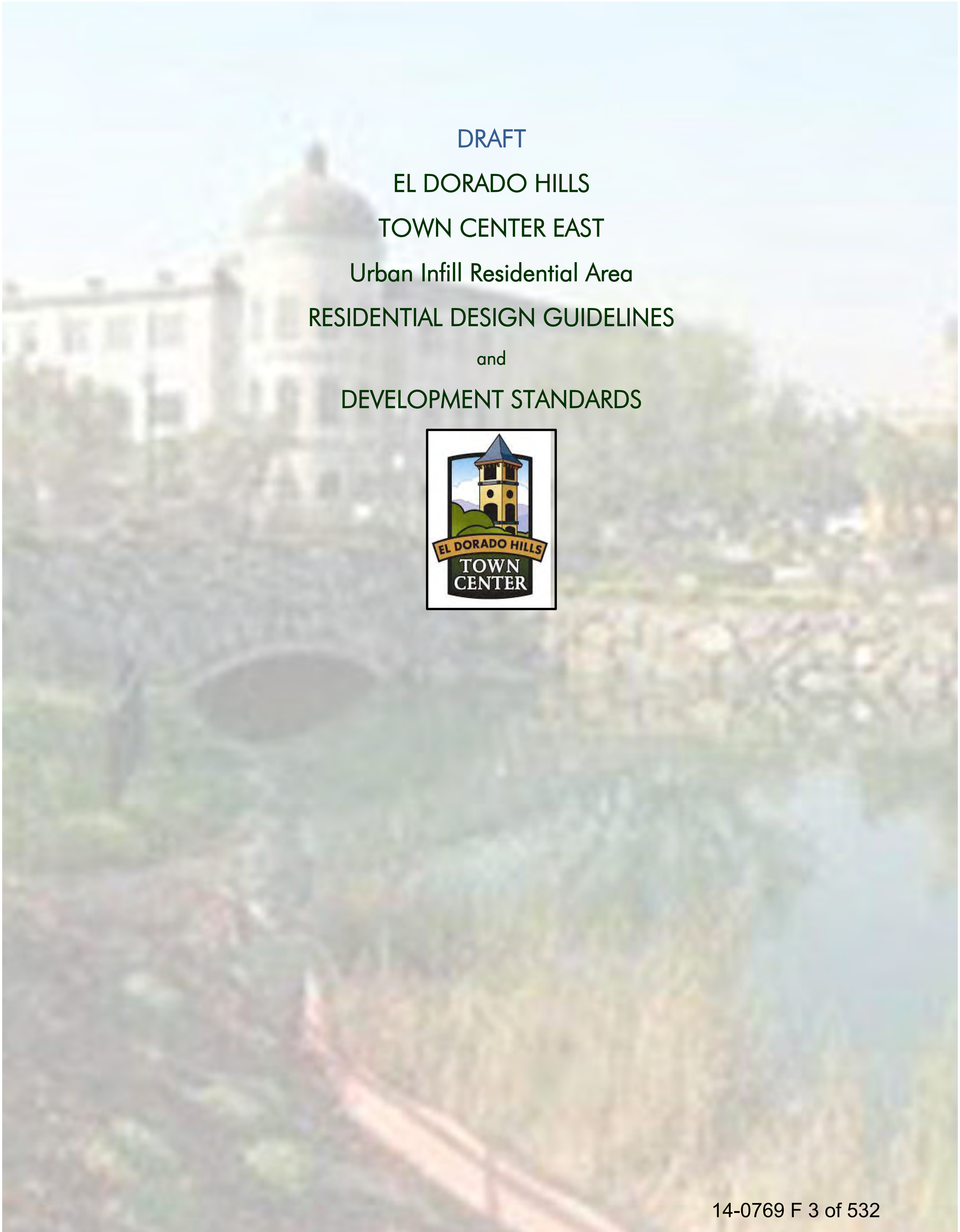
APPENDICES

APPENDIX A - RESIDENTIAL DESIGN GUIDELINES



DRAFT

EL DORADO HILLS

TOWN CENTER EAST

Urban Infill Residential Area

RESIDENTIAL DESIGN GUIDELINES

and

DEVELOPMENT STANDARDS

1. INTRODUCTION AND PURPOSE

In adopting the nearly 4,000 acre El Dorado Hills Specific Plan, the County of El Dorado approved a site along US Highway 50 at the El Dorado Hills Boulevard/Latrobe interchange to be designated in the Specific Plan as Villages T and U. Known as El Dorado Hills Town Center, these villages were "intended to provide for commercial uses of greater variety and at a higher intensity than provided elsewhere in the Specific Plan area or in the greater El Dorado Hills/Cameron Park area." The site is currently zoned General Commercial/Planned Development (GC/PD) and is secured by a Development Agreement between the property owner and the County of El Dorado. The Town Center ultimately is expected to be the "hub of economic development in western El Dorado County" and "a major mode of economic and retail activity on the eastern side of the Sacramento Metropolitan region."

Government Code section 65890.1 and the El Dorado General Plan Housing Element encourage land use patterns that balance the location of employment generating uses with residential uses in order to reduce commuting. The construction of a high density residential component in close proximity of the retail commercial uses developed at the Town Center would substantially improve the jobs-housing balance, stated in Table HO-13 of the Housing Element to be well below the minimums suggested in the State General Plan Guidelines.

Neither the existing El Dorado Hills Specific Plan nor the El Dorado Hills Town Center East Development Plan currently include high density residential development to (1) complement the commercial development, (2) provide housing for employees, and (3) reduce traffic impacts by providing proximity of residential to shopping and employment opportunities. This condition prompts the need for amendments to the County documents, and within these amendments it is necessary to include standards, design guidelines, and other design policies that will enable residential uses within Planning Area 2 to conform to the level of quality and content shown in other Planning Areas within Town Center East.

1.1 Purpose

The purpose of these Design Guidelines and Standards is to direct the orderly development of a 4.6-acre parcel at the northwest corner of Town Center Boulevard and Vine Street in El Dorado Hills Town Center East (TCE), designated in the General Plan as an urban infill residential area. These guidelines and standards are prepared in coordination with the goals and policies of the El Dorado Hills Specific Plan to serve as part of the El Dorado Hills Town Center East Development Plan. The guidelines and standards set forth here are meant to provide direction for modifications to Planning Area 2 of the Town Center East PD Plan to include multifamily residential use for the urban infill residential area located between Town Center Boulevard and Mercedes Lane in the Town Center East Development within the project area is intended to conform to the overall theme and standard of quality in the TCE . The standards to be applied are expressed by the El Dorado County Zoning Ordinance, as implemented in the Planned Development Overlay Zone and amplified by these Residential Development Guidelines and Standards.

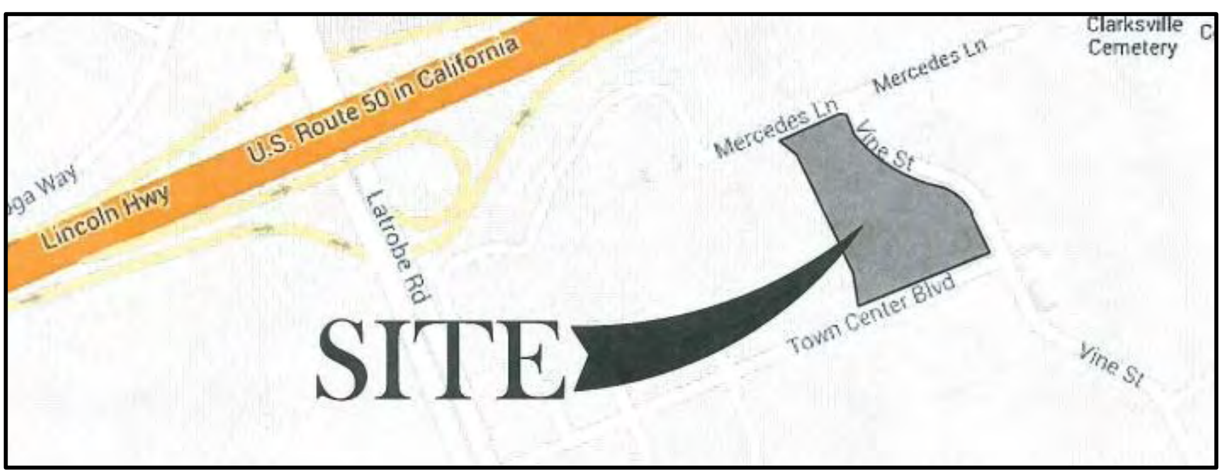
These Development Standards and Guidelines shall (1) provide information regarding design for potential developers within this Plan Area within Town Center East and (2) provide Planning Staff with a reference document for use in reviewing high density residential project proposals within the urban infill residential area.

1.2 "Main Street" Character and the Natural Setting

The subject site lies at the heart of Town Center East, overlooking the Central Creek Corridor and comprising critical segment of Town Center Boulevard as it approaches the intersection at Vine Street at the movie theater. The "main street" character that is embodied in the existing Town Center Boulevard must be continued consistently across the Central Creek Corridor bridge and across the new multi-family project streetscape. It is the intent of these Guidelines to maintain and specify an architectural, landscape architectural, lighting, and signage program that ensures consistency along this corridor at the heart of the community. In this way, residential uses will be effectively integrated into the existing commercial and open space feel of El Dorado Hills.

1.3 Site Location

The urban infill residential area described in the following guidelines is located in the Planning Area 2 of Town Center East, from north to south between Mercedes Lane and Town Center Boulevard, and from east to west between Vine Street and the Central Creek Corridor.



Site Location

Site Aerial


Site as seen across Central Creek Corridor

1.4 Exceptions

These Guidelines and Standards are specifically intended to pertain specifically to multifamily residential use within the urban infill residential area. Any and all other existing uses (i.e., Commercial uses) shall remain under the existing Town Center East Development Plan Standards and Guidelines as approved by the Board of Supervisors on August 15, 1995 and applicable revisions thereafter.

Furthermore, any design standards or elements not specifically addressed in this document shall revert to regulations and standards in the County Zoning Ordinance, the El Dorado Hills Specific Plan, and/or the Town Center East Development Plan. Project reviews and approvals shall follow procedures described in the existing Town Center East Development Plan Standards.

2. RESIDENTIAL DESIGN GUIDELINES

Residential Architectural Guidelines

2.1 Architectural Goals and Objectives - The Town Center East Development Plan architectural design constitutes a critical component of the project area that frames and determines the overall character and feel of both the project area and the surrounding neighborhood. To reinforce the Vision and guiding principles of Town Center East, the architecture should be designed to meet the needs of its residents and visitors and serve to attract the kinds of residents that will help maintain the high quality of living in the Town Center.

Following are the key goals and objectives of the architectural and site design of the Specific Plan:

2.1.1 *Sustainable Design*: Buildings should be designed to minimize energy use and provide a healthy, desirable living environment (see Section 3.4 for specific requirements).

2.1.2 *Quality and Character*: Architecture should be consistent and compatible with the context of the existing community and neighborhood. The buildings should be compatible with the existing buildings within both Town Center East and Town Center West. Elements of the buildings should incorporate the use of high quality materials and create buildings that are similar in quality to the existing Town Center developments.

Submittal of proposed plans are to be reviewed by the Town Center East Design Review Committee.

2.1.3 *Livability*: Building unit and space layout and design should be orchestrated to create an enjoyable living environment, reflecting present- day conveniences and lifestyles for its future inhabitants.

2.1.4 *Neighborhood Visual Impact*: The living faces of buildings should be located around the perimeter of the site and parking located on the interior of the site to maximize visibility of architectural character and minimize the impact of parking as seen from the surrounding streets and from the Town Center East Central Creek Corridor.

2.1.5 *Promotion of Use of Outdoor Spaces*: Site design should create and promote a healthy and safe walking environment through the use of paths, landscaping, and signage. Site design, layout, and siting also should serve to create a seamless transition between the project internal open spaces and the Town Center East public open spaces.

2.2. Architectural Character - The overall architectural character of Town Center East should be derived from the simple, utilitarian form and economy of means necessary in an earlier time in El Dorado County, expressed through the use of modern materials and contemporary ideas in architecture. The same structural clarity and invention of earlier days will be encouraged at Town Center East in today's vernacular.

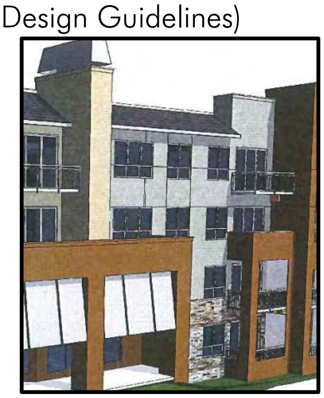
2.2.1 Buildings shall have substance and durability in both reality and appearance. A sense of "permanence" should characterize the image projected by all structural elements on site.

2.2.2 Architectural massing should be simple and regular, reflecting forms and character of earlier historic buildings in the region and within the Town Center.

2.2.3 Layout and Placement of Building Footprints should be orchestrated to create plazas, courtyards, and/or open private areas for tenants and their guests both in site interior areas and on sides connecting with the Central Creek Corridor system.

2.2.4 Architecture and site design shall respond to the regional climate by providing "indoor-outdoor" transitional spaces. Covered, shaded, and protected areas create visual depth and interest while providing shelter and appropriate pedestrian-scaled outdoor spaces for the residents and visitors. Some examples might include porches, patios, verandas, courtyards, loggias, trellises or arbors that create a covered walkway or gathering area to protect pedestrians from sun and provide aesthetic value.

2.3 Site Planning -"Site planning shall enhance and integrate building architecture, landscape architecture, color and signage through all stages of design." (Town Center Design Guidelines)



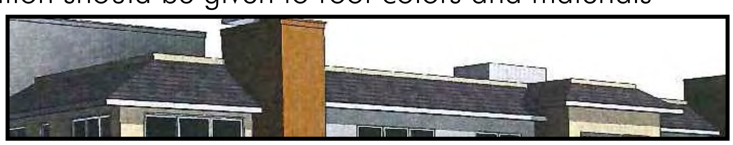
2.4 Architectural Design and Materials

2.4.1 <u>*Design Variation*</u>--.The effect of large monolithic building forms should be avoided by changes in color, texture and materials. Changes in roof plane, recesses in the façade, varied building setbacks, distinguishing chimneys or elevators, and other architectural techniques should be used to give the buildings interest and avoid the adverse effect of long unchanging facades

2.4.2 Building Entries—*"Individual projects shall provide a well-articulated, identifiable entry sequence from street to building."* (Town Center Design Guidelines) Entries should be enhanced by landscaping, paving, and effective signage features and be logically located and easily recognizable.

2.4.3 *Design Materials*—Design elements should include interesting use of varied and durable materials and colors that respond to the surroundings, both natural and man-made. Classic elements such as stucco, heavy timbers, brick or stone veneer are examples that replicate the surroundings and elements common to El Dorado County. Green materials that withstand local environmental conditions are strongly encouraged.

2.4.4 *Roof Materials* should be consistent with historical influences commonly seen in the Northern California and should be compatible with the overall style and character of the building façade. Wood shakes, composite shingles, and metal channeled roofing materials are examples of appropriate decorative roof areas. Flat roofs screened from street view by use of parapets or other roof forms are exempt from these requirements. Red clay tiles of the Spanish influence in Southern California are not acceptable. Consideration should be given to roof colors and materials that exceed Energy Star requirements to reduce the heat island effect.



2.4.5 *Building Colors*--Exterior colors and materials should be used to define the building form, details and massing. For the most part, more natural earth tones for large building elements should be maintained, with the potential for use of brighter colors as small detail accents.

2.5 Residential Lighting Guidelines

Lighting shall include project and building entry lighting, parking lot lighting, pathway lighting, and accent lighting for landscaping and architecture. Security lighting also should be included where necessary.

2.5.1 Lighting shall be designed to be consistent with the County's policies and Lighting provisions as found in the County Ordinance and in the Town Center East Development Plan—Appendix 4: "Specific Lighting Criteria."

The following guidelines and standards shall also apply:

2.5.2 _Lighting fixtures_ shall be designed to deflect light and glare from the viewsheds of adjacent parks and open space areas. Light from development in the Specific Plan Area shall not extend beyond the boundaries of the Plan Area. Cutoff type fixtures are preferred to minimize light spillage and glare.

3.1.3 _Lighting levels_ of outdoor lighting should not draw attention to the light source. Lighting fixtures in open parking areas shall be mounted with the light source parallel to the ground.

3.1.4 _Street_ Lighting--Any additional public and private street lighting fixtures, if required, shall be consistent with standards shown in Appendix 4 of the Town Center East Development Plan.

2.5.5 _Exterior architectural lighting_ shall use indirect light sources. Typically permissible lighting includes wall washing, overhead down lighting, interior lighting that extends outside, and decorative wall-mounted lights that are integral with the building.

2.5.6 _Wall-mounted security area lighting_ may be used in screened service areas when direct light and glare can be contained within these areas.

2.5.7 _Project common areas_, courtyards, arcades, swimming pool areas, and seating areas shall be adequately lighted to promote pedestrian use and safety. Special lighting effects may be created in these areas, provided it is consistent with the character and function of the area.

2.5.8 _Pedestrian stairs or ramps_ shall be adequately illuminated to draw attention to elevation changes and handrails. Bollards may also be used to supplement other pedestrian area lighting.

2.5.9 _Photometric_ Plans--If an Architecture and Site (A&S) application is required in the future for modifications that would affect lighting, site lighting photometric plans shall be included in the site plan application.

2.5.10 _Landscape lighting_ shall be designed for energy efficiency. Low and high-pressure sodium lamps are

recommended in common areas but prohibited on structures. Lighting design is encouraged to use

ENERGY STAR qualified hard-wired fixtures. All hard-wired lighting shall employ programmable photo-control or astronomical time-switch controls that automatically switch off when daylight is available.

2.6 Residential Landscape Guidelines

These Landscape Design Guidelines form the framework and basis for landscape design and implementation over the approximately 4.6-acre urban infill residential area. Landscaping will constitute a critical and defining component of this project in an effort to create a residential community that is compatible with the character, style, and quality of the Town Center area of El Dorado Hills. These landscape guidelines will address such issues as the appearance, nature, and sustainability measures required for the urban infill residential area. It is the intent to maintain consistency with the overall goals and principles of the Town Center East Development Plan, and to expand on them with additional standards and guidelines. It is further the intent of these landscape guidelines to outline a project that achieves the following objectives and standards:

2.6.1 ***Basic Objective*** – Landscaping will be planned, designed, and implemented to achieve results that reflect intelligent, aesthetic and sustainable practices. Prudent landscape design and implementation will result in reduced energy consumption, reduced greenhouse gas emissions, and the ability of the built landscape environment to sustain itself functionally and ecologically more successfully than landscapes designed under other "conventional" methods.

These community landscape elements include guidelines that define the character, aesthetics and functionality of the streetscape, amenity areas, open space system, walkways and other planted areas within the Plan Area. The overall quality of landscape design for the urban infill residential area as described in these Guidelines shall be guided by the implementation of landscape standards applied consistently throughout the Plan Area.

2.6.2 ***Landscape Character and Theme***

"The Center shall present a uniform landscaping, lighting, and signage treatment to ensure a desirable, attractive and safe environment," (EDH Specific Plan)

The landscaping component is to be designed to reflect the environment and character of this region in El Dorado County, with special attention to the natural look that gives the area its distinct identity. The landscape element of the urban infill residential area should achieve a visual balance between informal open space landscaping and more formal landscape elements— such as streetscape trees, project entry statements, and the project amenity areas--that help define and enhance the character of the residential community.

2.6.3 *Low Impact Development-* The landscape program should coordinate design efforts with site civil engineering design, and to the extent practical, reinforce the principles of Low Impact Development (LID) for storm drainage, runoff infiltration and groundwater recharge for the project open space areas by such measures as: (1) management of rainfall by using landscape design techniques and materials that infiltrate, filter, store, evaporate, and/or detain runoff as close to its source as feasible, (2) direction of storm water capture through small, cost-effective landscape features located at the site level, and/or (3) treatment devices as approved by the County.

2.6.4 *Heat Island Mitigation* - Parking areas (with the exception of parking structures), plazas, other hardscape areas and other potential "heat islands" should be mitigated by trees, vegetation, and other landscape screening/shading devices to (1) reduce heating and cooling energy use, (2) filter air pollution and greenhouse gas emissions, (3) remove air pollutants, sequester and store carbon, and (4) help lower the risk of heat-related illnesses.

2.6.5 *Strategic Climate Control* - Use of strategic shading techniques, plant selection, plant placement and use of deciduous tree species prudently in the landscape will reduce solar heat gain in the summer and maximize passive solar warming in winter months, especially for lower floor units of a high density, multi-story residential project. Where possible, careful and strategic planting and structure shading is encouraged around buildings and other project areas to (1) create south and west-facing shade during hot seasons and (2) allow sunlight in during cool seasons.

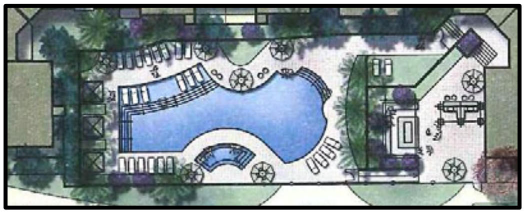
2.6.6 Fire Access – Planting shall be strategically located around buildings and throughout the project site such that fire vehicle and equipment access is facilitated. Landscape design and proposed tree locations shall be coordinated with the local Fire Marshal to ensure that adequate building access is provided to accommodate the Fire Department's needs.

2.6.7 *Aesthetics and Identity* - The urban infill residential area's landscaping should also emphasize design that establishes a strong identity and character of quality and distinction that typifies a high quality Town Center community. This includes such components as outdoor furniture, fences and walls, project entry features, plant selection, distinctive focal features, thematic lighting, screening/mitigation of undesirable views, site directional and identification signage, and other elements associated with tasteful landscape aesthetics.

2.6.8 *Landscape Art* – *"Works of art are encouraged in the development of outdoor spaces. The use of pools, sprays, fountains and sculptures and other elements of visual interest such as flags, banners, hangings, etc., are encouraged to be used where appropriate. (Town Center Design Guidelines)*

2.6.9 ***Streetscapes*** - Streetscape design and implementation along Town Center Drive shall remain conformed to the existing Town Center landscape plan, guidelines and standards as established and installed along Town Center Boulevard.

2.6.10 ***Walls and Fences*** – *"All walls and fences shall be of a design compatible with adjacent architecture. Height of walls and fences shall be as required for their intended use…"* (Town Center Design Guidelines)

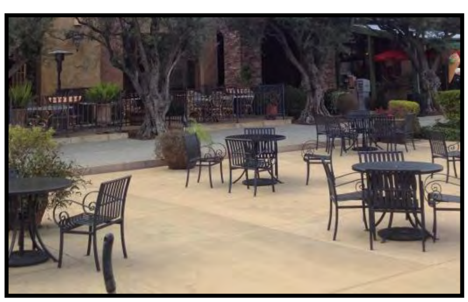


4.1.11 ***Interior Courtyards, Pools and Common Areas*** – ***"****Opportunities shall be provided for outdoor and indoor public activity areas, including space for cultural events, organizational meetings, recreational areas, and public seating accommodations."* (EDH Specific Plan).

High density residential housing necessitates an intelligent and effective treatment and design of open space areas and common courtyards. Appropriate shading, screening, and landscape furniture should be used to create a "human scale" within these areas surrounded by buildings. Arbors, decorative retaining walls, dining areas, patios, fire pits, benches, tables, well-designed swimming pools, and other features should be used to define and create inviting spaces and encourage outdoor use within the high density community. (see Section 3.2.4 above)

2.6.12 ***Paving and Hardscape*** - Where appropriate or practical, the use of special paving materials such as, interlocking pavers, exposed aggregate, or other such materials is recommended in areas of high pedestrian activity or community gathering to create design interest and a sense of quality in these key locations. If soil conditions allow, paving areas may utilize permeable paving techniques to reduce storm water run-off.

2.6.13 ***Landscape Furniture*** – *"All street furniture (bus shelters, benches, trash receptacles, etc.) within the Plan Area should utilize a common design theme as provided for in the Design guidelines."* (EDH Specific Plan)



Theme Landscape Furniture

2.6.14 ***Landscape Plant Palette*** *– "The Design Guidelines provide for a plant species mix which is complementary to the native species and yet compatible with the scope and scale of the development."* (Town Center Design Guidelines)

The proposed landscape planting schedule associated with planting plans shall be provided with landscape plans and shall include a breakdown by material type (i.e., trees, shrubs, etc.) and each plant species listed shall include the associated water use expectation (i.e., "Very Low," ""Low," "Medium," etc.).

3 RESIDENTIAL DEVELOPMENT STANDARDS

3.1 Permitted Uses - The following permitted use(s) is added to those uses listed in Section 6.2 of the existing Town Center East PD Plan's Development Standards and those uses shown in this area in the El Dorado Hills Specific Plan (Dec. 23, 1987).

USE ADDED:
High Density Residential-Multifamily apartments with densities up to a maximum of 55 dwelling units per gross acre.

3.2 Maximum Residential Building Height--60 feet. Buildings within the urban infill area Residential Area may be multiple stories, up to a maximum of five (5) stories in height. Building heights shall be measured, calculated, and determined according to standards set forth in the County Zoning Code ("Code") found in Section 17.060.050.Z Exceptions to this height requirement includes such structures as chimneys, spires, elevators, mechanical and stair housings, flag poles, towers, vents, parapets, and decorative features. These structures may exceed the 60-foot limitation by a maximum of an additional 15 feet.

3.3 Maximum Parking Structure Height--60 feet, 5 Tiers—The measurement of the first tier starts at the lowest level of the garage and continues 360 degrees to the immediate level above. Subsequent tiers are measured starting at the completion of the previous tier.

3.4 Minimum Setbacks—Minimum setback measurements shall be to *the main building line from the property line*. Projections beyond the building face, such as patios, stoops, balconies, and overhangs are permitted to have a zero setback from the property line.

3.4.1 Minimum Setback from Town Center Boulevard— 0 feet
3.4.2 Minimum Setback from Vine Street (private)— 4 feet
3.4.3 Minimum Setback from Mercedes Lane (private)— 4 feet
3.4.4 Minimum Setback from Central Creek Corridor Property Line—30 feet

3.4.5 Maximum Building Site Coverage— 55 percent of total site

3.4.6 Maximum Impervious Surface—80 percent of total site

*3.5 Provision of Common Open Space—Background--*Article 8 of the El Dorado County Zoning Code—"Glossary"—in Section 17.80.020, "Definitions of Specialized Terms and Phrases, defines "Common Open Space" as follows:

> *"Common. Open space within a development plan that is designated and intended for the use or enjoyment of all of the owners or occupants of the development. Common open space may contain such complementary structures and improvements as are necessary, desirable, or appropriate for the benefit and enjoyment of the owners or occupant of the development. Ownership of common open space is held by a homeowners' association or similar organization, and access is usually restricted to property owners and residents of the development and their guests (see also 'Private Recreation Area')."*

Note: The term "complementary structures" above is interpreted to designate, but not be limited to, such items as arbors, gazebos, landscape overhead structures, fountains, fitness apparatus, outdoor game features, built-in benches and tables, and other such amenities.

Furthermore, under the Glossary in the same Section 17.80.020 the definition of "Private Recreation Area" is stated as follows:

"Recreation facilities owned and operated by a homeowners' association or similar entity for the benefit of property owners within a subdivision or multi-unit residential complex. It may include, but is not limited to, swimming pools, indoor or outdoor sport courts, meeting rooms, clubhouse, and any facilities required to maintain said recreation areas.

3.6 Provision of Common Open Space—Residential Standard--Under the above definitions, a minimum of _30 percent_ of the total site shall be set aside for open space that is commonly owned.

3.7 Specific Development Standards

3.7.1 _Vehicular driveway access_ to and from the site shall occur off of Town Center Boulevard and/or Vine Street.

3.7.2 _Common access drives_ shall be sized to accommodate anticipated traffic.

3.7.3 _Driveway Size:_ The dimensions of all driveways and aisles shall be adequate to serve the number and design requirements of the parking spaces provided, and shall be in conformance with County standards where no stated or depicted Town Center East Design Guideline standard is established.

3.7.4 _Off-street parking_ *shall be required for residents and guests within the parking garage or within the Piazza Area. Off-street parking shall be provided as specified in the County Zoning Ordinance, Section 17.18 as follows:*

- *Studio and 1 bedroom units at 1.6 spaces per unit*
- *2 or more bedroom units at 2 spaces per unit*

(Note: The above Parking ratios are inclusive of guest spaces)

3.7.5 _Buildings' main orientation_ shall be toward Town Center Boulevard.

3.7.6 _Pedestrian Connections:_ A pedestrian promenade with continuous street trees shall be provided on Town Center Boulevard, as shown in the existing Development Plan. Pedestrian connections shall be provided to and from other areas of Town Center East along Town Center Boulevard.
At least one accessible route shall connect all buildings, facilities, elements and spaces in the project area, subject to ADA standards.

3.7.7 _The Above-grade Parking Garage_ shall be planted with vegetation as appropriate to accomplish an effective buffer in front of garage walls. Alternatively, parking structures may be exposed to the street when articulated with additional architectural detailing and/or when an architectural-grade concrete or decorative veneer is used. Parking spaces are to be designed and constructed according to local County standards (unless modified by this Development Plan) and level of quality.

3.7.8 _Walls and Fences_ shall be designed to be compatible with surrounding and adjacent architecture. Heights of walls and fences shall be as required for their intended use and shall not exceed 8 feet unless approved by the Design Review Committee.

3.8 Green Building Standards

3.8.1 Buildings shall comply with all mandatory measure of the 2010 California Green Building Standards Code and all subsequent amendments.

3.8.2 Project planning and design shall address and conform to the goals of California Assembly Bill 32 and California Senate Bill 375.

3.8.3 At later phases of project design development, the applicant shall include a full listing of specific green elements that would be incorporated into the project.

3.9 Signage

3.9.1 General--Signage is an important feature that contributes to the neighborhood and community character. Signage design within the Plan Area shall be designed to be complementary in character, materials, and style to other buildings within the Town Center East area. Signage, which may be lighted, should be of high quality materials and be only of sufficient number to adequately (1) define, (2) direct, or (3) identify.

3.9.2 References--Because residential uses are being introduced to Town Center East for this Plan Area, signage shall conform to the appropriate measures of the El Dorado Hills Town Center “Master Signage Program” as described in Appendix 5—Section 2.0 (“Signage Concept”), Section 3.0 (“General Design Requirements”), Section 6.1.2 (“Lot/Pad User Identification Monument Signs”), and Section 6.1.3 (“Lot/Pad User On-Building Identification Sign”) of the Town Center East Development Plan. Signage shall also conform, where relevant, to the County Zoning Ordinance and the El Dorado Hills Specific Plan.

3.9.3 Building Signage—Building ID signage is permitted to be 2-sided, illuminated vertical blade type. Project Applicant shall stipulate design and quantity and be submitted for Design Review Committee and agency review.

3.10 Screening

3.10.1 Building utilities, HVAC equipment, transmission devices, transformers, backflow preventers, trash areas (excluding solar panels) , large satellite dishes, ground-mounted mechanical equipment, and other similar mechanical or utility equipment, shall be screened with fences, walls, dense planting, or decorative architectural features. Roof top equipment is to be screened with either parapets or other roof forms.

3.10.2 Line of site drawings indicating screening of equipment from the right-of-way on the opposite side from all streets and topography from the buildings are to be provided with project site plan review submittal.

3.10.3 Utility service areas, such as electrical panels, shall be placed within enclosures that are architecturally, integrated into the building design.

3.11 Water-Conserving Landscape Measures

3.11.1 Plant materials planned for the area shall conform to State and regional water conservation standards and also shall be based on the Department of Water Resources (DWR) "Water Use Classification of Landscape Species" (WUCOLS) guide. "Low" to "very low" water demand plant materials are encouraged to constitute the majority of plant materials incorporated into the project. However, hardiness, functionality, micro-climates, maximum allowed water use (see 6.3.4) and aesthetics all should be considered when selecting a palette of plant materials. Natives and non-natives may be mixed together in an effort to balance sustainability and the aesthetic vision of the designer. (see sections following for further information)

3.11.2 Lawn and Turf Area Reductions--While it is acknowledged that lawn and turf areas are necessary for certain active recreational and aesthetic purposes, use of turf areas will be restricted to a maximum of 50% of the landscape in order to reduce irrigation water and energy usage. If an area is intended for active pedestrian use (i.e., formal or informal play, recreation, etc.), then lawn and turf may be used

3.11.3 Automatic Irrigation—All irrigated landscaped areas will be maintained with an automatic irrigation system. All irrigation valves shall be connected to an automatic "smart" irrigation control system.

3.11.4 Water-Conserving Irrigation --Irrigation methods and water budgets will follow the State Water Conservation Maximum Applied Water Allowance (MAWA) and Estimated Total Water Use (ETWU) guidelines, together with guidelines from Assembly Bill 1881, in order to create a framework for landscape water conservation. Irrigation designs and practices will employ low-flow, water-efficient spray heads and emitters wherever feasible.

3.11.5 Calculations Basis: Annual rainfall used to calculate Maximum Applied Water Allowance shall be based on location specific data for the Hydrologic Region provided by the California State Climatologist, Department of Water Resources. The formula, from the California Department of Water Resources "Water Budget Workbook" for calculating a project's MAWA is:

MAWA= (ETo) x 0.62 x [(0.7xLA)+(0.3xSLA)] in which:
ETo = Evapotranspiration rate for El Dorado Hills area (47.3 per State Model Water Efficient Landscape Ordinance Camino Station)
0.7= ET adjustment factor;
LA = Landscape area (in square feet) requiring irrigation;
0.62= conversion factor for MAWA in gallons/yr.
SLA = A Special Landscape Area of the landscape dedicated solely to edible plants , areas irrigated with recycled water, water features using recycled water and

areas dedicated to active play such as parks, sports fields, golf courses, and where turf provides a playing surface.

3.11.6 <u>*Submittal of Water Conservation Plan*</u>—Landscape improvement plans shall include a water conservation budget that conforms to the local and State water conservation programs, including calculations to demonstrate the project's Maximum Applied Water Allowance (MAWA) and Estimated Total Water Use (ETWU), shall be submitted to the County at time of the project Improvement Plans Review.

3.12 General Planting Provisions

3.12.1 <u>Minimum Plant Sizes at Installation:</u>

<u>Trees:</u> --Minimum 15-gallon size; Street Trees—Minimum 24-inch box;
<u>Shrubs</u>: Overall--Minimum 2-gallon size. In prominent areas (project entries, Amenity Center, courtyards, etc.), minimum 5-gallon size.
<u>Perennials, Ornamental Grasses and Ground Cover:</u> Minimum 1-gallon size, spaced to attain full coverage within 3 years.

3.12.2 <u>*Hydrozones*</u>--Plants with similar water use needs shall be grouped together in distinct hydrozones, and where irrigation is required, the distinct hydrozones shall be irrigated with separate valves. Low and moderate water use plants can be mixed, but that overall hydrozone should be classified as "moderate" water use if the moderate use plants exceed 25% of that zone. High water use plants should be limited in use, and, where use is necessary or desired as a part of the design, shall not be mixed with low or moderate water use plants.

3.12.3 <u>*Slope Planting*</u>—Areas to be planted with turf shall not be used in slopes in excess of 4:1. All planter areas in excess of 3:1 slopes shall be treated with erosion control geotextile materials and plant materials appropriate to steep slope conditions. All planting areas shall be graded to drain at a 2% minimum gradient.

3.12.4 <u>*Invasive Plants*</u>-- Known invasive plants are prohibited in the Plan Area.

Appendix B - Modified Development Standards

Attachment B
El Dorado Hills Apartments
Modified Development Standards Matrix

Criteria	General Plan		El Dorado Hills Specific Plan (within Village T Commercial Neighborhood)		Zoning (Section 17.28.IV of the EDC Zoning Ordinance)		Town Center East Development Plan (see proposed Modification to TCE PD Development Standards and Design Guidelines for this Project)		Notes
	Current	***Proposed***	***Current***	***Proposed***	***Current***	***Proposed***	***Current***	***Proposed***	
Land Designation/ Use	NA- Adopted Plan (AP)		Commercial	Multifamily Residential	Commercial (CG-PD)	Residential (RM-PD)	Commercial (within Planning Area 3 of TCE)	Multifamily Residential	Once approved, all original TCE uses for the site shall be superseded by this PD
Maximum Density	24 du/ac (under Multifamily Residential) Designation	55 du/ac max	12du/ac	55 du/ac max	No less than one thousand square feet for each dwelling or rental unit located on first and second story; and seven hundred fifty square feet for each dwelling or rental unit located on third story and above; however, the maximum density shall be no greater than the highest density established by the general plan land use element.	55 du/ac	NA	55 du/ac max	

* The proposed modifications are shown in the draft *El Dorado Hills Town Center East Urban Infill Residential Area Residential Design Guidelines and Development Standards* (May 2014), included as Attachment A to this Initial Study.

Attachment B
El Dorado Hills Apartments
Modified Development Standards Matrix

Development Standards					**Minimum lot area**: six thousand square feet or a minimum lot area shall be two thousand square feet when proposed with attached single-family dwellings; however, no lot of less than six thousand square feet shall be created prior to the dwelling being constructed; **Maximum building coverage**: fifty percent of the lot, including accessory structures; **Minimum lot width:** sixty feet, or twenty feet when proposed with attached single-family dwellings;	**Minimum Lot Area:** Project site consists of 4.5 acres for the proposed apartment complex **Maximum Building Coverage: 55%** (See proposed PD standards in the revised Design Guidelines and Development Standards for this site **Minimum Lot Width:** See proposed PD standards in the revised Design Guidelines and Development Standards for this site	**Minimum Lot Area**: 2,500 sf **Maximum Building Coverage**: NA **Minimum Lot Width:** 50	**Minimum Lot Area:** Project site consists of 4.5 acres for the proposed apartment complex **Maximum Building Coverage**: 55% **Minimum Lot Width: 247 feet (along Mercedes Lane)**	

* The proposed modifications are shown in the draft *El Dorado Hills Town Center East Urban Infill Residential Area Residential Design Guidelines and Development Standards* (May 2014), included as Attachment A to this Initial Study.

