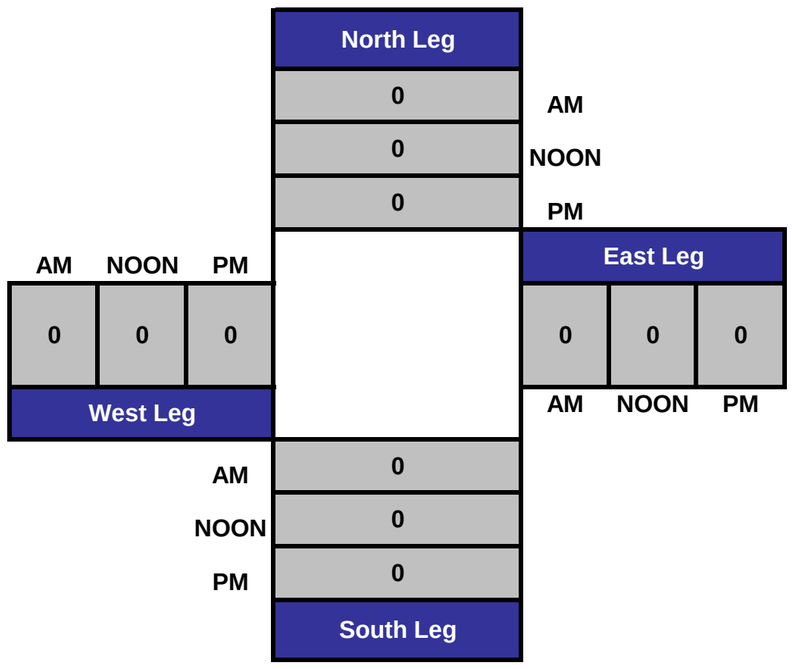
AM Peak Hour	07:15 - 08:15
NOON Peak Hour	
PM Peak Hour	16:30 - 17:30

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	7:00 PM

Total Ins & Outs



Total Volume Per Leg



1: Missouri Flat Road & WB Ramps Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	1.3	0.0	0.2	0.5
Total Del/Veh (s)	24.8	16.5	13.4	18.7
Vehicles Entered	862	1019	571	2452
Vehicles Exited	856	1013	576	2445
Hourly Exit Rate	856	1013	576	2445
Input Volume	874	998	564	2436
% of Volume	98	102	102	100
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

2: Missouri Flat Road & EB Ramps Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.8	0.0	0.0	0.2
Total Del/Veh (s)	17.7	12.1	19.7	16.3
Vehicles Entered	415	974	1005	2394
Vehicles Exited	411	979	1017	2407
Hourly Exit Rate	411	979	1017	2407
Input Volume	416	983	995	2394
% of Volume	99	100	102	101
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

3: Missouri Flat Road & Mother Lode Drive Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	1.9	0.0	0.0	0.1
Total Del/Veh (s)	34.5	7.9	4.2	8.0
Vehicles Entered	175	1265	1207	2647
Vehicles Exited	174	1275	1205	2654
Hourly Exit Rate	174	1275	1205	2654
Input Volume	169	1286	1184	2638
% of Volume	103	99	102	101
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

5: Missouri Flat Road & Forni Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	2.7	0.0	0.0	0.0	0.3
Total Del/Veh (s)	37.7	14.6	19.9	17.5	20.3
Vehicles Entered	321	338	952	1147	2758
Vehicles Exited	316	338	955	1157	2766
Hourly Exit Rate	316	338	955	1157	2766
Input Volume	328	339	955	1138	2760
% of Volume	96	100	100	102	100
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

6: Missouri Flat Road & Golden Center Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	15.2	5.8	12.5	18.2	13.7
Vehicles Entered	32	259	1049	733	2073
Vehicles Exited	32	259	1049	734	2074
Hourly Exit Rate	32	259	1049	734	2074
Input Volume	30	253	1052	722	2056
% of Volume	105	102	100	102	101
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

10: Pleasant Valley Rd & Missouri Flat Rd Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	2.6	2.7	0.0	2.0
Total Del/Veh (s)	22.0	17.6	9.9	17.0
Vehicles Entered	504	890	439	1833
Vehicles Exited	503	889	441	1833
Hourly Exit Rate	503	889	441	1833
Input Volume	498	899	432	1830
% of Volume	101	99	102	100
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

11: Forni Road & Project Access/Golden Center Drive Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.2	0.3	0.2
Total Del/Veh (s)	12.3	1.4	2.3	3.5
Vehicles Entered	179	582	245	1006
Vehicles Exited	180	581	245	1006
Hourly Exit Rate	180	581	245	1006
Input Volume	182	572	251	1004
% of Volume	99	102	98	100
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

Total Zone Performance

Denied Del/Veh (s)	1.6
Total Del/Veh (s)	440.0
Vehicles Entered	4326
Vehicles Exited	427
Hourly Exit Rate	427
Input Volume	17518
% of Volume	2
Denied Entry Before	0
Denied Entry After	0

1: Missouri Flat Road & WB Ramps Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.4	2.9	0.0	0.0	0.2	0.2	0.5
Total Del/Veh (s)	33.3	10.6	31.1	6.7	16.3	1.4	18.7

2: Missouri Flat Road & EB Ramps Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.4	1.0	0.0	0.0	0.1	0.0	0.2
Total Del/Veh (s)	31.4	13.9	12.5	5.4	26.2	18.8	16.3

3: Missouri Flat Road & Mother Lode Drive Performance by movement

Movement	EBL	EBR	NBL	NBT	NBR	SBT	SBR	All
Denied Del/Veh (s)	1.3	3.9	0.0	0.0	0.0	0.0	0.0	0.1
Total Del/Veh (s)	40.9	9.9	44.4	8.7	4.3	4.3	2.3	8.0

5: Missouri Flat Road & Forni Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.3	0.7	3.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	40.9	39.1	4.7	43.2	23.8	1.9	50.6	19.6	5.8	41.4	11.4	4.5

5: Missouri Flat Road & Forni Road Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	20.3

6: Missouri Flat Road & Golden Center Drive Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Del/Veh (s)	25.3	27.9	7.5	25.2	0.6	13.0	33.2	12.1	8.1	38.0	15.9	2.2

6: Missouri Flat Road & Golden Center Drive Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	13.7

10: Pleasant Valley Rd & Missouri Flat Rd Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	3.4	1.1	1.8	3.3	0.0	0.0	0.0	2.0
Total Del/Veh (s)	24.2	18.2	28.6	9.9	18.8	1.0	3.7	17.0

11: Forni Road & Project Access/Golden Center Drive Performance by movement

Movement	WBL	WBT	WBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.2	0.2	0.3	0.3	0.2
Total Del/Veh (s)	18.0	0.3	12.0	1.3	1.4	6.2	1.5	3.5

Total Zone Performance

Denied Del/Veh (s)	1.6
Total Del/Veh (s)	440.0

Intersection	
Int Delay, s/veh	0

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	0	1129	1270	1	0	0
Future Vol, veh/h	0	1129	1270	1	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1227	1380	1	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1382	0	-	0	1995	691
Stage 1	-	-	-	-	1381	-
Stage 2	-	-	-	-	614	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	492	-	-	-	53	387
Stage 1	-	-	-	-	198	-
Stage 2	-	-	-	-	502	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	492	-	-	-	53	387
Mov Cap-2 Maneuver	-	-	-	-	148	-
Stage 1	-	-	-	-	198	-
Stage 2	-	-	-	-	502	-

Approach	SE	NW	SW
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NWT	NWR	SEL	SETSWLn1	
Capacity (veh/h)	-	-	492	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	-	0
HCM Lane LOS	-	-	A	-	A
HCM 95th %tile Q(veh)	-	-	0	-	-

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	0	9	1	138	0	877	15	99	555	3
Future Vol, veh/h	1	0	0	9	1	138	0	877	15	99	555	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	1	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	0	10	1	155	0	985	17	111	624	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1920	1850	625	1842	1843	994	627	0	0	1002	0	0
Stage 1	848	848	-	994	994	-	-	-	-	-	-	-
Stage 2	1072	1002	-	848	849	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	51	74	485	58	75	297	955	-	-	691	-	-
Stage 1	356	378	-	295	323	-	-	-	-	-	-	-
Stage 2	267	320	-	356	377	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	21	62	485	51	63	297	955	-	-	691	-	-
Mov Cap-2 Maneuver	21	62	-	51	63	-	-	-	-	-	-	-
Stage 1	356	317	-	295	323	-	-	-	-	-	-	-
Stage 2	127	320	-	299	316	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	185.9	55.9	0	1.7
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	955	-	-	21	225	691	-	-
HCM Lane V/C Ratio	-	-	-	0.054	0.739	0.161	-	-
HCM Control Delay (s)	0	-	-	185.9	55.9	11.2	-	-
HCM Lane LOS	A	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	5	0.6	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	12	11	896	541	22
Future Vol, veh/h	13	12	11	896	541	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	1	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	14	13	1018	615	25

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1670	627	640	0	-	0
Stage 1	627	-	-	-	-	-
Stage 2	1043	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	106	484	944	-	-	-
Stage 1	532	-	-	-	-	-
Stage 2	339	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	105	484	944	-	-	-
Mov Cap-2 Maneuver	232	-	-	-	-	-
Stage 1	532	-	-	-	-	-
Stage 2	334	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.8	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	944	-	309	-	-
HCM Lane V/C Ratio	0.013	-	0.092	-	-
HCM Control Delay (s)	8.9	-	17.8	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	51	0	13	1	0	4	17	844	6	4	419	94
Future Vol, veh/h	51	0	13	1	0	4	17	844	6	4	419	94
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	1	-	-	1	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	59	0	15	1	0	5	20	981	7	5	487	109

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1578	1579	542	1583	1630	985	597	0	0	988	0	0
Stage 1	551	551	-	1024	1024	-	-	-	-	-	-	-
Stage 2	1027	1028	-	559	606	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	89	109	540	88	102	301	980	-	-	699	-	-
Stage 1	519	515	-	284	313	-	-	-	-	-	-	-
Stage 2	283	311	-	513	487	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	86	106	540	84	99	301	980	-	-	699	-	-
Mov Cap-2 Maneuver	86	106	-	84	99	-	-	-	-	-	-	-
Stage 1	508	511	-	278	307	-	-	-	-	-	-	-
Stage 2	273	305	-	495	484	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	99.1	23.7	0.2	0.1
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	980	-	-	104	198	699	-	-
HCM Lane V/C Ratio	0.02	-	-	0.716	0.029	0.007	-	-
HCM Control Delay (s)	8.7	-	-	99.1	23.7	10.2	-	-
HCM Lane LOS	A	-	-	F	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	3.7	0.1	0	-	-

Intersection: 1: Missouri Flat Road & WB Ramps

Movement	WB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	LT	R	R	L	L	T	T	T	T
Maximum Queue (ft)	247	224	152	125	137	149	374	207	222	145
Average Queue (ft)	149	131	70	31	113	125	102	56	112	51
95th Queue (ft)	218	202	124	78	167	167	299	138	194	120
Link Distance (ft)	983	983					395	395		
Upstream Blk Time (%)							0	0		
Queuing Penalty (veh)							1	0		
Storage Bay Dist (ft)			400	400	125	125				
Storage Blk Time (%)					1	7	0			
Queuing Penalty (veh)					3	21	0			

Intersection: 2: Missouri Flat Road & EB Ramps

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LTR	R	T	T	R	L	L	T	T
Maximum Queue (ft)	130	160	141	171	170	94	107	174	366	345
Average Queue (ft)	28	89	45	124	109	32	23	92	204	189
95th Queue (ft)	85	145	99	202	191	77	72	187	362	326
Link Distance (ft)		1460		138	138	138			395	395
Upstream Blk Time (%)				11	6				0	0
Queuing Penalty (veh)				34	20				0	0
Storage Bay Dist (ft)	700		550				150	150		
Storage Blk Time (%)								0	11	
Queuing Penalty (veh)								0	15	

Intersection: 3: Missouri Flat Road & Mother Lode Drive

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	L	T	T	T	T	R
Maximum Queue (ft)	106	148	57	71	214	134	133	135	13
Average Queue (ft)	33	69	21	15	67	33	41	44	0
95th Queue (ft)	76	125	46	49	164	94	98	99	13
Link Distance (ft)		633			1536	1536	138	138	
Upstream Blk Time (%)							0	0	0
Queuing Penalty (veh)							1	0	0
Storage Bay Dist (ft)	200		200	150					200
Storage Blk Time (%)					1			0	0
Queuing Penalty (veh)					0			0	0

Intersection: 5: Missouri Flat Road & Forni Road

Movement	EB	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	L	T	R	L	T	L	T	T	R	L	T
Maximum Queue (ft)	143	158	113	42	121	96	71	270	281	175	293	294
Average Queue (ft)	48	74	49	15	44	43	20	141	148	26	177	91
95th Queue (ft)	104	129	99	38	90	83	50	243	259	122	270	205
Link Distance (ft)			1180			266		317	317			368
Upstream Blk Time (%)								0	0			0
Queuing Penalty (veh)								0	0			2
Storage Bay Dist (ft)	195	195		150	190		250			150	300	
Storage Blk Time (%)	0	0	0		0			0	8	0	1	0
Queuing Penalty (veh)	0	0	0		0			0	5	0	3	0

Intersection: 5: Missouri Flat Road & Forni Road

Movement	SB	SB	B12
Directions Served	T	R	T
Maximum Queue (ft)	218	164	15
Average Queue (ft)	90	50	1
95th Queue (ft)	173	121	13
Link Distance (ft)	368		358
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		150	
Storage Blk Time (%)	2	0	
Queuing Penalty (veh)	3	0	

Intersection: 6: Missouri Flat Road & Golden Center Drive

Movement	EB	WB	NB	NB	NB	B43	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	T	L	T	T	R
Maximum Queue (ft)	58	94	79	199	217	10	172	235	237	17
Average Queue (ft)	18	38	28	112	119	0	55	94	108	2
95th Queue (ft)	45	79	62	176	179	7	121	187	205	11
Link Distance (ft)	184	339		216	216	2030		652	652	
Upstream Blk Time (%)				0	0					
Queuing Penalty (veh)				1	1					
Storage Bay Dist (ft)			150				175			500
Storage Blk Time (%)				1			0	1		
Queuing Penalty (veh)				1			0	1		

Intersection: 10: Pleasant Valley Rd & Missouri Flat Rd

Movement	EB	EB	EB	WB	WB	SB	SB	B68
Directions Served	L	L	T	T	R	L	R	T
Maximum Queue (ft)	140	151	280	483	225	173	86	18
Average Queue (ft)	103	66	88	177	110	80	30	1
95th Queue (ft)	147	165	203	360	224	152	68	10
Link Distance (ft)						127	127	419
Upstream Blk Time (%)						3	0	
Queuing Penalty (veh)						6	0	
Storage Bay Dist (ft)	130	130			200			
Storage Blk Time (%)	5	3	2	3	1			
Queuing Penalty (veh)	9	5	6	19	2			

Intersection: 11: Forni Road & Project Access/Golden Center Drive

Movement	WB	NB	SB
Directions Served	LTR	R	LTR
Maximum Queue (ft)	147	27	106
Average Queue (ft)	55	2	21
95th Queue (ft)	108	14	70
Link Distance (ft)	1386	266	441
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 163

1: Missouri Flat Road & WB Ramps Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	1.3	0.0	0.0	0.4
Total Del/Veh (s)	25.2	14.6	13.8	17.6
Vehicles Entered	943	1119	1012	3074
Vehicles Exited	935	1120	1026	3081
Hourly Exit Rate	935	1120	1026	3081
Input Volume	945	1106	1016	3067
% of Volume	99	101	101	100
Denied Entry Before	0	0	0	0
Denied Entry After	1	0	0	1

2: Missouri Flat Road & EB Ramps Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	1.5	0.0	0.1	0.4
Total Del/Veh (s)	25.2	13.7	23.6	21.0
Vehicles Entered	782	962	1433	3177
Vehicles Exited	780	965	1440	3185
Hourly Exit Rate	780	965	1440	3185
Input Volume	779	954	1429	3162
% of Volume	100	101	101	101
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

3: Missouri Flat Road & Mother Lode Drive Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	2.0	0.0	0.0	0.1
Total Del/Veh (s)	35.8	7.4	6.2	8.3
Vehicles Entered	170	1504	1685	3359
Vehicles Exited	168	1505	1686	3359
Hourly Exit Rate	168	1505	1686	3359
Input Volume	174	1503	1662	3338
% of Volume	97	100	101	101
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

5: Missouri Flat Road & Forni Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	3.0	0.0	0.1	0.0	0.6
Total Del/Veh (s)	44.6	11.0	20.5	16.2	22.4
Vehicles Entered	610	224	877	1543	3254
Vehicles Exited	609	224	877	1551	3261
Hourly Exit Rate	609	224	877	1551	3261
Input Volume	603	232	878	1545	3258
% of Volume	101	97	100	100	100
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

6: Missouri Flat Road & Golden Center Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	20.4	25.9	15.6	24.8	21.1
Vehicles Entered	89	161	873	1107	2230
Vehicles Exited	90	162	873	1111	2236
Hourly Exit Rate	90	162	873	1111	2236
Input Volume	85	163	876	1108	2232
% of Volume	106	100	100	100	100
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

10: Pleasant Valley Rd & Missouri Flat Rd Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	2.0	0.0	0.9	0.9
Total Del/Veh (s)	18.8	14.6	15.1	15.9
Vehicles Entered	546	672	979	2197
Vehicles Exited	547	672	979	2198
Hourly Exit Rate	547	672	979	2198
Input Volume	549	675	971	2195
% of Volume	100	100	101	100
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

11: Forni Road & Project Access/Golden Center Drive Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.1	0.0
Total Del/Veh (s)	6.9	1.1	0.6	3.1
Vehicles Entered	167	237	68	472
Vehicles Exited	167	237	68	472
Hourly Exit Rate	167	237	68	472
Input Volume	173	232	70	475
% of Volume	97	102	97	99
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

Total Zone Performance

Denied Del/Veh (s)	2.0
Total Del/Veh (s)	786.0
Vehicles Entered	3472
Vehicles Exited	269
Hourly Exit Rate	269
Input Volume	20734
% of Volume	1
Denied Entry Before	0
Denied Entry After	1

1: Missouri Flat Road & WB Ramps Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.4	2.8	0.1	0.0	0.0	0.0	0.4
Total Del/Veh (s)	32.3	12.8	29.3	7.6	16.0	3.5	17.6

2: Missouri Flat Road & EB Ramps Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	1.7	1.4	0.0	0.0	0.2	0.0	0.4
Total Del/Veh (s)	31.3	22.8	14.3	5.6	24.9	23.3	21.0

3: Missouri Flat Road & Mother Lode Drive Performance by movement

Movement	EBL	EBR	NBL	NBT	NBR	SBT	SBR	All
Denied Del/Veh (s)	1.3	3.9	0.0	0.0	0.0	0.0	0.0	0.1
Total Del/Veh (s)	44.3	13.0	40.1	7.9	3.9	6.5	2.4	8.3

5: Missouri Flat Road & Forni Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.2	1.2	3.2	0.0	0.0	0.0	0.0	0.1	0.4	0.0	0.0	0.0
Total Del/Veh (s)	50.3	35.9	9.7	44.9	41.3	1.9	46.5	19.1	4.4	46.0	14.5	6.7

5: Missouri Flat Road & Forni Road Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	22.4

6: Missouri Flat Road & Golden Center Drive Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.2	0.2	0.1	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	31.2	31.0	14.2	29.9	29.3	18.1	44.5	13.3	7.9	48.2	23.4	3.2

6: Missouri Flat Road & Golden Center Drive Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	21.1

10: Pleasant Valley Rd & Missouri Flat Rd Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	3.4	1.0	0.0	0.0	1.0	0.0	0.7	0.9
Total Del/Veh (s)	24.2	14.9	21.6	7.2	22.1	1.5	3.0	15.9

11: Forni Road & Project Access/Golden Center Drive Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.2	0.1	0.0
Total Del/Veh (s)	7.1	5.2	0.9	1.4	2.8	0.4	3.1

Total Zone Performance

Denied Del/Veh (s)	2.0
Total Del/Veh (s)	786.0

Intersection	
Int Delay, s/veh	0

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	2	1532	1473	2	1	0
Future Vol, veh/h	2	1532	1473	2	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	1665	1601	2	1	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1603	0	-	0	2439	802
Stage 1	-	-	-	-	1602	-
Stage 2	-	-	-	-	837	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	404	-	-	-	26	327
Stage 1	-	-	-	-	151	-
Stage 2	-	-	-	-	385	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	404	-	-	-	26	327
Mov Cap-2 Maneuver	-	-	-	-	108	-
Stage 1	-	-	-	-	151	-
Stage 2	-	-	-	-	383	-

Approach	SE	NW	SW
HCM Control Delay, s	0	0	38.7
HCM LOS			E

Minor Lane/Major Mvmt	NWT	NWR	SEL	SETSWLn1
Capacity (veh/h)	-	-	404	- 108
HCM Lane V/C Ratio	-	-	0.005	- 0.01
HCM Control Delay (s)	-	-	14	- 38.7
HCM Lane LOS	-	-	B	- E
HCM 95th %tile Q(veh)	-	-	0	- 0

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	2	10	0	175	1	670	20	133	1042	0
Future Vol, veh/h	0	0	2	10	0	175	1	670	20	133	1042	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	1	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	2	10	0	180	1	691	21	137	1074	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2141	2061	1074	2052	2051	701	1074	0	0	711	0	0
Stage 1	1348	1348	-	703	703	-	-	-	-	-	-	-
Stage 2	793	713	-	1349	1348	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	35	55	267	41	56	439	649	-	-	888	-	-
Stage 1	186	219	-	428	440	-	-	-	-	-	-	-
Stage 2	382	435	-	186	219	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	18	46	267	36	47	439	649	-	-	888	-	-
Mov Cap-2 Maneuver	18	46	-	36	47	-	-	-	-	-	-	-
Stage 1	186	185	-	427	439	-	-	-	-	-	-	-
Stage 2	225	434	-	156	185	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.6	43.5	0	1.1
HCM LOS	C	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	649	-	-	267	274	888	-	-
HCM Lane V/C Ratio	0.002	-	-	0.008	0.696	0.154	-	-
HCM Control Delay (s)	10.6	-	-	18.6	43.5	9.8	-	-
HCM Lane LOS	B	-	-	C	E	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	4.7	0.5	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	18	18	7	663	1021	11
Future Vol, veh/h	18	18	7	663	1021	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	1	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	20	8	729	1122	12

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1872	1128	1134	0	-	0
Stage 1	1128	-	-	-	-	-
Stage 2	744	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	79	249	616	-	-	-
Stage 1	309	-	-	-	-	-
Stage 2	470	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	78	249	616	-	-	-
Mov Cap-2 Maneuver	203	-	-	-	-	-
Stage 1	309	-	-	-	-	-
Stage 2	464	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	24.5	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	616	-	224	-	-
HCM Lane V/C Ratio	0.012	-	0.177	-	-
HCM Control Delay (s)	10.9	-	24.5	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.6	-	-

Intersection	
Int Delay, s/veh	16.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	78	1	30	1	1	1	7	573	2	4	934	62
Future Vol, veh/h	78	1	30	1	1	1	7	573	2	4	934	62
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	1	-	-	1	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	83	1	32	1	1	1	7	610	2	4	994	66

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1662	1662	1027	1678	1694	611	1060	0	0	612	0	0
Stage 1	1035	1035	-	626	626	-	-	-	-	-	-	-
Stage 2	627	627	-	1052	1068	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	~ 77	97	285	75	93	494	657	-	-	967	-	-
Stage 1	280	309	-	472	477	-	-	-	-	-	-	-
Stage 2	471	476	-	274	298	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 75	96	285	65	92	494	657	-	-	967	-	-
Mov Cap-2 Maneuver	~ 75	96	-	65	92	-	-	-	-	-	-	-
Stage 1	277	308	-	467	472	-	-	-	-	-	-	-
Stage 2	464	471	-	241	297	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	250.8	40	0.1	0
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	657	-	-	94	106	967	-	-
HCM Lane V/C Ratio	0.011	-	-	1.234	0.03	0.004	-	-
HCM Control Delay (s)	10.5	-	-	250.8	40	8.7	-	-
HCM Lane LOS	B	-	-	F	E	A	-	-
HCM 95th %tile Q(veh)	0	-	-	8.1	0.1	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection: 1: Missouri Flat Road & WB Ramps

Movement	WB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	LT	R	R	L	L	T	T	T	T
Maximum Queue (ft)	231	230	176	141	137	148	299	140	265	223
Average Queue (ft)	150	142	83	27	101	116	85	57	134	97
95th Queue (ft)	217	208	143	79	162	163	223	113	223	186
Link Distance (ft)	983	983					395	395	459	459
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			400	400	125	125				
Storage Blk Time (%)					1	3	0			
Queuing Penalty (veh)					2	12	0			

Intersection: 2: Missouri Flat Road & EB Ramps

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LTR	R	T	T	R	L	L	T	T
Maximum Queue (ft)	189	226	205	169	163	102	159	174	408	396
Average Queue (ft)	86	142	119	142	95	37	71	138	290	290
95th Queue (ft)	161	209	190	187	154	85	149	217	415	400
Link Distance (ft)		1460		138	138	138			395	395
Upstream Blk Time (%)				12	2	0			0	0
Queuing Penalty (veh)				39	5	0			3	2
Storage Bay Dist (ft)	700		550				150	150		
Storage Blk Time (%)							0	1	16	
Queuing Penalty (veh)							1	3	51	

Intersection: 3: Missouri Flat Road & Mother Lode Drive

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	L	T	T	T	T	R
Maximum Queue (ft)	85	143	64	112	235	118	158	155	137
Average Queue (ft)	27	65	25	31	62	16	89	104	11
95th Queue (ft)	64	120	53	76	163	66	161	166	72
Link Distance (ft)		633			1548	1548	138	138	
Upstream Blk Time (%)							2	3	0
Queuing Penalty (veh)							15	28	0
Storage Bay Dist (ft)	200		200	150					200
Storage Blk Time (%)		0			2			3	0
Queuing Penalty (veh)		0			1			4	1

Intersection: 5: Missouri Flat Road & Forni Road

Movement	EB	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	L	T	R	L	T	L	T	T	R	L	T
Maximum Queue (ft)	207	219	462	79	53	80	145	270	276	124	216	294
Average Queue (ft)	142	158	85	28	13	30	34	125	130	6	114	136
95th Queue (ft)	227	232	376	57	42	67	87	235	243	57	191	251
Link Distance (ft)			1180			266		317	317			368
Upstream Blk Time (%)			0					0	0			0
Queuing Penalty (veh)			0					0	0			2
Storage Bay Dist (ft)	195	195		150	190		250			150	300	
Storage Blk Time (%)	2	7						1	7	0		0
Queuing Penalty (veh)	2	8						0	2	0		0

Intersection: 5: Missouri Flat Road & Forni Road

Movement	SB	SB	B12	B12
Directions Served	T	R	T	T
Maximum Queue (ft)	324	175	33	31
Average Queue (ft)	146	87	2	2
95th Queue (ft)	274	183	40	42
Link Distance (ft)	368		347	347
Upstream Blk Time (%)	0			
Queuing Penalty (veh)	2			
Storage Bay Dist (ft)		150		
Storage Blk Time (%)	7	0		
Queuing Penalty (veh)	24	1		

Intersection: 6: Missouri Flat Road & Golden Center Drive

Movement	EB	WB	NB	NB	NB	B43	SB	SB	SB	SB	B25	B25
Directions Served	LTR	LTR	L	T	TR	T	L	T	T	R	T	T
Maximum Queue (ft)	112	178	155	202	205	45	199	429	437	16	2	32
Average Queue (ft)	44	86	53	106	107	2	58	179	195	2	0	1
95th Queue (ft)	88	152	112	174	175	46	142	349	359	10	2	32
Link Distance (ft)	184	337		216	216	2030		652	652		317	317
Upstream Blk Time (%)	0			0	0			0	0			0
Queuing Penalty (veh)	0			1	1			0	0			0
Storage Bay Dist (ft)			150				175			500		
Storage Blk Time (%)			0	2			0	9	0			
Queuing Penalty (veh)			1	1			0	6	0			

Intersection: 10: Pleasant Valley Rd & Missouri Flat Rd

Movement	EB	EB	EB	WB	WB	SB	SB	B68	B66
Directions Served	L	L	T	T	R	L	R	T	T
Maximum Queue (ft)	169	86	204	282	183	219	119	410	64
Average Queue (ft)	98	15	99	120	62	184	43	131	6
95th Queue (ft)	154	60	173	214	138	237	91	363	71
Link Distance (ft)				1506		127	127	419	624
Upstream Blk Time (%)						35	0	2	
Queuing Penalty (veh)						171	1	8	
Storage Bay Dist (ft)	200	200			200				
Storage Blk Time (%)	0	0	0	1	0				
Queuing Penalty (veh)	0	0	1	3	0				

Intersection: 11: Forni Road & Project Access/Golden Center Drive

Movement	WB	NB	SB
Directions Served	LTR	R	LTR
Maximum Queue (ft)	91	4	25
Average Queue (ft)	45	0	1
95th Queue (ft)	75	4	11
Link Distance (ft)	1297	266	441
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 401

1: Missouri Flat Road & WB Ramps Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	1.4	0.0	0.0	0.5
Total Del/Veh (s)	24.7	15.8	9.3	17.0
Vehicles Entered	884	1059	719	2662
Vehicles Exited	876	1055	726	2657
Hourly Exit Rate	876	1055	726	2657
Input Volume	889	1012	716	2618
% of Volume	99	104	101	101
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

2: Missouri Flat Road & EB Ramps Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	1.0	0.0	0.0	0.2
Total Del/Veh (s)	17.6	12.5	20.6	16.7
Vehicles Entered	432	1015	1000	2447
Vehicles Exited	427	1021	1014	2462
Hourly Exit Rate	427	1021	1014	2462
Input Volume	432	998	1013	2443
% of Volume	99	102	100	101
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

3: Missouri Flat Road & Mother Lode Drive Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	2.0	0.0	0.0	0.1
Total Del/Veh (s)	34.6	8.3	4.4	8.3
Vehicles Entered	173	1326	1218	2717
Vehicles Exited	170	1334	1221	2725
Hourly Exit Rate	170	1334	1221	2725
Input Volume	172	1316	1216	2704
% of Volume	99	101	100	101
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

5: Missouri Flat Road & Forni Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	2.7	0.0	0.0	0.0	0.3
Total Del/Veh (s)	37.2	16.2	20.8	17.4	20.8
Vehicles Entered	332	367	970	1124	2793
Vehicles Exited	332	364	975	1137	2808
Hourly Exit Rate	332	364	975	1137	2808
Input Volume	334	360	968	1136	2797
% of Volume	100	101	101	100	100
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

6: Missouri Flat Road & Golden Center Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	15.3	5.5	12.2	18.0	13.5
Vehicles Entered	30	251	1072	739	2092
Vehicles Exited	29	252	1069	738	2088
Hourly Exit Rate	29	252	1069	738	2088
Input Volume	30	260	1064	734	2088
% of Volume	95	97	101	101	100
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

10: Pleasant Valley Rd & Missouri Flat Rd Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	2.6	2.6	0.0	2.0
Total Del/Veh (s)	21.6	17.2	9.8	16.6
Vehicles Entered	503	912	446	1861
Vehicles Exited	503	916	445	1864
Hourly Exit Rate	503	916	445	1864
Input Volume	500	906	441	1847
% of Volume	101	101	101	101
Denied Entry Before	0	0	0	0
Denied Entry After	0	1	0	1

11: Forni Road & Project Access/Golden Center Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.2	0.3	0.2
Total Del/Veh (s)	7.1	13.7	1.4	2.7	4.0
Vehicles Entered	32	178	570	255	1035
Vehicles Exited	32	179	571	255	1037
Hourly Exit Rate	32	179	571	255	1037
Input Volume	34	183	576	258	1050
% of Volume	94	98	99	99	99
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

12: Missouri Flat Road & South Project Access Performance by approach

Approach	NB	SB	SW	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.0
Total Del/Veh (s)	4.5	1.0	6.1	3.0
Vehicles Entered	1310	1120	31	2461
Vehicles Exited	1308	1117	31	2456
Hourly Exit Rate	1308	1117	31	2456
Input Volume	1297	1129	31	2456
% of Volume	101	99	100	100
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

Total Zone Performance

Denied Del/Veh (s)	1.8
Total Del/Veh (s)	340.3
Vehicles Entered	3911
Vehicles Exited	598
Hourly Exit Rate	598
Input Volume	18004
% of Volume	3
Denied Entry Before	0
Denied Entry After	1

1: Missouri Flat Road & WB Ramps Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.4	2.9	0.0	0.0	0.0	0.0	0.5
Total Del/Veh (s)	32.9	11.4	29.4	7.2	10.5	3.2	17.0

2: Missouri Flat Road & EB Ramps Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.9	1.0	0.0	0.0	0.2	0.0	0.2
Total Del/Veh (s)	31.0	14.0	12.9	4.6	26.4	19.8	16.7

3: Missouri Flat Road & Mother Lode Drive Performance by movement

Movement	EBL	EBR	NBL	NBT	NBR	SBT	SBR	All
Denied Del/Veh (s)	1.5	3.8	0.0	0.0	0.0	0.0	0.0	0.1
Total Del/Veh (s)	41.1	9.9	46.5	9.2	4.1	4.6	2.3	8.3

5: Missouri Flat Road & Forni Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.3	0.7	3.4	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Del/Veh (s)	40.2	38.3	4.8	43.3	25.7	1.9	47.1	20.7	5.7	41.2	11.5	4.6

5: Missouri Flat Road & Forni Road Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	20.8

6: Missouri Flat Road & Golden Center Drive Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Del/Veh (s)	21.9	28.2	8.3	24.4	0.6	10.8	33.1	11.7	7.5	38.3	15.9	2.1

6: Missouri Flat Road & Golden Center Drive Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	13.5

10: Pleasant Valley Rd & Missouri Flat Rd Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	3.5	1.1	1.7	3.3	0.0	0.0	0.0	2.0
Total Del/Veh (s)	23.9	17.6	28.1	9.7	18.1	1.0	4.3	16.6

11: Forni Road & Project Access/Golden Center Drive Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.1	0.2	0.3	0.3
Total Del/Veh (s)	9.5	13.9	4.8	19.1	2.4	13.5	2.7	1.5	1.3	6.2	2.2	1.0

11: Forni Road & Project Access/Golden Center Drive Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	4.0

12: Missouri Flat Road & South Project Access Performance by movement

Movement	NBT	NBR	SBT	SWR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	4.6	3.0	1.0	6.1	3.0

Total Zone Performance

Denied Del/Veh (s)	1.8
Total Del/Veh (s)	340.3

Intersection	
Int Delay, s/veh	0.3

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	40	1125	1291	1	0	10
Future Vol, veh/h	40	1125	1291	1	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	0	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	1223	1403	1	0	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1403	0	-	0	2101	702
Stage 1	-	-	-	-	1403	-
Stage 2	-	-	-	-	698	-
Critical Hdwy	4.14	-	-	-	7.54	6.94
Critical Hdwy Stg 1	-	-	-	-	6.54	-
Critical Hdwy Stg 2	-	-	-	-	6.54	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	483	-	-	-	30	381
Stage 1	-	-	-	-	147	-
Stage 2	-	-	-	-	397	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	483	-	-	-	28	381
Mov Cap-2 Maneuver	-	-	-	-	99	-
Stage 1	-	-	-	-	134	-
Stage 2	-	-	-	-	362	-

Approach	SE	NW	SW
HCM Control Delay, s	0.5	0	14.7
HCM LOS			B

Minor Lane/Major Mvmt	NWT	NWR	SEL	SETSWLn1
Capacity (veh/h)	-	-	483	- 381
HCM Lane V/C Ratio	-	-	0.09	- 0.029
HCM Control Delay (s)	-	-	13.2	- 14.7
HCM Lane LOS	-	-	B	- B
HCM 95th %tile Q(veh)	-	-	0.3	- 0.1

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	0	9	1	140	0	887	15	101	563	3
Future Vol, veh/h	1	0	0	9	1	140	0	887	15	101	563	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	1	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	0	10	1	157	0	997	17	113	633	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1945	1874	634	1866	1868	1005	636	0	0	1013	0	0
Stage 1	861	861	-	1005	1005	-	-	-	-	-	-	-
Stage 2	1084	1013	-	861	863	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	49	72	479	56	72	293	947	-	-	684	-	-
Stage 1	350	372	-	291	319	-	-	-	-	-	-	-
Stage 2	263	316	-	350	372	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	20	60	479	49	60	293	947	-	-	684	-	-
Mov Cap-2 Maneuver	20	60	-	49	60	-	-	-	-	-	-	-
Stage 1	350	311	-	291	319	-	-	-	-	-	-	-
Stage 2	121	316	-	292	311	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	195.5	59.8	0	1.7
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	947	-	-	20	221	684	-	-
HCM Lane V/C Ratio	-	-	-	0.056	0.763	0.166	-	-
HCM Control Delay (s)	0	-	-	195.5	59.8	11.3	-	-
HCM Lane LOS	A	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	5.3	0.6	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	12	11	906	549	22
Future Vol, veh/h	13	12	11	906	549	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	1	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	14	13	1030	624	25

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1691	636	649	0	-	0
Stage 1	636	-	-	-	-	-
Stage 2	1055	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	103	478	937	-	-	-
Stage 1	527	-	-	-	-	-
Stage 2	335	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	102	478	937	-	-	-
Mov Cap-2 Maneuver	229	-	-	-	-	-
Stage 1	527	-	-	-	-	-
Stage 2	330	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	937	-	305	-	-
HCM Lane V/C Ratio	0.013	-	0.093	-	-
HCM Control Delay (s)	8.9	-	18	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	51	0	13	1	0	4	17	854	6	4	427	94
Future Vol, veh/h	51	0	13	1	0	4	17	854	6	4	427	94
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	1	-	-	1	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	59	0	15	1	0	5	20	993	7	5	497	109

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1598	1600	551	1604	1651	997	606	0	0	1000	0	0
Stage 1	560	560	-	1036	1036	-	-	-	-	-	-	-
Stage 2	1038	1040	-	568	615	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	86	106	534	85	99	296	972	-	-	692	-	-
Stage 1	513	511	-	280	309	-	-	-	-	-	-	-
Stage 2	279	307	-	508	482	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	83	103	534	81	96	296	972	-	-	692	-	-
Mov Cap-2 Maneuver	83	103	-	81	96	-	-	-	-	-	-	-
Stage 1	502	507	-	274	303	-	-	-	-	-	-	-
Stage 2	269	301	-	490	479	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	107.4	24.2	0.2	0.1
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	972	-	-	100	193	692	-	-
HCM Lane V/C Ratio	0.02	-	-	0.744	0.03	0.007	-	-
HCM Control Delay (s)	8.8	-	-	107.4	24.2	10.2	-	-
HCM Lane LOS	A	-	-	F	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	3.9	0.1	0	-	-

Intersection: 1: Missouri Flat Road & WB Ramps

Movement	WB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	LT	R	R	L	L	T	T	T	T
Maximum Queue (ft)	263	232	162	132	137	149	330	110	166	134
Average Queue (ft)	151	132	76	31	113	126	103	46	77	57
95th Queue (ft)	228	204	130	81	169	168	284	93	139	114
Link Distance (ft)	983	983					395	395	459	459
Upstream Blk Time (%)							0			
Queuing Penalty (veh)							1			
Storage Bay Dist (ft)			400	400	125	125				
Storage Blk Time (%)					1	6	0			
Queuing Penalty (veh)					2	19	0			

Intersection: 2: Missouri Flat Road & EB Ramps

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LTR	R	T	T	R	L	L	T	T
Maximum Queue (ft)	112	172	160	166	168	82	91	174	376	363
Average Queue (ft)	30	88	49	134	112	28	26	93	208	211
95th Queue (ft)	79	149	113	201	188	70	68	193	358	341
Link Distance (ft)		1460		138	138	138			395	395
Upstream Blk Time (%)				13	6				0	0
Queuing Penalty (veh)				43	19				0	0
Storage Bay Dist (ft)	700		550				150	150		
Storage Blk Time (%)								0	11	
Queuing Penalty (veh)								0	15	

Intersection: 3: Missouri Flat Road & Mother Lode Drive

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	L	T	T	T	T	R
Maximum Queue (ft)	94	139	58	85	232	107	133	125	27
Average Queue (ft)	35	62	21	18	74	28	46	47	1
95th Queue (ft)	76	115	49	58	177	78	105	103	20
Link Distance (ft)		633			1536	1536	138	138	
Upstream Blk Time (%)							0	0	0
Queuing Penalty (veh)							1	1	0
Storage Bay Dist (ft)	200		200	150					200
Storage Blk Time (%)					2			0	0
Queuing Penalty (veh)					0			0	0

Intersection: 5: Missouri Flat Road & Forni Road

Movement	EB	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	L	T	R	L	T	L	T	T	R	L	T
Maximum Queue (ft)	156	166	114	40	119	117	130	301	293	174	300	259
Average Queue (ft)	53	79	50	14	52	46	24	147	147	26	173	91
95th Queue (ft)	114	139	94	38	99	94	84	257	259	120	272	195
Link Distance (ft)			1180			266		317	317			366
Upstream Blk Time (%)								0	0			0
Queuing Penalty (veh)								1	1			1
Storage Bay Dist (ft)	195	195		150	190		250			150	300	
Storage Blk Time (%)	0	0	0			0		1	9	0	1	
Queuing Penalty (veh)	0	0	0			0		0	5	0	3	

Intersection: 5: Missouri Flat Road & Forni Road

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	226	174
Average Queue (ft)	92	47
95th Queue (ft)	177	118
Link Distance (ft)	366	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)	1	0
Queuing Penalty (veh)	3	0

Intersection: 6: Missouri Flat Road & Golden Center Drive

Movement	EB	WB	NB	NB	NB	B43	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	T	L	T	T	R
Maximum Queue (ft)	49	98	110	213	202	12	155	237	256	17
Average Queue (ft)	16	36	29	113	119	1	52	92	109	2
95th Queue (ft)	42	76	72	180	182	14	112	196	212	10
Link Distance (ft)	184	339		216	216	2030		652	652	
Upstream Blk Time (%)				0	0					
Queuing Penalty (veh)				1	0					
Storage Bay Dist (ft)			150				175			500
Storage Blk Time (%)				1			0	2		
Queuing Penalty (veh)				0			0	2		

Intersection: 10: Pleasant Valley Rd & Missouri Flat Rd

Movement	EB	EB	EB	WB	WB	SB	SB	B68	B68
Directions Served	L	L	T	T	R	L	R	T	T
Maximum Queue (ft)	141	154	274	457	225	184	115	4	4
Average Queue (ft)	103	66	83	175	118	82	34	0	0
95th Queue (ft)	148	165	187	347	229	152	78	4	4
Link Distance (ft)						127	127	419	419
Upstream Blk Time (%)						2	0		
Queuing Penalty (veh)						5	0		
Storage Bay Dist (ft)	130	130			200				
Storage Blk Time (%)	5	3	1	4	0				
Queuing Penalty (veh)	9	5	5	22	2				

Intersection: 11: Forni Road & Project Access/Golden Center Drive

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	LT	R	LTR
Maximum Queue (ft)	54	157	37	25	119
Average Queue (ft)	22	54	2	2	22
95th Queue (ft)	47	118	22	12	76
Link Distance (ft)	158	1386	266	266	441
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 12: Missouri Flat Road & South Project Access

Movement	NB	NB	NB	SB	SW
Directions Served	T	T	R	T	R
Maximum Queue (ft)	72	184	71	10	51
Average Queue (ft)	3	12	4	0	20
95th Queue (ft)	53	121	63	10	48
Link Distance (ft)	366	366	366	359	213
Upstream Blk Time (%)		0	0		
Queuing Penalty (veh)		0	0		
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Zone Summary

Zone wide Queuing Penalty: 170

1: Missouri Flat Road & WB Ramps Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	1.3	0.0	0.0	0.4
Total Del/Veh (s)	25.1	15.4	14.3	18.0
Vehicles Entered	969	1146	1017	3132
Vehicles Exited	958	1144	1030	3132
Hourly Exit Rate	958	1144	1030	3132
Input Volume	964	1142	1016	3121
% of Volume	99	100	101	100
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

2: Missouri Flat Road & EB Ramps Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	1.4	0.0	0.1	0.4
Total Del/Veh (s)	27.0	14.1	23.9	21.7
Vehicles Entered	792	985	1465	3242
Vehicles Exited	786	991	1468	3245
Hourly Exit Rate	786	991	1468	3245
Input Volume	797	990	1450	3237
% of Volume	99	100	101	100
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

3: Missouri Flat Road & Mother Lode Drive Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	2.0	0.0	0.0	0.1
Total Del/Veh (s)	36.8	7.7	6.2	8.5
Vehicles Entered	179	1566	1703	3448
Vehicles Exited	177	1567	1701	3445
Hourly Exit Rate	177	1567	1701	3445
Input Volume	176	1575	1699	3450
% of Volume	100	100	100	100
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

5: Missouri Flat Road & Forni Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	3.0	0.0	0.1	0.0	0.6
Total Del/Veh (s)	43.2	16.5	21.0	16.9	22.9
Vehicles Entered	618	267	893	1529	3307
Vehicles Exited	617	266	892	1534	3309
Hourly Exit Rate	617	266	892	1534	3309
Input Volume	610	278	894	1542	3323
% of Volume	101	96	100	99	100
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

6: Missouri Flat Road & Golden Center Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.1	0.0	0.0	0.0
Total Del/Veh (s)	19.4	27.0	15.8	24.9	21.3
Vehicles Entered	85	163	891	1142	2281
Vehicles Exited	86	163	890	1145	2284
Hourly Exit Rate	86	163	890	1145	2284
Input Volume	85	164	890	1136	2275
% of Volume	101	100	100	101	100
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

10: Pleasant Valley Rd & Missouri Flat Rd Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	2.0	0.0	4.1	2.3
Total Del/Veh (s)	20.5	15.1	16.9	17.2
Vehicles Entered	547	685	1004	2236
Vehicles Exited	548	683	1006	2237
Hourly Exit Rate	548	683	1006	2237
Input Volume	552	675	997	2224
% of Volume	99	101	101	101
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

11: Forni Road & Project Access/Golden Center Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.1	0.1
Total Del/Veh (s)	4.8	6.8	1.3	0.8	3.4
Vehicles Entered	70	171	233	74	548
Vehicles Exited	71	173	233	74	551
Hourly Exit Rate	71	173	233	74	551
Input Volume	72	179	236	78	564
% of Volume	99	97	99	95	98
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

12: Missouri Flat Road & Southern Project Access Performance by approach

Approach	NB	SB	SW	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.0
Total Del/Veh (s)	4.2	1.7	6.8	3.0
Vehicles Entered	1500	1521	50	3071
Vehicles Exited	1500	1521	50	3071
Hourly Exit Rate	1500	1521	50	3071
Input Volume	1504	1534	52	3090
% of Volume	100	99	97	99
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

Total Zone Performance

Denied Del/Veh (s)	2.8
Total Del/Veh (s)	778.1
Vehicles Entered	3665
Vehicles Exited	271
Hourly Exit Rate	271
Input Volume	21285
% of Volume	1
Denied Entry Before	0
Denied Entry After	0

1: Missouri Flat Road & WB Ramps Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.4	2.8	0.1	0.0	0.0	0.0	0.4
Total Del/Veh (s)	32.2	12.5	30.2	7.7	16.7	3.5	18.0

2: Missouri Flat Road & EB Ramps Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	1.6	1.4	0.0	0.0	0.2	0.0	0.4
Total Del/Veh (s)	32.6	24.8	14.7	5.4	24.9	23.6	21.7

3: Missouri Flat Road & Mother Lode Drive Performance by movement

Movement	EBL	EBR	NBL	NBT	NBR	SBT	SBR	All
Denied Del/Veh (s)	1.3	3.8	0.0	0.0	0.0	0.0	0.0	0.1
Total Del/Veh (s)	46.0	13.9	42.4	8.2	4.0	6.6	2.4	8.5

5: Missouri Flat Road & Forni Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.1	1.3	3.1	0.0	0.0	0.0	0.1	0.1	0.3	0.0	0.0	0.0
Total Del/Veh (s)	48.8	41.8	6.7	43.5	44.3	1.9	43.3	19.9	4.4	47.2	15.5	6.7

5: Missouri Flat Road & Forni Road Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	22.9

6: Missouri Flat Road & Golden Center Drive Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.2	0.2	0.2	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0
Total Del/Veh (s)	27.1	29.8	14.3	31.1	33.4	18.9	47.5	13.2	8.0	49.0	23.6	3.3

6: Missouri Flat Road & Golden Center Drive Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	21.3

10: Pleasant Valley Rd & Missouri Flat Rd Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	3.4	1.0	0.0	0.0	4.8	0.0	3.4	2.3
Total Del/Veh (s)	27.1	15.6	23.0	7.4	24.5	1.6	3.5	17.2

11: Forni Road & Project Access/Golden Center Drive Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.1	0.1
Total Del/Veh (s)	5.4	7.7	3.8	7.0	7.4	5.0	2.6	1.1	1.4	3.9	0.6	0.1

11: Forni Road & Project Access/Golden Center Drive Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	3.4

12: Missouri Flat Road & Southern Project Access Performance by movement

Movement	NBT	NBR	SBT	SWR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	4.2	2.9	1.7	6.8	3.0

Total Zone Performance

Denied Del/Veh (s)	2.8
Total Del/Veh (s)	778.1

Intersection	
Int Delay, s/veh	0.4

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	51	1526	1517	3	2	25
Future Vol, veh/h	51	1526	1517	3	2	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	0	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	55	1659	1649	3	2	27

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1649	0	-	0	2589	824
Stage 1	-	-	-	-	1649	-
Stage 2	-	-	-	-	940	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	388	-	-	-	21	316
Stage 1	-	-	-	-	142	-
Stage 2	-	-	-	-	340	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	388	-	-	-	18	316
Mov Cap-2 Maneuver	-	-	-	-	94	-
Stage 1	-	-	-	-	142	-
Stage 2	-	-	-	-	292	-

Approach	SE	NW	SW
HCM Control Delay, s	0.5	0	20
HCM LOS			C

Minor Lane/Major Mvmt	NWT	NWR	SEL	SETSWLn1
Capacity (veh/h)	-	-	388	- 269
HCM Lane V/C Ratio	-	-	0.143	- 0.109
HCM Control Delay (s)	-	-	15.8	- 20
HCM Lane LOS	-	-	C	- C
HCM 95th %tile Q(veh)	-	-	0.5	- 0.4

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	2	10	0	176	1	683	20	134	1067	0
Future Vol, veh/h	0	0	2	10	0	176	1	683	20	134	1067	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	1	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	2	10	0	181	1	704	21	138	1100	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2183	2103	1100	2093	2092	714	1100	0	0	725	0	0
Stage 1	1376	1376	-	716	716	-	-	-	-	-	-	-
Stage 2	807	727	-	1377	1376	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	33	52	258	38	52	431	635	-	-	878	-	-
Stage 1	179	213	-	421	434	-	-	-	-	-	-	-
Stage 2	375	429	-	179	213	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	17	44	258	33	44	431	635	-	-	878	-	-
Mov Cap-2 Maneuver	17	44	-	33	44	-	-	-	-	-	-	-
Stage 1	179	180	-	420	433	-	-	-	-	-	-	-
Stage 2	217	428	-	150	180	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19.1	49.2	0	1.1
HCM LOS	C	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	635	-	-	258	261	878	-	-
HCM Lane V/C Ratio	0.002	-	-	0.008	0.735	0.157	-	-
HCM Control Delay (s)	10.7	-	-	19.1	49.2	9.9	-	-
HCM Lane LOS	B	-	-	C	E	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	5.2	0.6	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	18	18	7	676	1046	11
Future Vol, veh/h	18	18	7	676	1046	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	1	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	20	8	743	1149	12

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1913	1155	1162	0	-	0
Stage 1	1155	-	-	-	-	-
Stage 2	758	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	75	240	601	-	-	-
Stage 1	300	-	-	-	-	-
Stage 2	463	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	74	240	601	-	-	-
Mov Cap-2 Maneuver	197	-	-	-	-	-
Stage 1	300	-	-	-	-	-
Stage 2	457	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	25.4	0.1	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	601	-	216	-	-
HCM Lane V/C Ratio	0.013	-	0.183	-	-
HCM Control Delay (s)	11.1	-	25.4	-	-
HCM Lane LOS	B	-	D	-	-
HCM 95th %tile Q(veh)	0	-	0.7	-	-

Intersection	
Int Delay, s/veh	18.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	78	1	30	1	1	1	7	586	2	4	959	62
Future Vol, veh/h	78	1	30	1	1	1	7	586	2	4	959	62
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	1	-	-	1	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	83	1	32	1	1	1	7	623	2	4	1020	66

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1702	1702	1053	1717	1734	624	1086	0	0	626	0	0
Stage 1	1062	1062	-	639	639	-	-	-	-	-	-	-
Stage 2	640	640	-	1078	1095	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	~ 72	92	275	71	88	485	642	-	-	956	-	-
Stage 1	270	300	-	464	470	-	-	-	-	-	-	-
Stage 2	464	470	-	265	290	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 70	91	275	61	87	485	642	-	-	956	-	-
Mov Cap-2 Maneuver	~ 70	91	-	61	87	-	-	-	-	-	-	-
Stage 1	267	299	-	459	465	-	-	-	-	-	-	-
Stage 2	457	465	-	232	289	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	288.8	42.2	0.1	0
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	642	-	-	88	100	956	-	-
HCM Lane V/C Ratio	0.012	-	-	1.318	0.032	0.004	-	-
HCM Control Delay (s)	10.7	-	-	288.8	42.2	8.8	-	-
HCM Lane LOS	B	-	-	F	E	A	-	-
HCM 95th %tile Q(veh)	0	-	-	8.6	0.1	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection: 1: Missouri Flat Road & WB Ramps

Movement	WB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	LT	R	R	L	L	T	T	T	T
Maximum Queue (ft)	270	252	186	142	137	148	312	136	290	252
Average Queue (ft)	159	154	83	26	112	123	98	55	141	98
95th Queue (ft)	240	228	150	79	166	166	256	105	246	194
Link Distance (ft)	983	983					395	395	459	459
Upstream Blk Time (%)							0			
Queuing Penalty (veh)							0			
Storage Bay Dist (ft)			400	400	125	125				
Storage Blk Time (%)					1	4	0			
Queuing Penalty (veh)					3	16	1			

Intersection: 2: Missouri Flat Road & EB Ramps

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LTR	R	T	T	R	L	L	T	T
Maximum Queue (ft)	202	258	236	165	165	97	159	175	407	400
Average Queue (ft)	94	151	124	145	100	38	69	135	303	296
95th Queue (ft)	172	229	207	187	161	84	151	216	431	410
Link Distance (ft)		1460		138	138	138			395	395
Upstream Blk Time (%)				14	2				0	0
Queuing Penalty (veh)				46	7				3	2
Storage Bay Dist (ft)	700		550				150	150		
Storage Blk Time (%)							0	1	16	
Queuing Penalty (veh)							1	3	53	

Intersection: 3: Missouri Flat Road & Mother Lode Drive

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	L	T	T	T	T	R
Maximum Queue (ft)	90	137	64	109	226	98	150	152	96
Average Queue (ft)	31	68	27	35	65	14	89	103	9
95th Queue (ft)	71	120	54	82	165	51	158	162	64
Link Distance (ft)		633			1548	1548	138	138	
Upstream Blk Time (%)							2	4	0
Queuing Penalty (veh)							17	30	0
Storage Bay Dist (ft)	200		200	150					200
Storage Blk Time (%)					1			4	0
Queuing Penalty (veh)					1			5	1

Intersection: 5: Missouri Flat Road & Forni Road

Movement	EB	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	L	T	R	L	T	L	T	T	R	L	T
Maximum Queue (ft)	207	219	465	54	96	89	97	260	269	160	224	288
Average Queue (ft)	143	161	75	28	37	39	30	132	136	11	107	140
95th Queue (ft)	226	232	274	50	78	80	70	242	253	79	182	239
Link Distance (ft)			1180			266		317	317			365
Upstream Blk Time (%)								0	0			0
Queuing Penalty (veh)								0	0			0
Storage Bay Dist (ft)	195	195		150	190		250			150	300	
Storage Blk Time (%)	1	7						0	8	0	0	0
Queuing Penalty (veh)	1	8						0	2	0	0	0

Intersection: 5: Missouri Flat Road & Forni Road

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	328	175
Average Queue (ft)	154	87
95th Queue (ft)	271	184
Link Distance (ft)	365	
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	1	
Storage Bay Dist (ft)		150
Storage Blk Time (%)	8	0
Queuing Penalty (veh)	28	0

Intersection: 6: Missouri Flat Road & Golden Center Drive

Movement	EB	WB	NB	NB	NB	B43	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	T	L	T	T	R
Maximum Queue (ft)	92	189	147	218	198	14	199	462	467	15
Average Queue (ft)	41	88	56	108	108	1	58	183	199	1
95th Queue (ft)	79	165	116	181	176	15	145	366	376	8
Link Distance (ft)	184	337		216	216	2030		652	652	
Upstream Blk Time (%)				0	0					
Queuing Penalty (veh)				1	0					
Storage Bay Dist (ft)			150				175			500
Storage Blk Time (%)			1	2			0	9	0	
Queuing Penalty (veh)			2	1			0	6	0	

Intersection: 10: Pleasant Valley Rd & Missouri Flat Rd

Movement	EB	EB	EB	WB	WB	SB	SB	B68	B68	B66
Directions Served	L	L	T	T	R	L	R	T	T	T
Maximum Queue (ft)	140	154	260	266	196	229	128	484	98	476
Average Queue (ft)	89	48	107	123	66	189	51	209	4	79
95th Queue (ft)	135	142	200	207	147	238	102	510	72	376
Link Distance (ft)				1506		127	127	419	419	624
Upstream Blk Time (%)						43	0	11		0
Queuing Penalty (veh)						215	1	56		2
Storage Bay Dist (ft)	130	130			200					
Storage Blk Time (%)	2	1	3	1	0					
Queuing Penalty (veh)	7	3	8	4	0					

Intersection: 11: Forni Road & Project Access/Golden Center Drive

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	LT	R	LTR
Maximum Queue (ft)	63	89	18	8	30
Average Queue (ft)	32	44	1	0	2
95th Queue (ft)	54	73	11	5	15
Link Distance (ft)	177	1297	266	266	441
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 12: Missouri Flat Road & Southern Project Access

Movement	NB	NB	NB	SB	SB	SW
Directions Served	T	T	R	T	T	R
Maximum Queue (ft)	82	113	36	10	16	67
Average Queue (ft)	4	6	1	0	1	26
95th Queue (ft)	70	84	36	10	11	52
Link Distance (ft)	365	365	365	350	350	272
Upstream Blk Time (%)	0	0	0			
Queuing Penalty (veh)	0	0	0			
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Zone Summary

Zone wide Queuing Penalty: 536

1: Missouri Flat Road & WB Ramps Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	1.3	0.0	0.0	0.4
Total Del/Veh (s)	22.8	20.0	13.1	19.1
Vehicles Entered	925	1269	743	2937
Vehicles Exited	924	1266	744	2934
Hourly Exit Rate	924	1266	744	2934
Input Volume	910	1235	750	2895
% of Volume	102	102	99	101
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

2: Missouri Flat Road & EB Ramps Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	1.2	0.0	0.0	0.2
Total Del/Veh (s)	21.2	12.5	10.2	13.4
Vehicles Entered	597	1197	1090	2884
Vehicles Exited	601	1197	1093	2891
Hourly Exit Rate	601	1197	1093	2891
Input Volume	590	1215	1085	2890
% of Volume	102	99	101	100
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

3: Missouri Flat Road & Mother Lode Drive Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	1.7	0.0	0.0	0.1
Total Del/Veh (s)	50.6	11.2	4.1	8.9
Vehicles Entered	73	1610	1415	3098
Vehicles Exited	72	1614	1421	3107
Hourly Exit Rate	72	1614	1421	3107
Input Volume	75	1634	1393	3102
% of Volume	96	99	102	100
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

5: Missouri Flat Road & Forni Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	3.0	0.0	0.0	0.3	0.5
Total Del/Veh (s)	40.3	19.5	28.1	28.8	29.2
Vehicles Entered	449	340	1218	1413	3420
Vehicles Exited	449	340	1219	1407	3415
Hourly Exit Rate	449	340	1219	1407	3415
Input Volume	444	340	1241	1402	3427
% of Volume	101	100	98	100	100
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

6: Missouri Flat Road & Golden Center Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	27.4	17.9	17.9	29.5	22.3
Vehicles Entered	48	210	1431	974	2663
Vehicles Exited	47	210	1427	976	2660
Hourly Exit Rate	47	210	1427	976	2660
Input Volume	50	205	1446	970	2671
% of Volume	94	103	99	101	100
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

7: Missouri Flat Road & China Garden Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	7.2	6.8	2.5	4.9	3.7
Vehicles Entered	5	79	956	793	1833
Vehicles Exited	5	79	957	794	1835
Hourly Exit Rate	5	79	957	794	1835
Input Volume	5	80	955	791	1830
% of Volume	100	99	100	100	100
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

8: Missouri Flat Road & Industrial Dr Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	16.5	3.9	4.5	4.4
Vehicles Entered	32	969	699	1700
Vehicles Exited	31	971	700	1702
Hourly Exit Rate	31	971	700	1702
Input Volume	35	966	700	1700
% of Volume	89	101	100	100
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

10: Pleasant Valley Rd & Missouri Flat Rd Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	22.3	14.0	6.6	15.0
Vehicles Entered	639	823	452	1914
Vehicles Exited	638	823	452	1913
Hourly Exit Rate	638	823	452	1913
Input Volume	630	826	450	1907
% of Volume	101	100	100	100
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

11: Forni Road & Golden Center Drive Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.2	0.3	0.1
Total Del/Veh (s)	9.6	1.3	2.3	3.5
Vehicles Entered	248	549	261	1058
Vehicles Exited	249	551	261	1061
Hourly Exit Rate	249	551	261	1061
Input Volume	250	535	265	1050
% of Volume	100	103	98	101
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

13: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.0	1.4	0.0
Total Del/Veh (s)	15.8	14.9	18.2	22.6	16.4
Vehicles Entered	966	810	884	32	2692
Vehicles Exited	965	810	886	32	2693
Hourly Exit Rate	965	810	886	32	2693
Input Volume	960	826	884	31	2701
% of Volume	100	98	100	104	100
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

Total Zone Performance

Denied Del/Veh (s)	1.5
Total Del/Veh (s)	370.7
Vehicles Entered	2794
Vehicles Exited	840
Hourly Exit Rate	840
Input Volume	24174
% of Volume	3
Denied Entry Before	0
Denied Entry After	0

1: Missouri Flat Road & WB Ramps Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.5	2.6	0.0	0.0	0.0	0.0	0.4
Total Del/Veh (s)	28.7	13.7	36.1	9.0	15.5	3.7	19.1

2: Missouri Flat Road & EB Ramps Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.9	1.3	0.0	0.0	0.0	0.0	0.2
Total Del/Veh (s)	26.7	19.4	12.8	2.3	37.7	6.0	13.4

3: Missouri Flat Road & Mother Lode Drive Performance by movement

Movement	EBL	EBR	NBL	NBT	NBR	SBT	SBR	All
Denied Del/Veh (s)	0.2	4.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Del/Veh (s)	75.4	13.1	97.1	12.5	5.4	4.1	2.2	8.9

5: Missouri Flat Road & Forni Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.5	1.0	3.6	0.0	0.0	0.0	0.0	0.0	0.1	0.8	0.1	0.6
Total Del/Veh (s)	45.8	37.3	6.1	51.1	27.7	1.8	61.1	27.1	10.2	91.4	17.7	8.3

5: Missouri Flat Road & Forni Road Performance by movement

Movement	All
Denied Del/Veh (s)	0.5
Total Del/Veh (s)	29.2

6: Missouri Flat Road & Golden Center Drive Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	40.0	42.5	16.8	41.5	2.6	26.8	54.6	16.6	13.8	72.8	25.0	4.9

6: Missouri Flat Road & Golden Center Drive Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	22.3

7: Missouri Flat Road & China Garden Rd Performance by movement

Movement	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	7.2	0.2	9.5	7.9	2.6	0.8	14.6	3.9	3.1	3.7