Attachment B
El Dorado Hills Apartments
Modified Development Standards Matrix

					Minimum yards: front, twenty feet; sides, five feet; rear, ten feet; between separate buildings, ten feet; access court to a group of buildings, twenty feet in width, or zero feet for all yards where common wall or party wall exists. All yard requirements in this section shall be increased by five feet for each ten feet of building height or portion thereof in excess of twenty-five feet (25') **Maximum building height**: fifty feet;	**Minimum Yards:** See proposed PD standards in the revised Design Guidelines and Development Standards for this site **Maximum Height**: 60 feet	**Minimum Yards:** Front: 0 feet Side: 10 feet Rear: 10 feet Maximum Impervious Area: 85%	**Minimum Yards:** Front (from TC Blvd): 0 feet Side (from Vine Street): 4 feet (from Town Center Lake): 30 feet Rear (Mercedes Lane): 4 feet **Maximum Height**: 60 feet Maximum Impervious Area: **80%**	

* The proposed modifications are shown in the draft *El Dorado Hills Town Center East Urban Infill Residential Area Residential Design Guidelines and Development Standards* (May 2014), included as Attachment A to this Initial Study.

APPENDIX C - EDH APARTMENTS AQ-GHG ANALYSIS MAY 2014

AIR QUALITY AND GREENHOUSE GAS ANALYSIS

FOR THE

EL DORADO HILLS APARTMENTS PROJECT

MAY 19, 2014

Prepared for:

A.G. Spanos Companies
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Phone: (209) 478-7954

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

A Land Use Planning, Design, and Environmental Firm

Air Quality and Greenhouse Gas Analysis

FOR THE

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Chapters	Page Numbers

Appendices

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1.1 INTRODUCTION

This Air Quality and Greenhouse Gas Analysis identifies and analyzes the potential impacts from the El Dorado Hills Apartments Project (hereinafter "proposed project") related to air quality and greenhouse gas (GHG) emissions. The information and analysis in this document is prepared in accordance with the requirements of the California Environmental Quality Act (CEQA) Guidelines and the El Dorado County Air Quality Management District requirements. The modeling efforts utilized the California Emission Estimator Model (CalEEMod)™ (v.2013.2.2). Modeling outputs are provided in the Appendix. This study is organized as follows:

- Chapter 1 Introduction
- Chapter 2 Air Quality Analysis
- Chapter 3 Greenhouse Gas Emissions Analysis
- Chapter 4 References

The Air Quality Analysis and Greenhouse Gas Emissions Analysis each include an environmental setting, regulatory setting, thresholds of significance, impacts, and mitigation.

1.2 PROJECT SUMMARY

The proposed project consists of the construction of 250 apartments units on 4.5 acres located near the corner of Town Center Boulevard and Vine Street in El Dorado Hills, El Dorado County. The proposed project includes a four story apartment building complex with a five level parking garage (424 spaces), entry piazza, two passive courtyard amenities, an active courtyard amenity, and a clubhouse.

The project site is within the existing El Dorado Hills Town Center development. Town Center is located in El Dorado Hills, CA, southeast of the US 50/El Dorado Hills Boulevard interchange and consists of retail, restaurant, gas station, commercial office, medical office, hotel, and entertainment land uses. The proposed project would locate residents close to jobs and services, which will allow trips to be "internally captured" within Town Center (i.e. trips that begin and end in the mixed use development), reducing external vehicle travel.

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This chapter describes the regional air quality, current attainment status of the air basin, local sensitive receptors, emission sources, and impacts that are likely to result from project implementation. This section is based in part on the following technical studies: *Air Quality and Land Use Handbook: A Community Health Perspective (California Air Resources Board 2007), CEQA Guide to Air Quality Assessment, Determining Significance of Air Quality Impacts Under the California Environmental Quality Act* (EDAQMD 2002), CalEEMod *(v.2013.2.2)* (California Air Resources Board 2007). (Note: The Greenhouse Gases and Climate Change analysis is located in a separate chapter.)

2.1 EXISTING SETTING

MOUNTAIN COUNTIES AIR BASIN

El Dorado County is located within the Mountain Counties Air Basin (MCAB), which contains Nevada, Sierra, Plumas, Amador, Calaveras, Tuolumne, Mariposa counties and a portion of El Dorado and Placer County. California air basin boundary designations generally cover areas that share similar meteorological and geographic conditions. The MCAB includes both the western and eastern slopes of the Sierra Nevada Mountains including much of the Sierra foothills. The area covered is approximately 11,000 square miles.

Topography

El Dorado County exhibits large variations in terrain and consequently exhibits large variations in climate. The western portions of the county slopes gradually, with deep river canyons running from northeast to southwest from the crest of the Sierra Nevada range to the Sacramento Valley floor. East of the divide, the slope of the Sierra Nevada is steeper, but river canyons are relatively shallow. Elevations range from about 100 feet to 10,000 feet.

Temperatures

Winter temperatures in the mountains can be below freezing for weeks at a time, and substantial depths of snow can accumulate, but in the western foothills, winter temperatures usually dip below freezing only at night and precipitation is mixed as rain or light snow. In the summer, temperatures in the mountains are mild, with daytime peaks in the 70s to low 80s F, but the western end of the county can routinely exceed 100 degrees F.

Precipitation

The topography of the county strongly affects temperature and rainfall distributions. The warmest areas are found at the lower elevations along the west side of the county, and the coldest temperatures are found at the highest elevations. Average annual precipitation generally increases with altitude, ranging from about 30 inches in the western portions of the county to over 60 inches near the crest of the Sierra Nevada. East of the crest, annual precipitation drops off rapidly, diminishing to about 30 inches at the eastern end of the county.

Air Movement

The prevailing wind direction over the county is westerly. However, the terrain of the area has a great influence on local winds, so that wide variability in wind direction can be expected. In the foothills, regional airflow patterns are influenced by the mountainous and hill covered terrain, which direct surface air flows, cause shallow vertical mixing, and create areas of high pollutant concentrations by hindering dispersion. Inversion layers, where warm air overlays cooler air, frequently occur and trap pollutants close to the ground.

In the summer, the strong upwind valley air flowing into the basin from the west is an effective transport medium for ozone precursors and ozone generated in the Bay Area and the Sacramento and San Joaquin valleys. These transported pollutants predominate as the cause of ozone in the MCAB and are largely responsible for the exceedances of the state and federal ozone Ambient Air Quality Standards in the MCAB. The California Air Resources Board (CARB) has officially designated the MCAB as “ozone impacted” by transport from those areas.

CRITERIA POLLUTANTS

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

Ozone (O_3) is a photochemical oxidant and the major component of smog. While O_3 in the upper atmosphere is beneficial to life by shielding the earth from harmful ultraviolet radiation from the sun, high concentrations of O_3 at ground level are a major health and environmental concern. O_3 is not emitted directly into the air but is formed through complex chemical reactions between precursor emissions of volatile organic compounds (VOC) and oxides of nitrogen (NOx) in the presence of sunlight. These reactions are stimulated by sunlight and temperature so that peak O_3 levels occur typically during the warmer times of the year. Both VOCs and NOx are emitted by transportation and industrial sources. VOCs are emitted from sources as diverse as autos, chemical manufacturing, dry cleaners, paint shops and other sources using solvents.

The reactivity of O_3 causes health problems because it damages lung tissue, reduces lung function and sensitizes the lungs to other irritants. Scientific evidence indicates that ambient levels of O_3 not only affect people with impaired respiratory systems, such as asthmatics, but healthy adults and children as well. Exposure to O_3 for several hours at relatively low concentrations has been found to significantly reduce lung function and induce respiratory inflammation in normal, healthy people during exercise. This decrease in lung function generally is accompanied by symptoms including chest pain, coughing, sneezing and pulmonary congestion.

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

Nitrogen dioxide (NO_2) is a brownish, highly reactive gas that is present in all urban atmospheres. NO_2 can irritate the lungs, cause bronchitis and pneumonia, and lower resistance to respiratory infections. Nitrogen oxides are an important precursor both to ozone (O_3) and acid rain, and may affect both terrestrial and aquatic ecosystems. The major mechanism for the formation of NO_2 in the atmosphere is the oxidation of the primary air pollutant nitric oxide (NOx). NOx plays a major role, together with VOCs, in the atmospheric reactions that produce O_3. NOx forms when fuel is burned at high temperatures. The two major emission sources are transportation and stationary fuel combustion sources such as electric utility and industrial boilers.

Sulfur dioxide (SO_2) affects breathing and may aggravate existing respiratory and cardiovascular disease in high doses. Sensitive populations include asthmatics, individuals with bronchitis or emphysema, children and the elderly. SO_2 is also a primary contributor to acid deposition, or acid rain, which causes acidification of lakes and streams and can damage trees, crops, historic buildings and statues. In addition, sulfur compounds in the air contribute to visibility impairment in large parts of the country. Ambient SO_2 results largely from stationary sources such as coal and oil combustion, steel mills, refineries, pulp and paper mills and from nonferrous smelters.

Particulate matter (PM) includes dust, dirt, soot, smoke and liquid droplets directly emitted into the air by sources such as factories, power plants, cars, construction activity, fires and natural windblown dust. Particles formed in the atmosphere by condensation or the transformation of emitted gases such as SO_2 and VOCs are also considered particulate matter.

Based on studies of human populations exposed to high concentrations of particles (sometimes in the presence of SO_2) and laboratory studies of animals and humans, there are major effects of concern for human health. These include effects on breathing and respiratory symptoms, aggravation of existing respiratory and cardiovascular disease, alterations in the body's defense systems against foreign materials, damage to lung tissue, carcinogenesis and premature death.

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

Fine particulate matter ($PM_{2.5}$) consists of fine particles, which are less than 2.5 microns in size. Similar to PM_{10}, these particles are primarily the result of combustion in motor vehicles, particularly diesel engines, as well as from industrial sources and residential/agricultural activities such as burning. It is also formed through the reaction of other pollutants. As with PM_{10}, these particulates can increase the chance of respiratory disease, and cause lung damage and cancer. In 1997, the EPA created new Federal air quality standards for $PM_{2.5}$.

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

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

ODORS

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

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

It is also important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

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

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

SENSITIVE RECEPTORS

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

AMBIENT AIR QUALITY

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

The federal and California state ambient air quality standards are summarized in **Table 2-1** for important pollutants. The federal and state ambient standards were developed independently, although both processes attempted to avoid health-related effects. As a result, the federal and state standards differ in some cases. In general, the California state standards are more stringent. This is particularly true for ozone and particulate matter between 2.5 and 10 microns in diameter (PM_{10}).

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

TABLE 2-1: FEDERAL AND STATE AMBIENT AIR QUALITY STANDARDS

POLLUTANT	*AVERAGING TIME*	*FEDERAL PRIMARY STANDARD*	*STATE STANDARD*
Ozone	1-Hour 8-Hour	-- 0.075 ppm	0.09 ppm 0.070 ppm
Carbon Monoxide	8-Hour 1-Hour	9.0 ppm 35.0 ppm	9.0 ppm 20.0 ppm
Nitrogen Dioxide	Annual 1-Hour	0.053 ppm 0.100 ppm	0.03 ppm 0.18 ppm
Sulfur Dioxide	Annual 24-Hour 1-Hour	0.03 ppm 0.14 ppm 75 ppb	-- 0.04 ppm 0.25 ppm
PM10	Annual 24-Hour	-- 150 µg /m3	20 µg /m^3 50 µg /m^3
PM2.5	Annual 24-Hour	12 µg /m^3 35 µg /m^3	12 µg /m^3 --
Lead	30-Day Avg. 3-Month Avg.	-- 0.15 µg /m^3	1.5 µg /m^3 --

NOTES: PPM = PARTS PER MILLION, PPB = PARTS PER BILLION, µG /M3 = MICROGRAMS PER CUBIC METER

SOURCE: CALIFORNIA AIR RESOURCES BOARD, 2014 (WWW.ARB.CA.GOV/RESEARCH/AAQS/CAAQS/CAAQS/HTM) AND USEPA, 2014 (WWW.EPA.GOV/AIR/CRITERIA/HTML)

In 1997, new national standards for fine particulate matter diameter 2.5 microns or less ($PM_{2.5}$) were adopted for 24-hour and annual averaging periods. The current PM_{10} standards were to be retained, but the method and form for determining compliance with the standards were revised.

The State of California regularly reviews scientific literature regarding the health effects and exposure to PM and other pollutants. On May 3, 2002, CARB staff recommended lowering the level of the annual standard for PM_{10} and establishing a new annual standard for $PM_{2.5}$. The new standards became effective on July 5, 2003, with another revision on November 29, 2005.

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

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

Attainment Status

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

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

The U.S. EPA designates areas for ozone (O_3), carbon monoxide (CO), and nitrogen dioxide (NO_2) as "does not meet the primary standards," "cannot be classified," or "better than national standards." For sulfur dioxide (SO_2), areas are designated as "does not meet the primary standards," "does not meet the secondary standards," "cannot be classified," or "better than national standards." However, the CARB terminology of attainment, nonattainment, and unclassified is more frequently used.

El Dorado County has a state designation of Nonattainment for Ozone and PM_{10}, and is either Unclassified or Attainment for all other criteria pollutants. El Dorado County has a national designation of Nonattainment for ozone and $PM_{2.5}$. The County is designated either attainment or unclassified for all other criteria pollutants. **Table 2-2** presents the state and nation attainment status for El Dorado County.

TABLE 2-2: STATE AND NATIONAL ATTAINMENT STATUS

CRITERIA POLLUTANTS	*STATE DESIGNATIONS*	*NATIONAL DESIGNATIONS*
Ozone	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Unclassified
$PM_{2.5}$	Unclassified	Nonattainment (western portion)
Carbon Monoxide	Unclassified	Unclassified/Attainment
Nitrogen Dioxide	Attainment	Unclassified/Attainment
Sulfur Dioxide	Attainment	Unclassified
Sulfates	Attainment	
Lead	Attainment	
Hydrogen Sulfide	Unclassified	
Visibility Reducing Particles	Unclassified	

SOURCES: CALIFORNIA AIR RESOURCES BOARD (2014).

2.2 REGULATORY SETTING

FEDERAL

Clean Air Act

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

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

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

Transportation Conformity

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

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

Transportation Control Measures

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

STATE

CARB Mobile-Source Regulation

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

California Clean Air Act

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

Air Quality Standards

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

Federal and state ambient air quality standards have been established for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, suspended particulates (PM_{10}) and lead. In addition, California has created standards for pollutants that are not covered by federal standards. The state and federal primary standards for major pollutants are shown in Table 2-1.

Tanner Air Toxics Act

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

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

LOCAL

El Dorado County Air Quality Management District

At the county level, air quality is managed through land use and development planning practices that are implemented by El Dorado County and through permitted source controls that are implemented by the El Dorado AQMD. The El Dorado AQMD is also the agency responsible for enforcing many federal and state air quality requirements and for establishing air quality rules and regulations. The El Dorado AQMD attains and maintains air quality conditions in El Dorado County through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The clean air strategy of the El Dorado AQMD includes the preparation of plans for the attainment of ambient air quality standards, adoption, and enforcement of rules and regulations concerning sources of air pollution, and issuance of permits for stationary sources of air pollution. The El Dorado AQMD also inspects stationary sources of air pollution and responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by the federal Clean Air Act, the Clean Air Act Amendments of 1990, and the California Clean Air Act.

CEQA GUIDE TO AIR QUALITY ASSESSMENT, DETERMINING SIGNIFICANCE OF AIR QUALITY IMPACTS UNDER THE CALIFORNIA ENVIRONMENTAL QUALITY ACT

The El Dorado County AQMD published the *Guide to Air Quality Assessment: Determining Significance of Air Quality Impacts under the California Environmental Quality Act* in February 2002. This guide outlines quantitative and qualitative significance criteria, methodologies for the estimation of construction and operational emissions, and mitigation measures to reduce such impacts. The quantitative and qualitative significance criteria are similar to the criteria for and developed in coordination with the surrounding air quality districts. To reduce NOx emissions and visible emissions from off-road diesel construction equipment, the following measures are recommended by the El Dorado County AQMD:

- All mass grading operations shall provide a plan for approval by the County AQMD demonstrating that the heavy-duty (> 50 horsepower) off-road vehicles to be used in the construction project, including owned, leased, and subcontractor vehicles, will achieve a project-wide fleet-average 20% NOX reduction and 45% particulate reduction compared to the most recent CARB fleet average at the time of construction; and the project representative shall submit a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used an aggregate of 40 or more hours during any portion of the construction project. The inventory shall be updated and submitted monthly throughout the duration of the project, except that an inventory shall not be required for any 30-day period in which no construction operations occur. At least 48 hours before the use of subject heavy-duty off-road equipment, the project representative shall provide the El Dorado County AQMD with the anticipated construction time line including start date, and name and phone number of the project manager and onsite foreman. Acceptable options for reducing emissions include the use of late-model engines, low-emission diesel products, alternative fuels, particulate matter traps, engine retrofit technology, after-treatment products, and/or other options as become available.

- All mass grading operations shall ensure that emissions from off-road diesel powered equipment used on the project site do not exceed 40% opacity for more than 3 minutes in any one hour. Any equipment found to exceed 40% opacity (or Ringlemann 2.0) shall be repaired immediately, and the El Dorado County AQMD shall be notified within 48 hours of identification of noncompliant equipment. A visual survey of all in-operation equipment shall be made at least weekly, and a monthly summary of visual survey results shall be submitted throughout the duration of the project, except that the monthly summary shall not be required for any 30-day period in which no construction operations occur. The monthly summary shall include the quantity and type of vehicles surveyed as well as the dates of each survey. The El Dorado County AQMD and/or officials may conduct periodic site inspections to determine compliance. The above recommendations shall not supersede other El Dorado County AQMD or state rules and regulations.

- The primary contractor shall be responsible for ensuring that all heavy-duty equipment is properly tuned and maintained, in accordance with manufacturers' specifications.

RULES AND REGULATIONS

The El Dorado County AQMD has promulgated mandatory rules, some of which are applicable to construction operators. These include Rule 223 regarding fugitive dust, Rule 215 regarding the application of architectural coatings, and Rule 224 regarding cutback and emulsified asphalt paving materials. Rule 215 is applicable to any person who supplies, sells, offers for sale, applies, or solicits the application of any architectural coating, or who manufacturers any architectural coating for use within the El Dorado County AQMD. Rule 223 states that no person may cause, suffer, allow, or permit any fine material to be handled, transported, or stored without taking precautions determined by the El Dorado County AQMD, and that no person responsible for the ownership or maintenance of a road or thoroughfare may cause, suffer, allow, or permit a nuisance to develop as a result of any use, construction, alteration, or repair of that road or thoroughfare. The responsible person shall take precautions determined by the El Dorado County AQMD to be necessary to prevent such a nuisance. Rule 224 states that a person shall not manufacture for sale nor use for paving, road construction, or road maintenance certain types of cutback and emulsified asphalt.

LOCAL ASBESTOS CONCERNS

Asbestos is of special concern in El Dorado County because it occurs naturally in surface deposits of several types of ultramafic materials (materials that contain magnesium and iron and a very small amount of silica). Asbestos emissions can result from the sale or use of asbestos-containing materials, road surfacing with such materials, grading activities, and surface mining.

The El Dorado County AQMD is responsible for implementing and enforcing asbestos-related regulations and programs. This includes implementation of Title 17, Sections 93105 and 93106 of the California Code of Regulations (Asbestos Airborne Toxic Control Measure-Asbestos-Containing Serpentine) and the County's Naturally Occurring Asbestos and Dust Protection Ordinance. Regulated activities include construction or digging on a site containing naturally occurring asbestos in rock or soils and the sale and use of serpentine material or rock containing asbestos materials for surfacing. Asbestos-related measures presented in the General Plan are focused on supporting the actions of the El Dorado County AQMD.

El Dorado County General Plan

The El Dorado County General Plan establishes the following goals and policies relative to air quality in the General Plan:

PUBLIC HEALTH, SAFETY, AND NOISE ELEMENT GOALS AND POLICIES

Air Quality

GOAL 6.7: AIR QUALITY MAINTENANCE

A. Strive to achieve and maintain ambient air quality standards established by the U.S. Environmental Protection Agency and the California Air Resources Board.

B. Minimize public exposure to toxic or hazardous air pollutants and air pollutants that create unpleasant odors.

OBJECTIVE 6.7.1: EL DORADO COUNTY CLEAN AIR PLAN: Adopt and enforce the El Dorado County Clean Air Act Plan in conjunction with the County Air Quality Management District.

OBJECTIVE 6.7.2: VEHICULAR EMISSIONS: Reduce motor vehicle air pollution by developing programs aimed at minimizing congestion and reducing the number of vehicle trips made in the County and encouraging the use of clean fuels.

Policy 6.7.2.1 Develop and implement a public awareness campaign to educate community leaders and the public about the causes and effects of El Dorado County air pollution and about ways to reduce air pollution.

Policy 6.7.2.2 Encourage, both through County policy and discretionary project review, the use of staggered work schedules, flexible work hours, compressed work weeks, teleconferencing, telecommuting, and car pool/van pool matching as ways to reduce peak-hour vehicle trips.

Policy 6.7.2.3 To improve traffic flow, synchronization of signalized intersections shall be encouraged as a means to reduce congestion, conserve energy, and improve air quality.

Policy 6.7.2.4 Encourage a local and inter-State rail system.

Policy 6.7.2.5 Upon reviewing projects, the County shall support and encourage the use of, and facilities for, alternative-fuel vehicles to the extent feasible. The County shall develop language to be included in County contract procedures to give preference to contractors that utilize low-emission heavy-duty vehicles.

Policy 6.7.2.6 The County shall investigate the replacement of its fleet vehicles with more fuel-efficient alternative fuel vehicles (e.g., liquid natural gas, fuel cell vehicles).

OBJECTIVE 6.7.3: TRANSIT SERVICE: Expand the use of transit service within the County.

Policy 6.7.3.1 Legally permissible trip reduction programs and the development of transit and ridesharing facilities shall be given priority over highway capacity expansion when such programs and facilities will help to achieve and maintain mobility and air quality.

OBJECTIVE 6.7.4: PROJECT DESIGN AND MIXED USES: Encourage project design that protects air quality and minimizes direct and indirect emissions of air contaminants.

Policy 6.7.4.1 Reduce automobile dependency by permitting mixed land use patterns which locate services such as banks, child care facilities, schools, shopping centers, and restaurants in close proximity to employment centers and residential neighborhoods.

Policy 6.7.4.2 Promote the development of new residential uses within walking or bicycling distance to the County's larger employment centers.

Policy 6.7.4.3 New development on large tracts of undeveloped land near the rail corridor shall, to the extent practical, be transit supportive with high density or intensity of use.

Policy 6.7.4.4 All discretionary development applications shall be reviewed to determine the need for pedestrian/bike paths connecting to adjacent development and to common service facilities (e.g., clustered mail boxes, bus stops, etc.).

Policy 6.7.4.5 Specific plans submitted to the County shall provide for the implementation of all policies contained under Objective 6.7.4 herein.

Policy 6.7.4.6 The County shall regulate wood-burning fireplaces and stoves in all new development. Environmental Protection Agency (EPA)-approved stoves and fireplaces burning natural gas or propane are allowed. The County shall discourage the use of non-certified wood heaters and fireplaces during periods of unhealthy air quality.

Policy 6.7.4.7 The County shall inform the public regarding the air quality effects associated with the use of wood for home heating. The program should address proper operation and maintenance of wood heaters, proper wood selection and use, the health effects of wood smoke, weatherization methods for homes, and determining the proper size of heaters needed before purchase and professional installation. The County shall develop an incentive program to encourage homeowners to replace high-pollution emitting non-EPA-certified wood stoves that were installed before the effective date of the applicable EPA regulation with newer cleaner-burning EPA-certified wood stoves.

OBJECTIVE 6.7.5: AGRICULTURAL AND FUEL REDUCTION BURNING: Adopt and maintain air quality regulations which will continue to permit agricultural and fuel reduction burning while minimizing their adverse effects.

OBJECTIVE 6.7.6: AIR POLLUTION-SENSITIVE LAND USES: Separate air pollution sensitive land uses from significant sources of air pollution.

Policy 6.7.6.1 Ensure that new facilities in which sensitive receptors are located (e.g., schools, child care centers, playgrounds, retirement homes, and hospitals) are sited away from significant sources of air pollution.

Policy 6.7.6.2 New facilities in which sensitive receptors are located (e.g. residential subdivisions, schools, childcare centers, playgrounds, retirement homes, and hospitals) shall be sited away from significant sources of air pollution.

OBJECTIVE 6.7.7: CONSTRUCTION RELATED, SHORT-TERM EMISSIONS: Reduce construction related, short-term emissions by adopting regulations which minimize their adverse effects.

Policy 6.7.7.1 The County shall consider air quality when planning the land uses and transportation systems to accommodate expected growth, and shall use the recommendations in the most recent version of the El Dorado County Air Quality Management (AQMD) Guide to Air Quality Assessment: Determining Significance of Air Quality Impacts Under the California Environmental Quality Act, to analyze potential air quality impacts (e.g., short-term construction, long-term operations, toxic and odor-related emissions) and to require feasible mitigation requirements for such impacts. The County shall also consider any new information or technology that becomes available prior to periodic updates of the Guide. The County shall encourage actions (e.g., use of light-colored roofs and retention of trees) to help mitigate heat island effects on air quality.

OBJECTIVE 6.7.8: THE EFFECTS OF AIR POLLUTION ON VEGETATION: Monitor ongoing scientific research regarding the adverse effects, if any, of air pollution on vegetation.

Policy 6.7.8.1 The County shall monitor ongoing scientific research regarding the adverse effects, if any, of air pollution on vegetation, including commercially valuable timber, threatened or endangered plant species, and other plant species. If and when such research conclusively determines, or if and when the weight of scientific opinion concludes, that air pollution is causing significant harm to vegetation within El Dorado County or similarly situated areas, the County, through its periodic review of the General Plan pursuant to Policy 2.9.1.2, shall consider whether to add policies to the General Plan to try to mitigate such harm.

Sacramento Area Regional Ozone Attainment Plan

The greater Sacramento region is designated nonattainment for both federal and State ozone standards. The federal 8-hour ozone regulations require that areas classified as serious or above submit a reasonable further progress (RFP) demonstration plan that shows a minimum of 18 percent volatile organic compound (and/or NOx) emission reductions over the first six years following the 2002 baseline year and then an average of 3 percent reductions per year for each subsequent three-year period out to the attainment year. The Sacramento Regional 8-Hour Ozone 2011 Reasonable Further Progress Plan includes the information and analyses to fulfill Clean Air Act requirements for demonstrating RFP toward attaining the 8-hour ozone National Ambient Air Quality Standards (NAAQS) for the Sacramento region through 2011. In addition, this plan establishes an updated emissions inventory and maintains existing motor vehicle emission budgets for transportation conformity purposes. The plan indicates that despite meeting the 2011 progress target, the Sacramento region cannot meet the 2013 attainment date for serious nonattainment areas. Section 181(b)(3) of the CAA permits a state to request that the USEPA reclassify or “bump up” a nonattainment area to a higher classification and extend the time allowed for attainment. This bump-up process is appropriate for areas that must rely on longer term strategies to achieve the emission reductions needed for attainment. Therefore, the air districts in the Sacramento region submitted a letter to CARB in February 2008 to request a voluntary reclassification (bump-up) of the Sacramento federal nonattainment area from a serious to a severe 8-hour ozone nonattainment area with an extended attainment deadline of June 15, 2019. On May 5, 2010, the USEPA approved the request effective June 4, 2010.

2.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

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

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

IMPACTS AND MITIGATION MEASURES

Impact 2-1: Conflict with or obstruct implementation of the applicable air quality plan (less than significant with mitigation)

The Sacramento Regional Ozone Air Quality Attainment Plan (AQAP) was developed to bring the region (including the Mountain Counties Air Basin) into attainment as required by the federal and California Clean Air Acts. The AQAP assumes annual increases in air pollutant emissions resulting from regional growth; however, the AQAP also assumes the incremental increase in emissions will be partially offset through the implementation of stationary, area, and indirect source control measures contained within the AQAP. These measures consist of the El Dorado AQMD's rules and regulations and other development- and transportation-related mitigation measures. Development projects in the Mountain Counties Air Basin portion of the county are considered consistent with the AQAP if:

1. The project does not require a change in the existing land use designation (e.g., a general plan amendment or rezone), and projected emissions of ROG and NOx from the proposed project are equal to or less than the emissions anticipated for the site if developed under the existing land use designation;
2. The project does not exceed the "project alone" significance criteria.
3. The lead agency for the project requires the project to implement any applicable emission reduction measures contained in and/or derived from the AQAP (see Appendix E);
4. The project complies with all applicable district rules and regulations.

Each of these requirements is analyzed below:

1. The project does not require a change in the existing land use designation (e.g., a general plan amendment or rezone), and projected emissions of ROG and NOx from the proposed project are equal to or less than the emissions anticipated for the site if developed under the existing land use designation;
   - The project site is part of a Planned Development Project and is designated for General Commercial Uses. This site has considered the development of retail uses, as well as a hotel use on this site. Each of these would be allowed under the existing General Plan and Zoning; however, the proposed residential uses is not an allowed use under the existing General Plan and Zoning. The proposed project would likely require a General Plan Amendment and/or Rezone to enable a residential use to be located within a mixed use area.

     In order to determine the air quality impact that a General Plan Amendment and Rezone would have, a comparison of the existing commercial use must be made to the proposed project. The California Emission Estimator Model (CalEEMod)™ (v.2013.2.2) was used to estimate project-level operational emissions for the proposed project and the existing commercial use. The existing commercial use was obtained from a site plan in the most current marketing materials for the project site (CB Richard Ellis). The existing commercial use is referred to as the "Retail Scenario" herein.

The Retail Scenario contains seven buildings ranging in size from 2,750 square feet to 24,700 square feet. The total square footage is 74,350 square feet. Table 2-3 shows the mitigated emissions of the proposed project compared to the Retail Scenario.

TABLE 2-3: OPERATIONAL EMISSIONS (MITIGATED MAXIMUM DAILY LBS/DAY)

Emission Source	ROG	NOx
Proposed Project		
Area	8.2743	0.2476
Energy	0.0302	0.2579
Mobile	7.7612	12.5639
Total	**16.0657**	**13.0694**
Retail Scenario		
Area	2.0639	8.0000e-005
Energy	0.0150	0.1364
Mobile	15.3640	18.5677
Total	17.4430	18.7042

SOURCES: CALEEMOD (V.2013.2.2)

As shown in Table 2-3 above, the proposed project would result in 7.90 percent lower emissions of ROG, and 30.13 percent lower emissions of NOx. While the proposed project would require an amendment to the General Plan and a Rezone, the net effect would be an improvement over the air emissions that would be generated under the Retail Scenario. Either scenario would be under the El Dorado AQMD thresholds of significance. The proposed project would be considered a **beneficial impact**.

2. The project does not exceed the "project alone" significance criteria.
   - As shown under Impact 2-2 through 2-4, the proposed project does not exceed the "project along" significance criteria.
3. The lead agency for the project requires the project to implement any applicable emission reduction measures contained in and/or derived from the AQAP (see Appendix E);
   - The existing Town Center includes numerous measures that were implemented to reduce air emissions as the project was developed. The proposed project is considered an infill development of the larger Town Center project. Many of the Appendix E emission reduction measures have already been implemented in the design and construction of the Town Center project. The proposed project does not conflict with any of these existing design measures. The emission reduction

measures that are applicable to the proposed project are incorporated into the project by mitigation requirements presented in this study (See Impacts 2-2 through 2-8).

4. The project complies with all applicable district rules and regulations.

   - The *CEQA Guide to Air Quality Assessment, Determining Significance of Air Quality Impacts Under the California Environmental Quality Act* (EDAQMD 2002) was used to review the proposed project relative to the El Dorado AQMD's rules and regulations. The proposed project complies with all applicable rules and regulations.

Conclusion: The above discussion shows that the proposed project does not conflict with, or obstruct, the Sacramento Regional Ozone Air Quality Attainment Plan (AQAP). Implementation of the proposed project would have a **less than significant** impact.

Impact 2-2: Project operations have the potential to cause a violation of any air quality standard or contribute substantially to an existing or projected air quality violation-Ozone (less than significant with mitigation)

The proposed project would be a direct and indirect source of air pollution, in that it would generate and attract vehicle trips in the region (mobile source emissions) and it would increase area source emissions and energy consumption. The mobile source emissions would be entirely from vehicles, while the area source emissions would be primarily from the use of natural gas fuel combustion, hearth fuel combustion, landscape fuel combustion, consumer products, and architectural coatings. Table 2-4 provides the project-level operational threshold of significance for Ozone Precursors (ROG and NOX).

TABLE 2-4: PROJECT-LEVEL OPERATIONAL EMISSION THRESHOLDS (OZONE)

	ROG	NOx
Threshold	82 lbs/day	82 lbs/day

SOURCES: CEQA GUIDE TO AIR QUALITY ASSESSMENT, DETERMINING SIGNIFICANCE OF AIR QUALITY IMPACTS UNDER THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (EDAQMD 2002)

The California Emission Estimator Model (CalEEMod)™ (v.2013.2.2) was used to estimate project-level operational emissions for the proposed project. Table 2-5 shows the emissions, which include mobile source, area source, and energy emissions of Ozone precursors that would result from operations of the proposed project.

TABLE 2-5: OPERATIONAL EMISSIONS (UNMITIGATED MAXIMUM DAILY LBS/DAY)

Emission Source	ROG	NOx
Summer		
Area	390.4363	5.4384
Energy	0.0322	0.2749
Mobile	8.2522	14.9213
Total	**398.7206**	**20.6346**
Winter		
Area	390.4363	5.4384
Energy	0.0322	0.2749
Mobile	7.8449	16.9943
Total	**398.3134**	**22.7076**

SOURCES: CALEEMOD (V.2013.2.2) AND CEQA GUIDE TO AIR QUALITY ASSESSMENT, DETERMINING SIGNIFICANCE OF AIR QUALITY IMPACTS UNDER THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (EDAQMD 2002)

As shown in the table above, operational NOx emissions are below the thresholds of significance for the individual emission categories (i.e. area, energy, and mobile sources), as well as the total for these categories. The ROG emissions for the Area Source category, as well as the total for all categories, exceed the project-level operational threshold of significance. The El Dorado AQMD requires mitigation to reduce emissions that exceed the thresholds of significance.

The California Emission Estimator Model (CalEEMod)™ (v.2013.2.2) was used to estimate project-level operational emissions for the proposed project with the implementation of mitigation measures. The primary source of operational emissions that was targeted for mitigation in the model was the area source emissions, which are estimated at 390.44 lbs/day without mitigation; however, mitigation targeting other sources were also applied. Mitigation was entered into the model to reduce the total operational area source emissions. Mitigation included the following:

Mobile Source Mitigation (*These are implemented through the project design and location)

- Increase Density
- Improve Walkability Design
- Improve Destination Accessibility
- Increase Transit Accessibility
- Improve Pedestrian Network
- Provide Traffic Calming Measures

Energy Source Mitigation

- Exceed Title 24 by 10 percent
- Install High Efficiency Lighting
- Install Energy Efficient Appliances

Area Source Mitigation

- Use only Natural Gas Hearths (sealed natural gas only, no wood burning)

Water Mitigation

- Install Low Flow Bathroom Faucet
- Install Low Flow Kitchen Faucet
- Install Low Flow Toilet
- Install Low Flow Shower
- Use Water Efficient Irrigation System

Table 2-6 shows the project-level operational emissions, which include area, energy, and mobile source emissions that would result from operations of the proposed project with mitigation.

TABLE 2-6: OPERATIONAL EMISSIONS (MITIGATED MAXIMUM DAILY LBS/DAY)

Emission Source	ROG	NOx
Summer		
Area	8.2743	0.2476
Energy	0.0302	0.2579
Mobile	7.7612	12.5639
Total	**16.0657**	**12.5639**
Percent Reduction	***95.97***	***36.66***
Winter		
Area	8.2743	0.2476
Energy	0.0302	0.2579
Mobile	7.3585	14.3118
Total	**15.6628**	**14.3118**
Percent Reduction	***96.07***	***34.75***

SOURCES: CALEEMOD (V.2013.2.2) AND CEQA GUIDE TO AIR QUALITY ASSESSMENT, DETERMINING SIGNIFICANCE OF AIR QUALITY IMPACTS UNDER THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (EDAQMD 2002)

As shown in the table above, all emissions are reduced to a level that does not exceed the project-level operational thresholds of significance. With the implementation of the following mitigation measure the proposed project would have a ***less than significant*** impact relative to this topic.

MITIGATION MEASURES

Mitigation Measure 2-1*: To reduce Projects Emissions, the project applicant shall include implement the following:*

1. *Exceed Title 24 by 10 percent*
2. *Install High Efficiency Lighting*
3. *Install Energy Efficient Appliances*
4. *Use only Natural Gas Hearths (sealed natural gas only, no wood burning)*
5. *Install Low Flow Bathroom Faucet*
6. *Install Low Flow Kitchen Faucet*
7. *Install Low Flow Toilet*
8. *Install Low Flow Shower*
9. *Use Water Efficient Irrigation System*
10. *Provide electric vehicle charging facilities in garage complex*
11. *Provide bicycle storage with convenient access*

Impact 2-3: Project operations have the potential to cause a violation of any air quality standard or contribute substantially to an existing or projected air quality violation-Other Criteria Pollutants (less than significant with mitigation)

The El Dorado AQMD has identified the following screening techniques to identify projects that can be conservatively assumed not to be associated with significant emissions of CO, PM_{10}, SO_2, NO_2, sulfates, lead, and H_2S. Application of air pollution modeling techniques need not be applied to emissions that can be addressed through screening.