8: Missouri Flat Road & Industrial Dr Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.2	0.0	0.0	0.0	0.0
Total Del/Veh (s)	17.2	7.7	15.6	3.4	4.6	3.0	4.4

10: Pleasant Valley Rd & Missouri Flat Rd Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	24.8	17.0	19.8	8.8	12.5	1.1	4.0	15.0

11: Forni Road & Golden Center Drive Performance by movement

Movement	WBL	WBT	WBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.2	0.1	0.3	0.3	0.1
Total Del/Veh (s)	21.1	0.4	14.6	1.4	1.2	6.1	1.7	3.5

13: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.1	0.1	0.1
Total Del/Veh (s)	34.4	19.6	14.3	31.5	13.4	6.9	19.0	4.6	2.7	28.1	29.9	11.9

13: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	16.4

Total Zone Performance

Denied Del/Veh (s)	1.5
Total Del/Veh (s)	370.7

Intersection	
Int Delay, s/veh	0

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	0	1388	1589	5	0	0
Future Vol, veh/h	0	1388	1589	5	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1509	1727	5	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1733	0	-	0	2484	866
Stage 1	-	-	-	-	1730	-
Stage 2	-	-	-	-	754	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	360	-	-	-	24	297
Stage 1	-	-	-	-	128	-
Stage 2	-	-	-	-	425	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	360	-	-	-	24	297
Mov Cap-2 Maneuver	-	-	-	-	97	-
Stage 1	-	-	-	-	128	-
Stage 2	-	-	-	-	425	-

Approach	SE	NW	SW
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NWT	NWR	SEL	SETSWLn1	
Capacity (veh/h)	-	-	360	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	-	0
HCM Lane LOS	-	-	A	-	A
HCM 95th %tile Q(veh)	-	-	0	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	65	0	15	5	0	5	20	840	10	5	430	120
Future Vol, veh/h	65	0	15	5	0	5	20	840	10	5	430	120
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	69	0	16	5	0	5	21	894	11	5	457	128

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1021	1479	293	1180	1537	452	585	0	0	904	0	0
Stage 1	532	532	-	941	941	-	-	-	-	-	-	-
Stage 2	489	947	-	239	596	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	191	125	703	146	115	555	986	-	-	748	-	-
Stage 1	499	524	-	283	340	-	-	-	-	-	-	-
Stage 2	529	338	-	743	490	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	185	122	703	140	112	555	986	-	-	748	-	-
Mov Cap-2 Maneuver	185	122	-	140	112	-	-	-	-	-	-	-
Stage 1	488	520	-	277	333	-	-	-	-	-	-	-
Stage 2	513	331	-	721	487	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	32.3	21.9	0.2	0.1
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	986	-	-	215	224	748	-	-
HCM Lane V/C Ratio	0.022	-	-	0.396	0.047	0.007	-	-
HCM Control Delay (s)	8.7	-	-	32.3	21.9	9.8	-	-
HCM Lane LOS	A	-	-	D	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.8	0.1	0	-	-

Intersection: 1: Missouri Flat Road & WB Ramps

Movement	WB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	LT	R	R	L	L	T	T	T	T
Maximum Queue (ft)	217	233	180	153	137	149	406	354	187	170
Average Queue (ft)	127	125	85	40	128	140	201	86	85	71
95th Queue (ft)	195	199	147	101	160	168	424	242	158	140
Link Distance (ft)	983	983					395	395	459	459
Upstream Blk Time (%)							1	0		
Queuing Penalty (veh)							8	0		
Storage Bay Dist (ft)			400	400	125	125				
Storage Blk Time (%)					2	17	0			
Queuing Penalty (veh)					6	61	0			

Intersection: 2: Missouri Flat Road & EB Ramps

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LTR	R	T	T	R	L	L	T	T
Maximum Queue (ft)	133	186	178	169	170	66	86	108	118	134
Average Queue (ft)	43	108	87	149	125	8	34	60	32	39
95th Queue (ft)	102	166	149	194	197	37	73	95	90	103
Link Distance (ft)		1460		138	138	138			395	395
Upstream Blk Time (%)				17	9					
Queuing Penalty (veh)				71	36					
Storage Bay Dist (ft)	700		550				150	150		
Storage Blk Time (%)									0	
Queuing Penalty (veh)									0	

Intersection: 3: Missouri Flat Road & Mother Lode Drive

Movement	EB	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	L	T	T	R	T	T	R
Maximum Queue (ft)	10	105	62	135	349	241	27	159	168	69
Average Queue (ft)	0	43	20	14	126	59	1	84	98	3
95th Queue (ft)	7	90	50	67	281	169	27	176	185	35
Link Distance (ft)		633			1546	1546		138	138	
Upstream Blk Time (%)								3	4	0
Queuing Penalty (veh)								21	30	0
Storage Bay Dist (ft)	200		200	150			250			200
Storage Blk Time (%)					6	0			4	0
Queuing Penalty (veh)					1	0			1	0

Intersection: 5: Missouri Flat Road & Forni Road

Movement	EB	EB	EB	EB	WB	WB	NB	NB	NB	NB	B25	B25
Directions Served	L	L	T	R	L	T	L	T	T	R	T	T
Maximum Queue (ft)	200	207	177	62	126	121	275	390	396	175	101	120
Average Queue (ft)	93	114	54	22	52	53	73	229	233	39	9	12
95th Queue (ft)	176	183	119	50	103	102	216	412	423	155	55	64
Link Distance (ft)			1180			262		317	317		652	652
Upstream Blk Time (%)								5	6			
Queuing Penalty (veh)								30	36			
Storage Bay Dist (ft)	195	195		150	190		250			150		
Storage Blk Time (%)	0	1	0				0	10	19	0		
Queuing Penalty (veh)	0	1	1				0	7	12	0		

Intersection: 5: Missouri Flat Road & Forni Road

Movement	SB	SB	SB	SB	B12	B12
Directions Served	L	T	T	R	T	T
Maximum Queue (ft)	318	420	416	175	102	76
Average Queue (ft)	220	191	200	94	10	6
95th Queue (ft)	341	402	380	205	75	48
Link Distance (ft)		368	368		348	348
Upstream Blk Time (%)		5	1			
Queuing Penalty (veh)		35	9			
Storage Bay Dist (ft)	300			150		
Storage Blk Time (%)	9	2	10	0		
Queuing Penalty (veh)	40	4	30	1		

Intersection: 6: Missouri Flat Road & Golden Center Drive

Movement	EB	WB	NB	NB	NB	B43	B43	SB	SB	SB	SB	B25
Directions Served	LTR	LTR	L	T	TR	T	T	L	T	T	R	T
Maximum Queue (ft)	103	158	174	294	296	188	206	198	499	561	170	33
Average Queue (ft)	29	60	65	201	218	22	27	87	152	242	8	1
95th Queue (ft)	70	117	156	319	327	114	127	172	369	472	97	33
Link Distance (ft)	184	339		216	216	1589	1589		652	652		317
Upstream Blk Time (%)				7	10				0	0		0
Queuing Penalty (veh)				51	71				0	1		0
Storage Bay Dist (ft)			150					175			500	
Storage Blk Time (%)			1	13				2	6	1		
Queuing Penalty (veh)			5	8				9	6	0		

Intersection: 7: Missouri Flat Road & China Garden Rd

Movement	EB	WB	NB	NB	NB	SB
Directions Served	R	R	L	T	TR	L
Maximum Queue (ft)	30	78	26	11	14	81
Average Queue (ft)	5	31	3	0	1	33
95th Queue (ft)	24	60	17	11	7	66
Link Distance (ft)	145	1432		558	558	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200			190
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 8: Missouri Flat Road & Industrial Dr

Movement	EB	NB	NB	NB	SB	SB
Directions Served	LR	L	T	T	T	TR
Maximum Queue (ft)	65	70	152	97	121	160
Average Queue (ft)	23	26	36	16	29	50
95th Queue (ft)	54	58	107	60	85	118
Link Distance (ft)	515		795	795	558	558
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		150				
Storage Blk Time (%)			0			
Queuing Penalty (veh)			0			

Intersection: 10: Pleasant Valley Rd & Missouri Flat Rd

Movement	EB	EB	EB	WB	WB	SB	SB	B68
Directions Served	L	L	T	T	R	L	R	T
Maximum Queue (ft)	164	179	198	225	209	146	110	7
Average Queue (ft)	90	85	78	126	80	61	38	0
95th Queue (ft)	145	149	158	197	150	118	81	8
Link Distance (ft)			658	1506		127	127	419
Upstream Blk Time (%)						1	0	
Queuing Penalty (veh)						1	0	
Storage Bay Dist (ft)	200	200			200			
Storage Blk Time (%)	0	0	0	1	0			
Queuing Penalty (veh)	0	1	0	2	0			

Intersection: 11: Forni Road & Golden Center Drive

Movement	WB	NB	NB	SB
Directions Served	LR	T	R	LT
Maximum Queue (ft)	163	25	22	119
Average Queue (ft)	52	1	1	20
95th Queue (ft)	120	22	12	73
Link Distance (ft)	1402	262	262	447
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 13: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway

Movement	EB	EB	EB	EB	B43	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	R	T	L	T	T	R	L	L	TR
Maximum Queue (ft)	39	140	133	5	23	117	218	244	73	275	307	50
Average Queue (ft)	8	51	53	0	1	47	89	96	5	137	149	12
95th Queue (ft)	30	108	113	5	13	92	186	202	40	233	249	37
Link Distance (ft)		1589	1589		216		2033	2033			451	451
Upstream Blk Time (%)											0	
Queuing Penalty (veh)											0	
Storage Bay Dist (ft)	125			250		500			175	275		
Storage Blk Time (%)		1						2		0	0	
Queuing Penalty (veh)		0						0		1	2	

Intersection: 13: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway

Movement	SB	SB
Directions Served	L	TR
Maximum Queue (ft)	34	42
Average Queue (ft)	8	14
95th Queue (ft)	29	37
Link Distance (ft)		278
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	50	
Storage Blk Time (%)	0	1
Queuing Penalty (veh)	0	0

Zone Summary

Zone wide Queuing Penalty: 599

1: Missouri Flat Road & WB Ramps Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	1.2	0.0	0.0	0.3
Total Del/Veh (s)	31.2	14.2	16.9	20.1
Vehicles Entered	1105	1307	1467	3879
Vehicles Exited	1109	1303	1465	3877
Hourly Exit Rate	1109	1303	1465	3877
Input Volume	1106	1348	1444	3898
% of Volume	100	97	101	99
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

2: Missouri Flat Road & EB Ramps Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	1.7	0.0	0.0	0.4
Total Del/Veh (s)	32.1	18.1	23.1	23.9
Vehicles Entered	929	1130	1662	3721
Vehicles Exited	927	1128	1665	3720
Hourly Exit Rate	927	1128	1665	3720
Input Volume	924	1225	1640	3789
% of Volume	100	92	102	98
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

3: Missouri Flat Road & Mother Lode Drive Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	2.8	0.0	0.0	0.1
Total Del/Veh (s)	44.8	20.0	5.3	12.6
Vehicles Entered	57	1731	2012	3800
Vehicles Exited	56	1734	2016	3806
Hourly Exit Rate	56	1734	2016	3806
Input Volume	60	1879	1984	3924
% of Volume	93	92	102	97
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

5: Missouri Flat Road & Forni Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	31.6	0.0	0.2	0.1	6.0
Total Del/Veh (s)	122.3	15.7	28.7	28.9	45.6
Vehicles Entered	726	187	1068	1987	3968
Vehicles Exited	708	187	1067	1989	3951
Hourly Exit Rate	708	187	1067	1989	3951
Input Volume	765	195	1170	1967	4097
% of Volume	93	96	91	101	96
Denied Entry Before	1	0	0	0	1
Denied Entry After	18	0	0	0	18

6: Missouri Flat Road & Golden Center Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	2.3	0.1	0.0	0.2
Total Del/Veh (s)	36.5	43.6	27.1	38.9	34.8
Vehicles Entered	128	240	1079	1483	2930
Vehicles Exited	128	239	1080	1487	2934
Hourly Exit Rate	128	239	1080	1487	2934
Input Volume	130	240	1195	1466	3031
% of Volume	98	100	90	101	97
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

7: Missouri Flat Road & China Garden Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	13.5	10.3	2.6	4.1	4.1
Vehicles Entered	6	184	746	1094	2030
Vehicles Exited	6	186	744	1094	2030
Hourly Exit Rate	6	186	744	1094	2030
Input Volume	5	185	750	1106	2046
% of Volume	120	100	99	99	99
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

8: Missouri Flat Road & Industrial Dr Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.0	0.0
Total Del/Veh (s)	14.5	3.5	3.3	4.0
Vehicles Entered	106	645	1085	1836
Vehicles Exited	106	644	1083	1833
Hourly Exit Rate	106	644	1083	1833
Input Volume	105	650	1096	1852
% of Volume	101	99	99	99
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

10: Pleasant Valley Rd & Missouri Flat Rd Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	19.1	11.9	8.5	12.6
Vehicles Entered	642	530	930	2102
Vehicles Exited	639	528	932	2099
Hourly Exit Rate	639	528	932	2099
Input Volume	634	540	943	2116
% of Volume	101	98	99	99
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

11: Forni Road & Golden Center Drive Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.0
Total Del/Veh (s)	5.1	1.2	0.8	2.5
Vehicles Entered	163	224	84	471
Vehicles Exited	162	224	84	470
Hourly Exit Rate	162	224	84	470
Input Volume	170	227	86	482
% of Volume	95	99	98	97
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

13: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.0	1.4	0.0
Total Del/Veh (s)	21.1	7.3	16.9	27.3	17.0
Vehicles Entered	1609	675	934	30	3248
Vehicles Exited	1607	674	934	29	3244
Hourly Exit Rate	1607	674	934	29	3244
Input Volume	1596	983	941	31	3551
% of Volume	101	69	99	94	91
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

Total Zone Performance

Denied Del/Veh (s)	7.5
Total Del/Veh (s)	463.9
Vehicles Entered	3734
Vehicles Exited	1032
Hourly Exit Rate	1032
Input Volume	28786
% of Volume	4
Denied Entry Before	1
Denied Entry After	18

1: Missouri Flat Road & WB Ramps Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.5	2.5	0.0	0.0	0.0	0.0	0.3
Total Del/Veh (s)	39.5	15.8	22.0	9.9	19.0	4.6	20.1

2: Missouri Flat Road & EB Ramps Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	1.7	1.7	0.0	0.0	0.1	0.0	0.4
Total Del/Veh (s)	25.6	34.5	18.4	1.4	45.9	17.4	23.9

3: Missouri Flat Road & Mother Lode Drive Performance by movement

Movement	EBL	EBR	NBL	NBT	NBR	SBT	SBR	All
Denied Del/Veh (s)	0.3	4.0	0.0	0.0	0.1	0.0	0.0	0.1
Total Del/Veh (s)	78.7	27.8	107.0	24.6	5.8	5.3	2.2	12.6

5: Missouri Flat Road & Forni Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	31.4	29.4	33.6	0.0	0.0	0.0	0.1	0.2	0.3	0.0	0.1	0.1
Total Del/Veh (s)	135.2	103.0	62.4	57.6	54.2	1.8	77.6	24.2	7.4	67.9	27.5	19.8

5: Missouri Flat Road & Forni Road Performance by movement

Movement	All
Denied Del/Veh (s)	6.0
Total Del/Veh (s)	45.6

6: Missouri Flat Road & Golden Center Drive Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.2	0.2	0.2	2.4	2.8	2.0	0.2	0.1	0.4	0.0	0.0	0.0
Total Del/Veh (s)	49.3	47.1	30.4	47.0	45.7	35.0	108.3	20.0	16.5	97.3	35.8	10.8

6: Missouri Flat Road & Golden Center Drive Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	34.8

7: Missouri Flat Road & China Garden Rd Performance by movement

Movement	EBR	WBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.1	0.0	0.0
Total Del/Veh (s)	13.5	10.4	2.6	0.5	10.8	4.0	4.1

8: Missouri Flat Road & Industrial Dr Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.2	0.2	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	17.7	9.4	20.9	3.4	3.4	2.1	4.0

10: Pleasant Valley Rd & Missouri Flat Rd Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	23.8	15.5	17.2	4.9	13.3	2.2	4.2	12.6

11: Forni Road & Golden Center Drive Performance by movement

Movement	WBL	WBT	WBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	7.0	0.4	5.4	1.0	1.4	3.3	0.4	2.5

13: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.2	0.1
Total Del/Veh (s)	39.0	21.0	20.9	30.7	5.7	4.4	18.4	13.0	4.8	31.2	33.4	11.3

13: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	17.0

Total Zone Performance

Denied Del/Veh (s)	7.5
Total Del/Veh (s)	463.9

Intersection	
Int Delay, s/veh	0

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	5	1955	1790	5	1	0
Future Vol, veh/h	5	1955	1790	5	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	2125	1946	5	1	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1951	0	-	0	3021	976
Stage 1	-	-	-	-	1948	-
Stage 2	-	-	-	-	1073	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	296	-	-	-	10	251
Stage 1	-	-	-	-	97	-
Stage 2	-	-	-	-	290	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	296	-	-	-	10	251
Mov Cap-2 Maneuver	-	-	-	-	69	-
Stage 1	-	-	-	-	97	-
Stage 2	-	-	-	-	285	-

Approach	SE	NW	SW
HCM Control Delay, s	0	0	58
HCM LOS			F

Minor Lane/Major Mvmt	NWT	NWR	SEL	SETSWLn1
Capacity (veh/h)	-	-	296	- 69
HCM Lane V/C Ratio	-	-	0.018	- 0.016
HCM Control Delay (s)	-	-	17.4	- 58
HCM Lane LOS	-	-	C	- F
HCM 95th %tile Q(veh)	-	-	0.1	- 0

Intersection	
Int Delay, s/veh	16.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	110	0	30	5	5	5	10	520	5	5	905	100
Future Vol, veh/h	110	0	30	5	5	5	10	520	5	5	905	100
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	117	0	32	5	5	5	11	553	5	5	963	106

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1328	1607	535	1069	1657	279	1069	0	0	559	0	0
Stage 1	1027	1027	-	577	577	-	-	-	-	-	-	-
Stage 2	301	580	-	492	1080	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 113	104	490	176	97	718	648	-	-	1008	-	-
Stage 1	251	310	-	469	500	-	-	-	-	-	-	-
Stage 2	683	498	-	527	293	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 106	102	490	162	95	718	648	-	-	1008	-	-
Mov Cap-2 Maneuver	~ 106	102	-	162	95	-	-	-	-	-	-	-
Stage 1	247	308	-	461	492	-	-	-	-	-	-	-
Stage 2	659	490	-	490	292	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	200.5	29	0.2	0
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	648	-	-	127	166	1008	-	-
HCM Lane V/C Ratio	0.016	-	-	1.173	0.096	0.005	-	-
HCM Control Delay (s)	10.6	-	-	200.5	29	8.6	-	-
HCM Lane LOS	B	-	-	F	D	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	9	0.3	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection: 1: Missouri Flat Road & WB Ramps

Movement	WB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	LT	R	R	L	L	T	T	T	T
Maximum Queue (ft)	325	339	238	166	137	148	306	224	322	294
Average Queue (ft)	178	190	103	46	116	125	107	71	177	150
95th Queue (ft)	291	307	188	119	165	166	246	157	290	260
Link Distance (ft)	983	983					395	395	459	459
Upstream Blk Time (%)							0	0		
Queuing Penalty (veh)							1	0		
Storage Bay Dist (ft)			400	400	125	125				
Storage Blk Time (%)		0	0		1	4	1			
Queuing Penalty (veh)		1	0		3	18	4			

Intersection: 2: Missouri Flat Road & EB Ramps

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LTR	R	T	T	R	L	L	T	T
Maximum Queue (ft)	250	319	318	168	168	27	162	174	382	389
Average Queue (ft)	107	183	181	156	131	2	97	125	147	168
95th Queue (ft)	209	278	280	188	189	13	162	186	334	351
Link Distance (ft)		1460		138	138	138			395	395
Upstream Blk Time (%)				34	11				0	1
Queuing Penalty (veh)				139	46				2	4
Storage Bay Dist (ft)	700		550				150	150		
Storage Blk Time (%)							0	4	7	
Queuing Penalty (veh)							2	25	24	

Intersection: 3: Missouri Flat Road & Mother Lode Drive

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	R	T	T	R
Maximum Queue (ft)	66	69	164	647	478	54	161	171	41
Average Queue (ft)	20	25	52	247	93	3	102	109	1
95th Queue (ft)	54	55	148	543	314	49	200	205	20
Link Distance (ft)	633			1536	1536		138	138	
Upstream Blk Time (%)							7	9	0
Queuing Penalty (veh)							72	88	0
Storage Bay Dist (ft)		200	150			250			200
Storage Blk Time (%)			0	26	0	0		9	0
Queuing Penalty (veh)			0	10	0	0		2	0

Intersection: 5: Missouri Flat Road & Forni Road

Movement	EB	EB	EB	EB	WB	WB	NB	NB	NB	NB	B25	B25
Directions Served	L	L	T	R	L	T	L	T	T	R	T	T
Maximum Queue (ft)	207	220	1042	99	55	96	253	374	374	158	63	58
Average Queue (ft)	197	210	628	36	16	32	93	191	194	12	3	3
95th Queue (ft)	235	246	1298	75	46	75	206	357	361	84	26	25
Link Distance (ft)			1180			260		317	317		652	652
Upstream Blk Time (%)			16					2	3			
Queuing Penalty (veh)			0					13	14			
Storage Bay Dist (ft)	195	195		150	190		250			150		
Storage Blk Time (%)	17	45	0	0			0	6	15	0		
Queuing Penalty (veh)	26	72	1	0			0	6	4	0		

Intersection: 5: Missouri Flat Road & Forni Road

Movement	SB	SB	SB	SB	B24	B24
Directions Served	L	T	T	R	T	T
Maximum Queue (ft)	324	452	468	175	370	418
Average Queue (ft)	178	314	379	149	82	137
95th Queue (ft)	332	495	533	232	300	399
Link Distance (ft)		368	368		356	356
Upstream Blk Time (%)		7	19		1	4
Queuing Penalty (veh)		69	182		7	36
Storage Bay Dist (ft)	300			150		
Storage Blk Time (%)	0	10	28	1		
Queuing Penalty (veh)	2	15	129	9		

Intersection: 6: Missouri Flat Road & Golden Center Drive

Movement	EB	WB	NB	NB	NB	B43	B43	SB	SB	SB	SB	B25
Directions Served	LTR	LTR	L	T	TR	T	T	L	T	T	R	T
Maximum Queue (ft)	167	242	174	292	297	169	142	200	655	697	322	148
Average Queue (ft)	80	150	108	191	190	17	13	87	332	416	17	9
95th Queue (ft)	144	237	194	309	301	93	75	182	671	737	161	89
Link Distance (ft)	184	337		216	216	1589	1589		652	652		317
Upstream Blk Time (%)	0			9	7				1	3		0
Queuing Penalty (veh)	0			51	39				6	24		1
Storage Bay Dist (ft)			150					175			500	
Storage Blk Time (%)			9	14				2	16	10	0	
Queuing Penalty (veh)			47	13				13	12	1	0	

Intersection: 6: Missouri Flat Road & Golden Center Drive

Movement	B25
Directions Served	T
Maximum Queue (ft)	206
Average Queue (ft)	14
95th Queue (ft)	115
Link Distance (ft)	317
Upstream Blk Time (%)	0
Queuing Penalty (veh)	2
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 7: Missouri Flat Road & China Garden Rd

Movement	EB	WB	SB
Directions Served	LTR	LTR	L
Maximum Queue (ft)	35	144	36
Average Queue (ft)	5	58	6
95th Queue (ft)	24	107	27
Link Distance (ft)	145	1432	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			150
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 8: Missouri Flat Road & Industrial Dr

Movement	EB	NB	NB	NB	SB	SB
Directions Served	LR	L	T	T	T	TR
Maximum Queue (ft)	106	30	112	79	137	133
Average Queue (ft)	49	5	35	12	39	45
95th Queue (ft)	86	21	87	47	101	104
Link Distance (ft)	515		795	795	558	558
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		150				
Storage Blk Time (%)			0			
Queuing Penalty (veh)			0			

Intersection: 10: Pleasant Valley Rd & Missouri Flat Rd

Movement	EB	EB	EB	WB	WB	SB	SB	B68
Directions Served	L	L	T	T	R	L	R	T
Maximum Queue (ft)	123	166	248	164	105	200	160	83
Average Queue (ft)	63	65	102	93	40	128	66	6
95th Queue (ft)	106	118	183	144	82	198	122	43
Link Distance (ft)			658	1506		127	127	419
Upstream Blk Time (%)						7	1	
Queuing Penalty (veh)						35	4	
Storage Bay Dist (ft)	200	200			200			
Storage Blk Time (%)			1	0				
Queuing Penalty (veh)			2	0				

Intersection: 11: Forni Road & Golden Center Drive

Movement	WB	NB	SB
Directions Served	LR	R	LT
Maximum Queue (ft)	87	2	35
Average Queue (ft)	39	0	2
95th Queue (ft)	67	2	16
Link Distance (ft)	1313	260	447
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 13: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway

Movement	EB	EB	EB	EB	B43	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	R	T	L	T	T	R	L	L	TR
Maximum Queue (ft)	51	216	219	55	106	79	91	84	24	266	282	98
Average Queue (ft)	9	95	101	2	6	26	34	32	3	132	143	33
95th Queue (ft)	34	171	175	40	51	59	71	66	13	219	235	68
Link Distance (ft)		1589	1589		216		2033	2033			451	451
Upstream Blk Time (%)					0						0	
Queuing Penalty (veh)					0						0	
Storage Bay Dist (ft)	125			250		500			175	275		
Storage Blk Time (%)		3	0	0						0	0	
Queuing Penalty (veh)		0	0	0						0	1	

Intersection: 13: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway

Movement	SB	SB
Directions Served	L	TR
Maximum Queue (ft)	35	45
Average Queue (ft)	7	13
95th Queue (ft)	27	36
Link Distance (ft)		278
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	50	
Storage Blk Time (%)	0	1
Queuing Penalty (veh)	0	0

Zone Summary

Zone wide Queuing Penalty: 1280

1: Missouri Flat Road & WB Ramps Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	1.3	0.0	0.0	0.3
Total Del/Veh (s)	22.7	20.5	8.5	16.3
Vehicles Entered	933	1279	1464	3676
Vehicles Exited	930	1273	1464	3667
Hourly Exit Rate	930	1273	1464	3667
Input Volume	925	1250	1453	3628
% of Volume	101	102	101	101
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

2: Missouri Flat Road & EB Ramps Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	1.3	0.0	0.0	0.3
Total Del/Veh (s)	22.9	13.4	11.3	14.6
Vehicles Entered	610	1216	1112	2938
Vehicles Exited	612	1213	1113	2938
Hourly Exit Rate	612	1213	1113	2938
Input Volume	605	1230	1104	2938
% of Volume	101	99	101	100
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

3: Missouri Flat Road & Mother Lode Drive Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	2.0	0.0	0.0	0.1
Total Del/Veh (s)	44.9	17.6	4.6	12.4
Vehicles Entered	77	1657	1443	3177
Vehicles Exited	76	1662	1449	3187
Hourly Exit Rate	76	1662	1449	3187
Input Volume	78	1664	1426	3169
% of Volume	97	100	102	101
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

5: Missouri Flat Road & Forni Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	3.0	0.0	0.1	0.3	0.6
Total Del/Veh (s)	42.1	22.1	30.9	31.6	31.8
Vehicles Entered	460	368	1245	1411	3484
Vehicles Exited	461	367	1247	1405	3480
Hourly Exit Rate	461	367	1247	1405	3480
Input Volume	451	360	1254	1399	3464
% of Volume	102	102	99	100	100
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

6: Missouri Flat Road & Golden Center Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	28.0	16.2	19.8	30.3	23.5
Vehicles Entered	47	217	1457	992	2713
Vehicles Exited	48	217	1449	993	2707
Hourly Exit Rate	48	217	1449	993	2707
Input Volume	50	212	1457	983	2702
% of Volume	96	102	99	101	100
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

7: Missouri Flat Road & China Garden Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	8.9	8.6	2.6	5.0	3.9
Vehicles Entered	6	66	980	804	1856
Vehicles Exited	6	66	979	801	1852
Hourly Exit Rate	6	66	979	801	1852
Input Volume	5	60	959	793	1817
% of Volume	120	110	102	101	102
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

8: Missouri Flat Road & Industrial Dr Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	16.1	3.9	4.0	4.2
Vehicles Entered	36	991	712	1739
Vehicles Exited	36	989	710	1735
Hourly Exit Rate	36	989	710	1735
Input Volume	35	969	703	1707
% of Volume	103	102	101	102
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

10: Pleasant Valley Rd & Missouri Flat Rd Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.1	1.0	0.0	0.5
Total Del/Veh (s)	25.2	14.3	6.6	16.1
Vehicles Entered	640	817	462	1919
Vehicles Exited	640	816	461	1917
Hourly Exit Rate	640	816	461	1917
Input Volume	632	796	454	1882
% of Volume	101	103	102	102
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

11: Forni Road & Project Access/Golden Center Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.2	0.3	0.2
Total Del/Veh (s)	7.9	11.7	1.4	2.9	4.3
Vehicles Entered	32	250	550	283	1115
Vehicles Exited	31	252	551	283	1117
Hourly Exit Rate	31	252	551	283	1117
Input Volume	34	250	540	271	1096
% of Volume	91	101	102	104	102
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

12: Missouri Flat Road & South Project Access Performance by approach

Approach	NB	SB	SW	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.0
Total Del/Veh (s)	5.4	5.0	8.7	5.3
Vehicles Entered	1622	1402	30	3054
Vehicles Exited	1622	1401	30	3053
Hourly Exit Rate	1622	1401	30	3053
Input Volume	1622	1388	31	3041
% of Volume	100	101	97	100
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

13: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.0	1.5	0.0
Total Del/Veh (s)	16.1	14.7	19.1	25.4	16.8
Vehicles Entered	982	814	909	28	2733
Vehicles Exited	985	816	906	28	2735
Hourly Exit Rate	985	816	906	28	2735
Input Volume	970	834	888	31	2722
% of Volume	102	98	102	91	100
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

Total Zone Performance

Denied Del/Veh (s)	1.7
Total Del/Veh (s)	251.3
Vehicles Entered	3185
Vehicles Exited	1514
Hourly Exit Rate	1514
Input Volume	28165
% of Volume	5
Denied Entry Before	0
Denied Entry After	0

1: Missouri Flat Road & WB Ramps Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.5	2.6	0.0	0.0	0.0	0.0	0.3
Total Del/Veh (s)	28.6	13.3	36.2	9.8	9.1	4.0	16.3

2: Missouri Flat Road & EB Ramps Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	1.4	1.3	0.0	0.0	0.0	0.0	0.3
Total Del/Veh (s)	27.9	21.4	13.8	2.6	38.4	7.0	14.6

3: Missouri Flat Road & Mother Lode Drive Performance by movement

Movement	EBL	EBR	NBL	NBT	NBR	SBT	SBR	All
Denied Del/Veh (s)	0.2	4.1	0.0	0.0	0.0	0.0	0.0	0.1
Total Del/Veh (s)	71.2	13.3	97.3	21.5	5.6	4.7	1.8	12.4

5: Missouri Flat Road & Forni Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.5	1.0	3.6	0.0	0.1	0.0	0.0	0.1	0.3	1.1	0.2	0.0
Total Del/Veh (s)	48.9	38.7	5.3	53.1	31.4	2.0	62.6	30.0	12.5	106.0	18.8	8.8

5: Missouri Flat Road & Forni Road Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	31.8

6: Missouri Flat Road & Golden Center Drive Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	45.4	41.2	17.4	38.7	2.2	24.3	65.3	18.2	15.1	85.1	24.8	3.5

6: Missouri Flat Road & Golden Center Drive Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	23.5

7: Missouri Flat Road & China Garden Rd Performance by movement

Movement	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	8.9	0.3	9.6	12.3	2.8	0.7	15.6	3.9	3.2	3.9

8: Missouri Flat Road & Industrial Dr Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.2	0.2	0.0	0.0	0.0	0.0
Total Del/Veh (s)	17.8	7.4	15.4	3.4	4.2	2.3	4.2

10: Pleasant Valley Rd & Missouri Flat Rd Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.2	0.0	0.5	1.4	0.0	0.0	0.0	0.5
Total Del/Veh (s)	29.1	17.2	21.5	8.4	12.5	1.1	4.0	16.1

11: Forni Road & Project Access/Golden Center Drive Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.1	0.1	0.0	0.0	0.0	0.2	0.2	0.1	0.3	0.3	0.3
Total Del/Veh (s)	13.1	11.9	4.8	23.2	1.5	17.2	3.1	1.5	1.2	6.7	2.2	1.1

11: Forni Road & Project Access/Golden Center Drive Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	4.3

12: Missouri Flat Road & South Project Access Performance by movement

Movement	NBT	NBR	SBT	SWR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	5.5	3.5	5.0	8.7	5.3

13: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.1	0.1
Total Del/Veh (s)	34.1	19.3	14.7	31.6	13.0	6.9	20.0	5.6	2.9	29.4	34.1	14.4

13: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	16.8

Total Zone Performance

Denied Del/Veh (s)	1.7
Total Del/Veh (s)	251.3

Intersection	
Int Delay, s/veh	0.3

Movement	SBL	SBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Vol, veh/h	0	10	40	1384	1610	5
Future Vol, veh/h	0	10	40	1384	1610	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	1	-	-	0
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	11	43	1504	1750	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2589	875	1750	0	-	0
Stage 1	1750	-	-	-	-	-
Stage 2	839	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	21	292	354	-	-	-
Stage 1	125	-	-	-	-	-
Stage 2	384	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	18	292	354	-	-	-
Mov Cap-2 Maneuver	90	-	-	-	-	-
Stage 1	125	-	-	-	-	-
Stage 2	337	-	-	-	-	-

Approach	SB	SE	NW
HCM Control Delay, s	17.8	0.5	0
HCM LOS	C		

Minor Lane/Major Mvmt	NWT	NWR	SEL	SET	SBLn1
Capacity (veh/h)	-	-	354	-	292
HCM Lane V/C Ratio	-	-	0.123	-	0.037
HCM Control Delay (s)	-	-	16.6	-	17.8
HCM Lane LOS	-	-	C	-	C
HCM 95th %tile Q(veh)	-	-	0.4	-	0.1

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	65	0	15	5	0	5	20	844	10	5	433	120
Future Vol, veh/h	65	0	15	5	0	5	20	844	10	5	433	120
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	69	0	16	5	0	5	21	898	11	5	461	128

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1026	1486	294	1187	1545	454	588	0	0	909	0	0
Stage 1	535	535	-	946	946	-	-	-	-	-	-	-
Stage 2	491	951	-	241	599	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	189	123	702	144	114	553	983	-	-	745	-	-
Stage 1	497	522	-	281	338	-	-	-	-	-	-	-
Stage 2	528	336	-	741	489	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	183	120	702	138	111	553	983	-	-	745	-	-
Mov Cap-2 Maneuver	183	120	-	138	111	-	-	-	-	-	-	-
Stage 1	486	518	-	275	331	-	-	-	-	-	-	-
Stage 2	512	329	-	719	486	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	32.9	22.1	0.2	0.1
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	983	-	-	212	221	745	-	-
HCM Lane V/C Ratio	0.022	-	-	0.401	0.048	0.007	-	-
HCM Control Delay (s)	8.7	-	-	32.9	22.1	9.9	-	-
HCM Lane LOS	A	-	-	D	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.8	0.2	0	-	-

Intersection: 1: Missouri Flat Road & WB Ramps

Movement	WB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	LT	R	R	L	L	T	T	T	T
Maximum Queue (ft)	214	208	173	127	137	149	414	371	201	162
Average Queue (ft)	130	124	86	33	129	140	209	69	91	76
95th Queue (ft)	196	191	148	84	157	163	441	208	162	140
Link Distance (ft)	983	983					395	395	459	459
Upstream Blk Time (%)							2	0		
Queuing Penalty (veh)							13	0		
Storage Bay Dist (ft)			400	400	125	125				
Storage Blk Time (%)					2	15	0			
Queuing Penalty (veh)					6	57	1			

Intersection: 2: Missouri Flat Road & EB Ramps

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LTR	R	T	T	R	L	L	T	T
Maximum Queue (ft)	159	201	193	168	169	66	100	133	164	176
Average Queue (ft)	53	113	91	152	123	7	36	63	37	46
95th Queue (ft)	121	177	167	192	192	35	79	101	110	127
Link Distance (ft)		1460		138	138	138			395	395
Upstream Blk Time (%)				23	8					
Queuing Penalty (veh)				96	34					
Storage Bay Dist (ft)	700		550				150	150		
Storage Blk Time (%)									1	
Queuing Penalty (veh)									1	

Intersection: 3: Missouri Flat Road & Mother Lode Drive

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	R	T	T	R
Maximum Queue (ft)	103	56	137	593	470	27	162	169	27
Average Queue (ft)	41	20	15	218	86	1	90	100	1
95th Queue (ft)	89	49	68	503	282	27	184	192	24
Link Distance (ft)	633			1547	1547		138	138	
Upstream Blk Time (%)							5	6	0
Queuing Penalty (veh)							33	43	0
Storage Bay Dist (ft)		200	150			250			200
Storage Blk Time (%)				20	0	0		6	0
Queuing Penalty (veh)				2	0	0		1	0

Intersection: 5: Missouri Flat Road & Forni Road

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	B25
Directions Served	L	L	T	R	L	T	R	L	T	T	R	T
Maximum Queue (ft)	196	204	219	57	146	141	20	274	400	395	175	155
Average Queue (ft)	96	116	64	22	63	61	1	70	257	258	40	18
95th Queue (ft)	176	186	154	47	116	114	20	203	439	449	156	85
Link Distance (ft)			1180			265			317	317		652
Upstream Blk Time (%)									8	8		
Queuing Penalty (veh)									49	52		
Storage Bay Dist (ft)	195	195		150	190		175	250			150	
Storage Blk Time (%)	0	1	0		0	0	0	0	13	21	0	
Queuing Penalty (veh)	0	1	0		0	0	0	0	9	13	0	

Intersection: 5: Missouri Flat Road & Forni Road

Movement	B25	SB	SB	SB	SB
Directions Served	T	L	T	T	R
Maximum Queue (ft)	168	322	390	377	175
Average Queue (ft)	20	231	203	204	98
95th Queue (ft)	93	355	404	367	209
Link Distance (ft)	652		365	365	
Upstream Blk Time (%)			9	1	
Queuing Penalty (veh)			61	6	
Storage Bay Dist (ft)		300			150
Storage Blk Time (%)		14	2	11	0
Queuing Penalty (veh)		61	4	33	2

Intersection: 6: Missouri Flat Road & Golden Center Drive

Movement	EB	WB	NB	NB	NB	B43	B43	SB	SB	SB	SB	B25
Directions Served	LTR	LTR	L	T	TR	T	T	L	T	T	R	T
Maximum Queue (ft)	101	130	174	293	311	238	273	194	506	547	17	24
Average Queue (ft)	29	60	65	217	231	34	46	93	164	248	2	1
95th Queue (ft)	70	114	152	333	343	148	178	183	401	493	10	24
Link Distance (ft)	184	339		216	216	1589	1589		652	652		317
Upstream Blk Time (%)				10	13				0	0		
Queuing Penalty (veh)				73	98				1	2		
Storage Bay Dist (ft)			150					175			500	
Storage Blk Time (%)			1	17				4	6	1		
Queuing Penalty (veh)			6	10				16	6	0		

Intersection: 6: Missouri Flat Road & Golden Center Drive

Movement	B25
Directions Served	T
Maximum Queue (ft)	55
Average Queue (ft)	3
95th Queue (ft)	44
Link Distance (ft)	317
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 7: Missouri Flat Road & China Garden Rd

Movement	EB	WB	NB	NB	NB	SB
Directions Served	R	R	L	T	TR	L
Maximum Queue (ft)	32	76	29	3	14	88
Average Queue (ft)	5	33	3	0	1	34
95th Queue (ft)	25	64	17	3	8	73
Link Distance (ft)	145	1432		558	558	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200			190
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 8: Missouri Flat Road & Industrial Dr

Movement	EB	NB	NB	NB	SB	SB
Directions Served	LR	L	T	T	T	TR
Maximum Queue (ft)	68	71	179	113	104	148
Average Queue (ft)	24	25	41	18	26	46
95th Queue (ft)	55	57	121	72	76	109
Link Distance (ft)	515		795	795	558	558
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		150				
Storage Blk Time (%)			0			
Queuing Penalty (veh)			0			

Intersection: 10: Pleasant Valley Rd & Missouri Flat Rd

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	L	T	T	R	L	R
Maximum Queue (ft)	172	185	224	286	224	140	97
Average Queue (ft)	97	92	81	134	89	61	35
95th Queue (ft)	161	165	180	230	177	116	73
Link Distance (ft)			658	1506		127	127
Upstream Blk Time (%)						1	0
Queuing Penalty (veh)						1	0
Storage Bay Dist (ft)	200	200			200		
Storage Blk Time (%)	1	1	0	1	0		
Queuing Penalty (veh)	2	2	1	5	0		

Intersection: 11: Forni Road & Project Access/Golden Center Drive

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	LT	R	LTR
Maximum Queue (ft)	46	196	46	19	121
Average Queue (ft)	20	57	2	2	23
95th Queue (ft)	46	137	16	13	79
Link Distance (ft)	169	1383	265	265	440
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 12: Missouri Flat Road & South Project Access

Movement	NB	NB	NB	SB	SB	SW
Directions Served	T	T	TR	T	T	R
Maximum Queue (ft)	104	302	36	149	198	69
Average Queue (ft)	5	12	0	35	29	21
95th Queue (ft)	71	119	0	186	162	52
Link Distance (ft)	365	365	365	350	350	197
Upstream Blk Time (%)	0	0	0	2	1	
Queuing Penalty (veh)	0	1	0	13	4	
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 13: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway

Movement	EB	EB	EB	B43	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	T	L	T	T	R	L	L	TR	L
Maximum Queue (ft)	42	129	131	4	113	220	226	58	287	333	45	39
Average Queue (ft)	8	53	58	0	47	87	90	4	144	153	13	8
95th Queue (ft)	29	108	111	3	95	176	186	33	241	259	39	30
Link Distance (ft)		1589	1589	216		2033	2033			451	451	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	125				500			175	275			50
Storage Blk Time (%)		0					1		0	1		1
Queuing Penalty (veh)		0					0		1	3		0

Intersection: 13: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway

Movement	SB
Directions Served	TR
Maximum Queue (ft)	46
Average Queue (ft)	12
95th Queue (ft)	34
Link Distance (ft)	278
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	0
Queuing Penalty (veh)	0

Zone Summary

Zone wide Queuing Penalty: 825

1: Missouri Flat Road & WB Ramps Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	1.2	0.0	0.0	0.3
Total Del/Veh (s)	42.1	15.0	16.5	23.3
Vehicles Entered	1132	1387	1452	3971
Vehicles Exited	1130	1380	1452	3962
Hourly Exit Rate	1130	1380	1452	3962
Input Volume	1123	1384	1453	3960
% of Volume	101	100	100	100
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

2: Missouri Flat Road & EB Ramps Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	1.7	0.0	0.0	0.4
Total Del/Veh (s)	34.6	19.2	25.4	25.8
Vehicles Entered	946	1219	1664	3829
Vehicles Exited	945	1217	1671	3833
Hourly Exit Rate	945	1217	1671	3833
Input Volume	943	1262	1661	3865
% of Volume	100	96	101	99
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

3: Missouri Flat Road & Mother Lode Drive Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	3.0	0.1	0.0	0.1
Total Del/Veh (s)	44.1	29.0	5.7	17.4
Vehicles Entered	62	1895	2036	3993
Vehicles Exited	61	1890	2041	3992
Hourly Exit Rate	61	1890	2041	3992
Input Volume	63	1952	2023	4038
% of Volume	97	97	101	99
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

5: Missouri Flat Road & Forni Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	77.9	0.0	1.0	0.1	14.8
Total Del/Veh (s)	169.6	23.0	33.4	30.5	56.1
Vehicles Entered	729	237	1174	1954	4094
Vehicles Exited	703	237	1172	1952	4064
Hourly Exit Rate	703	237	1172	1952	4064
Input Volume	772	242	1184	1962	4161
% of Volume	91	98	99	99	98
Denied Entry Before	1	0	0	0	1
Denied Entry After	40	0	0	0	40

6: Missouri Flat Road & Golden Center Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	2.0	0.4	0.0	0.3
Total Del/Veh (s)	35.9	45.4	31.7	39.5	36.7
Vehicles Entered	128	235	1213	1471	3047
Vehicles Exited	128	235	1207	1469	3039
Hourly Exit Rate	128	235	1207	1469	3039
Input Volume	130	241	1209	1494	3074
% of Volume	98	98	100	98	99
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

7: Missouri Flat Road & China Garden Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	9.8	13.7	2.9	4.0	4.5
Vehicles Entered	5	189	757	1098	2049
Vehicles Exited	5	189	757	1098	2049
Hourly Exit Rate	5	189	757	1098	2049
Input Volume	5	185	754	1114	2058
% of Volume	100	102	100	99	100
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

8: Missouri Flat Road & Industrial Dr Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.0	0.0
Total Del/Veh (s)	12.4	3.8	3.6	4.2
Vehicles Entered	108	656	1089	1853
Vehicles Exited	107	657	1088	1852
Hourly Exit Rate	107	657	1088	1852
Input Volume	105	654	1105	1864
% of Volume	102	100	98	99
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

10: Pleasant Valley Rd & Missouri Flat Rd Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	19.7	13.5	8.6	13.2
Vehicles Entered	642	527	948	2117
Vehicles Exited	642	526	950	2118
Hourly Exit Rate	642	526	950	2118
Input Volume	627	543	951	2121
% of Volume	102	97	100	100
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

11: Forni Road & Project Access/Golden Center Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.0	0.1	0.0
Total Del/Veh (s)	4.6	5.7	1.2	0.8	2.9
Vehicles Entered	70	162	223	94	549
Vehicles Exited	70	163	224	94	551
Hourly Exit Rate	70	163	224	94	551
Input Volume	74	170	233	92	570
% of Volume	95	96	96	102	97
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

12: Missouri Flat Road & South Project Access Performance by approach

Approach	NB	SB	SW	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.0
Total Del/Veh (s)	4.9	14.5	11.3	10.0
Vehicles Entered	1761	1954	53	3768
Vehicles Exited	1759	1947	53	3759
Hourly Exit Rate	1759	1947	53	3759
Input Volume	1821	1955	52	3828
% of Volume	97	100	102	98
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

13: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.0	1.4	0.0
Total Del/Veh (s)	21.4	8.7	19.9	26.8	17.5
Vehicles Entered	1602	990	951	32	3575
Vehicles Exited	1599	990	945	33	3567
Hourly Exit Rate	1599	990	945	33	3567
Input Volume	1622	994	945	31	3591
% of Volume	99	100	100	107	99
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

Total Zone Performance

Denied Del/Veh (s)	16.7
Total Del/Veh (s)	489.9
Vehicles Entered	3925
Vehicles Exited	1212
Hourly Exit Rate	1212
Input Volume	33130
% of Volume	4
Denied Entry Before	1
Denied Entry After	40

1: Missouri Flat Road & WB Ramps Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.5	2.4	0.0	0.0	0.0	0.0	0.3
Total Del/Veh (s)	54.0	20.1	23.3	10.3	18.6	4.5	23.3

2: Missouri Flat Road & EB Ramps Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	1.7	1.7	0.0	0.0	0.1	0.0	0.4
Total Del/Veh (s)	26.2	37.7	19.5	1.2	48.5	19.7	25.8

3: Missouri Flat Road & Mother Lode Drive Performance by movement

Movement	EBL	EBR	NBL	NBT	NBR	SBT	SBR	All
Denied Del/Veh (s)	0.2	4.1	0.6	0.1	0.2	0.0	0.0	0.1
Total Del/Veh (s)	74.6	30.9	111.9	37.4	8.1	5.7	2.4	17.4

5: Missouri Flat Road & Forni Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	77.8	77.4	78.6	0.0	0.0	0.0	1.6	0.9	1.2	0.0	0.1	0.1
Total Del/Veh (s)	183.3	150.0	104.4	54.0	57.3	1.8	105.5	27.1	11.4	69.6	29.7	19.6

5: Missouri Flat Road & Forni Road Performance by movement

Movement	All
Denied Del/Veh (s)	14.8
Total Del/Veh (s)	56.1

6: Missouri Flat Road & Golden Center Drive Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.2	0.2	0.2	1.9	1.8	2.1	1.1	0.4	0.0	0.0	0.0	0.0
Total Del/Veh (s)	43.4	57.7	30.0	48.2	49.4	38.2	130.7	23.5	18.9	93.0	37.1	7.8

6: Missouri Flat Road & Golden Center Drive Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	36.7

7: Missouri Flat Road & China Garden Rd Performance by movement

Movement	EBR	WBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	9.8	13.8	3.0	0.8	11.0	4.0	4.5

8: Missouri Flat Road & Industrial Dr Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.2	0.2	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	14.6	8.3	16.3	3.7	3.6	2.0	4.2

10: Pleasant Valley Rd & Missouri Flat Rd Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	24.3	16.0	19.1	6.1	13.6	2.1	4.3	13.2

11: Forni Road & Project Access/Golden Center Drive Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.2	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1
Total Del/Veh (s)	5.5	7.2	3.5	7.3	1.7	5.5	3.1	1.1	1.4	3.0	0.5	0.3

11: Forni Road & Project Access/Golden Center Drive Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	2.9

12: Missouri Flat Road & South Project Access Performance by movement

Movement	NBT	NBR	SBT	SWR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	5.0	3.0	14.5	11.3	10.0

13: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.3	0.1	0.1
Total Del/Veh (s)	42.5	22.3	20.6	32.6	7.2	6.0	21.8	17.2	5.5	33.7	36.4	9.9

13: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	17.5

Total Zone Performance

Denied Del/Veh (s)	16.7
Total Del/Veh (s)	489.9

Intersection	
Int Delay, s/veh	0.5

Movement	SBL	SBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Vol, veh/h	1	25	54	1949	1834	5
Future Vol, veh/h	1	25	54	1949	1834	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	50	-	-	0
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	27	59	2118	1993	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	3170	997	1993	0	-	0
Stage 1	1993	-	-	-	-	-
Stage 2	1177	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	8	243	285	-	-	-
Stage 1	92	-	-	-	-	-
Stage 2	255	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	6	243	285	-	-	-
Mov Cap-2 Maneuver	60	-	-	-	-	-
Stage 1	92	-	-	-	-	-
Stage 2	202	-	-	-	-	-

Approach	SB	SE	NW
HCM Control Delay, s	24.1	0.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NWT	NWR	SEL	SET	SBLn1
Capacity (veh/h)	-	-	285	-	217
HCM Lane V/C Ratio	-	-	0.206	-	0.13
HCM Control Delay (s)	-	-	20.9	-	24.1
HCM Lane LOS	-	-	C	-	C
HCM 95th %tile Q(veh)	-	-	0.8	-	0.4

Intersection	
Int Delay, s/veh	17.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	110	0	30	5	5	5	10	524	5	5	913	100
Future Vol, veh/h	110	0	30	5	5	5	10	524	5	5	913	100
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	117	0	32	5	5	5	11	557	5	5	971	106

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1338	1619	539	1077	1669	281	1078	0	0	563	0	0
Stage 1	1035	1035	-	581	581	-	-	-	-	-	-	-
Stage 2	303	584	-	496	1088	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 111	102	487	173	95	716	643	-	-	1005	-	-
Stage 1	248	307	-	467	498	-	-	-	-	-	-	-
Stage 2	681	496	-	524	290	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 104	100	487	159	93	716	643	-	-	1005	-	-
Mov Cap-2 Maneuver	~ 104	100	-	159	93	-	-	-	-	-	-	-
Stage 1	244	305	-	459	489	-	-	-	-	-	-	-
Stage 2	657	488	-	487	289	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	208.4	29.5	0.2	0
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	643	-	-	125	163	1005	-	-
HCM Lane V/C Ratio	0.017	-	-	1.191	0.098	0.005	-	-
HCM Control Delay (s)	10.7	-	-	208.4	29.5	8.6	-	-
HCM Lane LOS	B	-	-	F	D	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	9.1	0.3	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection: 1: Missouri Flat Road & WB Ramps

Movement	WB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	LT	R	R	L	L	T	T	T	T
Maximum Queue (ft)	460	478	259	174	137	149	364	261	334	300
Average Queue (ft)	227	241	138	47	121	131	133	74	169	146
95th Queue (ft)	452	502	307	121	159	164	300	174	289	258
Link Distance (ft)	983	983					395	395	459	459
Upstream Blk Time (%)	0	0					0	0		
Queuing Penalty (veh)	0	0					0	0		
Storage Bay Dist (ft)			400	400	125	125				
Storage Blk Time (%)		5	0		1	5	1			
Queuing Penalty (veh)		20	0		4	24	4			

Intersection: 2: Missouri Flat Road & EB Ramps

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LTR	R	T	T	R	L	L	T	T
Maximum Queue (ft)	295	364	368	169	165	22	160	174	396	398
Average Queue (ft)	116	195	195	160	142	1	99	131	174	188
95th Queue (ft)	243	316	315	169	185	9	167	192	373	377
Link Distance (ft)		1460		138	138	138			395	395
Upstream Blk Time (%)				41	15				1	1
Queuing Penalty (veh)				174	64				5	6
Storage Bay Dist (ft)	700		550				150	150		
Storage Blk Time (%)		0	0				0	4	9	
Queuing Penalty (veh)		0	0				2	27	30	

Intersection: 3: Missouri Flat Road & Mother Lode Drive

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	R	T	T	R
Maximum Queue (ft)	69	86	175	735	660	55	165	172	54
Average Queue (ft)	19	30	63	379	209	3	113	120	3
95th Queue (ft)	51	67	167	768	595	49	203	207	35
Link Distance (ft)	633			1533	1533		138	138	
Upstream Blk Time (%)							9	10	0
Queuing Penalty (veh)							88	103	0
Storage Bay Dist (ft)		200	150			250			200
Storage Blk Time (%)			0	39	0	0		10	0
Queuing Penalty (veh)			0	18	1	0		2	0

Intersection: 5: Missouri Flat Road & Forni Road

Movement	EB	EB	EB	EB	WB	WB	NB	NB	NB	NB	B25	B25
Directions Served	L	L	T	R	L	T	L	T	T	R	T	T
Maximum Queue (ft)	207	220	1175	84	99	108	274	395	391	156	134	146
Average Queue (ft)	203	216	882	34	40	43	116	228	228	20	11	15
95th Queue (ft)	223	234	1501	69	83	88	258	420	423	109	70	78
Link Distance (ft)			1180			265		317	317		652	652
Upstream Blk Time (%)			33					6	7			
Queuing Penalty (veh)			0					36	38			
Storage Bay Dist (ft)	195	195		150	190		250			150		
Storage Blk Time (%)	20	55		0			3	10	19	0		
Queuing Penalty (veh)	33	91		0			15	10	5	0		

Intersection: 5: Missouri Flat Road & Forni Road

Movement	SB	SB	SB	SB
Directions Served	L	T	T	R
Maximum Queue (ft)	324	389	397	175
Average Queue (ft)	174	305	345	158
95th Queue (ft)	324	449	450	228
Link Distance (ft)		365	365	
Upstream Blk Time (%)		7	15	
Queuing Penalty (veh)		72	146	
Storage Bay Dist (ft)	300			150
Storage Blk Time (%)	1	14	32	1
Queuing Penalty (veh)	3	21	147	8

Intersection: 6: Missouri Flat Road & Golden Center Drive

Movement	EB	WB	NB	NB	NB	B43	B43	SB	SB	SB	SB	B25
Directions Served	LTR	LTR	L	T	TR	T	T	L	T	T	R	T
Maximum Queue (ft)	177	250	174	297	299	342	342	200	658	708	220	65
Average Queue (ft)	78	151	120	224	222	55	51	85	349	422	12	3
95th Queue (ft)	146	236	203	339	330	233	223	183	695	762	126	44
Link Distance (ft)	184	339		216	216	1589	1589		652	652		317
Upstream Blk Time (%)	0	0		19	14				1	3		0
Queuing Penalty (veh)	0	0		111	85				6	22		0
Storage Bay Dist (ft)			150					175			500	
Storage Blk Time (%)			16	18				0	18	12		
Queuing Penalty (veh)			85	18				1	14	1		

Intersection: 6: Missouri Flat Road & Golden Center Drive

Movement	B25
Directions Served	T
Maximum Queue (ft)	203
Average Queue (ft)	10
95th Queue (ft)	92
Link Distance (ft)	317
Upstream Blk Time (%)	0
Queuing Penalty (veh)	1
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 7: Missouri Flat Road & China Garden Rd

Movement	EB	WB	NB	SB
Directions Served	R	R	T	L
Maximum Queue (ft)	32	167	15	40
Average Queue (ft)	5	64	1	6
95th Queue (ft)	23	132	16	26
Link Distance (ft)	145	1432	558	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				150
Storage Blk Time (%)			0	
Queuing Penalty (veh)			0	

Intersection: 8: Missouri Flat Road & Industrial Dr

Movement	EB	NB	NB	NB	SB	SB
Directions Served	LR	L	T	T	T	TR
Maximum Queue (ft)	102	32	136	77	128	153
Average Queue (ft)	45	5	44	13	40	51
95th Queue (ft)	81	23	100	49	97	113
Link Distance (ft)	515		795	795	558	558
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		150				
Storage Blk Time (%)			0			
Queuing Penalty (veh)			0			

Intersection: 10: Pleasant Valley Rd & Missouri Flat Rd

Movement	EB	EB	EB	WB	WB	SB	SB	B68	B68
Directions Served	L	L	T	T	R	L	R	T	T
Maximum Queue (ft)	129	177	287	219	178	205	175	85	11
Average Queue (ft)	68	72	104	105	46	135	66	9	0
95th Queue (ft)	114	130	194	175	106	209	132	47	5
Link Distance (ft)			658	1506		127	127	419	419
Upstream Blk Time (%)						9	1		
Queuing Penalty (veh)						41	5		
Storage Bay Dist (ft)	200	200			200				
Storage Blk Time (%)	0	0	1	0	0				
Queuing Penalty (veh)	0	0	2	1	0				

Intersection: 11: Forni Road & Project Access/Golden Center Drive

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	LT	R	LTR
Maximum Queue (ft)	62	89	15	16	32
Average Queue (ft)	30	42	0	1	2
95th Queue (ft)	53	73	5	8	16
Link Distance (ft)	169	1383	265	265	440
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 12: Missouri Flat Road & South Project Access

Movement	NB	NB	SB	SB	SW
Directions Served	T	T	T	T	R
Maximum Queue (ft)	98	147	382	383	83
Average Queue (ft)	5	9	142	203	30
95th Queue (ft)	70	104	395	452	62
Link Distance (ft)	365	365	362	362	197
Upstream Blk Time (%)	0	0	2	5	
Queuing Penalty (veh)	0	0	21	52	
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 13: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway

Movement	EB	EB	EB	EB	B43	B43	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	R	T	T	L	T	T	R	L	L
Maximum Queue (ft)	78	236	239	27	18	89	102	144	152	25	286	333
Average Queue (ft)	12	102	97	1	1	5	38	55	55	3	145	157
95th Queue (ft)	44	183	179	28	18	45	80	113	115	14	241	270
Link Distance (ft)		1589	1589		216	216		2033	2033			451
Upstream Blk Time (%)						0						0
Queuing Penalty (veh)						0						1
Storage Bay Dist (ft)	125			250			500			175	275	
Storage Blk Time (%)		4	0	0					0		0	1
Queuing Penalty (veh)		0	0	0					0		1	4

Intersection: 13: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway

Movement	NB	SB	SB
Directions Served	TR	L	TR
Maximum Queue (ft)	92	35	52
Average Queue (ft)	36	9	15
95th Queue (ft)	72	31	38
Link Distance (ft)	451		278
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		50	
Storage Blk Time (%)		1	1
Queuing Penalty (veh)		0	0

Zone Summary

Zone wide Queuing Penalty: 1673

Intersection	
Int Delay, s/veh	0.1

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	5	1414	1496	5	5	5
Future Vol, veh/h	5	1414	1496	5	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	0	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	1488	1575	5	5	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1575	0	-	0	2330	787
Stage 1	-	-	-	-	1575	-
Stage 2	-	-	-	-	755	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	414	-	-	-	31	334
Stage 1	-	-	-	-	156	-
Stage 2	-	-	-	-	425	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	414	-	-	-	31	334
Mov Cap-2 Maneuver	-	-	-	-	115	-
Stage 1	-	-	-	-	156	-
Stage 2	-	-	-	-	420	-

Approach	SE	NW	SW
HCM Control Delay, s	0	0	27.4
HCM LOS			D

Minor Lane/Major Mvmt	NWT	NWR	SEL	SETSWLn1
Capacity (veh/h)	-	-	414	- 171
HCM Lane V/C Ratio	-	-	0.013	- 0.062
HCM Control Delay (s)	-	-	13.8	- 27.4
HCM Lane LOS	-	-	B	- D
HCM 95th %tile Q(veh)	-	-	0	- 0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	395	52	63	39	63	232	52	874	39	176	916	327
Future Volume (veh/h)	395	52	63	39	63	232	52	874	39	176	916	327
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	403	53	54	40	64	0	53	892	40	180	935	334
Adj No. of Lanes	2	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	471	375	312	29	151	128	40	1394	623	200	1714	749
Arrive On Green	0.14	0.20	0.20	0.02	0.08	0.00	0.02	0.39	0.39	0.11	0.48	0.48
Sat Flow, veh/h	3442	1863	1549	1774	1863	1583	1774	3539	1582	1774	3539	1546
Grp Volume(v), veh/h	403	53	54	40	64	0	53	892	40	180	935	334
Grp Sat Flow(s),veh/h/ln	1721	1863	1549	1774	1863	1583	1774	1770	1582	1774	1770	1546
Q Serve(g_s), s	7.9	1.6	2.0	1.1	2.3	0.0	1.6	14.1	1.1	6.9	12.8	9.8
Cycle Q Clear(g_c), s	7.9	1.6	2.0	1.1	2.3	0.0	1.6	14.1	1.1	6.9	12.8	9.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	471	375	312	29	151	128	40	1394	623	200	1714	749
V/C Ratio(X)	0.85	0.14	0.17	1.36	0.42	0.00	1.33	0.64	0.06	0.90	0.55	0.45
Avail Cap(c_a), veh/h	698	621	516	154	405	344	180	1744	780	360	2103	919
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.1	22.6	22.8	33.9	30.2	0.0	33.7	16.9	13.0	30.2	12.5	11.7
Incr Delay (d2), s/veh	4.7	0.1	0.1	180.0	0.7	0.0	161.3	0.5	0.0	5.7	0.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	0.8	0.8	2.0	1.2	0.0	2.5	6.9	0.5	3.7	6.3	4.2
LnGrp Delay(d),s/veh	33.8	22.7	22.9	213.9	30.9	0.0	195.0	17.5	13.0	35.9	12.7	12.1
LnGrp LOS	C	C	C	F	C		F	B	B	D	B	B
Approach Vol, veh/h		510			104			985			1449	
Approach Delay, s/veh		31.5			101.3			26.9			15.5	
Approach LOS		C			F			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	37.4	14.5	10.6	12.8	31.2	6.1	18.9
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	8.0	40.0	15.0	15.0	15.0	33.0	7.0	23.0
Max Q Clear Time (g_c+I1), s	3.6	14.8	9.9	4.3	8.9	16.1	3.1	4.0
Green Ext Time (p_c), s	0.0	12.4	0.6	0.2	0.2	9.9	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	24.8
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	9	78	103	18	34	78	794	74	80	982	12
Future Volume (veh/h)	16	9	78	103	18	34	78	794	74	80	982	12
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	16	9	80	106	19	35	80	819	76	82	1012	12
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	25	14	124	154	28	51	102	1396	130	105	1518	663
Arrive On Green	0.10	0.10	0.10	0.13	0.13	0.13	0.06	0.43	0.43	0.06	0.43	0.43
Sat Flow, veh/h	249	140	1243	1145	205	378	1774	3268	303	1774	3539	1545
Grp Volume(v), veh/h	105	0	0	160	0	0	80	443	452	82	1012	12
Grp Sat Flow(s),veh/h/ln	1631	0	0	1729	0	0	1774	1770	1801	1774	1770	1545
Q Serve(g_s), s	3.8	0.0	0.0	5.4	0.0	0.0	2.7	11.7	11.7	2.8	13.9	0.3
Cycle Q Clear(g_c), s	3.8	0.0	0.0	5.4	0.0	0.0	2.7	11.7	11.7	2.8	13.9	0.3
Prop In Lane	0.15		0.76	0.66		0.22	1.00		0.17	1.00		1.00
Lane Grp Cap(c), veh/h	162	0	0	233	0	0	102	756	770	105	1518	663
V/C Ratio(X)	0.65	0.00	0.00	0.69	0.00	0.00	0.79	0.59	0.59	0.78	0.67	0.02
Avail Cap(c_a), veh/h	804	0	0	853	0	0	146	1222	1243	175	2501	1092
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.4	0.0	0.0	25.1	0.0	0.0	28.3	13.3	13.3	28.2	13.9	10.0
Incr Delay (d2), s/veh	3.2	0.0	0.0	2.7	0.0	0.0	13.7	0.7	0.7	9.1	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	0.0	2.7	0.0	0.0	1.7	5.8	5.9	1.6	6.9	0.1
LnGrp Delay(d),s/veh	29.5	0.0	0.0	27.8	0.0	0.0	42.0	14.0	14.0	37.3	14.4	10.0
LnGrp LOS	C			C			D	B	B	D	B	B
Approach Vol, veh/h		105			160			975			1106	
Approach Delay, s/veh		29.5			27.8			16.3			16.1	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		10.1	7.5	31.1		12.2	7.6	31.0
Change Period (Y+Rc), s		4.0	4.0	5.0		4.0	4.0	5.0
Max Green Setting (Gmax), s		30.0	5.0	43.0		30.0	6.0	42.0
Max Q Clear Time (g_c+I1), s		5.8	4.7	15.9		7.4	4.8	13.7
Green Ext Time (p_c), s		0.3	0.0	10.2		0.4	0.0	10.3