CO Screening: The CEQA Guide to Air Quality Assessment, Determining Significance of Air Quality Impacts Under the California Environmental Quality Act (EDAQMD 2002) indicates that the El Dorado AQMD considers development projects of the type and size that fall below the El Dorado AQMD's significance cut-points for ROG and NOx also to be insignificant for CO emissions. The El Dorado AQMD lists two development residential types in their screening table: single family housing cut-point 230 units (assuming no fireplaces/wood stoves) and low-rise apartment significance cut-point of 350 units (assuming no fireplaces/wood stoves). The proposed project is technically classified as a mid-rise (3-10 stories), which is not discussed within the *CEQA Guide to Air Quality Assessment, Determining Significance of Air Quality Impacts Under the California Environmental Quality Act* (EDAQMD 2002). CO Modeling is typically only warranted when an intersection level of service (LOS) is operating at, or will operate at, a LOS E or F and the affected intersection experiences more than 31,600 vehicles per hour. In the absence of screening information for the project type from the El Dorado AQMD, the California Project-Level Carbon Monoxide Protocol was used to further screen CO impacts for the proposed project.

The ambient air quality effects of traffic emissions were evaluated qualitatively according to the CO Protocol. In the CO Protocol, the proposed project screens from Level 1 to Level 7 before screening out satisfactorily. This conclusion was anticipated considering the proposed project does not have an intersection adjacent to the project site that is operating at, or will operate at, a LOS E or F and there are no intersections that experience more than 31,600 vehicles per hour.

Level 1 Screening: The proposed project is located in an area that is federally designated as attainment for CO. The area has continued to be in attainment since the 1990 Clean Air Act.

Level 7 Screening: The project is not likely to worsen air quality as it does not significantly increase the percentage of vehicles operating in cold start mode, it does not significantly increase traffic volumes, or worsen traffic flows. Additionally, the project is not suspected of resulting in higher CO concentrations than those existing within the region at the time of attainment demonstration. Lastly, the project does not involve signalized intersections within the Town Center area that are operating at LOS E or F, nor does it worsen a signalized intersection within the Town Center area to LOS E or F. There are no other reasons to believe that the proposed project may have adverse air quality impacts. The project screens out satisfactorily at Level 7.

Conclusion: No existing or future street segments or intersections proximate to the project site are forecast to operate at an unacceptable LOS E or worse or have traffic volumes of 31,600 vehicles per hour. Since the project is within an attainment area for carbon monoxide (ambient air quality standards are currently attained) and in an area with low background concentrations, changes in carbon monoxide levels resulting from the proposed project would not result in violations of the ambient air quality standards, and would represent a **less than significant** impact.

NO_2, PM_{10}, $PM_{2.5}$, and SO_2: The *CEQA Guide to Air Quality Assessment, Determining Significance of Air Quality Impacts Under the California Environmental Quality Act* (EDAQMD 2002) indicates that the El Dorado AQMD considers development projects of the type and size that fall below the El Dorado AQMD's significance cut-points for ROG and NOx also to be insignificant for NO_2, PM_{10}, and SO_2 emissions. As discussed under the CO screening above, the El Dorado AQMD lists two development residential types in their screening table: single family housing cut-point 230 units (assuming no fireplaces/wood stoves) and low-rise apartment significance cut-point of 350 units (assuming no fireplaces/wood stoves). The proposed project is 250 mid-rise apartment units, which is well under the 350 low-rise threshold, was shown to screen out under the CO Protocol. Table 2-7 shows the project-level operational emissions, which include area, energy, and mobile source emissions that would result from operations of the proposed project with mitigation.

TABLE 2-7: OPERATIONAL EMISSIONS (MAXIMUM DAILY LBS/DAY)

	NOx		CO		SO2		PM10 Total		PM2.5 Total	
	Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated
Summer										
Area	5.4384	0.2476	492.3326	21.0359	0.1852	1.0900e-003	66.3302	0.4143	66.3282	0.4111
Energy	0.2749	0.2579	0.1170	0.1097	1.7500e-003	1.6500e-003	0.0222	0.0209	0.0222	0.0209
Mobile	14.9213	12.5639	79.9213	67.6520	79.6389	0.1204	10.2501	8.4395	2.8618	2.3578
Total	**20.6346**	**13.0694**	**572.0885**	**88.7976**	**0.3325**	**0.1231**	**76.6025**	**8.8746**	**69.2122**	**2.7898**
Winter										
Area	5.4384	0.2476	492.3326	21.0359	0.1852	1.0900e-003	66.3302	0.4143	66.3282	0.4111
Energy	0.2749	0.2579	0.1170	0.1097	1.7500e-003	1.6500e-003	0.0222	0.0209	0.0222	0.0209
Mobile	16.9943	14.3118	80.9370	70.4989	0.1324	0.1096	10.2510	8.4404	2.8625	2.3586
Total	**22.7076**	**14.8172**	**573.3866**	**91.6445**	**0.3193**	**0.1124**	**76.6034**	**8.8755**	**69.2130**	**2.7906**

SOURCES: CALEEMOD (V.2013.2.2)

Considering that the proposed project does not include warehousing or heavy-duty diesel vehicle fleet operations, trip generation is below that of a 350 unit low-rise apartment complex (i.e project trips are 1,662.5 on Weekdays, 1,597.5 on Saturdays, and 1,465 on Sundays. Weekday peak hour traffic is estimated at: AM Peak, 155 PM Peak. The project type/size screened out for other criteria pollutants, and the modeled emissions are low for summer and winter conditions, the proposed project is anticipated to have a **less than significant** impact relative to these criteria pollutants.

Screening Lead, Sulfates and H_2S: The El Dorado AQMD indicates that these pollutants may be assumed to be not significant except for industrial sources that have specific processes resulting in direct emissions of lead, sulfates, or H_2S, such as a foundry, acid plant, or pulp mill. The proposed project is a residential project and does not include any of these industrial sources. As such, the proposed project would not result in violations of the ambient air quality standards, and would represent a **less than significant** impact.

Screening Visibility Impacts: The El Dorado AQMD indicates that it may be assumed that visibility impacts from development projects in the Mountain Counties Air Basin portion of the county are not significant; such impacts will be controlled to the maximum extent feasible through state and national regulatory programs governing vehicle emissions, and through mitigation required for ozone precursors and particulate matter. As such, the proposed project would not result in violations of the ambient air quality standards, and would represent a **less than significant** impact.

Impact 2-4: Project construction has the potential to cause a violation of any air quality standard or contribute substantially to an existing or projected air quality violation (less than significant with mitigation)

Construction activities would result in temporary short-term emissions associated with vehicle trips from construction workers, operation of construction equipment, and the dust generated during construction activities. These temporary and short-term emissions would generate additional ozone precursors (ROG and NOx) as well as PM_{10} and $PM_{2.5}$.

The *CEQA Guide to Air Quality Assessment, Determining Significance of Air Quality Impacts Under the California Environmental Quality Act* (EDAQMD 2002) provides two approaches for screening construction equipment exhaust emissions for significance: one is based on fuel use, the other on the incorporation of mitigation measures into the project design. If exhaust emissions are determined to be not significant under either approach, then further calculations to determine construction equipment exhaust emissions, as set out in subsequent sections of this chapter, are not necessary. For fugitive dust (PM_{10}) emissions, the screening approach is based on specific dust suppression measures that will prevent visible emissions beyond the boundaries of the project. If those measures are incorporated into the project design, then further calculations to determine PM_{10} fugitive dust emissions are not necessary.

Screening of Construction Equipment Exhaust Emissions Based on Incorporation of Mitigation Measures. Based on the El Dorado AQMD's experience with construction activities, and taking into account the temporary and non-continuous nature of construction emissions, ROG and NOx emissions during construction may be assumed to be not significant if:

a. the project encompasses 12 acres or less of ground that is being worked at one time and at least one of the mitigation measures relating to such pollutants described in the *CEQA Guide to Air Quality Assessment, Determining Significance of Air Quality Impacts Under the California Environmental Quality Act* (EDAQMD 2002) (or an equivalent measure) is incorporated into the project; or

b. 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 district that is acceptable to District).

If ROG and NOx mass emissions are determined to be not significant under the provisions above, then it can be assumed that exhaust emissions of other air pollutants from the operation of equipment and worker commute vehicles are also not significant. In such event, the steps for estimating exhaust emissions of these other pollutants need not be undertaken.

The proposed project is 4.5 acres, which is less than the 12 acre threshold identified in (a) above, and the project includes at least one mitigation measure relating to such pollutants as contained in *CEQA Guide to Air Quality Assessment, Determining Significance of Air Quality Impacts Under the California Environmental Quality Act* (EDAQMD 2002) and as presented below. As such, the proposed project would not result in violations of the ambient air quality standards, and would represent a **less than significant** impact.

Screening of Fugitive Dust PM_{10} Emissions Based on Incorporation of Mitigation Measures. Mass emissions of fugitive dust PM_{10} need not be quantified, and may be assumed to be not significant; if the project includes mitigation measures that will prevent visible dust beyond the project property lines, in compliance with Rule 403.

The proposed project is includes the fugitive dust mitigation measures contained in *CEQA Guide to Air Quality Assessment, Determining Significance of Air Quality Impacts Under the California Environmental Quality Act* (EDAQMD 2002) and as presented below. As such, the proposed project would not result in violations of the ambient air quality standards, and would represent a **less than significant** impact.

MITIGATION MEASURES

Mitigation Measure 2-2: *The El Dorado AQMD construction mitigation measures involve emission reductions of NOx, ROG, and PM_{10} which may include reformulated fuels, emulsified fuels, catalyst and filtration technologies, cleaner engine repowers, and new alternative-fueled trucks, among others. Heavy-duty diesel mitigation measures may qualify for state and air district incentive funding programs. Additional construction mitigation measures include emission reductions from controlling visible emissions from diesel-powered equipment and particulate matter emission control measures. At least one of the following measures must be implemented:*

- *Require the prime contractor to provide an approved plan demonstrating that heavy-duty (i.e., greater than 50 horsepower) off-road vehicles to be used in the construction project, and operated by either the prime contractor or any subcontractor, will achieve, at a minimum, a fleet-averaged 15 percent NOx reduction compared to the most recent CARB fleet average. Successful implementation of this measure requires the prime contractor to submit a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used an aggregate of 40 or more hours during the construction project. Usually the inventory includes the horsepower rating, engine production year, and hours of use or fuel throughput for each piece of equipment. In addition, the inventory list is updated and submitted monthly throughout the duration of when the construction activity occurs.*
- *Obligate the prime contractor to use an alternative fuel, other than Diesel, verified by the California Air Resources Board or otherwise documented through emissions testing to have*

the greatest NOx and PM_{10} reduction benefit available, provided each pollutant is reduced by at least 15%.

- *Obligate the prime contractor to use aqueous emulsified fuel verified by the California Air Resources Board or otherwise documented through emissions testing to have the greatest NOx and PM_{10} reduction benefit available, provided each pollutant is reduced by at least 15 %.*

Mitigation Measure 2-3: *During construction activities, the project applicant shall implement the following Best Available Fugitive Dust Control Measures as outlined in the CEQA Guide to Air Quality Assessment, Determining Significance of Air Quality Impacts Under the California Environmental Quality Act (EDAQMD 2002).*

- *1a. Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the District; two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations each subsequent four-hour period of active operations; OR 1a-1. For any earth-moving which is more than 100 feet from all property lines, conduct watering as necessary to prevent visible dust emissions from exceeding 100 feet in length in any direction.*
- *1b. Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the District; for areas which have an optimum moisture content for compaction of less than 12 percent, as determined by ASTM method 1557 or other equivalent method approved by the District, complete the compaction process as expeditiously as possible after achieving at least 70 percent of the optimum soil moisture content; two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations during each subsequent four-hour period of active operations.*
- *1c. Conduct watering as necessary to prevent visible emissions from extending more than 100 feet beyond the active cut or mining areas unless the area is inaccessible to watering vehicles due to slope conditions or other safety factors.*
- *2a/b. Apply dust suppression in a sufficient quantity and frequency to maintain a stabilized surface; any areas which cannot be stabilized, as evidenced by wind driven dust, must have an application of water at least twice per day to at least 80 percent of the unstabilized area.*
- *2c. Apply chemical stabilizers within 5 working days or grading completion; OR 2d. Take action 3a or 3c specified for inactive disturbed surface areas.*
- *3a. Apply water to at least 80 percent of all inactive disturbed surface areas on a daily basis when there is evidence of wind driven fugitive dust, excluding any areas which are inaccessible due to excessive slope or other safety conditions; OR 3b. Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR 3c. Establish a vegetative ground cover within 21 days after active operations have ceased; ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter; OR 3d. Utilize any*

combination of control actions 3a, 3b and 3c such that, in total, they apply to all inactive disturbed surface areas.

- *4a. Water all roads used for any vehicular traffic at least once per every two hours of active operations; OR 4b. Water all roads used for any vehicular traffic once daily and restrict vehicle speed to 15 mph; OR 4c. Apply chemical stabilizer to all unpaved road surfaces in sufficient quantity and frequency to maintain a stabilized surface.*
- *5a. Apply chemical stabilizers; OR 5b. Apply water to at least 80 percent of the surface areas of all open storage piles on a daily basis when there is evidence of wind driven fugitive dust; OR 5c. Install a three-sided enclosure with walls with no more than 50 percent porosity that extend, at a minimum, to the top of the pile.*
- *6a. Pave or apply chemical stabilization at sufficient concentration and frequency to maintain a stabilized surface starting from the point of intersection with the public paved surface, and extending for a centerline distance of at least 100 feet and width of at least 20 feet; OR 6b. Pave from the point of intersection with the public paved road surface, and extending for a centerline distance of at least 25 feet and a width of at least 20 feet, and install a track-out control device immediately adjacent to the paved surface such that exiting vehicles do not travel on any unpaved road surface after passing through the track-out control device.*
- *7a. Any other control measures approved by the District.*

Mitigation Measure 2-4: *During construction activities in high wind conditions, the project applicant shall implement the following Best Available Fugitive Dust Control Measures as outlined in the CEQA Guide to Air Quality Assessment, Determining Significance of Air Quality Impacts Under the California Environmental Quality Act (EDAQMD 2002).*

- *1A. Cease all active operations, OR 2A. Apply water to soil not more than 15 minutes prior to moving such soil.*
- *0B. On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than four consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than 1/20 of the concentration required to maintain a stabilized surface for a period of six months; OR 1B. Apply chemical stabilizers prior to a wind event; OR 2B. Apply water to all unstabilized disturbed areas 3 times per day; if there is any evidence of wind driven fugitive dust, watering frequency is increased to a minimum of four times per day; OR 3B. Take the actions specified in Table B.6, Item 3c; OR 4B. Utilize any combination of control actions specified in Table 1, Items 1B, 2B and 3B, such that, in total, they apply to all disturbed surfaced areas.*
- *1C. Apply chemical stabilizers prior to a wind event; OR 2C. Apply water twice per hour during active operation; OR 3C. Stop all vehicular traffic.*
- *1D. Apply water twice per hour; OR 2D. Install temporary coverings.*
- *1E. Cover all haul vehicles; OR 2E. Comply with the vehicle freeboard requirements of Section 23114 of the California Vehicle Code for operation on both public and private roads.*
- *1F. Any other control measures approved by the District.*

Impact 2-5: Potential to result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors) (less than significant with mitigation)

The El Dorado AQMD's primary criterion for determining whether a project has significant cumulative impacts is whether the project is consistent with an approved plan or mitigation program of District-wide or regional application in place for the pollutants emitted by the project. This criterion is applicable to both the construction and operation phases of a project.

ROG and NOx. The Sacramento Regional Ozone Air Quality Attainment Plan (AQAP) was developed to bring the region (including the Mountain Counties Air Basin) into attainment as required by the federal and California Clean Air Acts. The AQAP assumes annual increases in air pollutant emissions resulting from regional growth; however, the AQAP also assumes the incremental increase in emissions will be partially offset through the implementation of stationary, area, and indirect source control measures contained within the AQAP. These measures consist of the District's rules and regulations and other development- and transportation-related mitigation measures. If a project can demonstrate consistency with the AQAP for ROG and NOx emissions, it can be categorized as not having a significant cumulative air quality impact with respect to ozone. As discussed under Impact 2-1, the project is consistent with the AQAP. As such, the proposed project would have a **less than cumulatively considerable** impact.

Other Pollutants. For other pollutants such as CO, PM_{10}, SO_2, NO_2, and TACs, there is no applicable air quality plan containing growth elements. Accordingly, the District applies the following pollutant-specific criteria for determining the significance of cumulative impacts:

- **CO:** CO is an attainment pollutant in El Dorado County, and the El Dorado AQMD does not consider CO to be an area-wide or regional pollutant that is likely to have cumulative effects. Accordingly, CO emissions for a project will ordinarily be considered not cumulatively significant as long as "project alone" emissions are not significant.
- **PM_{10}, SO_2, and NO_2**: The Mountain Counties Air Basin is nonattainment for the state 24-hour PM_{10} standard, which dictates the use of a relatively sensitive criterion for identifying cumulative effects on PM_{10} ambient concentrations. The County is in attainment for the SO_2 and NO_2 ambient air quality standards, but SO_2 and NO_2 can also contribute to area-wide PM_{10} impacts through their transformation into sulfate and nitrate particulate aerosols. There is no approved regional plan for attainment of the PM_{10} standard, and there is no readily available model for predicting the combined ambient effects of directly emitted PM_{10}, SO_2 and NO_2 emissions from individual impacts. The El Dorado AQMD has determined that a project will be considered not significant for cumulative impacts of PM_{10}, SO_2 and NO_2 if the following conditions are met:

a. The project is not significant for "project alone" emissions of these pollutants;

b. The project complies with all applicable rules and regulations of the District; and

c. The project is not cumulatively significant for ROG, NOx, and CO based on the criteria set forth above.

As shown under Impacts 2-1, 2-2, 2-3 and 2-4, the proposed project would not have a significant impact for "project alone" emissions. Additionally, the project complies with all applicable rules and regulations of the El Dorado County AQMD. Lastly, the project was shown to not have a cumulatively significant impact for ROG, NOx, or CO based on the discussions above. As such, the proposed project would have a **less than cumulatively considerable** impact.

Impact 2-6: Potential to expose the public (especially schools, day care centers, hospitals, retirement homes, convalescent facilities, and residences) to substantial pollutant concentrations-Toxic Air Contaminants (less than significant)

A toxic air contaminant (TAC) is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air. However, their high toxicity or health risk may pose a threat to public health even at very low concentrations. In general, for those TACs that may cause cancer, there is no concentration that does not present some risk. This contrasts with the criteria pollutants for which acceptable levels of exposure can be determined and for which the state and federal governments have set ambient air quality standards.

The California Air Resources Board (CARB) published the *Air Quality and Land Use Handbook: A Community Health Perspective* (2007) to provide information to local planners and decision-makers about land use compatibility issues associated with emissions from industrial, commercial and mobile sources of air pollution. The CARB Handbook indicates that mobile sources continue to be the largest overall contributors to the State's air pollution problems, representing the greatest air pollution health risk to most Californians. The most serious pollutants on a statewide basis include diesel exhaust particulate matter (diesel PM), benzene, and 1,3-butadiene, all of which are emitted by motor vehicles. These mobile source air toxics are largely associated with freeways and high traffic roads. Non-mobile source air toxics are largely associated with industrial and commercial uses. Table 2-8 provides the California Air Resources Board minimum separation recommendations on siting sensitive land uses.

TABLE 2-8: CARB MINIMUM SEPARATION RECOMMENDATIONS ON SITING SENSITIVE LAND USES

Source Category	*Advisory Recommendations*
Freeways and High-Traffic Roads	• Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day.
Distribution Centers	• Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week). • Take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land uses near entry and exit points.
Rail Yards	• Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. • Within one mile of a rail yard, consider possible siting limitations and mitigation approaches.
Ports	• Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily

	impacted zones. Consult local air districts or the CARB on the status of pending analyses of health risks.
Refineries	• Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.
Chrome Platers	• Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
Dry Cleaners Using Perchloro- ethylene	• Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with 3 or more machines, consult with the local air district. • Do not site new sensitive land uses in the same building with perc dry cleaning operations.
Gasoline Dispensing Facilities	• Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50 foot separation is recommended for typical gas dispensing facilities.

SOURCES: AIR QUALITY AND LAND USE HANDBOOK: A COMMUNITY HEALTH PERSPECTIVE" (CARB 2005)

Gasoline Dispensing Facilities: There are two gasoline dispensing facilities located in the vicinity of the project site. This includes a Valero located at the northwestern corner of Town Center and Post Street and a Chevron located at the southwestern corner of Town Center and Post Street. These are considered typical fuel dispensing facilities. The California Air Resources Board recommends that lead agencies provide a 50-foot separation for typical gas dispensing facilities. The closest fuel dispensing station at the Valero is located 956 feet from the project site boundary. The closest fuel dispensing station at the Chevron is located 984 feet from the project site boundary. The proposed project is consistent with the *CARB Minimum Separation Recommendations on Siting Sensitive Land Uses* (2005) for gasoline dispensing facilities.

Freeways and High-Traffic Roads: There is one freeway located in the vicinity of the project site. This includes a US 50 located directly north of the project site. The California Air Resources Board recommends that lead agencies provide avoid siting new sensitive land uses within 500 feet of a freeway. US 50 is located 511 feet from the project site boundary. The proposed project is consistent with the CARB Minimum Separation Recommendations on Siting Sensitive Land Uses (2005) for freeways. There are no high-traffic roads (urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day) within 500 feet of the project site.

***Conclusion*:** There are two gasoline dispensing facilities and a freeway in the vicinity of the project site; however, these facilities are sufficiently separated from the project site such that they are not considered a significant risk to sensitive receptors. There are no other source categories located in the vicinity. Implementation of the proposed project would not result in an increased exposure of sensitive receptors to localized concentrations of TACs. This proposed project would have a **less than significant** relative to this topic.

Impact 2-7: Potential to expose the public (especially schools, day care centers, hospitals, retirement homes, convalescent facilities, and residences) to substantial pollutant concentrations-Naturally Occurring Asbestos (less than significant)

The EPA Region 9 office is working in areas of California to address concerns about potential effects of naturally occurring asbestos. The term "asbestos" is used to describe a variety of fibrous minerals that, when airborne, can result in serious human health effects. Naturally Occurring

Asbestos (NOA) is commonly associated with ultramafic rocks and serpentinite. Naturally occurring asbestos can take the form of long, thin, separable fibers. Natural weathering or human disturbance can break naturally occurring asbestos down to microscopic fibers, easily suspended in air. There is no health threat if asbestos fibers in soil remain undisturbed and do not become airborne. When inhaled, these thin fibers irritate tissues and resist the body's natural defenses. Asbestos, a known carcinogen, causes cancers of the lung and the lining of internal organs, as well as asbestosis and other diseases that inhibit lung function.

Ultramafic rocks, such as dunite, peridotite and pyroxenite, are igneous rocks comprised largely of iron-magnesium minerals. As they are intrusive in nature, these rocks often undergo metamorphosis, prior to their being exposed on the Earth's surface. The metamorphic rock serpentinite is a common product of the alteration process. A variety of minerals may be present within the host rock, including chrysotile, tremolite and actinolite.

Chrysotile, which is also known as "white asbestos" and found in serpentine rocks, is probably the most common NOA However, other types of asbestos, such as tremolite-actinolite, can also be found throughout California. Tremolite is most commonly associated with metamorphic formations containing dolomite and quartz. Tremolite tends to be whitish when magnesium-rich and trends towards dark green as iron increases. Actinolite, which can be found in metamorphic rocks rich in magnesium *or* iron, tends to be green to blackish-green.

Soil in El Dorado Hills has been known to have NOA, and project site lies within the Quarter Mile Buffer for More Likely to Contain Asbestos or Fault Line on the County's Asbestos Review Areas Map (7/21/2005). The project site was graded as part of the previous development in the Town Center; however, it is not known whether the soil material at the time of grading had NOA, or if any material containing NOA is currently on the project site. Because the project site lies within the Quarter Mile Buffer for More Likely to Contain Asbestos or Fault Line on the County's Asbestos Review Areas Map (7/21/2005) an Asbestos Hazard Dust Mitigation Plan must be prepared to ensure that adequate dust control and asbestos hazard mitigation measures are implemented during project construction. Additionally, the project must obtain AQMD approval prior to commencing construction activities. The applicant will not be allowed to "test out" of the Asbestos Hazard Dust Mitigation Plan by hiring a registered geologist to investigate. The following mitigation measure would ensure that any construction activities that may result in the release of asbestos would include appropriate measures contained within an Asbestos Hazard Dust Mitigation Plan to ensure that exposure to construction workers and the public is minimized to acceptable State and local levels. Implementation of the following mitigation measure would ensure that this potential impact is reduced to a ***less-than-significant*** level.

MITIGATION MEASURES

Mitigation Measure 2-5: *Prior to any grading activities, the project applicant shall prepare an Asbestos Hazard Dust Mitigation Plan and shall comply with applicable state and local regulations regarding asbestos, including ARB's asbestos airborne toxic control measure (ATCM) (Title 17, CCR § 93105 and 93106), to ensure that exposure to construction workers and the public is reduced to* *an acceptable level. The project applicant will not be allowed to "test out" of the Asbestos Hazard Dust Mitigation Plan by hiring a registered geologist to investigate.*

Impact 2-8: Potential to create objectionable odors affecting a substantial number of people (less than significant)

While offensive odors rarely cause any physical harm, they can be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and the El Dorado County AQMD. The general nuisance rule (Heath and Safety Code §41700 and District Rule 205) is the basis for the threshold.

Examples of facilities that are known producers of odors include: Wastewater Treatment Facilities, Chemical Manufacturing, Sanitary Landfill, Fiberglass Manufacturing, Transfer Station, Painting/Coating Operations (e.g. auto body shops), Food Processing Facility, Petroleum Refinery, Asphalt Batch Plant, and Rendering Plant. Table 2-9 provides a list of common types of facilities known to produce odors.

TABLE 2-9: COMMON TYPES OF FACILITIES KNOWN TO PRODUCE ODORS

Land Use/Type of Operation
Wastewater Treatment Plant
Sanitary Landfill
Transfer Station
Composting Facility
Petroleum Refinery
Asphalt Batch Plant
Chemical Manufacturing
Fiberglass Manufacturing
Painting/Coating Operations
Rendering Plant
Coffee Roaster
Food Processing Facility

SOURCE: CEQA GUIDE TO AIR QUALITY ASSESSMENT, DETERMINING SIGNIFICANCE OF AIR QUALITY IMPACTS UNDER THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (EDAQMD 2002).

The proposed project is a residential development and is not known to produce nuisance odors. The closest land use/operation to the project site is the El Dorado Irrigation District Wastewater Treatment Plant located at 4625 Latrobe Rd El Dorado Hills, CA 95762. This facility is located approximately 0.9 miles south of the project site. This facility is located immediately adjacent to the Blackstone residential development (a sensitive receptor), and there have not been nuisance complaints over odors. Additionally, there have not been nuisance complaints over odors from the existing retail uses within the Town Center. Odors from the El Dorado Irrigation District Wastewater Treatment Plant would be a **less than significant** impact. There are no other facilities proximate to the project site that pose an odor nuisance concern.

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This chapter discusses regional greenhouse gas (GHG) emissions and climate change impacts that could result from implementation of the proposed project. This section provides a background discussion of greenhouse gases and climate change linkages and effects of global climate change. This section is organized with an existing setting, regulatory setting, approach/methodology, and impact analysis. The analysis and discussion of the GHG and climate change impacts in this chapter focuses on the proposed project's consistency with local, regional, and statewide climate change planning efforts and discusses the context of these planning efforts as they relate to the proposed project.

3.1 ENVIRONMENTAL SETTING

GREENHOUSE GASES AND CLIMATE CHANGE LINKAGES

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

Naturally occurring greenhouse gases include water vapor (H_2O), carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and ozone (O_3). Several classes of halogenated substances that contain fluorine, chlorine, or bromine are also greenhouse gases, but they are, for the most part, solely a product of industrial activities. Although the direct greenhouse gases CO_2, CH_4, and N_2O occur naturally in the atmosphere, human activities have changed their atmospheric concentrations. From the pre-industrial era (i.e., ending about 1750) to 2005, concentrations of these three greenhouse gases have increased globally by 36, 148, and 18 percent, respectively (IPCC 2007)[1].

Greenhouse gases, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect. Among the prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), ozone (O_3), water vapor, nitrous oxide (N_2O), and chlorofluorocarbons (CFCs).

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, commercial, and agricultural sectors (California Air Resources Board, 2012)[2]. In California, the

1 Intergovernmental Panel on Climate Change. 2007. "Climate Change 2007: The Physical Science Basis, Summary for Policymakers." http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_wg1_report_the_physical_science_basis.htm

2 California Air Resources Board. 2012. "Greenhouse Gas Inventory Data, 2000-2009. http://www.arb.ca.gov/cc/inventory/data/data.htm

transportation sector is the largest emitter of GHGs, followed by electricity generation (California Air Resources Board, 2012).

As the name implies, global climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern, respectively. California produced 492 million gross metric tons of carbon dioxide equivalents ($MMTCO_2e$) in 2004 (California Energy Commission 2006a) [3]. By 2020, California is projected to produce 507 $MMTCO_2e$ per year.[4]

Carbon dioxide equivalents are a measurement used to account for the fact that different GHGs have different potential to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. This potential, known as the global warming potential of a GHG, is also dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. Expressing GHG emissions in carbon dioxide equivalents takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted.

Consumption of fossil fuels in the transportation sector was the single largest source of California's GHG emissions in 2008, accounting for 36.9% of total GHG emissions in the state (California Air Resources Board, 2012). This category was followed by the electric power sector (including both in-state and out of-state sources) (24.8%) and the industrial sector (21.1%) (California Air Resources Board, 2012).

EFFECTS OF GLOBAL CLIMATE CHANGE

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

If the temperature of the ocean warms, it is anticipated that the winter snow season would be shortened. Snowpack in the Sierra Nevada provides both water supply (runoff) and storage (within the snowpack before melting), which is a major source of supply for the state. The snowpack portion of the supply could potentially decline by 70% to 90% by the end of the 21st century (Cal EPA 2006)[5]. This phenomenon could lead to significant challenges securing an adequate water

3 California Energy Commission. 2006a. Inventory of California Greenhouse Gas Emissions and Sinks 1990 to 2004. http://www.arb.ca.gov/cc/inventory/archive/archive.htm

4 California Air Resources Board. 2010. "Functional Equivalent Document prepared for the California Cap on GHG Emissions and Market-Based Compliance Mechanisms."

5 California Environmental Protection Agency, Climate Action Team. 2006. Climate Action Team Report to Governor Schwarzenegger and the Legislature. http://www.climatechange.ca.gov/climate_action_team/reports/

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

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

Public Health

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

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

Water Resources

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

The state's water supplies are also at risk from rising sea levels. An influx of saltwater would degrade California's estuaries, wetlands, and groundwater aquifers. Saltwater intrusion caused by rising sea levels is a major threat to the quality and reliability of water within the southern edge of the Sacramento/San Joaquin River Delta, a major state fresh water supply. Global warming is also projected to seriously affect agricultural areas, with California farmers projected to lose as much as 25% of the water supply they need; decrease the potential for hydropower production within the state (although the effects on hydropower are uncertain); and seriously harm winter tourism. Under the lower warming range, the snow dependent winter recreational season at lower elevations could be reduced by as much as one month. If temperatures reach the higher warming range and precipitation declines, there might be many years with insufficient snow for skiing, snowboarding, and other snow dependent recreational activities.

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

Agriculture

Increased GHG emissions are expected to cause widespread changes to the agriculture industry reducing the quantity and quality of agricultural products statewide. Although higher carbon dioxide levels can stimulate plant production and increase plant water-use efficiency, California's farmers will face greater water demand for crops and a less reliable water supply as temperatures rise.

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

Crop growth and development will be affected, as will the intensity and frequency of pest and disease outbreaks. Rising temperatures will likely aggravate ozone pollution, which makes plants more susceptible to disease and pests and interferes with plant growth.

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

Forests and Landscapes

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

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

Rising Sea Levels

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

ENERGY CONSUMPTION

The consumption of nonrenewable energy (primarily gasoline and diesel fuel) associated with the operation of passenger, public transit, and commercial vehicles results in GHG emissions that ultimately result in global climate change. Alternative fuels such as natural gas, ethanol, and electricity (unless derived from solar, wind, nuclear, or other energy sources that do not produce carbon emissions) also result in GHG emissions and contribute to global climate change.

Electricity Consumption

California relies on a regional power system composed of a diverse mix of natural gas, renewable, hydroelectric, and nuclear generation resources. Approximately 71 percent of the electrical power needed to meet California's demand is produced in the state. Approximately 29 percent of its electricity demand is imported from the Pacific Northwest and the Southwest (California Energy Commission, 2012)[6]. In 2010, California's in-state generated electricity was derived from natural gas (53.4 percent), large hydroelectric resources (14.6 percent), coal (1.7 percent), nuclear sources (15.7 percent), and renewable resources that include geothermal, biomass, small hydroelectric resources, wind, and solar (14.6 percent) (California Energy Commission, 2012).

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6 California Energy Commission (2012). Energy Almanac. Retrieved August 2012, from http://energyalmanac.ca.gov/overview/index.html

According to the California Energy Commission (CEC), total statewide electricity consumption increased from 166,979 gigawatt-hours (GWh) in 1980 to 228,038 GWh in 1990, which is an estimated annual growth rate of 3.66 percent. The statewide electricity consumption in 1997 was 246,225 GWh, reflecting an annual growth rate of 1.14 percent between 1990 and 1997 (California Energy Commission Energy Almanac, 2012). Statewide consumption was 274,985 GWh in 2010, an annual growth rate of 0.9 percent between 1997 and 2010.

Oil

The primary energy source for the United States is oil, which is refined to produce fuels like gasoline, diesel, and jet fuel. Oil is a finite, nonrenewable energy source. World consumption of petroleum products has grown steadily in the last several decades. As of 2009, world consumption of oil had reached 96 million barrels per day. The United States, with approximately five percent of the world's population, accounts for approximately 19 percent of world oil consumption, or approximately 18.6 million barrels per day (The World Factbook 2009, Washington, DC: Central Intelligence Agency, 2009). The transportation sector relies heavily on oil. In California, petroleum based fuels currently provide approximately 96 percent of the state's transportation energy needs (California Energy Commission, 2012).

Natural Gas/Propane

The state produces approximately 12 percent of its natural gas, while obtaining 22 percent from Canada and 65 percent from the Rockies and the Southwest (California Energy Commission, 2012). In 2006, California produced 325.6 billion cubic feet of natural gas (California Energy Commission, 2012).

3.2 REGULATORY SETTING

FEDERAL

Clean Air Act

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

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

Energy Policy and Conservation Act

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

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

Energy Policy Act of 1992 (EPAct)

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

Energy Policy Act of 2005

The Energy Policy Act of 2005 was signed into law on August 8, 2005. Generally, the act provides for renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for a clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

Intermodal Surface Transportation Efficiency Act (ISTEA)

ISTEA (49 U.S.C. § 101 et seq.) promoted the development of intermodal transportation systems to maximize mobility as well as address national and local interests in air quality and energy. ISTEA contained factors that metropolitan planning organizations (MPOs), such as SACOG, were to address in developing transportation plans and programs, including some energy-related factors. To meet the ISTEA requirements, MPOs adopted explicit policies defining the social, economic, energy, and environmental values that were to guide transportation decisions in that metropolitan area. The planning process was then to address these policies. Another requirement was to consider the consistency of transportation planning with federal, state, and local energy goals. Through this requirement, energy consumption was expected to become a criterion, along with cost and other values that determine the best transportation solution.

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)

SAFETEA-LU (23 U.S.C. § 507), renewed the Transportation Equity Act for the 21st Century (TEA-21) of 1998 (23 U.S.C.; 49 U.S.C.) through FY 2009. SAFETEA-LU authorized the federal surface transportation programs for highways, highway safety, and transit. SAFETEA-LU addressed the many challenges facing our transportation system today—such as improving safety, reducing traffic congestion, improving efficiency in freight movement, increasing intermodal connectivity, and protecting the environment—as well as laying the groundwork for addressing future challenges. SAFETEA-LU promoted more efficient and effective federal surface transportation programs by focusing on transportation issues of national significance, while giving state and local transportation decision makers more flexibility to solve transportation problems in their communities. SAFETEA-LU was extended in March of 2010 for nine months, and expired in December of the same year. In June 2012, SAFETEA-LU was replaced by the Moving Ahead for Progress in the 21st Century Act (MAP-21), which will take effect October 1, 2012.

Federal Climate Change Policy

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

Mandatory Greenhouse Gas Reporting Rule

On September 22, 2009, EPA issued a final rule for mandatory reporting of GHGs from large GHG emissions sources in the United States. In general, this national reporting requirement will provide EPA with accurate and timely GHG emissions data from facilities that emit 25,000 metric tons or more of CO_2 per year. This publically available data will allow the reporters to track their own emissions, compare them to similar facilities, and aid in identifying cost effective opportunities to reduce emissions in the future. Reporting is at the facility level, except that certain suppliers of fossil fuels and industrial greenhouse gases along with vehicle and engine manufacturers will report at the corporate level. An estimated 85% of the total U.S. GHG emissions, from approximately 10,000 facilities, are covered by this final rule.

STATE

Assembly Bill 1493

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

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

Assembly Bill 1007

Assembly Bill 1007, (Pavley, Chapter 371, Statutes of 2005) directed the CEC to prepare a plan to increase the use of alternative fuels in California. As a result, the CEC prepared the State Alternative Fuels Plan in consultation with the state, federal, and local agencies. The plan presents strategies and actions California must take to increase the use of alternative non-petroleum fuels in a manner that minimizes costs to California and maximizes the economic benefits of in-state production. The Plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuels use, reduce greenhouse gas emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

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

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

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

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

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

Assembly Bill 32- Climate Change Scoping Plan

On December 11, 2008 ARB adopted its *Climate Change Scoping Plan* (Scoping Plan), which functions as a roadmap of ARB's plans to achieve GHG reductions in California required by AB 32 through subsequently enacted regulations. The Scoping Plan contains the main strategies California will implement to reduce CO_2e emissions by 169 million metric tons (MMT), or approximately 30 percent, from the state's projected 2020 emissions level of 596 MMT of CO_2e under a business-as-usual scenario. (This is a reduction of 42 MMT CO_2e, or almost 10 percent, from 2002–2004 average emissions, but requires the reductions in the face of population and economic growth through 2020.) The Scoping Plan also breaks down the amount of GHG emissions reductions ARB recommends for each emissions sector of the state's GHG inventory. The Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards:

- improved emissions standards for light-duty vehicles (estimated reductions of 31.7 MMT CO_2e),
- the Low-Carbon Fuel Standard (15.0 MMT CO_2e),
- energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 MMT CO_2e), and
- a renewable portfolio standard for electricity production (21.3 MMT CO_2e).

California Strategy to Reduce Petroleum Dependence (AB 2076)

In response to the requirements of AB 2076 (Chapter 936, Statutes of 2000), the CEC and the CARB developed a strategy to reduce petroleum dependence in California. The strategy, *Reducing California's Petroleum Dependence*, was adopted by the CEC and CARB in 2003. The strategy recommends that California reduce on-road gasoline and diesel fuel demand to 15 percent below 2003 demand levels by 2020 and maintain that level for the foreseeable future; the Governor and Legislature work to establish national fuel economy standards that double the fuel efficiency of new cars, light trucks, and sport utility vehicles (SUVs); and increase the use of non- petroleum fuels to 20 percent of on-road fuel consumption by 2020 and 30 percent by 2030.

Climate Action Program at Caltrans

The California Department of Transportation, Business, Transportation, and Housing Agency, prepared a Climate Action Program in response to new regulatory directives. The goal of the Climate Action Program is to promote clean and energy efficient transportation, and provide guidance for mainstreaming energy and climate change issues into business operations. The overall approach to lower fuel consumption and CO_2 from transportation is twofold: (1) reduce congestion and improve efficiency of transportation systems through smart land use, operational improvements, and Intelligent Transportation Systems; and (2) institutionalize energy efficiency and GHG emission reduction measures and technology into planning, project development, operations, and maintenance of transportation facilities, fleets, buildings, and equipment.

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

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

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

Senate Bill 97 (SB 97)

Senate Bill 97 (Chapter 185, 2007) required the Governor's Office of Planning and Research (OPR) to develop recommended amendments to the State CEQA Guidelines for addressing greenhouse gas emissions. OPR prepared its recommended amendments to the State CEQA Guidelines to provide guidance to public agencies regarding the analysis and mitigation of greenhouse gas emissions and the effects of greenhouse gas emissions in draft CEQA documents. The Amendments became effective on March 18, 2010.

Senate Bill 375

Sen. Bill No. 375 (Stats. 2008, ch. 728) (SB 375) was built on AB 32 (California’s 2006 climate change law). SB 375’s core provision is a requirement for regional transportation agencies to develop a Sustainable Communities Strategy (SCS) in order to reduce GHG emissions from passenger vehicles. The SCS is one component of the Regional Transportation Plan (RTP).

The SCS outlines the region’s plan for combining transportation resources, such as roads and mass transit, with a realistic land use pattern, in order to meet a state target for reducing GHG emissions. The strategy must take into account the region’s housing needs, transportation demands, and protection of resource and farmlands.

Additionally, SB 375 modified the state's Housing Element Law to achieve consistency between the land use pattern outlined in the SCS and the Regional Housing Needs Assessment allocation. The legislation also substantially improved cities' and counties' accountability for carrying out their housing element plans.

Finally, SB 375 amended the California Environmental Quality Act (Pub. Resources Code, § 21000 et seq.) to ease the environmental review of developments that help reduce the growth of GHG emissions.

3.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Per Appendix G of the CEQA Guidelines, climate change-related impacts are considered significant if implementation of the proposed project under consideration would do any of the following:

1. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
2. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

There is not an adopted threshold of significance of GHG emissions in El Dorado County. When this is the case, it is recommended that a threshold of significance for GHG emissions selected by lead agencies be related to compliance with AB 32. In compliance with AB 32 and the Scoping Plan, a quantitative GHG analysis should be performed to demonstrate that a project would promote sustainability and implement operational GHG emission reduction strategies in order to reduce the project's GHG emissions.

In August 2012, the California Air Resources Board (CARB) released revised estimates of the expected 2020 emissions reductions. The revised analysis relies on emissions projections updated in light of current economic forecasts which account for the economic downturn since 2008 as well as reduction measures already approved and put in place relating to future fuel and energy demand, as well as other factors. This reduced the projected 2020 emissions from 596 million metric tons (MMT) CO_2e to 545 $MMTCO_2e$. The reduction in projected 2020 emissions means that the revised reduction necessary to achieve AB 32's goal of reaching 1990 levels by 2020 is 21.7 percent (it had previously been around 29 percent).Therefore, if the proposed project does not show a 21.7 percent reduction of emissions when comparing the project's estimated 2020 levels to the project's 2005 BAU, the project would be considered to result in a cumulatively considerable contribution to global climate change. It should be noted that the proposed project would be required to comply with the minimum mandated measures of 2010 California Green Building Standards Code (CalGreen Code), such as a 20 percent mandatory reduction in indoor water use and diversion of 50 percent of construction waste from landfills. A variety of voluntary CalGreen Code measures also exists that would further reduce GHG emissions, but are not mandatory.

IMPACTS AND MITIGATION MEASURES

Impact 3-1: Potential to generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment or potential to conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases (less than significant with mitigation)

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. Therefore, the cumulative global emissions of GHGs contributing to global climate change can be attributed to every nation, region, and city, and virtually every individual on Earth. A project's GHG emissions are at a micro-scale relative to global emissions, but could result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale impact. Implementation of the proposed project would contribute to increases of GHG emissions that are associated with global climate change. Estimated GHG emissions attributable to future development would be primarily associated with increases of CO_2 and other GHG pollutants, such as methane (CH_4) and nitrous oxide (N_2O), from mobile sources and utility usage.

The proposed project's short-term construction-related and long-term operational GHG emissions were estimated using the California Emission Estimator Model (CalEEMod)™ (v.2013.2.2). CalEEMod is a statewide model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify GHG emissions from land use projects. The model quantifies direct GHG emissions from construction and operation (including vehicle use), as well as indirect GHG emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. Emissions are expressed in annual metric tons of CO_2 equivalent units of measure (i.e., $MTCO_2e$), based on the global warming potential of the individual pollutants.

Short-Term Construction GHG Emissions: Estimated increases in GHG emissions associated with construction of the proposed project are summarized in Table 3-2.

TABLE 3-2: CONSTRUCTION GHG EMISSIONS (UNMITIGATED METRIC TONS/YR)

	Bio- CO_2	*NBio- CO_2*	*Total CO_2*	*CH_4*	*N2O*	*CO_2e*
2015	0.0000	507.7703	507.7703	0.0854	0.0000	509.5637
2016	0.0000	25.6294	25.6294	5.7100e-003	0.0000	25.7492
Total	**0.0000**	**533.3996**	**533.3996**	**0.0911**	**0.0000**	**535.3129**

SOURCES: CALEEMOD (V.2013.2.2) AND CEQA GUIDE TO AIR QUALITY ASSESSMENT, DETERMINING SIGNIFICANCE OF AIR QUALITY IMPACTS UNDER THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (EDAQMD 2002)

As presented in the table, short-term construction emissions of GHG associated are estimated to be 535.31 $MTCO_2e$. Construction GHG emissions are a one-time release and are, therefore, not typically expected to generate a significant contribution to global climate change in the long-term. Due to the size of the proposed project, the project's estimated construction-related GHG contribution to global climate change would be considered negligible on the overall global emissions scale.

Long-Term Operational GHG Emissions: The long-term operational GHG emissions estimate for the proposed project incorporates the project's potential area source and vehicle emissions, and emissions associated with utility and water usage, and wastewater and solid waste generation. The modeling included mitigation inputs for the year 2020 including the following:

Mobile Source Mitigation (*These are implemented through the project design and location)

- Increase Density
- Improve Walkability Design
- Improve Destination Accessibility
- Increase Transit Accessibility
- Improve Pedestrian Network
- Provide Traffic Calming Measures

Energy Source Mitigation

- Exceed Title 24 by 10 percent
- Install High Efficiency Lighting
- Install Energy Efficient Appliances

Area Source Mitigation

- Use only Natural Gas Hearths

Water Mitigation

- Install Low Flow Bathroom Faucet
- Install Low Flow Kitchen Faucet
- Install Low Flow Toilet
- Install Low Flow Shower
- Use Water Efficient Irrigation System

Estimated GHG emissions associated with the proposed project in 2020 with the above mitigation incorporated are summarized in Table 3-3. As shown in the table, the annual 2020 GHG emissions associated with the proposed project would be 1,924.2328 $MTCO_2e$ with mitigation incorporated.

TABLE 3-3: OPERATIONAL GHG EMISSIONS 2020 (MITIGATED METRIC TONS/YR)

	Bio- CO_2	*NBio- CO_2*	*Total CO_2*	*CH_4*	*N2O*	*CO_2e*
Area	0.0000	180.2534	180.2534	6.3500e-003	3.2500e-003	181.3940
Energy	0.0000	290.1476	290.1476	0.0117	3.2000e-003	291.3865
Mobile	0.0000	1,351.3849	1,351.3849	0.0549	0.0000	1,352.5380
Waste	23.3440	0.0000	23.3440	1.3796	0.0000	52.3153
Water	4.1341	30.3299	34.4640	0.4259	0.0103	46.5990
Total	27.4780	1,852.1158	1,879.593	1.879.593	0.0167	1,924.2328

SOURCES: CALEEMOD (V.2013.2.2) AND CEQA GUIDE TO AIR QUALITY ASSESSMENT, DETERMINING SIGNIFICANCE OF AIR QUALITY IMPACTS UNDER THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (EDAQMD 2002)

The threshold of significance for GHG emissions is based on the CARB's Scoping Plan that a development project must show a minimum GHG emission reduction of 21.7 percent from projected Business as Usual (BAU) levels (i.e., 2005 levels) by the year 2020. Thus, the project's 2005 levels were evaluated in order to determine the net decrease in the proposed project's GHG emissions over time. Table 3-4 presents the projected 2005 BAU GHG emissions, which are estimated to be 2,939.2318 $MTCO_2e$.

TABLE 3-4: OPERATIONAL GHG EMISSIONS 2010 BUSINESS AS USUAL (UNMITIGATED METRIC TONS/YR)

	Bio- CO_2	NBio- CO_2	Total CO_2	CH_4	N2O	CO_2e
Area	258.2394	111.3341	369.5735	0.2420	0.0203	380.9525
Energy	0.0000	314.2116	314.2116	0.0127	3.4600e-003	315.5511
Mobile	0.0000	2,139.507	2,139.507	0.2118	0.0000	2,143.955
Waste	23.3440	0.0000	23.3440	1.3796	0.0000	52.3153
Water	5.1676	36.0957	41.2633	0.5324	0.0129	56.4333
Total	286.7510	2,601.1484	2,887.8994	2.3797	0.366	2.949.2318

SOURCES: CALEEMOD (V.2013.2.2) AND CEQA GUIDE TO AIR QUALITY ASSESSMENT, DETERMINING SIGNIFICANCE OF AIR QUALITY IMPACTS UNDER THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (EDAQMD 2002)

Consequently, the proposed project would result in approximately a 34.75 percent reduction in annual GHG emissions from the 2005 BAU level by 2020 ([2,949.23 MTCO2e – 1,924.23 MTCO2e] / 2,949.23 MTCO2e x 100% = 34.75%). The reduction in GHG emissions would be attributable to the energy and water mitigation model inputs as well as the advancement of vehicle and equipment efficiency, and more stringent standards and regulations as time progresses, such as State regulation emission reductions (e.g., Pavley, Low Carbon Fuel Standard, and Renewable Portfolio Standard). It should be noted that although a reduction related to such attributes would occur for every development project, CalEEMod takes into consideration how much of each attribute is applied for each specific project based on the size of the project and associated land uses.

In addition, as stated previously, the proposed project would be required to comply with the minimum mandatory measures of the CalGreen Code, which would result in an estimated 1.8 percent reduction. The total reduction in GHG emissions exceeds the minimum reduction threshold of 21.7 percent per the Scoping Plan.

Conclusion: As stated previously, short-term construction GHG emissions are a one-time release of GHGs and are not expected to significantly contribute to global climate change over the lifetime of the proposed project. With the implementation of the following mitigation measure (re-presented from Chapter 2), The overall annual GHG emissions associated with the project would be reduced by over 34.75 percent by the year 2020, consistent with applicable standards and thresholds of a 21.7 percent reduction. Because the project would meet the 21.7 percent minimum reduction threshold established for this project per the Scoping Plan, the proposed project would not hinder the State's ability to reach the GHG reduction target nor conflict with any applicable plan, policy, or regulation related to GHG reduction, and impacts related to GHG emissions and global climate change would be considered *less-than-significant*.

MITIGATION MEASURES

Mitigation Measure 3-1*: To reduce Projects Emissions, the project applicant shall include implement the following:*

1. *Exceed Title 24 by 10 percent*
2. *Install High Efficiency Lighting*
3. *Install Energy Efficient Appliances*
4. *Use only Natural Gas Hearths*
5. *Install Low Flow Bathroom Faucet*
6. *Install Low Flow Kitchen Faucet*
7. *Install Low Flow Toilet*
8. *Install Low Flow Shower*
9. *Use Water Efficient Irrigation System*
10. *Provide ten (10) Level 1 electric vehicle charging facilities within the garage complex. The charging facilities should be divided by floors (i.e. five (5) floors = two (2) facilities per floor).*
11. *Install the appropriate plumbing, and paneling to allow for an additional one hundred (100) Level 1 electric vehicle charging facilities to be installed within the garage complex as warranted by residential demand. This infrastructure installation should be divided by garage floors (i.e. twenty additional future Level 1 electric vehicle charging facilities per floor).*
12. *Provide bicycle storage areas for residents within the parking structure or other covered area to facilitate bicycling for both commuting and around town trips.*

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SUMMER EMISSIONS

El Dorado Hills Apartments Project

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	250.00	Dwelling Unit	4.50	239,070.00	715

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	1			**Operational Year**	2015
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 - Acreage and square feet adjusted to actual.

Construction Phase -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Vehicle Trips - Trip rates adjusted from defaults to match trip rates in the traffic analysis.

Table Name	Column Name	Default Value	New Value
tblLandUse	LandUseSquareFeet	250,000.00	239,070.00

tblLandUse	LotAcreage	6.58	4.50
tblProjectCharacteristics	OperationalYear	2014	2015
tblVehicleTrips	ST_TR	7.16	6.39
tblVehicleTrips	SU_TR	6.07	5.86
tblVehicleTrips	WD_TR	6.59	6.65

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					
2015	5.3522	56.9729	43.7128	0.0512	18.2141	3.0895	21.3037	9.9699	2.8424	12.8123	0.0000	4,844.3246	4,844.3246	1.2361	0.0000	4,870.2829
2016	416.0631	2.5198	3.7964	6.7500e-003	0.2957	0.1990	0.4947	0.0784	0.1988	0.2772	0.0000	592.0169	592.0169	0.0487	0.0000	593.0393
Total	**421.4153**	**59.4928**	**47.5092**	**0.0579**	**18.5099**	**3.2885**	**21.7984**	**10.0483**	**3.0411**	**13.0895**	**0.0000**	**5,436.3415**	**5,436.3415**	**1.2848**	**0.0000**	**5,463.3222**

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					
2015	5.3522	56.9729	43.7128	0.0512	18.2141	3.0895	21.3037	9.9699	2.8424	12.8123	0.0000	4,844.3246	4,844.3246	1.2361	0.0000	4,870.2829
2016	416.0631	2.5198	3.7964	6.7500e-003	0.2957	0.1990	0.4947	0.0784	0.1988	0.2772	0.0000	592.0169	592.0169	0.0487	0.0000	593.0393

Total	**421.4153**	**59.4928**	**47.5092**	**0.0579**	**18.5099**	**3.2885**	**21.7984**	**10.0483**	**3.0411**	**13.0895**	**0.0000**	**5,436.3415**	**5,436.3415**	**1.2848**	**0.0000**	**5,463.3222**

	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**

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	390.4363	5.4384	492.3326	0.1852		66.3302	66.3302		66.3282	66.3282	6,942.9327	2,948.9028	9,891.8355	6.4458	0.5461	10,196.4925
Energy	0.0322	0.2749	0.1170	1.7500e-003		0.0222	0.0222		0.0222	0.0222		350.9299	350.9299	6.7300e-003	6.4300e-003	353.0656
Mobile	8.2522	14.9213	79.6389	0.1455	10.0553	0.1948	10.2501	2.6831	0.1786	2.8618		12,901.6367	12,901.6367	0.5974		12,914.1821
Total	**398.7206**	**20.6346**	**572.0885**	**0.3325**	**10.0553**	**66.5472**	**76.6025**	**2.6831**	**66.5291**	**69.2122**	**6,942.9327**	**16,201.4694**	**23,144.4021**	**7.0499**	**0.5525**	**23,463.7403**

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	8.2743	0.2476	21.0359	1.0900e-003		0.4143	0.4143		0.4111	0.4111	0.0000	4,801.8440	4,801.8440	0.1299	0.0874	4,831.6522
Energy	0.0302	0.2579	0.1097	1.6500e-003		0.0209	0.0209		0.0209	0.0209		329.2293	329.2293	6.3100e-003	6.0400e-003	331.2330

Mobile	7.7612	12.5639	67.6520	0.1204	8.2766	0.1629	8.4395	2.2085	0.1493	2.3578		10,674.0614	10,674.0614	0.5044		10,684.6528
Total	**16.0657**	**13.0694**	**88.7976**	**0.1231**	**8.2766**	**0.5980**	**8.8746**	**2.2085**	**0.5813**	**2.7898**	**0.0000**	**15,805.1347**	**15,805.1347**	**0.6406**	**0.0934**	**15,847.5380**

	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	95.97	36.66	84.48	62.96	17.69	99.10	88.41	17.69	99.13	95.97	100.00	2.45	31.71	90.91	83.10	32.46

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2015	1/7/2015	5	5	
2	Grading	Grading	1/8/2015	1/19/2015	5	8	
3	Building Construction	Building Construction	1/20/2015	12/7/2015	5	230	
4	Paving	Paving	12/8/2015	12/31/2015	5	18	
5	Architectural Coating	Architectural Coating	1/1/2016	1/26/2016	5	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 484,117; Residential Outdoor: 161,372; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41

Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	125	0.42
Paving	Paving Equipment	2	6.00	130	0.36
Paving	Rollers	2	6.00	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
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	180.00	27.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	36.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2015

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2609	56.8897	42.6318	0.0391		3.0883	3.0883		2.8412	2.8412		4,111.7444	4,111.7444	1.2275		4,137.5225
Total	**5.2609**	**56.8897**	**42.6318**	**0.0391**	**18.0663**	**3.0883**	**21.1545**	**9.9307**	**2.8412**	**12.7719**		**4,111.7444**	**4,111.7444**	**1.2275**		**4,137.5225**

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	0.0913	0.0833	1.0811	1.8900e-003	0.1479	1.2600e-003	0.1491	0.0392	1.1400e-003	0.0404		161.1758	161.1758	8.5800e-003		161.3560
Total	**0.0913**	**0.0833**	**1.0811**	**1.8900e-003**	**0.1479**	**1.2600e-003**	**0.1491**	**0.0392**	**1.1400e-003**	**0.0404**		**161.1758**	**161.1758**	**8.5800e-003**		**161.3560**

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000

Off-Road	5.2609	56.8897	42.6318	0.0391		3.0883	3.0883		2.8412	2.8412	0.0000	4,111.7444	4,111.7444	1.2275		4,137.5224
Total	**5.2609**	**56.8897**	**42.6318**	**0.0391**	**18.0663**	**3.0883**	**21.1545**	**9.9307**	**2.8412**	**12.7719**	**0.0000**	**4,111.7444**	**4,111.7444**	**1.2275**		**4,137.5224**

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	0.0913	0.0833	1.0811	1.8900e-003	0.1479	1.2600e-003	0.1491	0.0392	1.1400e-003	0.0404		161.1758	161.1758	8.5800e-003		161.3560
Total	**0.0913**	**0.0833**	**1.0811**	**1.8900e-003**	**0.1479**	**1.2600e-003**	**0.1491**	**0.0392**	**1.1400e-003**	**0.0404**		**161.1758**	**161.1758**	**8.5800e-003**		**161.3560**

3.3 Grading - 2015

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					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	3.8327	40.4161	26.6731	0.0298		2.3284	2.3284		2.1421	2.1421		3,129.0158	3,129.0158	0.9341		3,148.6328
Total	**3.8327**	**40.4161**	**26.6731**	**0.0298**	**6.5523**	**2.3284**	**8.8807**	**3.3675**	**2.1421**	**5.5096**		**3,129.0158**	**3,129.0158**	**0.9341**		**3,148.6328**

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	0.0761	0.0694	0.9009	1.5700e-003	0.1232	1.0500e-003	0.1243	0.0327	9.5000e-004	0.0336		134.3132	134.3132	7.1500e-003		134.4633
Total	**0.0761**	**0.0694**	**0.9009**	**1.5700e-003**	**0.1232**	**1.0500e-003**	**0.1243**	**0.0327**	**9.5000e-004**	**0.0336**		**134.3132**	**134.3132**	**7.1500e-003**		**134.4633**

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					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	3.8327	40.4161	26.6731	0.0298		2.3284	2.3284		2.1421	2.1421	0.0000	3,129.0158	3,129.0158	0.9341		3,148.6328
Total	**3.8327**	**40.4161**	**26.6731**	**0.0298**	**6.5523**	**2.3284**	**8.8807**	**3.3675**	**2.1421**	**5.5096**	**0.0000**	**3,129.0158**	**3,129.0158**	**0.9341**		**3,148.6328**

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	0.0761	0.0694	0.9009	1.5700e-003	0.1232	1.0500e-003	0.1243	0.0327	9.5000e-004	0.0336		134.3132	134.3132	7.1500e-003		134.4633
Total	**0.0761**	**0.0694**	**0.9009**	**1.5700e-003**	**0.1232**	**1.0500e-003**	**0.1243**	**0.0327**	**9.5000e-004**	**0.0336**		**134.3132**	**134.3132**	**7.1500e-003**		**134.4633**

3.4 Building Construction - 2015

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	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904		2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**		**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

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	0.3972	2.7168	5.7230	5.4400e-003	0.1742	0.0453	0.2195	0.0495	0.0416	0.0911		542.9894	542.9894	4.9600e-003		543.0936

Worker	0.9127	0.8327	10.8106	0.0189	1.4787	0.0126	1.4912	0.3922	0.0114	0.4036		1,611.7581	1,611.7581	0.0858		1,613.5601
Total	**1.3099**	**3.5496**	**16.5336**	**0.0243**	**1.6529**	**0.0578**	**1.7107**	**0.4417**	**0.0530**	**0.4947**		**2,154.7475**	**2,154.7475**	**0.0908**		**2,156.6538**

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	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904	0.0000	2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**	**0.0000**	**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

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	0.3972	2.7168	5.7230	5.4400e-003	0.1742	0.0453	0.2195	0.0495	0.0416	0.0911		542.9894	542.9894	4.9600e-003		543.0936
Worker	0.9127	0.8327	10.8106	0.0189	1.4787	0.0126	1.4912	0.3922	0.0114	0.4036		1,611.7581	1,611.7581	0.0858		1,613.5601
Total	**1.3099**	**3.5496**	**16.5336**	**0.0243**	**1.6529**	**0.0578**	**1.7107**	**0.4417**	**0.0530**	**0.4947**		**2,154.7475**	**2,154.7475**	**0.0908**		**2,156.6538**

3.5 Paving - 2015

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	1.9601	20.3064	12.6794	0.0186		1.2241	1.2241		1.1280	1.1280		1,921.3091	1,921.3091	0.5588		1,933.0446
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9601**	**20.3064**	**12.6794**	**0.0186**		**1.2241**	**1.2241**		**1.1280**	**1.1280**		**1,921.3091**	**1,921.3091**	**0.5588**		**1,933.0446**

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	0.1014	0.0925	1.2012	2.1000e-003	0.1643	1.4000e-003	0.1657	0.0436	1.2700e-003	0.0449		179.0842	179.0842	9.5300e-003		179.2845
Total	**0.1014**	**0.0925**	**1.2012**	**2.1000e-003**	**0.1643**	**1.4000e-003**	**0.1657**	**0.0436**	**1.2700e-003**	**0.0449**		**179.0842**	**179.0842**	**9.5300e-003**		**179.2845**

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	1.9601	20.3064	12.6794	0.0186		1.2241	1.2241		1.1280	1.1280	0.0000	1,921.3090	1,921.3090	0.5588		1,933.0446
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9601**	**20.3064**	**12.6794**	**0.0186**		**1.2241**	**1.2241**		**1.1280**	**1.1280**	**0.0000**	**1,921.3090**	**1,921.3090**	**0.5588**		**1,933.0446**

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	0.1014	0.0925	1.2012	2.1000e-003	0.1643	1.4000e-003	0.1657	0.0436	1.2700e-003	0.0449		179.0842	179.0842	9.5300e-003		179.2845
Total	**0.1014**	**0.0925**	**1.2012**	**2.1000e-003**	**0.1643**	**1.4000e-003**	**0.1657**	**0.0436**	**1.2700e-003**	**0.0449**		**179.0842**	**179.0842**	**9.5300e-003**		**179.2845**

3.6 Architectural Coating - 2016

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	415.5335					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966		281.4481	281.4481	0.0332		282.1449

	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
Total	**415.9020**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**		**281.4481**	**281.4481**	**0.0332**		**282.1449**

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	0.1611	0.1476	1.9125	3.7800e-003	0.2957	2.3700e-003	0.2981	0.0784	2.1600e-003	0.0806		310.5688	310.5688	0.0155		310.8944
Total	**0.1611**	**0.1476**	**1.9125**	**3.7800e-003**	**0.2957**	**2.3700e-003**	**0.2981**	**0.0784**	**2.1600e-003**	**0.0806**		**310.5688**	**310.5688**	**0.0155**		**310.8944**

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	415.5335					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966	0.0000	281.4481	281.4481	0.0332		282.1449
Total	**415.9020**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**	**0.0000**	**281.4481**	**281.4481**	**0.0332**		**282.1449**

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	0.1611	0.1476	1.9125	3.7800e-003	0.2957	2.3700e-003	0.2981	0.0784	2.1600e-003	0.0806		310.5688	310.5688	0.0155		310.8944
Total	**0.1611**	**0.1476**	**1.9125**	**3.7800e-003**	**0.2957**	**2.3700e-003**	**0.2981**	**0.0784**	**2.1600e-003**	**0.0806**		**310.5688**	**310.5688**	**0.0155**		**310.8944**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	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	7.7612	12.5639	67.6520	0.1204	8.2766	0.1629	8.4395	2.2085	0.1493	2.3578		10,674.0614	10,674.0614	0.5044		10,684.6528
Unmitigated	8.2522	14.9213	79.6389	0.1455	10.0553	0.1948	10.2501	2.6831	0.1786	2.8618		12,901.6367	12,901.6367	0.5974		12,914.1821

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,662.50	1,597.50	1465.00	4,654,882	3,831,477
Total	1,662.50	1,597.50	1,465.00	4,654,882	3,831,477

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
Apartments Mid Rise	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.455780	0.078333	0.189232	0.163096	0.075602	0.010805	0.009660	0.001020	0.001371	0.000788	0.008641	0.000749	0.004924

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	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	0.0302	0.2579	0.1097	1.6500e-003		0.0209	0.0209		0.0209	0.0209		329.2293	329.2293	6.3100e-003	6.0400e-003	331.2330
NaturalGas Unmitigated	0.0322	0.2749	0.1170	1.7500e-003		0.0222	0.0222		0.0222	0.0222		350.9299	350.9299	6.7300e-003	6.4300e-003	353.0656

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					
Apartments Mid Rise	2982.9	0.0322	0.2749	0.1170	1.7500e-003		0.0222	0.0222		0.0222	0.0222		350.9299	350.9299	6.7300e-003	6.4300e-003	353.0656
Total		**0.0322**	**0.2749**	**0.1170**	**1.7500e-003**		**0.0222**	**0.0222**		**0.0222**	**0.0222**		**350.9299**	**350.9299**	**6.7300e-003**	**6.4300e-003**	**353.0656**

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					
Apartments Mid Rise	2.79845	0.0302	0.2579	0.1097	1.6500e-003		0.0209	0.0209		0.0209	0.0209		329.2293	329.2293	6.3100e-003	6.0400e-003	331.2330
Total		**0.0302**	**0.2579**	**0.1097**	**1.6500e-003**		**0.0209**	**0.0209**		**0.0209**	**0.0209**		**329.2293**	**329.2293**	**6.3100e-003**	**6.0400e-003**	**331.2330**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	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	8.2743	0.2476	21.0359	1.0900e-003		0.4143	0.4143		0.4111	0.4111	0.0000	4,801.8440	4,801.8440	0.1299	0.0874	4,831.6522
Unmitigated	390.4363	5.4384	492.3326	0.1852		66.3302	66.3302		66.3282	66.3282	6,942.9327	2,948.9028	9,891.8355	6.4458	0.5461	10,196.4925

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	2.0492					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	5.1161					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	382.5987	5.1908	471.3206	0.1841		66.2177	66.2177		66.2157	66.2157	6,942.9327	2,911.7647	9,854.6974	6.4072	0.5461	10,158.5434
Landscaping	0.6722	0.2475	21.0121	1.0900e-003		0.1125	0.1125		0.1125	0.1125		37.1381	37.1381	0.0386		37.9491
Total	**390.4363**	**5.4384**	**492.3326**	**0.1852**		**66.3302**	**66.3302**		**66.3282**	**66.3282**	**6,942.9327**	**2,948.9028**	**9,891.8355**	**6.4458**	**0.5461**	**10,196.4925**

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					
Consumer Products	5.1161					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4368	2.0000e-005	0.0238	0.0000		0.3018	0.3018		0.2986	0.2986	0.0000	4,764.7059	4,764.7059	0.0913	0.0874	4,793.7031
Landscaping	0.6722	0.2475	21.0121	1.0900e-003		0.1125	0.1125		0.1125	0.1125		37.1381	37.1381	0.0386		37.9491
Architectural Coating	2.0492					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**8.2743**	**0.2476**	**21.0359**	**1.0900e-003**		**0.4143**	**0.4143**		**0.4111**	**0.4111**	**0.0000**	**4,801.8440**	**4,801.8440**	**0.1299**	**0.0874**	**4,831.6522**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

WINTER EMISSIONS

El Dorado Hills Apartments Project

El Dorado-Mountain County County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	250.00	Dwelling Unit	4.50	239,070.00	715

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	1			**Operational Year**	2015
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 - Acreage and square feet adjusted to actual.

Construction Phase -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Vehicle Trips - Trip rates adjusted from defaults to match trip rates in the traffic analysis.

Table Name	Column Name	Default Value	New Value
tblLandUse	LandUseSquareFeet	250,000.00	239,070.00

tblLandUse	LotAcreage	6.58	4.50
tblProjectCharacteristics	OperationalYear	2014	2015
tblVehicleTrips	ST_TR	7.16	6.39
tblVehicleTrips	SU_TR	6.07	5.86
tblVehicleTrips	WD_TR	6.59	6.65

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					
2015	5.3454	56.9930	43.6578	0.0491	18.2141	3.0895	21.3037	9.9699	2.8424	12.8123	0.0000	4,665.0593	4,665.0593	1.2361	0.0000	4,691.0176
2016	416.0495	2.5553	3.6833	6.3400e-003	0.2957	0.1990	0.4947	0.0784	0.1988	0.2772	0.0000	558.3559	558.3559	0.0487	0.0000	559.3783
Total	**421.3949**	**59.5484**	**47.3412**	**0.0554**	**18.5099**	**3.2885**	**21.7984**	**10.0483**	**3.0411**	**13.0895**	**0.0000**	**5,223.4153**	**5,223.4153**	**1.2848**	**0.0000**	**5,250.3959**

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					
2015	5.3454	56.9930	43.6578	0.0491	18.2141	3.0895	21.3037	9.9699	2.8424	12.8123	0.0000	4,665.0593	4,665.0593	1.2361	0.0000	4,691.0176
2016	416.0495	2.5553	3.6833	6.3400e-003	0.2957	0.1990	0.4947	0.0784	0.1988	0.2772	0.0000	558.3559	558.3559	0.0487	0.0000	559.3783

Total	**421.3949**	**59.5484**	**47.3412**	**0.0554**	**18.5099**	**3.2885**	**21.7984**	**10.0483**	**3.0411**	**13.0895**	**0.0000**	**5,223.4153**	**5,223.4153**	**1.2848**	**0.0000**	**5,250.3959**

	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**

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	390.4363	5.4384	492.3326	0.1852		66.3302	66.3302		66.3282	66.3282	6,942.9327	2,948.9028	9,891.8355	6.4458	0.5461	10,196.4925
Energy	0.0322	0.2749	0.1170	1.7500e-003		0.0222	0.0222		0.0222	0.0222		350.9299	350.9299	6.7300e-003	6.4300e-003	353.0656
Mobile	7.8449	16.9943	80.9370	0.1324	10.0553	0.1956	10.2510	2.6831	0.1794	2.8625		11,759.4414	11,759.4414	0.5975		11,771.9885
Total	**398.3134**	**22.7076**	**573.3866**	**0.3193**	**10.0553**	**66.5481**	**76.6034**	**2.6831**	**66.5299**	**69.2130**	**6,942.9327**	**15,059.2741**	**22,002.2068**	**7.0500**	**0.5525**	**22,321.5467**

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	8.2743	0.2476	21.0359	1.0900e-003		0.4143	0.4143		0.4111	0.4111	0.0000	4,801.8440	4,801.8440	0.1299	0.0874	4,831.6522
Energy	0.0302	0.2579	0.1097	1.6500e-003		0.0209	0.0209		0.0209	0.0209		329.2293	329.2293	6.3100e-003	6.0400e-003	331.2330

Mobile	7.3584	14.3118	70.4989	0.1096	8.2766	0.1637	8.4404	2.2085	0.1501	2.3586		9,733.2140	9,733.2140	0.5044		9,743.8071
Total	**15.6628**	**14.8172**	**91.6445**	**0.1124**	**8.2766**	**0.5988**	**8.8755**	**2.2085**	**0.5820**	**2.7906**	**0.0000**	**14,864.2873**	**14,864.2873**	**0.6407**	**0.0934**	**14,906.6923**

	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	**96.07**	**34.75**	**84.02**	**64.81**	**17.69**	**99.10**	**88.41**	**17.69**	**99.13**	**95.97**	**100.00**	**1.29**	**32.44**	**90.91**	**83.10**	**33.22**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2015	1/7/2015	5	5	
2	Grading	Grading	1/8/2015	1/19/2015	5	8	
3	Building Construction	Building Construction	1/20/2015	12/7/2015	5	230	
4	Paving	Paving	12/8/2015	12/31/2015	5	18	
5	Architectural Coating	Architectural Coating	1/1/2016	1/26/2016	5	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 484,117; Residential Outdoor: 161,372; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41

Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	125	0.42
Paving	Paving Equipment	2	6.00	130	0.36
Paving	Rollers	2	6.00	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
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	180.00	27.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	36.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2015

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2609	56.8897	42.6318	0.0391		3.0883	3.0883		2.8412	2.8412		4,111.7444	4,111.7444	1.2275		4,137.5225
Total	**5.2609**	**56.8897**	**42.6318**	**0.0391**	**18.0663**	**3.0883**	**21.1545**	**9.9307**	**2.8412**	**12.7719**		**4,111.7444**	**4,111.7444**	**1.2275**		**4,137.5225**

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	0.0845	0.1034	1.0261	1.6800e-003	0.1479	1.2600e-003	0.1491	0.0392	1.1400e-003	0.0404		143.7416	143.7416	8.5800e-003		143.9218
Total	**0.0845**	**0.1034**	**1.0261**	**1.6800e-003**	**0.1479**	**1.2600e-003**	**0.1491**	**0.0392**	**1.1400e-003**	**0.0404**		**143.7416**	**143.7416**	**8.5800e-003**		**143.9218**

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000

	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
Off-Road	5.2609	56.8897	42.6318	0.0391		3.0883	3.0883		2.8412	2.8412	0.0000	4,111.7444	4,111.7444	1.2275		4,137.5224
Total	**5.2609**	**56.8897**	**42.6318**	**0.0391**	**18.0663**	**3.0883**	**21.1545**	**9.9307**	**2.8412**	**12.7719**	**0.0000**	**4,111.7444**	**4,111.7444**	**1.2275**		**4,137.5224**

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	0.0845	0.1034	1.0261	1.6800e-003	0.1479	1.2600e-003	0.1491	0.0392	1.1400e-003	0.0404		143.7416	143.7416	8.5800e-003		143.9218
Total	**0.0845**	**0.1034**	**1.0261**	**1.6800e-003**	**0.1479**	**1.2600e-003**	**0.1491**	**0.0392**	**1.1400e-003**	**0.0404**		**143.7416**	**143.7416**	**8.5800e-003**		**143.9218**