Intersection Summary	
HCM 2010 Ctrl Delay	17.6
HCM 2010 LOS	B

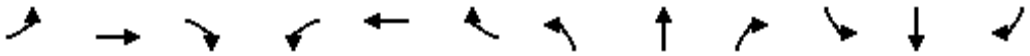
Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	187	0	9	0	93	192	14	150	0
Future Vol, veh/h	0	0	0	187	0	9	0	93	192	14	150	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	65	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	74	74	74	74	74	74	74	74	74	74	74	74
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	253	0	12	0	126	259	19	203	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	373	432	203	432	432	191	203	0	0	191	0	0
Stage 1	241	241	-	191	191	-	-	-	-	-	-	-
Stage 2	132	191	-	241	241	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	584	516	838	534	516	851	1369	-	-	1383	-	-
Stage 1	762	706	-	811	742	-	-	-	-	-	-	-
Stage 2	871	742	-	762	706	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	569	481	838	499	481	805	1369	-	-	1383	-	-
Mov Cap-2 Maneuver	569	481	-	499	481	-	-	-	-	-	-	-
Stage 1	762	695	-	767	702	-	-	-	-	-	-	-
Stage 2	858	702	-	751	695	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	19.5	0	0.7
HCM LOS	A	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1369	-	-	-	508	1383	-	-
HCM Lane V/C Ratio	-	-	-	-	0.521	0.014	-	-
HCM Control Delay (s)	0	-	-	0	19.5	7.6	0	-
HCM Lane LOS	A	-	-	A	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	3	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	403	53	64	40	64	237	53	892	40	180	935	334
v/c Ratio	0.77	0.10	0.12	0.36	0.26	0.58	0.43	0.76	0.06	0.74	0.58	0.38
Control Delay	46.9	26.2	0.4	52.6	35.8	10.7	53.5	30.7	0.2	56.1	20.8	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.9	26.2	0.4	52.6	35.8	10.7	53.5	30.7	0.2	56.1	20.8	4.8
Queue Length 50th (ft)	97	22	0	19	31	0	26	200	0	86	184	6
Queue Length 95th (ft)	#247	54	0	66	69	59	81	399	0	#250	383	75
Internal Link Dist (ft)		1177			277			338			365	
Turn Bay Length (ft)	195		150	190		175	250		150	300		150
Base Capacity (vph)	628	616	620	138	421	536	161	1572	808	323	1896	971
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.09	0.10	0.29	0.15	0.44	0.33	0.57	0.05	0.56	0.49	0.34

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	105	160	80	895	82	1012	12
v/c Ratio	0.37	0.50	0.63	0.72	0.54	0.77	0.02
Control Delay	16.5	33.9	63.4	26.2	54.3	27.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.5	33.9	63.4	26.2	54.3	27.3	0.1
Queue Length 50th (ft)	9	54	32	152	32	176	0
Queue Length 95th (ft)	63	168	#181	415	#174	481	0
Internal Link Dist (ft)	162	338		197		635	
Turn Bay Length (ft)			150		175		500
Base Capacity (vph)	761	758	127	2111	152	2191	980
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.21	0.63	0.42	0.54	0.46	0.01

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

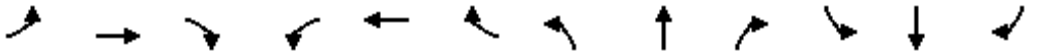
Intersection	
Int Delay, s/veh	0.4

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	43	1412	1520	9	6	18
Future Vol, veh/h	43	1412	1520	9	6	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	0	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	45	1486	1600	9	6	19

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1600	0	-	0	2434	800
Stage 1	-	-	-	-	1600	-
Stage 2	-	-	-	-	834	-
Critical Hdwy	4.14	-	-	-	7.54	6.94
Critical Hdwy Stg 1	-	-	-	-	6.54	-
Critical Hdwy Stg 2	-	-	-	-	6.54	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	405	-	-	-	16	328
Stage 1	-	-	-	-	111	-
Stage 2	-	-	-	-	329	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	405	-	-	-	15	328
Mov Cap-2 Maneuver	-	-	-	-	73	-
Stage 1	-	-	-	-	99	-
Stage 2	-	-	-	-	292	-

Approach	SE	NW	SW
HCM Control Delay, s	0.4	0	29
HCM LOS			D

Minor Lane/Major Mvmt	NWT	NWR	SEL	SETSWLn1
Capacity (veh/h)	-	-	405	- 175
HCM Lane V/C Ratio	-	-	0.112	- 0.144
HCM Control Delay (s)	-	-	15	- 29
HCM Lane LOS	-	-	C	- D
HCM 95th %tile Q(veh)	-	-	0.4	- 0.5



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	398	56	63	56	72	232	52	893	34	176	915	327
Future Volume (veh/h)	398	56	63	56	72	232	52	893	34	176	915	327
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	406	57	64	57	73	0	53	911	35	180	934	334
Adj No. of Lanes	2	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	474	362	301	43	151	128	40	1400	626	200	1720	751
Arrive On Green	0.14	0.19	0.19	0.02	0.08	0.00	0.02	0.40	0.40	0.11	0.49	0.49
Sat Flow, veh/h	3442	1863	1548	1774	1863	1583	1774	3539	1582	1774	3539	1546
Grp Volume(v), veh/h	406	57	64	57	73	0	53	911	35	180	934	334
Grp Sat Flow(s),veh/h/ln	1721	1863	1548	1774	1863	1583	1774	1770	1582	1774	1770	1546
Q Serve(g_s), s	8.0	1.8	2.4	1.7	2.6	0.0	1.6	14.6	1.0	7.0	12.8	9.9
Cycle Q Clear(g_c), s	8.0	1.8	2.4	1.7	2.6	0.0	1.6	14.6	1.0	7.0	12.8	9.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	474	362	301	43	151	128	40	1400	626	200	1720	751
V/C Ratio(X)	0.86	0.16	0.21	1.34	0.48	0.00	1.33	0.65	0.06	0.90	0.54	0.44
Avail Cap(c_a), veh/h	692	616	512	153	401	341	178	1729	773	357	2085	911
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.3	23.3	23.5	34.0	30.6	0.0	34.0	17.1	13.0	30.5	12.5	11.7
Incr Delay (d2), s/veh	5.1	0.1	0.1	164.6	0.9	0.0	161.5	0.6	0.0	6.2	0.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	0.9	1.0	2.8	1.4	0.0	2.5	7.2	0.4	3.7	6.3	4.2
LnGrp Delay(d),s/veh	34.4	23.4	23.7	198.5	31.5	0.0	195.6	17.7	13.0	36.7	12.8	12.1
LnGrp LOS	C	C	C	F	C		F	B	B	D	B	B
Approach Vol, veh/h		527			130			999			1448	
Approach Delay, s/veh		31.9			104.7			27.0			15.6	
Approach LOS		C			F			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	37.8	14.6	10.6	12.9	31.5	6.7	18.5
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	8.0	40.0	15.0	15.0	15.0	33.0	7.0	23.0
Max Q Clear Time (g_c+I1), s	3.6	14.8	10.0	4.6	9.0	16.6	3.7	4.4
Green Ext Time (p_c), s	0.0	12.5	0.6	0.3	0.2	9.8	0.0	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	25.8
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	9	78	105	18	35	78	807	74	80	995	12
Future Volume (veh/h)	16	9	78	105	18	35	78	807	74	80	995	12
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	16	9	80	108	19	36	80	832	76	82	1026	12
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	25	14	123	156	27	52	102	1408	129	105	1529	667
Arrive On Green	0.10	0.10	0.10	0.14	0.14	0.14	0.06	0.43	0.43	0.06	0.43	0.43
Sat Flow, veh/h	249	140	1243	1145	201	382	1774	3273	299	1774	3539	1545
Grp Volume(v), veh/h	105	0	0	163	0	0	80	450	458	82	1026	12
Grp Sat Flow(s),veh/h/ln	1631	0	0	1728	0	0	1774	1770	1802	1774	1770	1545
Q Serve(g_s), s	3.8	0.0	0.0	5.5	0.0	0.0	2.7	12.0	12.0	2.8	14.3	0.3
Cycle Q Clear(g_c), s	3.8	0.0	0.0	5.5	0.0	0.0	2.7	12.0	12.0	2.8	14.3	0.3
Prop In Lane	0.15		0.76	0.66		0.22	1.00		0.17	1.00		1.00
Lane Grp Cap(c), veh/h	162	0	0	235	0	0	102	761	775	105	1529	667
V/C Ratio(X)	0.65	0.00	0.00	0.69	0.00	0.00	0.79	0.59	0.59	0.78	0.67	0.02
Avail Cap(c_a), veh/h	793	0	0	841	0	0	144	1205	1227	173	2467	1077
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.8	0.0	0.0	25.4	0.0	0.0	28.7	13.4	13.4	28.6	14.0	10.0
Incr Delay (d2), s/veh	3.2	0.0	0.0	2.7	0.0	0.0	14.3	0.7	0.7	9.1	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.0	2.8	0.0	0.0	1.7	5.9	6.0	1.6	7.1	0.1
LnGrp Delay(d),s/veh	30.0	0.0	0.0	28.2	0.0	0.0	43.0	14.2	14.1	37.7	14.5	10.0
LnGrp LOS	C			C			D	B	B	D	B	B
Approach Vol, veh/h		105			163			988			1120	
Approach Delay, s/veh		30.0			28.2			16.5			16.2	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		10.1	7.5	31.6		12.4	7.6	31.5
Change Period (Y+Rc), s		4.0	4.0	5.0		4.0	4.0	5.0
Max Green Setting (Gmax), s		30.0	5.0	43.0		30.0	6.0	42.0
Max Q Clear Time (g_c+I1), s		5.8	4.7	16.3		7.5	4.8	14.0
Green Ext Time (p_c), s		0.3	0.0	10.3		0.5	0.0	10.5

Intersection Summary	
HCM 2010 Ctrl Delay	17.7
HCM 2010 LOS	B

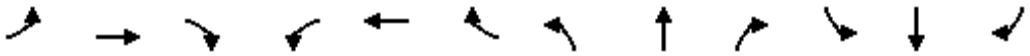
Intersection	
Int Delay, s/veh	8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	8	26	187	10	4	4	93	192	14	150	6
Future Vol, veh/h	10	8	26	187	10	4	4	93	192	14	150	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	65	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	74	74	74	74	74	74	74	74	74	74	74	74
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	11	35	253	14	5	5	126	259	19	203	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	391	446	207	469	450	191	211	0	0	191	0	0
Stage 1	245	245	-	201	201	-	-	-	-	-	-	-
Stage 2	146	201	-	268	249	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	568	507	833	505	504	851	1360	-	-	1383	-	-
Stage 1	759	703	-	801	735	-	-	-	-	-	-	-
Stage 2	857	735	-	738	701	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	543	470	833	442	467	805	1360	-	-	1383	-	-
Mov Cap-2 Maneuver	543	470	-	442	467	-	-	-	-	-	-	-
Stage 1	755	692	-	754	692	-	-	-	-	-	-	-
Stage 2	830	692	-	685	690	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11	24.8	0.1	0.6
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1360	-	-	660	447	1383	-	-
HCM Lane V/C Ratio	0.004	-	-	0.09	0.608	0.014	-	-
HCM Control Delay (s)	7.7	0	-	11	24.8	7.6	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	3.9	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	406	57	64	57	73	237	53	911	35	180	934	334
v/c Ratio	0.78	0.12	0.13	0.50	0.30	0.58	0.44	0.77	0.05	0.75	0.57	0.38
Control Delay	47.8	27.4	0.5	58.4	36.6	10.6	54.3	31.2	0.1	57.3	20.9	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.8	27.4	0.5	58.4	36.6	10.6	54.3	31.2	0.1	57.3	20.9	4.7
Queue Length 50th (ft)	101	24	0	28	36	0	26	209	0	88	187	7
Queue Length 95th (ft)	#251	57	0	#102	77	59	81	#414	0	#250	383	75
Internal Link Dist (ft)		1177			277			338			365	
Turn Bay Length (ft)	195		150	190		175	250		150	300		150
Base Capacity (vph)	620	609	614	136	416	533	160	1553	801	320	1873	963
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.09	0.10	0.42	0.18	0.44	0.33	0.59	0.04	0.56	0.50	0.35

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	105	163	80	908	82	1026	12
v/c Ratio	0.37	0.50	0.63	0.72	0.54	0.77	0.02
Control Delay	16.6	34.3	64.5	26.3	54.9	27.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.6	34.3	64.5	26.3	54.9	27.4	0.1
Queue Length 50th (ft)	10	56	32	156	33	181	0
Queue Length 95th (ft)	63	170	#181	423	#174	490	0
Internal Link Dist (ft)	162	338		197		635	
Turn Bay Length (ft)			150		175		500
Base Capacity (vph)	754	751	126	2089	151	2168	971
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.22	0.63	0.43	0.54	0.47	0.01

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Intersection	
Int Delay, s/veh	0.1

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	5	1803	1843	5	5	5
Future Vol, veh/h	5	1803	1843	5	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	0	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	1898	1940	5	5	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1940	0	-	0	2899	970
Stage 1	-	-	-	-	1940	-
Stage 2	-	-	-	-	959	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	299	-	-	-	12	253
Stage 1	-	-	-	-	98	-
Stage 2	-	-	-	-	333	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	299	-	-	-	12	253
Mov Cap-2 Maneuver	-	-	-	-	73	-
Stage 1	-	-	-	-	98	-
Stage 2	-	-	-	-	327	-

Approach	SE	NW	SW
HCM Control Delay, s	0	0	40.1
HCM LOS			E

Minor Lane/Major Mvmt	NWT	NWR	SEL	SETSWLn1
Capacity (veh/h)	-	-	299	- 113
HCM Lane V/C Ratio	-	-	0.018	- 0.093
HCM Control Delay (s)	-	-	17.3	- 40.1
HCM Lane LOS	-	-	C	- E
HCM 95th %tile Q(veh)	-	-	0.1	- 0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	496	65	79	32	52	191	69	1161	52	224	1167	417
Future Volume (veh/h)	496	65	79	32	52	191	69	1161	52	224	1167	417
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	506	66	81	33	53	0	70	1185	53	229	1191	426
Adj No. of Lanes	2	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	549	402	335	24	131	111	66	1412	631	249	1777	777
Arrive On Green	0.16	0.22	0.22	0.01	0.07	0.00	0.04	0.40	0.40	0.14	0.50	0.50
Sat Flow, veh/h	3442	1863	1550	1774	1863	1583	1774	3539	1582	1774	3539	1546
Grp Volume(v), veh/h	506	66	81	33	53	0	70	1185	53	229	1191	426
Grp Sat Flow(s),veh/h/ln	1721	1863	1550	1774	1863	1583	1774	1770	1582	1774	1770	1546
Q Serve(g_s), s	11.9	2.4	3.6	1.1	2.2	0.0	3.0	24.9	1.7	10.5	20.8	15.6
Cycle Q Clear(g_c), s	11.9	2.4	3.6	1.1	2.2	0.0	3.0	24.9	1.7	10.5	20.8	15.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	549	402	335	24	131	111	66	1412	631	249	1777	777
V/C Ratio(X)	0.92	0.16	0.24	1.37	0.41	0.00	1.07	0.84	0.08	0.92	0.67	0.55
Avail Cap(c_a), veh/h	586	521	434	129	340	289	151	1464	654	302	1777	777
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.0	26.2	26.7	40.5	36.6	0.0	39.6	22.3	15.4	34.9	15.4	14.1
Incr Delay (d2), s/veh	18.8	0.1	0.1	185.7	0.8	0.0	50.3	4.4	0.1	26.7	1.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.9	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	1.2	1.5	1.8	1.2	0.0	2.4	12.9	0.8	7.0	10.3	6.8
LnGrp Delay(d),s/veh	52.8	26.3	26.8	227.1	37.3	0.0	91.5	26.7	15.4	61.6	16.3	14.9
LnGrp LOS	D	C	C	F	D		F	C	B	E	B	B
Approach Vol, veh/h		653			86			1308			1846	
Approach Delay, s/veh		46.9			110.2			29.7			21.6	
Approach LOS		D			F			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	45.3	18.1	10.8	16.5	36.8	6.1	22.8
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	8.0	40.0	15.0	15.0	15.0	33.0	7.0	23.0
Max Q Clear Time (g_c+I1), s	5.0	22.8	13.9	4.2	12.5	26.9	3.1	5.6
Green Ext Time (p_c), s	0.0	12.8	0.2	0.3	0.1	4.9	0.0	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	30.5
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	10	90	149	26	49	106	1081	101	106	1304	16
Future Volume (veh/h)	18	10	90	149	26	49	106	1081	101	106	1304	16
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	19	10	93	154	27	51	109	1114	104	109	1344	16
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	26	13	125	190	33	63	107	1492	139	128	1659	725
Arrive On Green	0.10	0.10	0.10	0.17	0.17	0.17	0.06	0.46	0.46	0.07	0.47	0.47
Sat Flow, veh/h	254	134	1243	1148	201	380	1774	3266	305	1774	3539	1546
Grp Volume(v), veh/h	122	0	0	232	0	0	109	603	615	109	1344	16
Grp Sat Flow(s),veh/h/ln	1631	0	0	1729	0	0	1774	1770	1801	1774	1770	1546
Q Serve(g_s), s	6.0	0.0	0.0	10.7	0.0	0.0	5.0	23.3	23.4	5.0	27.0	0.5
Cycle Q Clear(g_c), s	6.0	0.0	0.0	10.7	0.0	0.0	5.0	23.3	23.4	5.0	27.0	0.5
Prop In Lane	0.16		0.76	0.66		0.22	1.00		0.17	1.00		1.00
Lane Grp Cap(c), veh/h	164	0	0	287	0	0	107	808	823	128	1659	725
V/C Ratio(X)	0.74	0.00	0.00	0.81	0.00	0.00	1.02	0.75	0.75	0.85	0.81	0.02
Avail Cap(c_a), veh/h	589	0	0	624	0	0	107	894	910	128	1831	800
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.3	0.0	0.0	33.4	0.0	0.0	39.1	18.6	18.6	38.1	18.9	11.8
Incr Delay (d2), s/veh	4.8	0.0	0.0	4.1	0.0	0.0	93.0	3.1	3.1	38.3	2.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	0.0	5.4	0.0	0.0	5.2	12.1	12.3	3.8	13.7	0.2
LnGrp Delay(d),s/veh	41.2	0.0	0.0	37.5	0.0	0.0	132.2	21.7	21.7	76.4	21.5	11.9
LnGrp LOS	D			D			F	C	C	E	C	B
Approach Vol, veh/h		122			232			1327			1469	
Approach Delay, s/veh		41.2			37.5			30.8			25.5	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		12.4	9.0	44.0		17.8	10.0	43.0
Change Period (Y+Rc), s		4.0	4.0	5.0		4.0	4.0	5.0
Max Green Setting (Gmax), s		30.0	5.0	43.0		30.0	6.0	42.0
Max Q Clear Time (g_c+I1), s		8.0	7.0	29.0		12.7	7.0	25.4
Green Ext Time (p_c), s		0.3	0.0	9.9		0.6	0.0	11.3

Intersection Summary		
HCM 2010 Ctrl Delay		29.2
HCM 2010 LOS		C

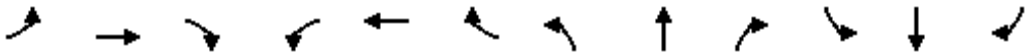
Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	133	0	6	0	92	190	16	174	0
Future Vol, veh/h	0	0	0	133	0	6	0	92	190	16	174	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	65	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	74	74	74	74	74	74	74	74	74	74	74	74
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	180	0	8	0	124	257	22	235	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	406	467	235	467	467	189	235	0	0	189	0	0
Stage 1	278	278	-	189	189	-	-	-	-	-	-	-
Stage 2	128	189	-	278	278	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	555	493	804	506	493	853	1332	-	-	1385	-	-
Stage 1	728	680	-	813	744	-	-	-	-	-	-	-
Stage 2	876	744	-	728	680	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	542	458	804	472	458	807	1332	-	-	1385	-	-
Mov Cap-2 Maneuver	542	458	-	472	458	-	-	-	-	-	-	-
Stage 1	728	668	-	769	704	-	-	-	-	-	-	-
Stage 2	867	704	-	715	668	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	17.2	0	0.6
HCM LOS	A	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1332	-	-	-	481	1385	-	-
HCM Lane V/C Ratio	-	-	-	-	0.391	0.016	-	-
HCM Control Delay (s)	0	-	-	0	17.2	7.6	0	-
HCM Lane LOS	A	-	-	A	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	1.8	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	506	66	81	33	53	195	70	1185	53	229	1191	426
v/c Ratio	0.95	0.14	0.16	0.35	0.25	0.54	0.60	0.91	0.08	0.88	0.71	0.48
Control Delay	68.1	28.4	0.6	55.2	38.0	10.1	65.8	40.0	0.2	72.4	24.7	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.1	28.4	0.6	55.2	38.0	10.1	65.8	40.0	0.2	72.4	24.7	7.8
Queue Length 50th (ft)	144	31	0	18	28	0	38	312	0	124	267	35
Queue Length 95th (ft)	#336	64	0	56	60	49	#118	#655	0	#338	#572	156
Internal Link Dist (ft)		1177			277			338			365	
Turn Bay Length (ft)	195		150	190		175	250		150	300		150
Base Capacity (vph)	535	545	567	118	366	472	137	1339	718	275	1670	892
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.12	0.14	0.28	0.14	0.41	0.51	0.88	0.07	0.83	0.71	0.48

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	122	232	109	1218	109	1344	16
v/c Ratio	0.46	0.71	1.14	0.76	0.95	0.81	0.02
Control Delay	18.7	47.8	178.2	27.6	118.9	28.7	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.7	47.8	178.2	27.6	118.9	28.7	0.1
Queue Length 50th (ft)	15	116	~68	267	61	304	0
Queue Length 95th (ft)	69	242	#245	#694	#233	#789	0
Internal Link Dist (ft)	162	338		197		635	
Turn Bay Length (ft)			150		175		500
Base Capacity (vph)	604	576	96	1598	115	1657	760
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.40	1.14	0.76	0.95	0.81	0.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

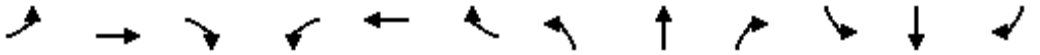
Intersection	
Int Delay, s/veh	0.5

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	43	1801	1867	9	6	18
Future Vol, veh/h	43	1801	1867	9	6	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	0	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	45	1896	1965	9	6	19

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1965	0	-	0	3003	983
Stage 1	-	-	-	-	1965	-
Stage 2	-	-	-	-	1038	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	292	-	-	-	11	248
Stage 1	-	-	-	-	95	-
Stage 2	-	-	-	-	302	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	292	-	-	-	9	248
Mov Cap-2 Maneuver	-	-	-	-	66	-
Stage 1	-	-	-	-	95	-
Stage 2	-	-	-	-	255	-

Approach	SE	NW	SW
HCM Control Delay, s	0.5	0	34.5
HCM LOS			D

Minor Lane/Major Mvmt	NWT	NWR	SEL	SETSWLn1
Capacity (veh/h)	-	-	292	- 147
HCM Lane V/C Ratio	-	-	0.155	- 0.172
HCM Control Delay (s)	-	-	19.6	- 34.5
HCM Lane LOS	-	-	C	- D
HCM 95th %tile Q(veh)	-	-	0.5	- 0.6



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	499	69	79	49	61	191	69	1180	47	224	1166	417
Future Volume (veh/h)	499	69	79	49	61	191	69	1180	47	224	1166	417
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	509	70	81	50	62	0	70	1204	48	229	1190	426
Adj No. of Lanes	2	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	551	390	324	37	131	111	66	1412	631	249	1776	776
Arrive On Green	0.16	0.21	0.21	0.02	0.07	0.00	0.04	0.40	0.40	0.14	0.50	0.50
Sat Flow, veh/h	3442	1863	1549	1774	1863	1583	1774	3539	1582	1774	3539	1546
Grp Volume(v), veh/h	509	70	81	50	62	0	70	1204	48	229	1190	426
Grp Sat Flow(s),veh/h/ln	1721	1863	1549	1774	1863	1583	1774	1770	1582	1774	1770	1546
Q Serve(g_s), s	12.0	2.5	3.6	1.7	2.6	0.0	3.1	25.5	1.5	10.5	20.8	15.6
Cycle Q Clear(g_c), s	12.0	2.5	3.6	1.7	2.6	0.0	3.1	25.5	1.5	10.5	20.8	15.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	551	390	324	37	131	111	66	1412	631	249	1776	776
V/C Ratio(X)	0.92	0.18	0.25	1.35	0.48	0.00	1.06	0.85	0.08	0.92	0.67	0.55
Avail Cap(c_a), veh/h	585	520	432	129	339	288	151	1460	653	301	1776	776
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.1	26.8	27.2	40.3	36.9	0.0	39.7	22.6	15.3	35.0	15.4	14.1
Incr Delay (d2), s/veh	19.2	0.1	0.1	169.2	1.0	0.0	49.1	5.0	0.1	26.8	1.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	1.3	1.5	2.6	1.4	0.0	2.4	13.4	0.7	7.0	10.3	6.8
LnGrp Delay(d),s/veh	53.3	26.8	27.3	209.6	37.8	0.0	90.3	27.5	15.4	61.8	16.4	14.9
LnGrp LOS	D	C	C	F	D		F	C	B	E	B	B
Approach Vol, veh/h		660			112			1322			1845	
Approach Delay, s/veh		47.3			114.5			30.4			21.7	
Approach LOS		D			F			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.1	45.4	18.2	10.8	16.5	36.9	6.7	22.2
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	8.0	40.0	15.0	15.0	15.0	33.0	7.0	23.0
Max Q Clear Time (g_c+I1), s	5.1	22.8	14.0	4.6	12.5	27.5	3.7	5.6
Green Ext Time (p_c), s	0.0	12.9	0.2	0.3	0.1	4.3	0.0	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	31.5
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	10	90	151	26	50	106	1094	101	106	1317	16
Future Volume (veh/h)	18	10	90	151	26	50	106	1094	101	106	1317	16
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	19	10	93	156	27	52	109	1128	104	109	1358	16
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	26	13	125	192	33	64	106	1497	138	127	1662	726
Arrive On Green	0.10	0.10	0.10	0.17	0.17	0.17	0.06	0.46	0.46	0.07	0.47	0.47
Sat Flow, veh/h	254	134	1243	1148	199	383	1774	3270	301	1774	3539	1546
Grp Volume(v), veh/h	122	0	0	235	0	0	109	610	622	109	1358	16
Grp Sat Flow(s),veh/h/ln	1631	0	0	1729	0	0	1774	1770	1802	1774	1770	1546
Q Serve(g_s), s	6.1	0.0	0.0	11.0	0.0	0.0	5.0	23.9	24.0	5.1	27.7	0.5
Cycle Q Clear(g_c), s	6.1	0.0	0.0	11.0	0.0	0.0	5.0	23.9	24.0	5.1	27.7	0.5
Prop In Lane	0.16		0.76	0.66		0.22	1.00		0.17	1.00		1.00
Lane Grp Cap(c), veh/h	164	0	0	289	0	0	106	810	825	127	1662	726
V/C Ratio(X)	0.74	0.00	0.00	0.81	0.00	0.00	1.03	0.75	0.75	0.86	0.82	0.02
Avail Cap(c_a), veh/h	584	0	0	619	0	0	106	887	903	127	1817	793
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.6	0.0	0.0	33.6	0.0	0.0	39.4	18.8	18.8	38.5	19.1	11.9
Incr Delay (d2), s/veh	4.9	0.0	0.0	4.1	0.0	0.0	95.6	3.4	3.3	40.0	2.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	0.0	5.6	0.0	0.0	5.2	12.3	12.5	3.9	14.0	0.2
LnGrp Delay(d),s/veh	41.5	0.0	0.0	37.8	0.0	0.0	135.4	22.1	22.2	78.5	21.9	11.9
LnGrp LOS	D			D			F	C	C	E	C	B
Approach Vol, veh/h		122			235			1341			1483	
Approach Delay, s/veh		41.5			37.8			31.4			26.0	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		12.4	9.0	44.3		18.0	10.0	43.3
Change Period (Y+Rc), s		4.0	4.0	5.0		4.0	4.0	5.0
Max Green Setting (Gmax), s		30.0	5.0	43.0		30.0	6.0	42.0
Max Q Clear Time (g_c+I1), s		8.1	7.0	29.7		13.0	7.1	26.0
Green Ext Time (p_c), s		0.3	0.0	9.7		0.6	0.0	11.1

Intersection Summary		
HCM 2010 Ctrl Delay		29.7
HCM 2010 LOS		C

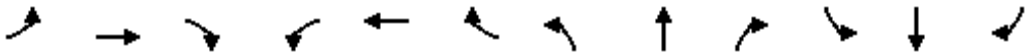
Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	8	26	133	10	1	4	92	190	16	174	6
Future Vol, veh/h	10	8	26	133	10	1	4	92	190	16	174	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	65	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	74	74	74	74	74	74	74	74	74	74	74	74
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	11	35	180	14	1	5	124	257	22	235	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	425	482	239	505	486	189	243	0	0	189	0	0
Stage 1	282	282	-	200	200	-	-	-	-	-	-	-
Stage 2	143	200	-	305	286	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	540	484	800	478	481	853	1323	-	-	1385	-	-
Stage 1	725	678	-	802	736	-	-	-	-	-	-	-
Stage 2	860	736	-	705	675	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	517	447	800	417	445	807	1323	-	-	1385	-	-
Mov Cap-2 Maneuver	517	447	-	417	445	-	-	-	-	-	-	-
Stage 1	721	666	-	755	693	-	-	-	-	-	-	-
Stage 2	838	693	-	651	663	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.3	20.8	0.1	0.6
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1323	-	-	631	420	1385	-	-
HCM Lane V/C Ratio	0.004	-	-	0.094	0.463	0.016	-	-
HCM Control Delay (s)	7.7	0	-	11.3	20.8	7.6	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	2.4	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	509	70	81	50	62	195	70	1204	48	229	1190	426
v/c Ratio	0.96	0.14	0.16	0.50	0.28	0.53	0.60	0.92	0.07	0.88	0.71	0.48
Control Delay	70.8	28.6	0.6	62.3	38.7	9.9	66.2	41.2	0.2	73.7	24.8	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.8	28.6	0.6	62.3	38.7	9.9	66.2	41.2	0.2	73.7	24.8	7.8
Queue Length 50th (ft)	146	34	0	27	33	0	38	322	0	125	270	35
Queue Length 95th (ft)	#338	67	0	#86	68	49	#118	#670	0	#338	#571	155
Internal Link Dist (ft)		1177			277			338			365	
Turn Bay Length (ft)	195		150	190		175	250		150	300		150
Base Capacity (vph)	531	543	565	117	364	470	137	1329	715	273	1671	893
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.13	0.14	0.43	0.17	0.41	0.51	0.91	0.07	0.84	0.71	0.48

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	122	235	109	1232	109	1358	16
v/c Ratio	0.46	0.72	1.14	0.77	0.95	0.82	0.02
Control Delay	18.8	48.0	178.3	27.9	119.5	29.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.8	48.0	178.3	27.9	119.5	29.2	0.1
Queue Length 50th (ft)	15	118	~68	274	61	311	0
Queue Length 95th (ft)	69	246	#245	#708	#233	#802	0
Internal Link Dist (ft)	162	338		197		635	
Turn Bay Length (ft)			150		175		500
Base Capacity (vph)	603	575	96	1595	115	1654	759
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.41	1.14	0.77	0.95	0.82	0.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	1	0	0	148	0	877	15	99	555	3
Future Vol, veh/h	0	0	1	0	0	148	0	877	15	99	555	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	1	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	1	0	0	166	0	985	17	111	624	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	625	-	-	994	627	0	0	1002	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.22	-	-	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.318	-	-	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	0	0	485	0	0	297	955	-	-	691	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	485	-	-	297	955	-	-	691	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.4	31.5	0	1.7
HCM LOS	B	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	955	-	-	485	297	691	-	-
HCM Lane V/C Ratio	-	-	-	0.002	0.56	0.161	-	-
HCM Control Delay (s)	0	-	-	12.4	31.5	11.2	-	-
HCM Lane LOS	A	-	-	B	D	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0	3.2	0.6	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	0	13	1	0	4	17	844	6	4	419	94
Future Volume (veh/h)	51	0	13	1	0	4	17	844	6	4	419	94
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	59	0	15	1	0	5	20	981	7	5	487	109
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	204	0	19	97	5	90	34	1237	9	10	967	216
Arrive On Green	0.06	0.00	0.06	0.06	0.00	0.06	0.02	0.67	0.67	0.01	0.66	0.66
Sat Flow, veh/h	1162	0	295	203	83	1429	1774	1847	13	1774	1474	330
Grp Volume(v), veh/h	74	0	0	6	0	0	20	0	988	5	0	596
Grp Sat Flow(s),veh/h/ln	1458	0	0	1715	0	0	1774	0	1860	1774	0	1805
Q Serve(g_s), s	2.3	0.0	0.0	0.0	0.0	0.0	0.6	0.0	18.6	0.1	0.0	8.4
Cycle Q Clear(g_c), s	2.5	0.0	0.0	0.2	0.0	0.0	0.6	0.0	18.6	0.1	0.0	8.4
Prop In Lane	0.80		0.20	0.17		0.83	1.00		0.01	1.00		0.18
Lane Grp Cap(c), veh/h	223	0	0	193	0	0	34	0	1246	10	0	1183
V/C Ratio(X)	0.33	0.00	0.00	0.03	0.00	0.00	0.58	0.00	0.79	0.53	0.00	0.50
Avail Cap(c_a), veh/h	595	0	0	594	0	0	143	0	1723	179	0	1708
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.9	0.0	0.0	21.9	0.0	0.0	24.1	0.0	5.8	24.6	0.0	4.4
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.1	0.0	0.0	14.5	0.0	1.8	38.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.0	0.1	0.0	0.0	0.4	0.0	10.0	0.2	0.0	4.2
LnGrp Delay(d),s/veh	23.8	0.0	0.0	21.9	0.0	0.0	38.7	0.0	7.6	62.9	0.0	4.7
LnGrp LOS	C			C			D		A	E		A
Approach Vol, veh/h		74			6			1008			601	
Approach Delay, s/veh		23.8			21.9			8.2			5.2	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.3	38.3		7.1	5.0	37.6		7.1
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0
Max Green Setting (Gmax), s	5.0	46.0		16.0	4.0	47.0		16.0
Max Q Clear Time (g_c+I1), s	2.1	20.6		4.5	2.6	10.4		2.2
Green Ext Time (p_c), s	0.0	12.7		0.2	0.0	14.9		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	7.9
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	1	30	1	1	1	7	573	2	4	934	62
Future Volume (veh/h)	78	1	30	1	1	1	7	573	2	4	934	62
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	83	1	32	1	1	1	7	610	2	4	994	66
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	208	3	41	112	86	58	13	1253	4	8	1161	77
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.01	0.68	0.68	0.00	0.67	0.67
Sat Flow, veh/h	1026	32	403	304	857	580	1774	1856	6	1774	1728	115
Grp Volume(v), veh/h	116	0	0	3	0	0	7	0	612	4	0	1060
Grp Sat Flow(s),veh/h/ln	1461	0	0	1740	0	0	1774	0	1862	1774	0	1843
Q Serve(g_s), s	4.5	0.0	0.0	0.0	0.0	0.0	0.2	0.0	9.4	0.1	0.0	26.2
Cycle Q Clear(g_c), s	4.6	0.0	0.0	0.1	0.0	0.0	0.2	0.0	9.4	0.1	0.0	26.2
Prop In Lane	0.72		0.28	0.33		0.33	1.00		0.00	1.00		0.06
Lane Grp Cap(c), veh/h	251	0	0	256	0	0	13	0	1257	8	0	1238
V/C Ratio(X)	0.46	0.00	0.00	0.01	0.00	0.00	0.54	0.00	0.49	0.52	0.00	0.86
Avail Cap(c_a), veh/h	500	0	0	525	0	0	120	0	1481	120	0	1466
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.9	0.0	0.0	23.9	0.0	0.0	29.2	0.0	4.6	29.3	0.0	7.5
Incr Delay (d2), s/veh	1.3	0.0	0.0	0.0	0.0	0.0	30.2	0.0	0.3	46.2	0.0	4.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.0	0.0	0.0	0.0	0.2	0.0	4.9	0.2	0.0	14.5
LnGrp Delay(d),s/veh	27.3	0.0	0.0	24.0	0.0	0.0	59.4	0.0	4.9	75.5	0.0	12.1
LnGrp LOS	C			C			E		A	E		B
Approach Vol, veh/h		116			3			619			1064	
Approach Delay, s/veh		27.3			24.0			5.6			12.3	
Approach LOS		C			C			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.3	44.9		9.9	4.4	44.7		9.9
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0
Max Green Setting (Gmax), s	4.0	47.0		16.0	4.0	47.0		16.0
Max Q Clear Time (g_c+I1), s	2.1	11.4		6.6	2.2	28.2		2.1
Green Ext Time (p_c), s	0.0	16.4		0.3	0.0	11.5		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	11.0
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	1	0	0	150	0	887	15	101	563	3
Future Vol, veh/h	0	0	1	0	0	150	0	887	15	101	563	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	1	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	1	0	0	169	0	997	17	113	633	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	634	-	-	1005	636	0	0	1013	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.22	-	-	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.318	-	-	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	0	0	479	0	0	293	947	-	-	684	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	479	-	-	293	947	-	-	684	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.5	32.7	0	1.7
HCM LOS	B	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	947	-	-	479	293	684	-	-
HCM Lane V/C Ratio	-	-	-	0.002	0.575	0.166	-	-
HCM Control Delay (s)	0	-	-	12.5	32.7	11.3	-	-
HCM Lane LOS	A	-	-	B	D	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0	3.3	0.6	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	0	13	1	0	4	17	854	6	4	427	94
Future Volume (veh/h)	51	0	13	1	0	4	17	854	6	4	427	94
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	59	0	15	1	0	5	20	993	7	5	497	109
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	201	0	19	95	5	90	34	1247	9	10	978	215
Arrive On Green	0.06	0.00	0.06	0.06	0.00	0.06	0.02	0.67	0.67	0.01	0.66	0.66
Sat Flow, veh/h	1162	0	295	199	87	1427	1774	1847	13	1774	1481	325
Grp Volume(v), veh/h	74	0	0	6	0	0	20	0	1000	5	0	606
Grp Sat Flow(s),veh/h/ln	1458	0	0	1712	0	0	1774	0	1860	1774	0	1805
Q Serve(g_s), s	2.4	0.0	0.0	0.0	0.0	0.0	0.6	0.0	19.2	0.1	0.0	8.7
Cycle Q Clear(g_c), s	2.5	0.0	0.0	0.2	0.0	0.0	0.6	0.0	19.2	0.1	0.0	8.7
Prop In Lane	0.80		0.20	0.17		0.83	1.00		0.01	1.00		0.18
Lane Grp Cap(c), veh/h	220	0	0	191	0	0	34	0	1255	10	0	1193
V/C Ratio(X)	0.34	0.00	0.00	0.03	0.00	0.00	0.58	0.00	0.80	0.53	0.00	0.51
Avail Cap(c_a), veh/h	583	0	0	582	0	0	140	0	1725	140	0	1674
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.4	0.0	0.0	22.3	0.0	0.0	24.6	0.0	5.8	25.1	0.0	4.4
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.1	0.0	0.0	14.6	0.0	1.9	38.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.0	0.1	0.0	0.0	0.4	0.0	10.1	0.2	0.0	4.3
LnGrp Delay(d),s/veh	24.3	0.0	0.0	22.4	0.0	0.0	39.3	0.0	7.7	63.5	0.0	4.7
LnGrp LOS	C			C			D		A	E		A
Approach Vol, veh/h		74			6			1020			611	
Approach Delay, s/veh		24.3			22.4			8.3			5.2	
Approach LOS		C			C			A			A	

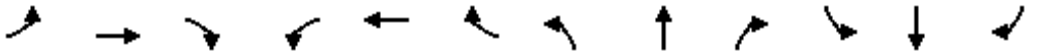
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.3	39.2		7.2	5.0	38.5		7.2
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0
Max Green Setting (Gmax), s	4.0	47.0		16.0	4.0	47.0		16.0
Max Q Clear Time (g_c+I1), s	2.1	21.2		4.5	2.6	10.7		2.2
Green Ext Time (p_c), s	0.0	13.0		0.2	0.0	15.3		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	7.9
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	1	30	1	1	1	7	586	2	4	959	62
Future Volume (veh/h)	78	1	30	1	1	1	7	586	2	4	959	62
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	83	1	32	1	1	1	7	623	2	4	1020	66
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	205	3	41	110	86	58	13	1263	4	8	1173	76
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.01	0.68	0.68	0.00	0.68	0.68
Sat Flow, veh/h	1024	35	403	307	854	580	1774	1856	6	1774	1731	112
Grp Volume(v), veh/h	116	0	0	3	0	0	7	0	625	4	0	1086
Grp Sat Flow(s),veh/h/ln	1462	0	0	1741	0	0	1774	0	1862	1774	0	1843
Q Serve(g_s), s	4.6	0.0	0.0	0.0	0.0	0.0	0.2	0.0	9.8	0.1	0.0	28.0
Cycle Q Clear(g_c), s	4.7	0.0	0.0	0.1	0.0	0.0	0.2	0.0	9.8	0.1	0.0	28.0
Prop In Lane	0.72		0.28	0.33		0.33	1.00		0.00	1.00		0.06
Lane Grp Cap(c), veh/h	249	0	0	254	0	0	13	0	1267	8	0	1249
V/C Ratio(X)	0.47	0.00	0.00	0.01	0.00	0.00	0.54	0.00	0.49	0.52	0.00	0.87
Avail Cap(c_a), veh/h	487	0	0	513	0	0	117	0	1445	117	0	1430
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.6	0.0	0.0	24.5	0.0	0.0	30.0	0.0	4.6	30.1	0.0	7.7
Incr Delay (d2), s/veh	1.4	0.0	0.0	0.0	0.0	0.0	30.3	0.0	0.3	46.3	0.0	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	5.0	0.2	0.0	15.8
LnGrp Delay(d),s/veh	28.0	0.0	0.0	24.6	0.0	0.0	60.3	0.0	4.9	76.4	0.0	13.1
LnGrp LOS	C			C			E		A	E		B
Approach Vol, veh/h		116			3			632			1090	
Approach Delay, s/veh		28.0			24.6			5.6			13.4	
Approach LOS		C			C			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.3	46.2		10.1	4.4	46.0		10.1
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0
Max Green Setting (Gmax), s	4.0	47.0		16.0	4.0	47.0		16.0
Max Q Clear Time (g_c+I1), s	2.1	11.8		6.7	2.2	30.0		2.1
Green Ext Time (p_c), s	0.0	17.0		0.3	0.0	11.0		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	11.6
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	0	30	5	5	5	10	520	5	5	905	100
Future Volume (veh/h)	110	0	30	5	5	5	10	520	5	5	905	100
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	117	0	32	5	5	5	11	553	5	5	963	106
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	345	0	44	179	119	81	21	1731	16	10	1529	168
Arrive On Green	0.14	0.00	0.14	0.14	0.14	0.14	0.01	0.48	0.48	0.01	0.48	0.48
Sat Flow, veh/h	1142	0	312	297	850	574	1774	3594	32	1774	3216	354
Grp Volume(v), veh/h	149	0	0	15	0	0	11	272	286	5	530	539
Grp Sat Flow(s),veh/h/ln	1454	0	0	1721	0	0	1774	1770	1857	1774	1770	1800
Q Serve(g_s), s	3.1	0.0	0.0	0.0	0.0	0.0	0.2	3.3	3.3	0.1	7.8	7.8
Cycle Q Clear(g_c), s	3.4	0.0	0.0	0.3	0.0	0.0	0.2	3.3	3.3	0.1	7.8	7.8
Prop In Lane	0.79		0.21	0.33		0.33	1.00		0.02	1.00		0.20
Lane Grp Cap(c), veh/h	388	0	0	379	0	0	21	852	894	10	841	856
V/C Ratio(X)	0.38	0.00	0.00	0.04	0.00	0.00	0.53	0.32	0.32	0.52	0.63	0.63
Avail Cap(c_a), veh/h	1091	0	0	1154	0	0	203	1065	1118	203	1065	1083
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.3	0.0	0.0	13.0	0.0	0.0	17.2	5.5	5.5	17.3	6.9	6.9
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.0	0.0	0.0	19.9	0.2	0.2	37.3	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	0.0	0.1	0.0	0.0	0.2	1.6	1.7	0.1	3.9	3.9
LnGrp Delay(d),s/veh	14.9	0.0	0.0	13.0	0.0	0.0	37.0	5.8	5.7	54.6	7.6	7.6
LnGrp LOS	B			B			D	A	A	D	A	A
Approach Vol, veh/h		149			15			569			1074	
Approach Delay, s/veh		14.9			13.0			6.4			7.8	
Approach LOS		B			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.2	21.8		8.9	4.4	21.6		8.9
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0
Max Green Setting (Gmax), s	4.0	21.0		22.0	4.0	21.0		22.0
Max Q Clear Time (g_c+I1), s	2.1	5.3		5.4	2.2	9.8		2.3
Green Ext Time (p_c), s	0.0	8.5		0.8	0.0	6.8		0.8

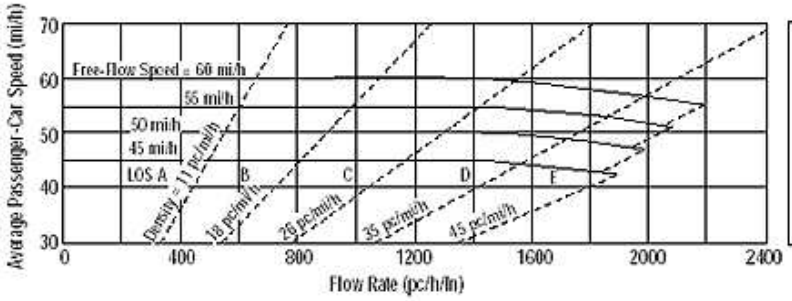
Intersection Summary	
HCM 2010 Ctrl Delay	8.0
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	0	30	5	5	5	10	524	5	5	913	100
Future Volume (veh/h)	110	0	30	5	5	5	10	524	5	5	913	100
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	117	0	32	5	5	5	11	557	5	5	971	106
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	344	0	44	179	119	81	21	1735	16	10	1534	167
Arrive On Green	0.14	0.00	0.14	0.14	0.14	0.14	0.01	0.48	0.48	0.01	0.48	0.48
Sat Flow, veh/h	1142	0	312	296	851	574	1774	3594	32	1774	3219	351
Grp Volume(v), veh/h	149	0	0	15	0	0	11	274	288	5	534	543
Grp Sat Flow(s),veh/h/ln	1454	0	0	1721	0	0	1774	1770	1857	1774	1770	1801
Q Serve(g_s), s	3.2	0.0	0.0	0.0	0.0	0.0	0.2	3.3	3.3	0.1	7.9	7.9
Cycle Q Clear(g_c), s	3.4	0.0	0.0	0.3	0.0	0.0	0.2	3.3	3.3	0.1	7.9	7.9
Prop In Lane	0.79		0.21	0.33		0.33	1.00		0.02	1.00		0.20
Lane Grp Cap(c), veh/h	388	0	0	379	0	0	21	854	897	10	843	858
V/C Ratio(X)	0.38	0.00	0.00	0.04	0.00	0.00	0.53	0.32	0.32	0.52	0.63	0.63
Avail Cap(c_a), veh/h	1088	0	0	1150	0	0	203	1062	1114	203	1062	1080
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.4	0.0	0.0	13.0	0.0	0.0	17.2	5.5	5.5	17.4	6.9	6.9
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.0	0.0	0.0	19.9	0.2	0.2	37.3	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	0.0	0.1	0.0	0.0	0.2	1.7	1.7	0.1	3.9	4.0
LnGrp Delay(d),s/veh	15.0	0.0	0.0	13.1	0.0	0.0	37.1	5.8	5.7	54.7	7.7	7.7
LnGrp LOS	B			B			D	A	A	D	A	A
Approach Vol, veh/h		149			15			573			1082	
Approach Delay, s/veh		15.0			13.1			6.4			7.9	
Approach LOS		B			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.2	21.9		8.9	4.4	21.7		8.9
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0
Max Green Setting (Gmax), s	4.0	21.0		22.0	4.0	21.0		22.0
Max Q Clear Time (g_c+I1), s	2.1	5.3		5.4	2.2	9.9		2.3
Green Ext Time (p_c), s	0.0	8.5		0.8	0.0	6.8		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	8.0
HCM 2010 LOS	A

MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	JF
Agency or Company	ED County
Date Performed	6/23/2017
Analysis Time Period	AM

Site Information

Highway/Direction to Travel	Missouri Flat Road Northbound
From/To	Mother Lode/Golden Center
Jurisdiction	ED County
Analysis Year	Existing

Project Description Creekside

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1343	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	2
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.977

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	747
Speed, S (mi/h)	45.0
D (pc/mi/ln)	16.6
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*729.9*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.07*
Bicycle level of service (Exhibit 15-4)	*C*

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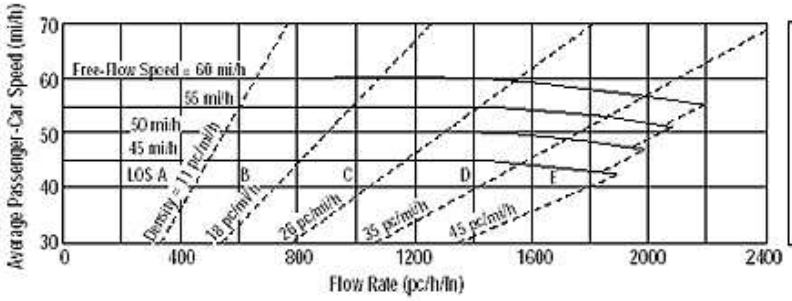
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	JF
Agency or Company	ED County
Date Performed	6/23/2017
Analysis Time Period	AM

Site Information

Highway/Direction to Travel	Missouri Flat Road Northbound
From/To	Golden Center/China Garden
Jurisdiction	ED County
Analysis Year	Existing

Project Description Creekside

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1071	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	2
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.977

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	596
Speed, S (mi/h)	45.0
D (pc/mi/ln)	13.2
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*582.1*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.96*
Bicycle level of service (Exhibit 15-4)	*C*

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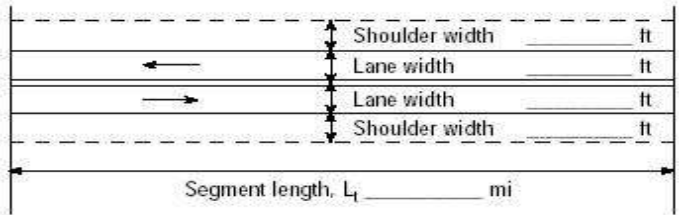
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	*JF*	Highway / Direction of Travel	*Missouri Flat Road*
Agency or Company	*ED County*	From/To	
Date Performed	*6/22/2017*	Jurisdiction	
Analysis Time Period	*AM*	Analysis Year	*Existing*

Project Description: *Creekside - Northbound*

Input Data



Show North Arrow

☑ Class I highway ☐ Class II highway ☐ Class III highway

Terrain ☑ Level ☐ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.88*

No-passing zone *100%*

% Trucks and Buses , P_T *4 %*

% Recreational vehicles, P_R *2%*

Access points *mi* *15*/mi

Analysis direction vol., V_d *931*veh/h

Opposing direction vol., V_o *847*veh/h

Shoulder width ft *3.0*

Lane Width ft *12.0*

Segment Length mi *0.9*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*1058*	*963*

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*3.8 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.1 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*38.7 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*21.8 mi/h*
		Percent free flow speed, PFFS	*56.5 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*1058*	*963*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*78.9*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*18.2*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*88.4*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*E*
Volume to capacity ratio, *v/c*	*0.62*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1700*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*56.5*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*1058.0*
Effective width, Wv (Eq. 15-29) ft	*15.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*5.02*
Bicycle level of service (Exhibit 15-4)	*E*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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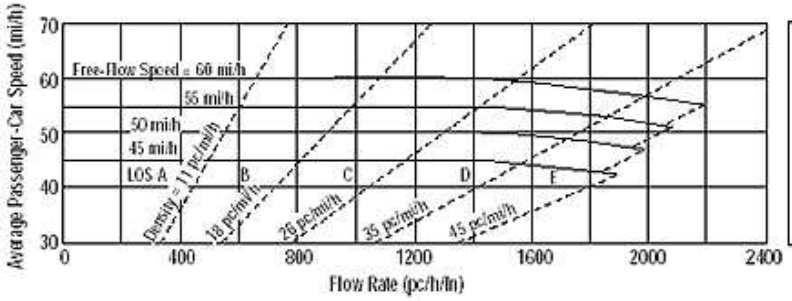
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	JF
Agency or Company	ED County
Date Performed	6/23/2017
Analysis Time Period	PM

Site Information

Highway/Direction to Travel	Missouri Flat Road Northbound
From/To	Mother Lode/Golden Center
Jurisdiction	ED County
Analysis Year	Existing

Project Description Creekside

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1490	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	2
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.977

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	829
Speed, S (mi/h)	45.0
D (pc/mi/ln)	18.4
LOS	C

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*809.8*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.13*
Bicycle level of service (Exhibit 15-4)	*C*

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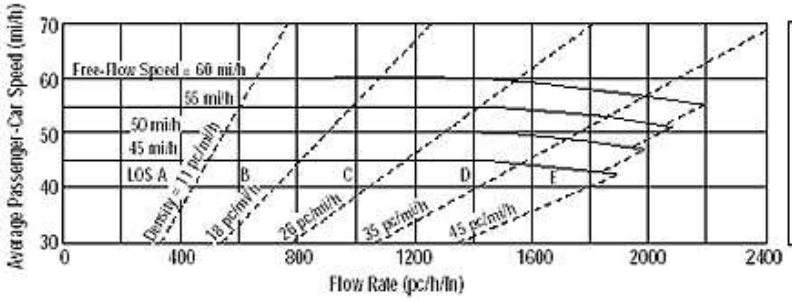
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	JF
Agency or Company	ED County
Date Performed	6/23/2017
Analysis Time Period	PM

Site Information

Highway/Direction to Travel	Missouri Flat Road Northbound
From/To	Golden Center/China Garden
Jurisdiction	ED County
Analysis Year	Existing

Project Description Creekside

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1016	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	2
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.977

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	565
Speed, S (mi/h)	45.0
D (pc/mi/ln)	12.6
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*552.2*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.93*
Bicycle level of service (Exhibit 15-4)	*C*

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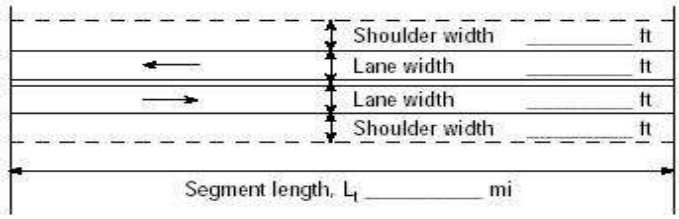
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Missouri Flat Road*
Agency or Company	*ED County*	From/To	
Date Performed	*6/22/2017*	Jurisdiction	
Analysis Time Period	*PM*	Analysis Year	*Existing*

Project Description: *Creekside - Northbound*

Input Data





☑ Class I highway ☐ Class II highway ☐ Class III highway

Terrain ☑ Level ☐ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.88*

No-passing zone *100%*

% Trucks and Buses , P_T *4 %*

% Recreational vehicles, P_R *2%*

Access points *mi* *15*/mi

Analysis direction vol., V_d *826*veh/h

Opposing direction vol., V_o *1118*veh/h

Shoulder width ft *3.0*

Lane Width ft *12.0*

Segment Length mi *0.9*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*939*	*1270*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*3.8 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*0.9 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*38.7 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*20.6 mi/h*
		Percent free flow speed, PFFS	*53.3 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*939*	*1270*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*78.7*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*15.1*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*85.1*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*E*
Volume to capacity ratio, *v/c*	*0.55*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1700*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*53.3*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*938.6*
Effective width, Wv (Eq. 15-29) ft	*15.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*4.96*
Bicycle level of service (Exhibit 15-4)	*E*
Notes	
1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain. 2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F. 3. For the analysis direction only and for v>200 veh/h. 4. For the analysis direction only 5. Exhibit 15-20 provides coefficients a and b for Equation 15-10. 6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.	