3.3 Grading - 2015

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					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	3.8327	40.4161	26.6731	0.0298		2.3284	2.3284		2.1421	2.1421		3,129.0158	3,129.0158	0.9341		3,148.6328
Total	**3.8327**	**40.4161**	**26.6731**	**0.0298**	**6.5523**	**2.3284**	**8.8807**	**3.3675**	**2.1421**	**5.5096**		**3,129.0158**	**3,129.0158**	**0.9341**		**3,148.6328**

Unmitigated Construction Off-Site

Category	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
	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	0.0704	0.0862	0.8551	1.4000e-003	0.1232	1.0500e-003	0.1243	0.0327	9.5000e-004	0.0336		119.7847	119.7847	7.1500e-003		119.9349
Total	**0.0704**	**0.0862**	**0.8551**	**1.4000e-003**	**0.1232**	**1.0500e-003**	**0.1243**	**0.0327**	**9.5000e-004**	**0.0336**		**119.7847**	**119.7847**	**7.1500e-003**		**119.9349**

Mitigated Construction On-Site

Category	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
	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	3.8327	40.4161	26.6731	0.0298		2.3284	2.3284		2.1421	2.1421	0.0000	3,129.0158	3,129.0158	0.9341		3,148.6328
Total	**3.8327**	**40.4161**	**26.6731**	**0.0298**	**6.5523**	**2.3284**	**8.8807**	**3.3675**	**2.1421**	**5.5096**	**0.0000**	**3,129.0158**	**3,129.0158**	**0.9341**		**3,148.6328**

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	0.0704	0.0862	0.8551	1.4000e-003	0.1232	1.0500e-003	0.1243	0.0327	9.5000e-004	0.0336		119.7847	119.7847	7.1500e-003		119.9349
Total	**0.0704**	**0.0862**	**0.8551**	**1.4000e-003**	**0.1232**	**1.0500e-003**	**0.1243**	**0.0327**	**9.5000e-004**	**0.0336**		**119.7847**	**119.7847**	**7.1500e-003**		**119.9349**

3.4 Building Construction - 2015

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	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904		2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**		**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

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	0.4987	2.9403	8.1436	5.4300e-003	0.1742	0.0462	0.2204	0.0495	0.0425	0.0919		538.0660	538.0660	5.1200e-003		538.1734

Worker	0.8451	1.0338	10.2607	0.0168	1.4787	0.0126	1.4912	0.3922	0.0114	0.4036		1,437.4162	1,437.4162	0.0858		1,439.2183
Total	**1.3438**	**3.9741**	**18.4043**	**0.0223**	**1.6529**	**0.0588**	**1.7116**	**0.4417**	**0.0539**	**0.4956**		**1,975.4822**	**1,975.4822**	**0.0909**		**1,977.3917**

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	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904	0.0000	2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**	**0.0000**	**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

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	0.4987	2.9403	8.1436	5.4300e-003	0.1742	0.0462	0.2204	0.0495	0.0425	0.0919		538.0660	538.0660	5.1200e-003		538.1734
Worker	0.8451	1.0338	10.2607	0.0168	1.4787	0.0126	1.4912	0.3922	0.0114	0.4036		1,437.4162	1,437.4162	0.0858		1,439.2183
Total	**1.3438**	**3.9741**	**18.4043**	**0.0223**	**1.6529**	**0.0588**	**1.7116**	**0.4417**	**0.0539**	**0.4956**		**1,975.4822**	**1,975.4822**	**0.0909**		**1,977.3917**

3.5 Paving - 2015

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	1.9601	20.3064	12.6794	0.0186		1.2241	1.2241		1.1280	1.1280		1,921.3091	1,921.3091	0.5588		1,933.0446
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9601**	**20.3064**	**12.6794**	**0.0186**		**1.2241**	**1.2241**		**1.1280**	**1.1280**		**1,921.3091**	**1,921.3091**	**0.5588**		**1,933.0446**

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	0.0939	0.1149	1.1401	1.8700e-003	0.1643	1.4000e-003	0.1657	0.0436	1.2700e-003	0.0449		159.7129	159.7129	9.5300e-003		159.9131
Total	**0.0939**	**0.1149**	**1.1401**	**1.8700e-003**	**0.1643**	**1.4000e-003**	**0.1657**	**0.0436**	**1.2700e-003**	**0.0449**		**159.7129**	**159.7129**	**9.5300e-003**		**159.9131**

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	1.9601	20.3064	12.6794	0.0186		1.2241	1.2241		1.1280	1.1280	0.0000	1,921.3090	1,921.3090	0.5588		1,933.0446
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9601**	**20.3064**	**12.6794**	**0.0186**		**1.2241**	**1.2241**		**1.1280**	**1.1280**	**0.0000**	**1,921.3090**	**1,921.3090**	**0.5588**		**1,933.0446**

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	0.0939	0.1149	1.1401	1.8700e-003	0.1643	1.4000e-003	0.1657	0.0436	1.2700e-003	0.0449		159.7129	159.7129	9.5300e-003		159.9131
Total	**0.0939**	**0.1149**	**1.1401**	**1.8700e-003**	**0.1643**	**1.4000e-003**	**0.1657**	**0.0436**	**1.2700e-003**	**0.0449**		**159.7129**	**159.7129**	**9.5300e-003**		**159.9131**

3.6 Architectural Coating - 2016

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	415.5335					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966		281.4481	281.4481	0.0332		282.1449

Total	**415.9020**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**		**281.4481**	**281.4481**	**0.0332**		**282.1449**

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	0.1475	0.1831	1.7994	3.3600e-003	0.2957	2.3700e-003	0.2981	0.0784	2.1600e-003	0.0806		276.9079	276.9079	0.0155		277.2334
Total	**0.1475**	**0.1831**	**1.7994**	**3.3600e-003**	**0.2957**	**2.3700e-003**	**0.2981**	**0.0784**	**2.1600e-003**	**0.0806**		**276.9079**	**276.9079**	**0.0155**		**277.2334**

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	415.5335					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966	0.0000	281.4481	281.4481	0.0332		282.1449
Total	**415.9020**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**	**0.0000**	**281.4481**	**281.4481**	**0.0332**		**282.1449**

Mitigated Construction Off-Site

Category	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
	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	0.1475	0.1831	1.7994	3.3600e-003	0.2957	2.3700e-003	0.2981	0.0784	2.1600e-003	0.0806		276.9079	276.9079	0.0155		277.2334
Total	**0.1475**	**0.1831**	**1.7994**	**3.3600e-003**	**0.2957**	**2.3700e-003**	**0.2981**	**0.0784**	**2.1600e-003**	**0.0806**		**276.9079**	**276.9079**	**0.0155**		**277.2334**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

Category	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
	lb/day										lb/day					
Unmitigated	7.8449	16.9943	80.9370	0.1324	10.0553	0.1956	10.2510	2.6831	0.1794	2.8625		11,759.4414	11,759.4414	0.5975		11,771.9885
Mitigated	7.3584	14.3118	70.4989	0.1096	8.2766	0.1637	8.4404	2.2085	0.1501	2.3586		9,733.2140	9,733.2140	0.5044		9,743.8071

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,662.50	1,597.50	1465.00	4,654,882	3,831,477
Total	1,662.50	1,597.50	1,465.00	4,654,882	3,831,477

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
Apartments Mid Rise	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.455780	0.078333	0.189232	0.163096	0.075602	0.010805	0.009660	0.001020	0.001371	0.000788	0.008641	0.000749	0.004924

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	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	0.0302	0.2579	0.1097	1.6500e-003		0.0209	0.0209		0.0209	0.0209		329.2293	329.2293	6.3100e-003	6.0400e-003	331.2330
NaturalGas Unmitigated	0.0322	0.2749	0.1170	1.7500e-003		0.0222	0.0222		0.0222	0.0222		350.9299	350.9299	6.7300e-003	6.4300e-003	353.0656

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					
Apartments Mid Rise	2982.9	0.0322	0.2749	0.1170	1.7500e-003		0.0222	0.0222		0.0222	0.0222		350.9299	350.9299	6.7300e-003	6.4300e-003	353.0656
Total		**0.0322**	**0.2749**	**0.1170**	**1.7500e-003**		**0.0222**	**0.0222**		**0.0222**	**0.0222**		**350.9299**	**350.9299**	**6.7300e-003**	**6.4300e-003**	**353.0656**

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					
Apartments Mid Rise	2.79845	0.0302	0.2579	0.1097	1.6500e-003		0.0209	0.0209		0.0209	0.0209		329.2293	329.2293	6.3100e-003	6.0400e-003	331.2330
Total		**0.0302**	**0.2579**	**0.1097**	**1.6500e-003**		**0.0209**	**0.0209**		**0.0209**	**0.0209**		**329.2293**	**329.2293**	**6.3100e-003**	**6.0400e-003**	**331.2330**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	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					
Unmitigated	390.4363	5.4384	492.3326	0.1852		66.3302	66.3302		66.3282	66.3282	6,942.932 7	2,948.902 8	9,891.8355	6.4458	0.5461	10,196.492 5
Mitigated	8.2743	0.2476	21.0359	1.0900e-003		0.4143	0.4143		0.4111	0.4111	0.0000	4,801.844 0	4,801.8440	0.1299	0.0874	4,831.6522

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	2.0492					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	5.1161					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	382.5987	5.1908	471.3206	0.1841		66.2177	66.2177		66.2157	66.2157	6,942.932 7	2,911.764 7	9,854.6974	6.4072	0.5461	10,158.543 4
Landscaping	0.6722	0.2475	21.0121	1.0900e-003		0.1125	0.1125		0.1125	0.1125		37.1381	37.1381	0.0386		37.9491
Total	**390.4363**	**5.4384**	**492.3326**	**0.1852**		**66.3302**	**66.3302**		**66.3282**	**66.3282**	**6,942.932 7**	**2,948.902 8**	**9,891.8355**	**6.4458**	**0.5461**	**10,196.492 5**

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	2.0492					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	5.1161					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4368	2.0000e-005	0.0238	0.0000		0.3018	0.3018		0.2986	0.2986	0.0000	4,764.7059	4,764.7059	0.0913	0.0874	4,793.7031
Landscaping	0.6722	0.2475	21.0121	1.0900e-003		0.1125	0.1125		0.1125	0.1125		37.1381	37.1381	0.0386		37.9491
Total	**8.2743**	**0.2476**	**21.0359**	**1.0900e-003**		**0.4143**	**0.4143**		**0.4111**	**0.4111**	**0.0000**	**4,801.8440**	**4,801.8440**	**0.1299**	**0.0874**	**4,831.6522**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

GHG BUSINESS-AS-USUAL 2005 EMISSIONS

El Dorado Hills Apartments Project

El Dorado-Mountain County County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	250.00	Dwelling Unit	4.50	239,070.00	715

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 - Acreage and square feet adjusted to actual.

Construction Phase -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Vehicle Trips - Trip rates adjusted from default to match the trip rates in the traffic analysis.

Table Name	Column Name	Default Value	New Value
tblLandUse	LandUseSquareFeet	250,000.00	239,070.00

tblLandUse	LotAcreage	6.58	4.50
tblProjectCharacteristics	OperationalYear	2014	2005
tblVehicleTrips	ST_TR	7.16	6.39
tblVehicleTrips	SU_TR	6.07	5.86
tblVehicleTrips	WD_TR	6.59	6.65

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					
2015	0.5880	4.1674	4.2936	5.8700e-003	0.2529	0.2650	0.5179	0.0870	0.2487	0.3356	0.0000	507.7703	507.7703	0.0854	0.0000	509.5637
2016	3.7658	0.2208	0.1885	2.9000e-004	5.5500e-003	0.0138	0.0193	1.4800e-003	0.0129	0.0144	0.0000	25.6294	25.6294	5.7100e-003	0.0000	25.7492
Total	**4.3538**	**4.3881**	**4.4821**	**6.1600e-003**	**0.2584**	**0.2788**	**0.5372**	**0.0885**	**0.2615**	**0.3500**	**0.0000**	**533.3996**	**533.3996**	**0.0911**	**0.0000**	**535.3129**

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					
2015	0.5880	4.1673	4.2936	5.8700e-003	0.2529	0.2650	0.5179	0.0870	0.2487	0.3356	0.0000	507.7699	507.7699	0.0854	0.0000	509.5634
2016	3.7658	0.2208	0.1885	2.9000e-004	5.5500e-003	0.0138	0.0193	1.4800e-003	0.0129	0.0144	0.0000	25.6294	25.6294	5.7100e-003	0.0000	25.7492

Total	4.3538	4.3881	4.4821	6.1600e-003	0.2584	0.2788	0.5372	0.0885	0.2615	0.3500	0.0000	533.3993	533.3993	0.0911	0.0000	535.3125

	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

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	17.0874	0.2421	21.4770	7.6500e-003		2.7240	2.7240		2.7239	2.7239	258.2394	111.3341	369.5735	0.2432	0.0203	380.9769
Energy	5.8700e-003	0.0502	0.0214	3.2000e-004		4.0600e-003	4.0600e-003		4.0600e-003	4.0600e-003	0.0000	314.2116	314.2116	0.0127	3.4600e-003	315.5511
Mobile	3.1347	4.9829	34.6354	0.0372	1.5574	0.0774	1.6348	0.4522	0.0774	0.5296	0.0000	2,139.5071	2,139.5071	0.2118	0.0000	2,143.9552
Waste						0.0000	0.0000		0.0000	0.0000	23.3440	0.0000	23.3440	1.3796	0.0000	52.3153
Water						0.0000	0.0000		0.0000	0.0000	5.1676	36.0957	41.2633	0.5324	0.0129	56.4333
Total	**20.2279**	**5.2751**	**56.1337**	**0.0451**	**1.5574**	**2.8055**	**4.3629**	**0.4522**	**2.8054**	**3.2576**	**286.7510**	**2,601.1484**	**2,887.8994**	**2.3797**	**0.0366**	**2,949.2318**

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	1.4187	0.0293	2.1538	1.0000e-004		0.0215	0.0215		0.0213	0.0213	0.0000	180.2534	180.2534	8.2500e-003	3.2500e-003	181.4339
Energy	5.5100e-003	0.0471	0.0200	3.0000e-004		3.8100e-003	3.8100e-003		3.8100e-003	3.8100e-003	0.0000	290.1476	290.1476	0.0117	3.2000e-003	291.3865
Mobile	2.9080	4.1798	29.6706	0.0307	1.2820	0.0644	1.3464	0.3722	0.0644	0.4366	0.0000	1,769.9762	1,769.9762	0.1801	0.0000	1,773.7584
Waste						0.0000	0.0000		0.0000	0.0000	23.3440	0.0000	23.3440	1.3796	0.0000	52.3153
Water						0.0000	0.0000		0.0000	0.0000	4.1341	30.3299	34.4640	0.4259	0.0103	46.5990
Total	**4.3322**	**4.2561**	**31.8444**	**0.0311**	**1.2820**	**0.0897**	**1.3716**	**0.3722**	**0.0895**	**0.4617**	**27.4780**	**2,270.7072**	**2,298.1852**	**2.0055**	**0.0167**	**2,345.4931**

	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	**78.58**	**19.32**	**43.27**	**31.07**	**17.69**	**96.80**	**68.56**	**17.69**	**96.81**	**85.83**	**90.42**	**12.70**	**20.42**	**15.72**	**54.31**	**20.47**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/29/2015	2/4/2015	5	5	
2	Grading	Grading	2/5/2015	2/16/2015	5	8	
3	Building Construction	Building Construction	2/17/2015	1/4/2016	5	230	
4	Paving	Paving	1/5/2016	1/28/2016	5	18	
5	Architectural Coating	Architectural Coating	1/29/2016	2/23/2016	5	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 484,117; Residential Outdoor: 161,372; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	125	0.42
Paving	Paving Equipment	2	6.00	130	0.36
Paving	Rollers	2	6.00	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
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	180.00	27.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	36.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2015

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					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0132	0.1422	0.1066	1.0000e-004		7.7200e-003	7.7200e-003		7.1000e-003	7.1000e-003	0.0000	9.3253	9.3253	2.7800e-003	0.0000	9.3837
Total	**0.0132**	**0.1422**	**0.1066**	**1.0000e-004**	**0.0452**	**7.7200e-003**	**0.0529**	**0.0248**	**7.1000e-003**	**0.0319**	**0.0000**	**9.3253**	**9.3253**	**2.7800e-003**	**0.0000**	**9.3837**

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	2.0000e-004	2.4000e-004	2.4900e-003	0.0000	3.5000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3338	0.3338	2.0000e-005	0.0000	0.3342
Total	**2.0000e-004**	**2.4000e-004**	**2.4900e-003**	**0.0000**	**3.5000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3338**	**0.3338**	**2.0000e-005**	**0.0000**	**0.3342**

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					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0132	0.1422	0.1066	1.0000e-004		7.7200e-003	7.7200e-003		7.1000e-003	7.1000e-003	0.0000	9.3253	9.3253	2.7800e-003	0.0000	9.3837
Total	**0.0132**	**0.1422**	**0.1066**	**1.0000e-004**	**0.0452**	**7.7200e-003**	**0.0529**	**0.0248**	**7.1000e-003**	**0.0319**	**0.0000**	**9.3253**	**9.3253**	**2.7800e-003**	**0.0000**	**9.3837**

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	2.0000e-004	2.4000e-004	2.4900e-003	0.0000	3.5000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3338	0.3338	2.0000e-005	0.0000	0.3342
Total	**2.0000e-004**	**2.4000e-004**	**2.4900e-003**	**0.0000**	**3.5000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3338**	**0.3338**	**2.0000e-005**	**0.0000**	**0.3342**

3.3 Grading - 2015

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					0.0262	0.0000	0.0262	0.0135	0.0000	0.0135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0153	0.1617	0.1067	1.2000e-004		9.3100e-003	9.3100e-003		8.5700e-003	8.5700e-003	0.0000	11.3544	11.3544	3.3900e-003	0.0000	11.4256
Total	**0.0153**	**0.1617**	**0.1067**	**1.2000e-004**	**0.0262**	**9.3100e-003**	**0.0355**	**0.0135**	**8.5700e-003**	**0.0220**	**0.0000**	**11.3544**	**11.3544**	**3.3900e-003**	**0.0000**	**11.4256**

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	2.7000e-004	3.2000e-004	3.3200e-003	1.0000e-005	4.7000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4451	0.4451	3.0000e-005	0.0000	0.4456
Total	**2.7000e-004**	**3.2000e-004**	**3.3200e-003**	**1.0000e-005**	**4.7000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4451**	**0.4451**	**3.0000e-005**	**0.0000**	**0.4456**

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					0.0262	0.0000	0.0262	0.0135	0.0000	0.0135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0153	0.1617	0.1067	1.2000e-004		9.3100e-003	9.3100e-003		8.5700e-003	8.5700e-003	0.0000	11.3544	11.3544	3.3900e-003	0.0000	11.4256

Total	0.0153	0.1617	0.1067	1.2000e-004	0.0262	9.3100e-003	0.0355	0.0135	8.5700e-003	0.0220	0.0000	11.3544	11.3544	3.3900e-003	0.0000	11.4256

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	2.7000e-004	3.2000e-004	3.3200e-003	1.0000e-005	4.7000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4451	0.4451	3.0000e-005	0.0000	0.4456
Total	**2.7000e-004**	**3.2000e-004**	**3.3200e-003**	**1.0000e-005**	**4.7000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4451**	**0.4451**	**3.0000e-005**	**0.0000**	**0.4456**

3.4 Building Construction - 2015

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	0.4171	3.4234	2.1369	3.0600e-003		0.2413	0.2413		0.2269	0.2269	0.0000	278.1535	278.1535	0.0698	0.0000	279.6191
Total	**0.4171**	**3.4234**	**2.1369**	**3.0600e-003**		**0.2413**	**0.2413**		**0.2269**	**0.2269**	**0.0000**	**278.1535**	**278.1535**	**0.0698**	**0.0000**	**279.6191**

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	0.0509	0.3303	0.8028	6.2000e-004	0.0192	5.2100e-003	0.0244	5.4600e-003	4.7900e-003	0.0103	0.0000	55.9416	55.9416	5.2000e-004	0.0000	55.9525
Worker	0.0911	0.1092	1.1349	1.9700e-003	0.1615	1.4300e-003	0.1630	0.0430	1.3000e-003	0.0443	0.0000	152.2166	152.2166	8.8700e-003	0.0000	152.4029
Total	**0.1420**	**0.4395**	**1.9377**	**2.5900e-003**	**0.1807**	**6.6400e-003**	**0.1873**	**0.0485**	**6.0900e-003**	**0.0545**	**0.0000**	**208.1582**	**208.1582**	**9.3900e-003**	**0.0000**	**208.3555**

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	0.4171	3.4234	2.1369	3.0600e-003		0.2413	0.2413		0.2269	0.2269	0.0000	278.1532	278.1532	0.0698	0.0000	279.6188
Total	**0.4171**	**3.4234**	**2.1369**	**3.0600e-003**		**0.2413**	**0.2413**		**0.2269**	**0.2269**	**0.0000**	**278.1532**	**278.1532**	**0.0698**	**0.0000**	**279.6188**

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	0.0509	0.3303	0.8028	6.2000e-004	0.0192	5.2100e-003	0.0244	5.4600e-003	4.7900e-003	0.0103	0.0000	55.9416	55.9416	5.2000e-004	0.0000	55.9525
Worker	0.0911	0.1092	1.1349	1.9700e-003	0.1615	1.4300e-003	0.1630	0.0430	1.3000e-003	0.0443	0.0000	152.2166	152.2166	8.8700e-003	0.0000	152.4029
Total	**0.1420**	**0.4395**	**1.9377**	**2.5900e-003**	**0.1807**	**6.6400e-003**	**0.1873**	**0.0485**	**6.0900e-003**	**0.0545**	**0.0000**	**208.1582**	**208.1582**	**9.3900e-003**	**0.0000**	**208.3555**

3.4 Building Construction - 2016

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	3.4100e-003	0.0285	0.0185	3.0000e-005		1.9700e-003	1.9700e-003		1.8500e-003	1.8500e-003	0.0000	2.4215	2.4215	6.0000e-004	0.0000	2.4342
Total	**3.4100e-003**	**0.0285**	**0.0185**	**3.0000e-005**		**1.9700e-003**	**1.9700e-003**		**1.8500e-003**	**1.8500e-003**	**0.0000**	**2.4215**	**2.4215**	**6.0000e-004**	**0.0000**	**2.4342**

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	4.1000e-004	2.5900e-003	6.6700e-003	1.0000e-005	1.7000e-004	4.0000e-005	2.1000e-004	5.0000e-005	3.0000e-005	8.0000e-005	0.0000	0.4914	0.4914	0.0000	0.0000	0.4915

Worker	7.0000e-004	8.5000e-004	8.7600e-003	2.0000e-005	1.4200e-003	1.0000e-005	1.4300e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.2862	1.2862	7.0000e-005	0.0000	1.2877
Total	**1.1100e-003**	**3.4400e-003**	**0.0154**	**3.0000e-005**	**1.5900e-003**	**5.0000e-005**	**1.6400e-003**	**4.3000e-004**	**4.0000e-005**	**4.7000e-004**	**0.0000**	**1.7776**	**1.7776**	**7.0000e-005**	**0.0000**	**1.7792**

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	3.4100e-003	0.0285	0.0185	3.0000e-005		1.9700e-003	1.9700e-003		1.8500e-003	1.8500e-003	0.0000	2.4215	2.4215	6.0000e-004	0.0000	2.4342
Total	**3.4100e-003**	**0.0285**	**0.0185**	**3.0000e-005**		**1.9700e-003**	**1.9700e-003**		**1.8500e-003**	**1.8500e-003**	**0.0000**	**2.4215**	**2.4215**	**6.0000e-004**	**0.0000**	**2.4342**

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	4.1000e-004	2.5900e-003	6.6700e-003	1.0000e-005	1.7000e-004	4.0000e-005	2.1000e-004	5.0000e-005	3.0000e-005	8.0000e-005	0.0000	0.4914	0.4914	0.0000	0.0000	0.4915
Worker	7.0000e-004	8.5000e-004	8.7600e-003	2.0000e-005	1.4200e-003	1.0000e-005	1.4300e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.2862	1.2862	7.0000e-005	0.0000	1.2877
Total	**1.1100e-003**	**3.4400e-003**	**0.0154**	**3.0000e-005**	**1.5900e-003**	**5.0000e-005**	**1.6400e-003**	**4.3000e-004**	**4.0000e-005**	**4.7000e-004**	**0.0000**	**1.7776**	**1.7776**	**7.0000e-005**	**0.0000**	**1.7792**

3.5 Paving - 2016

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	0.0162	0.1651	0.1131	1.7000e-004		9.9600e-003	9.9600e-003		9.1800e-003	9.1800e-003	0.0000	15.5310	15.5310	4.5600e-003	0.0000	15.6268
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0162**	**0.1651**	**0.1131**	**1.7000e-004**		**9.9600e-003**	**9.9600e-003**		**9.1800e-003**	**9.1800e-003**	**0.0000**	**15.5310**	**15.5310**	**4.5600e-003**	**0.0000**	**15.6268**

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	7.0000e-004	8.5000e-004	8.7600e-003	2.0000e-005	1.4200e-003	1.0000e-005	1.4300e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.2862	1.2862	7.0000e-005	0.0000	1.2877
Total	**7.0000e-004**	**8.5000e-004**	**8.7600e-003**	**2.0000e-005**	**1.4200e-003**	**1.0000e-005**	**1.4300e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.2862**	**1.2862**	**7.0000e-005**	**0.0000**	**1.2877**

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	0.0162	0.1651	0.1131	1.7000e-004		9.9600e-003	9.9600e-003		9.1800e-003	9.1800e-003	0.0000	15.5310	15.5310	4.5600e-003	0.0000	15.6268
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0162**	**0.1651**	**0.1131**	**1.7000e-004**		**9.9600e-003**	**9.9600e-003**		**9.1800e-003**	**9.1800e-003**	**0.0000**	**15.5310**	**15.5310**	**4.5600e-003**	**0.0000**	**15.6268**

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	7.0000e-004	8.5000e-004	8.7600e-003	2.0000e-005	1.4200e-003	1.0000e-005	1.4300e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.2862	1.2862	7.0000e-005	0.0000	1.2877
Total	**7.0000e-004**	**8.5000e-004**	**8.7600e-003**	**2.0000e-005**	**1.4200e-003**	**1.0000e-005**	**1.4300e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.2862**	**1.2862**	**7.0000e-005**	**0.0000**	**1.2877**

3.6 Architectural Coating - 2016

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	3.7398					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.3200e-003	0.0214	0.0170	3.0000e-005		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003	0.0000	2.2979	2.2979	2.7000e-004	0.0000	2.3036

	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
Total	**3.7431**	**0.0214**	**0.0170**	**3.0000e-005**		**1.7700e-003**	**1.7700e-003**		**1.7700e-003**	**1.7700e-003**	**0.0000**	**2.2979**	**2.2979**	**2.7000e-004**	**0.0000**	**2.3036**

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	1.2600e-003	1.5300e-003	0.0158	3.0000e-005	2.5500e-003	2.0000e-005	2.5700e-003	6.8000e-004	2.0000e-005	7.0000e-004	0.0000	2.3151	2.3151	1.3000e-004	0.0000	2.3178
Total	**1.2600e-003**	**1.5300e-003**	**0.0158**	**3.0000e-005**	**2.5500e-003**	**2.0000e-005**	**2.5700e-003**	**6.8000e-004**	**2.0000e-005**	**7.0000e-004**	**0.0000**	**2.3151**	**2.3151**	**1.3000e-004**	**0.0000**	**2.3178**

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	3.7398					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.3200e-003	0.0214	0.0170	3.0000e-005		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003	0.0000	2.2979	2.2979	2.7000e-004	0.0000	2.3036
Total	**3.7431**	**0.0214**	**0.0170**	**3.0000e-005**		**1.7700e-003**	**1.7700e-003**		**1.7700e-003**	**1.7700e-003**	**0.0000**	**2.2979**	**2.2979**	**2.7000e-004**	**0.0000**	**2.3036**

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	1.2600e-003	1.5300e-003	0.0158	3.0000e-005	2.5500e-003	2.0000e-005	2.5700e-003	6.8000e-004	2.0000e-005	7.0000e-004	0.0000	2.3151	2.3151	1.3000e-004	0.0000	2.3178
Total	**1.2600e-003**	**1.5300e-003**	**0.0158**	**3.0000e-005**	**2.5500e-003**	**2.0000e-005**	**2.5700e-003**	**6.8000e-004**	**2.0000e-005**	**7.0000e-004**	**0.0000**	**2.3151**	**2.3151**	**1.3000e-004**	**0.0000**	**2.3178**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	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	2.9080	4.1798	29.6706	0.0307	1.2820	0.0644	1.3464	0.3722	0.0644	0.4366	0.0000	1,769.9762	1,769.9762	0.1801	0.0000	1,773.7584
Unmitigated	3.1347	4.9829	34.6354	0.0372	1.5574	0.0774	1.6348	0.4522	0.0774	0.5296	0.0000	2,139.5071	2,139.5071	0.2118	0.0000	2,143.9552

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,662.50	1,597.50	1465.00	4,654,882	3,831,477
Total	1,662.50	1,597.50	1,465.00	4,654,882	3,831,477

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
Apartments Mid Rise	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.404033	0.184436	0.220057	0.112552	0.033889	0.012626	0.008980	0.001539	0.000949	0.000407	0.013773	0.001204	0.005555

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	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	235.6400	235.6400	0.0107	2.2000e-003	236.5471
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	256.1112	256.1112	0.0116	2.4000e-003	257.0971
NaturalGas Mitigated	5.5100e-003	0.0471	0.0200	3.0000e-004		3.8100e-003	3.8100e-003		3.8100e-003	3.8100e-003	0.0000	54.5076	54.5076	1.0400e-003	1.0000e-003	54.8393
NaturalGas Unmitigated	5.8700e-003	0.0502	0.0214	3.2000e-004		4.0600e-003	4.0600e-003		4.0600e-003	4.0600e-003	0.0000	58.1004	58.1004	1.1100e-003	1.0700e-003	58.4540

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					
Apartments Mid Rise	1.08876e+006	5.8700e-003	0.0502	0.0214	3.2000e-004		4.0600e-003	4.0600e-003		4.0600e-003	4.0600e-003	0.0000	58.1004	58.1004	1.1100e-003	1.0700e-003	58.4540
Total		**5.8700e-003**	**0.0502**	**0.0214**	**3.2000e-004**		**4.0600e-003**	**4.0600e-003**		**4.0600e-003**	**4.0600e-003**	**0.0000**	**58.1004**	**58.1004**	**1.1100e-003**	**1.0700e-003**	**58.4540**

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					
Apartments Mid Rise	1.02143e+006	5.5100e-003	0.0471	0.0200	3.0000e-004		3.8100e-003	3.8100e-003		3.8100e-003	3.8100e-003	0.0000	54.5076	54.5076	1.0400e-003	1.0000e-003	54.8393
Total		**5.5100e-003**	**0.0471**	**0.0200**	**3.0000e-004**		**3.8100e-003**	**3.8100e-003**		**3.8100e-003**	**3.8100e-003**	**0.0000**	**54.5076**	**54.5076**	**1.0400e-003**	**1.0000e-003**	**54.8393**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	880375	256.1112	0.0116	2.4000e-003	257.0971
Total		**256.1112**	**0.0116**	**2.4000e-003**	**257.0971**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	810006	235.6400	0.0107	2.2000e-003	236.5471
Total		**235.6400**	**0.0107**	**2.2000e-003**	**236.5471**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	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	1.4187	0.0293	2.1538	1.0000e-004		0.0215	0.0215		0.0213	0.0213	0.0000	180.2534	180.2534	8.2500e-003	3.2500e-003	181.4339
Unmitigated	17.0874	0.2421	21.4770	7.6500e-003		2.7240	2.7240		2.7239	2.7239	258.2394	111.3341	369.5735	0.2432	0.0203	380.9769

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	0.3740					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.9337					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	15.6866	0.2128	19.3241	7.5500e-003		2.7149	2.7149		2.7149	2.7149	258.2394	108.3019	366.5413	0.2383	0.0203	377.8427
Landscaping	0.0931	0.0293	2.1529	1.0000e-004		9.0900e-003	9.0900e-003		9.0900e-003	9.0900e-003	0.0000	3.0322	3.0322	4.8600e-003	0.0000	3.1342
Total	**17.0874**	**0.2421**	**21.4770**	**7.6500e-003**		**2.7240**	**2.7240**		**2.7239**	**2.7239**	**258.2394**	**111.3341**	**369.5735**	**0.2432**	**0.0203**	**380.9769**

Mitigated

SubCategory	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
	tons/yr										MT/yr					
Consumer Products	0.9337					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0179	0.0000	9.8000e-004	0.0000		0.0124	0.0124		0.0122	0.0122	0.0000	177.2212	177.2212	3.4000e-003	3.2500e-003	178.2998
Landscaping	0.0931	0.0293	2.1529	1.0000e-004		9.0900e-003	9.0900e-003		9.0900e-003	9.0900e-003	0.0000	3.0322	3.0322	4.8600e-003	0.0000	3.1342
Architectural Coating	0.3740					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.4187**	**0.0293**	**2.1538**	**1.0000e-004**		**0.0215**	**0.0215**		**0.0213**	**0.0213**	**0.0000**	**180.2534**	**180.2534**	**8.2600e-003**	**3.2500e-003**	**181.4339**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

Category	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	34.4640	0.4259	0.0103	46.5990
Unmitigated	41.2633	0.5324	0.0129	56.4333

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	16.2885 / 10.2688	41.2633	0.5324	0.0129	56.4333
Total		**41.2633**	**0.5324**	**0.0129**	**56.4333**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	13.0308 / 9.64244	34.4640	0.4259	0.0103	46.5990
Total		**34.4640**	**0.4259**	**0.0103**	**46.5990**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	23.3440	1.3796	0.0000	52.3153
Unmitigated	23.3440	1.3796	0.0000	52.3153

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	115	23.3440	1.3796	0.0000	52.3153
Total		**23.3440**	**1.3796**	**0.0000**	**52.3153**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e

Land Use	tons	MT/yr			
Apartments Mid Rise	115	23.3440	1.3796	0.0000	52.3153
Total		**23.3440**	**1.3796**	**0.0000**	**52.3153**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

GHG 2020 MITIGATED EMISSIONS

El Dorado Hills Apartments Project

El Dorado-Mountain County County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	250.00	Dwelling Unit	4.50	239,070.00	715

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)	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 - Acreage and square feet adjusted to actual.

Construction Phase -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Vehicle Trips - Trip rates adjusted from defaults to match trip rates in the traffic analysis.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	PhaseEndDate	1/7/2015	2/4/2015

tblConstructionPhase	PhaseStartDate	1/29/2016	1/2/2011
tblConstructionPhase	PhaseStartDate	2/17/2015	1/2/2011
tblConstructionPhase	PhaseStartDate	2/5/2015	1/2/2011
tblConstructionPhase	PhaseStartDate	1/5/2016	1/2/2011
tblConstructionPhase	PhaseStartDate	1/1/2015	1/2/2011
tblLandUse	LandUseSquareFeet	250,000.00	239,070.00
tblLandUse	LotAcreage	6.58	4.50
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	ST_TR	7.16	6.39
tblVehicleTrips	SU_TR	6.07	5.86
tblVehicleTrips	WD_TR	6.59	6.65

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					
2011	56.6256	22.6977	18.6726	0.0194	13.4697	1.3559	14.8256	7.1942	1.2587	8.4529	0.0000	1,822.8175	1,822.8175	0.4385	0.0000	1,832.0262
2012	56.7696	22.5175	18.1518	0.0194	13.4708	1.3489	14.8197	7.1945	1.2516	8.4461	0.0000	1,816.8255	1,816.8255	0.4355	0.0000	1,825.9706
2013	56.6403	21.7103	17.4358	0.0194	13.4708	1.2911	14.7619	7.1945	1.1977	8.3921	0.0000	1,800.6894	1,800.6894	0.4308	0.0000	1,809.7367
2014	56.4977	20.7295	16.7212	0.0194	13.4708	1.2183	14.6891	7.1945	1.1298	8.3243	0.0000	1,784.7878	1,784.7878	0.4262	0.0000	1,793.7390
2015	55.3395	8.8268	7.9704	0.0110	13.4406	0.5500	13.9906	7.1865	0.5141	7.7006	0.0000	968.6567	968.6567	0.1924	0.0000	972.6973
2016	7.9280	0.2646	0.2384	3.8000e-004	8.5400e-003	0.0169	0.0254	2.2800e-003	0.0159	0.0182	0.0000	32.6236	32.6236	6.6600e-003	0.0000	32.7635

Total	289.8007	96.7463	79.1901	0.0890	67.3312	5.7810	73.1123	35.9663	5.3678	41.3341	0.0000	8,226.4005	8,226.4005	1.9301	0.0000	8,266.9333

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					
2011	56.6256	22.6977	18.6725	0.0194	13.4697	1.3559	14.8256	7.1942	1.2587	8.4529	0.0000	1,822.8157	1,822.8157	0.4385	0.0000	1,832.0245
2012	56.7696	22.5174	18.1517	0.0194	13.4708	1.3489	14.8197	7.1945	1.2516	8.4461	0.0000	1,816.8238	1,816.8238	0.4355	0.0000	1,825.9689
2013	56.6403	21.7102	17.4358	0.0194	13.4708	1.2911	14.7619	7.1945	1.1977	8.3921	0.0000	1,800.6877	1,800.6877	0.4308	0.0000	1,809.7350
2014	56.4977	20.7294	16.7212	0.0194	13.4708	1.2183	14.6891	7.1945	1.1298	8.3243	0.0000	1,784.7861	1,784.7861	0.4262	0.0000	1,793.7372
2015	55.3395	8.8268	7.9704	0.0110	13.4406	0.5500	13.9906	7.1865	0.5141	7.7006	0.0000	968.6559	968.6559	0.1924	0.0000	972.6965
2016	7.9280	0.2646	0.2384	3.8000e-004	8.5400e-003	0.0169	0.0254	2.2800e-003	0.0159	0.0182	0.0000	32.6236	32.6236	6.6600e-003	0.0000	32.7634
Total	**289.8007**	**96.7462**	**79.1901**	**0.0890**	**67.3312**	**5.7810**	**73.1123**	**35.9663**	**5.3678**	**41.3341**	**0.0000**	**8,226.3928**	**8,226.3928**	**1.9301**	**0.0000**	**8,266.9255**

	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

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	17.0509	0.2344	21.1866	7.6500e-003		2.7252	2.7252		2.7251	2.7251	258.2394	111.3341	369.5735	0.2413	0.0203	380.9370
Energy	5.8700e-003	0.0502	0.0214	3.2000e-004		4.0600e-003	4.0600e-003		4.0600e-003	4.0600e-003	0.0000	314.2116	314.2116	0.0127	3.4600e-003	315.5511
Mobile	0.8977	1.9346	8.8302	0.0238	1.7157	0.0261	1.7418	0.4595	0.0241	0.4836	0.0000	1,632.6625	1,632.6625	0.0653	0.0000	1,634.0339
Waste						0.0000	0.0000		0.0000	0.0000	23.3440	0.0000	23.3440	1.3796	0.0000	52.3153
Water						0.0000	0.0000		0.0000	0.0000	5.1676	36.0957	41.2633	0.5324	0.0129	56.4333
Total	**17.9545**	**2.2192**	**30.0381**	**0.0317**	**1.7157**	**2.7553**	**4.4710**	**0.4595**	**2.7532**	**3.2127**	**286.7510**	**2,094.3038**	**2,381.0548**	**2.2312**	**0.0366**	**2,439.2706**

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	1.3823	0.0215	1.8634	1.0000e-004		0.0226	0.0226		0.0225	0.0225	0.0000	180.2534	180.2534	6.3500e-003	3.2500e-003	181.3940
Energy	5.5100e-003	0.0471	0.0200	3.0000e-004		3.8100e-003	3.8100e-003		3.8100e-003	3.8100e-003	0.0000	290.1476	290.1476	0.0117	3.2000e-003	291.3865
Mobile	0.8445	1.6312	7.6306	0.0197	1.4122	0.0219	1.4341	0.3782	0.0202	0.3984	0.0000	1,351.3849	1,351.3849	0.0549	0.0000	1,352.5380
Waste						0.0000	0.0000		0.0000	0.0000	23.3440	0.0000	23.3440	1.3796	0.0000	52.3153
Water						0.0000	0.0000		0.0000	0.0000	4.1341	30.3299	34.4640	0.4259	0.0103	46.5990
Total	**2.2323**	**1.6998**	**9.5140**	**0.0201**	**1.4122**	**0.0483**	**1.4605**	**0.3782**	**0.0465**	**0.4247**	**27.4780**	**1,852.1158**	**1,879.5938**	**1.8785**	**0.0167**	**1,924.2328**

	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	**87.57**	**23.41**	**68.33**	**36.76**	**17.69**	**98.25**	**67.33**	**17.69**	**98.31**	**86.78**	**90.42**	**11.56**	**21.06**	**15.81**	**54.31**	**21.11**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/2/2011	2/4/2015	5	5	
2	Grading	Grading	1/2/2011	2/16/2015	5	8	
3	Building Construction	Building Construction	1/2/2011	1/4/2016	5	230	
4	Paving	Paving	1/2/2011	1/28/2016	5	18	
5	Architectural Coating	Architectural Coating	1/2/2011	2/23/2016	5	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 484,117; Residential Outdoor: 161,372; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	125	0.42
Paving	Paving Equipment	2	6.00	130	0.36
Paving	Rollers	2	6.00	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
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	180.00	27.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	36.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2011

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					9.6474	0.0000	9.6474	5.3030	0.0000	5.3030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.7298	8.0543	5.9308	5.1000e-003		0.4433	0.4433		0.4078	0.4078	0.0000	497.3088	497.3088	0.1451	0.0000	500.3563
Total	**0.7298**	**8.0543**	**5.9308**	**5.1000e-003**	**9.6474**	**0.4433**	**10.0907**	**5.3030**	**0.4078**	**5.7108**	**0.0000**	**497.3088**	**497.3088**	**0.1451**	**0.0000**	**500.3563**

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	0.0178	0.0208	0.2176	2.3000e-004	0.0184	2.5000e-004	0.0187	4.9000e-003	2.3000e-004	5.1300e-003	0.0000	19.6637	19.6637	1.5800e-003	0.0000	19.6970
Total	**0.0178**	**0.0208**	**0.2176**	**2.3000e-004**	**0.0184**	**2.5000e-004**	**0.0187**	**4.9000e-003**	**2.3000e-004**	**5.1300e-003**	**0.0000**	**19.6637**	**19.6637**	**1.5800e-003**	**0.0000**	**19.6970**

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					9.6474	0.0000	9.6474	5.3030	0.0000	5.3030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.7298	8.0543	5.9308	5.1000e-003		0.4433	0.4433		0.4078	0.4078	0.0000	497.3082	497.3082	0.1451	0.0000	500.3557
Total	**0.7298**	**8.0543**	**5.9308**	**5.1000e-003**	**9.6474**	**0.4433**	**10.0907**	**5.3030**	**0.4078**	**5.7108**	**0.0000**	**497.3082**	**497.3082**	**0.1451**	**0.0000**	**500.3557**

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	0.0178	0.0208	0.2176	2.3000e-004	0.0184	2.5000e-004	0.0187	4.9000e-003	2.3000e-004	5.1300e-003	0.0000	19.6637	19.6637	1.5800e-003	0.0000	19.6970
Total	**0.0178**	**0.0208**	**0.2176**	**2.3000e-004**	**0.0184**	**2.5000e-004**	**0.0187**	**4.9000e-003**	**2.3000e-004**	**5.1300e-003**	**0.0000**	**19.6637**	**19.6637**	**1.5800e-003**	**0.0000**	**19.6970**

3.2 Site Preparation - 2012

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					9.6474	0.0000	9.6474	5.3030	0.0000	5.3030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.7352	8.0547	5.9407	5.1200e-003		0.4445	0.4445		0.4090	0.4090	0.0000	497.8625	497.8625	0.1457	0.0000	500.9211
Total	**0.7352**	**8.0547**	**5.9407**	**5.1200e-003**	**9.6474**	**0.4445**	**10.0919**	**5.3030**	**0.4090**	**5.7120**	**0.0000**	**497.8625**	**497.8625**	**0.1457**	**0.0000**	**500.9211**

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	0.0157	0.0183	0.1924	2.3000e-004	0.0185	2.2000e-004	0.0187	4.9200e-003	2.0000e-004	5.1200e-003	0.0000	19.1803	19.1803	1.4200e-003	0.0000	19.2101
Total	**0.0157**	**0.0183**	**0.1924**	**2.3000e-004**	**0.0185**	**2.2000e-004**	**0.0187**	**4.9200e-003**	**2.0000e-004**	**5.1200e-003**	**0.0000**	**19.1803**	**19.1803**	**1.4200e-003**	**0.0000**	**19.2101**

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					9.6474	0.0000	9.6474	5.3030	0.0000	5.3030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.7352	8.0547	5.9407	5.1200e-003		0.4445	0.4445		0.4090	0.4090	0.0000	497.8620	497.8620	0.1457	0.0000	500.9205
Total	**0.7352**	**8.0547**	**5.9407**	**5.1200e-003**	**9.6474**	**0.4445**	**10.0919**	**5.3030**	**0.4090**	**5.7120**	**0.0000**	**497.8620**	**497.8620**	**0.1457**	**0.0000**	**500.9205**

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	0.0157	0.0183	0.1924	2.3000e-004	0.0185	2.2000e-004	0.0187	4.9200e-003	2.0000e-004	5.1200e-003	0.0000	19.1803	19.1803	1.4200e-003	0.0000	19.2101
Total	**0.0157**	**0.0183**	**0.1924**	**2.3000e-004**	**0.0185**	**2.2000e-004**	**0.0187**	**4.9200e-003**	**2.0000e-004**	**5.1200e-003**	**0.0000**	**19.1803**	**19.1803**	**1.4200e-003**	**0.0000**	**19.2101**

3.2 Site Preparation - 2013

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					9.6474	0.0000	9.6474	5.3030	0.0000	5.3030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.7159	7.8149	5.7967	5.1100e-003		0.4293	0.4293		0.3950	0.3950	0.0000	495.1805	495.1805	0.1456	0.0000	498.2380
Total	**0.7159**	**7.8149**	**5.7967**	**5.1100e-003**	**9.6474**	**0.4293**	**10.0767**	**5.3030**	**0.3950**	**5.6980**	**0.0000**	**495.1805**	**495.1805**	**0.1456**	**0.0000**	**498.2380**

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	0.0138	0.0161	0.1691	2.3000e-004	0.0185	2.0000e-004	0.0187	4.9200e-003	1.8000e-004	5.1000e-003	0.0000	18.6098	18.6098	1.2700e-003	0.0000	18.6364
Total	**0.0138**	**0.0161**	**0.1691**	**2.3000e-004**	**0.0185**	**2.0000e-004**	**0.0187**	**4.9200e-003**	**1.8000e-004**	**5.1000e-003**	**0.0000**	**18.6098**	**18.6098**	**1.2700e-003**	**0.0000**	**18.6364**

Mitigated Construction On-Site

Category	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
	tons/yr										MT/yr					
Fugitive Dust					9.6474	0.0000	9.6474	5.3030	0.0000	5.3030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.7159	7.8149	5.7966	5.1100e-003		0.4293	0.4293		0.3950	0.3950	0.0000	495.1799	495.1799	0.1456	0.0000	498.2374
Total	**0.7159**	**7.8149**	**5.7966**	**5.1100e-003**	**9.6474**	**0.4293**	**10.0767**	**5.3030**	**0.3950**	**5.6980**	**0.0000**	**495.1799**	**495.1799**	**0.1456**	**0.0000**	**498.2374**

Mitigated Construction Off-Site

Category	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
	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	0.0138	0.0161	0.1691	2.3000e-004	0.0185	2.0000e-004	0.0187	4.9200e-003	1.8000e-004	5.1000e-003	0.0000	18.6098	18.6098	1.2700e-003	0.0000	18.6364
Total	**0.0138**	**0.0161**	**0.1691**	**2.3000e-004**	**0.0185**	**2.0000e-004**	**0.0187**	**4.9200e-003**	**1.8000e-004**	**5.1000e-003**	**0.0000**	**18.6098**	**18.6098**	**1.2700e-003**	**0.0000**	**18.6364**

3.2 Site Preparation - 2014

Unmitigated Construction On-Site

Category	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
	tons/yr										MT/yr					
Fugitive Dust					9.6474	0.0000	9.6474	5.3030	0.0000	5.3030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	0.6905	7.5194	5.6064	5.1100e-003		0.4095	0.4095		0.3767	0.3767	0.0000	492.0060	492.0060	0.1454	0.0000	495.0593
Total	**0.6905**	**7.5194**	**5.6064**	**5.1100e-003**	**9.6474**	**0.4095**	**10.0569**	**5.3030**	**0.3767**	**5.6797**	**0.0000**	**492.0060**	**492.0060**	**0.1454**	**0.0000**	**495.0593**

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	0.0120	0.0142	0.1482	2.3000e-004	0.0185	1.8000e-004	0.0187	4.9200e-003	1.6000e-004	5.0800e-003	0.0000	18.0656	18.0656	1.1300e-003	0.0000	18.0894
Total	**0.0120**	**0.0142**	**0.1482**	**2.3000e-004**	**0.0185**	**1.8000e-004**	**0.0187**	**4.9200e-003**	**1.6000e-004**	**5.0800e-003**	**0.0000**	**18.0656**	**18.0656**	**1.1300e-003**	**0.0000**	**18.0894**

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					9.6474	0.0000	9.6474	5.3030	0.0000	5.3030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.6905	7.5194	5.6064	5.1100e-003		0.4095	0.4095		0.3767	0.3767	0.0000	492.0055	492.0055	0.1454	0.0000	495.0587
Total	**0.6905**	**7.5194**	**5.6064**	**5.1100e-003**	**9.6474**	**0.4095**	**10.0569**	**5.3030**	**0.3767**	**5.6797**	**0.0000**	**492.0055**	**492.0055**	**0.1454**	**0.0000**	**495.0587**

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	0.0120	0.0142	0.1482	2.3000e-004	0.0185	1.8000e-004	0.0187	4.9200e-003	1.6000e-004	5.0800e-003	0.0000	18.0656	18.0656	1.1300e-003	0.0000	18.0894
Total	**0.0120**	**0.0142**	**0.1482**	**2.3000e-004**	**0.0185**	**1.8000e-004**	**0.0187**	**4.9200e-003**	**1.6000e-004**	**5.0800e-003**	**0.0000**	**18.0656**	**18.0656**	**1.1300e-003**	**0.0000**	**18.0894**

3.2 Site Preparation - 2015

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					9.6474	0.0000	9.6474	5.3030	0.0000	5.3030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0658	0.7111	0.5329	4.9000e-004		0.0386	0.0386		0.0355	0.0355	0.0000	46.6264	46.6264	0.0139	0.0000	46.9187
Total	**0.0658**	**0.7111**	**0.5329**	**4.9000e-004**	**9.6474**	**0.0386**	**9.6860**	**5.3030**	**0.0355**	**5.3385**	**0.0000**	**46.6264**	**46.6264**	**0.0139**	**0.0000**	**46.9187**

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	1.0000e-003	1.2000e-003	0.0124	2.0000e-005	1.7700e-003	2.0000e-005	1.7900e-003	4.7000e-004	1.0000e-005	4.9000e-004	0.0000	1.6690	1.6690	1.0000e-004	0.0000	1.6711
Total	**1.0000e-003**	**1.2000e-003**	**0.0124**	**2.0000e-005**	**1.7700e-003**	**2.0000e-005**	**1.7900e-003**	**4.7000e-004**	**1.0000e-005**	**4.9000e-004**	**0.0000**	**1.6690**	**1.6690**	**1.0000e-004**	**0.0000**	**1.6711**

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					9.6474	0.0000	9.6474	5.3030	0.0000	5.3030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0658	0.7111	0.5329	4.9000e-004		0.0386	0.0386		0.0355	0.0355	0.0000	46.6263	46.6263	0.0139	0.0000	46.9187
Total	**0.0658**	**0.7111**	**0.5329**	**4.9000e-004**	**9.6474**	**0.0386**	**9.6860**	**5.3030**	**0.0355**	**5.3385**	**0.0000**	**46.6263**	**46.6263**	**0.0139**	**0.0000**	**46.9187**

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	1.0000e-003	1.2000e-003	0.0124	2.0000e-005	1.7700e-003	2.0000e-005	1.7900e-003	4.7000e-004	1.0000e-005	4.9000e-004	0.0000	1.6690	1.6690	1.0000e-004	0.0000	1.6711
Total	**1.0000e-003**	**1.2000e-003**	**0.0124**	**2.0000e-005**	**1.7700e-003**	**2.0000e-005**	**1.7900e-003**	**4.7000e-004**	**1.0000e-005**	**4.9000e-004**	**0.0000**	**1.6690**	**1.6690**	**1.0000e-004**	**0.0000**	**1.6711**

3.3 Grading - 2011

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					3.5252	0.0000	3.5252	1.8117	0.0000	1.8117	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.5350	5.7524	3.5889	3.8800e-003		0.3351	0.3351		0.3083	0.3083	0.0000	378.3355	378.3355	0.1104	0.0000	380.6539
Total	**0.5350**	**5.7524**	**3.5889**	**3.8800e-003**	**3.5252**	**0.3351**	**3.8603**	**1.8117**	**0.3083**	**2.1200**	**0.0000**	**378.3355**	**378.3355**	**0.1104**	**0.0000**	**380.6539**

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	0.0148	0.0173	0.1814	1.9000e-004	0.0154	2.1000e-004	0.0156	4.0900e-003	1.9000e-004	4.2700e-003	0.0000	16.3864	16.3864	1.3200e-003	0.0000	16.4142
Total	**0.0148**	**0.0173**	**0.1814**	**1.9000e-004**	**0.0154**	**2.1000e-004**	**0.0156**	**4.0900e-003**	**1.9000e-004**	**4.2700e-003**	**0.0000**	**16.3864**	**16.3864**	**1.3200e-003**	**0.0000**	**16.4142**

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					3.5252	0.0000	3.5252	1.8117	0.0000	1.8117	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.5350	5.7524	3.5889	3.8800e-003		0.3351	0.3351		0.3083	0.3083	0.0000	378.3350	378.3350	0.1104	0.0000	380.6534
Total	**0.5350**	**5.7524**	**3.5889**	**3.8800e-003**	**3.5252**	**0.3351**	**3.8603**	**1.8117**	**0.3083**	**2.1200**	**0.0000**	**378.3350**	**378.3350**	**0.1104**	**0.0000**	**380.6534**

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	0.0148	0.0173	0.1814	1.9000e-004	0.0154	2.1000e-004	0.0156	4.0900e-003	1.9000e-004	4.2700e-003	0.0000	16.3864	16.3864	1.3200e-003	0.0000	16.4142
Total	**0.0148**	**0.0173**	**0.1814**	**1.9000e-004**	**0.0154**	**2.1000e-004**	**0.0156**	**4.0900e-003**	**1.9000e-004**	**4.2700e-003**	**0.0000**	**16.3864**	**16.3864**	**1.3200e-003**	**0.0000**	**16.4142**

3.3 Grading - 2012

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					3.5252	0.0000	3.5252	1.8117	0.0000	1.8117	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.5384	5.7463	3.6091	3.8900e-003		0.3360	0.3360		0.3091	0.3091	0.0000	378.7590	378.7590	0.1108	0.0000	381.0859
Total	**0.5384**	**5.7463**	**3.6091**	**3.8900e-003**	**3.5252**	**0.3360**	**3.8611**	**1.8117**	**0.3091**	**2.1208**	**0.0000**	**378.7590**	**378.7590**	**0.1108**	**0.0000**	**381.0859**

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	0.0131	0.0153	0.1604	1.9000e-004	0.0154	1.8000e-004	0.0156	4.1000e-003	1.7000e-004	4.2700e-003	0.0000	15.9836	15.9836	1.1800e-003	0.0000	16.0084
Total	**0.0131**	**0.0153**	**0.1604**	**1.9000e-004**	**0.0154**	**1.8000e-004**	**0.0156**	**4.1000e-003**	**1.7000e-004**	**4.2700e-003**	**0.0000**	**15.9836**	**15.9836**	**1.1800e-003**	**0.0000**	**16.0084**

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					3.5252	0.0000	3.5252	1.8117	0.0000	1.8117	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.5384	5.7463	3.6091	3.8900e-003		0.3360	0.3360		0.3091	0.3091	0.0000	378.7586	378.7586	0.1108	0.0000	381.0854

Total	0.5384	5.7463	3.6091	3.8900e-003	3.5252	0.3360	3.8611	1.8117	0.3091	2.1208	0.0000	378.7586	378.7586	0.1108	0.0000	381.0854

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	0.0131	0.0153	0.1604	1.9000e-004	0.0154	1.8000e-004	0.0156	4.1000e-003	1.7000e-004	4.2700e-003	0.0000	15.9836	15.9836	1.1800e-003	0.0000	16.0084
Total	**0.0131**	**0.0153**	**0.1604**	**1.9000e-004**	**0.0154**	**1.8000e-004**	**0.0156**	**4.1000e-003**	**1.7000e-004**	**4.2700e-003**	**0.0000**	**15.9836**	**15.9836**	**1.1800e-003**	**0.0000**	**16.0084**

3.3 Grading - 2013

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					3.5252	0.0000	3.5252	1.8117	0.0000	1.8117	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.5246	5.5864	3.5610	3.8900e-003		0.3248	0.3248		0.2988	0.2988	0.0000	376.7130	376.7130	0.1108	0.0000	379.0389
Total	**0.5246**	**5.5864**	**3.5610**	**3.8900e-003**	**3.5252**	**0.3248**	**3.8500**	**1.8117**	**0.2988**	**2.1105**	**0.0000**	**376.7130**	**376.7130**	**0.1108**	**0.0000**	**379.0389**

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	0.0115	0.0134	0.1410	1.9000e-004	0.0154	1.6000e-004	0.0156	4.1000e-003	1.5000e-004	4.2500e-003	0.0000	15.5082	15.5082	1.0500e-003	0.0000	15.5303
Total	**0.0115**	**0.0134**	**0.1410**	**1.9000e-004**	**0.0154**	**1.6000e-004**	**0.0156**	**4.1000e-003**	**1.5000e-004**	**4.2500e-003**	**0.0000**	**15.5082**	**15.5082**	**1.0500e-003**	**0.0000**	**15.5303**

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					3.5252	0.0000	3.5252	1.8117	0.0000	1.8117	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.5246	5.5864	3.5610	3.8900e-003		0.3248	0.3248		0.2988	0.2988	0.0000	376.7125	376.7125	0.1108	0.0000	379.0385
Total	**0.5246**	**5.5864**	**3.5610**	**3.8900e-003**	**3.5252**	**0.3248**	**3.8500**	**1.8117**	**0.2988**	**2.1105**	**0.0000**	**376.7125**	**376.7125**	**0.1108**	**0.0000**	**379.0385**

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	0.0115	0.0134	0.1410	1.9000e-004	0.0154	1.6000e-004	0.0156	4.1000e-003	1.5000e-004	4.2500e-003	0.0000	15.5082	15.5082	1.0500e-003	0.0000	15.5303
Total	**0.0115**	**0.0134**	**0.1410**	**1.9000e-004**	**0.0154**	**1.6000e-004**	**0.0156**	**4.1000e-003**	**1.5000e-004**	**4.2500e-003**	**0.0000**	**15.5082**	**15.5082**	**1.0500e-003**	**0.0000**	**15.5303**

3.3 Grading - 2014

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					3.5252	0.0000	3.5252	1.8117	0.0000	1.8117	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.5046	5.3635	3.4914	3.8900e-003		0.3095	0.3095		0.2847	0.2847	0.0000	374.3921	374.3921	0.1106	0.0000	376.7155
Total	**0.5046**	**5.3635**	**3.4914**	**3.8900e-003**	**3.5252**	**0.3095**	**3.8346**	**1.8117**	**0.2847**	**2.0964**	**0.0000**	**374.3921**	**374.3921**	**0.1106**	**0.0000**	**376.7155**

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

	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
Worker	9.9600e-003	0.0118	0.1235	1.9000e-004	0.0154	1.5000e-004	0.0156	4.1000e-003	1.3000e-004	4.2300e-003	0.0000	15.0547	15.0547	9.4000e-004	0.0000	15.0745
Total	**9.9600e-003**	**0.0118**	**0.1235**	**1.9000e-004**	**0.0154**	**1.5000e-004**	**0.0156**	**4.1000e-003**	**1.3000e-004**	**4.2300e-003**	**0.0000**	**15.0547**	**15.0547**	**9.4000e-004**	**0.0000**	**15.0745**

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					3.5252	0.0000	3.5252	1.8117	0.0000	1.8117	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.5046	5.3635	3.4914	3.8900e-003		0.3095	0.3095		0.2847	0.2847	0.0000	374.3917	374.3917	0.1106	0.0000	376.7151
Total	**0.5046**	**5.3635**	**3.4914**	**3.8900e-003**	**3.5252**	**0.3095**	**3.8346**	**1.8117**	**0.2847**	**2.0964**	**0.0000**	**374.3917**	**374.3917**	**0.1106**	**0.0000**	**376.7151**

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	9.9600e-003	0.0118	0.1235	1.9000e-004	0.0154	1.5000e-004	0.0156	4.1000e-003	1.3000e-004	4.2300e-003	0.0000	15.0547	15.0547	9.4000e-004	0.0000	15.0745
Total	**9.9600e-003**	**0.0118**	**0.1235**	**1.9000e-004**	**0.0154**	**1.5000e-004**	**0.0156**	**4.1000e-003**	**1.3000e-004**	**4.2300e-003**	**0.0000**	**15.0547**	**15.0547**	**9.4000e-004**	**0.0000**	**15.0745**

3.3 Grading - 2015

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					3.5252	0.0000	3.5252	1.8117	0.0000	1.8117	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0632	0.6669	0.4401	4.9000e-004		0.0384	0.0384		0.0353	0.0353	0.0000	46.8368	46.8368	0.0140	0.0000	47.1305
Total	**0.0632**	**0.6669**	**0.4401**	**4.9000e-004**	**3.5252**	**0.0384**	**3.5636**	**1.8117**	**0.0353**	**1.8471**	**0.0000**	**46.8368**	**46.8368**	**0.0140**	**0.0000**	**47.1305**

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	1.1000e-003	1.3200e-003	0.0137	2.0000e-005	1.9500e-003	2.0000e-005	1.9700e-003	5.2000e-004	2.0000e-005	5.3000e-004	0.0000	1.8360	1.8360	1.1000e-004	0.0000	1.8382
Total	**1.1000e-003**	**1.3200e-003**	**0.0137**	**2.0000e-005**	**1.9500e-003**	**2.0000e-005**	**1.9700e-003**	**5.2000e-004**	**2.0000e-005**	**5.3000e-004**	**0.0000**	**1.8360**	**1.8360**	**1.1000e-004**	**0.0000**	**1.8382**

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					3.5252	0.0000	3.5252	1.8117	0.0000	1.8117	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0632	0.6669	0.4401	4.9000e-004		0.0384	0.0384		0.0353	0.0353	0.0000	46.8368	46.8368	0.0140	0.0000	47.1304
Total	**0.0632**	**0.6669**	**0.4401**	**4.9000e-004**	**3.5252**	**0.0384**	**3.5636**	**1.8117**	**0.0353**	**1.8471**	**0.0000**	**46.8368**	**46.8368**	**0.0140**	**0.0000**	**47.1304**

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	1.1000e-003	1.3200e-003	0.0137	2.0000e-005	1.9500e-003	2.0000e-005	1.9700e-003	5.2000e-004	2.0000e-005	5.3000e-004	0.0000	1.8360	1.8360	1.1000e-004	0.0000	1.8382
Total	**1.1000e-003**	**1.3200e-003**	**0.0137**	**2.0000e-005**	**1.9500e-003**	**2.0000e-005**	**1.9700e-003**	**5.2000e-004**	**2.0000e-005**	**5.3000e-004**	**0.0000**	**1.8360**	**1.8360**	**1.1000e-004**	**0.0000**	**1.8382**

3.4 Building Construction - 2011

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	0.5865	4.4937	2.5237	3.4900e-003		0.3298	0.3298		0.3112	0.3112	0.0000	322.6494	322.6494	0.0861	0.0000	324.4570
Total	**0.5865**	**4.4937**	**2.5237**	**3.4900e-003**		**0.3298**	**0.3298**		**0.3112**	**0.3112**	**0.0000**	**322.6494**	**322.6494**	**0.0861**	**0.0000**	**324.4570**

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	0.1252	0.5851	1.4587	7.2000e-004	0.0218	0.0174	0.0393	6.2300e-003	0.0160	0.0222	0.0000	65.5127	65.5127	1.2400e-003	0.0000	65.5388
Worker	0.1778	0.2075	2.1764	2.2500e-003	0.1842	2.5300e-003	0.1867	0.0490	2.2600e-003	0.0513	0.0000	196.6373	196.6373	0.0159	0.0000	196.9701
Total	**0.3029**	**0.7926**	**3.6351**	**2.9700e-003**	**0.2061**	**0.0200**	**0.2260**	**0.0553**	**0.0183**	**0.0735**	**0.0000**	**262.1500**	**262.1500**	**0.0171**	**0.0000**	**262.5088**

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	0.5865	4.4937	2.5237	3.4900e-003		0.3298	0.3298		0.3112	0.3112	0.0000	322.6490	322.6490	0.0861	0.0000	324.4566
Total	**0.5865**	**4.4937**	**2.5237**	**3.4900e-003**		**0.3298**	**0.3298**		**0.3112**	**0.3112**	**0.0000**	**322.6490**	**322.6490**	**0.0861**	**0.0000**	**324.4566**

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	0.1252	0.5851	1.4587	7.2000e-004	0.0218	0.0174	0.0393	6.2300e-003	0.0160	0.0222	0.0000	65.5127	65.5127	1.2400e-003	0.0000	65.5388
Worker	0.1778	0.2075	2.1764	2.2500e-003	0.1842	2.5300e-003	0.1867	0.0490	2.2600e-003	0.0513	0.0000	196.6373	196.6373	0.0159	0.0000	196.9701
Total	**0.3029**	**0.7926**	**3.6351**	**2.9700e-003**	**0.2061**	**0.0200**	**0.2260**	**0.0553**	**0.0183**	**0.0735**	**0.0000**	**262.1500**	**262.1500**	**0.0171**	**0.0000**	**262.5088**

3.4 Building Construction - 2012

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	0.5702	4.4378	2.5286	3.5000e-003		0.3251	0.3251		0.3065	0.3065	0.0000	323.2883	323.2883	0.0849	0.0000	325.0709
Total	**0.5702**	**4.4378**	**2.5286**	**3.5000e-003**		**0.3251**	**0.3251**		**0.3065**	**0.3065**	**0.0000**	**323.2883**	**323.2883**	**0.0849**	**0.0000**	**325.0709**

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	0.1033	0.5347	1.2666	7.1000e-004	0.0219	0.0153	0.0371	6.2400e-003	0.0140	0.0203	0.0000	64.7017	64.7017	1.1200e-003	0.0000	64.7253
Worker	0.1572	0.1832	1.9242	2.2600e-003	0.1849	2.2200e-003	0.1871	0.0492	1.9900e-003	0.0512	0.0000	191.8031	191.8031	0.0142	0.0000	192.1009
Total	**0.2605**	**0.7179**	**3.1908**	**2.9700e-003**	**0.2068**	**0.0175**	**0.2243**	**0.0555**	**0.0160**	**0.0715**	**0.0000**	**256.5048**	**256.5048**	**0.0153**	**0.0000**	**256.8261**

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	0.5702	4.4378	2.5286	3.5000e-003		0.3251	0.3251		0.3065	0.3065	0.0000	323.2880	323.2880	0.0849	0.0000	325.0705
Total	**0.5702**	**4.4378**	**2.5286**	**3.5000e-003**		**0.3251**	**0.3251**		**0.3065**	**0.3065**	**0.0000**	**323.2880**	**323.2880**	**0.0849**	**0.0000**	**325.0705**

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	0.1033	0.5347	1.2666	7.1000e-004	0.0219	0.0153	0.0371	6.2400e-003	0.0140	0.0203	0.0000	64.7017	64.7017	1.1200e-003	0.0000	64.7253

	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
Worker	0.1572	0.1832	1.9242	2.2600e-003	0.1849	2.2200e-003	0.1871	0.0492	1.9900e-003	0.0512	0.0000	191.8031	191.8031	0.0142	0.0000	192.1009
Total	**0.2605**	**0.7179**	**3.1908**	**2.9700e-003**	**0.2068**	**0.0175**	**0.2243**	**0.0555**	**0.0160**	**0.0715**	**0.0000**	**256.5048**	**256.5048**	**0.0153**	**0.0000**	**256.8261**

3.4 Building Construction - 2013

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	0.5408	4.2857	2.5059	3.5000e-003		0.3105	0.3105		0.2925	0.2925	0.0000	322.0735	322.0735	0.0832	0.0000	323.8201
Total	**0.5408**	**4.2857**	**2.5059**	**3.5000e-003**		**0.3105**	**0.3105**		**0.2925**	**0.2925**	**0.0000**	**322.0735**	**322.0735**	**0.0832**	**0.0000**	**323.8201**

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	0.0866	0.4908	1.1284	7.1000e-004	0.0219	0.0131	0.0350	6.2400e-003	0.0120	0.0183	0.0000	64.3185	64.3185	1.0000e-003	0.0000	64.3396
Worker	0.1377	0.1612	1.6913	2.2600e-003	0.1849	1.9700e-003	0.1869	0.0492	1.7700e-003	0.0510	0.0000	186.0982	186.0982	0.0127	0.0000	186.3640
Total	**0.2243**	**0.6519**	**2.8198**	**2.9700e-003**	**0.2068**	**0.0150**	**0.2218**	**0.0555**	**0.0138**	**0.0692**	**0.0000**	**250.4167**	**250.4167**	**0.0137**	**0.0000**	**250.7036**

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	0.5408	4.2857	2.5059	3.5000e-003		0.3105	0.3105		0.2925	0.2925	0.0000	322.0731	322.0731	0.0832	0.0000	323.8197
Total	**0.5408**	**4.2857**	**2.5059**	**3.5000e-003**		**0.3105**	**0.3105**		**0.2925**	**0.2925**	**0.0000**	**322.0731**	**322.0731**	**0.0832**	**0.0000**	**323.8197**

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	0.0866	0.4908	1.1284	7.1000e-004	0.0219	0.0131	0.0350	6.2400e-003	0.0120	0.0183	0.0000	64.3185	64.3185	1.0000e-003	0.0000	64.3396
Worker	0.1377	0.1612	1.6913	2.2600e-003	0.1849	1.9700e-003	0.1869	0.0492	1.7700e-003	0.0510	0.0000	186.0982	186.0982	0.0127	0.0000	186.3640
Total	**0.2243**	**0.6519**	**2.8198**	**2.9700e-003**	**0.2068**	**0.0150**	**0.2218**	**0.0555**	**0.0138**	**0.0692**	**0.0000**	**250.4167**	**250.4167**	**0.0137**	**0.0000**	**250.7036**

3.4 Building Construction - 2014

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	0.5048	4.0786	2.4703	3.5000e-003		0.2908	0.2908		0.2737	0.2737	0.0000	320.7354	320.7354	0.0816	0.0000	322.4480
Total	**0.5048**	**4.0786**	**2.4703**	**3.5000e-003**		**0.2908**	**0.2908**		**0.2737**	**0.2737**	**0.0000**	**320.7354**	**320.7354**	**0.0816**	**0.0000**	**322.4480**

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	0.0736	0.4532	1.0348	7.1000e-004	0.0219	9.8500e-003	0.0318	6.2500e-003	9.0500e-003	0.0153	0.0000	64.6556	64.6556	8.3000e-004	0.0000	64.6731
Worker	0.1195	0.1418	1.4818	2.2500e-003	0.1849	1.7800e-003	0.1867	0.0492	1.6100e-003	0.0508	0.0000	180.6563	180.6563	0.0113	0.0000	180.8939
Total	**0.1930**	**0.5950**	**2.5166**	**2.9600e-003**	**0.2068**	**0.0116**	**0.2185**	**0.0555**	**0.0107**	**0.0661**	**0.0000**	**245.3119**	**245.3119**	**0.0121**	**0.0000**	**245.5669**

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	0.5048	4.0786	2.4703	3.5000e-003		0.2908	0.2908		0.2737	0.2737	0.0000	320.7350	320.7350	0.0816	0.0000	322.4476
Total	**0.5048**	**4.0786**	**2.4703**	**3.5000e-003**		**0.2908**	**0.2908**		**0.2737**	**0.2737**	**0.0000**	**320.7350**	**320.7350**	**0.0816**	**0.0000**	**322.4476**

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	0.0736	0.4532	1.0348	7.1000e-004	0.0219	9.8500e-003	0.0318	6.2500e-003	9.0500e-003	0.0153	0.0000	64.6556	64.6556	8.3000e-004	0.0000	64.6731
Worker	0.1195	0.1418	1.4818	2.2500e-003	0.1849	1.7800e-003	0.1867	0.0492	1.6100e-003	0.0508	0.0000	180.6563	180.6563	0.0113	0.0000	180.8939
Total	**0.1930**	**0.5950**	**2.5166**	**2.9600e-003**	**0.2068**	**0.0116**	**0.2185**	**0.0555**	**0.0107**	**0.0661**	**0.0000**	**245.3119**	**245.3119**	**0.0121**	**0.0000**	**245.5669**

3.4 Building Construction - 2015

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	0.4775	3.9189	2.4462	3.5000e-003		0.2762	0.2762		0.2598	0.2598	0.0000	318.4126	318.4126	0.0799	0.0000	320.0903
Total	**0.4775**	**3.9189**	**2.4462**	**3.5000e-003**		**0.2762**	**0.2762**		**0.2598**	**0.2598**	**0.0000**	**318.4126**	**318.4126**	**0.0799**	**0.0000**	**320.0903**

Unmitigated Construction Off-Site

Category	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
	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	0.0583	0.3781	0.9190	7.1000e-004	0.0219	5.9600e-003	0.0279	6.2500e-003	5.4800e-003	0.0117	0.0000	64.0384	64.0384	6.0000e-004	0.0000	64.0509
Worker	0.1042	0.1250	1.2991	2.2500e-003	0.1849	1.6400e-003	0.1866	0.0492	1.4900e-003	0.0507	0.0000	174.2479	174.2479	0.0102	0.0000	174.4613
Total	**0.1625**	**0.5031**	**2.2181**	**2.9600e-003**	**0.2068**	**7.6000e-003**	**0.2144**	**0.0555**	**6.9700e-003**	**0.0624**	**0.0000**	**238.2863**	**238.2863**	**0.0108**	**0.0000**	**238.5122**

Mitigated Construction On-Site

Category	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
	tons/yr										MT/yr					
Off-Road	0.4775	3.9189	2.4462	3.5000e-003		0.2762	0.2762		0.2598	0.2598	0.0000	318.4122	318.4122	0.0799	0.0000	320.0899
Total	**0.4775**	**3.9189**	**2.4462**	**3.5000e-003**		**0.2762**	**0.2762**		**0.2598**	**0.2598**	**0.0000**	**318.4122**	**318.4122**	**0.0799**	**0.0000**	**320.0899**