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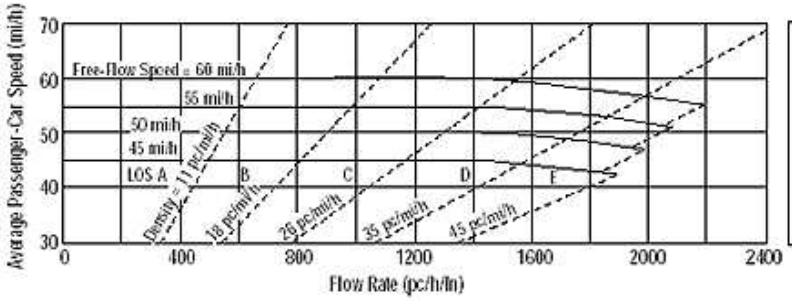
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	JF
Agency or Company	ED County
Date Performed	6/23/2017
Analysis Time Period	AM

Site Information

Highway/Direction to Travel	Missouri Flat Road Southbound
From/To	Mother Lode/Golden Center
Jurisdiction	ED County
Analysis Year	Existing

Project Description Creekside

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1376	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	2
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.977

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	765
Speed, S (mi/h)	45.0
D (pc/mi/ln)	17.0
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*747.8*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.08*
Bicycle level of service (Exhibit 15-4)	*C*

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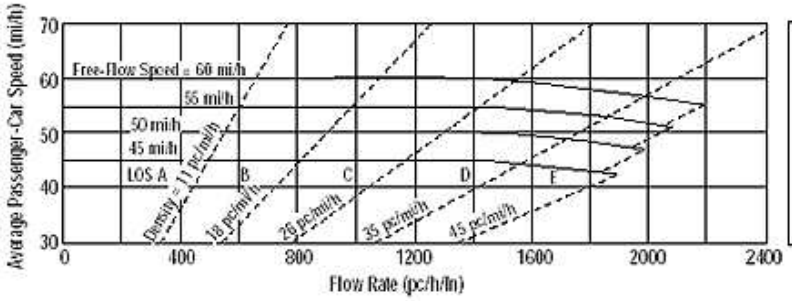
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	JF
Agency or Company	ED County
Date Performed	6/23/2017
Analysis Time Period	AM

Site Information

Highway/Direction to Travel	Missouri Flat Road Southbound
From/To	Golden Center/China Garden
Jurisdiction	ED County
Analysis Year	Existing

Project Description Creekside

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1026	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	2
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.977

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	570
Speed, S (mi/h)	45.0
D (pc/mi/ln)	12.7
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*557.6*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.94*
Bicycle level of service (Exhibit 15-4)	*C*

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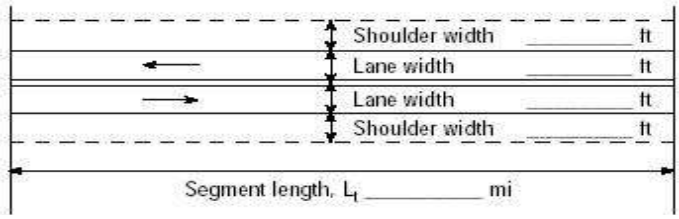
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	*JF*	Highway / Direction of Travel	*Missouri Flat Road*
Agency or Company	*ED County*	From/To	
Date Performed	*6/22/2017*	Jurisdiction	
Analysis Time Period	*AM*	Analysis Year	*Existing*

Project Description: *Creekside - Southbound*

Input Data



Analysis direction vol., V_d *847*veh/h

Opposing direction vol., V_o *931*veh/h

Shoulder width ft *3.0*

Lane Width ft *12.0*

Segment Length mi *0.9*



☑ Class I highway ☐ Class II highway ☐ Class III highway

Terrain ☑ Level ☐ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.88*

No-passing zone *100*%

% Trucks and Buses , P_T *4* %

% Recreational vehicles, P_R *2*%

Access points *mi* *15*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*963*	*1058*

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*3.8 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.1 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*38.7 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*21.9 mi/h*
		Percent free flow speed, PFFS	*56.7* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*963*	*1058*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*77.2*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*18.2*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*85.9*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*E*
Volume to capacity ratio, *v/c*	*0.57*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1700*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*56.7*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*962.5*
Effective width, Wv (Eq. 15-29) ft	*15.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*4.97*
Bicycle level of service (Exhibit 15-4)	*E*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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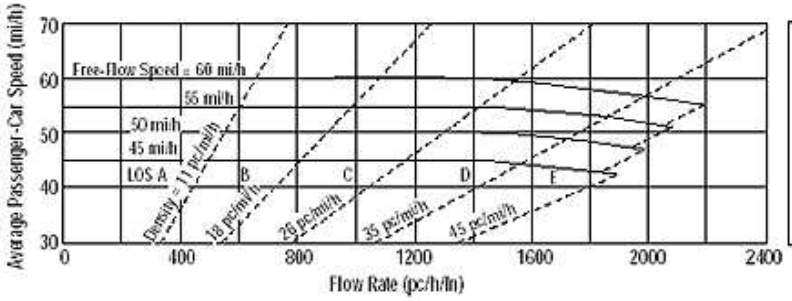
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	JF
Agency or Company	ED County
Date Performed	6/23/2017
Analysis Time Period	PM

Site Information

Highway/Direction to Travel	Missouri Flat Road Southbound
From/To	Mother Lode/Golden Center
Jurisdiction	ED County
Analysis Year	Existing

Project Description Creekside

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1629	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	2
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.977

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	906
Speed, S (mi/h)	45.0
D (pc/mi/ln)	20.1
LOS	C

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*885.3*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.17*
Bicycle level of service (Exhibit 15-4)	*C*

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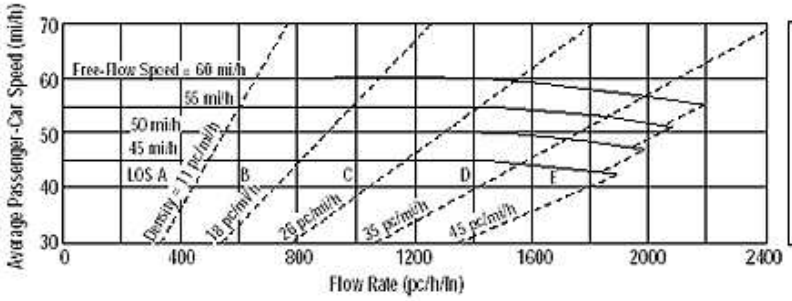
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	JF
Agency or Company	ED County
Date Performed	6/23/2017
Analysis Time Period	PM

Site Information

Highway/Direction to Travel	Missouri Flat Road Southbound
From/To	Golden Center/China Garden
Jurisdiction	ED County
Analysis Year	Existing

Project Description Creekside

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1240	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	2
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.977

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	690
Speed, S (mi/h)	45.0
D (pc/mi/ln)	15.3
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*673.9*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.03*
Bicycle level of service (Exhibit 15-4)	*C*

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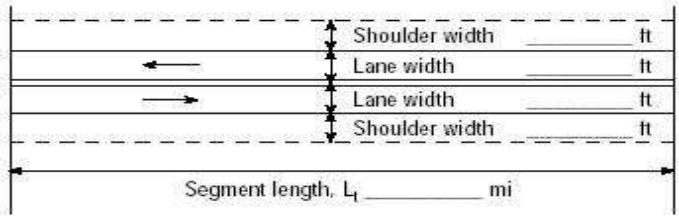
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Missouri Flat Road*
Agency or Company	*ED County*	From/To	
Date Performed	*6/22/2017*	Jurisdiction	
Analysis Time Period	*PM*	Analysis Year	*Existing*

Project Description: *Creekside - Southbound*

Input Data





☑ Class I highway ☐ Class II highway ☐ Class III highway

Terrain ☑ Level ☐ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.88*

No-passing zone *100%*

% Trucks and Buses , P_T *4 %*

% Recreational vehicles, P_R *2%*

Access points *mi* *15*/mi

Analysis direction vol., V_d *1118*veh/h

Opposing direction vol., V_o *826*veh/h

Shoulder width ft *3.0*

Lane Width ft *12.0*

Segment Length mi *0.9*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*1270*	*939*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*3.8 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.1 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*38.7 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*20.4 mi/h*
		Percent free flow speed, PFFS	*52.7 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*1270*	*939*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*83.6*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*15.1*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*92.3*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*E*
Volume to capacity ratio, *v/c*	*0.75*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1700*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*52.7*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*1270.5*
Effective width, Wv (Eq. 15-29) ft	*15.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*5.11*
Bicycle level of service (Exhibit 15-4)	*E*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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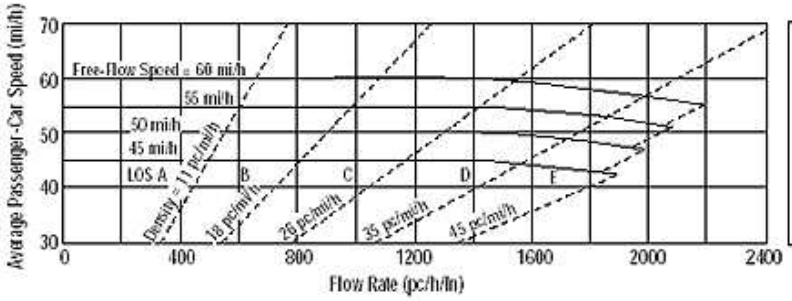
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	JF
Agency or Company	ED County
Date Performed	6/23/2017
Analysis Time Period	AM

Site Information

Highway/Direction to Travel	Missouri Flat Road Northbound
From/To	Mother Lode/Golden Center
Jurisdiction	ED County
Analysis Year	Existing plus Project

Project Description Creekside

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1372	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	2
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.977

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	763
Speed, S (mi/h)	45.0
D (pc/mi/ln)	17.0
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*745.7*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.08*
Bicycle level of service (Exhibit 15-4)	*C*

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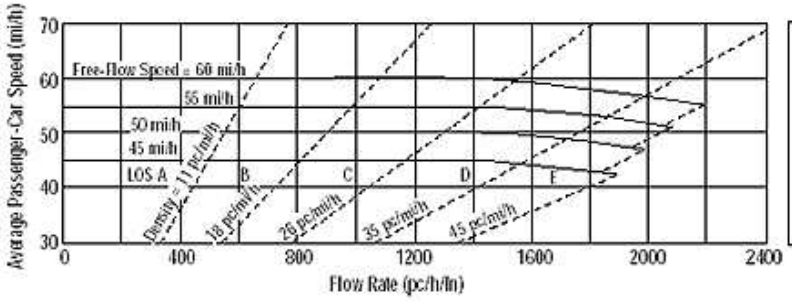
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	JF
Agency or Company	ED County
Date Performed	6/23/2017
Analysis Time Period	AM

Site Information

Highway/Direction to Travel	Missouri Flat Road Northbound
From/To	Golden Center/China Garden
Jurisdiction	ED County
Analysis Year	Existing plus Project

Project Description Creekside

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1084	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	2
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.977

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	603
Speed, S (mi/h)	45.0
D (pc/mi/ln)	13.4
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*589.1*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.96*
Bicycle level of service (Exhibit 15-4)	*C*

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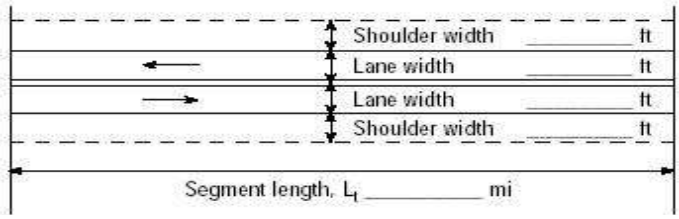
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Missouri Flat Road Northbound*
Agency or Company	*ED County*	From/To	*China Garden/Pleasant Valley*
Date Performed	*6/22/2017*	Jurisdiction	
Analysis Time Period	*AM*	Analysis Year	*Existing plus Project*

Project Description: *Creekside*

Input Data



Analysis direction vol., V_d *943*veh/h

Opposing direction vol., V_o *861*veh/h

Shoulder width ft *3.0*

Lane Width ft *12.0*

Segment Length mi *0.9*



☑ Class I highway ☐ Class II highway ☐ Class III highway

Terrain ☑ Level ☐ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.88*

No-passing zone *100*%

% Trucks and Buses , P_T *4* %

% Recreational vehicles, P_R *2*%

Access points *mi* *15*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*1072*	*978*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*3.8 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.1 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*38.7 mi/h*
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*21.6 mi/h*
		Percent free flow speed, PFFS	*56.0* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*1072*	*978*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*79.7*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*17.8*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*89.0*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*E*
Volume to capacity ratio, *v/c*	*0.63*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1700*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*56.0*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*1071.6*
Effective width, Wv (Eq. 15-29) ft	*15.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*5.02*
Bicycle level of service (Exhibit 15-4)	*E*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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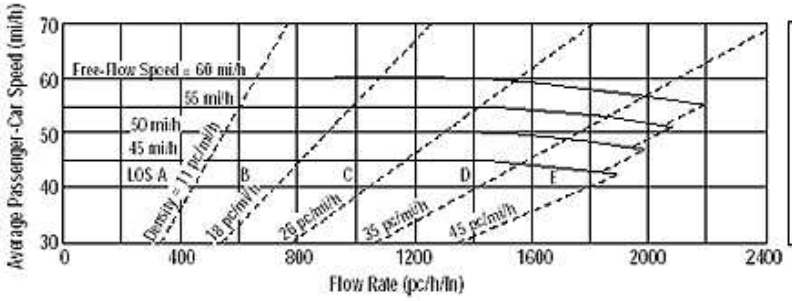
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	JF
Agency or Company	ED County
Date Performed	6/23/2017
Analysis Time Period	PM

Site Information

Highway/Direction to Travel	Missouri Flat Road Northbound
From/To	Mother Lode/Golden Center
Jurisdiction	ED County
Analysis Year	Existing plus Project

Project Description Creekside

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1562	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	2
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.977

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	869
Speed, S (mi/h)	45.0
D (pc/mi/ln)	19.3
LOS	C

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*848.9*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.15*
Bicycle level of service (Exhibit 15-4)	*C*

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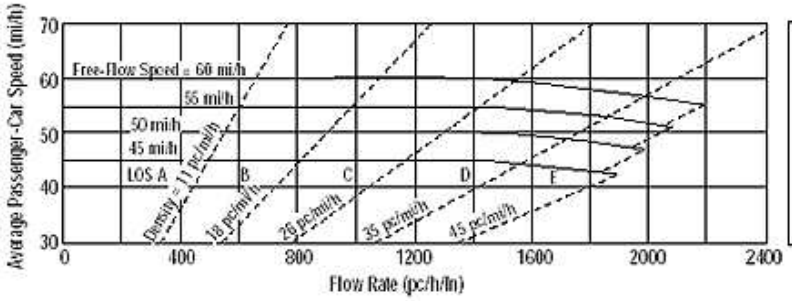
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	JF
Agency or Company	ED County
Date Performed	6/23/2017
Analysis Time Period	PM

Site Information

Highway/Direction to Travel	Missouri Flat Road Northbound
From/To	Golden Center/China Garden
Jurisdiction	ED County
Analysis Year	Existing plus Project

Project Description Creekside

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1031	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	2
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.977

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	573
Speed, S (mi/h)	45.0
D (pc/mi/ln)	12.7
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*560.3*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.94*
Bicycle level of service (Exhibit 15-4)	*C*

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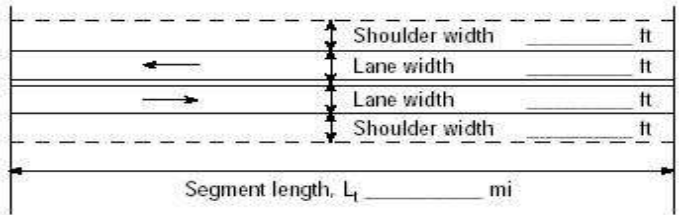
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Missouri Flat Road Northbound*
Agency or Company	*ED County*	From/To	
Date Performed	*6/22/2017*	Jurisdiction	
Analysis Time Period	*PM*	Analysis Year	*Existing plus Project*

Project Description: *Creekside*

Input Data





☑ Class I highway ☐ Class II highway ☐ Class III highway

Terrain ☑ Level ☐ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.88*

No-passing zone *100%*

% Trucks and Buses , P_T *4 %*

% Recreational vehicles, P_R *2%*

Access points *mi* *15*/mi

Analysis direction vol., V_d *840*veh/h

Opposing direction vol., V_o *1144*veh/h

Shoulder width ft *3.0*

Lane Width ft *12.0*

Segment Length mi *0.9*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*955*	*1300*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*3.8 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*0.9 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*38.7 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*20.3 mi/h*
		Percent free flow speed, PFFS	*52.5 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*955*	*1300*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*79.6*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*14.5*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*85.7*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*E*
Volume to capacity ratio, *v/c*	*0.56*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1700*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*52.5*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*954.5*
Effective width, Wv (Eq. 15-29) ft	*15.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*4.96*
Bicycle level of service (Exhibit 15-4)	*E*
Notes	
1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain. 2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F. 3. For the analysis direction only and for v>200 veh/h. 4. For the analysis direction only 5. Exhibit 15-20 provides coefficients a and b for Equation 15-10. 6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.	

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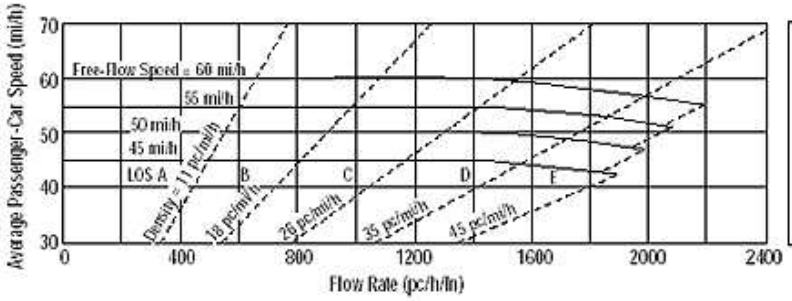
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	JF
Agency or Company	ED County
Date Performed	6/23/2017
Analysis Time Period	AM

Site Information

Highway/Direction to Travel	Missouri Flat Road Southbound
From/To	Mother Lode/Golden Center
Jurisdiction	ED County
Analysis Year	Existing plus Project

Project Description Creekside

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1412	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	2
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.977

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	785
Speed, S (mi/h)	45.0
D (pc/mi/ln)	17.4
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*767.4*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.10*
Bicycle level of service (Exhibit 15-4)	*C*

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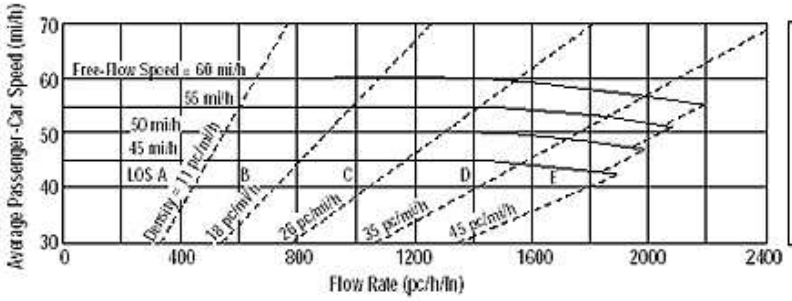
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	JF
Agency or Company	ED County
Date Performed	6/23/2017
Analysis Time Period	AM

Site Information

Highway/Direction to Travel	Missouri Flat Road Southbound
From/To	Golden Center/China Garden
Jurisdiction	ED County
Analysis Year	Existing plus Project

Project Description Creekside

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1035	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	2
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.977

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	575
Speed, S (mi/h)	45.0
D (pc/mi/ln)	12.8
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*562.5*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.94*
Bicycle level of service (Exhibit 15-4)	*C*

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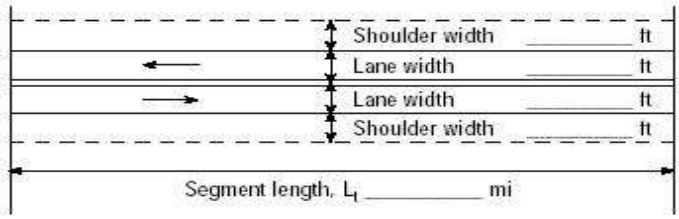
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	*JF*	Highway / Direction of Travel	*Missouri Flat Road Southbound*
Agency or Company	*ED County*	From/To	*Golden Center/Pleasant Valley*
Date Performed	*6/22/2017*	Jurisdiction	
Analysis Time Period	*AM*	Analysis Year	*Existing plus Project*

Project Description:

Input Data





☑ Class I highway ☐ Class II highway ☐ Class III highway

Terrain ☑ Level ☐ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.88*

No-passing zone *100*%

Analysis direction vol., V_d *856*veh/h

Opposing direction vol., V_o *943*veh/h

% Trucks and Buses , P_T *4* %

% Recreational vehicles, P_R *2*%

Access points *mi* *15*/mi

Shoulder width ft *3.0*

Lane Width ft *12.0*

Segment Length mi *0.9*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*973*	*1072*

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*3.8 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.1 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*38.7 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*21.7 mi/h*
		Percent free flow speed, PFFS	*56.2* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*973*	*1072*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*78.1*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*17.8*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*86.6*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*E*
Volume to capacity ratio, *v/c*	*0.57*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1700*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*56.2*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*972.7*
Effective width, Wv (Eq. 15-29) ft	*15.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*4.97*
Bicycle level of service (Exhibit 15-4)	*E*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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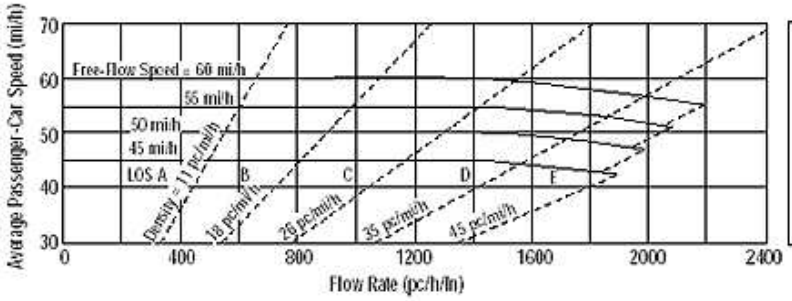
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	JF
Agency or Company	ED County
Date Performed	6/23/2017
Analysis Time Period	PM

Site Information

Highway/Direction to Travel	Missouri Flat Road Southbound
From/To	Mother Lode/Golden Center
Jurisdiction	ED County
Analysis Year	Existing plus Project

Project Description Creekside

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1669	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	2
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.977

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	928
Speed, S (mi/h)	45.0
D (pc/mi/ln)	20.6
LOS	C

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*907.1*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.18*
Bicycle level of service (Exhibit 15-4)	*C*

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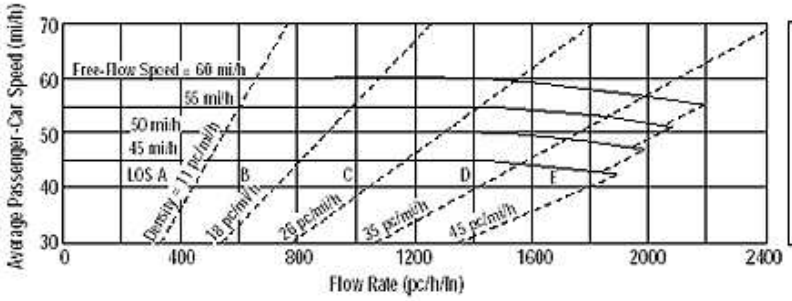
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	JF
Agency or Company	ED County
Date Performed	6/23/2017
Analysis Time Period	PM

Site Information

Highway/Direction to Travel	Missouri Flat Road Southbound
From/To	Golden Center/China Garden
Jurisdiction	ED County
Analysis Year	Existing plus Project

Project Description Creekside

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1266	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	2
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.977

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	704
Speed, S (mi/h)	45.0
D (pc/mi/ln)	15.6
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*688.0*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.04*
Bicycle level of service (Exhibit 15-4)	*C*

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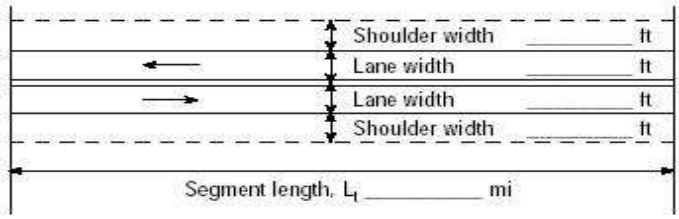
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Missouri Flat Road Southbound*
Agency or Company	*ED County*	From/To	*China Garden/Pleasant Valley*
Date Performed	*6/22/2017*	Jurisdiction	
Analysis Time Period	*PM*	Analysis Year	*Existing plus Project*

Project Description: *Creekside*

Input Data



Analysis direction vol., V_d *1144*veh/h

Opposing direction vol., V_o *840*veh/h

Shoulder width ft *3.0*

Lane Width ft *12.0*

Segment Length mi *0.9*



☑ Class I highway ☐ Class II highway ☐ Class III highway

Terrain ☑ Level ☐ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.88*

No-passing zone *100*%

% Trucks and Buses , P_T *4* %

% Recreational vehicles, P_R *2*%

Access points *mi* *15*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*1300*	*955*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*3.8 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.1 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*38.7 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*20.0 mi/h*
		Percent free flow speed, PFFS	*51.8* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*1300*	*955*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*84.2*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*14.5*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*92.6*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*E*
Volume to capacity ratio, *v/c*	*0.76*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1700*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*51.8*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*1300.0*
Effective width, Wv (Eq. 15-29) ft	*15.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*5.12*
Bicycle level of service (Exhibit 15-4)	*E*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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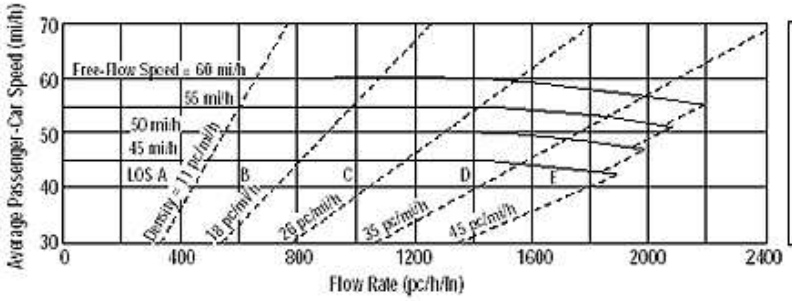
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	JF
Agency or Company	ED County
Date Performed	6/23/2017
Analysis Time Period	AM

Site Information

Highway/Direction to Travel	Missouri Flat Road Northbound
From/To	Mother Lode/Golden Center
Jurisdiction	ED County
Analysis Year	2035

Project Description Creekside

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1625	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	2
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.977

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	904
Speed, S (mi/h)	45.0
D (pc/mi/ln)	20.1
LOS	C

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*883.2*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.17*
Bicycle level of service (Exhibit 15-4)	*C*

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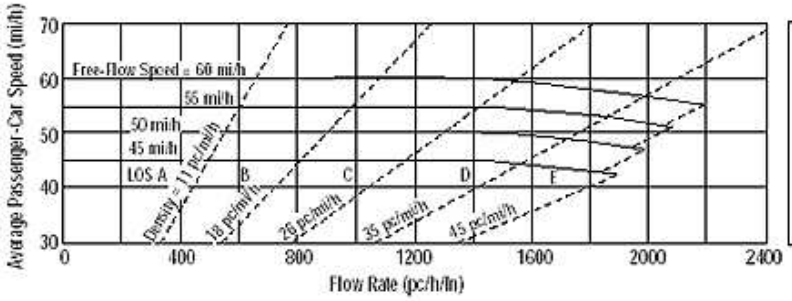
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	JF
Agency or Company	ED County
Date Performed	7/17/2017
Analysis Time Period	AM

Site Information

Highway/Direction to Travel	Missouri Flat Road Northbound
From/To	Golden Center/China Garden
Jurisdiction	ED County
Analysis Year	2035

Project Description Creekside

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1415	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	2
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.977

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	787
Speed, S (mi/h)	45.0
D (pc/mi/ln)	17.5
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*769.0*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.10*
Bicycle level of service (Exhibit 15-4)	*C*

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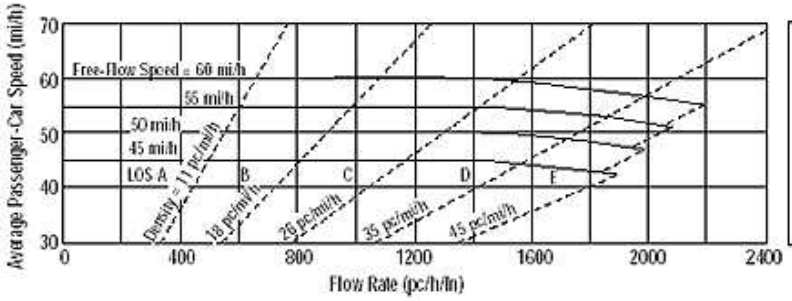
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	JF
Agency or Company	ED County
Date Performed	7/17/2017
Analysis Time Period	AM

Site Information

Highway/Direction to Travel	Missouri Flat Road Northbound
From/To	China Garden/Pleasant Valley
Jurisdiction	ED County
Analysis Year	2035

Project Description Creekside

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	955	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	2
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.977

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	531
Speed, S (mi/h)	45.0
D (pc/mi/ln)	11.8
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*519.0*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.90*
Bicycle level of service (Exhibit 15-4)	*C*

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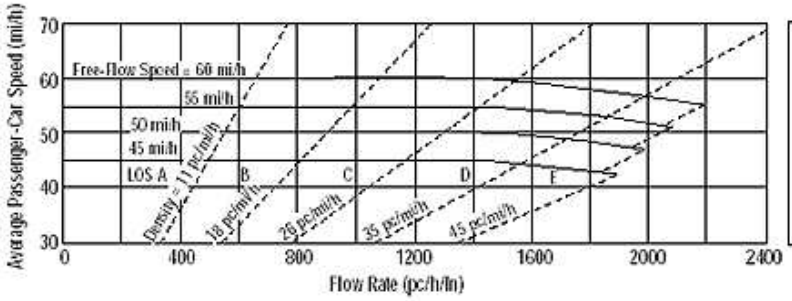
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	JF
Agency or Company	ED County
Date Performed	7/17/2017
Analysis Time Period	PM

Site Information

Highway/Direction to Travel	Missouri Flat Road Northbound
From/To	Mother Lode/Golden Center
Jurisdiction	ED County
Analysis Year	2035

Project Description Creekside

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1880	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	2
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.977

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	1046
Speed, S (mi/h)	45.0
D (pc/mi/ln)	23.2
LOS	C

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*1021.7*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.24*
Bicycle level of service (Exhibit 15-4)	*C*

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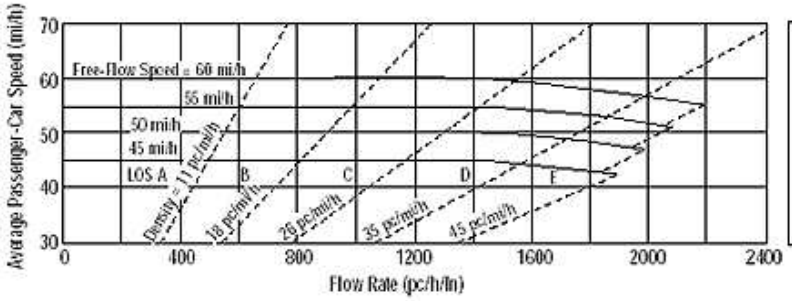
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	JF
Agency or Company	ED County
Date Performed	7/17/2017
Analysis Time Period	PM

Site Information

Highway/Direction to Travel	Missouri Flat Road Northbound
From/To	Golden Center/China Garden
Jurisdiction	ED County
Analysis Year	2035

Project Description Creekside

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1195	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	2
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.977

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	665
Speed, S (mi/h)	45.0
D (pc/mi/ln)	14.8
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*649.5*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.01*
Bicycle level of service (Exhibit 15-4)	*C*

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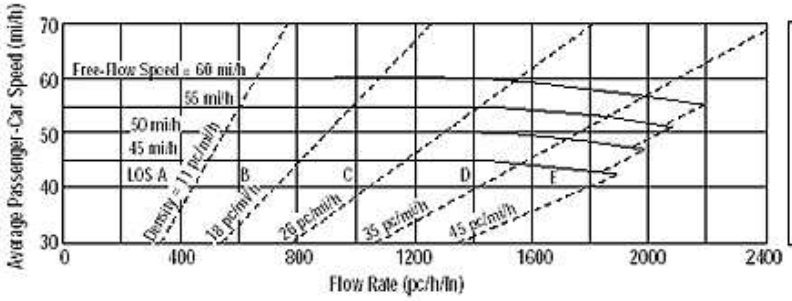
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	JF
Agency or Company	ED County
Date Performed	7/17/2017
Analysis Time Period	PM

Site Information

Highway/Direction to Travel	Missouri Flat Road Northbound
From/To	China Garden/Pleasant Valley
Jurisdiction	ED County
Analysis Year	2035

Project Description Creekside

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	710	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	2
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.977

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	395
Speed, S (mi/h)	45.0
D (pc/mi/ln)	8.8
LOS	A

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*385.9*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.75*
Bicycle level of service (Exhibit 15-4)	*C*

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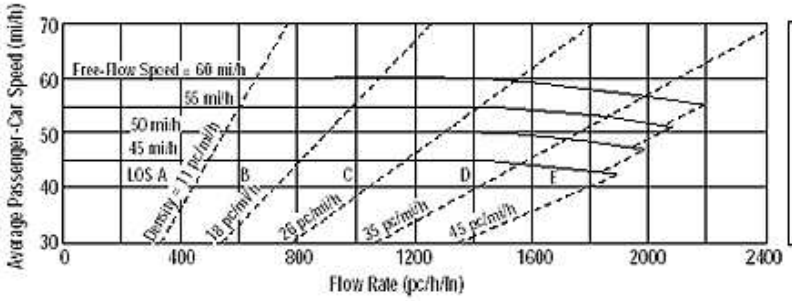
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	JF
Agency or Company	ED County
Date Performed	7/17/2017
Analysis Time Period	AM

Site Information

Highway/Direction to Travel	Missouri Flat Road Southbound
From/To	Mother Lode/Golden Center
Jurisdiction	ED County
Analysis Year	2035

Project Description Creekside

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1400	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	2
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.977

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	779
Speed, S (mi/h)	45.0
D (pc/mi/ln)	17.3
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*760.9*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.09*
Bicycle level of service (Exhibit 15-4)	*C*

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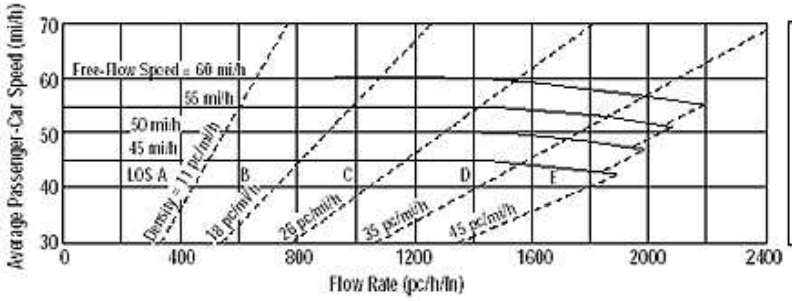
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	JF
Agency or Company	ED County
Date Performed	7/17/2017
Analysis Time Period	AM

Site Information

Highway/Direction to Travel	Missouri Flat Road Southbound
From/To	Golden Center/China Garden
Jurisdiction	ED County
Analysis Year	2035

Project Description Creekside

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	960	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	2
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.977

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	534
Speed, S (mi/h)	45.0
D (pc/mi/ln)	11.9
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*521.7*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.90*
Bicycle level of service (Exhibit 15-4)	*C*

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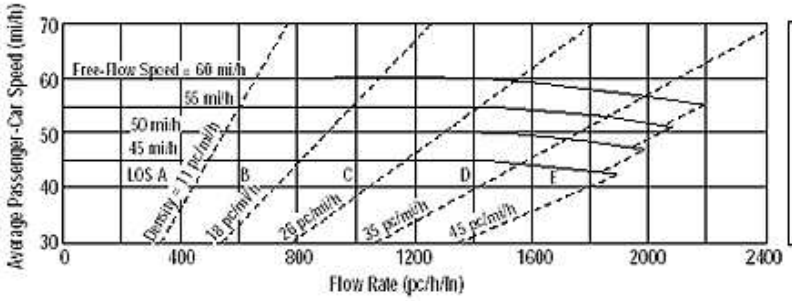
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	JF
Agency or Company	ED County
Date Performed	7/17/2017
Analysis Time Period	AM

Site Information

Highway/Direction to Travel	Missouri Flat Road Southbound
From/To	China Garden/Pleasant Valley
Jurisdiction	ED County
Analysis Year	2035

Project Description Creekside

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	690	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	2
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.977

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	383
Speed, S (mi/h)	45.0
D (pc/mi/ln)	8.5
LOS	A

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*375.0*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.73*
Bicycle level of service (Exhibit 15-4)	*C*

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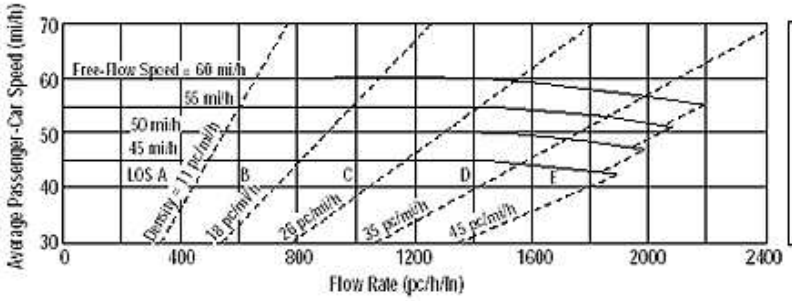
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	JF
Agency or Company	ED County
Date Performed	7/17/2017
Analysis Time Period	PM

Site Information

Highway/Direction to Travel	Missouri Flat Road Southbound
From/To	Mother Lode/Golden Center
Jurisdiction	ED County
Analysis Year	2035

Project Description Creekside

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	2000	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	2
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.977

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	1113
Speed, S (mi/h)	45.0
D (pc/mi/ln)	24.7
LOS	C

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*1087.0*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.27*
Bicycle level of service (Exhibit 15-4)	*C*

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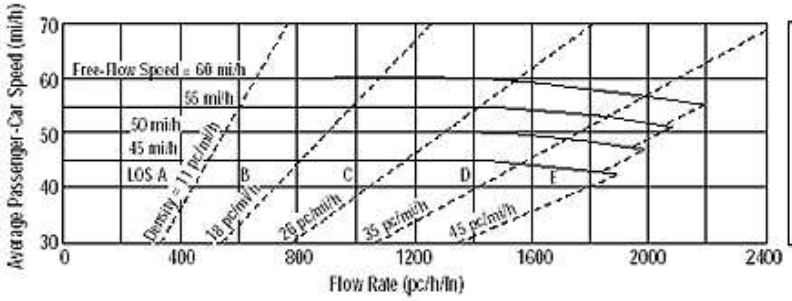
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	JF
Agency or Company	ED County
Date Performed	7/17/2017
Analysis Time Period	PM

Site Information

Highway/Direction to Travel	Missouri Flat Road Southbound
From/To	Golden Center/China Garden
Jurisdiction	ED County
Analysis Year	2035

Project Description Creekside

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1595	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	2
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.977

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	887
Speed, S (mi/h)	45.0
D (pc/mi/ln)	19.7
LOS	C

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*866.8*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.16*
Bicycle level of service (Exhibit 15-4)	*C*

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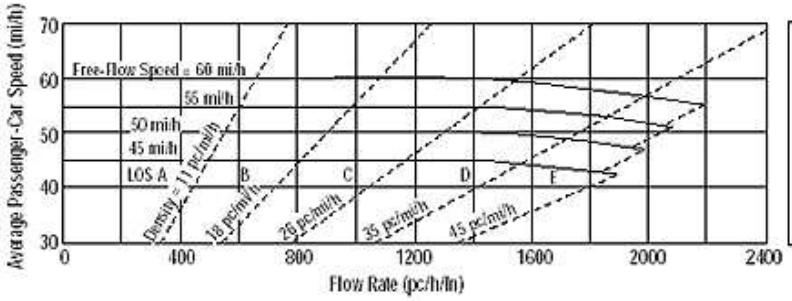
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	JF
Agency or Company	ED County
Date Performed	7/17/2017
Analysis Time Period	PM

Site Information

Highway/Direction to Travel	Missouri Flat Road Southbound
From/To	China Garden/Pleasant Valley
Jurisdiction	ED County
Analysis Year	2035

Project Description Creekside

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1055	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	2
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.977

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	587
Speed, S (mi/h)	45.0
D (pc/mi/ln)	13.0
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*573.4*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.95*
Bicycle level of service (Exhibit 15-4)	*C*

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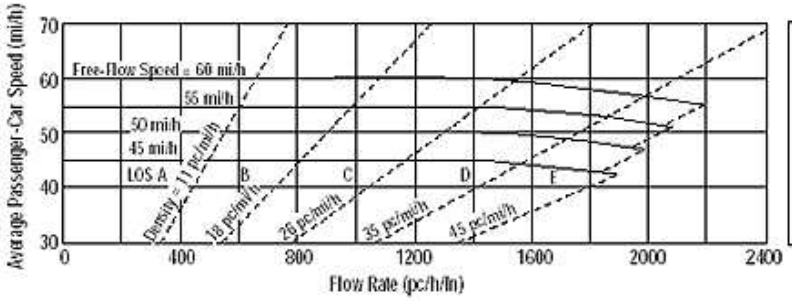
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	JF
Agency or Company	ED County
Date Performed	6/23/2017
Analysis Time Period	AM

Site Information

Highway/Direction to Travel	Missouri Flat Road Northbound
From/To	Mother Lode/Golden Center
Jurisdiction	ED County
Analysis Year	2035 plus Project

Project Description Creekside

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1654	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	2
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.977

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	920
Speed, S (mi/h)	45.0
D (pc/mi/ln)	20.4
LOS	C

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*898.9*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.18*
Bicycle level of service (Exhibit 15-4)	*C*

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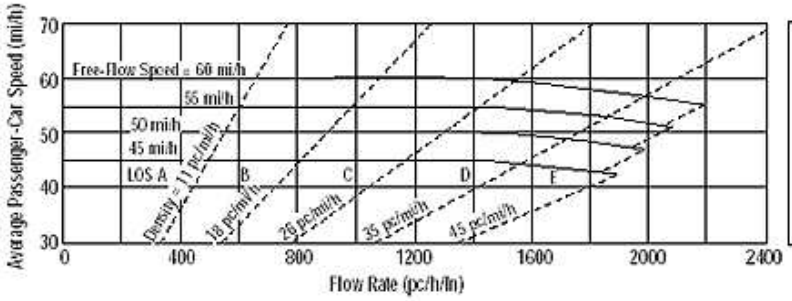
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	JF
Agency or Company	ED County
Date Performed	7/17/2017
Analysis Time Period	AM

Site Information

Highway/Direction to Travel	Missouri Flat Road Northbound
From/To	Golden Center/China Garden
Jurisdiction	ED County
Analysis Year	2035 plus Project

Project Description Creekside

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1427	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	2
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.977

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	794
Speed, S (mi/h)	45.0
D (pc/mi/ln)	17.6
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*775.5*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.10*
Bicycle level of service (Exhibit 15-4)	*C*

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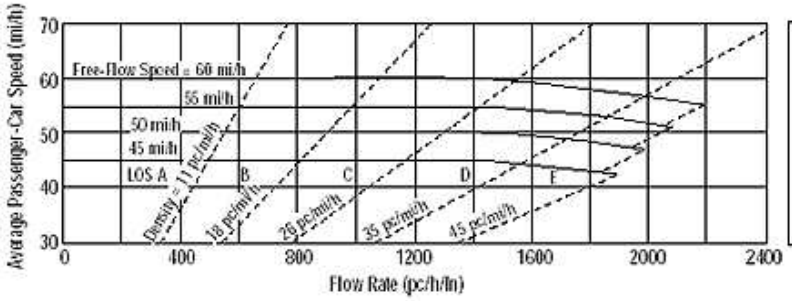
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	JF
Agency or Company	ED County
Date Performed	7/17/2017
Analysis Time Period	AM

Site Information

Highway/Direction to Travel	Missouri Flat Road Northbound
From/To	China Garden/Pleasant Valley
Jurisdiction	ED County
Analysis Year	2035 plus Project

Project Description Creekside

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	959	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	2
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.977

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	533
Speed, S (mi/h)	45.0
D (pc/mi/ln)	11.8
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*521.2*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.90*
Bicycle level of service (Exhibit 15-4)	*C*

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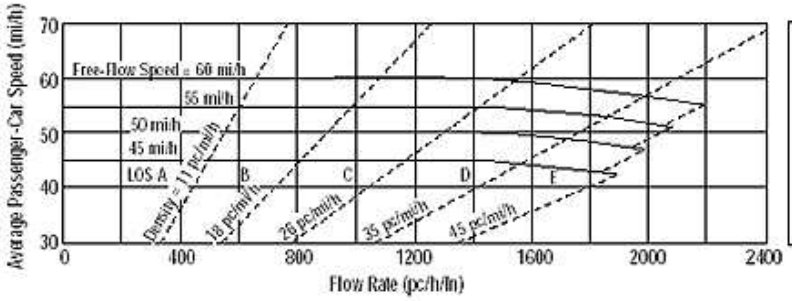
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	JF
Agency or Company	ED County
Date Performed	7/17/2017
Analysis Time Period	PM

Site Information

Highway/Direction to Travel	Missouri Flat Road Northbound
From/To	Mother Lode/Golden Center
Jurisdiction	ED County
Analysis Year	2035 plus Project

Project Description Creekside

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1952	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	2
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.977

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	1086
Speed, S (mi/h)	45.0
D (pc/mi/ln)	24.1
LOS	C

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*1060.9*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.26*
Bicycle level of service (Exhibit 15-4)	*C*

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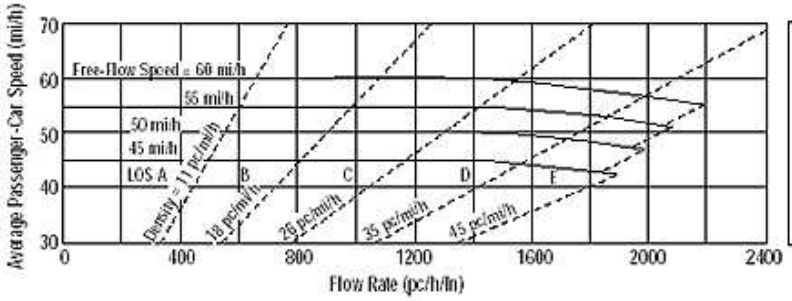
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	JF
Agency or Company	ED County
Date Performed	7/17/2017
Analysis Time Period	PM

Site Information

Highway/Direction to Travel	Missouri Flat Road Northbound
From/To	Golden Center/China Garden
Jurisdiction	ED County
Analysis Year	2035 plus Project

Project Description Creekside

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1209	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	2
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.977

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	672
Speed, S (mi/h)	45.0
D (pc/mi/ln)	14.9
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*657.1*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.02*
Bicycle level of service (Exhibit 15-4)	*C*

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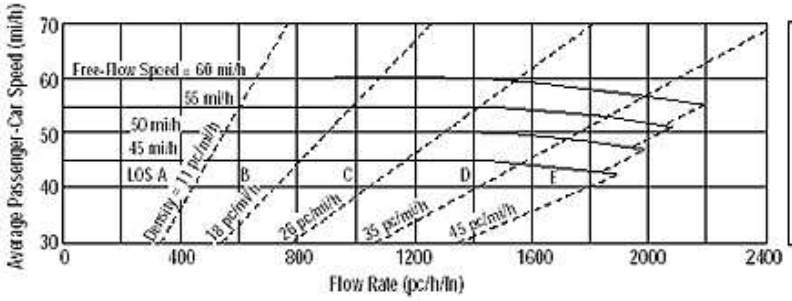
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	JF
Agency or Company	ED County
Date Performed	7/17/2017
Analysis Time Period	PM

Site Information

Highway/Direction to Travel	Missouri Flat Road Northbound
From/To	China Garden/Pleasant Valley
Jurisdiction	ED County
Analysis Year	2035 plus Project

Project Description Creekside

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	714	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	2
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.977

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	397
Speed, S (mi/h)	45.0
D (pc/mi/ln)	8.8
LOS	A

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*388.0*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.75*
Bicycle level of service (Exhibit 15-4)	*C*

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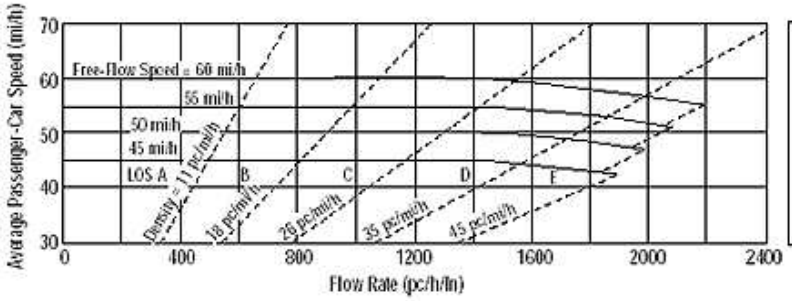
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	JF
Agency or Company	ED County
Date Performed	6/23/2017
Analysis Time Period	AM

Site Information

Highway/Direction to Travel	Missouri Flat Road Southbound
From/To	Mother Lode/Golden Center
Jurisdiction	ED County
Analysis Year	2035 plus Project

Project Description Creekside

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1436	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	2
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.977

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	799
Speed, S (mi/h)	45.0
D (pc/mi/ln)	17.8
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*780.4*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.11*
Bicycle level of service (Exhibit 15-4)	*C*

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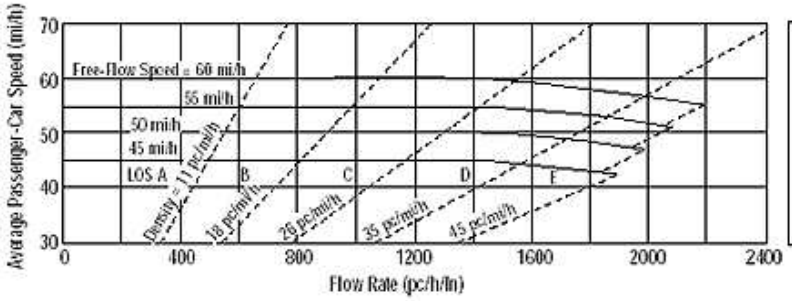
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	JF
Agency or Company	ED County
Date Performed	7/17/2017
Analysis Time Period	AM

Site Information

Highway/Direction to Travel	Missouri Flat Road Southbound
From/To	Golden Center/China Garden
Jurisdiction	ED County
Analysis Year	2035 plus Project

Project Description Creekside

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	969	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	2
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.977

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	539
Speed, S (mi/h)	45.0
D (pc/mi/ln)	12.0
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*526.6*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.91*
Bicycle level of service (Exhibit 15-4)	*C*

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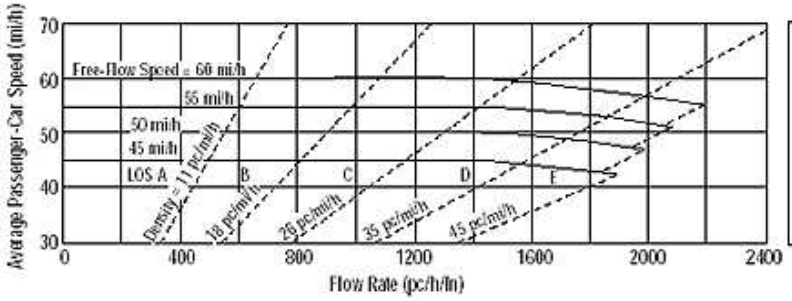
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	JF
Agency or Company	ED County
Date Performed	7/17/2017
Analysis Time Period	AM

Site Information

Highway/Direction to Travel	Missouri Flat Road Southbound
From/To	China Garden/Pleasant Valley
Jurisdiction	ED County
Analysis Year	2035 plus Project

Project Description Creekside

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	693	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	2
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.977

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	385
Speed, S (mi/h)	45.0
D (pc/mi/ln)	8.6
LOS	A

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*376.6*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.74*
Bicycle level of service (Exhibit 15-4)	*C*

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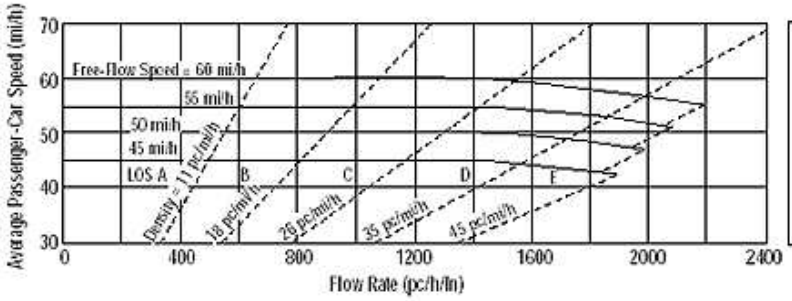
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	JF
Agency or Company	ED County
Date Performed	7/17/2017
Analysis Time Period	PM

Site Information

Highway/Direction to Travel	Missouri Flat Road Southbound
From/To	Mother Lode/Golden Center
Jurisdiction	ED County
Analysis Year	2035 plus Project

Project Description Creekside

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	2042	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	2
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.977

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	1136
Speed, S (mi/h)	45.0
D (pc/mi/ln)	25.2
LOS	C

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*1109.8*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.28*
Bicycle level of service (Exhibit 15-4)	*C*

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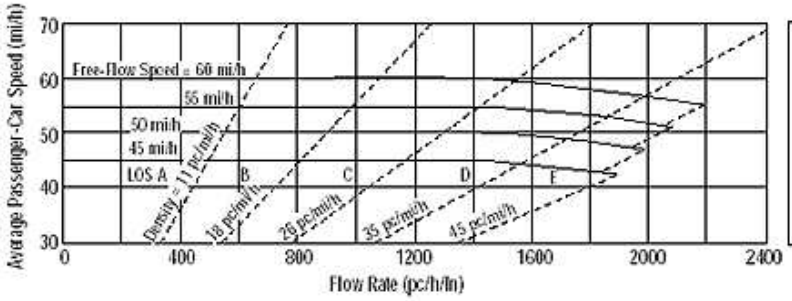
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	JF
Agency or Company	ED County
Date Performed	7/17/2017
Analysis Time Period	PM

Site Information

Highway/Direction to Travel	Missouri Flat Road Southbound
From/To	Golden Center/China Garden
Jurisdiction	ED County
Analysis Year	2035 plus Project

Project Description Creekside

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1621	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	2
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.977

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	902
Speed, S (mi/h)	45.0
D (pc/mi/ln)	20.0
LOS	C

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*881.0*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.17*
Bicycle level of service (Exhibit 15-4)	*C*

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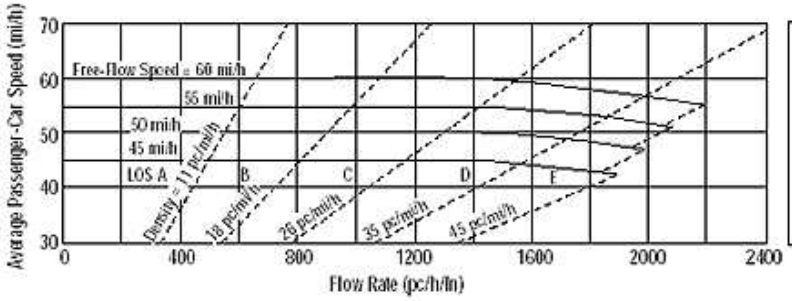
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	JF
Agency or Company	ED County
Date Performed	7/17/2017
Analysis Time Period	PM

Site Information

Highway/Direction to Travel	Missouri Flat Road Southbound
From/To	China Garden/Pleasant Valley
Jurisdiction	ED County
Analysis Year	2035 plus Project

Project Description Creekside

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1063	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	2
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.977

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	591
Speed, S (mi/h)	45.0
D (pc/mi/ln)	13.1
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*577.7*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.95*
Bicycle level of service (Exhibit 15-4)	*C*

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Existing AM

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 4 MF Rd / Road 2233	No / No	No / No
# 7 China Garden Rd / MF Rd	No / Yes	No / Yes
# 8 Industrial Dr / MF Rd	No / No	No / No
# 9 Enterprise Dr / MF Rd	No / No	No / No
# 11 Forni Rd / Golden Center Dr	No / No	No / No
# 12 Missouri Flat Rd / South Project En	No / No	No / No

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Existing AM

Peak Hour Delay Signal Warrant Report

Intersection #4 MF Rd / Road 2233

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 2	0	1	1 0 2	0	0	0 0 0	0	0	0 0 0	0	1
Initial Vol:	0 1270		1	0 1129		0	0	0	0	0	0	0
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Existing AM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #4 MF Rd / Road 2233

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 2	0	1	1 0 2	0	0	0 0 0	0	0	0 0 0	0	1
Initial Vol:	0 1270		1	0 1129		0	0	0	0	0	0	0

Major Street Volume: 2400
Minor Approach Volume: 0
Minor Approach Volume Threshold: -80 [less than minimum of 75]

SIGNAL WARRANT DISCLAIMER

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Existing + Project AM

Peak Hour Delay Signal Warrant Report

Intersection #4 MF Rd / Road 2233

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 2	0	1	1 0 2	0	0	0 0 0	0	0	0 0 0	0	1
Initial Vol:	0 1291		1	40 1125		0	0 0	0		0 0		10
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			13.8		

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=10]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2467]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

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Existing + Project AM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #4 MF Rd / Road 2233

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0	2 0	1	1 0	2 0	0	0 0	0 0	0	0 0	0 0	1
Initial Vol:	0	1291	1	40	1125	0	0	0	0	0	0	10

Major Street Volume: 2457
Minor Approach Volume: 10
Minor Approach Volume Threshold: -85 [less than minimum of 75]

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Existing AM

Peak Hour Delay Signal Warrant Report

Intersection #7 China Garden Rd / MF Rd

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	0 0	0	0 0	1! 0	0
Initial Vol:	0	877	15	99	555	3	1	0	0	9	1	138
ApproachDel:	xxxxxx			xxxxxx			99.6			31.7		

Approach[eastbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=1]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1698]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=148]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1698]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Existing AM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #7 China Garden Rd / MF Rd

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	0 0	0	0 0	1! 0	0
Initial Vol:	0	877	15	99	555	3	1	0	0	9	1	138

Major Street Volume: 1549
Minor Approach Volume: 148
Minor Approach Volume Threshold: 21 [less than minimum of 75]

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Existing + Project AM

Peak Hour Delay Signal Warrant Report

Intersection #7 China Garden Rd / MF Rd

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	0 0	0	0 0	1! 0	0
Initial Vol:	0	887	15	101	563	3	1	0	0	9	1	140
ApproachDel:	xxxxxx			xxxxxx			105.5			33.0		

Approach[eastbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=1]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1720]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.4]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=150]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1720]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

SIGNAL WARRANT DISCLAIMER
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Existing + Project AM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #7 China Garden Rd / MF Rd

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	0 0	0	0 0	1! 0	0
Initial Vol:	0	887	15	101	563	3	1	0	0	9	1	140

Major Street Volume: 1569
Minor Approach Volume: 150
Minor Approach Volume Threshold: 18 [less than minimum of 75]

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Existing AM

Peak Hour Delay Signal Warrant Report

Intersection #8 Industrial Dr / MF Rd

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0	1 0	0	0 0	0 1	0	0 0	1! 0	0	0 0	0 0	0
Initial Vol:	11	896	0	0	541	22	13	0	12	0	0	0
ApproachDel:	xxxxxx			xxxxxx			23.7			xxxxxx		

Approach[eastbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=25]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1495]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Existing AM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #8 Industrial Dr / MF Rd

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0	1 0	0	0 0	0 1	0	0 0	1! 0	0	0 0	0 0	0
Initial Vol:	11	896	0	0	541	22	13	0	12	0	0	0

Major Street Volume: 1470
Minor Approach Volume: 25
Minor Approach Volume Threshold: 33 [less than minimum of 75]

SIGNAL WARRANT DISCLAIMER

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Existing + Project AM

Peak Hour Delay Signal Warrant Report

Intersection #8 Industrial Dr / MF Rd

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0	1 0	0	0 0	0 1	0	0 0	1! 0	0	0 0	0 0	0
Initial Vol:	11	906	0	0	549	22	13	0	12	0	0	0
ApproachDel:	xxxxxx			xxxxxx			24.2			xxxxxx		

Approach[eastbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=25]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1513]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

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Existing + Project AM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #8 Industrial Dr / MF Rd

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0	1 0	0	0 0	0 1	0	0 0	1! 0	0	0 0	0 0	0
Initial Vol:	11	906	0	0	549	22	13	0	12	0	0	0

Major Street Volume: 1488
Minor Approach Volume: 25
Minor Approach Volume Threshold: 30 [less than minimum of 75]

SIGNAL WARRANT DISCLAIMER

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Existing AM

Peak Hour Delay Signal Warrant Report

****

Intersection #9 Enterprise Dr / MF Rd

****

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0	0 1	0	1 0	0 1	0	0 0	1! 0	0	0 0	1! 0	0
Initial Vol:	17	844	6	4	419	94	51	0	13	1	0	4
ApproachDel:	xxxxxx			xxxxxx			46.7			19.1		

Approach[eastbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.8]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=64]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1453]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=5]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1453]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

SIGNAL WARRANT DISCLAIMER

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Existing AM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #9 Enterprise Dr / MF Rd

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0 0	1 0		1 0 0	1 0		0 0 1!	0 0		0 0 1!	0 0	
Initial Vol:	17	844	6	4	419	94	51	0	13	1	0	4

Major Street Volume: 1384
Minor Approach Volume: 64
Minor Approach Volume Threshold: 47 [less than minimum of 75]

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Existing + Project AM

Peak Hour Delay Signal Warrant Report

Intersection #9 Enterprise Dr / MF Rd

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1	0 0	1	1	0 0	1	0	0 1!	0	0	0 1!	0
Initial Vol:	17	854	6	4	427	94	51	0	13	1	0	4
ApproachDel:	xxxxxx			xxxxxx			48.7			19.4		

Approach[eastbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.9]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=64]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1471]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=5]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1471]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

SIGNAL WARRANT DISCLAIMER

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Existing + Project AM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #9 Enterprise Dr / MF Rd

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0 0	1 0		1 0 0	1 0		0 0 1!	0 0		0 0 1!	0 0	
Initial Vol:	17	854	6	4	427	94	51	0	13	1	0	4

Major Street Volume: 1402
Minor Approach Volume: 64
Minor Approach Volume Threshold: 44 [less than minimum of 75]

SIGNAL WARRANT DISCLAIMER

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Existing AM

Peak Hour Delay Signal Warrant Report

Intersection #11 Forni Rd / Golden Center Dr

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 1	0	0 1	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Initial Vol:	0	358	214	39	212	0	0	0	0	82	0	57
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			14.8		

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.6]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=139]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=962]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

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Existing AM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #11 Forni Rd / Golden Center Dr

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 1	0	0 1	0	0	1! 0	0	0	1! 0	0	0	1! 0
Initial Vol:	0	358	214	39	212	0	0	0	0	82	0	57

Major Street Volume: 823
Minor Approach Volume: 139
Minor Approach Volume Threshold: 167

SIGNAL WARRANT DISCLAIMER

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Existing + Project AM

Peak Hour Delay Signal Warrant Report

Intersection #11 Forni Rd / Golden Center Dr

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 1	0	0 1	0	0 1!	0 0	0	0 1!	0 0	0	0 1!	0 0
Initial Vol:	4	358	214	39	208	10	5	7	22	82	5	57
ApproachDel:	xxxxxx			xxxxxx			13.0			17.5		

Approach[eastbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=34]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1011]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.7]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=144]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1011]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

SIGNAL WARRANT DISCLAIMER
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Existing + Project AM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #11 Forni Rd / Golden Center Dr

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 1	0	0 1	0	0 1!	0 0	0	0 1!	0 0	0	0 1!	0 0
Initial Vol:	4	358	214	39	208	10	5	7	22	82	5	57

Major Street Volume: 833
Minor Approach Volume: 144
Minor Approach Volume Threshold: 164

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Existing + Project AM

Peak Hour Delay Signal Warrant Report

****

Intersection #12 Missouri Flat Rd / South Project Entrance

****

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 2	0	1	0 0 2	0	0	0 0 0	0	0	0 0 0	0	1
Initial Vol:	0 1256		30	0 1129		0	0	0	0	0	0	31
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			14.0		

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=31]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2446]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

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Existing + Project AM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #12 Missouri Flat Rd / South Project Entrance

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 2	0	1	0 0 2	0	0	0 0 0	0	0	0 0 0	0	1
Initial Vol:	0 1256		30	0 1129		0	0	0	0	0	0	31

Major Street Volume: 2415
Minor Approach Volume: 31
Minor Approach Volume Threshold: -81 [less than minimum of 75]

SIGNAL WARRANT DISCLAIMER

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Existing PM

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 4 MF Rd / Road 2233	No / No	No / No
# 7 China Garden Rd / MF Rd	No / Yes	No / Yes
# 8 Industrial Dr / MF Rd	No / No	No / No
# 9 Enterprise Dr / MF Rd	Yes / Yes	Yes / Yes
# 11 Forni Rd / Golden Center Dr	No / No	No / No
# 12 Missouri Flat Rd / South Project En	No / No	No / No

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Existing PM

Peak Hour Delay Signal Warrant Report

Intersection #4 MF Rd / Road 2233

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0	2 0	1	1 0	2 0	0	0 0	0 0	0	0 0	1! 0	0
Initial Vol:	0	1473	2	2	1532	0	0	0	0	1	0	0
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			106.6		

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=1]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=3010]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

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Existing PM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #4 MF Rd / Road 2233

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0	2 0	1	1 0	2 0	0	0 0	0 0	0	0 0	1! 0	0
Initial Vol:	0	1473	2	2	1532	0	0	0	0	1	0	0

Major Street Volume: 3009
Minor Approach Volume: 1
Minor Approach Volume Threshold: -132 [less than minimum of 75]

SIGNAL WARRANT DISCLAIMER

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Existing + Project PM

Peak Hour Delay Signal Warrant Report

Intersection #4 MF Rd / Road 2233

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 2	0	1	1 0 2	0	0	0 0 0	0	0	0 0 1!	0	0
Initial Vol:	0 1517		3	51 1526		0	0 0		0	2	0	25
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			27.6		

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=27]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=3124]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

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Existing + Project PM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #4 MF Rd / Road 2233

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0	2 0	1	1 0	2 0	0	0 0	0 0	0	0 0	1! 0	0
Initial Vol:	0	1517	3	51	1526	0	0	0	0	2	0	25

Major Street Volume: 3097
Minor Approach Volume: 27
Minor Approach Volume Threshold: -138 [less than minimum of 75]

SIGNAL WARRANT DISCLAIMER

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Existing PM

Peak Hour Delay Signal Warrant Report

Intersection #7 China Garden Rd / MF Rd

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0	0	1 0	1 0	0	1 0	0 0	0	0 1	0 0	1!	0 0
Initial Vol:	1	670	20	133	1042	0	0	0	2	10	0	175
ApproachDel:	xxxxxx			xxxxxx			17.9			36.3		

Approach[eastbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=2]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=2053]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.9]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=185]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=2053]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

SIGNAL WARRANT DISCLAIMER
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Existing PM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #7 China Garden Rd / MF Rd

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0 0	1 0		1 0 0	1 0		0 0 0	0 1		0 0 1!	0 0	
Initial Vol:	1	670	20	133	1042	0	0	0	2	10	0	175

Major Street Volume: 1866
Minor Approach Volume: 185
Minor Approach Volume Threshold: -22 [less than minimum of 75]

SIGNAL WARRANT DISCLAIMER

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Existing + Project PM

Peak Hour Delay Signal Warrant Report

Intersection #7 China Garden Rd / MF Rd

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0	0	1 0	1 0	0	1 0	0 0	0	0 1	0 0	1! 0	0
Initial Vol:	1	683	20	134	1067	0	0	0	2	10	0	176
ApproachDel:	xxxxxx			xxxxxx			18.3			39.3		

Approach[eastbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=2]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=2093]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=2.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=186]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=2093]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

SIGNAL WARRANT DISCLAIMER
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Existing + Project PM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #7 China Garden Rd / MF Rd

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0	0 1	0	1 0	0 1	0	0 0	0 0	1	0 0	1! 0	0
Initial Vol:	1	683	20	134	1067	0	0	0	2	10	0	176

Major Street Volume: 1905
Minor Approach Volume: 186
Minor Approach Volume Threshold: -26 [less than minimum of 75]

SIGNAL WARRANT DISCLAIMER

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Existing PM

Peak Hour Delay Signal Warrant Report

Intersection #8 Industrial Dr / MF Rd

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0	1 0	0	0 0	0 1	0	0 0	1! 0	0	0 0	0 0	0
Initial Vol:	7	663	0	0	1021	11	18	0	18	0	0	0
ApproachDel:	xxxxxx			xxxxxx			36.5			xxxxxx		

Approach[eastbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.4]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=36]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1738]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

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Existing PM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #8 Industrial Dr / MF Rd

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0 1	0	0	0 0	0	1 0	0 0	1!	0 0	0 0	0	0 0
Initial Vol:	7	663	0	0	1021	11	18	0	18	0	0	0

Major Street Volume: 1702
Minor Approach Volume: 36
Minor Approach Volume Threshold: -0 [less than minimum of 75]

SIGNAL WARRANT DISCLAIMER

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Existing + Project PM

Peak Hour Delay Signal Warrant Report

Intersection #8 Industrial Dr / MF Rd

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0	1 0	0	0 0	0 1	0	0 0	1! 0	0	0 0	0 0	0
Initial Vol:	7	676	0	0	1046	11	18	0	18	0	0	0
ApproachDel:	xxxxxx			xxxxxx			38.6			xxxxxx		

Approach[eastbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.4]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=36]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1776]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

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Existing + Project PM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #8 Industrial Dr / MF Rd

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0	1 0	0	0 0	0 1	0	0 0	1! 0	0	0 0	0 0	0
Initial Vol:	7	676	0	0	1046	11	18	0	18	0	0	0

Major Street Volume: 1740
Minor Approach Volume: 36
Minor Approach Volume Threshold: -6 [less than minimum of 75]

SIGNAL WARRANT DISCLAIMER

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Existing PM

Peak Hour Delay Signal Warrant Report

Intersection #9 Enterprise Dr / MF Rd

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0	0 1	0	1 0	0 1	0	0 0	1! 0	0	0 0	1! 0	0
Initial Vol:	7	573	2	4	934	62	78	1	30	1	1	1
ApproachDel:	xxxxxx			xxxxxx			149.2			34.3		

Approach[eastbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=4.5]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=109]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1694]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=3]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1694]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Existing PM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #9 Enterprise Dr / MF Rd

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0	0 1	0	1 0	0 1	0	0 0	1! 0	0	0 0	1! 0	0
Initial Vol:	7	573	2	4	934	62	78	1	30	1	1	1

Major Street Volume: 1582
Minor Approach Volume: 109
Minor Approach Volume Threshold: 16 [less than minimum of 75]

SIGNAL WARRANT DISCLAIMER

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Existing + Project PM

Peak Hour Delay Signal Warrant Report

Intersection #9 Enterprise Dr / MF Rd

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0	0 1	0	1 0	0 1	0	0 0	1! 0	0	0 0	1! 0	0
Initial Vol:	7	586	2	4	959	62	78	1	30	1	1	1
ApproachDel:	xxxxxx			xxxxxx			171.5			36.0		

Approach[eastbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=5.2]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=109]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1732]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=3]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1732]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

SIGNAL WARRANT DISCLAIMER
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Existing + Project PM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #9 Enterprise Dr / MF Rd

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0	0 1	0	1 0	0 1	0	0 0	1! 0	0	0 0	1! 0	0
Initial Vol:	7	586	2	4	959	62	78	1	30	1	1	1

Major Street Volume: 1620
Minor Approach Volume: 109
Minor Approach Volume Threshold: 11 [less than minimum of 75]

SIGNAL WARRANT DISCLAIMER

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Existing PM

Peak Hour Delay Signal Warrant Report

Intersection #11 Forni Rd / Golden Center Dr

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 1	0	0 1	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Initial Vol:	0	114	109	6	64	0	0	0	0	160	0	13
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			10.6		

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.5]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=173]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=466]
FAIL - Total volume less than 650 for intersection
with less than four approaches.

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Existing PM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #11 Forni Rd / Golden Center Dr

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 1	0	0 1	0	0 1!	0 0	0	0 1!	0 0	0	0 1!	0 0
Initial Vol:	0	114	109	6	64	0	0	0	0	160	0	13

Major Street Volume: 293
Minor Approach Volume: 173
Minor Approach Volume Threshold: 404

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Existing + Project PM

Peak Hour Delay Signal Warrant Report

Intersection #11 Forni Rd / Golden Center Dr

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 1	0	0 1	0	0	1! 0	0	0	1! 0	0	0	1! 0 0
Initial Vol:	4	114	109	6	63	8	13	13	45	160	6	13
ApproachDel:	xxxxxx			xxxxxx			9.8			12.0		

Approach[eastbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=71]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=554]
FAIL - Total volume less than 650 for intersection
with less than four approaches.

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.6]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=179]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=554]
FAIL - Total volume less than 650 for intersection
with less than four approaches.

SIGNAL WARRANT DISCLAIMER
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Existing + Project PM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #11 Forni Rd / Golden Center Dr

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 1	0	0 1	0	0 1!	0 0	0	0 1!	0 0	0	0 1!	0 0
Initial Vol:	4	114	109	6	63	8	13	13	45	160	6	13

Major Street Volume: 304
Minor Approach Volume: 179
Minor Approach Volume Threshold: 396

SIGNAL WARRANT DISCLAIMER

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Existing + Project PM

Peak Hour Delay Signal Warrant Report

Intersection #12 Missouri Flat Rd / South Project Entrance

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 2	0	1	0 0 2	0	0	0 0 0	0	0	0 0 0	0	1
Initial Vol:	0 1469		24	0 1534		0	0	0	0	0	0	52
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			16.4		

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=52]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=3079]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

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Existing + Project PM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #12 Missouri Flat Rd / South Project Entrance

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 2	0	1	0 0 2	0	0	0 0 0	0	0	0 0 0	0	1
Initial Vol:	0 1469		24	0 1534		0	0	0	0	0	0	52

Major Street Volume: 3027
Minor Approach Volume: 52
Minor Approach Volume Threshold: -133 [less than minimum of 75]

SIGNAL WARRANT DISCLAIMER

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2035 AM

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 4 MF Rd / Road 2233	No / No	No / No
# 7 China Garden Rd / MF Rd	No / No	No / No
# 9 Enterprise Dr / MF Rd	No / Yes	No / Yes
# 11 Forni Rd / Golden Center Dr	No / No	No / No
# 12 Missouri Flat Rd / South Project En	No / No	No / No

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2035 AM

Peak Hour Delay Signal Warrant Report

Intersection #4 MF Rd / Road 2233

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 2	0	1	1 0 2	0	0	0 0 0	0	0	0 0 0	0	1
Initial Vol:	0 1589		5	0 1388		0	0	0	0	0	0	0
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		

SIGNAL WARRANT DISCLAIMER

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2035 AM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #4 MF Rd / Road 2233

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0	2 0	1	1 0	2 0	0	0 0	0 0	0	0 0	0 0	1
Initial Vol:	0	1589	5	0	1388	0	0	0	0	0	0	0

Major Street Volume: 2982
Minor Approach Volume: 0
Minor Approach Volume Threshold: -130 [less than minimum of 75]

SIGNAL WARRANT DISCLAIMER

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2035 plus Project AM

Peak Hour Delay Signal Warrant Report

Intersection #4 MF Rd / Road 2233

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 2	0	1	1 0 2	0	0	0 0 0	0	0	0 0 0	0	1
Initial Vol:	0 1610		5	40 1384		0	0 0		0	0 0		10
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			16.3		

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=10]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=3049]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

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2035 plus Project AM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #4 MF Rd / Road 2233

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 2	0	1	1 0 2	0	0	0 0 0	0	0	0 0 0	0	1
Initial Vol:	0 1610		5	40 1384		0	0	0	0	0	0	10

Major Street Volume: 3039
Minor Approach Volume: 10
Minor Approach Volume Threshold: -134 [less than minimum of 75]

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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2035 AM

Peak Hour Delay Signal Warrant Report

Intersection #7 China Garden Rd / MF Rd

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0	1	1 0	1 0	1	1 0	0 0	0	0 1	0 0	0	0 1
Initial Vol:	5	820	85	75	685	5	0	0	5	0	0	55
ApproachDel:	xxxxxx			xxxxxx			10.5			12.1		

Approach[eastbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=5]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1735]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=55]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1735]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

SIGNAL WARRANT DISCLAIMER

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2035 AM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #7 China Garden Rd / MF Rd

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0 1	1 0		1 0 1	1 0		0 0 0	0 1		0 0 0	0 1	
Initial Vol:	5	820	85	75	685	5	0	0	5	0	0	55

Major Street Volume: 1675
Minor Approach Volume: 55
Minor Approach Volume Threshold: 3 [less than minimum of 75]

SIGNAL WARRANT DISCLAIMER

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2035 plus Project AM

Peak Hour Delay Signal Warrant Report

Intersection #7 China Garden Rd / MF Rd

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0	1	1 0	1 0	1	1 0	0 0	0	0 1	0 0	0	0 1
Initial Vol:	5	824	85	75	688	5	0	0	5	0	0	55
ApproachDel:	xxxxxx			xxxxxx			10.5			12.2		

Approach[eastbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=5]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1742]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=55]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1742]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

SIGNAL WARRANT DISCLAIMER
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2035 plus Project AM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #7 China Garden Rd / MF Rd

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0 1	1 0		1 0 1	1 0		0 0 0	0 1		0 0 0	0 1	
Initial Vol:	5	824	85	75	688	5	0	0	5	0	0	55

Major Street Volume: 1682
Minor Approach Volume: 55
Minor Approach Volume Threshold: 2 [less than minimum of 75]

SIGNAL WARRANT DISCLAIMER

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2035 AM

Peak Hour Delay Signal Warrant Report

Intersection #9 Enterprise Dr / MF Rd

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0	1	1 0	1 0	1	1 0	0 0	1!	0 0	0 0	1!	0 0
Initial Vol:	20	840	10	5	430	120	65	0	15	5	0	5
ApproachDel:	xxxxxx			xxxxxx			27.3			19.9		

Approach[eastbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.6]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=80]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1515]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=10]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1515]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

SIGNAL WARRANT DISCLAIMER

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2035 AM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #9 Enterprise Dr / MF Rd

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0	1	1 0	1 0	1	1 0	0 0	1!	0 0	0 0	1!	0 0
Initial Vol:	20	840	10	5	430	120	65	0	15	5	0	5

Major Street Volume: 1425
Minor Approach Volume: 80
Minor Approach Volume Threshold: 40 [less than minimum of 75]

SIGNAL WARRANT DISCLAIMER

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Peak Hour Delay Signal Warrant Report

Intersection #9 Enterprise Dr / MF Rd

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0	1 1	0	1 0	1 1	0	0 0	1! 0	0	0 0	1! 0	0
Initial Vol:	20	844	10	5	433	120	65	0	15	5	0	5
ApproachDel:	xxxxxx			xxxxxx			27.5			20.1		

Approach[eastbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.6]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=80]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1522]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=10]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1522]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

SIGNAL WARRANT DISCLAIMER

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Peak Hour Volume Signal Warrant Report [Rural]

Intersection #9 Enterprise Dr / MF Rd

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0	1	1 0	1 0	1	1 0	0 0	1!	0 0	0 0	1!	0 0
Initial Vol:	20	844	10	5	433	120	65	0	15	5	0	5

Major Street Volume: 1432
Minor Approach Volume: 80
Minor Approach Volume Threshold: 39 [less than minimum of 75]

SIGNAL WARRANT DISCLAIMER

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2035 AM

Peak Hour Delay Signal Warrant Report

Intersection #11 Forni Rd / Golden Center Dr

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 1	0	0 1	0	0 1! 0	0	0	0 1! 0	0	0	0 1! 0	0
Initial Vol:	0	370	165	40	225	0	0	0	0	70	0	60
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			14.7		

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.5]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=130]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=930]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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2035 AM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #11 Forni Rd / Golden Center Dr

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 1	0	0 1	0	0	1! 0	0	0	1! 0	0	0	1! 0
Initial Vol:	0	370	165	40	225	0	0	0	0	70	0	60

Major Street Volume: 800
Minor Approach Volume: 130
Minor Approach Volume Threshold: 173

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Peak Hour Delay Signal Warrant Report

Intersection #11 Forni Rd / Golden Center Dr

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 1	0	0 1	0	0 1!	0 0	0	0 1!	0 0	0	0 1!	0 0
Initial Vol:	5	370	165	40	221	10	5	7	22	70	5	60
ApproachDel:	xxxxxx			xxxxxx			13.0			17.2		

Approach[eastbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=34]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=980]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.6]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=135]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=980]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

SIGNAL WARRANT DISCLAIMER
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Peak Hour Volume Signal Warrant Report [Rural]

Intersection #11 Forni Rd / Golden Center Dr

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 1	0	0 1	0	0	1! 0	0	0	1! 0	0	0	1! 0
Initial Vol:	5	370	165	40	221	10	5	7	22	70	5	60

Major Street Volume: 811
Minor Approach Volume: 135
Minor Approach Volume Threshold: 170

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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2035 plus Project AM

Peak Hour Delay Signal Warrant Report

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Intersection #12 Missouri Flat Rd / South Project Entrance

****

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 2	0	1	0 0 2	0	0	0 0 0	0	0	0 0 0	0	1
Initial Vol:	0	1579	29	0	1388	0	0	0	0	0	0	31
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			16.7		

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=31]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=3027]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Peak Hour Volume Signal Warrant Report [Rural]

Intersection #12 Missouri Flat Rd / South Project Entrance

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 2	0	1	0 0 2	0	0	0 0 0	0	0	0 0 0	0	1
Initial Vol:	0 1579		29	0 1388		0	0	0	0	0	0	31

Major Street Volume: 2996
Minor Approach Volume: 31
Minor Approach Volume Threshold: -131 [less than minimum of 75]

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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2035 PM

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 4 MF Rd / Road 2233	No / No	No / No
# 7 China Garden Rd / MF Rd	No / Yes	No / Yes
# 9 Enterprise Dr / MF Rd	Yes / Yes	Yes / Yes
# 11 Forni Rd / Golden Center Dr	No / No	No / No
# 12 Missouri Flat Rd / South Project En	No / No	No / No

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2035 PM

Peak Hour Delay Signal Warrant Report

Intersection #4 MF Rd / Road 2233

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 2	0	1	1 0 2	0	0	0 0 0	0	0	0 0 1!	0	0
Initial Vol:	0 1790		5	5 1955		0	0 0		0	1	0	0
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			252.5		

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=1]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=3756]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

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Peak Hour Volume Signal Warrant Report [Rural]

Intersection #4 MF Rd / Road 2233

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 2	0	1	1 0 2	0	0	0 0 0	0	0	0 0 1!	0	0
Initial Vol:	0 1790		5	5 1955		0	0	0	0	1	0	0

Major Street Volume: 3755
Minor Approach Volume: 1
Minor Approach Volume Threshold: -183 [less than minimum of 75]

SIGNAL WARRANT DISCLAIMER

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Peak Hour Delay Signal Warrant Report

Intersection #4 MF Rd / Road 2233

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0	2 0	1	1 0	2 0	0	0 0	0 0	0	0 0	1! 0	0
Initial Vol:	0	1834	5	54	1949	0	0	0	0	1	0	25
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			35.5		

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=26]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=3868]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

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Peak Hour Volume Signal Warrant Report [Rural]

Intersection #4 MF Rd / Road 2233

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0	2 0	1	1 0	2 0	0	0 0	0 0	0	0 0	1! 0	0
Initial Vol:	0	1834	5	54	1949	0	0	0	0	1	0	25

Major Street Volume: 3842
Minor Approach Volume: 26
Minor Approach Volume Threshold: -188 [less than minimum of 75]

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Peak Hour Delay Signal Warrant Report

Intersection #7 China Garden Rd / MF Rd

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0	1	1 0	1 0	1	1 0	0 0	0	0 1	0 0	0	0 1
Initial Vol:	0	745	5	10	1090	0	0	0	5	0	0	185
ApproachDel:	xxxxxx			xxxxxx			12.5			13.1		

Approach[eastbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=5]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=2040]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.7]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=185]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=2040]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

SIGNAL WARRANT DISCLAIMER
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Peak Hour Volume Signal Warrant Report [Rural]

Intersection #7 China Garden Rd / MF Rd

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0 1			1 0 1			1 0 0			0 0 1		
Initial Vol:	0	745	5	10	1090	0	0	0	5	0	0	185

Major Street Volume: 1850
Minor Approach Volume: 185
Minor Approach Volume Threshold: -20 [less than minimum of 75]

SIGNAL WARRANT DISCLAIMER

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2035 plus Project PM

Peak Hour Delay Signal Warrant Report

Intersection #7 China Garden Rd / MF Rd

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0 1	1	0	1 0 1	1	0	0 0 0	0	1	0 0 0	0	1
Initial Vol:	0	749	5	10	1098	0	0	0	5	0	0	185
ApproachDel:	xxxxxx			xxxxxx			12.5			13.1		

Approach[eastbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=5]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=2052]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.7]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=185]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=2052]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

SIGNAL WARRANT DISCLAIMER

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Peak Hour Volume Signal Warrant Report [Rural]

Intersection #7 China Garden Rd / MF Rd

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0 1			1 0 1			0 0 0			0 0 0		
Initial Vol:	0	749	5	10	1098	0	0	0	5	0	0	185

Major Street Volume: 1862
Minor Approach Volume: 185
Minor Approach Volume Threshold: -21 [less than minimum of 75]

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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2035 PM

Peak Hour Delay Signal Warrant Report

Intersection #9 Enterprise Dr / MF Rd

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1	0 1	0	1	0 1	0	0	0 1! 0	0	0	0 1! 0	0
Initial Vol:	10	520	5	5	905	100	110	0	30	5	5	5
ApproachDel:	xxxxxx			xxxxxx			117.4			25.5		

Approach[eastbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=4.6]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=140]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1700]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=15]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1700]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

SIGNAL WARRANT DISCLAIMER

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2035 PM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #9 Enterprise Dr / MF Rd

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0	1 1	0	1 0	1 1	0	0 0	1! 0	0	0 0	1! 0	0
Initial Vol:	10	520	5	5	905	100	110	0	30	5	5	5

Major Street Volume: 1545
Minor Approach Volume: 140
Minor Approach Volume Threshold: 22 [less than minimum of 75]

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Peak Hour Delay Signal Warrant Report

Intersection #9 Enterprise Dr / MF Rd

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0	1	1 0	1 0	1	1 0	0 0	1! 0	0	0 0	1! 0	0
Initial Vol:	10	524	5	5	913	100	110	0	30	5	5	5
ApproachDel:	xxxxxx			xxxxxx			122.7			25.8		

Approach[eastbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=4.8]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=140]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1712]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=15]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1712]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

SIGNAL WARRANT DISCLAIMER

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Peak Hour Volume Signal Warrant Report [Rural]

Intersection #9 Enterprise Dr / MF Rd

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0	1 1	0	1 0	1 1	0	0 0	1! 0	0	0 0	1! 0	0
Initial Vol:	10	524	5	5	913	100	110	0	30	5	5	5

Major Street Volume: 1557
Minor Approach Volume: 140
Minor Approach Volume Threshold: 20 [less than minimum of 75]

SIGNAL WARRANT DISCLAIMER

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2035 PM

Peak Hour Delay Signal Warrant Report

Intersection #11 Forni Rd / Golden Center Dr

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 1	0	0 1	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Initial Vol:	0	130	95	10	75	0	0	0	0	110	0	15
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			10.5		

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.4]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=125]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=435]
FAIL - Total volume less than 650 for intersection
with less than four approaches.

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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2035 PM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #11 Forni Rd / Golden Center Dr

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 1	0	0 1	0	0	1! 0	0	0	1! 0	0	0	1! 0
Initial Vol:	0	130	95	10	75	0	0	0	0	110	0	15

Major Street Volume: 310
Minor Approach Volume: 125
Minor Approach Volume Threshold: 391

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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2035 plus Project PM

Peak Hour Delay Signal Warrant Report

Intersection #11 Forni Rd / Golden Center Dr

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 1	0	0 1	0	0 1!	0 0	0	0 1!	0 0	0	0 1!	0 0
Initial Vol:	6	130	95	10	74	8	13	13	47	110	6	15
ApproachDel:	xxxxxx			xxxxxx			9.9			11.8		

Approach[eastbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=73]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=527]
FAIL - Total volume less than 650 for intersection with less than four approaches.

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.4]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=131]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=527]
FAIL - Total volume less than 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

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Peak Hour Volume Signal Warrant Report [Rural]

Intersection #11 Forni Rd / Golden Center Dr

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 1	0	0 1	0	0	1! 0	0	0	1! 0	0	0	1! 0
Initial Vol:	6	130	95	10	74	8	13	13	47	110	6	15

Major Street Volume: 323
Minor Approach Volume: 131
Minor Approach Volume Threshold: 382

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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2035 plus Project PM

Peak Hour Delay Signal Warrant Report

Intersection #12 Missouri Flat Rd / South Project Entrance

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 2	0	1	0 0 2	0	0	0 0 0	0	0	0 0 0	0	1
Initial Vol:	0 1788		23	0 1955		0	0	0	0	0	0	52
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			20.2		

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=52]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=3818]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Peak Hour Volume Signal Warrant Report [Rural]

Intersection #12 Missouri Flat Rd / South Project Entrance

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 2	0	1	0 0 2	0	0	0 0 0	0	0	0 0 0	0	1
Initial Vol:	0 1788		23	0 1955		0	0	0	0	0	0	52

Major Street Volume: 3766
Minor Approach Volume: 52
Minor Approach Volume Threshold: -183 [less than minimum of 75]

SIGNAL WARRANT DISCLAIMER

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Existing Mid-Afternoon

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 4 MF Rd / Road 2233	No / No	No / No
# 11 Forni Rd / Golden Center Dr	No / No	No / No

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Existing Mid-Afternoon

Peak Hour Delay Signal Warrant Report

Intersection #4 MF Rd / Road 2233

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 2	0	1	1 0 2	0	0	0 0 0	0	0	0 0 1!	0	0
Initial Vol:	0 1496		5	5 1414		0	0 0		0	5	0	5
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			66.1		

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=10]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2930]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

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Existing Mid-Afternoon

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #4 MF Rd / Road 2233

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0	2 0	1	1 0	2 0	0	0 0	0 0	0	0 0	1! 0	0
Initial Vol:	0	1496	5	5	1414	0	0	0	0	5	0	5

Major Street Volume: 2920
Minor Approach Volume: 10
Minor Approach Volume Threshold: -125 [less than minimum of 75]

SIGNAL WARRANT DISCLAIMER

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Existing plus Project Mid-Afternoon

Peak Hour Delay Signal Warrant Report

Intersection #4 MF Rd / Road 2233

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0	2 0	1	1 0	2 0	0	0 0	0 0	0	0 0	1! 0	0
Initial Vol:	0	1520	9	43	1412	0	0	0	0	6	0	18
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			54.2		

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.4]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=24]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=3008]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

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Existing plus Project Mid-Afternoon

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #4 MF Rd / Road 2233

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0	2	0 1	1 0	2	0 0	0 0	0	0 0	0 0	1!	0 0
Initial Vol:	0	1520	9	43	1412	0	0	0	0	6	0	18

Major Street Volume: 2984
Minor Approach Volume: 24
Minor Approach Volume Threshold: -130 [less than minimum of 75]

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Existing Mid-Afternoon

Peak Hour Delay Signal Warrant Report

Intersection #11 Forni Rd / Golden Center Dr

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 1	0	0 1	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Initial Vol:	0	93	192	14	150	0	0	0	0	187	0	9
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			11.8		

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.6]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=196]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=645]
FAIL - Total volume less than 650 for intersection
with less than four approaches.

SIGNAL WARRANT DISCLAIMER

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Existing Mid-Afternoon

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #11 Forni Rd / Golden Center Dr

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 1	0	0 1	0	0 1!	0 0	0	0 1!	0 0	0	0 1!	0 0
Initial Vol:	0	93	192	14	150	0	0	0	0	187	0	9

Major Street Volume: 449
Minor Approach Volume: 196
Minor Approach Volume Threshold: 306

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Existing plus Project Mid-Afternoon

Peak Hour Delay Signal Warrant Report

Intersection #11 Forni Rd / Golden Center Dr

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 1	0	0 1	0	0 1!	0 0	0	0 1!	0 0	0	0 1!	0 0
Initial Vol:	4	93	192	14	150	6	10	8	26	187	10	4
ApproachDel:	xxxxxx			xxxxxx			10.5			13.4		

Approach[eastbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=44]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=704]
FAIL - Total volume less than 650 for intersection with less than four approaches.

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.7]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=201]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=704]
FAIL - Total volume less than 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Existing plus Project Mid-Afternoon

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #11 Forni Rd / Golden Center Dr

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 1	0 0	1	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Initial Vol:	4	93	192	14	150	6	10	8	26	187	10	4

Major Street Volume: 459
Minor Approach Volume: 201
Minor Approach Volume Threshold: 301

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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2035 Mid-Afternoon

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 4 MF Rd / Road 2233	No / No	No / No
# 11 Forni Rd / Golden Center Dr	No / No	No / No

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2035 Mid-Afternoon

Peak Hour Delay Signal Warrant Report

Intersection #4 MF Rd / Road 2233

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0	2 0	1	1 0	2 0	0	0 0	0 0	0	0 0	1! 0	0
Initial Vol:	0	1843	5	5	1803	0	0	0	0	5	0	5
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			173.3		

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.5]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=10]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=3666]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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2035 Mid-Afternoon

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #4 MF Rd / Road 2233

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0	2 0	1	1 0	2 0	0	0 0	0 0	0	0 0	1! 0	0
Initial Vol:	0	1843	5	5	1803	0	0	0	0	5	0	5

Major Street Volume: 3656
Minor Approach Volume: 10
Minor Approach Volume Threshold: -176 [less than minimum of 75]

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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2035 plus Project Mid-Afternoon

Peak Hour Delay Signal Warrant Report

Intersection #4 MF Rd / Road 2233

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0	2 0	1	1 0	2 0	0	0 0	0 0	0	0 0	1! 0	0
Initial Vol:	0	1867	8	43	1801	0	0	0	0	5	0	18
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			130.7		

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.8]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=23]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=3742]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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2035 plus Project Mid-Afternoon

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #4 MF Rd / Road 2233

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 2	0	1	1 0 2	0	0	0 0 0	0	0	0 0 1!	0	0
Initial Vol:	0 1867		8	43 1801		0	0	0	0	5	0	18

Major Street Volume: 3719
Minor Approach Volume: 23
Minor Approach Volume Threshold: -180 [less than minimum of 75]

SIGNAL WARRANT DISCLAIMER

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2035 Mid-Afternoon

Peak Hour Delay Signal Warrant Report

Intersection #11 Forni Rd / Golden Center Dr

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 1	0	0 1	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Initial Vol:	0	92	190	16	174	0	0	0	0	133	0	6
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			11.4		

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.4]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=139]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=611]
FAIL - Total volume less than 650 for intersection
with less than four approaches.

SIGNAL WARRANT DISCLAIMER

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2035 Mid-Afternoon

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #11 Forni Rd / Golden Center Dr

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 1	0	0 1	0	0	1! 0	0	0	1! 0	0	0	1! 0 0
Initial Vol:	0	92	190	16	174	0	0	0	0	133	0	6

Major Street Volume: 472
Minor Approach Volume: 139
Minor Approach Volume Threshold: 295

SIGNAL WARRANT DISCLAIMER

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2035 plus Project Mid-Afternoon

Peak Hour Delay Signal Warrant Report

Intersection #11 Forni Rd / Golden Center Dr

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 1	0	0 1	0	0 1!	0 0	0	0 1!	0 0	0	0 1!	0 0
Initial Vol:	5	92	190	16	174	6	10	8	27	133	10	1
ApproachDel:	xxxxxx			xxxxxx			10.7			13.0		

Approach[eastbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=45]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=672]
FAIL - Total volume less than 650 for intersection
with less than four approaches.

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.5]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=144]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=672]
FAIL - Total volume less than 650 for intersection
with less than four approaches.

SIGNAL WARRANT DISCLAIMER
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2035 plus Project Mid-Afternoon

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #11 Forni Rd / Golden Center Dr

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 1	0	0 1	0	0	1! 0	0	0	1! 0	0	0	1! 0 0
Initial Vol:	5	92	190	16	174	6	10	8	27	133	10	1

Major Street Volume: 483
Minor Approach Volume: 144
Minor Approach Volume Threshold: 289

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Appendix D:
Biological Resources Documentation

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D.1 - Biological Resource Assessments

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June 7, 2016

Leonard Grado
Grado Equities VII, LLC
4330 Golden Center Drive, Ste. D
Placerville, CA 95667

SUBJECT: Creekside Plaza, El Dorado County, Biological Resource Assessment Update

Dear Mr. Grado:

At your request, Salix Consulting has conducted a review and updated assessment of biological resources on the ±4.31-acre Creekside Plaza property, located on the corner of Missouri Flat Road and Forni Road just west of Placerville (Figures 1 and 2).

Background

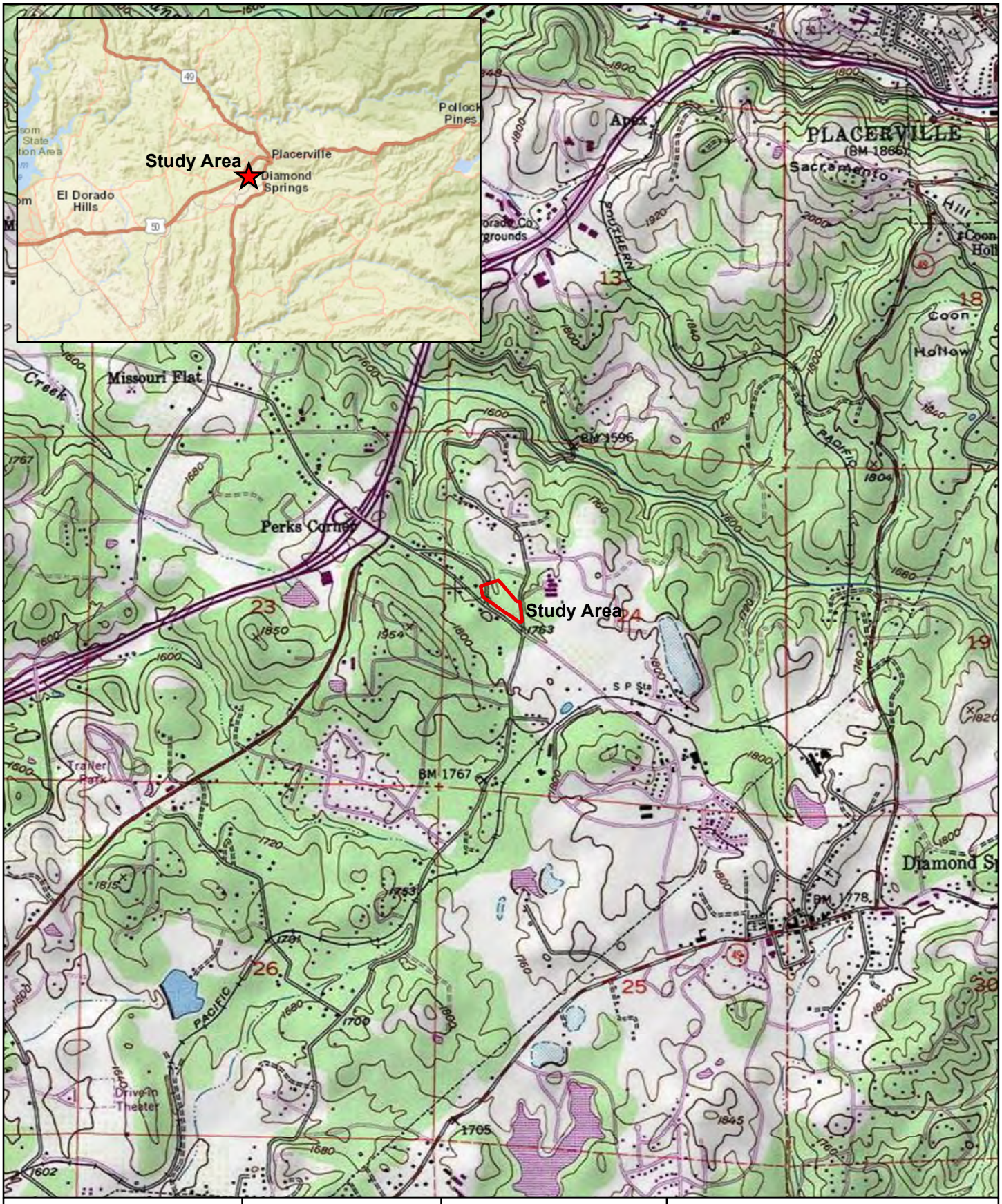
The proposed Creekside Plaza project has been referred to as the "Fusano Property" and "Forni Road Property" in various documents produced for the study area over the years. This document updates the *Biological Resource Assessment for the Creekside Plaza Study Area* prepared by Barry Anderson in collaboration with North Fork Associates and dated "Revised February 14, 2011". Salix Consulting produced a wetland delineation for the property in November 2015, which was submitted to the U.S. Army Corps of Engineers for verification in March 2016.

Methodology

The previous study conducted on the site by Barry Anderson/North Fork Associates was reviewed and a reconnaissance-level site assessment was conducted during the wetland delineation conducted on March 16, 2015 and during the oak canopy site assessment on April 7, 2016.

The property is in similar condition as it was since the 2011 evaluation. There were a couple outbuildings on the site in 2011 but they have since been removed. The habitat types are the same; foothill woodland, riparian, and ruderal. The site is surrounded by major roads, retail businesses, offices, a school, and residential housing.

To update the 2011 report and determine if there is new information regarding special-status species in the region, Salix Consulting re-queried the California Natural Diversity Database (CNDDB 2016) for location records for special-status species known to occur in the study area region. Quadrangles included in the query were Coloma, Garden Valley, Slate Mountain,



Salix consulting, inc.

N

0 1,000 2,000

Feet

Source Maps: USGS Topographic Map, Placerville, CA (1973) Quadrangle, 1:24,000

Legend

Study Area (±4.31 acres)

Figure 1

VICINITY MAP

Creekside Plaza

Placerville, El Dorado County, CA



Salix consulting, inc.

N

0 50 100

Feet

Legend

Study Area (±4.31 ac)

Figure 2

AERIAL MAP

Creekside Plaza

Placerville, El Dorado County, CA

Shingle Springs, Placerville, Camino, Latrobe, Fiddletown, and Aukum. In addition, the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) database was queried for the study area, and the California Native Plant Society (CNPS) Inventory for special-status plants occurring in the 9-quad area was queried.

For the purposes of this report, special-status species are those that fall into one or more of the following categories:

- Listed as endangered or threatened under the federal Endangered Species Act (or candidate species, or formally proposed for listing);
- Listed as endangered or threatened under the California Endangered Species Act (or proposed for listing);
- Designated as rare, protected, or fully protected pursuant to California Fish and Game Code;
- Designated a Species of Special Concern by the California Department of Fish and Wildlife, or
- Designated as Ranks 1 or 2 on lists maintained by the California Native Plant Society. Species ranked 3 and 4 are dismissed from further consideration.

Findings

Information on **Geology and Soils**, **Hydrology**, **Vegetation**, and **Wildlife** is unchanged from the 2011 report. The site has not been substantially altered since the 2011 evaluation, and the same biological communities occur there, as summarized in Table 1 and illustrated in Figure 3. Current photographs of the site are provided in Figures 4a and 4b.

Table 1
Biological Communities on the Creekside Plaza site

Biological Community	Estimated Acreage
Ruderal	**0.7**
Foothill woodland	**2.5**
Riparian	**1.1**
Total	**4.3**

Waters of the U.S. and Riparian Habitat

Waters of the U.S. were re-delineated in 2015 by Salix, and the U.S. Army Corps of Engineers issued a Preliminary Jurisdictional Determination of that delineation on April 19, 2016. The delineation report and map are available under separate cover. Table 2 provides an acreage summary of the types of waters present on the site. Acreage variations from the 2008 delineation referenced in the 2011 Biological Resources Assessment are likely due to changes in



Salix consulting, inc.

N

0 50 100

Feet

Legend

Study Area (±4.31 ac)

Figure 3

HABITAT COMPONENTS MAP

Creekside Plaza

Placerville, El Dorado County, CA



Looking into site and typical foothill woodland.
Photo date: 4/7/16.



Looking northwest along Missouri Flat Road across ruderal area. *Photo date: 4/7/16.*

Salix consulting, inc.

Figure 4a

SITE PHOTOS
Creekside Plaza
Placerville, El Dorado County, CA



Looking southwest across foothill woodland and riparian corridor. *Photo date 4/7/16*



Intermittent streambed within riparian corridor.
Photo date: 3/16/15.

Salix consulting, inc.

Figure 4b

SITE PHOTOS
Creekside Plaza
Placerville, El Dorado County, CA

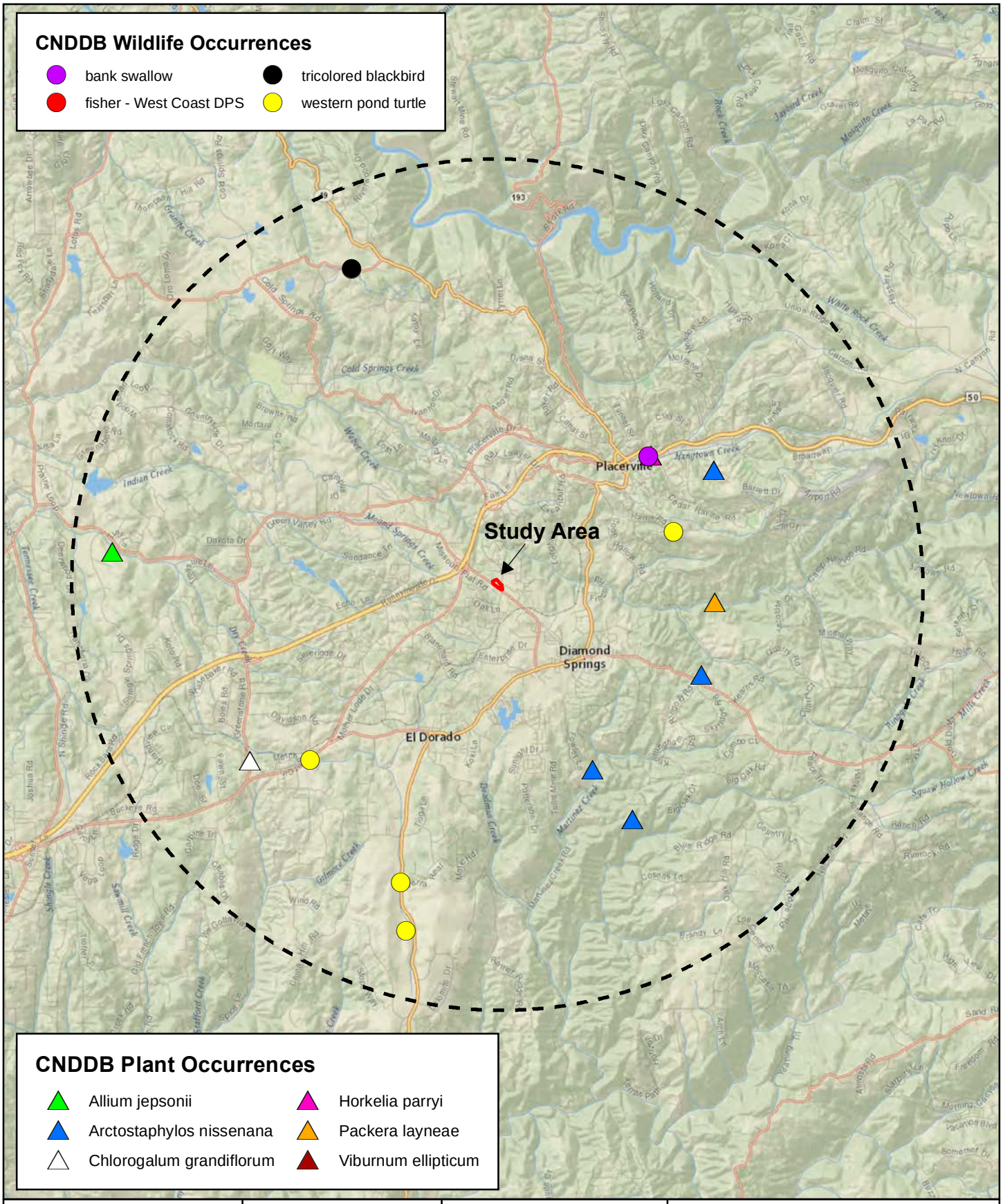
the boundary of the study area and to more refined and accurate mapping techniques that are now available.

Table 2
Waters of the U.S. on the Creekside Plaza Site

Type	Acreage
Wetlands	
Wetland Swale	0.03
Other Waters	
Intermittent stream	0.47
Total	**0.50**

Special Status Species

Salix re-queried the California Natural Diversity Database (CNDDB 2016) for location records for special-status species known to occur in the 9-quadrangle region surrounding the study area. In addition, the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC 2016) database was queried for the study area, as was the California Native Plant Society (CNPS 2016) Inventory for special-status plants occurring in the 9-quad area. Figure 5 illustrates special-status species occurrences within a 5-mile radius of the study area.



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0 1 2

Miles

Legend

Study Area

5-Mile Buffer

Figure 5

CNDDB SPECIAL-STATUS SPECIES OCCURENCES

Creekside Plaza

Placerville, El Dorado County, CA

Table 3 lists special-status plants that appear in both the 2011 and in the 2016 database queries, and their likelihood to occur on the site remains "none" due to the absence of suitable habitat or substrates. Note that in 2011, the BRA indicated that it was possible for Brandegee's clarkia (*Clarkia biloba* ssp. *brandegeae*) to occur within the study area. In 2011, this species was listed by CNPS as a 1B.2 plant; it has since been downgraded to a 4.2 and is no longer considered in the analysis. Sierra arching sedge (*Carex cyrtostachya*) and Van Zuuk's morning glory (*Calystegia vanzuukiae*) now appear in the CNDDB query and are included in the analysis in Table 3.

Table 3.
Special-Status Plants Determined to have NO POTENTIAL to Occur Within the Creekside Plaza Study Area (2011 and 2016)

Species	Status* Federal	State	CNPS	Habitat	Reason for NO POTENTIAL to occur
Plants					
Red Hills soaproot *Chlorogalum grandiflorum*		-	1B.2	Chaparral; cismontane woodland[serpentinite or gabbroic].;	Site lacks gabbro/serpentine soils.
Jepson's Onion *Allium jepsonii*			1B.2	Cismontane woodland; lower montane coniferous forest; [serpentinite or volcanic].;	Site lacks serpentine soils.
Stebbins' morning-glory *Calystegia stebbinsii*	FE	CE	1B.1	Chaparral (openings); cismontane woodland; [serpentinite or gabbroic].	Site lacks gabbro/serpentine soils.
Pine Hill flannelbush *Fremontodendron decumbens*	FE	CR	1B.2	Chaparral; cismontane woodland; [gabbroic or serpentinite].	Site lacks gabbro/serpentine soils.
Western vibernum *Vibernum ellipticum*	-	-	2B.3	Chaparral; cismontane woodland; lower montane coniferous forest. Generally on north-facing slopes.	No suitable habitat. Site lacks shaded slopes.
Layne's ragwort *Packera layneae*	FT	CR	1B.2	Chaparral; cismontane woodland; [gabbroic or serpentinite].	Site lacks gabbro/serpentine soils.
El Dorado County mules ears *Wyethia reticulata*	-	-	1B.2	Chaparral; cismontane woodland; lower montane coniferous forest [clay or gabbroic]	Site lacks gabbro soils
Pine Hill ceanothus *Ceanothus roderickii*	FE	CR	1B.1	Chaparral; cismontane woodland; [serpentinite or gabbroic].	Site lacks gabbro/serpentine soils
Eldorado bedstraw *Galium californicum sierrae*	FE	CR	1B.2	Chaparral; cismontane woodland; lower montane coniferous forest [gabbroic]	Site lacks gabbro soils

Table 3.
Special-Status Plants Determined to have NO POTENTIAL to Occur Within the Creekside Plaza Study Area (2011 and 2016)

Species	Status* Federal	State	CNPS	Habitat	Reason for NO POTENTIAL to occur
Pleasant Valley mariposa-lily *Calochortus clavatus avius*	-	-	1B.2	Lower montane coniferous forest (Josephine silt loam and volcanic)	No suitable habitat occurs onsite.
Parry's horkelia *Horkelia parryi*	-	-	1B.2	Chaparral; cismontane woodland; [especially Ione formation]	No suitable habitat occurs onsite.
Nissenan manzanita *Arctostaphylos missanana*	-	-	1B.2	Closed-cone coniferous forest; chapparal	No suitable habitat occurs onsite.
Sierra arching sedge *Carex cyrtostachya*	-	-	1B.2	Lower montane coniferous forest; Meadows & seeps; Marshes & swamps; Riparian forest margins	No suitable habitat occurs onsite.
Van Zuuk's morning-glory *Calystegia vanzuukiae*	-	-	1B.3	Chaparral; Cismontaine woodland (Gabbro, serpentinite)	Site lacks gabbro/serpentine soils

Appendix D (Special-status Wildlife) of the 2011 report lists species that were identified as potentially-occurring in the region in the 2011 resource database queries and assesses the species' probability to occur on the site. That Appendix indicates that several species were unlikely to occur within the Study Area at that time. After assessing the site again during field studies in 2015 and 2016, it was determined that there is no potential for most of these species to occur on the site (Appendix D). Table 4 below lists wildlife species with federal or state status that appear on the 2016 database queries and indicates their likelihood to occur within the study area. Note that the 2016 CNDDB query indicated the addition of bank swallow, great gray owl, and fisher to the list of potentially-occurring wildlife within the 9-quad region. Silver-haired bat is no longer listed as a California Species of Concern and is no longer considered in the analysis.

Table 4.

Special-Status Wildlife That Could Occur Within the Creekside Plaza Study Area (2011 and 2016)

Species	Status* Federal	State	Other	Habitat	Potential for Occurrence**
Amphibians					
California red-legged frog *Rana draytonii*	FT	SSC	-	Ponds and deeper pools along streams with emergent or overhanging vegetation. Surface water to at least June.	None. Drainage does not provide suitable aquatic habitat for species. Prefers ponds or slow-moving reaches of streams with permanent surface water. CNDDB does not show any occurrences within five miles
Foothill yellow-legged frog ***Rana boylii***	-	SSC	-	Found in partially shaded, shallow streams with rocky substrates. Needs some cobble-sized rocks as a substrate for egg laying. Requires water for 15 weeks for larval transformation..	Unlikely. Marginal habitat observed along intermittent stream. Closely associated with steeper gradient streams with rocky substrate. CNDDB does not show any occurrences within five miles.
Reptiles					
Western pond turtle *Emys marmorata*	-	SSC	-	Inhabits ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Requires suitable basking sites and upland habitat for egg laying..	Unlikely. Drainage does not provide suitable aquatic habitat for species. Prefers perennial surface water with deep pools and basking sites. May utilize drainage as a travel corridor.
California horned lizard *Phrynosoma coronatum frontale*		SSC	-	Found in a variety of habitats, but most common in sandy washes with scattered shrubs. Requires open areas for sunning, shrubs for cover, and sandy soil for hiding.	None. No suitable habitat present on site. Prefers open habitats of lowlands, such as sandy washes and flood plains. No individuals observed within project site during field survey.
Birds					
Bank swallow *Riparia riparia*	-	CT	-	Colonial nester near riparian and other lowland habitats. Requires vertical banks or cliffs with fine-textured, sandy soils near streams, rivers, and lakes.	None. No suitable nesting habitat present onsite.

Table 4.

Special-Status Wildlife That Could Occur Within the Creekside Plaza Study Area (2011 and 2016)

Species	Status* Federal	State	Other	Habitat	Potential for Occurrence**
Tri-colored blackbird *Agelaius tricolor*	-	CE	-	Colonial nester in dense cattails, tules, brambles, or other dense vegetation. Requires open water, dense vegetation, and open grassy areas for foraging.	None. No suitable nesting habitat present onsite.
Northern goshawk *Accipiter gentilis*	-	SSC		Dense, mature coniferous forests, most typically dense fir stands in the Sierra Nevada mountains.	None. No suitable nesting habitat present onsite.
Great grey owl *Strix nebulosa*	-	CE	-	Sierra Nevada in mature and mixed conifer and red fir forests, adjacent to montane meadows within forested habitat. Nests in broken top snag or mature fir.	None. No suitable nesting habitat present onsite.
Mammals					
Fisher- West Coast DPS *Pekania pennanti*	FPT	CC, SSC	-	Occurs in intermediate to large-tree stage coniferous forests and riparian woodlands with a high percent of canopy closure.	None. Site lacks suitable habitat.

***Status Codes:**

Federal

FE **Federal Endangered**
FPT **Federal Proposed Threatened**
FT **Federal Threatened**

State

CC **California Candidate**
CE **California Endangered**
CFP **California Fully Protected**
CR **California Rare**
CT **California Threatened**
SSC **California Species of Concern**

**Definitions for the Potential to Occur:

- **None.** Suitable habitat does not occur.
- **Unlikely.** Some habitat may occur, but disturbance or other activities may restrict or eliminate the possibility of the species occurring. Habitat may be very marginal, or the study area may be outside the range of the species.
- **Possible.** Marginal to suitable habitat occurs, and the study area occurs within the range of the species.
- **Likely.** Good habitat occurs, but the species was not observed during surveys.
- **Occurs:** Species was observed during surveys.

Potential Impacts and Mitigation Measures

There is only one revision to the Impacts and Mitigation Measures section of the 2011 Biological Resources Assessment: Preconstruction surveys for nesting raptors and migratory birds should be conducted no more than 15 days prior to the initiation of ground-disturbing activities.

Summary

We reviewed the 2011 Biological Resources Assessment for the Creekside Plaza site, conducted two field evaluations of the site in 2015 and 2016, and queried three data bases to determine if new information would warrant any further analysis or study of this site. We identified species that were not noted in the previous analysis, most of which have no habitat on the project site. The new information discovered during this analysis does not affect our previous findings.

Please do not hesitate to contact me at (530) 888-0130 if you have any questions about this report.

Sincerely,



Jeff Glazner
Principal Biologist

BIOLOGICAL RESOURCE ASSESSMENT
FOR THE
CREEKSIDE PLAZA STUDY AREA

EL DORADO COUNTY, CALIFORNIA

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Revised February 14, 2011

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BIOLOGICAL RESOURCES ASSESSMENT
FOR THE
CREEKSIDE PLAZA STUDY AREA

INTRODUCTION

The proposed Creekside Plaza project has been known by other names. Various documents produced for the study area over the years have used the names "Fusano Property" and "Forni Road Property." The Current name of Creekside Plaza is used here because that is the name being submitted to El Dorado County.

North Fork Associates biologists have done most of the work for the proposed project. This Biological Resources Assessment has been completed by Barry Anderson in collaboration with North Fork Associates.

Project Location and Setting

The proposed Creekside Plaza property is on the corner of Missouri Flat Road and Forni Road just west of Placerville. It is located in Section 24, Township 10 North, Range 10 East on the Placerville 7 ½ minute USGS quadrangle (Figure 1). The approximate latitude and longitude for the site are 38°42'28" north and 120°49'54" west. Most of the property is flat, but the stream channel on the site is in a ravine. Elevations are between 1723 feet to 1761 feet above sea level. Figure 2 is an aerial of the site and surrounding area.

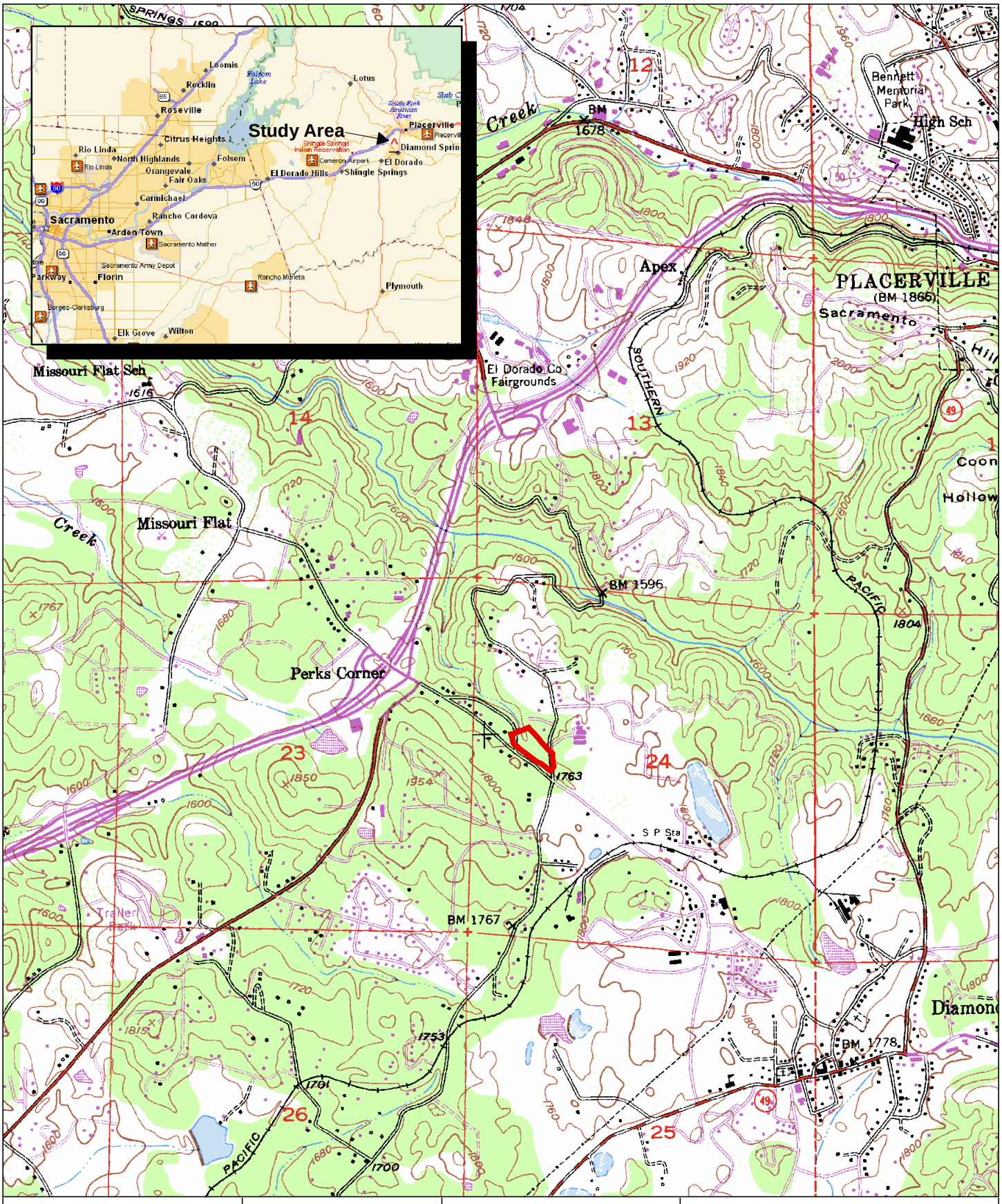
According to the soils map, portions of the area were placer mined at one time. Since then, much of the site has been graded flat on the south side of the creek. This portion of Missouri Flat Road is rapidly becoming developed with retail outlets and offices, although some residential housing still exists along Forni Road.

Project Description

The proposed project is commercial, office, and retail development.

Objectives

- Identify and describe the biological communities present on the project site.
- Record plant and animal species observed on the project site.
- Evaluate and identify sensitive resources and special-status plant and animal species that could be affected by project activities.
- Provide an impact assessment and potential mitigation measures.



north fork associates

0 500 1,000 2,000

Scale in Feet

USGS Base Map: Placerville, CA
7.5 minute topographic quadrangle
Section: 24
Township: 10N
Range: 10E

Figure 1

SITE & VICINITY MAP

Creekside Plaza

El Dorado County, California



north fork associates

N

0 25 50 100

Scale in Feet

Aerial photo provided by: ESRI (2007)

Figure 2

AERIAL PHOTO

Creekside Plaza

El Dorado County, California

Available Literature and other Information

A variety of resources were used in this assessment. Aerial photographs were obtained from several sources and Lebeck Young supplied a topographic map of the site. Soil information was obtained from the El Dorado soil survey (USDA, NRCS 1974), and geological information was

taken from the *Geologic Map of California Sacramenot Sheet* (California Department of Conservation 1966).

The following publications were reviewed to provide information on life history, habitat requirements, distribution, and conservation status of regionally occurring animal species: *California's Wildlife*, Volumes I-III (Zeiner et al. 1988, 1990a, 1990b), *A Field Guide to Western Reptiles and Amphibians* (Stebbins 1985), *Mammals of the Pacific States* (Ingles 1965), *The Peterson Field Guide to Hawks of North America (*Clark and Wheeler 1987) and *The Sibley Field Guide to Birds of Western North America* (Sibley 2003).

Special Status Species Reports

North Fork Associates biologists queried the California Natural Diversity Data Base for location records for special status species known to occur in the region surrounding the study area. Quadrangles included in the query were Coloma, Garden Valley, Slate Mtn, Shingle Springs, Placerville, Camino, Latrobe, Fiddletown, and Aukum. A similar list was obtained from the CNPS Electronic Inventory website. North Fork Associates biologists also reviewed the special endangered and threatened species lists for the Placerville USGS quadrangle and El Dorado County created by the U.S. Fish and Wildlife Service.

For the purposes of this report, special status species are those that fall into one or more of the following categories, including those:

- listed as endangered or threatened under the federal Endangered Species Act (including candidates and species proposed for listing),
- listed as endangered or threatened under the California Endangered Species Act (including candidates and species proposed for listing),
- designated as rare, protected, or fully protected pursuant to California Fish and Game Code,
- designated a Species of Concern by the California Department of Fish and Game,
- defined as rare or endangered under Section 15380 of the California Environmental Quality Act (CEQA), or
- occurring on List 1, 2, 3 or 4 maintained by the California Native Plant Society.

Field Surveys

The initial site assessments were done primarily for the wetland delineation and general botanical surveys. These were conducted by July 26, 2006 by botanists Barry Anderson and Pat Britton. Wildlife biologist Gaylene Tupen surveyed the site on October 3, 2006. The survey consisted of walking the site, recording notes of species observed or their sign, and assessing habitats present for the potential occurrence of special status species. Appendix A is a list of plants observed, and Appendix B is list of wildlife observed. Plant names are according to *The*

Jepson Manual (Hickman 1993), except for changes obtained from the Jepson Interchange, an online database maintained by the University and Jepson Herbaria of the University of California.

The botanical surveys were floristic according to guidelines issued by the California Department of Fish and Game. During floristic surveys, each individual plant was identified to the extent needed to determine whether it was a special status species. The list of plants observed is in Appendix A.

RESULTS

Geology and Soils

The area around the Forni Road property is underlain by Mesozoic granitic rock. The site does not have soils derived from serpentine or gabbro rocks that are known to support special status plants.

Three soils series have been mapped on the site:

- Boomer gravelly loam, 3 to 15 percent slopes
- Diamond Springs very fine sandy loam, 9 to 15 percent slopes
- Placer diggings

Boomer and Diamond Springs soils are not considered hydric soils. However, they can support wetlands in topographic depressions with adequate hydrology.

Placer diggings are areas of rock and cobble created during placer mining in streams. Finer soil was often deposited in depressions between rock piles, and these often support wetland vegetation. Most of the placer diggings on the site appear to have been graded flat.

Hydrology

The study area is in the South Fork American watershed (HUC 18020129). The main hydrological feature on the site is a stream channel emanating from a culvert under Forni Road. This channel is marked as intermittent on the USGS quad, but it receives runoff landscape water from developments upstream during the summer. Because of the summer water, the stream may actually be perennial. At the time of the July delineation, a small amount of water was flowing in the stream. The unnamed stream is a tributary of Weber Creek.

Biological Communities

Three biological communities occur on the site: ruderal, foothill woodland, and riparian. Table 1 is an acreage summary of these types and Figure 3 shows representative examples. Figure 4 shows site photos.



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N

0 25 50 100

Scale in Feet

Aerial photo provided by: ESRI (2007)

Figure 3

HABITAT MAP

Creekside Plaza

El Dorado County, California



4a. Ruderal area along Missouri Flat Road.

4b. Riparian corridor through center of the study area.





4c. Riparian habitat located near Forni Road.

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Photo Date: July 26, 2006

Figure 4

SITE PHOTOS

Creekside Plaza

El Dorado County, California

Table 1

Biological Communities

Biological Community	Estimated Acreage
Ruderal	0.9
Foothill woodland	2.4
Riparian	1.1
Total	**4.4**

Vegetation

Ruderal habitats are those that are often continuously disturbed. They tend to support undesirable non-native species, although some native plants behave as ruderal species. Common ruderal species include skeleton weed, Russian thistle, yellow starthistle, horehound, puncture vine, fluellin, and barbed goatgrass. Most of the area south of the stream has been graded and supports ruderal vegetation. Some urban landscape species occur around the two structures on the site.

Foothill woodland occurs on the banks and north side of the stream. Interior live oak, blue oak, and foothill pine are common species. A few valley oaks are present along the stream. The woodland is not well developed, and shrubs, such as coyote brush and buck brush, are present between the trees and sometimes for an understory. Grassy open areas are dominated by ripgut grass, soft chess, barbed goatgrass, and rattail fescue. A few native bulbs are present in the spring, and native tarweeds become more prominent during the summer and fall.

Riparian habitat occurs along the creek and consists of a dense canopy of narrow-leaved willow, red willow, arroyo willow, and Fremont cottonwood. Himalayan blackberry forms dense thickets at the edge of the riparian habitat. Herbaceous wetland species are in places abundant within the riparian canopy.

Wildlife

The study area is expected to provide limited habitat value for wildlife due to the close proximity to existing development and roadways, and the disturbed condition of portions of the site. However, taller trees located throughout the site, including foothill pines, oaks, and cottonwoods, provide potential nesting and roosting habitat for raptors known from the region. Scattered shrubs and trees provide potential nesting and foraging habitat for resident and migratory songbirds. Although larger mammals such as deer and coyote are not likely to occur within the project site on a regular basis, they may periodically visit the site for foraging purposes. In addition, the intermittent drainage provides a source of drinking water for wildlife occurring in the project vicinity. Because of the shallow surface water depths and limited drainage area, occurrence of aquatic species within the onsite drainage is likely limited to smaller amphibians such as Pacific tree frog and western toad, and some aquatic insects and invertebrates.

The following animals were observed in association with grassland and woodland habitats of the project site during the field survey: acorn woodpecker, oak titmouse, western scrub jay, northern flicker, American crow, mourning dove, Brewer's blackbird, California ground squirrel, and western fence lizard. Sign of mule deer, raccoon, and black-tailed hare was

observed throughout the site. In addition, turkey vultures were observed soaring over the project site throughout the field survey. Pacific tree frogs were detected in various locations along the drainage. A complete list of species observed during the October 3, 2006 field survey is provided in Appendix B.

Waters of the United States and Riparian Habitat

North Fork Associates delineated waters of the United States in July of 2006. The Corps verified the revised delineation on September 9, 2008. An intermittent stream (0.60 acre) and a wetland swale (0.06) are the only features within Corps jurisdiction. The intermittent stream is an unnamed tributary to Weber Creek. Activities affecting the unnamed stream or the wetland swale would require a permit from the Corps.

The stream channel and its bed-and-bank are considered riparian and are within the jurisdiction of the California Department of Fish and Game. This agency should be notified if the stream would be impacted by project activities.

Special Status Species

Appendix C is a list of potentially occurring special status plants, and Appendix D is a similar list of special status wildlife. The U.S. Fish and Wildlife Service list for El Dorado County includes species from the Central Valley to the Sierra Nevada. Species requiring habitats not occurring in or around the study area and species occurring far outside the study area are not considered in Appendix C or Appendix D. Field surveys and the best professional judgment of North Fork Associates biologists were used to further refine the tables in Appendix C and Appendix D. In general, plants on the CNPS List 3 and List 4 are not considered further. Table 2 is a list of special status species that occur on the site or that are rated possible or likely to occur.

The refined list of status species in the region of the project site includes 14 plants and eight animals (Appendix C and Appendix D, respectively). Of the 14 plant species in Appendix C and eight animal species in Appendix D, one plant and one animal have some potential to occur because the site has some areas of suitable habitat or they are known from nearby locations. Table 2 is a summary of those species, and they are discussed in more detail in the paragraphs following the table.

Table 2
Special Status Species That Could Occur on the Project Site

Species	Federal	State	CNPS	Habitat	Potential for Occurrence
Plants					
Brandegee's clarkia *Clarkia biloba* subsp. *brandegeeae*	-	-	List 1B.2	Chaparral and woodlands, often on roadcuts	Possible. Marginal habitat occurs on the site. Not observed during field surveys.
Amphibians					
California red-legged frog *Rana aurora draytonii*	FT	CSC	-	Deeper pools and streams with emergent or overhanging vegetation.	Unlikely. The stream in the study area does not provide suitable breeding habitat for species, and does not appear to provide dispersal habitat No known occurrences in project vicinity.
Mammals					
Silver-haired bat *Lasionycteris noctivagans*	-	CSC	-	Coniferous forests, oak woodland and riparian habitats. Roosts in hollow trees, snags, buildings, rocks.	Unlikely: May forage in project area but no significant roosting activity expected to occur.