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	0.0583	0.3781	0.9190	7.1000e-004	0.0219	5.9600e-003	0.0279	6.2500e-003	5.4800e-003	0.0117	0.0000	64.0384	64.0384	6.0000e-004	0.0000	64.0509
Worker	0.1042	0.1250	1.2991	2.2500e-003	0.1849	1.6400e-003	0.1866	0.0492	1.4900e-003	0.0507	0.0000	174.2479	174.2479	0.0102	0.0000	174.4613
Total	**0.1625**	**0.5031**	**2.2181**	**2.9600e-003**	**0.2068**	**7.6000e-003**	**0.2144**	**0.0555**	**6.9700e-003**	**0.0624**	**0.0000**	**238.2863**	**238.2863**	**0.0108**	**0.0000**	**238.5122**

3.4 Building Construction - 2016

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	3.4100e-003	0.0285	0.0185	3.0000e-005		1.9700e-003	1.9700e-003		1.8500e-003	1.8500e-003	0.0000	2.4215	2.4215	6.0000e-004	0.0000	2.4342
Total	**3.4100e-003**	**0.0285**	**0.0185**	**3.0000e-005**		**1.9700e-003**	**1.9700e-003**		**1.8500e-003**	**1.8500e-003**	**0.0000**	**2.4215**	**2.4215**	**6.0000e-004**	**0.0000**	**2.4342**

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	4.1000e-004	2.5900e-003	6.6700e-003	1.0000e-005	1.7000e-004	4.0000e-005	2.1000e-004	5.0000e-005	3.0000e-005	8.0000e-005	0.0000	0.4914	0.4914	0.0000	0.0000	0.4915

Worker	7.0000e-004	8.5000e-004	8.7600e-003	2.0000e-005	1.4200e-003	1.0000e-005	1.4300e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.2862	1.2862	7.0000e-005	0.0000	1.2877
Total	**1.1100e-003**	**3.4400e-003**	**0.0154**	**3.0000e-005**	**1.5900e-003**	**5.0000e-005**	**1.6400e-003**	**4.3000e-004**	**4.0000e-005**	**4.7000e-004**	**0.0000**	**1.7776**	**1.7776**	**7.0000e-005**	**0.0000**	**1.7792**

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	3.4100e-003	0.0285	0.0185	3.0000e-005		1.9700e-003	1.9700e-003		1.8500e-003	1.8500e-003	0.0000	2.4215	2.4215	6.0000e-004	0.0000	2.4342
Total	**3.4100e-003**	**0.0285**	**0.0185**	**3.0000e-005**		**1.9700e-003**	**1.9700e-003**		**1.8500e-003**	**1.8500e-003**	**0.0000**	**2.4215**	**2.4215**	**6.0000e-004**	**0.0000**	**2.4342**

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	4.1000e-004	2.5900e-003	6.6700e-003	1.0000e-005	1.7000e-004	4.0000e-005	2.1000e-004	5.0000e-005	3.0000e-005	8.0000e-005	0.0000	0.4914	0.4914	0.0000	0.0000	0.4915
Worker	7.0000e-004	8.5000e-004	8.7600e-003	2.0000e-005	1.4200e-003	1.0000e-005	1.4300e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.2862	1.2862	7.0000e-005	0.0000	1.2877
Total	**1.1100e-003**	**3.4400e-003**	**0.0154**	**3.0000e-005**	**1.5900e-003**	**5.0000e-005**	**1.6400e-003**	**4.3000e-004**	**4.0000e-005**	**4.7000e-004**	**0.0000**	**1.7776**	**1.7776**	**7.0000e-005**	**0.0000**	**1.7792**

3.5 Paving - 2011

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	0.2907	3.0640	1.6601	2.4300e-003		0.1863	0.1863		0.1717	0.1717	0.0000	231.9554	231.9554	0.0660	0.0000	233.3422
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.2907**	**3.0640**	**1.6601**	**2.4300e-003**		**0.1863**	**0.1863**		**0.1717**	**0.1717**	**0.0000**	**231.9554**	**231.9554**	**0.0660**	**0.0000**	**233.3422**

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	0.0198	0.0231	0.2418	2.5000e-004	0.0205	2.8000e-004	0.0208	5.4500e-003	2.5000e-004	5.7000e-003	0.0000	21.8486	21.8486	1.7600e-003	0.0000	21.8856
Total	**0.0198**	**0.0231**	**0.2418**	**2.5000e-004**	**0.0205**	**2.8000e-004**	**0.0208**	**5.4500e-003**	**2.5000e-004**	**5.7000e-003**	**0.0000**	**21.8486**	**21.8486**	**1.7600e-003**	**0.0000**	**21.8856**

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	0.2907	3.0640	1.6601	2.4300e-003		0.1863	0.1863		0.1717	0.1717	0.0000	231.9551	231.9551	0.0660	0.0000	233.3419
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.2907**	**3.0640**	**1.6601**	**2.4300e-003**		**0.1863**	**0.1863**		**0.1717**	**0.1717**	**0.0000**	**231.9551**	**231.9551**	**0.0660**	**0.0000**	**233.3419**

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	0.0198	0.0231	0.2418	2.5000e-004	0.0205	2.8000e-004	0.0208	5.4500e-003	2.5000e-004	5.7000e-003	0.0000	21.8486	21.8486	1.7600e-003	0.0000	21.8856
Total	**0.0198**	**0.0231**	**0.2418**	**2.5000e-004**	**0.0205**	**2.8000e-004**	**0.0208**	**5.4500e-003**	**2.5000e-004**	**5.7000e-003**	**0.0000**	**21.8486**	**21.8486**	**1.7600e-003**	**0.0000**	**21.8856**

3.5 Paving - 2012

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	0.2919	3.0572	1.6749	2.4300e-003		0.1868	0.1868		0.1722	0.1722	0.0000	232.2549	232.2549	0.0663	0.0000	233.6465
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

	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
Total	**0.2919**	**3.0572**	**1.6749**	**2.4300e-003**		**0.1868**	**0.1868**		**0.1722**	**0.1722**	**0.0000**	**232.2549**	**232.2549**	**0.0663**	**0.0000**	**233.6465**

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	0.0175	0.0204	0.2138	2.5000e-004	0.0206	2.5000e-004	0.0208	5.4700e-003	2.2000e-004	5.6900e-003	0.0000	21.3115	21.3115	1.5800e-003	0.0000	21.3445
Total	**0.0175**	**0.0204**	**0.2138**	**2.5000e-004**	**0.0206**	**2.5000e-004**	**0.0208**	**5.4700e-003**	**2.2000e-004**	**5.6900e-003**	**0.0000**	**21.3115**	**21.3115**	**1.5800e-003**	**0.0000**	**21.3445**

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	0.2919	3.0572	1.6749	2.4300e-003		0.1868	0.1868		0.1722	0.1722	0.0000	232.2546	232.2546	0.0663	0.0000	233.6462
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.2919**	**3.0572**	**1.6749**	**2.4300e-003**		**0.1868**	**0.1868**		**0.1722**	**0.1722**	**0.0000**	**232.2546**	**232.2546**	**0.0663**	**0.0000**	**233.6462**

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	0.0175	0.0204	0.2138	2.5000e-004	0.0206	2.5000e-004	0.0208	5.4700e-003	2.2000e-004	5.6900e-003	0.0000	21.3115	21.3115	1.5800e-003	0.0000	21.3445
Total	**0.0175**	**0.0204**	**0.2138**	**2.5000e-004**	**0.0206**	**2.5000e-004**	**0.0208**	**5.4700e-003**	**2.2000e-004**	**5.6900e-003**	**0.0000**	**21.3115**	**21.3115**	**1.5800e-003**	**0.0000**	**21.3445**

3.5 Paving - 2013

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	0.2760	2.9053	1.6628	2.4300e-003		0.1754	0.1754		0.1616	0.1616	0.0000	230.9705	230.9705	0.0662	0.0000	232.3611
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.2760**	**2.9053**	**1.6628**	**2.4300e-003**		**0.1754**	**0.1754**		**0.1616**	**0.1616**	**0.0000**	**230.9705**	**230.9705**	**0.0662**	**0.0000**	**232.3611**

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	0.0153	0.0179	0.1879	2.5000e-004	0.0206	2.2000e-004	0.0208	5.4700e-003	2.0000e-004	5.6600e-003	0.0000	20.6776	20.6776	1.4100e-003	0.0000	20.7071
Total	**0.0153**	**0.0179**	**0.1879**	**2.5000e-004**	**0.0206**	**2.2000e-004**	**0.0208**	**5.4700e-003**	**2.0000e-004**	**5.6600e-003**	**0.0000**	**20.6776**	**20.6776**	**1.4100e-003**	**0.0000**	**20.7071**

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	0.2760	2.9053	1.6628	2.4300e-003		0.1754	0.1754		0.1616	0.1616	0.0000	230.9702	230.9702	0.0662	0.0000	232.3608
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.2760**	**2.9053**	**1.6628**	**2.4300e-003**		**0.1754**	**0.1754**		**0.1616**	**0.1616**	**0.0000**	**230.9702**	**230.9702**	**0.0662**	**0.0000**	**232.3608**

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

	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
Worker	0.0153	0.0179	0.1879	2.5000e-004	0.0206	2.2000e-004	0.0208	5.4700e-003	2.0000e-004	5.6600e-003	0.0000	20.6776	20.6776	1.4100e-003	0.0000	20.7071
Total	**0.0153**	**0.0179**	**0.1879**	**2.5000e-004**	**0.0206**	**2.2000e-004**	**0.0208**	**5.4700e-003**	**2.0000e-004**	**5.6600e-003**	**0.0000**	**20.6776**	**20.6776**	**1.4100e-003**	**0.0000**	**20.7071**

3.5 Paving - 2014

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	0.2604	2.7405	1.6530	2.4300e-003		0.1641	0.1641		0.1512	0.1512	0.0000	229.6980	229.6980	0.0662	0.0000	231.0876
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.2604**	**2.7405**	**1.6530**	**2.4300e-003**		**0.1641**	**0.1641**		**0.1512**	**0.1512**	**0.0000**	**229.6980**	**229.6980**	**0.0662**	**0.0000**	**231.0876**

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	0.0133	0.0158	0.1647	2.5000e-004	0.0206	2.0000e-004	0.0207	5.4700e-003	1.8000e-004	5.6500e-003	0.0000	20.0729	20.0729	1.2600e-003	0.0000	20.0993
Total	**0.0133**	**0.0158**	**0.1647**	**2.5000e-004**	**0.0206**	**2.0000e-004**	**0.0207**	**5.4700e-003**	**1.8000e-004**	**5.6500e-003**	**0.0000**	**20.0729**	**20.0729**	**1.2600e-003**	**0.0000**	**20.0993**

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	0.2604	2.7405	1.6530	2.4300e-003		0.1641	0.1641		0.1512	0.1512	0.0000	229.6977	229.6977	0.0662	0.0000	231.0874
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.2604**	**2.7405**	**1.6530**	**2.4300e-003**		**0.1641**	**0.1641**		**0.1512**	**0.1512**	**0.0000**	**229.6977**	**229.6977**	**0.0662**	**0.0000**	**231.0874**

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	0.0133	0.0158	0.1647	2.5000e-004	0.0206	2.0000e-004	0.0207	5.4700e-003	1.8000e-004	5.6500e-003	0.0000	20.0729	20.0729	1.2600e-003	0.0000	20.0993
Total	**0.0133**	**0.0158**	**0.1647**	**2.5000e-004**	**0.0206**	**2.0000e-004**	**0.0207**	**5.4700e-003**	**1.8000e-004**	**5.6500e-003**	**0.0000**	**20.0729**	**20.0729**	**1.2600e-003**	**0.0000**	**20.0993**

3.5 Paving - 2015

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	0.2558	2.6500	1.6547	2.4300e-003		0.1598	0.1598		0.1472	0.1472	0.0000	227.4592	227.4592	0.0662	0.0000	228.8485
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.2558**	**2.6500**	**1.6547**	**2.4300e-003**		**0.1598**	**0.1598**		**0.1472**	**0.1472**	**0.0000**	**227.4592**	**227.4592**	**0.0662**	**0.0000**	**228.8485**

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	0.0116	0.0139	0.1444	2.5000e-004	0.0206	1.8000e-004	0.0207	5.4700e-003	1.7000e-004	5.6300e-003	0.0000	19.3609	19.3609	1.1300e-003	0.0000	19.3846
Total	**0.0116**	**0.0139**	**0.1444**	**2.5000e-004**	**0.0206**	**1.8000e-004**	**0.0207**	**5.4700e-003**	**1.7000e-004**	**5.6300e-003**	**0.0000**	**19.3609**	**19.3609**	**1.1300e-003**	**0.0000**	**19.3846**

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	0.2558	2.6500	1.6547	2.4300e-003		0.1598	0.1598		0.1472	0.1472	0.0000	227.4589	227.4589	0.0662	0.0000	228.8483
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total	**0.2558**	**2.6500**	**1.6547**	**2.4300e-003**		**0.1598**	**0.1598**		**0.1472**	**0.1472**	**0.0000**	**227.4589**	**227.4589**	**0.0662**	**0.0000**	**228.8483**

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	0.0116	0.0139	0.1444	2.5000e-004	0.0206	1.8000e-004	0.0207	5.4700e-003	1.7000e-004	5.6300e-003	0.0000	19.3609	19.3609	1.1300e-003	0.0000	19.3846
Total	**0.0116**	**0.0139**	**0.1444**	**2.5000e-004**	**0.0206**	**1.8000e-004**	**0.0207**	**5.4700e-003**	**1.7000e-004**	**5.6300e-003**	**0.0000**	**19.3609**	**19.3609**	**1.1300e-003**	**0.0000**	**19.3846**

3.5 Paving - 2016

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	0.0180	0.1834	0.1256	1.9000e-004		0.0111	0.0111		0.0102	0.0102	0.0000	17.2567	17.2567	5.0700e-003	0.0000	17.3631
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0180**	**0.1834**	**0.1256**	**1.9000e-004**		**0.0111**	**0.0111**		**0.0102**	**0.0102**	**0.0000**	**17.2567**	**17.2567**	**5.0700e-003**	**0.0000**	**17.3631**

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	7.8000e-004	9.4000e-004	9.7300e-003	2.0000e-005	1.5700e-003	1.0000e-005	1.5900e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.4291	1.4291	8.0000e-005	0.0000	1.4307
Total	**7.8000e-004**	**9.4000e-004**	**9.7300e-003**	**2.0000e-005**	**1.5700e-003**	**1.0000e-005**	**1.5900e-003**	**4.2000e-004**	**1.0000e-005**	**4.3000e-004**	**0.0000**	**1.4291**	**1.4291**	**8.0000e-005**	**0.0000**	**1.4307**

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	0.0180	0.1834	0.1256	1.9000e-004		0.0111	0.0111		0.0102	0.0102	0.0000	17.2566	17.2566	5.0700e-003	0.0000	17.3631
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0180**	**0.1834**	**0.1256**	**1.9000e-004**		**0.0111**	**0.0111**		**0.0102**	**0.0102**	**0.0000**	**17.2566**	**17.2566**	**5.0700e-003**	**0.0000**	**17.3631**

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	7.8000e-004	9.4000e-004	9.7300e-003	2.0000e-005	1.5700e-003	1.0000e-005	1.5900e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.4291	1.4291	8.0000e-005	0.0000	1.4307
Total	**7.8000e-004**	**9.4000e-004**	**9.7300e-003**	**2.0000e-005**	**1.5700e-003**	**1.0000e-005**	**1.5900e-003**	**4.2000e-004**	**1.0000e-005**	**4.3000e-004**	**0.0000**	**1.4291**	**1.4291**	**8.0000e-005**	**0.0000**	**1.4307**

3.6 Architectural Coating - 2011

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	54.0194					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0734	0.4381	0.2579	3.9000e-004		0.0403	0.0403		0.0403	0.0403	0.0000	33.1923	33.1923	5.9600e-003	0.0000	33.3174
Total	**54.0928**	**0.4381**	**0.2579**	**3.9000e-004**		**0.0403**	**0.0403**		**0.0403**	**0.0403**	**0.0000**	**33.1923**	**33.1923**	**5.9600e-003**	**0.0000**	**33.3174**

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	0.0356	0.0415	0.4353	4.5000e-004	0.0368	5.1000e-004	0.0374	9.8000e-003	4.5000e-004	0.0103	0.0000	39.3275	39.3275	3.1700e-003	0.0000	39.3940
Total	**0.0356**	**0.0415**	**0.4353**	**4.5000e-004**	**0.0368**	**5.1000e-004**	**0.0374**	**9.8000e-003**	**4.5000e-004**	**0.0103**	**0.0000**	**39.3275**	**39.3275**	**3.1700e-003**	**0.0000**	**39.3940**

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	54.0194					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0734	0.4381	0.2579	3.9000e-004		0.0403	0.0403		0.0403	0.0403	0.0000	33.1923	33.1923	5.9600e-003	0.0000	33.3174
Total	**54.0928**	**0.4381**	**0.2579**	**3.9000e-004**		**0.0403**	**0.0403**		**0.0403**	**0.0403**	**0.0000**	**33.1923**	**33.1923**	**5.9600e-003**	**0.0000**	**33.3174**

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	0.0356	0.0415	0.4353	4.5000e-004	0.0368	5.1000e-004	0.0374	9.8000e-003	4.5000e-004	0.0103	0.0000	39.3275	39.3275	3.1700e-003	0.0000	39.3940
Total	**0.0356**	**0.0415**	**0.4353**	**4.5000e-004**	**0.0368**	**5.1000e-004**	**0.0374**	**9.8000e-003**	**4.5000e-004**	**0.0103**	**0.0000**	**39.3275**	**39.3275**	**3.1700e-003**	**0.0000**	**39.3940**

3.6 Architectural Coating - 2012

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	54.2271					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0686	0.4130	0.2562	3.9000e-004		0.0379	0.0379		0.0379	0.0379	0.0000	33.3200	33.3200	5.5700e-003	0.0000	33.4369
Total	**54.2957**	**0.4130**	**0.2562**	**3.9000e-004**		**0.0379**	**0.0379**		**0.0379**	**0.0379**	**0.0000**	**33.3200**	**33.3200**	**5.5700e-003**	**0.0000**	**33.4369**

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	0.0314	0.0366	0.3848	4.5000e-004	0.0370	4.4000e-004	0.0374	9.8400e-003	4.0000e-004	0.0102	0.0000	38.3606	38.3606	2.8400e-003	0.0000	38.4202
Total	**0.0314**	**0.0366**	**0.3848**	**4.5000e-004**	**0.0370**	**4.4000e-004**	**0.0374**	**9.8400e-003**	**4.0000e-004**	**0.0102**	**0.0000**	**38.3606**	**38.3606**	**2.8400e-003**	**0.0000**	**38.4202**

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	54.2271					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0686	0.4130	0.2562	3.9000e-004		0.0379	0.0379		0.0379	0.0379	0.0000	33.3199	33.3199	5.5700e-003	0.0000	33.4369
Total	**54.2957**	**0.4130**	**0.2562**	**3.9000e-004**		**0.0379**	**0.0379**		**0.0379**	**0.0379**	**0.0000**	**33.3199**	**33.3199**	**5.5700e-003**	**0.0000**	**33.4369**

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	0.0314	0.0366	0.3848	4.5000e-004	0.0370	4.4000e-004	0.0374	9.8400e-003	4.0000e-004	0.0102	0.0000	38.3606	38.3606	2.8400e-003	0.0000	38.4202
Total	**0.0314**	**0.0366**	**0.3848**	**4.5000e-004**	**0.0370**	**4.4000e-004**	**0.0374**	**9.8400e-003**	**4.0000e-004**	**0.0102**	**0.0000**	**38.3606**	**38.3606**	**2.8400e-003**	**0.0000**	**38.4202**

3.6 Architectural Coating - 2013

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	54.2271					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0634	0.3864	0.2534	3.9000e-004		0.0351	0.0351		0.0351	0.0351	0.0000	33.3200	33.3200	5.1600e-003	0.0000	33.4283

Total	**54.2905**	**0.3864**	**0.2534**	**3.9000e-004**		**0.0351**	**0.0351**		**0.0351**	**0.0351**	**0.0000**	**33.3200**	**33.3200**	**5.1600e-003**	**0.0000**	**33.4283**

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	0.0275	0.0322	0.3383	4.5000e-004	0.0370	3.9000e-004	0.0374	9.8400e-003	3.5000e-004	0.0102	0.0000	37.2196	37.2196	2.5300e-003	0.0000	37.2728
Total	**0.0275**	**0.0322**	**0.3383**	**4.5000e-004**	**0.0370**	**3.9000e-004**	**0.0374**	**9.8400e-003**	**3.5000e-004**	**0.0102**	**0.0000**	**37.2196**	**37.2196**	**2.5300e-003**	**0.0000**	**37.2728**

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	54.2271					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0634	0.3864	0.2534	3.9000e-004		0.0351	0.0351		0.0351	0.0351	0.0000	33.3199	33.3199	5.1600e-003	0.0000	33.4283
Total	**54.2905**	**0.3864**	**0.2534**	**3.9000e-004**		**0.0351**	**0.0351**		**0.0351**	**0.0351**	**0.0000**	**33.3199**	**33.3199**	**5.1600e-003**	**0.0000**	**33.4283**

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	0.0275	0.0322	0.3383	4.5000e-004	0.0370	3.9000e-004	0.0374	9.8400e-003	3.5000e-004	0.0102	0.0000	37.2196	37.2196	2.5300e-003	0.0000	37.2728
Total	**0.0275**	**0.0322**	**0.3383**	**4.5000e-004**	**0.0370**	**3.9000e-004**	**0.0374**	**9.8400e-003**	**3.5000e-004**	**0.0102**	**0.0000**	**37.2196**	**37.2196**	**2.5300e-003**	**0.0000**	**37.2728**

3.6 Architectural Coating - 2014

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	54.2271					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0582	0.3624	0.2508	3.9000e-004		0.0320	0.0320		0.0320	0.0320	0.0000	33.3200	33.3200	4.7500e-003	0.0000	33.4197
Total	**54.2854**	**0.3624**	**0.2508**	**3.9000e-004**		**0.0320**	**0.0320**		**0.0320**	**0.0320**	**0.0000**	**33.3200**	**33.3200**	**4.7500e-003**	**0.0000**	**33.4197**

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	0.0239	0.0284	0.2964	4.5000e-004	0.0370	3.6000e-004	0.0373	9.8400e-003	3.2000e-004	0.0102	0.0000	36.1313	36.1313	2.2600e-003	0.0000	36.1788
Total	**0.0239**	**0.0284**	**0.2964**	**4.5000e-004**	**0.0370**	**3.6000e-004**	**0.0373**	**9.8400e-003**	**3.2000e-004**	**0.0102**	**0.0000**	**36.1313**	**36.1313**	**2.2600e-003**	**0.0000**	**36.1788**

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	54.2271					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0582	0.3624	0.2508	3.9000e-004		0.0320	0.0320		0.0320	0.0320	0.0000	33.3199	33.3199	4.7500e-003	0.0000	33.4197
Total	**54.2854**	**0.3624**	**0.2508**	**3.9000e-004**		**0.0320**	**0.0320**		**0.0320**	**0.0320**	**0.0000**	**33.3199**	**33.3199**	**4.7500e-003**	**0.0000**	**33.4197**

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

	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
Worker	0.0239	0.0284	0.2964	4.5000e-004	0.0370	3.6000e-004	0.0373	9.8400e-003	3.2000e-004	0.0102	0.0000	36.1313	36.1313	2.2600e-003	0.0000	36.1788
Total	**0.0239**	**0.0284**	**0.2964**	**4.5000e-004**	**0.0370**	**3.6000e-004**	**0.0373**	**9.8400e-003**	**3.2000e-004**	**0.0102**	**0.0000**	**36.1313**	**36.1313**	**2.2600e-003**	**0.0000**	**36.1788**

3.6 Architectural Coating - 2015

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	54.2271					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0531	0.3354	0.2482	3.9000e-004		0.0288	0.0288		0.0288	0.0288	0.0000	33.3200	33.3200	4.3400e-003	0.0000	33.4111
Total	**54.2802**	**0.3354**	**0.2482**	**3.9000e-004**		**0.0288**	**0.0288**		**0.0288**	**0.0288**	**0.0000**	**33.3200**	**33.3200**	**4.3400e-003**	**0.0000**	**33.4111**

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	0.0208	0.0250	0.2598	4.5000e-004	0.0370	3.3000e-004	0.0373	9.8400e-003	3.0000e-004	0.0101	0.0000	34.8496	34.8496	2.0300e-003	0.0000	34.8923
Total	**0.0208**	**0.0250**	**0.2598**	**4.5000e-004**	**0.0370**	**3.3000e-004**	**0.0373**	**9.8400e-003**	**3.0000e-004**	**0.0101**	**0.0000**	**34.8496**	**34.8496**	**2.0300e-003**	**0.0000**	**34.8923**

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	54.2271					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0531	0.3354	0.2482	3.9000e-004		0.0288	0.0288		0.0288	0.0288	0.0000	33.3199	33.3199	4.3400e-003	0.0000	33.4110
Total	**54.2802**	**0.3354**	**0.2482**	**3.9000e-004**		**0.0288**	**0.0288**		**0.0288**	**0.0288**	**0.0000**	**33.3199**	**33.3199**	**4.3400e-003**	**0.0000**	**33.4110**

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	0.0208	0.0250	0.2598	4.5000e-004	0.0370	3.3000e-004	0.0373	9.8400e-003	3.0000e-004	0.0101	0.0000	34.8496	34.8496	2.0300e-003	0.0000	34.8923
Total	**0.0208**	**0.0250**	**0.2598**	**4.5000e-004**	**0.0370**	**3.3000e-004**	**0.0373**	**9.8400e-003**	**3.0000e-004**	**0.0101**	**0.0000**	**34.8496**	**34.8496**	**2.0300e-003**	**0.0000**	**34.8923**

3.6 Architectural Coating - 2016

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	7.8951					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.0000e-003	0.0451	0.0358	6.0000e-005		3.7400e-003	3.7400e-003		3.7400e-003	3.7400e-003	0.0000	4.8512	4.8512	5.7000e-004	0.0000	4.8632
Total	**7.9021**	**0.0451**	**0.0358**	**6.0000e-005**		**3.7400e-003**	**3.7400e-003**		**3.7400e-003**	**3.7400e-003**	**0.0000**	**4.8512**	**4.8512**	**5.7000e-004**	**0.0000**	**4.8632**

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	2.6600e-003	3.2200e-003	0.0333	7.0000e-005	5.3800e-003	4.0000e-005	5.4300e-003	1.4300e-003	4.0000e-005	1.4700e-003	0.0000	4.8875	4.8875	2.7000e-004	0.0000	4.8931
Total	**2.6600e-003**	**3.2200e-003**	**0.0333**	**7.0000e-005**	**5.3800e-003**	**4.0000e-005**	**5.4300e-003**	**1.4300e-003**	**4.0000e-005**	**1.4700e-003**	**0.0000**	**4.8875**	**4.8875**	**2.7000e-004**	**0.0000**	**4.8931**

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	7.8951					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.0000e-003	0.0451	0.0358	6.0000e-005		3.7400e-003	3.7400e-003		3.7400e-003	3.7400e-003	0.0000	4.8512	4.8512	5.7000e-004	0.0000	4.8632

Total	**7.9021**	**0.0451**	**0.0358**	**6.0000e-005**		**3.7400e-003**	**3.7400e-003**		**3.7400e-003**	**3.7400e-003**	**0.0000**	**4.8512**	**4.8512**	**5.7000e-004**	**0.0000**	**4.8632**

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	2.6600e-003	3.2200e-003	0.0333	7.0000e-005	5.3800e-003	4.0000e-005	5.4300e-003	1.4300e-003	4.0000e-005	1.4700e-003	0.0000	4.8875	4.8875	2.7000e-004	0.0000	4.8931
Total	**2.6600e-003**	**3.2200e-003**	**0.0333**	**7.0000e-005**	**5.3800e-003**	**4.0000e-005**	**5.4300e-003**	**1.4300e-003**	**4.0000e-005**	**1.4700e-003**	**0.0000**	**4.8875**	**4.8875**	**2.7000e-004**	**0.0000**	**4.8931**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	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	0.8445	1.6312	7.6306	0.0197	1.4122	0.0219	1.4341	0.3782	0.0202	0.3984	0.0000	1,351.3849	1,351.3849	0.0549	0.0000	1,352.5380
Unmitigated	0.8977	1.9346	8.8302	0.0238	1.7157	0.0261	1.7418	0.4595	0.0241	0.4836	0.0000	1,632.6625	1,632.6625	0.0653	0.0000	1,634.0339

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,662.50	1,597.50	1465.00	4,654,882	3,831,477
Total	1,662.50	1,597.50	1,465.00	4,654,882	3,831,477

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
Apartments Mid Rise	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3

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

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	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	235.6400	235.6400	0.0107	2.2000e-003	236.5471
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	256.1112	256.1112	0.0116	2.4000e-003	257.0971
NaturalGas Mitigated	5.5100e-003	0.0471	0.0200	3.0000e-004		3.8100e-003	3.8100e-003		3.8100e-003	3.8100e-003	0.0000	54.5076	54.5076	1.0400e-003	1.0000e-003	54.8393
NaturalGas Unmitigated	5.8700e-003	0.0502	0.0214	3.2000e-004		4.0600e-003	4.0600e-003		4.0600e-003	4.0600e-003	0.0000	58.1004	58.1004	1.1100e-003	1.0700e-003	58.4540

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					
Apartments Mid Rise	1.08876e+006	5.8700e-003	0.0502	0.0214	3.2000e-004		4.0600e-003	4.0600e-003		4.0600e-003	4.0600e-003	0.0000	58.1004	58.1004	1.1100e-003	1.0700e-003	58.4540
Total		**5.8700e-003**	**0.0502**	**0.0214**	**3.2000e-004**		**4.0600e-003**	**4.0600e-003**		**4.0600e-003**	**4.0600e-003**	**0.0000**	**58.1004**	**58.1004**	**1.1100e-003**	**1.0700e-003**	**58.4540**

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					
Apartments Mid Rise	1.02143e+006	5.5100e-003	0.0471	0.0200	3.0000e-004		3.8100e-003	3.8100e-003		3.8100e-003	3.8100e-003	0.0000	54.5076	54.5076	1.0400e-003	1.0000e-003	54.8393
Total		**5.5100e-003**	**0.0471**	**0.0200**	**3.0000e-004**		**3.8100e-003**	**3.8100e-003**		**3.8100e-003**	**3.8100e-003**	**0.0000**	**54.5076**	**54.5076**	**1.0400e-003**	**1.0000e-003**	**54.8393**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	880375	256.1112	0.0116	2.4000e-003	257.0971
Total		**256.1112**	**0.0116**	**2.4000e-003**	**257.0971**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	810006	235.6400	0.0107	2.2000e-003	236.5471
Total		**235.6400**	**0.0107**	**2.2000e-003**	**236.5471**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	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	1.3823	0.0215	1.8634	1.0000e-004		0.0226	0.0226		0.0225	0.0225	0.0000	180.2534	180.2534	6.3500e-003	3.2500e-003	181.3940
Unmitigated	17.0509	0.2344	21.1866	7.6500e-003		2.7252	2.7252		2.7251	2.7251	258.2394	111.3341	369.5735	0.2413	0.0203	380.9370

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	0.3740					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.9337					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	15.6866	0.2128	19.3241	7.5500e-003		2.7149	2.7149		2.7149	2.7149	258.2394	108.3019	366.5413	0.2383	0.0203	377.8427
Landscaping	0.0567	0.0215	1.8625	1.0000e-004		0.0102	0.0102		0.0102	0.0102	0.0000	3.0322	3.0322	2.9600e-003	0.0000	3.0943

Total	17.0509	0.2344	21.1866	7.6500e-003		2.7252	2.7252		2.7251	2.7251	258.2394	111.3341	369.5735	0.2413	0.0203	380.9370

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	0.3740					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.9337					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0179	0.0000	9.8000e-004	0.0000		0.0124	0.0124		0.0122	0.0122	0.0000	177.2212	177.2212	3.4000e-003	3.2500e-003	178.2998
Landscaping	0.0567	0.0215	1.8625	1.0000e-004		0.0102	0.0102		0.0102	0.0102	0.0000	3.0322	3.0322	2.9600e-003	0.0000	3.0943
Total	**1.3823**	**0.0215**	**1.8634**	**1.0000e-004**		**0.0226**	**0.0226**		**0.0225**	**0.0225**	**0.0000**	**180.2534**	**180.2534**	**6.3600e-003**	**3.2500e-003**	**181.3940**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e

Category	MT/yr			
Mitigated	34.4640	0.4259	0.0103	46.5990
Unmitigated	41.2633	0.5324	0.0129	56.4333

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	16.2885 / 10.2688	41.2633	0.5324	0.0129	56.4333
Total		**41.2633**	**0.5324**	**0.0129**	**56.4333**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	13.0308 / 9.64244	34.4640	0.4259	0.0103	46.5990
Total		**34.4640**	**0.4259**	**0.0103**	**46.5990**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	23.3440	1.3796	0.0000	52.3153
Unmitigated	23.3440	1.3796	0.0000	52.3153

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	115	23.3440	1.3796	0.0000	52.3153
Total		**23.3440**	**1.3796**	**0.0000**	**52.3153**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	115	23.3440	1.3796	0.0000	52.3153
Total		**23.3440**	**1.3796**	**0.0000**	**52.3153**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

RETAIL SCENARIO EMISSIONS (SUMMER AND WINTER)

El Dorado Hills Apartments Project

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Regional Shopping Center	74.35	1000sqft	4.50	74,350.00	0

1.2 Other Project Characteristics

Urbanization Urban **Wind Speed (m/s)** 2.7 **Precipitation Freq (Days)** 70

Climate Zone 1 **Operational Year** 2015

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

Project Characteristics -

Land Use - Acreage and square feet adjusted to actual.