Status Codes:
Federal FT Federal Threatened
State CSC California Species of Concern

CNPS List 1B Rare or Endangered in California

Definitions for the potential to occur:

- **None.** Habitat does not occur on the site.
- **Unlikely.** Some habitat may occur on the site, but disturbance or other activities may restrict or eliminate the possibility of the species occurring. Habitat may be very marginal, or the site may be outside the range of the species.
- **Possible.** Marginal to suitable habitat occurs on the site, and the site occurs within the range of the species.
- **Likely.** Good habitat occurs, but the species was not observed during surveys.
- **Occurs:** Species was observed during surveys.

Plants

Brandegee's clarkia (*Clarkia biloba* subsp. *brandegeeae*) is an erect annual member of the evening primrose family (Onagraceae). It has no state or federal status, but it is on the CNPS List 1B. Brandegee's clarkia differs from similar species by having pendant buds, notched petals, and eight stamens. It can be found in oak woodlands in the Sierra foothills from Butte County to El

Dorado County. Its common name, farewell-to-spring suggests its late blooming period, usually from May to July.

Although the blooming time for this species was past during the field surveys, North Fork Associates biologists are familiar with t his species, and are able to distinguish it from more common species even during the dry season. No members of the genus *Clarkia* were found during the survey.

Other species: No other special status species were found during the surveys. Gabbro and serpentine derived soils that support special status plants near Shingle Springs and Cameron Park are absent on the study area. In addition, no members of the manzanita genus were found. Finally, it is likely that the floristic surveys would have found other special status species not occurring in the quadrangles surrounding the site, and past disturbance has probably eliminated the possibility of special status species.

Wildlife

California red-legged frog (*Rana aurora draytoni*), a federally threatened species and California species of special concern, historically ranged from Marin County southward to northern Baja California. This species is still locally abundant within portions of the San Francisco Bay area and along the central coast. Only isolated populations of California red-legged frog (CRLF) have been documented in the Sierra Nevada foothills. CRLF prefers aquatic habitats with little or no flow, the presence of surface water to at least early June, surface water depths to at least 0.7 meters (2.3 feet), and the presence of fairly sturdy underwater supports such as cattails. The largest densities of CRLF are typically associated with dense stands of overhanging willows and a fringe of sturdy emergent vegetation (USFWS 2006). CRLF typically breeds from January to July, with peak breeding occurring in February. Eggs are attached to subsurface vegetation, and hatched tadpoles require eleven to twenty weeks to metamorphose.

The closest known occurrences of CRLF relative to the project site are from approximately 13 miles west, along the east side of Folsom Lake, and from approximately eight miles east along the North Fork of Weber Creek (NDDB 2007). Focused surveys for CRLF have previously been conducted in association with other proposed developments in the general vicinity of the study area, but no individuals of the species were detected (EDAW 1998; ECORP 2003; Wildlife Research Associates 2004; Jones and Stokes 2002). At the time of the October 2006 field survey, most of the on-site drainage contained minimal standing water. The only portion of the drainage that exhibited surface water depths greater than a few inches was at the downstream end of the culvert, just west of Forni Road. While the drainage may retain surface water throughout much of the year, depths are not expected to be sufficient to support CRLF. Based on the absence of previous documented sightings in the project vicinity and the minimal amount of surface water and absence of pool habitat along the drainage, occurrence of CRLF within the project site is considered very unlikely.

Silver -haired bat (*Lasionycteris noctivagans*) is a common species throughout California, but fluctuates significantly in abundance (Zeiner et al., 1990). It occurs in coastal and montane coniferous forest, oak woodland, and riparian habitats. This species roosts in hollow trees, snags, buildings, rock crevices, in caves, and under bark of trees. Females can form nursery colonies or roost as solitary individuals in hollow trees or dense foliage. Mating primarily occurs in the fall. Young are born from May through July and are weaned at about six weeks (Zeiner et al., 1990).

There is only one documented occurrence of silver-haired bat in the study area region (CNDDB 2007). This occurrence is from approximately six miles northeast of the project site along the South Fork of the American River in an area with dense willow thickets and steep-walled cliffs. The project site may provide periodic foraging habitat for the species and limited suitable roosting habitat. However, no significant roosting activity or nursery colonies are expected to occur within the project site.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Waters of the United States

Impacts

The site has waters of the United States under the jurisdiction of the U.S. Army Corps of Engineers pursuant to Section 404 of the federal Clean Water Act. Activities affecting waters of the United States, including wetland, require a permit from the Corps. Based on project plans supplied by Lebeck Young Engineers, the project will affect 0.37 acre of waters of the United States and is eligible to use the existing Nationwide Permit 39 for institutional and commercial projects. Impacts to waters of the United States are considered significant. A Pre-construction Notification was submitted to the Corps on September 30, 2009 and amended on January 4, 2010.

On January 2, 2010, the applicant submitted an application to the Regional Water Quality Control Board for a water quality certification pursuant to Section 401 of the federal Clean Water Act.

Mitigation Measures

In the application to the Corps, the applicant has provided the following mitigation measures to offset impacts to waters of the United States.

- Purchase credits in an in-lieu fund held by the National Fish and Wildlife Foundation Fund. This will offset the direct impacts of the project.
- Preserve 1.14 acres of the drainage swale and adjacent upland habitat in perpetuity by creating a conservation easement over the preserved area.
- Obtain a third-party conservator to hold the conservation easement and ensure that the conditions of the Corps permit and the conservation easement are enforced.
- Provide an endowment for management of the preserved area.
- Enhance the preserved area by planting valley oaks and riparian vegetation in appropriate areas.

Streams and Riparian Habitat

Impacts

The site has habitat regulated by the California Department of Fish and Game pursuant to Section 1600 of the California Fish and Game Code. Activities affecting the stream and associated riparian habitat would require a stream and lakebed alteration agreement from the Department. Based on current project plans, 299 linear feet of stream channel (which includes

approximately ½ acre of riparian habitat) will be affected. Impacts to streams and riparian habitat are considered significant. On February 2, 2010, the applicant submitted an application for a streambed alteration agreement to the Department.

Mitigation Measures

The extent of the riparian habitat (0.5 acre) is greater than the extent of waters of the United States (0.37 acre), and the mitigation measures in the previous section were determined by the larger amount. The applicant believes that the mitigation measures for impacts to waters of the United States also offset impacts to streams and riparian habitat.

El Dorado County General Plan

County General Plan Policy 7.3.3.4 encourages the preservation of protected areas through easements or other methods. This policy also requires minimum setbacks of 50 feet on intermittent streams.

Impacts

The Creekside Plaza property has severe constraints to development, including the relative narrowness of the property and the steeply graded slope along Missouri Flat Road. These constraints make it difficult, if not impossible, to maintain 50-foot buffers on the southwest side of the site. Following meetings with the Corps of Engineers, the project was scaled-back to its current design. Even with these changes, the current project cannot be built while maintaining 50-foot buffers throughout.

Mitigation Measures

In cases were rigid buffers are not possible, the Corps of Engineers often accepts variable buffers. The applicant has had several discussions with the Corps personnel and that agency is likely to accept narrower buffers with a wider buffer on the opposite side of the channel. In addition, the preserved area will be protected as described in the section on Waters of the United States. These measures should be sufficient to offset the inability of the project to provide 50-foot buffers throughout the whole project.

Special-Status Plants

The floristic botanical survey did not locate any special status species expected to occur there, and it did not find unexpected special status plants. No further surveys are needed, and no mitigation is required.

California Red-legged Frog

The CNDDB does not document any occurrences of the California red-legged frog in the vicinity of the project site. In addition, previous focused surveys for this species conducted in association with other proposed development projects yielded no sightings of the California red-legged frog within the project region. Occurrence of the species within the project site is therefore considered to be highly unlikely because of the absence of sightings within the project region, and the absence of suitable aquatic habitat along the intermittent drainage. However, the Corps may initiate a consultation with the U.S. Fish and Wildlife Service pursuant to Section 7 of the federal Endangered Species Act. The outcome of consultation between the two agencies cannot be known at this time.

Nesting Raptors

Potential Impacts

Nesting raptors known from the region, including red-shouldered hawk and red-tailed hawk, could also be adversely affected if construction takes place during the identified breeding or nesting season. Take of any active raptor nest is prohibited under Fish and Game Code Section 3503.5 and would be considered significant.

Mitigation Measures

To avoid take of active raptor nests the applicant should:

- Conduct a pre-construction survey by a qualified biologist **no more than 30 days prior to initiation of proposed development activities.**
- Submit the survey results to CDFG. If active raptor nests are found on or immediately adjacent to the site, consultation should be initiated with CDFG to determine appropriate avoidance measures. Protective measures would likely included establishing an adequately sized buffer zone around each active nest found, and subsequent monitoring of the nests. Buffer zone widths shall be determined through consultation with CDFG, and should be delineated with highly visible fencing. Avoidance of all construction activities within the buffer zones will likely be required while the nest is occupied, and until after the young have fledged.

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APPENDIX A

Plant Species Observed on the Creekview Plaza Study Area During Surveys

Creekside Plaza

Plants Observed

Gymnosperms

Pinaceae

Pinus sabiniana	Foothill pine

Angiosperms - Dicots

Amaranthaceae

**Salsola tragus*	Russian-thistle

Anacardiaceae

Toxicodendron diversilobum	Western poison-oak

Apiaceae (Umbelliferae)

**Daucus carota*	Queen Anne's lace
**Torilis arvensis*	Field hedge-parsley

Asteraceae (Compositae)

**Anthemis cotula*	Mayweed
Baccharis pilularis	Coyote brush
**Carduus pycnocephalus*	Italian thistle
**Centaurea solstitialis*	Yellow starthistle
Centromadia fitchii	Fitch's spikeweed
**Chondrilla juncea*	Skeleton weed
**Cichorium intybus*	Chicory
**Cirsium vulgare*	Bull thistle
Conyza canadensis	Horseweed
**Lactuca serriola*	Prickly lettuce
Madia gracilis	Slender tarweed
Pseudognaphalium californicum	California everlasting

Brassicaceae (Cruciferae)

**Nasturtium officinale*	Water cress

Caryophyllaceae

**Spergularia rubra*	Ruby sand-spurrey

Convolvulaceae

**Convolvulus arvensis*	Bindweed

Euphorbiaceae

Croton setigerus	Turkey mullein

Fabaceae (Leguminosae)

Lathyrus sp.	Wild pea
Lotus purshianus var. purshianus	Spanish-clover
**Melilotus alba*	White sweetcover
**Trifolium hirtum*	Rose clover

* Indicates a non-native species

Fagaceae

Quercus douglasii	Blue oak
Quercus lobata	Valley oak
Quercus wislizeni var. wislizeni	Interior live oak

Hypericaceae

**Hypericum perforatum*	Klamathweed

Lamiaceae (Labiatae)

**Marrubium vulgare*	Horehound

Onagraceae

Epilobium brachycarpum	Summer cottonweed
Epilobium ciliatum	Hairy willow-herb

Phrymaceae

Mimulus guttatus	Common monkeyflower

Plantaginaceae

**Kickxia elatine*	Sharppoint fluvellin

Polygonaceae

Persicaria sp.	Smartweed
**Polygonum aviculare*	Common knotweed
**Rumex crispus*	Curly dock

Rhamnaceae

Ceanothus cuneatus var. cuneatus	Buck brush
Frangula californica subsp. tomentella	Hoary coffeeberry

Rosaceae

Heteromeles arbutifolia	Toyon
**Rubus discolor*	Himalayan blackberry

Salicaceae

Populus fremontii subsp. fremontii	Fremont cottonwood
Salix exigua	Narrow-leaved willow
Salix laevigata	Red willow
Salix lasiolepis	Arroyo willow

Scrophulariaceae

**Verbascum blattaria*	Moth mullein
**Verbascum thapsus*	Woolly mullein

Zygophyllaceae

**Tribulus terrestris*	Puncture vine

Angiosperms -Monocots

Agavaceae

Chlorogalum pomeridianum var. pomeridianum	Soap plant

Cyperaceae

Cyperus eragrostis	Tall flatsedge

Juncaceae

Juncus sp.	Rush

* Indicates a non-native species

Poaceae (Gramineae)

**Aegilops triuncialis*	Barbed goatgrass
**Bromus diandrus*	Ripgut grass
**Bromus hordeaceus*	Soft chess
**Bromus tectorum*	Cheat grass
Elymus glaucus	Blue wildrye
**Hordeum murinum*	Foxtail barley
**Lolium multiflorum*	Italian ryegrass
**Phalaris aquatica*	Harding grass
**Vulpia myuros*	Rattail fescue

Themidaceae

Triteleia sp.	Triteleia

Typhaceae

Typha sp.	Cattail

Appendix B

Wildlife Species Observed on the Creekside Plaza Study Area During Surveys

Creekside Plaza
Wildlife Observed

Amphibians	
Pacific chorus frog	*Pseudacris regilla*
Reptiles	
Western fence lizard	*Sceloporus occidentalis*
Birds	
Turkey vulture	*Cathartes aura*
Mourning dove	*Zenaida macroura*
Acorn woodpecker	*Melanerpes formicivorus*
Northern flicker	*Colaptes auratus*
Western scrub-jay	*Aphelocoma californica*
American crow	*Corvus brachyrhynchos*
Oak titmouse	*Baeolophus inornatus*
Brewer's blackbird	*Euphagus cyanocephalus*
Mammals	
Black-tailed hare	*Lepus californicus*
California ground squirrel	*Spermophilus beecheyi*
Raccoon	*Procyon lotor*
Mule deer	*Odocoileus hemionus*

Appendix C

Special Status Plant Species Known to Occur in the Region Surrounding the Study Area

Creekside Plaza

Special-Status Plant Species

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
Adoxaceae				
Viburnum ellipticum Western viburnum	Fed: - State: - CNPS: List 2.3	May-July	Chaparral; cismontane woodland; lower montane coniferous forest.	None. No suitable habitat occurs on the site.
Agavaceae				
Chlorogalum grandiflorum Red Hills soaproot	Fed: - State: - CNPS: List 1B.2	May-June	Chaparral; cismontane woodland; [serpentinite or gabbroic].	None. No suitable habitat occurs on the site.
Alliaceae				
Allium jepsonii Jepson's onion	Fed: - State: - CNPS: List 1B.2	May-August	Cismontane woodland; lower montane coniferous forest [serpentinite or volcanic]. 300 to 1160 meters.	None. No suitable habitat occurs on the site.
Asteraceae (Compositae)				
Packera layneae Layne's ragwort	Fed: FT State: CR CNPS: List 1B.2	April-July	Chaparral; cismontane woodland; [serpentinite or gabbroic].	None. No suitable habitat occurs on the site.
Wyethia reticulata El Dorado County mules ears	Fed: - State: - CNPS: List 1B.2	May-July	Chaparral; cismontane woodland; lower montane coniferous forest; [clay or gabbroic].	None. No suitable habitat occurs on the site.
Cistaceae				
Helianthemum suffrutescens Bisbee Peark rush-rose	Fed: - State: - CNPS: List 3.2	April-June	Chaparral (often serpentinite, gabbroic, or Ione soil).	None. No suitable habitat occurs on the site.

Creekside Plaza

Special-Status Plant Species

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
Convolvulaceae				
Calystegia stebbinsii Stebbins' false bindweed	Fed: FE State: CE CNPS: List 1B.1	May-June	Chaparral (openings); cismontane woodland; [serpentinite or gabbroic].	None. No suitable habitat occurs on the site.
Ericaceae				
Arctostaphylos nissenana Nissenan manzanita	Fed: - State: - CNPS: List 1B.2	February-March	Closed-cone coniferous forest; chaparral.	Very unlikely. No pure chaparral occurs on the site.
Liliaceae				
Calochortus clavatus avius Pleasant Valley mariposa lily	Fed: - State: - CNPS: List 1B.2	May-July	Lower montane coniferous forest, (Josephine silt loam and volcanic).	
Onagraceae				
Clarkia biloba brandegeeae Brandegee's clarkia	Fed: - State: - CNPS: List 1B.2	May-July	Chaparral; cismontane woodland [often on roadcuts].	Possible. The species tolerates some disturbance.
Rhamnaceae				
Ceanothus roderickii Pine Hill ceanothus	Fed: FE State: CR CNPS: List 1B.2	May-June	Chaparral; cismontane woodland; [serpentinite or gabbroic].	None. No suitable habitat occurs on the site.
Rosaceae				
Horkelia parryi Parry's horkelia	Fed: - State: - CNPS: List 1B.2	April-June	Chaparral; cismontane woodland; [especially Ione formation].	None. No suitable habitat occurs on the site.

Creekside Plaza

Special-Status Plant Species

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
Rubiaceae				
Galium californicum sierrae Eldorado bedstraw	Fed: FE State: CR CNPS: List 1B.2	May-June	Chaparral; cismontane woodland; lower montane coniferous forest; [gabbroic].	
Sterculiaceae				
Fremontodendron californicum decumbens Pine Hill flannelbush	Fed: FE State: CR CNPS: List 1B.2	April-June	Chaparral; cismontane woodland; [gabbroic or serpentinite].	None. No suitable habitat occurs on the site.

***Status**

Federal:
FE - Federal Endangered
FT - Federal Threatened
FPE - Federal Proposed Endangered
FPT - Federal Proposed Threatened
FC - Federal Candidate

State:
CE - California Endangered
CT - California Threatened
CR - California Rare
CSC - California Species of Special Concern

CNPS (California Native Plant Society - List.RED Code):
List 1A - Extinct
List 1B - Plants rare, threatened, or endangered in California and elsewhere
List 2 - Plants rare, threatened, or endangered in California, more common elsewhere
List 3 - Plants about which more information is needed, a review list
List 4 - Plants of limited distribution, a watch list
RED Code
1 - Seriously endangered (>80% of occurrences threatened)
2 - Fairly endangered (20 to 80% of occurrences threatened)
3 - Not very endangered (<20% of occurrences threatened)

Appendix D

Special Status Wildlife Species Known to Occur in the Region Surrounding the Study Area

Creekside Plaza
Special-Status Wildlife

	Status*	Habitat	Probability on Project Site
Amphibians			
California red-legged frog *Rana aurora draytonii*	Fed: FT State: CSC Other: -	Occurs in lowlands and foothills in deeper pools and slow-moving streams, usually with emergent wetland vegetation. Requires 11-20 weeks of permanent water for larval development.	Unlikely. Drainage does not provide suitable aquatic habitat for species. Prefers ponds or slow-moving reaches of streams with permanent surface water. Closest documented occurrence is from the east side of Folsom Lake.
Foothill yellow-legged frog *Rana boylii*	Fed: - State: CSC Other: *	Found in partially shaded, shallow streams with rocky substrates. Needs some cobble-sized rocks as a substrate for egg laying. Requires water for 15 weeks for larval transformation.	Unlikely. No suitable aquatic habitat observed along drainage. Closely associated with steeper gradient streams with rocky substrate and areas of permanent surface water. Closest known occurrence is from Indian Creek, approx. 8 miles north of site.
Reptiles			
Northwestern pond turtle *Actinemys marmorata marmorata*	Fed: - State: CSC Other: *	Inhabits ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Requires suitable basking sites and upland habitat for egg laying.	Unlikely. Drainage does not provide suitable aquatic habitat for species. Prefers perennial surface water with deep pools and basking sites.
California horned lizard *Phrynosoma coronatum frontale*	Fed: - State: CSC Other: -	Found in a variety of habitats, but most common in sandy washes with scattered shrubs. Requires open areas for sunning, shrubs for cover, and sandy soil for hiding.	Unlikely. No suitable habitat observed on site. Prefers open habitats of lowlands, such as sandy washes and flood plains. No individuals observed within project site during field survey.
Birds			
Cooper's hawk *Accipiter cooperii*	Fed: - State: - Other: -	Breeds in deciduous, mixed, and coniferous forests. Becoming more common in suburban and urban areas. Occurs in open to interrupted woodland.	Possible. Suitable foraging and nesting habitat in project vicinity. Marginal-quality nesting habitat in taller trees of site. Known from project region.
Northern goshawk *Accipiter gentilis*	Fed: - State: CSC Other: *	Dense, mature coniferous forests, most typically dense fir stands in the Sierra Nevada mountains.	Unlikely. No suitable habitat (dense, mature coniferous forest) present on site. Associated with coniferous forests at higher elevations.
Tricolored blackbird *Agelaius tricolor*	Fed: - State: CSC Other: *	Colonial nester in dense cattails, tules, brambles or other dense vegetation. Requires open water, dense vegetation, and open grassy areas for foraging.	Unlikely. No suitable nesting habitat observed on site. Prefers larger areas of open water for foraging and nearby emergent vegetation for nesting. No previously documented nesting colonies in project vicinity.

Creekside Plaza

Special-Status Wildlife

	Status*	Habitat	Probability on Project Site
Mammals			
Silver-haired bat *Lasionycteris noctivagans*	Fed: - State: CSC Other: -	Coniferous forests, oak woodland, and riparian habitats. Roosts in hollow trees, snags, buildings, and rocks. Migratory species.	Unlikely. Individuals may periodically roost or forage on site, but no significant roosting activity expected. Only one previously known occurrence in project region along South Fork of the American River.

***Status**

Federal:
FE - Federal Endangered
FT - Federal Threatened
FPE - Federal Proposed Endangered
FPT - Federal Proposed Threatened
FC - Federal Candidate
FPD - Federal Proposed for Delisting

State:
CE - California Endangered
CT - California Threatened
CR - California Rare
CC - California Candidate
CFP - California Fully Protected
CSC - California Species of Special Concern

Other:
Some species have protection under the other designations, such as the California Department of Forestry Sensitive Species, Bureau of Land Management Sensitive Species, U.S.D.A. Forest Service Sensitive Species, and the Migratory Bird Treaty Act. Raptors and their nests are protected by provisions of the California Fish and Game Code. Certain areas, such as wintering areas of the monarch butterfly, may be protected by policies of the California Department of Fish and Game.

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D.2 - Tree Canopy Analyses

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June 17, 2016

Mr. Leonard Grado
Grado Equities VII, LLC
4330 Golden Center Drive, Suite D
Placerville, CA 95667

Subject: Oak Canopy Cover Analysis
Creekside Plaza (APNs 327-211-14, -16, -25)
El Dorado County, California

Dear Mr. Grado:

At your request, Salix Consulting, Inc. conducted a canopy assessment for the ±4.3-acre Creekside Plaza project site, located at the northwest corner of the intersection of Missouri Flat Road and Forni Road in El Dorado County, California. This location corresponds to Section 24, Township 10N, and Range 10E on the Placerville, California 7.5 minute USGS quadrangle.

Oak Canopy Cover Analysis

A field survey to determine the coverage of the oak canopy onsite was conducted on April 7, 2016. Data was collected during the field survey with a Trimble GeoXT sub-meter GPS and overlaid onto a 2016 orthomosaic aerial photo using ArcMap 10.4. The acreage of oak tree canopy cover was calculated from these data. The project site plan, provided by project architect Brian Wickert, was then overlaid to determine the area of impact to the oak canopy that would occur with implementation of all phases of the proposed project. The project will include 30,560 square feet of office, retail and fast food space in 3 separate buildings with 156 proposed parking stalls.

Field survey data and mapping determined that existing oak canopy covers ±0.78 acre (18.1%) of the ±4.3-acre project site (Figure 1). The proposed site plan will remove ±0.42-acre of oak woodland canopy, or 53.8% of the existing canopy, and would retain ±0.36 (46.2%) of existing oak canopy (Figure 2).

If you need any further information or clarification of the data collected, please contact me at (530) 888-0130.

Sincerely,

Jeff Glazner
Principal

Attachments: Figure 1- Existing Oak Canopy

Figure 2- Oak Canopy Impact Analysis

cc: Brian Wickert, Architect



Salix consulting, inc.

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Feet

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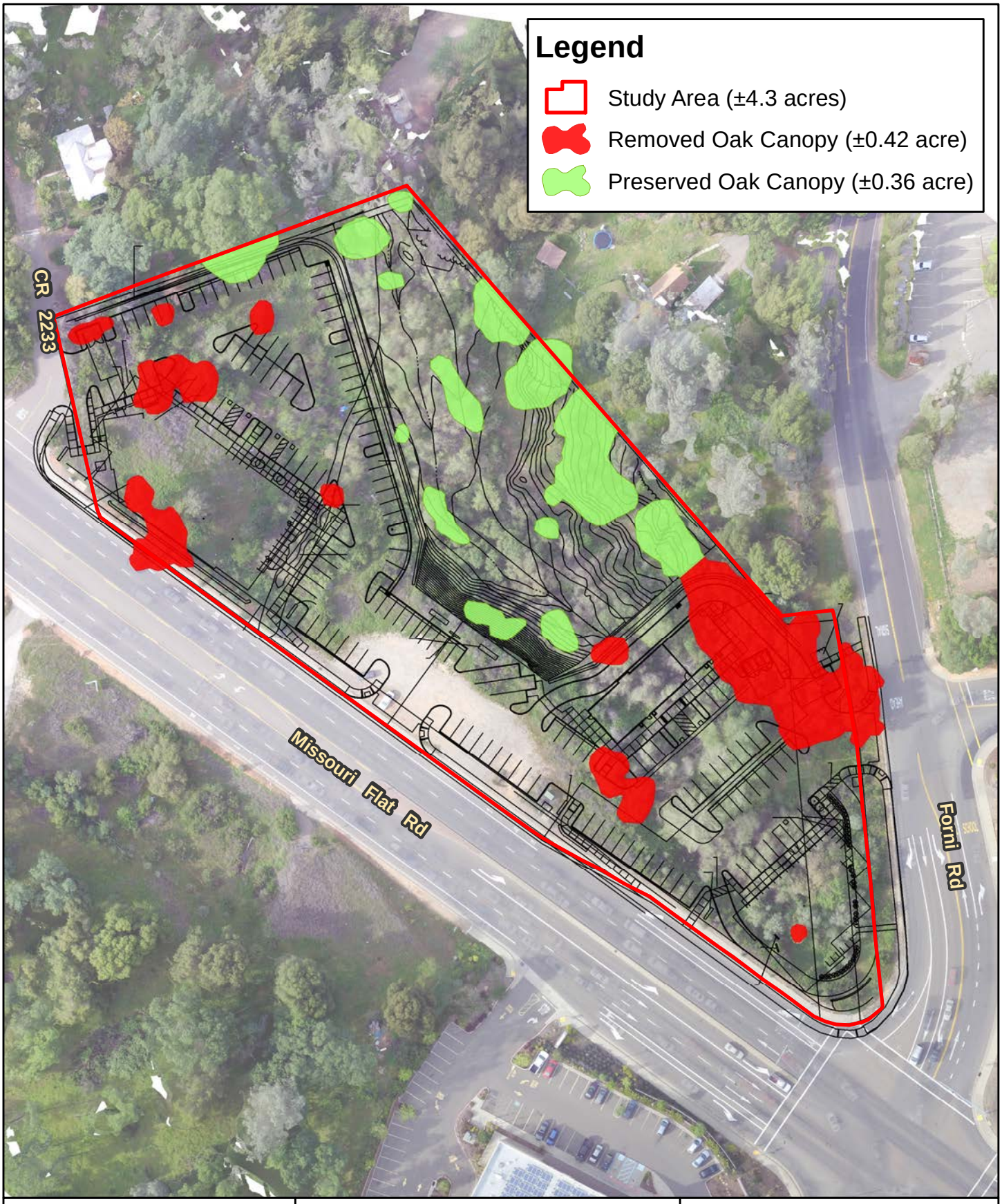
Figure 1

EXISTING OAK CANOPY

Creekside Plaza

Placerville, El Dorado County, CA



Salix consulting, inc.

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Feet

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Figure 2

OAK CANOPY IMPACT ANALYSIS

Creekside Plaza

Placerville, El Dorado County, CA

June 21, 2016

Mr. Leonard Grado
Grado Equities VII, LLC
4330 Golden Center Drive, Ste. D
Placerville, CA 95667

Subject: Canopy Cover Analysis
Creekside Plaza (APNs 327-211-14, -16, -25)
El Dorado County, California

Dear Mr. Grado:

At your request, Salix Consulting, Inc. conducted a tree canopy assessment for the ±4.3-acre Creekside Plaza project site, located at the northwest corner of the intersection of Missouri Flat Road and Forni Road in El Dorado County, California. This location corresponds to Section 24, Township 10N, and Range 10E on the Placerville, California 7.5 minute USGS quadrangle.

All Trees Canopy Cover Analysis

A field survey to determine the coverage of the total tree canopy onsite was conducted on April 7, 2016. Data was collected during the field survey with a Trimble GeoXT sub-meter GPS and overlaid onto a 2016 orthomosaic aerial photo using ArcMap 10.4. The acreage of total canopy cover was calculated from these data. The project site plan, provided by project architect Brian Wickert, was then overlaid to determine the area of impact to the total canopy that would occur with implementation of all phases of the proposed project. The project will include 30,560 square feet of office, retail and fast food space in 3 separate buildings with 156 proposed parking stalls.

Field survey data and aerial mapping determined that existing canopy covers ±2.47 acres (57.4%) of the ±4.3-acre project site (Figure 1). The proposed site plan will remove ±1.46-acres of tree canopy, or 59.1% of the existing tree canopy, and would retain ±1.01 acres (40.9%) of existing tree canopy (Figure 2).

If you need any further information or clarification of the data collected, please contact me at (530) 888-0130.

Sincerely,

Jeff Glazner
Principal

Attachments: Figure 1- All Tree Canopy

Figure 2- All Tree Canopy Impact Analysis

cc: Brian Wickert, Architect



Salix consulting, inc.

0 50 100
Feet

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Figure 1

ALL TREE CANOPY

Creekside Plaza

Placerville, El Dorado County, CA



Salix consulting, inc.

Figure 2

ALL TREE CANOPY IMPACT ANALYSIS

Creekside Plaza

Placerville, El Dorado County, CA

D.3 - Wetland Information

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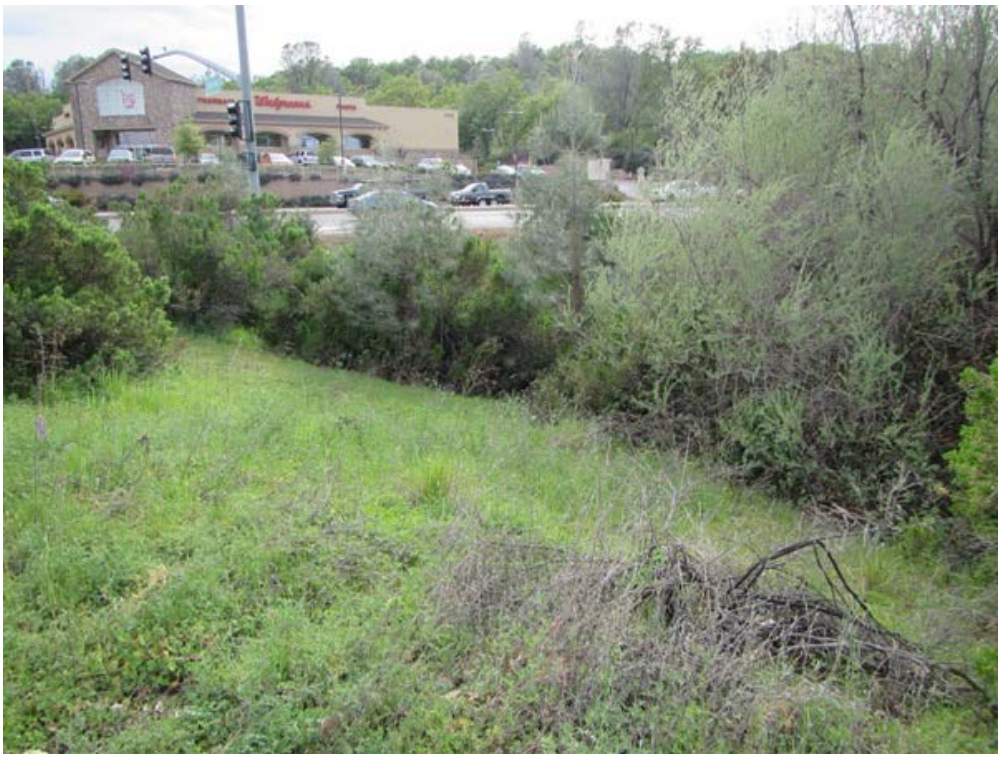
WETLAND DELINEATION
FOR THE

± 4.31-ACRE CREEKSIDE PLAZA STUDY AREA

EL DORADO COUNTY, CALIFORNIA



Prepared for:
Grado Equities VII, LLC
4330 Golden Center Drive, Ste. D
Placerville, CA 95667
Prepared by:

Salix consulting, inc.
12240 Herdal Drive, Ste. 14
Auburn, California 95603
(530) 888-0130

NOVEMBER 2015

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Appendix A. Wetland Data Sheets
Appendix B. Plant Species Observed

WETLAND DELINEATION
FOR THE
±4.31-ACRE CREEKSIDE PLAZA STUDY AREA

INTRODUCTION

The Creekside Plaza study area is located on the corner of Missouri Flat Road and Forni Road just west of Placerville. It is located in Section 24, Township 10 North, Range 10 East on the Placerville 7 ½ minute USGS quadrangle (Figure 1). The approximate latitude and longitude for the site are 38°42'28" north and 120°49'54" west. Elevations are between 1723 feet and 1761 feet above sea level.

The property is generally hilly with a flat graded lot area on the south side along Missouri Flat Road. According to the soils map, portions of the area were placer mined. The property is bisected from east to west by an intermittent stream channel. Figure 2 is an aerial showing the site and surrounding land uses.

From Sacramento take Highway 50 east to Placerville. Take the Missouri Flat Road exit and turn right (east) onto Missouri Flat Road. Continue ½ mile to Forni Road and turn left (north). The site is on the northwest corner of the intersection.

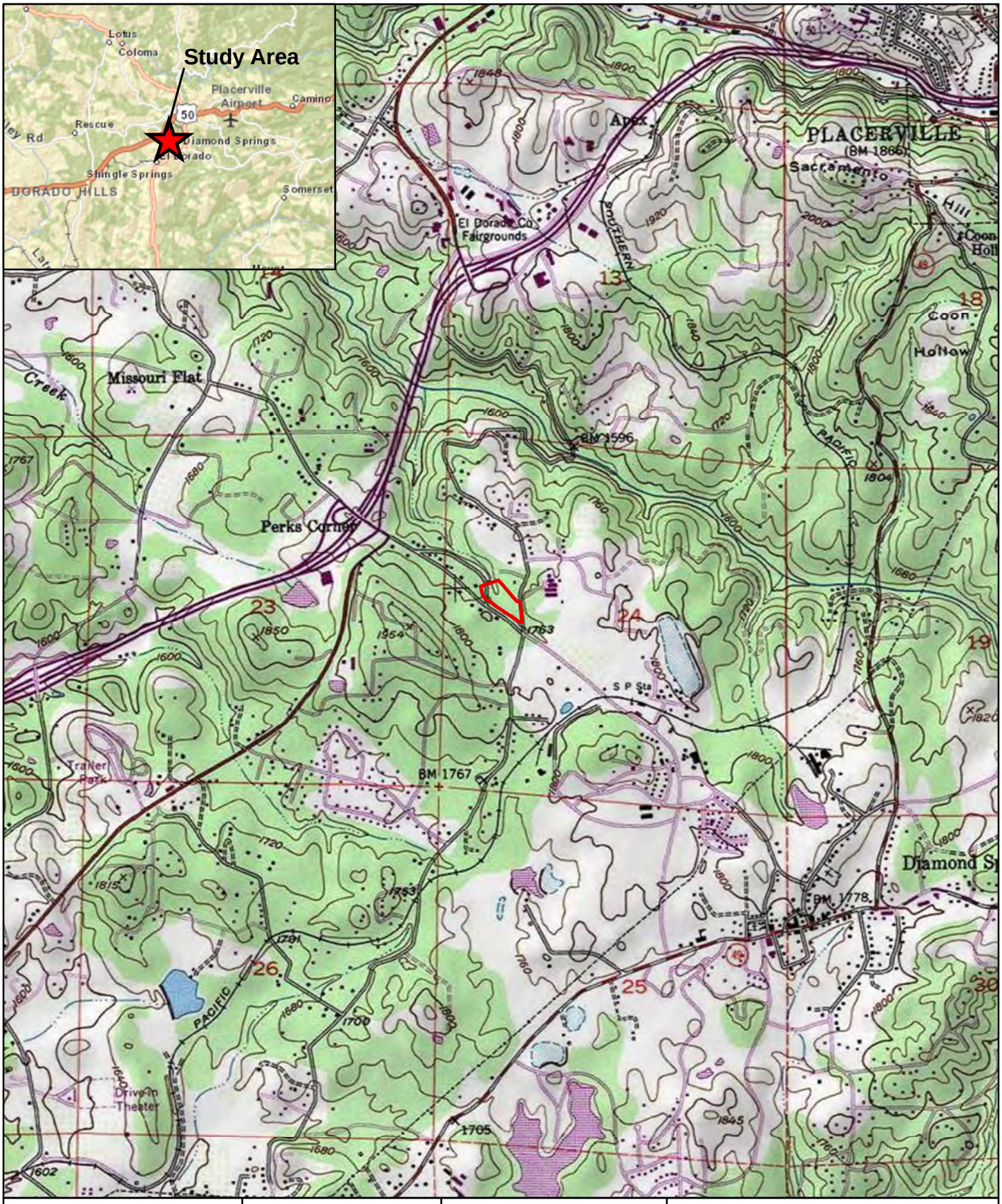
Background

Waters of the U.S. were originally delineated by North Fork Associates (NFA) in August 2006 (North Fork Associates 2006). An approved jurisdictional determination was issued by the U.S. Army Corps of Engineers in September 2008 (SPK 200200211) and expired in 2013. In conversations with the Corps regarding re-verification of the delineation, and following a field visit by the Corps, it was determined that the delineation needed to be updated. The original delineation included most of the Himalayan blackberry that extended upslope and beyond the ordinary high water mark of the intermittent stream. This delineation is more topographically-based with less emphasis on the FACU Himalayan blackberry. It also includes an additional strip of land between the eastern boundary of the original study area and Forni Road.

CONTACT INFORMATION

Property Owner:
Leonard Grado
Grado Equities VII, LLC
4330 Golden Center Drive, Ste. D
Placerville, CA 95667
Phone: (530) 622-5682

Delineator:
Salix Consulting, Inc.
12240 Herdal Drive, Suite 14
Auburn, California 95603
Phone: (530) 888-0130
Contact: Jeff Glazner



Salix consulting, inc.

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Source Maps: USGS Topographic Map, Placerville, CA (1973) Quadrangle, 1:24,000

Legend

Study Area (±4.31 acres)

Figure 1

VICINITY MAP

Creekside Plaza

Placerville, El Dorado County, CA



Salix consulting, inc.

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Legend

Study Area (±4.31 ac)

Figure 2

AERIAL MAP

Creekside Plaza

El Dorado County, CA

METHODS

Waters of the United States were re-delineated on March 16, 2015 by Jeff Glazner. The delineation was conducted according to the 1987 Corps Manual (Environmental Laboratory 1987) as amended by the Arid West Regional Supplement (U.S. Army Corps of Engineers 2008).

The entire site was observed on foot. Any area that may support wetlands or other waters was evaluated closely. Where closer evaluation was necessary, information about vegetation, soils, and hydrology was recorded on standard Wetland Delineation Data Forms. Three parameter data points are presented for four locations. Two of the data points were collected during the original delineation in 2006 and two additional data points are included from the March 2015 field visit. Data forms are included in Appendix A.

Information on soils was taken from the El Dorado County soil survey (USDA, NRCS 1974). A Munsell Color chart was used to determine moist soil colors. No soil pits were dug along the stream. Appendix B is a list of plants observed during the delineation, along with the scientific name and wetland status of each species. Where a plant species observed has a wetland indicator status (not UPL), plant nomenclature follows Lichvar et.al. (2015). Otherwise, species names are aligned with The Jepson Manual (Baldwin et.al. 2012).

A Trimble GeoXT 6000 GPS was used to collect position information about data points, wetland areas, and other pertinent features. The delineation basemap used was local topographic mapping composited with a recent aerial photo.

RESULTS

Climate and Weather

Placerville has cool, wet winters and warm, dry summers. Average January temperatures are a maximum of 53°F and a minimum of 33°F. Average July temperatures are a maximum of 93°F and a minimum of 57 °F. Average rainfall at Placerville is about 38 inches. There is an average of 66 days with measurable precipitation. The majority of the rain falls between November and March. Snowfall for the Placerville area ranges between a dusting and 6 inches per cold winter storm, averaging 3-6 inches.

Geology and Soils

The area around the Forni Road property is underlain by Mesozoic granitic rock.

Three soils series have been mapped on the site (Figure 3):

- Boomer gravelly loam, 3 to 15 percent slopes
- Diamond Springs very fine sandy loam, 9 to 15 percent slopes
- Placer diggings

Boomer soils are deep to very deep, well drained Alfisols formed from metavolcanic rock (greenstone). The A horizon is very shallow, usually less than three inches. The transition from A to B occurs between three and 11 inches. This zone is usually brown to dark brown (7.5YR) with chromas around 4. The lower B horizon soils become yellowish red (5YR) with higher chromas. The clay layer is very shallow (just below the A horizon), but bedrock is between 40 to 80 inches. Because of the clay layer, Boomer soils have moderately slow permeability and can form wetlands in certain situations.



Salix consulting, inc.

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0 50 100

Feet

Legend

Study Area (±4.31 ac)

Figure 3

SOIL MAP

Creekside Plaza

El Dorado County, CA

19-1509 2A 841 of 948

Diamond Springs soils are acidic Typic Haploxerults derived from igneous rock. The A horizon is relatively shallow, usually 9 inches or less, and is usually a loam or sandy loam. The B horizon, 9 to 29 inches, is a clay loam that tends to impede the percolation of water. A horizon hues are 10YR and 7.5YR, and chromas are between 2 and 5. The B horizon hues are similar, but patches of 5YR soils are also present. B horizon chromas are generally high, 2 and above. Diamond Springs soils are well-drained and have moderate or moderately slow permeability.

Placer diggings are areas of rock and cobble created during placer mining in streams. Finer soil was often deposited in depressions between rock piles, and these often support wetland vegetation.

Hydrology

The Forni Road site is in the South Fork American watershed (HUC 18020129).

The main hydrological feature on the site is a stream channel emanating from a culvert under Forni Road. This channel is noted on the USGS quad, and it receives dry-season runoff from developments upstream. At the time of the March 2015 delineation, water was flowing at a trickle in the stream (Figure 4).

The unnamed stream is a tributary of Weber Creek. Weber Creek flows into the South Fork of the American River just upstream of Folsom Lake. The American River is a tributary of the Sacramento River, a navigable waterway.

Vegetation

Much of the south side of the site is ruderal, having been historically disturbed by placer mining and more recent grading and general urban edge activities. Common introduced species adapted to disturbance are the dominant plants outside the creek. Portions of the south side and the entire north side of the property supports foothill woodland including blue oak, interior live oak, foothill pine, and common chaparral shrubs.

A dense band of willows and cottonwoods currently grows the entire length of the channel. Narrow-leaved willow, red willow, and arroyo willow are the dominant species. The low, dry season flows allow the growth of water cress and hairy willow-herb in the channel. Dense thickets of Himalayan blackberry line the channel between the riparian habitat and foothill woodland.



Looking over riparian zone from eastern boundary.
Photo date: 3/16/15

Looking across intermittent stream. Channel is shallow and does not carry high flows. Areas adjacent to stream are dominated by blackberry and willow.
Photo date: 3-16-15





Looking along southern edge of property to northwest over wetland swale.
Photo date 3-16-15

Salix consulting, inc.

Figure 4

SITE PHOTOS

Creekside Plaza

Placerville, El Dorado County, CA

Waters of the United States

One wetland and one other waters type have been on the site. The wetland is a wetland swale that begins along the southwestern boundary and flows northeast. The other water is an intermittent stream, which bypasses the entire site from southeast to northwest. Table 1 is an acreage summary of the types, the wetland delineation map is shown in Figure 5, and discussions of each type follow.

Table 1
Waters of the United States

Type	Acreage
Wetlands	
Wetland Swale	0.03
Other Waters	
Intermittent stream	0.47
Total	**0.50**

Wetland Swale

The wetland swale originates at a culvert flowing under Missouri Flat Road. The culvert discharges local runoff onto the hillside above the intermittent stream that flows through the project site. The volume of water in this swale is minimal, and wetland expression does not reach the stream. The swale supports willow and Himalayan blackberry.

Intermittent Stream

The intermittent stream carries water from the southeast through the site. It carries low volume flows as evidenced by a lack of channel scouring or debris lines. The ordinary high water mark is located above the low flow channel, and although it is not visually well-defined, it is topographically well-defined. The ordinary high water mark width varies from about 15-35 feet. The stream is 695 feet long from the culvert under Forni Road to the point where it leaves the property. The upper end of the watershed lies under the developments on the east side of Forni Road. Areas of the stream channel bed support herbaceous wetland vegetation, including watercress.

WATERS OF THE UNITED STATES

WETLANDS	Acres
Wetland Swale (WS)	0.03 acre
OTHER WATERS	
Intermittent Stream (IS)	0.47 acre
TOTAL	**0.50 acre**



Salix consulting, inc.

N

0 50 100

Feet

Legend

- Study Area (±4.31 acres)
- Upland Data Point
- Wetland Data Point
- Flow Direction
- Culvert

Figure 5

WETLAND DELINEATION MAP

Creekside Plaza

Placerville, El Dorado County, CA

Revised September 30, 2015

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Appendix A
Wetland Data Sheets

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Creekside Plaza City/County: El Dorado County Sampling Date: 3-16-15

Applicant/Owner: Grado Equities LLC State: CA Sampling Point: 01

Investigator(s): Jeff Glazner Section, Township, Range: Section 24, Township 10 North, Range 10 East

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 4

Subregion (LRR): LRRC Lat: 38º42'28" north Long: 120º49'54" west Datum: _____

Soil Map Unit Name: Placer Diggings NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No _____
Hydric Soil Present?	Yes _____	No _____	
Wetland Hydrology Present?	Yes _____	No _____	

Remarks:

Intermittent stream. Data point located near culvert outfall. Edge of channel is dense willow and blackberry. Receives urban trickle.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lasiolepis			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. Rubus armeniacus			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Typha sp.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No _____

Remarks:

Salix lasiolepis and Rubus armeniacus dense along banks forming riparian corridor. Typha latifolia common near outfall.

SOIL

Sampling Point: 01

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:

Rocky channel bed with flowing water

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Flowing.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Creekside Plaza City/County: El Dorado County Sampling Date: 3-16-15

Applicant/Owner: Grado Equities LLC State: CA Sampling Point: 02

Investigator(s): Jeff Glazner Section, Township, Range: Section 24, Township 10 North, Range 10 East

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 3

Subregion (LRR): LRRC Lat: 38º42'28" north Long: 120º49'54" west Datum: _____

Soil Map Unit Name: Boomer gravelly loam, 3 to 15 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No _____	**Is the Sampled Area within a Wetland?** Yes _____ No _____
Hydric Soil Present?	Yes _____ No _____	
Wetland Hydrology Present?	Yes _____ No _____	

Remarks:

Midpoint of intermittent stream. Willow-lined.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No _____

Remarks:

This reach of stream is primarily Salix lasiolepis and S. exigua.

SOIL

Sampling Point: 02

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:

Rocky channel. No soil data taken.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Water flowing in channel.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Creekside Plaza City/County: El Dorado County Sampling Date: 3-16-15

Applicant/Owner: Grado Equities LLC State: CA Sampling Point: 03

Investigator(s): Jeff Glazner Section, Township, Range: Section 24, Township 10 North, Range 10 East

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 3

Subregion (LRR): LRRC Lat: 38º42'28" north Long: 120º49'54" west Datum: _____

Soil Map Unit Name: Boomer gravelly loam, 3 to 15 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

Area at bottom of wetland swale. Slope flattens and water does not reach this far.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Bromus hordeaceus	50	X	FACU
2. Torilis arvensis	10		UPL
3. Vicia villosa	20	X	UPL
4.			
5.			
6.			
7.			
8.			
	80 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 20 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

Typical upland vegetation in foothill woodland clearing.

SOIL

Sampling Point: 03

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 4/2	100					loam	
2-12	7.5YR 4/3	100					gravelly l	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

Soils lack redox or evidence of hydric moisture regime.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Soils moist but lack evidence of prolonged saturation. Swale upslope does not continue downslope this far.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Creekside Plaza City/County: El Dorado County Sampling Date: 3-16-15

Applicant/Owner: Grado Equities LLC State: CA Sampling Point: 04

Investigator(s): Jeff Glazner Section, Township, Range: Section 24, Township 10 North, Range 10 East

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): channel Slope (%): 2

Subregion (LRR): LRRC Lat: 38º42'28" north Long: 120º49'54" west Datum: _____

Soil Map Unit Name: Boomer gravelly loam, 3 to 15 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No _____	**Is the Sampled Area within a Wetland?** Yes _____ No _____
Hydric Soil Present?	Yes _____ No _____	
Wetland Hydrology Present?	Yes _____ No _____	

Remarks:

Sample point is an other water. Intermittent Stream.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species _____	x 1 =	_____
FACW species _____	x 2 =	_____
FAC species _____	x 3 =	_____
FACU species _____	x 4 =	_____
UPL species _____	x 5 =	_____
Column Totals: _____ (A)		_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No _____

Remarks:

Willow and blackberry thicket on both sides of low-flow channel.

SOIL

Sampling Point: 04

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:

No soil data taken. Rocky streambed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Flowing water, trickle. Channel bed is shallow, evidence of scour and high flows is lacking.

Appendix B
Plant Species Observed

Appendix B. Creekside Plaza Plants Observed with Wetland Status

Taxon	Common Name	Wetland Status
Acmispon americanus var. americanus	Spanish-clover	UPL
Aegilops triuncialis	Barbed goatgrass	UPL
Aira caryophyllea	Silver European hairgrass	FACU
Anthemis cotula	Mayweed	FACU
Artemisia douglasiana	California mugwort	FAC
Avena fatua	Wild oat	UPL
Baccharis pilularis	Coyote brush	UPL
Bromus diandrus	Ripgut grass	UPL
Bromus hordeaceus	Soft chess	FACU
Bromus tectorum	Cheat grass	UPL
Carduus pychnocephalus	Italian thistle	UPL
Ceanothus cuneatus var. cuneatus	Buck brush	UPL
Centaurea melitensis	Tocalote	UPL
Centaurea solstitialis	Yellow starthistle	UPL
Centromadia fitchii	Fitch's spikeweed	FACU
Chlorogalum pomeridianum var. pomeridianum	Soap plant	UPL
Chondrilla juncea	Skeleton weed	UPL
Cichorium intybus	Chicory	FACU
Cirsium vulgare	Bull thistle	FACU
Convolvulus arvensis	Bindweed	UPL
Croton setiger	Turkey mullein	UPL
Cyperus eragrostis	Tall flatsedge	FACW
Daucus carota	Queen Anne's lace	UPL
Dichelostemma capitatum	Blue dicks	FACU
Elymus glaucus	Blue wildrye	FACU
Epilobium brachycarpum	Summer cottonweed	UPL
Epilobium ciliatum	Hairy willow-herb	FACW
Erigeron canadensis	Canadian horseweed	FACU
Erythranthe guttata	Common monkeyflower	OBL
Eschscholzia californica	California poppy	UPL
Festuca perennis	Italian ryegrass	FAC
Frangula californica subsp. tomentella	Hoary coffeeberry	UPL
Geranium dissectum	Cut-leaf geranium	UPL
Heteromeles arbutifolia	Toyon	UPL
Hirschfeldia incana	Short-podded mustard	UPL
Hordeum murinum	Wall barley	FACU
Hypericum perforatum subsp. perforatum	Klamathweed	FACU
Juncus balticus subsp. ater	Baltic rush	FACW

Taxon	Common Name	Wetland Status
Juncus bufonius	Toad rush	FACW
Juncus effusus	Soft rush	FACW
Kickxia elatine	Sharppoint fluvellin	UPL
Lactuca serriola	Prickly lettuce	FACU
Lathyrus sp.	Wild pea	VARIES
Madia gracilis	Slender tarweed	UPL
Marrubium vulgare	White horehound	FACU
Melilotus albus	White sweetcover	UPL
Muhlenbergia rigens	Deer grass	FAC
Nasturtium officinale	Watercress	OBL
Persicaria sp.	Smartweed	VARIES
Phalaris aquatica	Harding grass	FACU
Pinus sabiniana	Gray pine	UPL
Polygonum aviculare	Common knotweed	FACW
Populus fremontii subsp. fremontii	Fremont cottonwood	FAC
Pseudognaphalium californicum	California everlasting	UPL
Quercus douglasii	Blue oak	UPL
Quercus lobata	Valley oak	FACU
Quercus wislizeni	Interior live oak	UPL
Rubus armeniacus	Himalayan blackberry	FACU
Rumex crispus	Curly dock	FAC
Salix exigua	Narrow-leaved willow	FACW
Salix laevigata	Red willow	FACW
Salix lasiolepis	Arroyo willow	FACW
Salsola tragus	Russian-thistle	FACU
Silybum marianum	Milk thistle	UPL
Spergularia rubra	Ruby sand-spurrey	FAC
Stachys stricta	Sonoma hedge-nettle	OBL
Torilis arvensis	Field hedgeparsley	UPL
Toxicodendron diversilobum	Western poison-oak	FACU
Tribulus terrestris	Puncture vine	UPL
Trifolium hirtum	Rose clover	UPL
Triteleia hyacinthina	White triteleia	FAC
Typha sp.	Cattail	OBL
Verbascum blattaria	Moth mullein	UPL
Verbascum thapsus	Woolly mullein	FACU
Vicia villosa	Winter vetch	UPL

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

April 19, 2016

Regulatory Division SPK-2002-00211

Grado Equities 7 LLC
Attn: Mr. Leonard Grado
4330 Golden Center Drive, Suite D
Placerville, California 95667

Dear Mr. Grado:

We are responding to your March 31, 2016, request for a preliminary jurisdictional determination (JD), in accordance with our Regulatory Guidance Letter (RGL) 08-02, for the Creekside Plaza site. The approximately 4.31-acre project site is located near Webber Creek, at the corner of Forni Road and Missouri Flat Road, Latitude 38.7076°, Longitude -120.8318°, Placerville, El Dorado County, California.

Based on available information, **we concur with the amount and location of wetlands and other water bodies on the site as depicted on the enclosed September 30, 2015, Figure 5, Wetland Delineation Map, Creekside Plaza, Placerville, El Dorado County, CA, drawing prepared by Salix Consulting, Inc. (enclosure 1).** The approximately 0.50 acre of wetlands and other water bodies present within the survey area are potential waters of the United States regulated under Section 404 of the Clean Water Act.

We have enclosed a copy of the *Preliminary Jurisdictional Determination Form* for this site (enclosure 2). Please sign and return a copy of the completed form to this office. Once we receive a copy of the form with your signature we can accept and process a Pre-Construction Notification or permit application for your proposed project.

You should not start any work in potentially jurisdictional waters of the United States unless you have Department of the Army permit authorization for the activity. You may request an approved JD for this site at any time prior to starting work within waters. In certain circumstances, as described in RGL 08-02, an approved JD may later be necessary.

You should provide a copy of this letter and notice to all other affected parties, including any individual who has an identifiable and substantial legal interest in the property.

This preliminary determination has been conducted to identify the potential limits of wetlands and other water bodies which may be subject to Corps of Engineers' jurisdiction for the particular site identified in this request. A Notification of Appeal Process and Request for Appeal form is enclosed to notify you of your options with this determination (enclosure 3). This determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are U.S. Department of Agriculture (USDA) program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service, prior to starting work.

We appreciate your feedback. At your earliest convenience, please tell us how we are doing by completing the customer survey on our website under *Customer Service Survey*.

Please refer to identification number SPK-2002-00211 in any correspondence concerning this project. If you have any questions, please contact Peck Ha at the above address, by email at *Peck.Ha@usace.army.mil*, or telephone at 916-557-6617. For more information regarding our program, please visit our website at *www.spk.usace.army.mil/Missions/Regulatory.aspx*.

Sincerely,

Kathleen A. Dadey, PhD
Chief, California South Branch

Enclosures

cc: (w/o encls)
Mr. Jeff Glazner, Salix Consulting, Inc., JGlazner@salixinc.com
Mr. Elizabeth Lee, California Regional Water Quality Control Board, centralvalleysacramento@waterboards.ca.gov
Ms. Tina Bartlett, California Department of Fish and Game, R2Info@wildlife.ca.gov
El Dorado County Planning Department, planning@edcgov.us

PRELIMINARY JURISDICTIONAL DETERMINATION FORM
Sacramento District

This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

Regulatory Branch: **California South** File/ORM #: **SPK-2002-00211** PJD Date: **April 18, 2016**

State: **CA** City/County: **, El Dorado County**
Nearest Waterbody: **Webber Creek**
Location (Lat/Long): **38.7076°, -120.8318°**
Size of Review Area: **4.31** acres

Name/Address Of Property Owner/ Potential Applicant: **Grado Equities 7 LLC**, **Attn: Mr. Leonard Grado**, **4330 Golden Center Drive, Suite D**, **Placerville, California 95667**

Identify (Estimate) Amount of Waters in the Review Area

Non-Wetland Waters:
linear feet ft wide **0.47** acre(s)
Stream Flow: **Intermittent**

Wetlands: **0.03** acre(s)
Cowardin Class: **Palustrine, emergent**

Name of any Water Bodies on the site identified as Section 10 Waters: Tidal: Non-Tidal:

☒ Office (Desk) Determination
☐ Field Determination:
Date(s) of Site Visit(s):

SUPPORTING DATA: Data reviewed for preliminary JD (check all that apply – checked items should be included in case file and, where checked and requested, appropriately reference sources below)

☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: **Figure 5, Wetland Delineation Map, Creekside Plaza, Placerville, El Dorado County, CA, drawing prepared by Salix Consulting, Inc.**
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Data sheets prepared by the Corps.
☐ Corps navigable waters' study.
☐ U.S. Geological Survey Hydrologic Atlas:
  ☐ USGS NHD data.
  ☐ USGS HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name: **1:24K; CA-PLACERVILLE**
☐ USDA Natural Resources Conservation Service Soil Survey.
☐ National wetlands inventory map(s).
☐ State/Local wetland inventory map(s).
☐ FEMA/FIRM maps.
☐ 100-year Floodplain Elevation (if known):
☒ Photographs: ☒ Aerial ☒ Other
☐ Previous determination(s). File no. and date of response letter:
☐ Other information (please specify):

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

4/20/2016

Signature and Date of Regulatory Project Manager (REQUIRED)

Signature and Date of Person Requesting Preliminary JD (REQUIRED, unless obtaining the signature is impracticable)

EXPLANATION OF PRELIMINARY AND APPROVED JURISDICTIONAL DETERMINATIONS:

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "preconstruction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: Grado Equities 7 LLC, Attn: Mr. Leonard Grado	File No.: SPK-2002-00211	Date: April 12, 2016

Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
	APPROVED JURISDICTIONAL DETERMINATION	D
X	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at *http://www.usace.army.mil/cecw/pages/reg_materials.aspx* or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer (address on reverse). This form must be received by the division engineer within 60 days of the date of this notice.

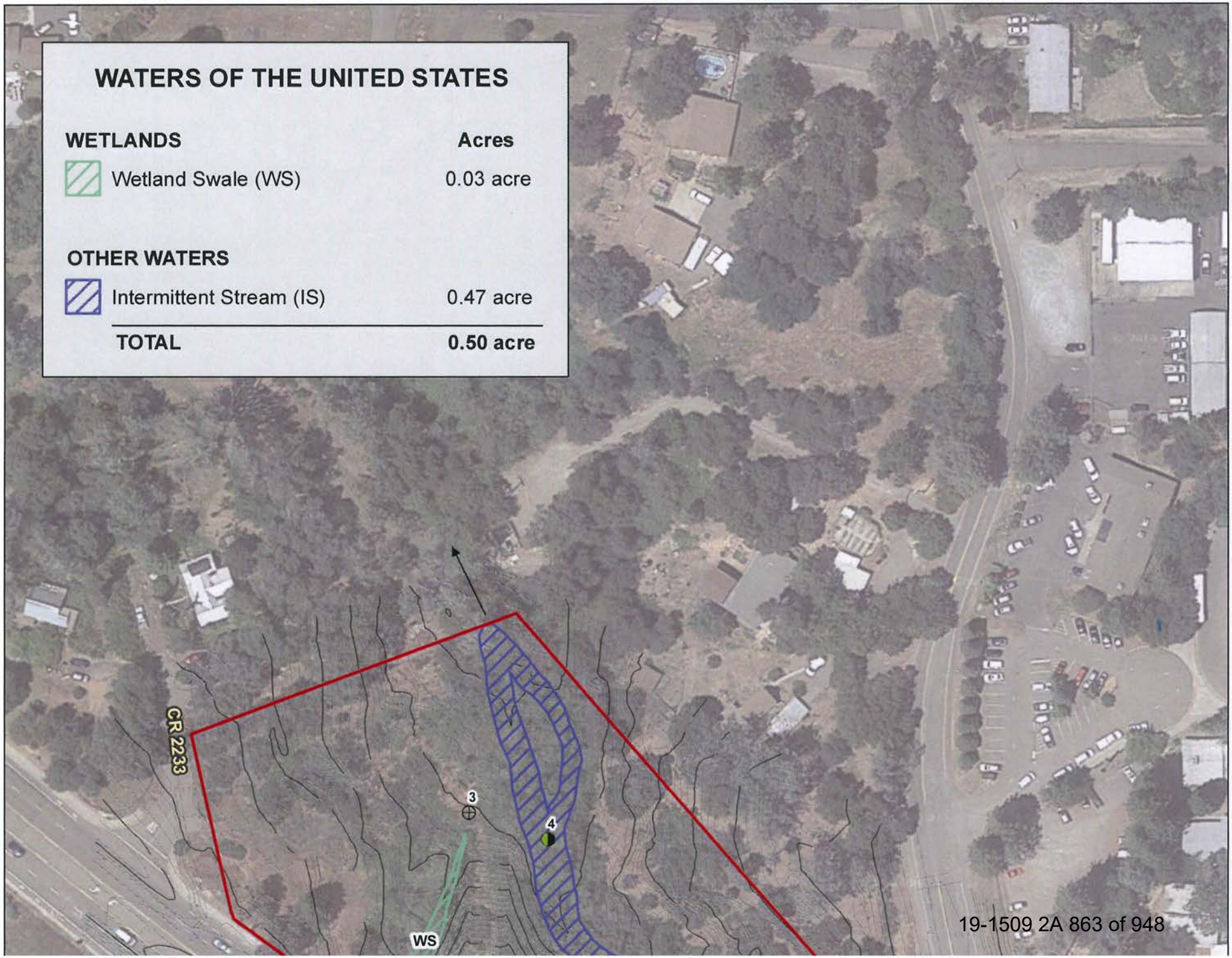
C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer (address on reverse). This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.

- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer (address on reverse). This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.


WATERS OF THE UNITED STATES
WETLANDS
Acres
Wetland Swale (WS)
0.03 acre
OTHER WATERS
Intermittent Stream (IS)
0.47 acre
TOTAL
0.50 acre
CR 2233
3
4
WS

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Appendix E:
Cultural Resources Documentation

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E.1 - Creekside Letter Update Report

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April 29, 2016

Leonard Grado
Grado Equities VII, LLC

Subject: **Cultural Resources Assessment Supplemental Letter—Creekside Plaza/Fusano Property, El Dorado County, California**

Dear Mr. Grado:

This letter summarizes the findings of a cultural assessment update conducted by FirstCarbon Solutions (FCS) of properties associated with the Creekside Plaza/Fusano Property, El Dorado County, California. A previous cultural resources assessment for the project area was conducted by Peak and Associates in 2009; however, since the project is subject to a new USACE permit, USACE regulations require that a new records search and survey be conducted since the prior assessment is over 2 years old. This update consisted of a records search, literature review, and reconnaissance-level survey to identify potential historic and prehistoric cultural resources that may be adversely affected by the proposed project. FCS also submitted an updated request to the NAHC to check its Sacred Lands File for Native American resources that may be affected by the project and for a list of tribes that may wish to consult on the project pursuant to Public Resources Code Sections 21080.3.1 and 21080.3.2 (also known as Assembly Bill [AB] 52).

Project Site Description and Location

The proposed project involves commercial development of three parcels situated east of State Route 50 and west of the town of Diamond Springs in El Dorado County, California. The project is mapped within the Placerville, USGS 7.5-minute topographic quadrangle map in Section 24 of Township 10 North, Range 10 East. The project street address is 4179 Missouri Flat Road, Diamond Springs, California and is situated on assessor's parcel numbers 327-211-25, 327-211-14, and 327-211-16 (Attachment A).

The property consists primarily of vacant brush land interspersed with medium to large trees. A residence located on the property and observed in 2009 has since been demolished. A small intermittent tributary to Weber Creek flows through the property.

Methods

Records Search/Literature Review

Prior to conducting the site visit, historic aerial photographs of the project site were reviewed to determine if previous structures or potentially significant historic resources may be present at the project location. Topographic and geologic maps were also reviewed to understand the existing terrain and natural resources within the area.

UNITED STATES

Irvine
250 Commerce, Suite 250
Irvine, CA 92602

Los Angeles
11755 Wilshire Blvd, Suite 1660
Los Angeles, CA 90025

Bay Area
1350 Treat Boulevard, Suite 380
Walnut Creek, CA 94597

Central Valley
7265 N First Street, Suite 101
Fresno, CA 93720

Inland Empire
650 E. Hospitality Lane, Suite 125
San Bernardino, CA 92408

Sacramento
180 Promenade Circle, Suite 300
Sacramento, CA 95834

Connecticut
1175 Post Road E
Westport, CT 06880

EUROPE

United Kingdom
Tel: +44 (0) 845.165.6245
Fax: +44 (0) 20.3070.0890
Future Business Centre
Kings Hedges Rd.
Cambridge CB4 2HY
United Kingdom

AUSTRALIA

New South Wales
Tel: +61 (02) 9418.7822
Fax: +61 (02) 9418.7833
13-15 Smith Street
Chatswood, NSW 2067
Australia

AFRICA

Kenya
Tel: +254-737-433-621
ADEC Kenya Services EPZ Ltd.
Nairobi, Kenya

ASIA

Philippines
Tel: +63 (2) 775.0632
Fax: +63 (2) 775.0632 local 8050
26th Floor, Philippine AXA Life Centre,
Sen. Gil Puyat Avenue,
Makati City, Metro Manila

Malaysia
Tel: +603 74902112
Fax: +603 79606977
15-7, Block A, Jaya ONE
72A Jalan Universiti
46200 Petaling Jaya
Selangor, Malaysia

A record search and literature review was conducted for the project sites and a 0.50-mile radius surrounding them on April 14, 2016 at the Central California Information Center (CCIC), located at Sacramento State University. The purpose of this review was to access existing cultural resource survey reports, archaeological site records, and historic maps and evaluate whether any previously documented prehistoric or historic archaeological sites, architectural resources, cultural landscapes, or other resources exist within or near the project area. The record search/literature review was also conducted to evaluate whether any historic properties listed on or determined eligible for listing on the National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR) exist within the area.

Field Survey Methods

FCS Senior Archaeologist Dana DePietro, PhD conducted a reconnaissance-level pedestrian survey of the property on April 14, 2016. The survey was accomplished using parallel transects at 15-meter intervals across the site whenever possible. Photographs were taken during the survey, and notes on topography, soil composition, and natural resources within the project area were recorded in a field notebook. The entire project area was scrutinized for the presence of natural and historic features that may indicate the presence of archaeological sites, with particular attention paid to potential resource PA-08-112, which was previously recorded within the project area during the 2009 survey.

Results

Records Search Results

The records search conducted at the CCIC revealed a total of 10 cultural resources that have been recorded within 0.50 mile of the project sites, none of which are located within the project site boundaries (Table 1). In addition, 11 previous cultural resource inventories or other archaeological investigations have been conducted within 0.50 mile of the site, one of which addressed the project site itself (Table 2). Reports and resources located within or addressing the project area directly are listed in bold, below.

Table 1: Cultural Resources within 0.5 Mile of the Creekside/Fusano Property Project

Resource No.	Resource Description	Date Recorded
P-09-000809	CA-ELD-000721H: Lincoln Highway; AH07(Roads/trails/railroad grades); HP11(Engineering structure); HP19 (Bridge); HP37 (Highway/trail)	1985
P-09-000942	CA-ELD-000854H: Missouri Flat Ditch; AH06 (Water conveyance system); HP20 (Canal/aqueduct)	1992
P-09-001242	CA-ELD-000971H: Southern Pacific Railroad; AH07 (Roads/trails/railroad grades)	1995
P-09-001830	CA-ELD-001346H: Dunlop Ranch; AH03 (Landscaping/orchard); AH09 (Mines/quarries/tailings); AH10 (Machinery); AH11 (Walls/fences); AH15 (Standing structures); HP33 (Farm/ranch)	1995

Table 1 (cont.): Cultural Resources within 0.5 Mile of the Creekside/Fusano Property Project

Resource No.	Resource Description	Date Recorded
P-09-001847	Eld-Oliver Temp 1; AH06 (Water 004290, 004306 conveyance system)	1990
P-09-001855	Bray Reservoir; AH09 (Mines/quarries/tailings)—tailings; AH11 (Walls/fences)—retaining wall	1990
P-09-001856	CA-ELD-001357H: Bray Treatment/Placerville Ridge Conduit; AH02 (Foundations/structure pads); AH03 (Landscaping/orchard); AH04 (Privies/dumps/trash scatters); AH10 (Machinery); AH11 (Walls/fences); AH16 (Other)—Cobblestone incinerator (Foundations/structure pads)	1990
P-09-001904	Bray BRM Site; AP04 (Bedrock milling feature)	1992
P-09-004424	Caldor Water Tower; HP09 (Public utility building)	2007
P-09-005231	Bridge 25C-116; HP19 (Bridge)	1985
PA-08-112	**Cobblestone Circle; AH16 (Other)**	**2009**

Table 2: Previous Investigations within 0.5 Mile of the Creekside/Fusano Property Project

Report No.	Report Title/Project Focus	Author	Date
002225	Archaeological Survey Report, Assessor's Parcel Number 327:170:22, A Proposed Parcel Split, Southeast of Missouri Flat Road, El Dorado County, California.	Supernowicz, Dana	1994
006675	Caltrans Historic Bridges Inventory Update	Hope, Andrew, Jessica Feldman, and JRP Consultants	2004
009295	Historical Resources Evaluation Report for The Eldorado Trail Project, El Dorado County, California	Melinda Peak	2008
009317	Cultural Resources Study of the Diamond Road Project, Metro PCS Site No. SAC-372B, 3457 Wedge Hill Road, Placerville, El Dorado County, California 95667	Historic Resource Associates	2007
010072	Cultural Resource Study of APNs 327-213-06-100 & 327-213-08-100	Supernowicz, Dana	2009
010171	Cultural Resources Study of Placerville Fairgrounds Project, AT&T Site No. SCRMCAE014	Supernowicz, Dana	2009
010232	AT&T Mobility CN 1416-A "Diamond Springs"	Milford Wayne Donaldson	2008

Table 2: Previous Investigations within 0.5 Mile of the Creekside/Fusano Property Project

Report No.	Report Title/Project Focus	Author	Date
010260	Cultural Resources Study of the Pierce Trust Project Assessor's Parcel No. 327-140-07 6800 Greenleaf Drive, Placerville, El Dorado County, California 95667	Historic Resource Associates	2009
011200	Cultural Resources Assessment of the Seventh Day Adventist Church Property, El Dorado County, California	Peak & Associates, Inc.	2005
011561	Archaeological Survey Report Verizon Wireless Missouri Flat-New Build Site Number 20130974376	Ric Windmiller	2014
08-112	**Cultural Resources Assessment of the Fusano Property, Missouri Flat Road at Forni Road, El Dorado County, California**	**Peak & Associates, Inc.**	**2009**

One potential resource, PA-08-112, has been identified by the records search as having the potential to be adversely impacted by the proposed project. A descriptions of the resource (compiled from Peak & Associates 2009) follows:

PA-08-112: Consists of a circle of dry-laid field stone 8 feet in external diameter and two or three courses high. There is a break in the ring on the southeast. Ten feet north of the ring is a pile of barbed wire and hog wire and two pieces of old timber, probably posts. The only artifact on site is a single horseshoe. It seems likely from the small size of the enclosure that it was for protective purposes for one or a small number of animals. This suggests a lambing pen, although the function of the feature can only be assumed. The lumber is badly rotted, suggesting considerable age. Given its uncertain age, function and lack of any nearby features to provide historical context, the authors concluded that the site does not appear to meet any criteria of significance for federal or state registration. The exact location of this resource is unknown as it appears to have been plotted inadequately on the Department of Parks and Recreation (DPR) recordation form.

Native American Heritage Commission Record Search

On September 1, 2008, Peake Associates sent a letter to the Native American Heritage Commission (NAHC) in Sacramento in an effort to determine whether any sacred sites listed on its Sacred Lands File are included in the current Project APE. The response from the NAHC was received on September 12, 2008, stating that a search of its Sacred Land File failed to indicate the presence of Native American cultural resources in the immediate Project APE. Included with the response was a list of seven Native American representatives who may have further knowledge of the Project APE. However, these representatives were not contacted.

On March 24, 2016, FCS sent an updated letter to the Native American Heritage Commission (NAHC) in Sacramento in an effort to determine whether any sacred sites listed on its Sacred Lands File are included in the current project site. The response from the NAHC was received on April 11, 2016, stating that a search of its Sacred Land File failed to indicate the presence of Native American cultural resources in the immediate project area. Included with the response was a list of four Native American representatives who may have further information about the project area. To ensure that all Native American concerns are adequately addressed, letters containing project descriptions and maps were sent to each of the four listed tribal contacts on April 12, 2013, requesting any input about the project that these individuals may have. As of this date, no responses have been received.

Please note that these letters were requests for information pertaining to a cultural resources assessment only. The County of El Dorado, which serves as the lead CEQA agency for this project, is responsible for notification and consultation with California Native American Tribes pursuant to Public Resources Code Section 21080.3.1 and 21080.3.2 (AB 52). All NAHC and Native American correspondence can be found in Attachment B.

Pedestrian Survey Results

On April 14, 2016, FCS Senior Archaeologist Dana DePietro, PhD conducted a reconnaissance-level pedestrian survey of the Creekside/Fusano Property using 15-meter transects to ensure proper coverage, when possible. The terrain varied considerably from open grassy areas in the northwest and southeast corners of the property to densely forested areas that limited mobility running along both sides of the tributary. The terrain slopes steeply down to the tributary on both sides and has undergone massive grading with the construction of roadways to the east and west, leaving these sections of the property highly disturbed.

The entire project area was covered with thick green vegetation, limiting overall visibility to greater than 10 percent. Soils were observed by removing vegetation and consisted of iron-rich, orange, gravely soil interspersed with small basalt, schist and quartz stones ranging from 5 to 10 centimeters (cm) in size. It should be noted that larger stones (20 to 30 cm) were observed in the soils on the eastern side of the tributary, creating a soil matrix similar to hydraulic mining tailings. No characteristic tailing piles were observed, however, nor were any clear boundaries of a possible tailing site observed.

Particular attention was paid to potential cultural resource PA-08-112, the circular stone feature recorded in the 2009 survey. This feature was inadequately recorded on the DPR recordation form included in the 2009 report. Its precise location was therefore unclear, and it was not located during the present survey, despite extensive efforts to do so. As a result, FCS conducted an on-site interview with James Bever, a current resident who lives adjacent to the property at 4171 Missouri Flat Road. Mr. Bever stated that he grew up in a house built in 1906 that once stood within the Creekside/Fusano Property that has since been demolished. Mr. Bever moved to the property at the age of 13 in 1939, and grew up exploring the tributary and project area as a youth. As a result, he has an intimate knowledge of the area, and at no time observed any resources of a historic or prehistoric nature. When asked about

PA-08-112 and shown the sketch plan, he stated he had a memory of a similar structure having been built by kids playing near the creek in the 1960s. No additional prehistoric or historic cultural resources were found during the course of the pedestrian survey (Attachment C: Photographs 1–8).

Summary and Recommendations

At the request of Grado Equities VII and El Dorado County, First Carbon Solutions conducted a cultural resources assessment update for the Creekside/Fusano Property. The results of the updated records search failed to reveal any new cultural resources within the project boundaries, and no additional prehistoric or historic cultural resources were found during the following pedestrian survey. An updated NAHC sacred lands file search request also failed to locate any tribal cultural resources within the project boundaries. As such, this updated assessment concurs with the finding of the previous 2009 assessment, and finds that no historic or prehistoric cultural resources will be adversely affected by the proposed project.

FCS recommends that in the event archaeological resources are discovered during construction, operations shall stop within 50 feet of the find and a qualified archaeologist shall be consulted to determine whether the resource requires further study. The archaeologist shall make recommendations concerning appropriate measures that should be implemented to protect the resources. At the discretion of the City or lead agency, the applicant may be required to notify each of the Native American groups identified by the NAHC, and those groups may be afforded the opportunity to comment on the project. Finally, copies of all documented cultural resources management activities should be provided to the NWIC where they will be made available to future researchers.

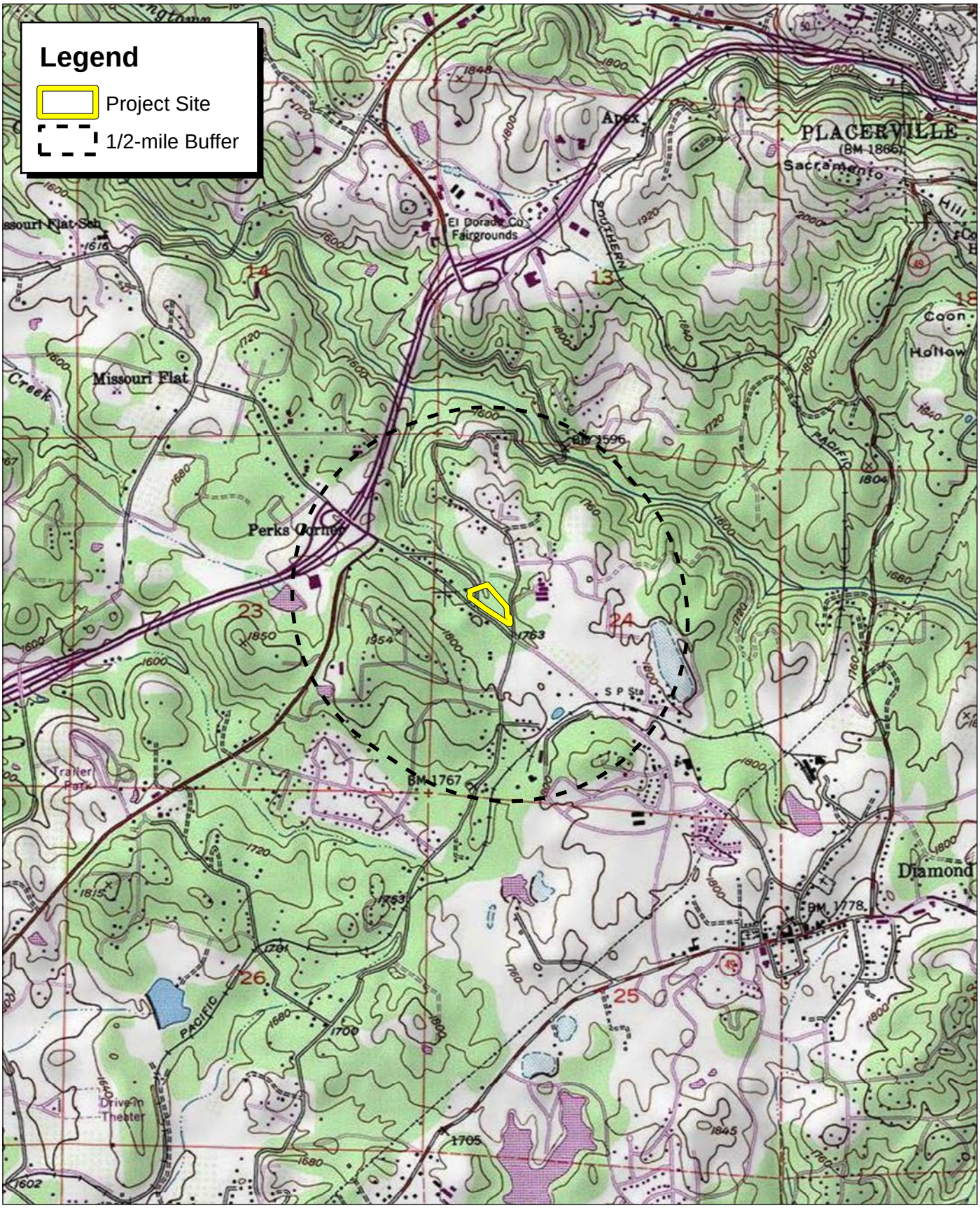
We at FCS appreciate the opportunity to assist you with this project. If you have any questions regarding this letter, please do not hesitate to call me at 925.357.2562, or send me an email at ddepietro@fcs-intl.com.

Sincerely,

Dana Douglas DePietro, PhD
Senior Scientist, Archaeology
FirstCarbon Solutions
1350 Treat Boulevard, Suite 380
Walnut Creek, CA 94597

Enc: Attachment A: Record Search Map
Attachment B: Native American Correspondence
Attachment C: Pedestrian Survey Photographs

Attachment A:
Record Search Map



Source: USGS Placerville (1973) 7.5' Quadrangle

T10N R10E Secs 13, 14, 23, 24

FirstCarbon SOLUTIONS

2,000 1,000 0 2,000 Feet

Records Search Map

38100004 • 03/2016 | RS.mxd

CREEKSIDE PLAZA
ADDENDUM LETTER REPORT

Attachment B:
Native American Correspondence

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710
(916) 373-5471 FAX

April 11, 2016

Dr. Dana DePietro
El Dorado County

Sent by Email: ddepietro@fcs-int.com
Number of Pages: 3

RE: Creekside Plaza, Placerville, El Dorado County

Dear Ms. DePietro:

Attached is a consultation list of tribes with traditional lands or cultural places located within the boundaries of the above referenced counties. Please note that the intent above reference codes is to mitigate impacts to tribal cultural resources, as defined, for California Environmental Quality Act (CEQA) projects.

As of July 1, 2015, Public Resources Code Sections 21080.1, 21080.3.1 and 21080.3.2 require public agencies to consult with California Native American tribes identified by the Native American Heritage Commission (NAHC) for the purpose mitigating impacts to tribal cultural resources:

> Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section. (Public Resources Code Section 21080.1(d))

The law does not preclude agencies from initiating consultation with the tribes that are culturally and traditionally affiliated with their jurisdictions. The NAHC believes that in fact that this is the best practice to ensure that tribes are consulted commensurate with the intent of the law.

In accordance with Public Resources Code Section 21080.1(d), formal notification must include a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation. The NAHC believes that agencies should also include with their notification letters information regarding any cultural resources assessment that has been completed on the APE, such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

   - A listing of any and all known cultural resources have already been recorded on or adjacent to the APE;
   - Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
   - If the probability is low, moderate, or high that cultural resources are located in the APE.
   - Whether the records search indicates a low, moderate or high probability that unrecorded cultural resources are located in the potential APE; and
   - If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

   - Any report that may contain site forms, site significance, and suggested mitigation measurers.

     All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for pubic disclosure in accordance with Government Code Section 6254.10.

3. The results of any Sacred Lands File (SFL) check conducted through Native American Heritage Commission. **A search of the SFL was completed for the USGS quadrangle information provided with negative results.**

4. Any ethnographic studies conducted for any area including all or part of the potential APE; and

5. Any geotechnical reports regarding all or part of the potential APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS is not exhaustive, and a negative response to these searches does not preclude the existence of a cultural place. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the case that they do, having the information beforehand well help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance we are able to assure that our consultation list contains current information.

If you have any questions, please contact me at my email address: sharaya.souza@nahc.ca.gov

Sincerely,

Sharaya Souza
Staff Services Analyst

Native American Heritage Commission
Tribal Consultation List
El Dorado County
April 8, 2016

Ione Band of Miwok Indians
Yvonne Miller, Chairperson
P.O. Box 699 Miwok
Plymouth , CA 95669
administrator@ionemiwok.org
(209) 245-5800 Office

Nashville-El Dorado Miwok
Cosme Valdez, Interim Chief Executive Officer
P.O. Box 580986 Miwok
Elk Grove , CA 95758
valdezcom@comcast.net
(916) 429-8047 Voice/Fax

Shingle Springs Band of Miwok Indians
Nicholas Fonseca, Chairperson
P.O. Box 1340 Miwok
Shingle Springs , CA 95682 Maidu
nfonseca@ssband.org
(530) 387-1400

United Auburn Indian Community of the Auburn Rancheria
Gene Whitehouse, Chairperson
10720 Indian Hill Road Maidu
Auburn , CA 95603 Miwok
(530) 883-2390 Office

This list is current only as of the date of this document and is based on the information available to the Commission on the date it was produced.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable only for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed Creekside Plaza, Placerville, El Dorado County.

Ione Band of Miwok Indians
Yvonne Miller, Chairperson
P.O. Box 699, Plymouth , CA 95669

April 12, 2016

Subject: Proposed Development of the Fusano Property (Creekside Plaza Project), El Dorado County

Dear Chairperson Miller,

At the request of Grado Equities, FirstCarbon Solutions (FCS) is conducting a cultural resources assessment for a proposed project within El Dorado County, CA. The proposed project involves the commercial development of the Fusano Property, located at the northwest corner of Missouri Flat Road and Forni Road. The property is in Section 24 of Township 10 North, Range 10 East (see project map enclosed).

To determine the presence or absence of cultural and historical resources within the proposed project area and a ½ mile radius, FCS conducted a record search at the North Central Information Center (NCIC) at Cal State Sacramento. To identify any historic properties or resources, the current inventories of the National Register of Historic Places (NR), the California Register of Historic Resources (CR), the California Historical Landmarks list (CHL), the California Points of Historical Interest (CPHI) list, and the California State Historic Resources Inventory (HRI) for Merced County were reviewed to determine the existence of previously documented local historical resources. An intensive pedestrian survey has also been conducted at the location.

If you have any additional information regarding potential historic or cultural resources in proximity or relation to the proposed project area, we would greatly appreciate your input. ***Please note that this letter is a request for information pertaining to a cultural resources assessment and is not notification of a project under Senate Bill (SB) 18, Assembly Bill (AB) 52 or Section 106 of the National Historic Preservation Act.*** Project notification and consultation requirements are being handled by designated lead agencies under CEQA and NEPA. Please feel free to contact me at 925.357.2562 or via email at ddepietro@fcs-intl.com and thank you for your valuable assistance.

Sincerely,

Dana Douglas DePietro, Ph.D.
Senior Scientist, Archaeology
FirstCarbon Solutions
1350 Treat Boulevard, Ste. 380
Walnut Creek, CA 94597

Nashville- El Dorado Miwok
Cosme Valdez, Chief Executive Officer
P.O. Box 580986, Elk Grove , CA 95758

April 12, 2016

Subject: Proposed Development of the Fusano Property (Creekside Plaza Project), El Dorado County

Dear Director Valdez,

At the request of Grado Equities, FirstCarbon Solutions (FCS) is conducting a cultural resources assessment for a proposed project within El Dorado County, CA. The proposed project involves the commercial development of the Fusano Property, located at the northwest corner of Missouri Flat Road and Forni Road. The property is in Section 24 of Township 10 North, Range 10 East (see project map enclosed).

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Sincerely,

Dana Douglas DePietro, Ph.D.
Senior Scientist, Archaeology
FirstCarbon Solutions
1350 Treat Boulevard, Ste. 380
Walnut Creek, CA 94597

Shingle Springs Band of Miwok Indians
Nicholas Fonseca, Chairperson
P.O. Box 1340, Shingle Springs , CA 95682

April 12, 2016

Subject: Proposed Development of the Fusano Property (Creekside Plaza Project), El Dorado County

Dear Chairperson Fonseca,

At the request of Grado Equities, FirstCarbon Solutions (FCS) is conducting a cultural resources assessment for a proposed project within El Dorado County, CA. The proposed project involves the commercial development of the Fusano Property, located at the northwest corner of Missouri Flat Road and Forni Road. The property is in Section 24 of Township 10 North, Range 10 East (see project map enclosed).

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Sincerely,

Dana Douglas DePietro, Ph.D.
Senior Scientist, Archaeology
FirstCarbon Solutions
1350 Treat Boulevard, Ste. 380
Walnut Creek, CA 94597

United Auburn Indian Community of the Auburn Rancheria
Gene Whitehouse, Chairperson
10720 Indian Hill Road, Auburn , CA 95603

April 12, 2016

Subject: Proposed Development of the Fusano Property (Creekside Plaza Project), El Dorado County

Dear Chairperson Whitehouse,

At the request of Grado Equities, FirstCarbon Solutions (FCS) is conducting a cultural resources assessment for a proposed project within El Dorado County, CA. The proposed project involves the commercial development of the Fusano Property, located at the northwest corner of Missouri Flat Road and Forni Road. The property is in Section 24 of Township 10 North, Range 10 East (see project map enclosed).

To determine the presence or absence of cultural and historical resources within the proposed project area and a ½ mile radius, FCS conducted a record search at the North Central Information Center (NCIC) at Cal State Sacramento. To identify any historic properties or resources, the current inventories of the National Register of Historic Places (NR), the California Register of Historic Resources (CR), the California Historical Landmarks list (CHL), the California Points of Historical Interest (CPHI) list, and the California State Historic Resources Inventory (HRI) for Merced County were reviewed to determine the existence of previously documented local historical resources. An intensive pedestrian survey has also been conducted at the location.

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Sincerely,

Dana Douglas DePietro, Ph.D.
Senior Scientist, Archaeology
FirstCarbon Solutions
1350 Treat Boulevard, Ste. 380
Walnut Creek, CA 94597

Attachment C:
Pedestrian Survey Photographs



Photograph 1: Overview of the project area; facing southeast



Photograph 2: Detail of native soils in the western half of the project area



Photograph 3: View of the tributary bisecting the project area; facing south



Photograph 4: View of an open area In the center of the project area; facing south



Photograph 5: View of rockier soil matrix in the east of the project area; facing north



Photograph 6: Overview of the project area; facing northwest



Photograph 7: View of the project area bordering Forni Road; facing northeast



Photograph 8: View of the project area bordering Missouri Flat Road; facing northwest

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E.2 - Creekside Plaza Cultural Resource

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2009 DEC -7 PM 2:31
RECEIVED
PLANNING DEPARTMENT

CULTURAL RESOURCES ASSESSMENT OF THE FUSANO PROPERTY, MISSOURI FLAT ROAD AT FORNI ROAD, EL DORADO COUNTY, CALIFORNIA

Prepared by:

Peak & Associates, Inc.
3941 Park Drive, Suite 20, #329
El Dorado Hills, California 95762

Prepared for:

Lebeck Young Engineering, Inc.
3430 Robin Lane, Bldg. #2
Cameron Park, California 95682

March 25, 2009
(Job #08-112)

INTRODUCTION

The Fusano Property is a parcel proposed for commercial development located at the northwest corner of Missouri Flat Road and Forni Road. The property is in Section 24 of Township 10 North, Range 10 East (Map 1).

The property includes one modern residence but it is primarily vacant brush land. A small intermittant drainage tributary to Weber Creek flows through the property. A record search was performed by the North Central Information Center at the request of the developer and a field inspection of the property was conducted by Peak & Associates. The work was supervised by Melinda Peak with the field inspection performed by Michael Lawson.

CULTURAL HISTORY

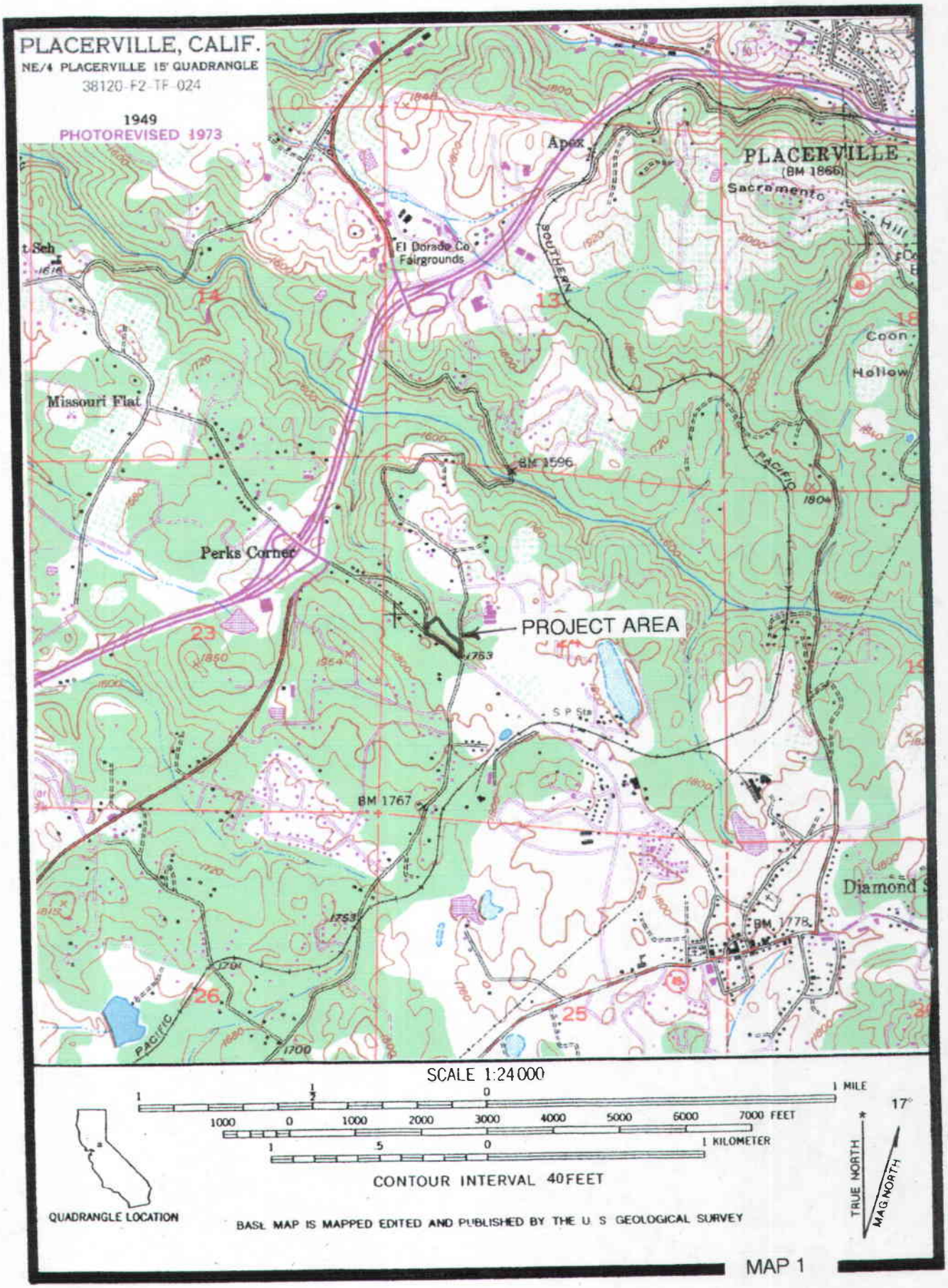
Prehistory

The project area lies at the edge of the Central Valley, in an area where cultural sequences are not well defined. Based on the limited excavation work conducted in the general area, the archeological cultures are similar to those of the Great Valley province, although there are some difference which may prove to be significant when better understood. Due to the lack of a rigorously developed regional sequence, the following summary of Central Valley archeology is presented.

The Central Valley was among the first in the state to attract intensive fieldwork, and research has continued to the present day. This has resulted in a substantial accumulation of data. In the early decades of the 1900s, E. J. Dawson explored numerous sites near Stockton and Lodi, later collaborating with W. E. Schenck (Schenck and Dawson 1929). By 1933, the focus of work was directed to the Cosumnes locality, where survey and exploration were conducted by Sacramento Junior College (Lillard and Purves 1936). Excavation data, in particular from the stratified Windmiller Site (CA-Sac-107), suggested two temporally distinct cultural traditions. Later work at other mounds by Sacramento Junior College and the University of California enabled the investigators to identify a third cultural tradition, intermediate between the previously postulated Early and Late Horizons. The three-horizon sequence, based on discrete changes in ornamental artifacts and mortuary practices, as well as on observed differences in soils within sites (Lillard, Heizer and Fenenga 1939), was later refined by Beardsley (1954). An expanded definition of artifacts diagnostic of each time period was developed, and application extended to parts of the central California coast. Traits held in common allow the application of this system within certain limits of time and space to other areas of prehistoric central California.

The Windmiller Culture (Early Horizon) is characterized by ventrally-extended burials (some dorsal extensions are known), with westerly orientation of heads, a high percentage of burials with grave goods, frequent presence of red ochre in graves, large projectile points, of which 60 percent are of materials other than obsidian; rectangular Haliotis beads; Olivella shell beads (types Ala and L); rare use of bone; some use of baked clay objects; and well-fashioned charmstones, usually perforated.

The Cosumnes Culture (Middle Horizon) displays considerable changes from the preceding cultural expression. The burial mode is predominately flexed, with variable cardinal orientation and some cremations present. There is a lower percentage of burials with grave goods, and ochre staining is common in graves. Olivella beads of types C1, F and G predominate, and there is abundant use of


PLACERVILLE, CALIF.
NE/4 PLACERVILLE 15' QUADRANGLE
38120-F2-TF-024
1949
PHOTOREVISED 1973
PLACERVILLE
(BM 1860)
Apex
Sacramento
El Dorado Co. Fairgrounds
SOUTHERN
PACIFIC
Missouri Flat
Perks Corner
BM 1596
PROJECT AREA
BM 1767
BM 1778
Diamond
Coon
Hollow
SCALE 1:24000
1 MILE
7000 FEET
1 KILOMETER
CONTOUR INTERVAL 40 FEET
QUADRANGLE LOCATION
BASE MAP IS MAPPED EDITED AND PUBLISHED BY THE U. S. GEOLOGICAL SURVEY
TRUE NORTH
MAGNORTH
17°

MAP 1

green Haliotis sp. rather than red Haliotis sp. Other characteristic artifacts include perforated canid teeth, asymmetrical and "fishtail" charmstones, usually unperforated, cobble mortars and evidence of wooden mortars, extensive use of bone for tools and ornaments, large projectile points, with considerable use of rock other than obsidian; and use of baked clay.

Hotchkiss Culture (Late Horizon) -- The burial pattern retains the use of the flexed mode, and there is widespread evidence of cremation, lesser use of red ochre, heavy use of baked clay, Olivella beads of Types E and M, extensive use of Haliotis ornaments of many elaborate shapes and forms, shaped mortars and cylindrical pestles, bird-bone tubes with elaborate geometric designs, clamshell disc beads, small projectile points indicative of the introduction of the bow and arrow, flanged tubular pipes of steatite and schist, and use of magnesite. (The above adapted from Moratto 1984:181-183). The characteristics noted are not all-inclusive, but cover the more important traits.

More recently, Bennyhoff and Hughes (1984) have presented alternative dating schemes for the Central California Archeological Sequence. The primary emphasis is a more elaborate division of the horizons and a compression of the temporal span.

There have been other chronologies proposed -- importantly, Fredrickson (1973) -- and, since it is correlated with Bennyhoff's (1977) work, it does merit discussion. The particular archeological cultural entities Fredrickson has defined are patterns, phases and aspects. Bennyhoff's (1977) work in the Plains Miwok area is the best definition of the Cosumnes District, which likely conforms to Fredrickson's pattern. The interested reader is referred to Fredrickson, for full details of the entities. Fredrickson, also, proposed periods of time associated heavily with economic modes, which provides a temporal term for comparing contemporary cultural entities. It corresponds with Willey and Phillips' (1958) earlier "tradition," although tied more specifically to the archeological record in California.

Period and Dating

Fredrickson	Bennyhoff, Heizer and Schulz
	Historic--post A.D. 1850
Emergent Period--A.D. 500 to 1800	Phase 2, Late Horizon--A.D. 500 to 1500
Upper Archaic--1000 B.C. to A.D. 500	Phase 1, Late Horizon--A.D. 500 to 1500
Middle Archaic--3000 to 1000 B.C.	Middle Horizon--1000 B.C. to A.D. 500
Lower Archaic--6000 to 3000 B.C.	Early Horizon--2500 to 1000 B.C.
Paleo Indian--10,000 to 6000 B.C.	
Early Lithic--? to 10,000 B.C.	
(Fredrickson 1973)	(Bennyhoff and Heizer 1958; Schulz 1981)

Ethnography

The project area lies in the territory attributed to the Nisenan -- a branch of the Maidu group of the Penutian language family. Tribes of this family dominated the Central Valley, San Francisco Bay areas, and western Sierra Nevada foothills at the coming of the white man. The Nisenan controlled the drainages of the Yuba, Bear, and American rivers, along with the lower portion of the Feather River. The tribes of this whole region referred to themselves as Nisenan, meaning "people," in contrast to the surrounding tribes, in spite of close linguistic and cultural similarities. For this reason, they are usually named by this term rather than the more technical "Southern Maidu." In any event, the local main village was of more importance to the people than the tribal designation, and groups identified themselves by the name of the central village. The project area is near the southern boundary of Nisenan territory and no major villages are known to have been located in the immediate vicinity.

The northern boundary of Nisenan territory has not been clearly established due to similarity in language to neighboring groups. The eastern boundary was the crest of the Sierra Nevada mountains. Probably a few miles south to the confluence of the American and Sacramento rivers on the valley floor was their southern boundary. The western boundary extended from this point upstream to the mouth of the Feather River.

The Valley Maidu settlement pattern was basically oriented to major river drainages, with ancillary villages located on tributary streams and sloughs. Major villages often supported a population exceeding five hundred people. The inhabitants had an intimate knowledge of the environs within their territory.

The Nisenan who occupied the foothills and lower Sierra Nevada mountain elevations selected village sites on ridges and large flats or meadows near the major streams. These villages tended to have smaller populations than those in the great valley, and it was not uncommon for family groups to have their abodes located away from the main village (Wilson and Towne 1978:389).

Both the valley and foothill people lived by hunting and gathering, with the latter being more important. Acorns in the forms of meal, soup or bread provided the staple diet, augmented by a wide variety of seeds and tubers. Hunting and fishing were regularly practiced, but provided less of the diet than vegetable foods. The bedrock mortar and pestle were employed to process the acorn meats into flour, and the mortar cups are frequently found throughout the range of oak trees.

Religion was in the form of the "Kuksu Cult," a widespread pattern among the California Indians. Ceremonies congregated in the semisubterranean dancehouse located at the central village and "cry sites" where the annual mourning ceremony for the dead took place. Later, the religious revival of the ghost dance also affected this area.

In 1833, a great epidemic swept through the Sacramento Valley. This epidemic has been attributed to malaria (Cook 1955:308), and is estimated to have killed seventy-five percent of the native population, leaving only a shadow of the original Maidu to face the intruding miners and settlers. The Nisenan of the mountain areas felt little of the impact of European settlement in California as compared to the Valley Nisenan, who were subjected to some missionization. The Mountain Nisenan, remote from these early impacts, were overwhelmed by the gold rush. Native ways of life were almost totally abandoned, and today only a few families in Placer, Nevada, Yuba, and El Dorado counties identify themselves as Nisenan and can speak the language (Wilson and Towne 1978).

History

As the word of James Marshall's gold discovery spread throughout the world, prospectors began arriving in California. Following Marshall's example, the first place these men searched for gold was along the rivers and streams of the foothills and valleys. When mining claims along the major rivers of the gold country became scarce, prospectors moved to smaller streams.

The El Dorado mining district started in this manner as placer discoveries at Mud Springs (later El Dorado) led to the establishment of camps in surrounding areas. In 1849 and 1850, the camps of Loafer's Hollow, Deadman's Hollow, Slate Creek, Empire Ravine, Dry Creek and Missouri Flat were founded in the El Dorado district (Hoover *et al.* 1990: 80). These were mostly ephemeral camps, but Missouri Flat became a town of some size in the placer mining era. However, hard rock mining never developed in the vicinity and the placers played out pretty quickly. By 1870, when the General Land

Office plat of the township was published, there is no mention of Missouri Flat. Several old surface mining areas are noted within section 23, but no town.

What does remain from the mining era are ditches that were constructed to carry water to the mines. In some cases these have been incorporated into modern water systems, particularly for irrigation water. In other cases the ditches are abandoned features on the land. The first ditches tended to be small in size and length, but many of the early ditches became parts of very large water conveyance systems in later years.

The project area lies between areas of early mining and settlement: Placerville, Missouri Flat, Diamond Springs and El Dorado. Since it is on a tributary of Weber Creek, it was no doubt prospected in the early days of mining. However, there is no indication that this was a productive mining area. After the mining days it was still at the edge of develpment until the recent considerable expansion of Placerville. Up to now it has been part of one of the many small farms and ranches that characterize the region.

RECORD SEARCH

A records search was conducted by the North Central Information Center of the California Historical Resources Information System at California State University, Sacramento. The record search included review of several registers (Office of Historic Preservation Historic Property Directory, California Inventory, California Department of Transportation Bridge Inventory, California Historical Landmarks, Points of Historic Interest) published listings (Gudde 1969, 1975; Hoover *et al.* 1990) and the 1855 General Land Office (GLO) plat of the township, all with negative results.

The Information Center did note that Forni Road appears on the 1870 GLO plat of the township following roughly the same route as it does today. However, there are no historic features noted near the project area other than the road itself (Appendix 1).

NATIVE AMERICAN CONSULTATION

The Native American Heritage Commission was contacted for a check of the Sacred Lands files. There are no listed properties in or near the project area Appendix 2).

FIELD SURVEY

An intensive field inspection was conducted on September 26,2008, covering all of the property. This was very difficult in some areas due to very dense brush and young trees, especially near the drainage. It was necessary to clear ground cover at regular intervals to see the ground surface.

The field inspection did not identify any prehistoric cultural resources in the project area. A small historic feature of uncertain age was recorded.

PA-08-112 (temporary field number) consists of a circle of dry-laid field stone 8 feet in external diameter and two or three courses high. There is a break in the ring on the southeast. Ten feet north of the ring is a pile of barbed wire and hog wire and two pieces of old timber, probably posts. The only artifact on site is a single horseshoe. It seems likely from the small size of the enclosure that it was for protective purposes for one, or at least a very small number of animals. This suggests a lambing pen, although the function of the feature can only be assumed. The lumber is badly rotted, suggesting considerable age, early 1900s at a guess.

CONCLUSIONS

PA-08-112 is of uncertain age and function, but there is no other feature, site or structure nearby to provide any historic context. Given this situation, the site does not appear to meet any criteria of significance for federal or state registration.

As with any surface inspection, there is some possibility that a buried site may exist in the area and be obscured by vegetation, fill, or other historic activities, leaving no surface evidence. Should artifacts or unusual amounts of stone, bone, or shell be uncovered during construction activities, an archeologist should be consulted for on-the-spot evaluation. If the bone appears to be human, the El Dorado County Coroner must be contacted. If the coroner determines that the bone is most likely Native American in origin, he will contact the Native American Heritage Commission to identify most likely descendants for consultation regarding further treatment of the remains.

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APPENDIX 1

Information Center Communication

NORTH CENTRAL INFORMATION CENTER

916-278-6217 ncic@csus.edu FAX 916-278-5162
CSU-SACRAMENTO - 6000 J STREET, ADAMS BLDG. SUITE #208 - SACRAMENTO, CA 95819-6100
Amador, El Dorado, Nevada, Placer, Sacramento, and Yuba Counties

February 16, 2007 File No: ELD-07-29

Leonard Grado
Granite Grado Ventures Pro LLC
4330 Golden Center Drive, Suite D
Placerville, CA 95667

Re: Record Search Results for Grado Property, 3870 Forni Road, Placerville (APN 327-213-12)
T 10N/R 10E Section 24; USGS Placerville 7.5' Quad, El Dorado County

Dear Mr. Grado;

Per your request received by our office on February 14, 2007, a complete records search for the above referenced project was conducted by reviewing the State of California Office of Historic Preservation records, base maps, historic maps, and literature for El Dorado County on file at this office. Review of this information indicates that the proposed project area contains no recorded prehistoric archaeological sites or historic-period resources listed with the California Historical Resources Information System (CHRIS). This office has two records of archaeological studies conducted within or adjacent to the current project area, including an intensive cultural resource survey of the project parcel that was conducted in 1984. State and Federal inventories list no historic properties (buildings, structures, or objects) within the proposed project area.

In this part of El Dorado County, prehistoric-period habitation sites are primarily found adjacent to streams or on ridges or knolls, especially those with a southern exposure (Moratto 1984:290). This region is known as the ethnographic-period territory of the Nisenan, also called the Southern Maidu. The Nisenan had permanent settlements along major rivers in the Sacramento Valley and foothills, and would travel yearly into higher elevations to hunt or gather seasonal plant resources (Wilson and Towne 1978:387-389). The proposed project area is located on a gentle north-facing slope a few hundred feet from a small tributary of Weber Creek. Given the environmental setting, there is a moderate potential for prehistoric or ethnohistoric-period Native American sites in the project area; however, previous archaeological investigations of the area did not reveal the presence of any cultural resources.

The 1870 GLO plat of T 10N/R 10E shows a few homesteads and mining features in the general project vicinity. A road is illustrated that follows approximately the same alignment as modern-day Forni Road. This same road is also shown on the 1893 USGS Placerville Sheet and the 1949 USGS Placerville Quad. No historic properties or features are identified in any of the other inventories or references consulted. Given the known patterns of local historic land use, there is a low-to-moderate potential for identifying historic-period cultural resources in the Grado parcel; however, none have been identified during previous investigations of the area.

LITERATURE REFERENCED DURING SEARCH: In addition to the official records and maps for archaeological sites and studies in El Dorado County, the following inventories and references were also reviewed: the National Register of Historic Places - Listed Properties and Determinations of Eligibility (2006); the California Register of Historic Resources – Listed Properties and Determinations of Eligibility (2006); the California Inventory of Historic Resources (1976); California State Historical Landmarks (1996 and updates); California Points of Historical Interest (1992 and updates); the Office of Historic Preservation's Historic Property Directory (2006); Caltrans State and Local Bridge Surveys (1987, 2000, and 2004); Gold Districts of California (Clark 1970); California Gold Camps (Gudde 1975); California Place Names (Gudde 1969); Historic Spots in California (Hoover et al. 1966 and 1990); Trail of the First Wagons Over the Sierra Nevada (Graydon 1986); Historical Souvenir of El Dorado County (Sioli 1883); Historic Mining Ditches of El Dorado County and the Formation of the El Dorado Irrigation District (Starns 1998); El Dorado County Historical Cemeteries (Starns 2002); the Smithsonian Institution's Handbook of North American Indians, Volume 8, California (Wilson and Towne 1978:387-389); and California Archaeology (Moratto 1984).

NCIC LIBRARY REPORTS CONSULTED:

NCIC# 4258 (Snoke 1984): "Archaeological Reconnaissance of the Missouri-Flat-Diamond Springs Redevelopment Project." *This report included an intensive archaeological survey of the parcel at 3870 Forni Road.*

NCIC # 4272 (Lindström 1995): "Wal-Mart EIR Heritage Resource Inventory: 19.8-Acre Parcel Near Placerville, CA." *This report resulted from the archaeological survey of a parcel directly east of the current project area. The survey documented the historic Dunlop Ranch, recommending it as ineligible for the National Register of Historic Places.*

RECOMMENDATIONS:

1) There is a moderate sensitivity for prehistoric archaeological sites, and a low-to-moderate sensitivity for historic-period cultural resources in the project area. However, previous cultural resource surveys identified no such properties within the subject parcel; therefore, **no further archival or field study for cultural resources is recommended at this time.**

2) Review for possible historic structures has included only those sources listed in the attached bibliography and should not be considered comprehensive. The Office of Historic Preservation has determined that buildings, structures, and objects 45 years or older may be of historical value. If the area of potential effect contains such properties not noted in our research, they should be assessed by an architectural historian before commencement of project activities.

3) If cultural resources are encountered **during the project**, avoid altering the materials and their context until a cultural resource consultant has evaluated the situation. Project personnel should not collect cultural resources. Prehistoric resources include chert or obsidian flakes, projectile points, and other flaked-stone artifacts; mortars,

grinding slicks, pestles, and other groundstone tools; and dark friable soil containing shell and bone dietary debris, heat-affected rock, or human burials. Historic resources include stone or adobe foundations or walls; structures and remains with square nails; mine shafts, tailings, or ditches; and refuse deposits or bottle dumps, often located in old wells or privies.

4) Identified cultural resources should be recorded on DPR 523 (A-J) historic resource recordation forms, available at www.ohp.parks.ca.gov.

Thank you for using our services. Please contact our office at (916) 278-6217 if you have any questions about this record search. A billing statement is enclosed.

Sincerely,

Jennifer Bowden
Researcher

Cc: Elena Brown, Patterson Development

Appendix 2

Native American Heritage Commission Communication

STATE OF CALIFORNIA — Arnold Schwarzenegger, Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-4082
Fax (916) 657-5390

September 12, 2008

Robert A. Gerry
Peak & Associates
3941 Park Drive Suite 20
El Dorado Hills, CA 95762

Sent by Fax: 916-939-2406
Number of Pages: 2

RE: Proposed 2.5 acre parcel for Leonard Grado Development, El Dorado County

Dear Mr. Gerry:

A record search of the sacred lands file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 653-4040.

Sincerely,

Katy Sanchez
Program Analyst

Native American Contacts
El Dorado County
September 11, 2008

Ione Band of Miwok Indians
Tina Reynolds, Executive Secretary
PO Box 1190 Miwok
Ione , CA 95640
tina@ionemiwok.org
(209) 274-6753
(209) 274-6836 Fax

Nashville-El Dorado Miwok
Cosme Valdez, Interim Chief Executive Officer
PO Box 580986 Miwok
Elk Grove , CA 95758
916-429-8047 voice
916-429-8047 fax

El Dorado Miwok Tribe
Wesly Yielding
3266 Cimmarron Road, Apt 36 Miwok
Cameron Park , CA 95682
530-672-9819

Ione Band of Miwok Indians
Heritage Cultural Committee
PO Box 1190 Miwok
Ione , CA 95640
(209) 274-6753
(209) 274-6836 Fax

Shingle Springs Band of Miwok Indians
Nicholas Fonseca, Chairperson
P.O. Box 1340 Miwok
Shingle Springs , CA 95682 Maidu
nfonseca@ssband.org
(530) 676-8010
(530) 676-8033 Fax

Kenneth Counsil
4209 V Street #5 Miwok
Sacramento , CA 95817 Maidu
mrken@sonic.net
916-457-7144 - Home
916-213-3934 - cell

Washoe Tribe of Nevada and California THPO
Darrel Cruz, Cultural Resources Coordinator
919 Highway 395 South Washoe
Gardnerville , NV 89410
darrel.cruz@washoetribe.us
(775) 265-4191 ext 1212
(775) 546-3421 - cell
(775) 265-2254 FAX

This list is current only as of the date of this document.

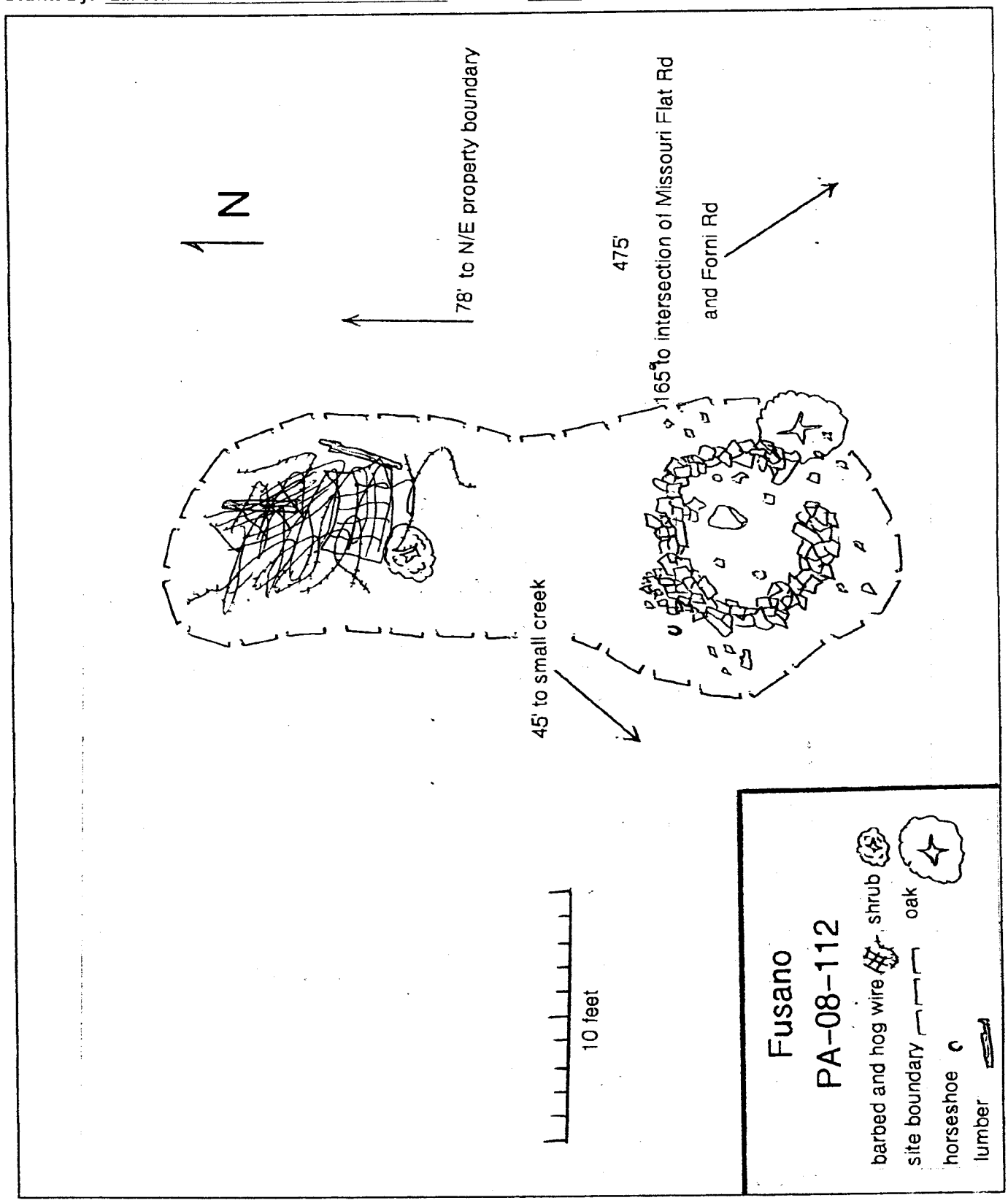
Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Leonard Grado Development, commercial development, Missouri Flat Road and Forni Road; El Dorado County.

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
SKETCH MAP

Primary #: _____
HRI #: _____
Trinomial: _____

Page 3 of 4 **Resource Name or #:** (assigned by recorder) PA-08-112
Drawn By: Lawson **Scale:** 1 inch = 10 feet **Date of Map:** 9/26/08



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Appendix F:
Preliminary Drainage Report

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PRELIMINARY
DRAINAGE REPORT
for
CREEKSIDE PLAZA
PLACERVILLE, CA



LEBECK · YOUNG
ENGINEERING, INC.

3430 Robin Lane, Bldg.#2, Cameron Park, CA 95682
(530) 677-4080; Fax (530) 677-4096
e-mail: bobbie@lebeckyoung.com

By: B. Lebeck, P.E.
February 8, 2010

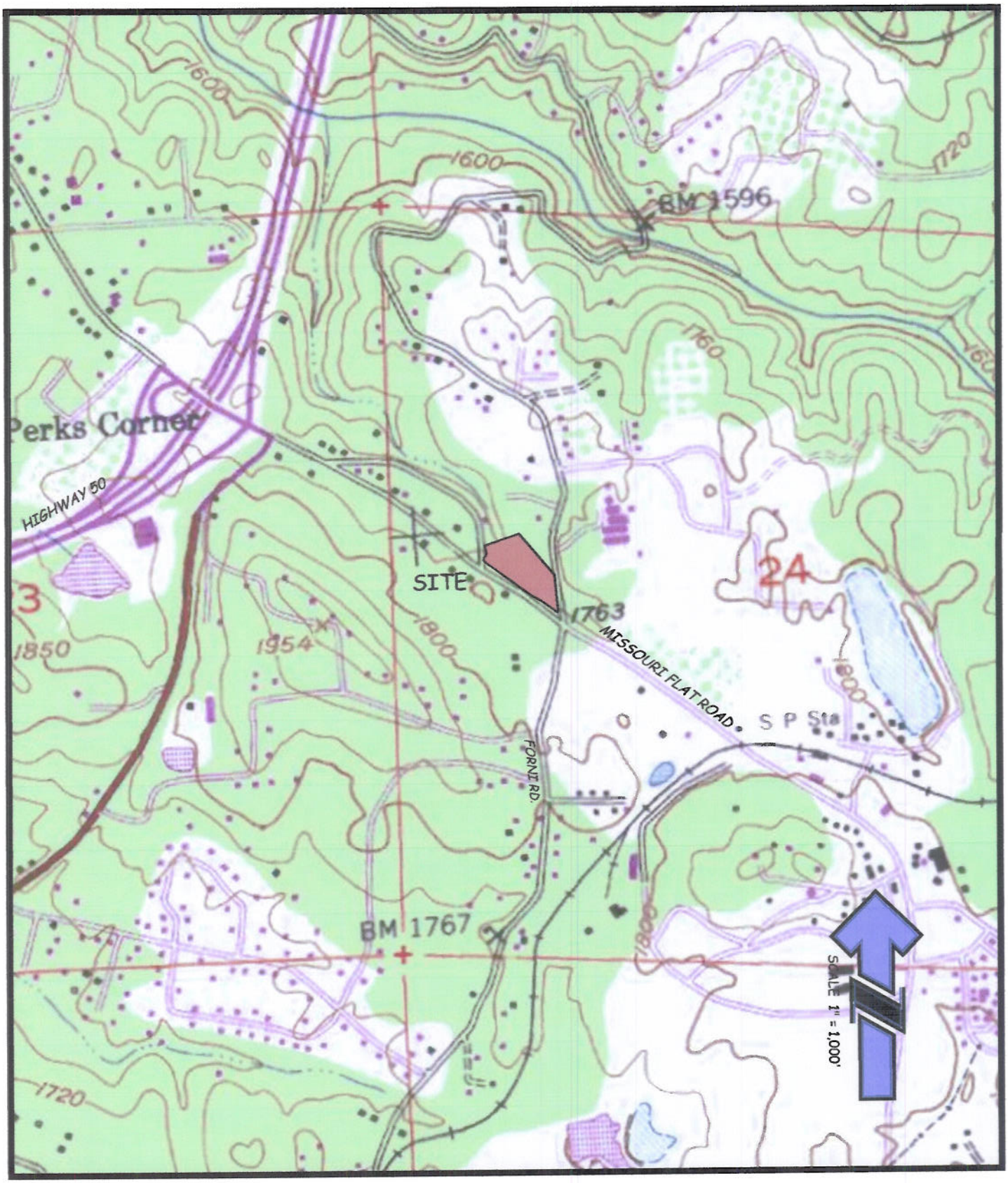


Not to Scale

PROJECT: CREEKSIDE PLAZA (4.1 ACRES)
SEC. 24, T.10N., R.10E.

VICINITY MAP

NTS



U.S.G.S. - Placerville Quadrangle - Creekside Plaza

SECTION 24, T 10 N, R 10 E, M.D.M.

Scale: 1" = 1,000'

Preliminary Drainage Analysis for Creekside Plaza

INTRODUCTION AND BACKGROUND

The project property is located at 3820 Forni Road and 4179 & 4221 Missouri Flat Road in Placerville, California. The site is currently owned by Grado Equities VII, LLC and encompasses approximately 4.3 acres (3 existing parcels).

The project proposes to construct a commercial center with approximately three buildings. At present, site cover consists of a combination of grass, brush and oak trees.

Drainage originates on or above the project site and drains from the east, southeast, south, and southwest into an existing unnamed tributary of Weber Creek that flows through the site from the southeast to the northwest. The tributary converges with Weber Creek at a flow distance of approximately one mile downstream from the site..

The drainage for the site was analyzed using methodology as discussed in the El Dorado County Drainage Manual, adopted March 15, 1995.

HYDROLOGY

- ***Methodology***

  The site was analyzed using peak runoff rates and volumes as determined by the U.S. Army Corp of Engineers Hydraulic Engineering Circular, HEC-HMS program. The HEC-HMS program was used in coordination with the Soil Conservation Service (SCS) Dimensionless Unit Hydrograph Method and the El Dorado County Drainage Manual, adopted March 15, 1995, in order to determine the peak runoff rates for both pre-development and post-development scenarios. The HEC-HMS program is the up-dated program from HEC-1.

  The input data for the HEC-HMS program consists of watershed areas, curve numbers, lag time, channel dimensions, and detention pond data (where applicable).

  The HEC-HMS program can be used for larger watersheds and it has a channel routing feature. The channel routing feature of the HEC-HMS utilized in this analysis was the Muskingum-Cunge routing.

  As stated above, the on-site storm drains were sized utilizing the El Dorado County Drainage Manual, adopted March 15, 1995.

PROCEDURE

A. Watershed Areas:

See Preliminary Grading & Drainage Plan for location of on-site drainage patterns.

B. Mean Annual Precipitation, Pptn:

Use Pptn = 36 inches

See Mean Annual Precipitation exhibit in the Appendix.

C. Time of Concentration, Tc:

Per Section 2.4 of the EDC Drainage Manual:

- ***Sheet Flow (L < 300 ft.):***

Tt = 0.007 (nL)^0.8 ; L = length of longest watercourse (ft)
(P2)^0.5 S^0.4 P2 = 2-yr, 24-hour rainfall depth (in-in)
S = land slope (ft/ft)
Tt = sheet flow travel time (hrs)
n = overland roughness coefficient
(per Table 2.4.3 - See Appendix)

- ***Shallow Concentrated Flow:***

V = 16.1345 So^0.5 (unpaved); V = shallow-concentrated flow velocity (ft./s)
So = slope (ft/ft)

V = 20.3283So^0.5 (paved);

Tt = L/V ; Travel time is the flow path length divided by the velocity.

- ***Channel Flow:***

Velocity is estimated by Manning's Equation, assuming discharge equal the average annual value (2-yr event). The channel flow travel time is the channel length divided by the velocity.

D. Intensity, I:

See figures in Appendix.

E. Runoff Coefficient, C:

Per Figures 2.5.1 thru 2.5.4 of the EDC Drainage Manual (See Appendix):

- *Above 1640' elevation = SCS Type 1A storm*
- *Hydrologic Soil Group = D & C, See Soil Survey Map in the Appendix.*
- *Curve No., CN (See Drainage Chart for CN numbers used, See Table 2-2a and 2-2c. in the Appendix for determination of curve numbers used. Curve numbers are selected according to soil hydrological group, cover type and hydrologic condition.)*
- *(See Drainage Chart for "C" values)*

The soil survey map was used in order to determine the soil types present within the watersheds that contribute runoff to the project site. Next, data from the El Dorado Area Soil Survey (USDA, January 4, 2007) describing each soil type was reviewed in order to determine the hydrological soil group of the soil. Soils are rated as Type A, having high infiltration rates, through Type D, having the lowest infiltration rate. A majority of soil's hydrological soil groups are listed in Exhibit A-1 of the TR-55 manual. This project site and the surrounding off-site watersheds lie within Hydrological soil group D & C (Auburn, Boomer, & Placer Diggings Series).

Soil:
Soils types within the project consist of Auburn, Boomer, & Placer Diggings series rock land as follows:

1) *Auburn very rocky silt loam (AxD)– 2 to 30 percent slopes. Surface runoff is slow to medium, and the erosion hazard is slight to moderate.*

2) *Boomer gravelly loam (BhC)– 3 to 15 percent slopes. Surface runoff is medium, and the erosion hazard is slight to moderate.*

3) *Boomer very rocky loam (BkE)– 30 to 50 percent slopes. Surface runoff is rapid, and the erosion hazard is high.*

4) *Placer Diggings (PrD)- Consists of areas of stony, cobbly, and gravelly material, commonly in beds of creeks and other streams.*

Once the hydrological soil group was determined, the watershed cover type was analyzed. Utilizing Table 2-2c, a curve number was determined for both pre-development & post-developed watersheds.

Since this property is above 1640' elevation, an SCS storm Type 1A was used. Therefore, Figures 2.5.1 (10-year) and 2.5.2 (100-year) were used along with the curve number and time of concentration to determine the runoff coefficient "C".

F. Peak Discharge, Q (cfs):

$Q = C\ I\ A$

SUMMARY AND CONCLUSIONS

Proposed site development consists of one mixed use building (medical & professional offices), one fast food/retail building, one retail building, driveways, and parking. A retaining wall is being constructed through the middle portion of the project in order to preserve a large portion of the existing creek.

Off-site storm water is being routed through the project and into the existing creek channel. The on-site storm water is being collected through a series of storm water pipes and conveyed to the northerly portion of the site where it will be filtered through a CDS device in order to ensure water quality is being preserved.

On-site storm drains will discharge to the existing on-site stream at points shown on the Post-Development Watershed exhibit (see Appendix). Peak discharges for the creek were analyzed at two different points along the Weber Creek tributary channel. Point A is the cumulative flow before the project site, and Point X is where runoff from the entire project site becomes tributary. The watershed area above Point 'X' is approximately 141 acres, of which the project accounts for less than 3%.

The hydrograph method of runoff analyses, employing the HEC-HMS computer program, was used to simulate runoff from 10-year & 100-year, 24-hour, SCS Type 1A storms, under pre-and post-development conditions. The results, summarized in Table 1, indicate that the proposed project may increase channel flow by less than 1% for the design storm under consideration. Resultant impacts on channel flow depth or velocity would be negligible. Therefore no detention pond should be required.

TABLE 1 – CHANNEL FLOW

CONDITION	*10-YEAR PEAK FLOW (CFS)*	*100-YEAR PEAK FLOW (CFS)*
Pre-Development	*120*	*181*
Post-Development	*121*	*182*

DRAINAGE CALCULATION CHART - 10 YEAR

Water Shed No.	Area (Ac.)	Area (sq.mi.)	Curve No.	Sheet Flow L (ft)	Sheet Flow H2-H1 (ft)	Sheet Flow S (ft/ft)	Sheet Flow n	Sheet Flow P2 (in in)	Sheet Flow Tt (min)	Shallow Conc. Flow L (ft)	Shallow Conc. Flow H2-H1 (ft)	Shallow Conc. Flow S (ft/ft)	Shallow Conc. Flow V (ft/s)	Shallow Conc. Flow Tt (min)	Total Tt (min)	I 10-yr (in/hr)	C (10 yr)	Q 10-YR (cfs)
Mean Annual Precipitation = 36																		
Pre-development																		
																See HEC-HMS Results		
1	9.6	0.015	77											USE	20	"OFF-PRE" (Por.)		
1A	1.6	0.002	77											USE	15	"OFF-PRE" (Por.)		
2	4.4	0.007	94											USE	15	"WALGR SITE-PRE"		
3	12.4	0.019	72											USE	15	"WOFF-PRE"		
4	3.9	0.006	73											USE	15	"SITE-PRE"		
Post-development																See HEC-HMS Results		
1	9.6	0.015	77											USE	20	"OFF-POST" (Por.)		
1A	1.6	0.002	77											USE	15	"OFF-POST" (Por.)		
2	4.4	0.007	94											USE	15	"WALGR SITE-POST"		
3	12.4	0.019	72											USE	15	"WOFF-POST"		
4	2.6	0.004	94											USE	5	"SITE-POST" (Por.)		
5	1.3	0.002	77											USE	10	"SITE-POST" (Por.)		

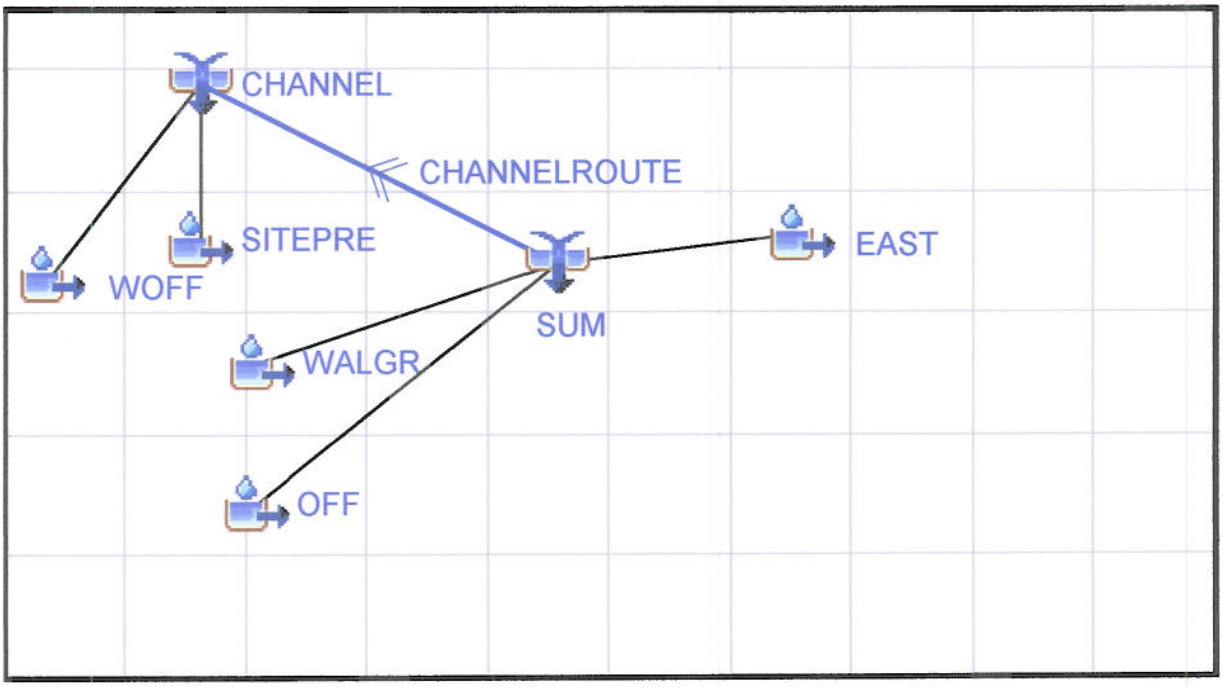
HEC-HMS RESULTS

HEC-HMS

Project : Creekside Plaza Prelim

Basin Model : PREDEVEL

Feb 09 08:21:15 PST 2010



Project: Creekside Plaza Prelim Simulation Run: 10-yr Pre-Devel

Start of Run: 01Jan2010, 00:00
End of Run: 02Jan2010, 01:00
Compute Time: 05Feb2010, 12:51:01

Basin Model: PREDEVEL
Meteorologic Model: 10YR
Control Specifications: Control 1

Volume Units: IN

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHANNEL	0.2198	120.1	01Jan2010, 08:07	3.74
CHANNELROUTE	0.1943	113.6	01Jan2010, 08:07	3.97
EAST	0.1700	104.3	01Jan2010, 08:08	4.13
OFF	0.0174	6.3	01Jan2010, 08:01	2.38
SITEPRE	0.0061	1.6	01Jan2010, 08:08	2.06
SUM	0.1943	113.6	01Jan2010, 08:06	3.97
WALGR	0.0069	4.6	01Jan2010, 07:58	4.02
WOFF	0.0194	4.9	01Jan2010, 08:07	1.98

Project: Creekside Plaza Prelim Simulation Run: 100-yr Pre-Devel

Start of Run: 01Jan2010, 00:00 Basin Model: PREDEVEL
End of Run: 02Jan2010, 01:00 Meteorologic Model: 100-yr
Compute Time: 05Feb2010, 12:55:09 Control Specifications: Control 1

Volume Units: IN

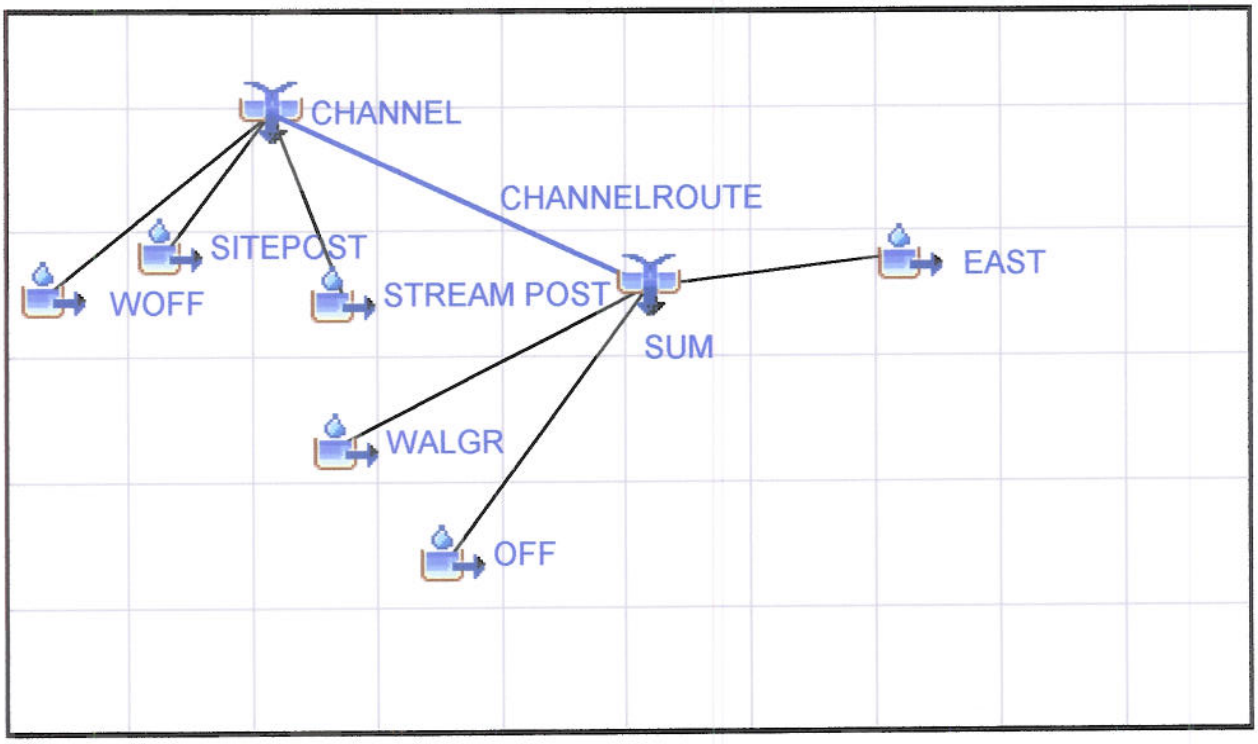
Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHANNEL	0.2198	180.5	01Jan2010, 08:07	5.63
CHANNELROUTE	0.1943	167.6	01Jan2010, 08:07	5.90
EAST	0.1700	152.0	01Jan2010, 08:07	6.09
OFF	0.0174	11.4	01Jan2010, 08:01	4.08
SITEPRE	0.0061	3.2	01Jan2010, 08:07	3.66
SUM	0.1943	167.6	01Jan2010, 08:06	5.90
WALGR	0.0069	6.8	01Jan2010, 07:58	5.97
WOFF	0.0194	9.8	01Jan2010, 08:06	3.56

HEC-HMS

Project : Creekside Plaza Prelim

Basin Model : POSTDEVEL

Feb 09 08:20:46 PST 2010



Project: Creekside Plaza Prelim Simulation Run: 10-yr Post-Devel

Start of Run: 01Jan2010, 00:00 Basin Model: POSTDEVEL
End of Run: 02Jan2010, 01:00 Meteorologic Model: 10YR
Compute Time: 05Feb2010, 12:52:19 Control Specifications: Control 1

Volume Units: IN

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHANNEL	0.2198	121.2	01Jan2010, 08:07	3.78
CHANNELROUTE	0.1943	113.6	01Jan2010, 08:07	3.97
EAST	0.1700	104.3	01Jan2010, 08:08	4.13
OFF	0.0174	6.3	01Jan2010, 08:01	2.38
SITEPOST	0.0041	2.8	01Jan2010, 07:58	4.02
STREAM POST	0.0020	0.7	01Jan2010, 08:03	2.38
SUM	0.1943	113.6	01Jan2010, 08:06	3.97
WALGR	0.0069	4.6	01Jan2010, 07:58	4.02
WOFF	0.0194	4.9	01Jan2010, 08:07	1.98

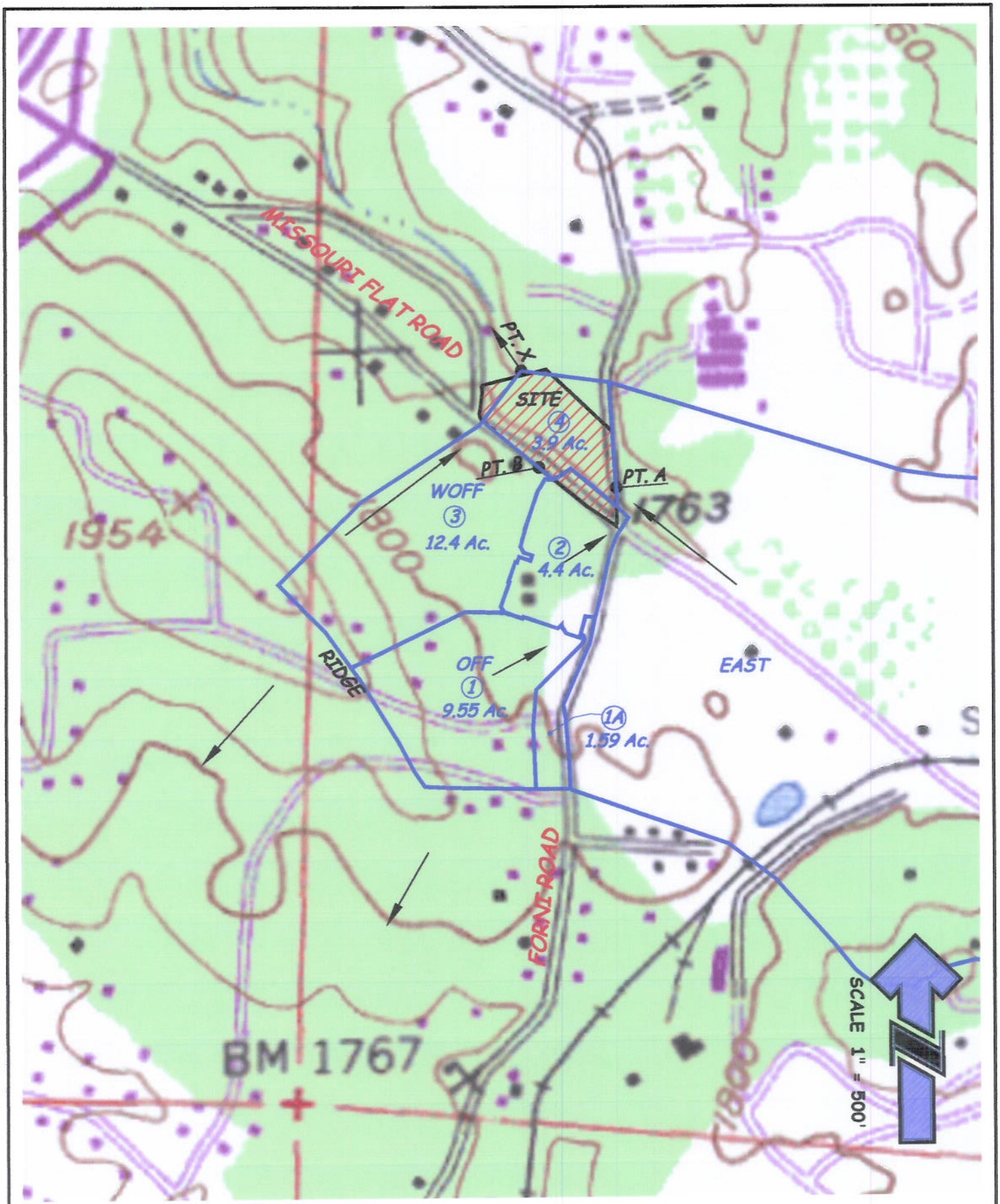
Project: Creekside Plaza Prelim Simulation Run: 100-yr Post-Devel

Start of Run: 01Jan2010, 00:00 Basin Model: POSTDEVEL
End of Run: 02Jan2010, 01:00 Meteorologic Model: 100-yr
Compute Time: 05Feb2010, 12:46:27 Control Specifications: Control 1

Volume Units: IN

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHANNEL	0.2198	181.6	01Jan2010, 08:06	5.68
CHANNELROUTE	0.1943	167.6	01Jan2010, 08:07	5.90
EAST	0.1700	152.0	01Jan2010, 08:07	6.09
OFF	0.0174	11.4	01Jan2010, 08:01	4.08
SITEPOST	0.0041	4.0	01Jan2010, 07:58	5.97
STREAM POST	0.0020	1.3	01Jan2010, 08:02	4.08
SUM	0.1943	167.6	01Jan2010, 08:06	5.90
WALGR	0.0069	6.8	01Jan2010, 07:58	5.97
WOFF	0.0194	9.8	01Jan2010, 08:06	3.56

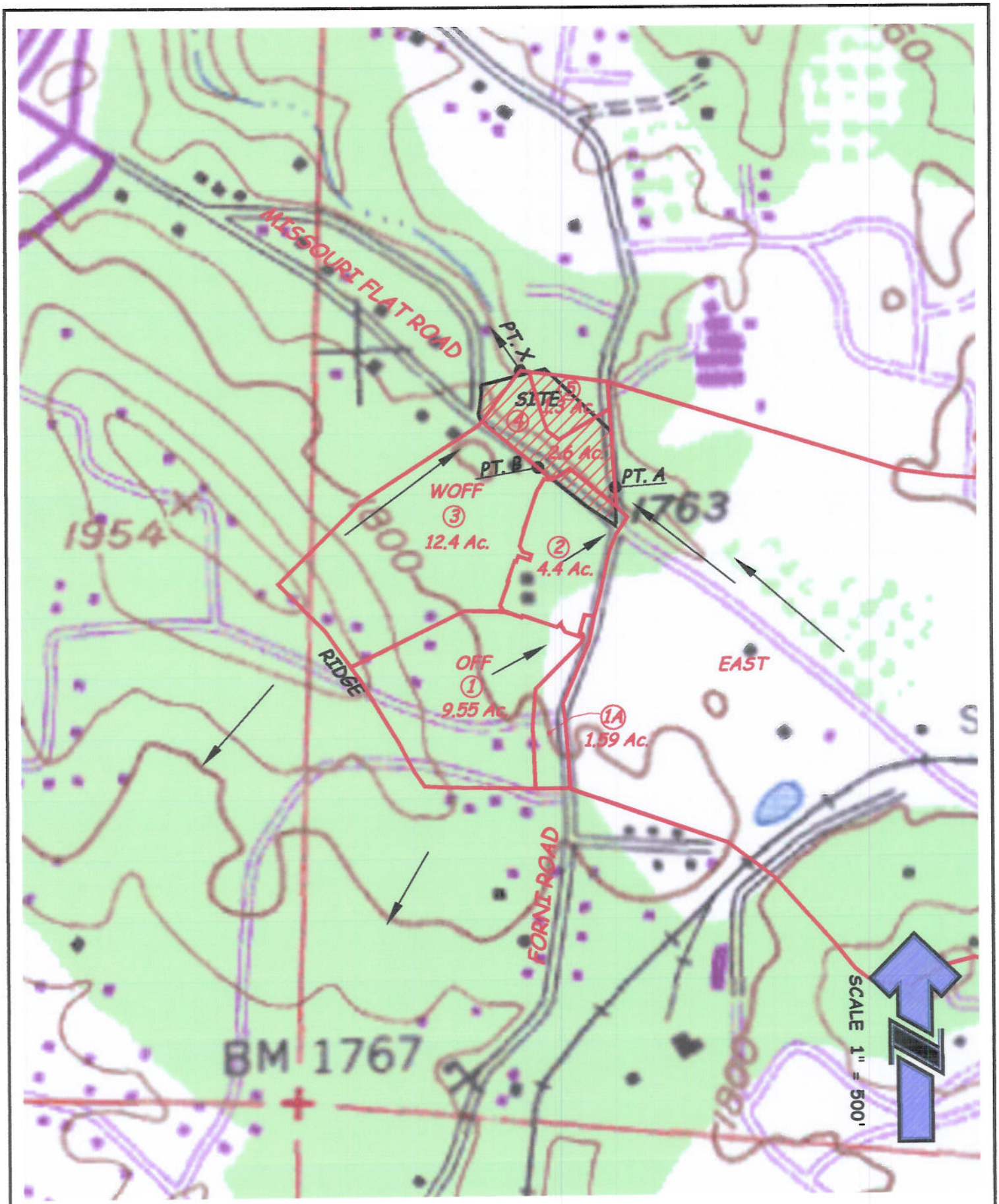
APPENDIX



PRE-DEVELOPMENT WATERSHED AREAS - CREEKSIDE PLAZA

SEC. 24, T.10N., R.10E

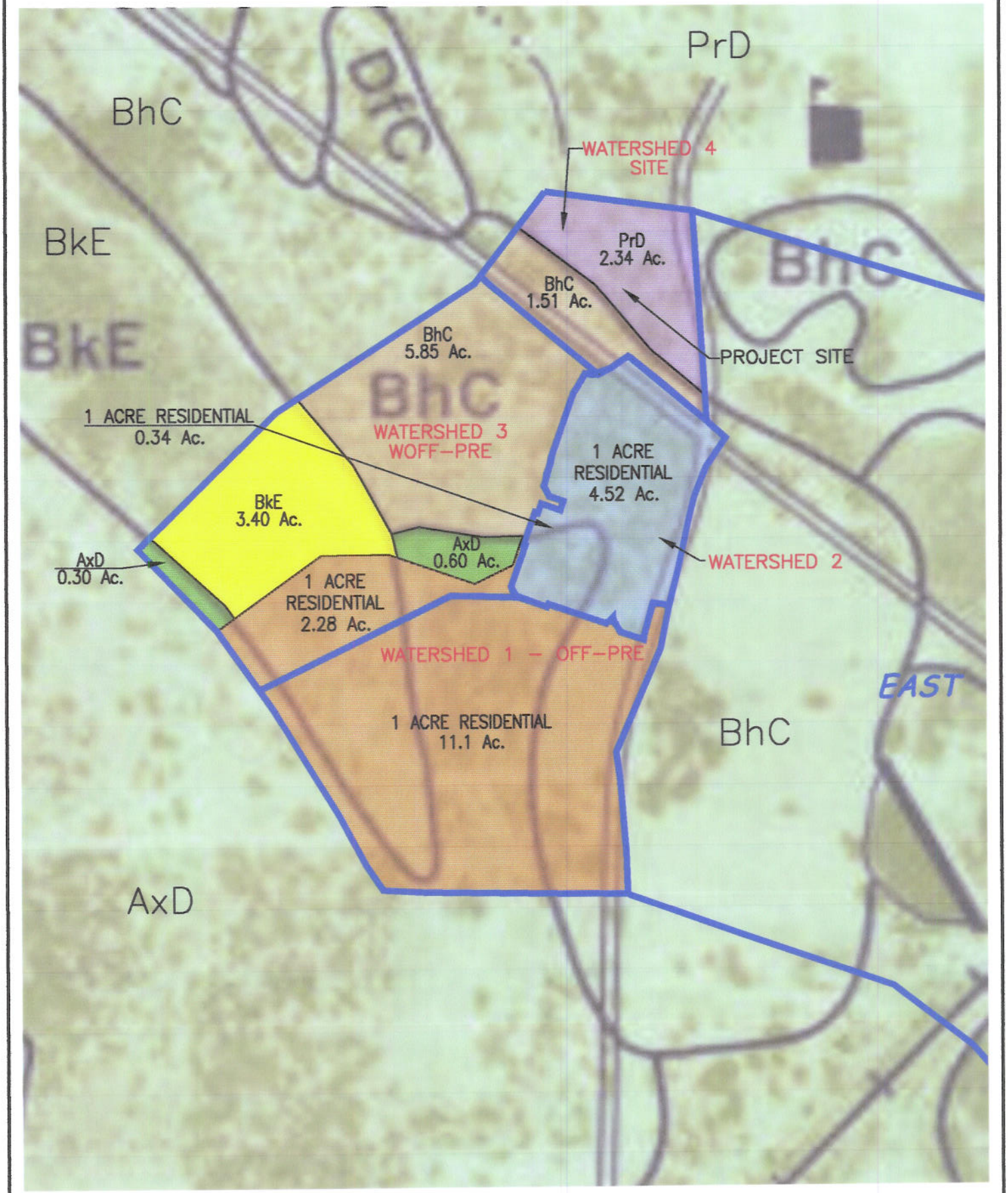
SCALE: 1"=500'



POST-DEVELOPMENT WATERSHED AREAS - CREEKSIDE PLAZA

SEC. 24, T.10N., R.10E

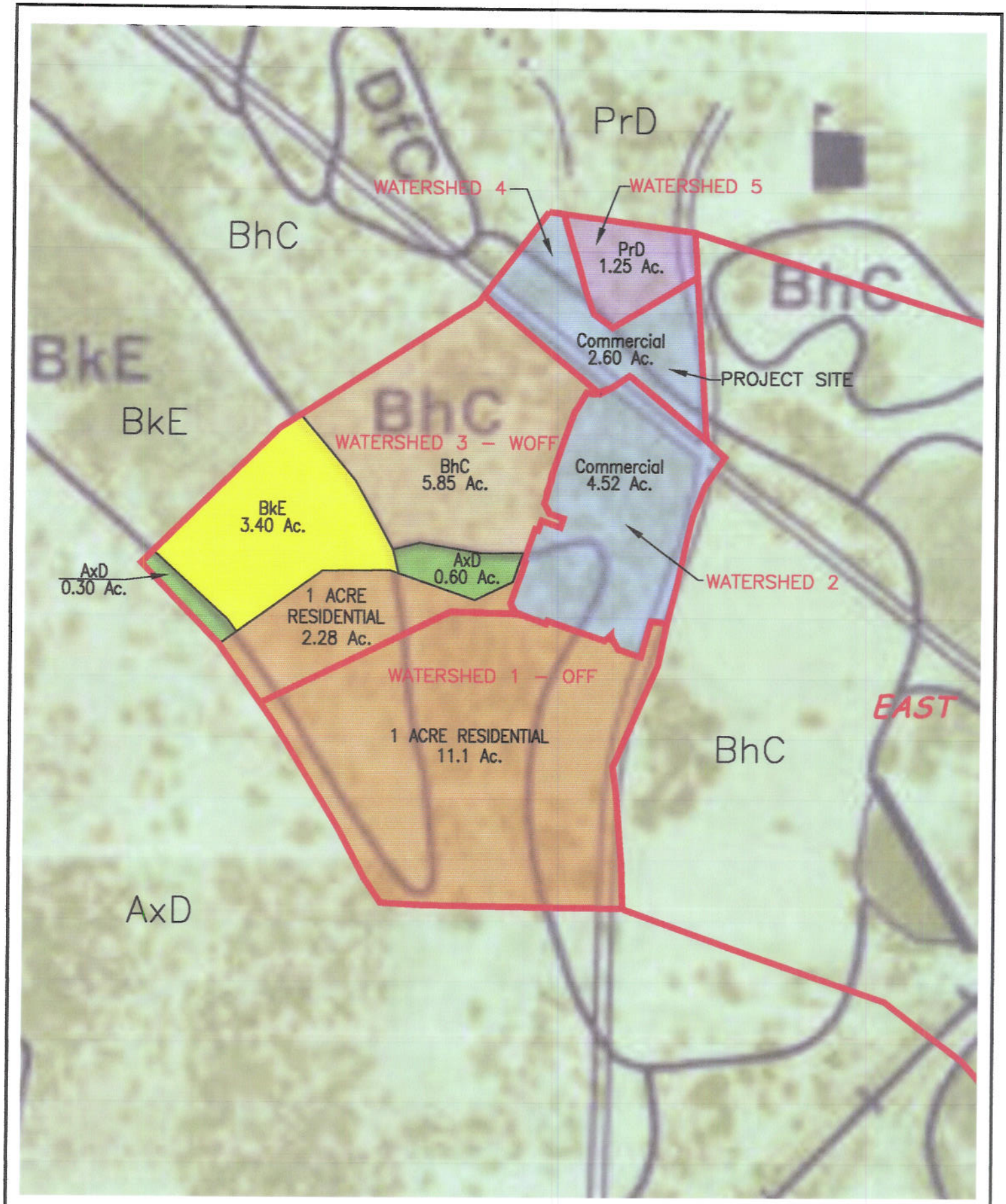
SCALE: 1"=500'



SOIL SURVEY - PRE-DEVELOPMENT COVER TYPE

FORNI RETAIL PLAZA
SCALE: 1"=300'

USDA-SOIL CONSERVATION SERVICE



SOIL SURVEY - POST-DEVELOPMENT COVER TYPE

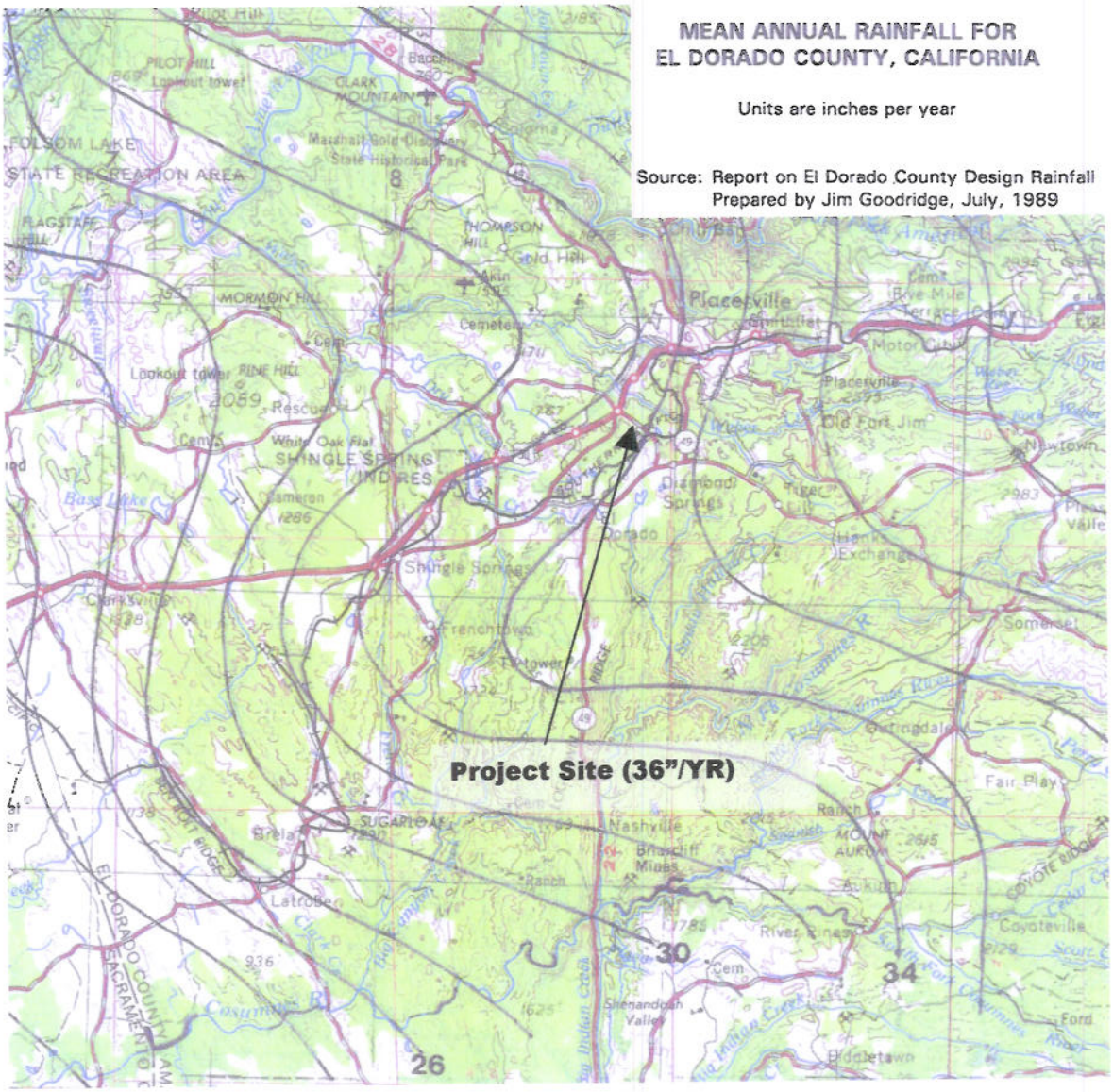
FORNI RETAIL PLAZA
SCALE: 1"=300'

USDA-SOIL CONSERVATION SERVICE

MEAN ANNUAL RAINFALL FOR EL DORADO COUNTY, CALIFORNIA

Units are inches per year

Source: Report on El Dorado County Design Rainfall
Prepared by Jim Goodridge, July, 1989



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ENGINEERING, INC.

PRE-DEVELOPMENT WATERSHEDS - COMPOSITE CURVE NUMBERS:

Note: This spreadsheet only calculates composite curve numbers for only those watershed basins which contain multiple soil types &/or uses.

1	Total Watershed Area	11.1	acres			
	Soil Type	% of Watershed	Hydrol. Soil Group	approx. Area (ac.)	CN	CN*A
	Residential - 1 acre lot size - BhC	28%	C	3.14	70	219.8
	Residential - 1 acre lot size - BkE	22%	C	2.47	70	172.9
	Residential - 1 acre lot size - AxD	50%	D	5.5	84	464.5
	Subtotal	100%		11.1		857.2
	CN =	77				
2	Total Watershed Area	4.5	acres			
	Soil Type	% of Watershed	Hydrol. Soil Group	approx. Area (ac.)	CN	CN*A
	Commercial - BhC	82%	C	3.71	94	348.402
	Commercial - AxD	18%	D	0.8	95	77.3
	Subtotal	100%		4.5		425.7
	CN =	94				
3	Total Watershed Area	12.4	acres			
	Soil Type	% of Watershed	Hydrol. Soil Group	approx. Area (ac.)	CN	CN*A
	Boomer Series - BhC	47%	C	5.9	70	409.5
	Auburn Series - AxD	7%	D	0.9	77	69.3
	Boomer Series - BkE	27%	C	3.4	70	238.0
	Residential - 1 acre lot size - BkE & BhC	18%	C	2.3	79	180.1
	Subtotal	100%		12.4		896.9
	CN =	72				
4	Total Watershed Area	3.9	acres			
	Soil Type	% of Watershed	Hydrol. Soil Group	approx. Area (ac.)	CN	CN*A
	Boomer Series - BhC	39%	C	1.51	70	105.7
	Placcer Diggings - PrD	60%	D	2.3	77	180.2
	Subtotal	100%		3.9		285.9
	CN =	73				

POST-DEVELOPMENT WATERSHEDS - COMPOSITE CURVE NUMBERS:

Note: This spreadsheet only calculates composite curve numbers for only those watershed basins which contain multiple soil types &/or uses.

1	Total Watershed Area	11.1	acres			
	Soil Type	% of Watershed	Hydrol. Soil Group	approx. Area (ac.)	CN	CN*A
	Residential - 1 acre lot size - BhC	28%	C	3.14	70	219.8
	Residential - 1 acre lot size - BkE	22%	C	2.47	70	172.9
	Residential - 1 acre lot size - AxD	50%	D	5.5	84	464.5
	Subtotal	100%		11.1		857.2
	CN =	77				
2	Total Watershed Area	4.5	acres			
	Soil Type	% of Watershed	Hydrol. Soil Group	approx. Area (ac.)	CN	CN*A
	Commercial - BhC	82%	C	3.71	94	348.402
	Commercial - AxD	18%	D	0.8	95	77.3
	Subtotal	100%		4.5		425.7
	CN =	94				
3	Total Watershed Area	12.4	acres			
	Soil Type	% of Watershed	Hydrol. Soil Group	approx. Area (ac.)	CN	CN*A
	Boomer Series - BhC	47%	C	5.9	70	409.5
	Auburn Series - AxD	7%	D	0.9	77	69.3
	Boomer Series - BkE	27%	C	3.4	70	238.0
	Residential - 1 acre lot size - BkE & BhC	18%	C	2.3	79	180.1
	Subtotal	100%		12.4		896.9
	CN =	72				
4	Total Watershed Area	2.6	acres			
	Soil Type	% of Watershed	Hydrol. Soil Group	approx. Area (ac.)	CN	CN*A
	Commercial - BhC	57%	C	1.49	94	140.06
	Commercial - PrD	43%	D	1.1	95	105.5
	Subtotal	100%		2.6		245.5
	CN =	94				

In either case, the travel time is the flow path length divided by the velocity.

Channel flow: The velocity of flow in a clearly-defined channel is estimated with Manning's equation, assuming discharge equal the average annual value (2-yr event). If this discharge is unknown, the regression equation presented in Appendix 2.5 can be used to provide an estimate. The channel-flow travel time is the channel length divided by the velocity.

Table 2.4.3 Overland-flow Roughness Coefficients (Source: SCS, 1986)

Surface description (1)	Overland flow n (2)
Smooth surfaces (concrete, asphalt, gravel, or bare soil	0.011
Fallow (no residue)	0.05
Cultivated soils:	
Residue cover < 20%	0.06
Residue cover > 20%	0.17
Grass:	
Short grass prairie	0.15
Dense grasses	0.24
Bermuda	0.41
Range (natural)	0.13
Woods:	
Light underbrush	0.40
Dense underbrush	0.80

When the various travel times are determined, t_c can be computed as the sum. The UH lag is estimated as 60% t_c, and Eq. 2.4.5 is solved to find the UH peak. In the solution of Eq. 2.4.6, it is convenient to select ΔD equal the computation time step. Then the resulting UH can be used directly with rainfall excess, which is computed with this same time step, to estimate the runoff hydrograph.

Fig. 2.4.2 shows the 10-min UH developed for an example 5-sq mi catchment in which t_c = 1 hr. In that case, lag = 0.60 hr. Solving Eq. 2.4.6 yields T_p = 0.68 hr. Eq. 2.4.5 yields q_p = 3541.5 cfs/in. of excess rainfall. To develop the UH, values in cols. 1 and 3 of Table 2.4.2 are multiplied by T_p, and the values in cols. 2 and 4 are multiplied by q_p. To compute storm runoff, Eq. 2.4.4 is solved with the UH and excess.

Table 2-2c.—Runoff curve numbers for other agricultural lands[1]

Cover description		Curve numbers for hydrologic soil group—			
Cover type	Hydrologic condition	A	B	C	D
Pasture, grassland, or range—continuous forage for grazing.[2]	Poor	68	79	86	89
	Fair	49	69	79	84
	Good	39	61	74	80
Meadow—continuous grass, protected from grazing and generally mowed for hay.	—	30	58	71	78
Brush—brush-weed-grass mixture with brush the major element.[3]	Poor	48	67	77	83
	Fair	35	56	70	77
	Good	[4]30	48	65	73
Woods—grass combination (orchard or tree farm).[5]	Poor	57	73	82	86
	Fair	43	65	76	82
	Good	32	58	72	79
Woods.[6]	Poor	45	66	77	83
	Fair	36	60	73	79
	Good	[4]30	55	70	77
Farmsteads—buildings, lanes, driveways, and surrounding lots.	—	59	74	82	86

[1]Average runoff condition, and $I_a = 0.2S$.

[2]*Poor:* <50% ground cover or heavily grazed with no mulch.
Fair: 50 to 75% ground cover and not heavily grazed.
Good: >75% ground cover and lightly or only occasionally grazed.

[3]*Poor:* <50% ground cover.
Fair: 50 to 75% ground cover.
Good: >75% ground cover.

[4]Actual curve number is less than 30; use CN = 30 for runoff computations.

[5]CN's shown were computed for areas with 50% woods and 50% grass (pasture) cover. Other combinations of conditions may be computed from the CN's for woods and pasture.

[6]*Poor:* Forest litter, small trees, and brush are destroyed by heavy grazing or regular burning.
Fair: Woods are grazed but not burned, and some forest litter covers the soil.
Good: Woods are protected from grazing, and litter and brush adequately cover the soil.

Table 2-2a.—Runoff curve numbers for urban areas[1]

Cover description		Curve numbers for hydrologic soil group—			
Cover type and hydrologic condition	Average percent impervious area[2]	A	B	C	D
Fully developed urban areas (vegetation established)					
Open space (lawns, parks, golf courses, cemeteries, etc.)[3]:					
Poor condition (grass cover < 50%)		68	79	86	89
Fair condition (grass cover 50% to 75%)		49	69	79	84
Good condition (grass cover > 75%)		39	61	74	80
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)		98	98	98	98
Streets and roads:					
Paved; curbs and storm sewers (excluding right-of-way)		98	98	98	98
Paved; open ditches (including right-of-way)		83	89	92	93
Gravel (including right-of-way)		76	85	89	91
Dirt (including right-of-way)		72	82	87	89
Western desert urban areas:					
Natural desert landscaping (pervious areas only)[4]		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders)		96	96	96	96
Urban districts:					
Commercial and business	85	89	92	94	95
Industrial	72	81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town houses)	65	77	85	90	92
1/4 acre	38	61	75	83	87
1/3 acre	30	57	72	81	86
1/2 acre	25	54	70	80	85
1 acre	20	51	68	79	84
2 acres	12	46	65	77	82
Developing urban areas					
Newly graded areas (pervious areas only, no vegetation)[5]		77	86	91	94
Idle lands (CN's are determined using cover types similar to those in table 2-2c).					

[1]Average runoff condition, and $I_a = 0.2S$.
[2]The average percent impervious area shown was used to develop the composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. CN's for other combinations of conditions may be computed using figure 2-3 or 2-4.
[3]CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.
[4]Composite CN's for natural desert landscaping should be computed using figures 2-3 or 2-4 based on the impervious area percentage (CN = 98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.
[5]Composite CN's to use for the design of temporary measures during grading and construction should be computed using figure 2-3 or 2-4, based on the degree of development (impervious area percentage) and the CN's for the newly graded pervious areas.

El Dorado Design Rainfall P2

Rainfall Depth in Inches for Return Period = 2.33 years

Mean Annual Precipitation	5 Min	10 Min	15 Min	30 Min	1 Hr	2 Hrs	3 Hrs	6 Hrs	12 Hrs	24 Hrs
20	0.113	0.162	0.200	0.286	0.410	0.587	0.723	1.035	1.481	2.120
22	0.120	0.172	0.212	0.304	0.435	0.623	0.768	1.099	1.572	2.249
24	0.128	0.183	0.225	0.322	0.461	0.660	0.814	1.165	1.667	2.385
26	0.135	0.193	0.238	0.341	0.488	0.698	0.860	1.231	1.762	2.521
28	0.142	0.203	0.251	0.359	0.514	0.735	0.907	1.298	1.857	2.657
30	0.149	0.214	0.264	0.377	0.540	0.773	0.953	1.364	1.952	2.793
32	0.157	0.224	0.277	0.396	0.566	0.810	1.000	1.430	2.047	2.929
34	0.164	0.235	0.289	0.414	0.593	0.848	1.046	1.497	2.142	3.065
36	0.171	0.245	0.302	0.433	0.619	0.886	1.092	1.563	2.237	3.200
38	0.179	0.256	0.315	0.451	0.645	0.923	1.139	1.629	2.332	3.336
40	0.186	0.266	0.328	0.469	0.671	0.961	1.185	1.696	2.426	3.472
42	0.193	0.276	0.341	0.488	0.698	0.998	1.231	1.762	2.521	3.608
44	0.200	0.287	0.354	0.506	0.724	1.036	1.278	1.828	2.616	3.744
46	0.208	0.297	0.366	0.524	0.750	1.074	1.324	1.895	2.711	3.880
48	0.512	0.308	0.379	0.543	0.777	1.111	1.370	1.961	2.806	4.016
50	0.222	0.318	0.392	0.561	0.803	1.149	1.417	2.027	2.901	4.152
52	0.229	0.328	0.405	0.579	0.829	1.186	1.463	2.094	2.996	4.287
54	0.237	0.339	0.418	0.598	0.855	1.224	1.510	2.160	3.091	4.423
56	0.244	0.349	0.431	0.616	0.882	1.262	1.556	2.226	3.186	4.559
58	0.251	0.360	0.443	0.634	0.908	1.299	1.602	2.293	3.281	4.695
60	0.259	0.370	0.456	0.653	0.934	1.337	1.649	2.359	3.376	4.831
62	0.266	0.380	0.469	0.671	0.960	1.374	1.695	2.425	3.471	4.967
64	0.273	0.391	0.482	0.690	0.987	1.412	1.741	2.492	3.566	5.103
66	0.280	0.401	0.495	0.708	1.013	1.450	1.788	2.558	3.661	5.238
68	0.288	0.412	0.508	0.726	1.039	1.487	1.834	2.625	3.756	5.374
70	0.295	0.422	0.520	0.745	1.066	1.525	1.880	2.691	3.851	5.510
72	0.302	0.432	0.533	0.763	1.092	1.562	1.927	2.757	3.946	5.646
74	0.309	0.443	0.546	0.781	1.118	1.600	1.973	2.824	4.040	5.782
76	0.317	0.453	0.559	0.800	1.144	1.638	2.020	2.890	4.135	5.918
78	0.324	0.464	0.572	0.818	1.171	1.675	2.066	2.956	4.230	6.054
80	0.331	0.474	0.585	0.836	1.197	1.713	2.112	3.023	4.325	6.189
82	0.339	0.484	0.597	0.855	1.223	1.750	2.159	3.089	4.420	6.325
84	0.346	0.495	0.610	0.873	1.250	1.788	2.205	3.155	4.515	6.461
86	0.353	0.505	0.623	0.892	1.276	1.826	2.251	3.222	4.610	6.597
88	0.360	0.516	0.636	0.910	1.302	1.863	2.298	3.288	4.705	6.733
90	0.368	0.526	0.649	0.928	1.328	1.901	2.344	3.354	4.800	6.869

Source: Design Rainfall Tables for El Dorado County, prepared by Jim Goodridge, July 29, 1989

Mean Annual Percipitation	Rainfall Intensity in inches per hour for Return Period = 10 years									
	5Min	10Min	15Min	30Min	1Hr	2Hrs	3Hrs	6 Hrs	12Hrs	24 Hrs
20	2.004	1.434	1.179	.843	.603	.432	.355	.254	.182	.130
22	2.127	1.522	1.251	.895	.640	.458	.377	.270	.193	.138
24	2.255	1.613	1.326	.949	.679	.486	.399	.286	.204	.146
26	2.383	1.705	1.402	1.003	.718	.514	.422	.302	.216	.155
28	2.512	1.797	1.478	1.057	.756	.541	.445	.318	.228	.163
30	2.640	1.889	1.553	1.111	.795	.569	.468	.335	.239	.171
32	2.769	1.981	1.629	1.165	.834	.597	.490	.351	.251	.180
34	2.897	2.073	1.704	1.219	.872	.624	.513	.367	.263	.188
36	3.026	2.165	1.780	1.273	.911	.652	.536	.383	.274	.196
38	3.154	2.257	1.855	1.327	.950	.680	.559	.400	.286	.205
40	3.282	2.349	1.931	1.381	.988	.707	.581	.416	.298	.213
42	3.411	2.440	2.006	1.436	1.027	.735	.604	.432	.309	.221
44	3.539	2.532	2.082	1.490	1.066	.763	.627	.449	.321	.230
46	3.668	2.624	2.157	1.544	1.104	.790	.650	.465	.333	.238
48	3.796	2.716	2.233	1.598	1.143	.818	.672	.481	.344	.246
50	3.925	2.808	2.309	1.652	1.182	.846	.695	.497	.356	.255
52	4.053	2.900	2.384	1.706	1.221	.873	.718	.514	.368	.263
54	4.181	2.992	2.460	1.760	1.259	.901	.741	.530	.379	.271
56	4.310	3.084	2.535	1.814	1.298	.929	.763	.546	.391	.280
58	4.438	3.176	2.611	1.868	1.337	.956	.786	.563	.402	.288
60	4.567	3.267	2.686	1.922	1.375	.984	.809	.579	.414	.296
62	4.695	3.359	2.762	1.976	1.414	1.012	.832	.595	.426	.305
64	4.824	3.451	2.837	2.030	1.453	1.039	.854	.611	.437	.313
66	4.952	3.543	2.913	2.084	1.491	1.067	.877	.628	.449	.321
68	5.081	3.635	2.989	2.138	1.530	1.095	.900	.644	.461	.330
70	5.209	3.727	3.064	2.192	1.569	1.122	.923	.660	.472	.338
72	5.337	3.819	3.140	2.246	1.607	1.150	.945	.676	.484	.346
74	5.466	3.911	3.215	2.300	1.646	1.178	.968	.693	.496	.355
76	5.594	4.003	3.291	2.354	1.685	1.205	.991	.709	.507	.363
78	5.723	4.095	3.366	2.409	1.723	1.233	1.014	.725	.519	.371
80	5.851	4.186	3.442	2.463	1.762	1.261	1.036	.742	.531	.380
82	5.980	4.278	3.517	2.517	1.801	1.288	1.059	.758	.542	.388
84	6.108	4.370	3.593	2.571	1.839	1.316	1.082	.774	.554	.396
86	6.236	4.462	3.668	2.625	1.878	1.344	1.105	.790	.566	.405
88	6.365	4.554	3.744	2.679	1.917	1.371	1.127	.807	.577	.413
90	6.493	4.646	3.820	2.733	1.955	1.399	1.150	.823	.589	.421

7/24/89 Note older versions are superseded
12:08 PM Prepared by Jim Goodridge 916 345 3106

Mean Annual Precipitation	Rainfall Intensity in inches per hour for Return Period = 100 years									
	5Min	10Min	15Min	30Min	1Hr	2Hrs	3Hrs	6 Hrs	12Hrs	24 Hrs
20	2.840	2.032	1.671	1.195	.855	.612	.503	.360	.258	.184
22	3.014	2.157	1.773	1.269	.908	.649	.534	.382	.273	.196
24	3.196	2.287	1.880	1.345	.963	.689	.566	.405	.290	.207
26	3.378	2.417	1.987	1.422	1.017	.728	.598	.428	.306	.219
28	3.561	2.548	2.094	1.499	1.072	.767	.631	.451	.323	.231
30	3.743	2.678	2.202	1.575	1.127	.806	.663	.474	.339	.243
32	3.925	2.808	2.309	1.652	1.182	.846	.695	.497	.356	.255
34	4.107	2.938	2.416	1.728	1.237	.885	.727	.520	.372	.266
36	4.289	3.069	2.523	1.805	1.291	.924	.760	.544	.389	.278
38	4.471	3.199	2.630	1.882	1.346	.963	.792	.567	.405	.290
40	4.653	3.329	2.737	1.958	1.401	1.002	.824	.590	.422	.302
42	4.835	3.459	2.844	2.035	1.456	1.042	.856	.613	.438	.314
44	5.017	3.590	2.951	2.112	1.511	1.081	.889	.636	.455	.326
46	5.199	3.720	3.058	2.188	1.566	1.120	.921	.659	.471	.337
48	5.381	3.850	3.165	2.265	1.620	1.159	.953	.682	.488	.349
50	5.563	3.980	3.272	2.341	1.675	1.199	.985	.705	.504	.361
52	5.745	4.111	3.380	2.418	1.730	1.238	1.018	.728	.521	.373
54	5.927	4.241	3.487	2.495	1.785	1.277	1.050	.751	.537	.385
56	6.109	4.371	3.594	2.571	1.840	1.316	1.082	.774	.554	.396
58	6.291	4.501	3.701	2.648	1.895	1.356	1.114	.797	.571	.408
60	6.473	4.632	3.808	2.725	1.949	1.395	1.147	.820	.587	.420
62	6.656	4.762	3.915	2.801	2.004	1.434	1.179	.844	.604	.432
64	6.838	4.892	4.022	2.878	2.059	1.473	1.211	.867	.620	.444
66	7.020	5.022	4.129	2.954	2.114	1.512	1.243	.890	.637	.455
68	7.202	5.153	4.236	3.031	2.169	1.552	1.276	.913	.653	.467
70	7.384	5.283	4.343	3.108	2.223	1.591	1.308	.936	.670	.479
72	7.566	5.413	4.450	3.184	2.278	1.630	1.340	.959	.686	.491
74	7.748	5.544	4.558	3.261	2.333	1.669	1.372	.982	.703	.503
76	7.930	5.674	4.665	3.338	2.388	1.709	1.405	1.005	.719	.514
78	8.112	5.804	4.772	3.414	2.443	1.748	1.437	1.028	.736	.526
80	8.294	5.934	4.879	3.491	2.498	1.787	1.469	1.051	.752	.538
82	8.476	6.065	4.986	3.567	2.552	1.826	1.501	1.074	.769	.550
84	8.658	6.195	5.093	3.644	2.607	1.865	1.534	1.097	.785	.562
86	8.840	6.325	5.200	3.721	2.662	1.905	1.566	1.120	.802	.574
88	9.022	6.455	5.307	3.797	2.717	1.944	1.598	1.143	.818	.585
90	9.204	6.586	5.414	3.874	2.772	1.983	1.630	1.167	.835	.597

7/24/89 Note older versions are superseded
12:08 PM Prepared by Jim Goodridge 916 345 3106

In either case, the travel time is the flow path length divided by the velocity.

Channel flow: The velocity of flow in a clearly-defined channel is estimated with Manning's equation, assuming discharge equal the average annual value (2-yr event). If this discharge is unknown, the regression equation presented in Appendix 2.5 can be used to provide an estimate. The channel-flow travel time is the channel length divided by the velocity.

Table 2.4.3 Overland-flow Roughness Coefficients (Source: SCS, 1986)

Surface description (1)	Overland flow n (2)
Smooth surfaces (concrete, asphalt, gravel, or bare soil	0.011
Fallow (no residue)	0.05
Cultivated soils:	
Residue cover < 20%	0.06
Residue cover > 20%	0.17
Grass:	
Short grass prairie	0.15
Dense grasses	0.24
Bermuda	0.41
Range (natural)	0.13
Woods:	
Light underbrush	0.40
Dense underbrush	0.80

When the various travel times are determined, t_c can be computed as the sum. The UH lag is estimated as 60% t_c, and Eq. 2.4.5 is solved to find the UH peak. In the solution of Eq. 2.4.6, it is convenient to select ΔD equal the computation time step. Then the resulting UH can be used directly with rainfall excess, which is computed with this same time step, to estimate the runoff hydrograph.

Fig. 2.4.2 shows the 10-min UH developed for an example 5-sq mi catchment in which t_c = 1 hr. In that case, lag = 0.60 hr. Solving Eq. 2.4.6 yields T_p = 0.68 hr. Eq. 2.4.5 yields q_p = 3541.5 cfs/in. of excess rainfall. To develop the UH, values in cols. 1 and 3 of Table 2.4.2 are multiplied by T_p, and the values in cols. 2 and 4 are multiplied by q_p. To compute storm runoff, Eq. 2.4.4 is solved with the UH and excess.

Appendix G:
El Dorado Irrigation District Facility Improvement Letter

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El Dorado Irrigation District

Letter No.: EEO 2016-0717

June 16, 2016

VIA FIRST-CLASS MAIL

Leonard Grado
Grado Equities VII, LLC
4330 Golden Center Drive, Suite D
Placerville, CA 95667

Subject: Facility Improvement Letter (FIL), Creekside Plaza
Assessor's Parcel No. 327-211-14, 16, 25 (Diamond Springs)

Dear Mr. Grado:

This letter is in response to your request dated May 20, 2016 and is valid for a period of three years. If facility improvement plans for your project are not submitted to El Dorado Irrigation District (EID or District) within three years of the date of this letter, a new Facility Improvement Letter will be required.

Design drawings for your project must be in conformance with the District's *Water, Sewer and Recycled Water Design and Construction Standards*.

This project is a commercial development on 4.1 acres. Water service, sewer service, private fire service and fire hydrants are requested. The property is within the District boundary.

This letter is not a commitment to serve, but does address the location and approximate capacity of existing facilities that may be available to serve your project.

Water Supply
As of January 1, 2015, there were 5,094 equivalent dwelling units (EDUs) of water supply available in the Western/Eastern Water Supply Region. Your project as proposed on this date would require 1 additional EDU of water supply.

Water Facilities
A 10-inch water line is located in Forni Road and a 6-inch water line is located near the northwest property boundary in Missouri Flat Road (see enclosed System Map). The Diamond Springs/El Dorado Fire Protection District has determined that the minimum fire flow for this project is 1,875 GPM for a two-hour duration while maintaining a 20-psi residual pressure. According to the District's hydraulic model, the existing system can deliver the required fire flow. In order to provide this fire flow and receive service, you must construct a water line extension connecting to the 10-inch waterline in Forni Road to the 6-inch water line located near the northwest corner of the project. These two water lines currently operate at different hydraulic grade lines and will need to be isolated with a normally close valve near the connection to the 6-inch water line. Future system modifications are anticipated that will allow the water lines to operate in a common pressure zone. The hydraulic grade line for the existing water

distribution facilities is 2,050 feet above mean sea level at static conditions and 1,990 feet above mean sea level during fire flow and maximum demands.

The flow predicted above was developed using a computer model and is not an actual field flow test.

Sewer Facilities
There is a 6-inch gravity sewer line located near the northern property line of the project. The Herbert Green Lift Station is also located immediately north of the project site. This sewer line and lift station have adequate capacity at this time. In order to receive service from this line, an extension of facilities of adequate size and meeting District design criteria must be constructed. Your project as proposed on this date would require 3 EDUs of sewer service.

Easement Requirements
Proposed water lines, sewer lines and related facilities must be located within an easement accessible by conventional maintenance vehicles. When the water lines or sewer lines are within streets, they shall be located within the paved section of the roadway. No structures will be permitted within the easements of any existing or proposed facilities. The District must have unobstructed access to these easements at all times, and generally does not allow water or sewer facilities along lot lines.

Easements for any new District facilities constructed by this project must be granted to the District prior to District approval of water and/or sewer improvement plans, whether on site or off site. In addition, due to either nonexistent or prescriptive easements for some older facilities, any existing on-site District facilities that will remain in place after the development of this property must also have an easement granted to the District.

Environmental
The County is the lead agency for environmental review of this project per Section 15051 of the California Environmental Quality Act Guidelines (CEQA). The County's environmental document should include a review of both off-site and on-site water and sewer facilities that may be constructed by this project. You may be requested to submit a copy of the County's environmental document to the District if your project involves significant off-site facilities. If the County's environmental document does not address all water and sewer facilities and they are not exempt from environmental review, a supplemental environmental document will be required. This document would be prepared by a consultant. It could require several months to prepare and you would be responsible for its cost.

Summary
Service to this proposed development is contingent upon the following:

- The availability of uncommitted water supplies at the time service is requested;
- Approval of the County's environmental document by the District (if requested);
- Executed grant documents for all required easements;
- Approval of an extension of facilities application by the District;
- Approval of facility improvement plans by the District;

- Construction by the developer of all on-site and off-site proposed water and sewer facilities;
- Acceptance of these facilities by the District; and
- Payment of all District connection costs.

Services shall be provided in accordance with El Dorado Irrigation District Board Policies and Administrative Regulations, as amended from time-to-time. As they relate to conditions of and fees for extension of service, District Administrative Regulations will apply as of the date of a fully executed Extension of Facilities Agreement.

If you have any questions, please contact me at (530) 642-4054.

Sincerely,

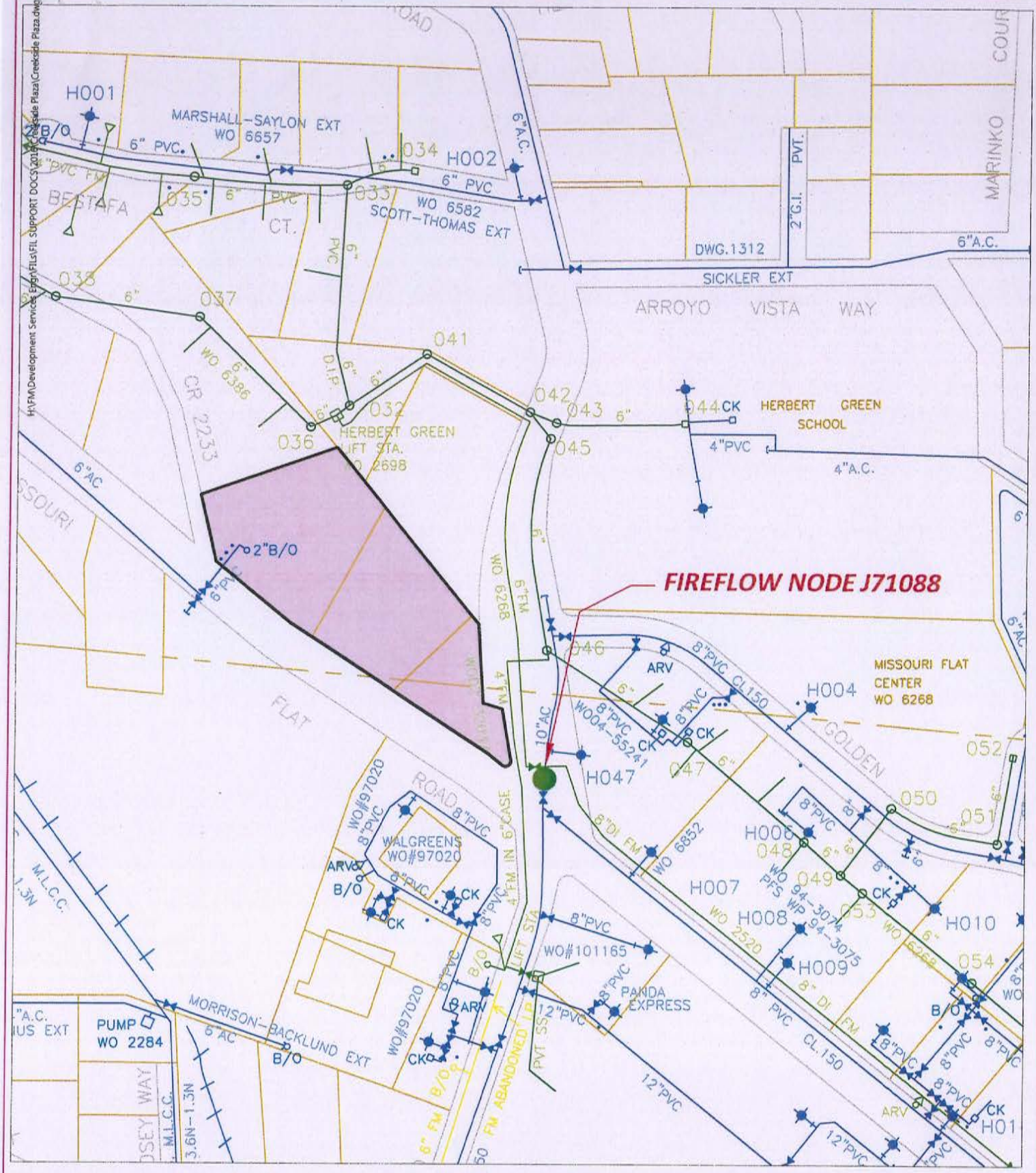
Michael J. Brink, P.E.
Supervising Civil Engineer

MB/MM:at

Enclosures: System Map

cc w/ System Map:
Roger Trout, Director
El Dorado County Development Services Department
Via email - roger.trout@edcgov.us

Lori Tuthill – Administrative Assistant
Diamond Springs / El Dorado Fire Protection District
Via email - ltuthill@diamondfire.org



El Dorado Irrigation District
System Map

DATE: June 10. 2016

WARNING: For schematic purposes only.
Exact pipe location must be
field verified.

Creekside Plaza

WATERLINE

SEWERLINE

Scale: 1" = 250'

APN: 327-211-14,16+25