Construction Phase -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	1.71	4.50
tblProjectCharacteristics	OperationalYear	2014	2015

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					
2015	5.3522	56.9729	43.7128	0.0410	18.2141	3.0895	21.3037	9.9699	2.8424	12.8123	0.0000	4,272.9202	4,272.9202	1.2361	0.0000	4,298.8785
2016	96.1165	2.3927	2.1495	3.5000e-003	0.0411	0.1969	0.2380	0.0109	0.1969	0.2078	0.0000	324.5826	324.5826	0.0353	0.0000	325.3246
Total	**101.4687**	**59.3657**	**45.8624**	**0.0445**	**18.2552**	**3.2865**	**21.5417**	**9.9808**	**3.0393**	**13.0201**	**0.0000**	**4,597.5028**	**4,597.5028**	**1.2714**	**0.0000**	**4,624.2031**

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					
2015	5.3522	56.9729	43.7128	0.0410	18.2141	3.0895	21.3037	9.9699	2.8424	12.8123	0.0000	4,272.9202	4,272.9202	1.2361	0.0000	4,298.8785
2016	96.1165	2.3927	2.1495	3.5000e-003	0.0411	0.1969	0.2380	0.0109	0.1969	0.2078	0.0000	324.5826	324.5826	0.0353	0.0000	325.3246
Total	**101.4687**	**59.3657**	**45.8624**	**0.0445**	**18.2552**	**3.2865**	**21.5417**	**9.9808**	**3.0393**	**13.0201**	**0.0000**	**4,597.5028**	**4,597.5028**	**1.2714**	**0.0000**	**4,624.2031**

	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**

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	2.0639	8.0000e-005	7.8500e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0163	0.0163	5.0000e-005		0.0173
Energy	0.0167	0.1516	0.1273	9.1000e-004		0.0115	0.0115		0.0115	0.0115		181.8909	181.8909	3.4900e-003	3.3300e-003	182.9979
Mobile	16.0355	21.7922	119.2262	0.2021	13.7539	0.2789	14.0328	3.6701	0.2556	3.9257		17,914.7989	17,914.7989	0.8790		17,933.2582
Total	**18.1161**	**21.9438**	**119.3614**	**0.2031**	**13.7539**	**0.2904**	**14.0444**	**3.6701**	**0.2672**	**3.9372**		**18,096.7060**	**18,096.7060**	**0.8826**	**3.3300e-003**	**18,116.2733**

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	2.0639	8.0000e-005	7.8500e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0163	0.0163	5.0000e-005		0.0173
Energy	0.0150	0.1364	0.1146	8.2000e-004		0.0104	0.0104		0.0104	0.0104		163.7018	163.7018	3.1400e-003	3.0000e-003	164.6981
Mobile	15.3640	18.5677	102.8302	0.1678	11.3210	0.2352	11.5562	3.0209	0.2156	3.2364		14,867.8638	14,867.8638	0.7517		14,883.6503
Total	**17.4430**	**18.7042**	**102.9526**	**0.1686**	**11.3210**	**0.2456**	**11.5666**	**3.0209**	**0.2260**	**3.2468**		**15,031.5818**	**15,031.5818**	**0.7549**	**3.0000e-003**	**15,048.3656**

	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	**3.72**	**14.76**	**13.75**	**16.95**	**17.69**	**15.43**	**17.64**	**17.69**	**15.43**	**17.54**	**0.00**	**16.94**	**16.94**	**14.46**	**9.91**	**16.93**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2015	1/7/2015	5	5	
2	Grading	Grading	1/8/2015	1/19/2015	5	8	
3	Building Construction	Building Construction	1/20/2015	12/7/2015	5	230	
4	Paving	Paving	12/8/2015	12/31/2015	5	18	
5	Architectural Coating	Architectural Coating	1/1/2016	1/26/2016	5	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 111,525; Non-Residential Outdoor: 37,175 (Architectural

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	125	0.42

Paving	Paving Equipment	2	6.00	130	0.36
Paving	Rollers	2	6.00	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
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	24.00	12.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2015

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2609	56.8897	42.6318	0.0391		3.0883	3.0883		2.8412	2.8412		4,111.7444	4,111.7444	1.2275		4,137.5225
Total	**5.2609**	**56.8897**	**42.6318**	**0.0391**	**18.0663**	**3.0883**	**21.1545**	**9.9307**	**2.8412**	**12.7719**		**4,111.7444**	**4,111.7444**	**1.2275**		**4,137.5225**

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	0.0913	0.0833	1.0811	1.8900e-003	0.1479	1.2600e-003	0.1491	0.0392	1.1400e-003	0.0404		161.1758	161.1758	8.5800e-003		161.3560
Total	**0.0913**	**0.0833**	**1.0811**	**1.8900e-003**	**0.1479**	**1.2600e-003**	**0.1491**	**0.0392**	**1.1400e-003**	**0.0404**		**161.1758**	**161.1758**	**8.5800e-003**		**161.3560**

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2609	56.8897	42.6318	0.0391		3.0883	3.0883		2.8412	2.8412	0.0000	4,111.7444	4,111.7444	1.2275		4,137.5224
Total	**5.2609**	**56.8897**	**42.6318**	**0.0391**	**18.0663**	**3.0883**	**21.1545**	**9.9307**	**2.8412**	**12.7719**	**0.0000**	**4,111.7444**	**4,111.7444**	**1.2275**		**4,137.5224**

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	0.0913	0.0833	1.0811	1.8900e-003	0.1479	1.2600e-003	0.1491	0.0392	1.1400e-003	0.0404		161.1758	161.1758	8.5800e-003		161.3560
Total	**0.0913**	**0.0833**	**1.0811**	**1.8900e-003**	**0.1479**	**1.2600e-003**	**0.1491**	**0.0392**	**1.1400e-003**	**0.0404**		**161.1758**	**161.1758**	**8.5800e-003**		**161.3560**

3.3 Grading - 2015

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					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	3.8327	40.4161	26.6731	0.0298		2.3284	2.3284		2.1421	2.1421		3,129.0158	3,129.0158	0.9341		3,148.6328
Total	**3.8327**	**40.4161**	**26.6731**	**0.0298**	**6.5523**	**2.3284**	**8.8807**	**3.3675**	**2.1421**	**5.5096**		**3,129.0158**	**3,129.0158**	**0.9341**		**3,148.6328**

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	0.0761	0.0694	0.9009	1.5700e-003	0.1232	1.0500e-003	0.1243	0.0327	9.5000e-004	0.0336		134.3132	134.3132	7.1500e-003		134.4633

Total	**0.0761**	**0.0694**	**0.9009**	**1.5700e-003**	**0.1232**	**1.0500e-003**	**0.1243**	**0.0327**	**9.5000e-004**	**0.0336**		**134.3132**	**134.3132**	**7.1500e-003**		**134.4633**

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					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	3.8327	40.4161	26.6731	0.0298		2.3284	2.3284		2.1421	2.1421	0.0000	3,129.0158	3,129.0158	0.9341		3,148.6328
Total	**3.8327**	**40.4161**	**26.6731**	**0.0298**	**6.5523**	**2.3284**	**8.8807**	**3.3675**	**2.1421**	**5.5096**	**0.0000**	**3,129.0158**	**3,129.0158**	**0.9341**		**3,148.6328**

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	0.0761	0.0694	0.9009	1.5700e-003	0.1232	1.0500e-003	0.1243	0.0327	9.5000e-004	0.0336		134.3132	134.3132	7.1500e-003		134.4633
Total	**0.0761**	**0.0694**	**0.9009**	**1.5700e-003**	**0.1232**	**1.0500e-003**	**0.1243**	**0.0327**	**9.5000e-004**	**0.0336**		**134.3132**	**134.3132**	**7.1500e-003**		**134.4633**

3.4 Building Construction - 2015

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	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904		2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**		**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

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	0.1765	1.2075	2.5436	2.4200e-003	0.0774	0.0201	0.0976	0.0220	0.0185	0.0405		241.3286	241.3286	2.2100e-003		241.3750
Worker	0.1217	0.1110	1.4414	2.5200e-003	0.1972	1.6700e-003	0.1988	0.0523	1.5200e-003	0.0538		214.9011	214.9011	0.0114		215.1414
Total	**0.2982**	**1.3185**	**3.9850**	**4.9400e-003**	**0.2746**	**0.0218**	**0.2964**	**0.0743**	**0.0200**	**0.0943**		**456.2297**	**456.2297**	**0.0137**		**456.5163**

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	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904	0.0000	2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**	**0.0000**	**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

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	0.1765	1.2075	2.5436	2.4200e-003	0.0774	0.0201	0.0976	0.0220	0.0185	0.0405		241.3286	241.3286	2.2100e-003		241.3750
Worker	0.1217	0.1110	1.4414	2.5200e-003	0.1972	1.6700e-003	0.1988	0.0523	1.5200e-003	0.0538		214.9011	214.9011	0.0114		215.1414
Total	**0.2982**	**1.3185**	**3.9850**	**4.9400e-003**	**0.2746**	**0.0218**	**0.2964**	**0.0743**	**0.0200**	**0.0943**		**456.2297**	**456.2297**	**0.0137**		**456.5163**

3.5 Paving - 2015

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	1.9601	20.3064	12.6794	0.0186		1.2241	1.2241		1.1280	1.1280		1,921.3091	1,921.3091	0.5588		1,933.0446
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9601**	**20.3064**	**12.6794**	**0.0186**		**1.2241**	**1.2241**		**1.1280**	**1.1280**		**1,921.3091**	**1,921.3091**	**0.5588**		**1,933.0446**

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	0.1014	0.0925	1.2012	2.1000e-003	0.1643	1.4000e-003	0.1657	0.0436	1.2700e-003	0.0449		179.0842	179.0842	9.5300e-003		179.2845
Total	**0.1014**	**0.0925**	**1.2012**	**2.1000e-003**	**0.1643**	**1.4000e-003**	**0.1657**	**0.0436**	**1.2700e-003**	**0.0449**		**179.0842**	**179.0842**	**9.5300e-003**		**179.2845**

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	1.9601	20.3064	12.6794	0.0186		1.2241	1.2241		1.1280	1.1280	0.0000	1,921.3090	1,921.3090	0.5588		1,933.0446
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9601**	**20.3064**	**12.6794**	**0.0186**		**1.2241**	**1.2241**		**1.1280**	**1.1280**	**0.0000**	**1,921.3090**	**1,921.3090**	**0.5588**		**1,933.0446**

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	0.1014	0.0925	1.2012	2.1000e-003	0.1643	1.4000e-003	0.1657	0.0436	1.2700e-003	0.0449		179.0842	179.0842	9.5300e-003		179.2845
Total	**0.1014**	**0.0925**	**1.2012**	**2.1000e-003**	**0.1643**	**1.4000e-003**	**0.1657**	**0.0436**	**1.2700e-003**	**0.0449**		**179.0842**	**179.0842**	**9.5300e-003**		**179.2845**

3.6 Architectural Coating - 2016

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	95.7256					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966		281.4481	281.4481	0.0332		282.1449
Total	**96.0941**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**		**281.4481**	**281.4481**	**0.0332**		**282.1449**

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

	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
Worker	0.0224	0.0205	0.2656	5.2000e-004	0.0411	3.3000e-004	0.0414	0.0109	3.0000e-004	0.0112		43.1346	43.1346	2.1500e-003		43.1798
Total	**0.0224**	**0.0205**	**0.2656**	**5.2000e-004**	**0.0411**	**3.3000e-004**	**0.0414**	**0.0109**	**3.0000e-004**	**0.0112**		**43.1346**	**43.1346**	**2.1500e-003**		**43.1798**

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	95.7256					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966	0.0000	281.4481	281.4481	0.0332		282.1449
Total	**96.0941**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**	**0.0000**	**281.4481**	**281.4481**	**0.0332**		**282.1449**

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	0.0224	0.0205	0.2656	5.2000e-004	0.0411	3.3000e-004	0.0414	0.0109	3.0000e-004	0.0112		43.1346	43.1346	2.1500e-003		43.1798
Total	**0.0224**	**0.0205**	**0.2656**	**5.2000e-004**	**0.0411**	**3.3000e-004**	**0.0414**	**0.0109**	**3.0000e-004**	**0.0112**		**43.1346**	**43.1346**	**2.1500e-003**		**43.1798**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	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	15.3640	18.5677	102.8302	0.1678	11.3210	0.2352	11.5562	3.0209	0.2156	3.2364		14,867.8638	14,867.8638	0.7517		14,883.6503
Unmitigated	16.0355	21.7922	119.2262	0.2021	13.7539	0.2789	14.0328	3.6701	0.2556	3.9257		17,914.7989	17,914.7989	0.8790		17,933.2582

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Regional Shopping Center	3,192.59	3,715.27	1876.59	5,398,879	4,443,867
Total	3,192.59	3,715.27	1,876.59	5,398,879	4,443,867

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
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH

0.455780	0.078333	0.189232	0.163096	0.075602	0.010805	0.009660	0.001020	0.001371	0.000788	0.008641	0.000749	0.004924

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	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	0.0150	0.1364	0.1146	8.2000e-004		0.0104	0.0104		0.0104	0.0104		163.7018	163.7018	3.1400e-003	3.0000e-003	164.6981
NaturalGas Unmitigated	0.0167	0.1516	0.1273	9.1000e-004		0.0115	0.0115		0.0115	0.0115		181.8909	181.8909	3.4900e-003	3.3300e-003	182.9979

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					
Regional Shopping Center	1546.07	0.0167	0.1516	0.1273	9.1000e-004		0.0115	0.0115		0.0115	0.0115		181.8909	181.8909	3.4900e-003	3.3300e-003	182.9979
Total		**0.0167**	**0.1516**	**0.1273**	**9.1000e-004**		**0.0115**	**0.0115**		**0.0115**	**0.0115**		**181.8909**	**181.8909**	**3.4900e-003**	**3.3300e-003**	**182.9979**

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					
Regional Shopping Center	1.39147	0.0150	0.1364	0.1146	8.2000e-004		0.0104	0.0104		0.0104	0.0104		163.7018	163.7018	3.1400e-003	3.0000e-003	164.6981
Total		**0.0150**	**0.1364**	**0.1146**	**8.2000e-004**		**0.0104**	**0.0104**		**0.0104**	**0.0104**		**163.7018**	**163.7018**	**3.1400e-003**	**3.0000e-003**	**164.6981**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	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	2.0639	8.0000e-005	7.8500e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0163	0.0163	5.0000e-005		0.0173
Unmitigated	2.0639	8.0000e-005	7.8500e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0163	0.0163	5.0000e-005		0.0173

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	0.4721					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.5911					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	7.8000e-004	8.0000e-005	7.8500e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0163	0.0163	5.0000e-005		0.0173
Total	**2.0639**	**8.0000e-005**	**7.8500e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**		**0.0163**	**0.0163**	**5.0000e-005**		**0.0173**

<u>Mitigated</u>

	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					
Consumer Products	1.5911					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	7.8000e-004	8.0000e-005	7.8500e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0163	0.0163	5.0000e-005		0.0173
Architectural Coating	0.4721					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.0639**	**8.0000e-005**	**7.8500e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**		**0.0163**	**0.0163**	**5.0000e-005**		**0.0173**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

El Dorado Hills Apartments Project

El Dorado-Mountain County County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Regional Shopping Center	74.35	1000sqft	4.50	74,350.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	1			**Operational Year**	2015
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

Project Characteristics -

Land Use - Acreage and square feet adjusted to actual.

Construction Phase -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	1.71	4.50
tblProjectCharacteristics	OperationalYear	2014	2015

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					
2015	5.3454	56.9930	43.6578	0.0408	18.2141	3.0895	21.3037	9.9699	2.8424	12.8123	0.0000	4,255.4860	4,255.4860	1.2361	0.0000	4,281.4443
2016	96.1146	2.3977	2.1338	3.4400e-003	0.0411	0.1969	0.2380	0.0109	0.1969	0.2078	0.0000	319.9075	319.9075	0.0353	0.0000	320.6495
Total	**101.4600**	**59.3907**	**45.7917**	**0.0443**	**18.2552**	**3.2865**	**21.5417**	**9.9808**	**3.0393**	**13.0201**	**0.0000**	**4,575.3935**	**4,575.3935**	**1.2714**	**0.0000**	**4,602.0938**

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					
2015	5.3454	56.9930	43.6578	0.0408	18.2141	3.0895	21.3037	9.9699	2.8424	12.8123	0.0000	4,255.4860	4,255.4860	1.2361	0.0000	4,281.4443
2016	96.1146	2.3977	2.1338	3.4400e-003	0.0411	0.1969	0.2380	0.0109	0.1969	0.2078	0.0000	319.9075	319.9075	0.0353	0.0000	320.6495
Total	**101.4600**	**59.3907**	**45.7917**	**0.0443**	**18.2552**	**3.2865**	**21.5417**	**9.9808**	**3.0393**	**13.0201**	**0.0000**	**4,575.3935**	**4,575.3935**	**1.2714**	**0.0000**	**4,602.0938**

	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**

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	2.0639	8.0000e-005	7.8500e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0163	0.0163	5.0000e-005		0.0173
Energy	0.0167	0.1516	0.1273	9.1000e-004		0.0115	0.0115		0.0115	0.0115		181.8909	181.8909	3.4900e-003	3.3300e-003	182.9979
Mobile	15.1468	24.8313	129.7177	0.1843	13.7539	0.2808	14.0347	3.6701	0.2573	3.9274		16,349.0646	16,349.0646	0.8792		16,367.5278
Total	**17.2274**	**24.9829**	**129.8529**	**0.1852**	**13.7539**	**0.2923**	**14.0463**	**3.6701**	**0.2689**	**3.9390**		**16,530.9718**	**16,530.9718**	**0.8827**	**3.3300e-003**	**16,550.5429**

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	2.0639	8.0000e-005	7.8500e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0163	0.0163	5.0000e-005		0.0173
Energy	0.0150	0.1364	0.1146	8.2000e-004		0.0104	0.0104		0.0104	0.0104		163.7018	163.7018	3.1400e-003	3.0000e-003	164.6981
Mobile	14.4813	21.1621	115.4401	0.1532	11.3210	0.2371	11.5581	3.0209	0.2173	3.2381		13,577.5383	13,577.5383	0.7519		13,593.3287
Total	**16.5602**	**21.2986**	**115.5626**	**0.1540**	**11.3210**	**0.2475**	**11.5685**	**3.0209**	**0.2277**	**3.2485**		**13,741.2564**	**13,741.2564**	**0.7551**	**3.0000e-003**	**13,758.0440**

	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	**3.87**	**14.75**	**11.00**	**16.86**	**17.69**	**15.33**	**17.64**	**17.69**	**15.33**	**17.53**	**0.00**	**16.88**	**16.88**	**14.46**	**9.91**	**16.87**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2015	1/7/2015	5	5	
2	Grading	Grading	1/8/2015	1/19/2015	5	8	
3	Building Construction	Building Construction	1/20/2015	12/7/2015	5	230	
4	Paving	Paving	12/8/2015	12/31/2015	5	18	
5	Architectural Coating	Architectural Coating	1/1/2016	1/26/2016	5	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 111,525; Non-Residential Outdoor: 37,175 (Architectural

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	125	0.42

Paving	Paving Equipment		2	6.00	130	0.36
Paving	Rollers		2	6.00	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
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	24.00	12.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2015

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2609	56.8897	42.6318	0.0391		3.0883	3.0883		2.8412	2.8412		4,111.7444	4,111.7444	1.2275		4,137.5225
Total	**5.2609**	**56.8897**	**42.6318**	**0.0391**	**18.0663**	**3.0883**	**21.1545**	**9.9307**	**2.8412**	**12.7719**		**4,111.7444**	**4,111.7444**	**1.2275**		**4,137.5225**

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	0.0845	0.1034	1.0261	1.6800e-003	0.1479	1.2600e-003	0.1491	0.0392	1.1400e-003	0.0404		143.7416	143.7416	8.5800e-003		143.9218
Total	**0.0845**	**0.1034**	**1.0261**	**1.6800e-003**	**0.1479**	**1.2600e-003**	**0.1491**	**0.0392**	**1.1400e-003**	**0.0404**		**143.7416**	**143.7416**	**8.5800e-003**		**143.9218**

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2609	56.8897	42.6318	0.0391		3.0883	3.0883		2.8412	2.8412	0.0000	4,111.7444	4,111.7444	1.2275		4,137.5224
Total	**5.2609**	**56.8897**	**42.6318**	**0.0391**	**18.0663**	**3.0883**	**21.1545**	**9.9307**	**2.8412**	**12.7719**	**0.0000**	**4,111.7444**	**4,111.7444**	**1.2275**		**4,137.5224**

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	0.0845	0.1034	1.0261	1.6800e-003	0.1479	1.2600e-003	0.1491	0.0392	1.1400e-003	0.0404		143.7416	143.7416	8.5800e-003		143.9218
Total	**0.0845**	**0.1034**	**1.0261**	**1.6800e-003**	**0.1479**	**1.2600e-003**	**0.1491**	**0.0392**	**1.1400e-003**	**0.0404**		**143.7416**	**143.7416**	**8.5800e-003**		**143.9218**

3.3 Grading - 2015

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					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	3.8327	40.4161	26.6731	0.0298		2.3284	2.3284		2.1421	2.1421		3,129.0158	3,129.0158	0.9341		3,148.6328
Total	**3.8327**	**40.4161**	**26.6731**	**0.0298**	**6.5523**	**2.3284**	**8.8807**	**3.3675**	**2.1421**	**5.5096**		**3,129.0158**	**3,129.0158**	**0.9341**		**3,148.6328**

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	0.0704	0.0862	0.8551	1.4000e-003	0.1232	1.0500e-003	0.1243	0.0327	9.5000e-004	0.0336		119.7847	119.7847	7.1500e-003		119.9349

Total	**0.0704**	**0.0862**	**0.8551**	**1.4000e-003**	**0.1232**	**1.0500e-003**	**0.1243**	**0.0327**	**9.5000e-004**	**0.0336**		**119.7847**	**119.7847**	**7.1500e-003**		**119.9349**

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					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	3.8327	40.4161	26.6731	0.0298		2.3284	2.3284		2.1421	2.1421	0.0000	3,129.0158	3,129.0158	0.9341		3,148.6328
Total	**3.8327**	**40.4161**	**26.6731**	**0.0298**	**6.5523**	**2.3284**	**8.8807**	**3.3675**	**2.1421**	**5.5096**	**0.0000**	**3,129.0158**	**3,129.0158**	**0.9341**		**3,148.6328**

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	0.0704	0.0862	0.8551	1.4000e-003	0.1232	1.0500e-003	0.1243	0.0327	9.5000e-004	0.0336		119.7847	119.7847	7.1500e-003		119.9349
Total	**0.0704**	**0.0862**	**0.8551**	**1.4000e-003**	**0.1232**	**1.0500e-003**	**0.1243**	**0.0327**	**9.5000e-004**	**0.0336**		**119.7847**	**119.7847**	**7.1500e-003**		**119.9349**

3.4 Building Construction - 2015

Unmitigated Construction On-Site

Category	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
	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904		2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**		**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

Unmitigated Construction Off-Site

Category	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
	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	0.2216	1.3068	3.6194	2.4100e-003	0.0774	0.0205	0.0980	0.0220	0.0189	0.0409		239.1404	239.1404	2.2700e-003		239.1882
Worker	0.1127	0.1378	1.3681	2.2500e-003	0.1972	1.6700e-003	0.1988	0.0523	1.5200e-003	0.0538		191.6555	191.6555	0.0114		191.8958
Total	**0.3343**	**1.4447**	**4.9875**	**4.6600e-003**	**0.2746**	**0.0222**	**0.2968**	**0.0743**	**0.0204**	**0.0947**		**430.7959**	**430.7959**	**0.0137**		**431.0840**

Mitigated Construction On-Site

Category	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
	lb/day										lb/day					

Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904	0.0000	2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**	**0.0000**	**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

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	0.2216	1.3068	3.6194	2.4100e-003	0.0774	0.0205	0.0980	0.0220	0.0189	0.0409		239.1404	239.1404	2.2700e-003		239.1882
Worker	0.1127	0.1378	1.3681	2.2500e-003	0.1972	1.6700e-003	0.1988	0.0523	1.5200e-003	0.0538		191.6555	191.6555	0.0114		191.8958
Total	**0.3343**	**1.4447**	**4.9875**	**4.6600e-003**	**0.2746**	**0.0222**	**0.2968**	**0.0743**	**0.0204**	**0.0947**		**430.7959**	**430.7959**	**0.0137**		**431.0840**

3.5 Paving - 2015

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	1.9601	20.3064	12.6794	0.0186		1.2241	1.2241		1.1280	1.1280		1,921.3091	1,921.3091	0.5588		1,933.0446
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9601**	**20.3064**	**12.6794**	**0.0186**		**1.2241**	**1.2241**		**1.1280**	**1.1280**		**1,921.3091**	**1,921.3091**	**0.5588**		**1,933.0446**

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	0.0939	0.1149	1.1401	1.8700e-003	0.1643	1.4000e-003	0.1657	0.0436	1.2700e-003	0.0449		159.7129	159.7129	9.5300e-003		159.9131
Total	**0.0939**	**0.1149**	**1.1401**	**1.8700e-003**	**0.1643**	**1.4000e-003**	**0.1657**	**0.0436**	**1.2700e-003**	**0.0449**		**159.7129**	**159.7129**	**9.5300e-003**		**159.9131**

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	1.9601	20.3064	12.6794	0.0186		1.2241	1.2241		1.1280	1.1280	0.0000	1,921.3090	1,921.3090	0.5588		1,933.0446
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9601**	**20.3064**	**12.6794**	**0.0186**		**1.2241**	**1.2241**		**1.1280**	**1.1280**	**0.0000**	**1,921.3090**	**1,921.3090**	**0.5588**		**1,933.0446**

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	0.0939	0.1149	1.1401	1.8700e-003	0.1643	1.4000e-003	0.1657	0.0436	1.2700e-003	0.0449		159.7129	159.7129	9.5300e-003		159.9131
Total	**0.0939**	**0.1149**	**1.1401**	**1.8700e-003**	**0.1643**	**1.4000e-003**	**0.1657**	**0.0436**	**1.2700e-003**	**0.0449**		**159.7129**	**159.7129**	**9.5300e-003**		**159.9131**

3.6 Architectural Coating - 2016

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	95.7256					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966		281.4481	281.4481	0.0332		282.1449
Total	**96.0941**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**		**281.4481**	**281.4481**	**0.0332**		**282.1449**

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	0.0205	0.0254	0.2499	4.7000e-004	0.0411	3.3000e-004	0.0414	0.0109	3.0000e-004	0.0112		38.4594	38.4594	2.1500e-003		38.5046
Total	**0.0205**	**0.0254**	**0.2499**	**4.7000e-004**	**0.0411**	**3.3000e-004**	**0.0414**	**0.0109**	**3.0000e-004**	**0.0112**		**38.4594**	**38.4594**	**2.1500e-003**		**38.5046**

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	95.7256					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966	0.0000	281.4481	281.4481	0.0332		282.1449
Total	**96.0941**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**	**0.0000**	**281.4481**	**281.4481**	**0.0332**		**282.1449**

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	0.0205	0.0254	0.2499	4.7000e-004	0.0411	3.3000e-004	0.0414	0.0109	3.0000e-004	0.0112		38.4594	38.4594	2.1500e-003		38.5046
Total	**0.0205**	**0.0254**	**0.2499**	**4.7000e-004**	**0.0411**	**3.3000e-004**	**0.0414**	**0.0109**	**3.0000e-004**	**0.0112**		**38.4594**	**38.4594**	**2.1500e-003**		**38.5046**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	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	14.4813	21.1621	115.4401	0.1532	11.3210	0.2371	11.5581	3.0209	0.2173	3.2381		13,577.5383	13,577.5383	0.7519		13,593.3287
Unmitigated	15.1468	24.8313	129.7177	0.1843	13.7539	0.2808	14.0347	3.6701	0.2573	3.9274		16,349.0646	16,349.0646	0.8792		16,367.5278

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Regional Shopping Center	3,192.59	3,715.27	1876.59	5,398,879	4,443,867
Total	3,192.59	3,715.27	1,876.59	5,398,879	4,443,867

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
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH

0.455780	0.078333	0.189232	0.163096	0.075602	0.010805	0.009660	0.001020	0.001371	0.000788	0.008641	0.000749	0.004924

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	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	0.0150	0.1364	0.1146	8.2000e-004		0.0104	0.0104		0.0104	0.0104		163.7018	163.7018	3.1400e-003	3.0000e-003	164.6981
NaturalGas Unmitigated	0.0167	0.1516	0.1273	9.1000e-004		0.0115	0.0115		0.0115	0.0115		181.8909	181.8909	3.4900e-003	3.3300e-003	182.9979

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					
Regional Shopping Center	1546.07	0.0167	0.1516	0.1273	9.1000e-004		0.0115	0.0115		0.0115	0.0115		181.8909	181.8909	3.4900e-003	3.3300e-003	182.9979
Total		**0.0167**	**0.1516**	**0.1273**	**9.1000e-004**		**0.0115**	**0.0115**		**0.0115**	**0.0115**		**181.8909**	**181.8909**	**3.4900e-003**	**3.3300e-003**	**182.9979**

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					
Regional Shopping Center	1.39147	0.0150	0.1364	0.1146	8.2000e-004		0.0104	0.0104		0.0104	0.0104		163.7018	163.7018	3.1400e-003	3.0000e-003	164.6981
Total		**0.0150**	**0.1364**	**0.1146**	**8.2000e-004**		**0.0104**	**0.0104**		**0.0104**	**0.0104**		**163.7018**	**163.7018**	**3.1400e-003**	**3.0000e-003**	**164.6981**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	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	2.0639	8.0000e-005	7.8500e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0163	0.0163	5.0000e-005		0.0173
Unmitigated	2.0639	8.0000e-005	7.8500e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0163	0.0163	5.0000e-005		0.0173

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	0.4721					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.5911					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	7.8000e-004	8.0000e-005	7.8500e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0163	0.0163	5.0000e-005		0.0173
Total	**2.0639**	**8.0000e-005**	**7.8500e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**		**0.0163**	**0.0163**	**5.0000e-005**		**0.0173**

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	0.4721					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.5911					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	7.8000e-004	8.0000e-005	7.8500e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0163	0.0163	5.0000e-005		0.0173
Total	**2.0639**	**8.0000e-005**	**7.8500e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**		**0.0163**	**0.0163**	**5.0000e-005**		**0.0173**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

PROJECT PLANS

Context Plan

EL DORADO HILLS APARTMENTS

El Dorado Hills, CA

11.14.2013

0 20 40 80

NORTH

213080

AGS A.G. Spanos Companies

KEPHART community ▪ planning ▪ architecture

Site Summary

Site Acreage	4.5 Ac
Dwelling Units	250 Du
• Studio (575 ft² Avg.)	12 Du
• 1Bd/1Ba (800 ft² Avg.)	104 Du
• 1Bd/Den (950 ft² Avg.)	17 Du
• 2Bd/2Ba (1145 ft² Avg.)	116 Du
Density	55.5 Du/Ac
Parking	424 Spaces
• (Includes 24 Guest/Leasing Spaces)	
Parking Ratio	1.7 Sp/Du

Conceptual Site Plan

EL DORADO HILLS APARTMENTS

El Dorado Hills, CA

11.14.2013

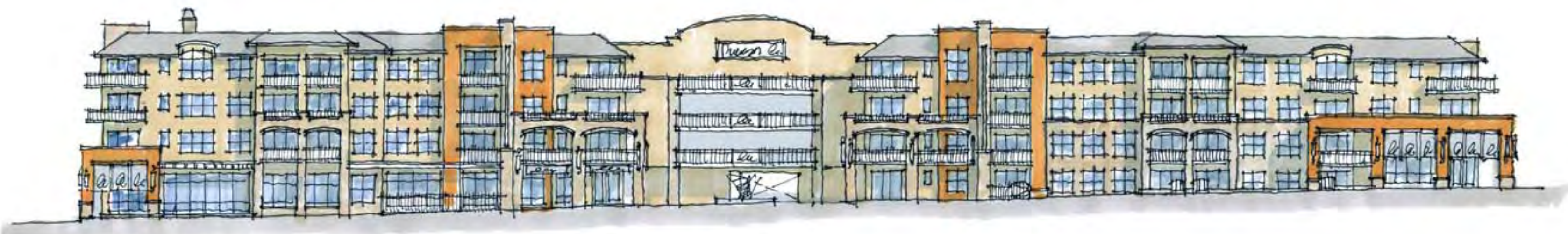
0 15 30 60

NORTH

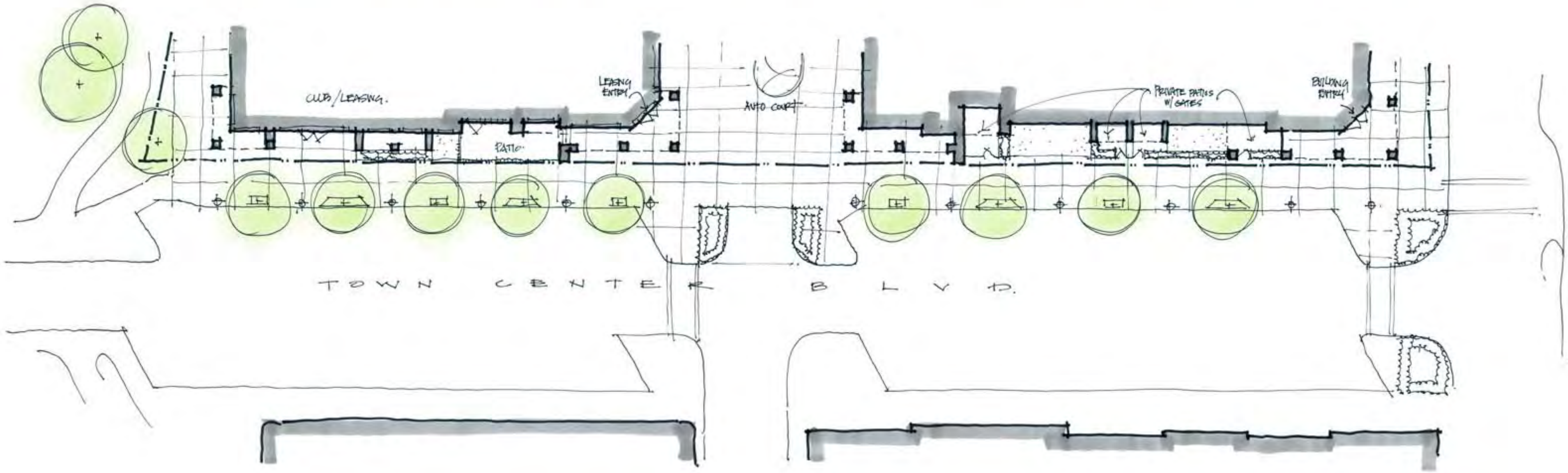
213080

A.G. Spanos Companies

KEPHART community • planning • architecture



Town Center Boulevard Elevation



Elevation

EL DORADO HILLS APARTMENTS

El Dorado Hills, CA

11.14.2013

NORTH
213080

A.G. Spanos Companies

KEPHART
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Street View Looking East from Bridge

Street View Looking West

West Building Streetscape

East Building Streetscape

Architectural Character/Streetscape

EL DORADO HILLS APARTMENTS

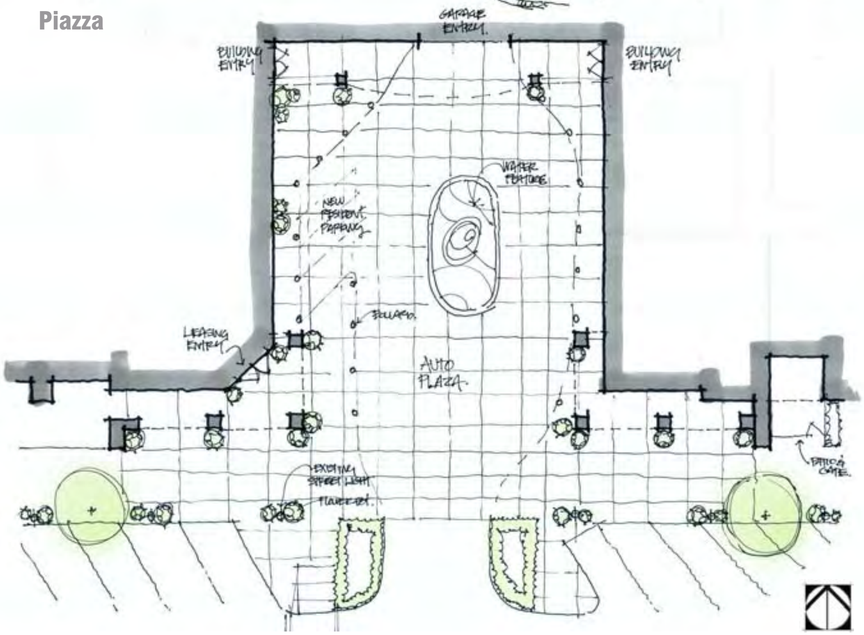
El Dorado Hills, CA

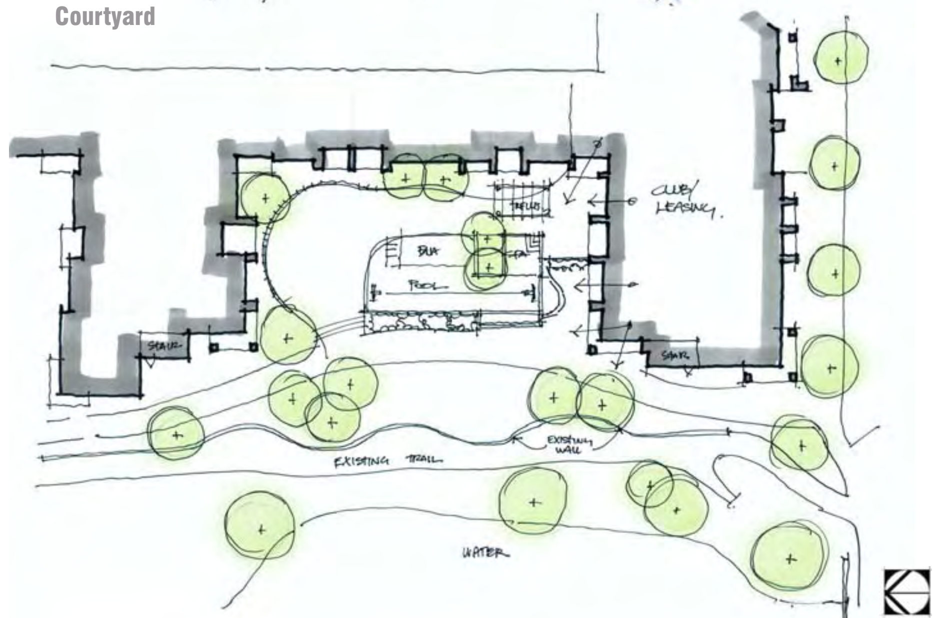
11.14.2013

213080 A.G. Spanos Companies KEPHART community • planning • architecture

Piazza

Courtyard





Piazza/Courtyard

EL DORADO HILLS APARTMENTS

El Dorado Hills, CA

11.14.2013

213080 A.G. Spanos Companies KEPHART community ▪ planning ▪ architecture

APPENDIX D - NOISE STUDY

Environmental Noise Assessment

El Dorado Hills Apartments

El Dorado County, California

Job # 2013-133

Prepared For:

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Attn: Mr. Tom Allen

Prepared By:

j.c. brennan & associates, Inc.

Jim Brennan
President
Member, Institute of Noise Control Engineering

April 8, 2014

j.c. brennan & associates
consultants in acoustics

P.O. Box 6748 - 1287 High Street - Auburn, California 95603 -p: (530) 823-0960 -f: (530) 823-0961

INTRODUCTION

The proposed El Dorado Hills Apartment project is located at the northwest corner of Mercedes Lane and Vine Street, within the El Dorado Hills Town Center. The proposed project encompasses approximately 4.5 acres, and includes 250 dwelling units and 424 parking spaces within a 5-story parking garage. The project site also includes passive courtyard areas, a clubhouse and swimming pool area. Figure 1 shows the project site and an aerial of the project location. Figure 2 shows the project site plan.

Potential noise impacts upon the site include traffic noise from U.S. 50, which is approximately 560 feet to the north of the site, and activities associated with commercial uses, and parking lot use within the El Dorado Hills Town Center.

ACOUSTIC TERMINOLOGY

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise can be highly subjective from person to person.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels, but are expressed as dB, unless otherwise noted.

Figure 1
AG Spanos El Dorado Hills Apartments – El Dorado County, California
Project Site and Noise Measurement Locations

: Continuous Noise Measurement Site
Cal : US-50 Calibration Site
: Short-term Noise Measurement Site

j.c. brennan & associates
consultants in acoustics

Figure 2
AG Spanos El Dorado Hills Apartments – El Dorado County, California
Project Site

j.c. brennan & associates
consultants in acoustics

The decibel scale is logarithmic, not linear. In other words, two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70 dBA sound is half as loud as an 80 dBA sound, and twice as loud as a 60 dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (L_{eq}), which corresponds to a steady-state A weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The L_{eq} is the foundation of the composite noise descriptor, L_{dn}, and shows very good correlation with community response to noise.

The day/night average level (L_{dn}) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment.

Table 1 lists several examples of the noise levels associated with common situations. Appendix A provides a summary of acoustical terms used in this report.

Table 1 Typical Noise Levels		
Common Outdoor Activities	**Noise Level (dBA)**	**Common Indoor Activities**
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft)	--100--	
Gas Lawn Mower at 1 m (3 ft)	--90--	
Diesel Truck at 15 m (50 ft), at 80 km/hr (50 mph)	--80--	Food Blender at 1 m (3 ft) Garbage Disposal at 1 m (3 ft)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft)	--70--	Vacuum Cleaner at 3 m (10 ft)
Commercial Area Heavy Traffic at 90 m (300 ft)	--60--	Normal Speech at 1 m (3 ft)
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing
Source: Caltrans, Technical Noise Supplement, Traffic Noise Analysis Protocol. November 2009.		

Effects of Noise on People

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction
- Interference with activities such as speech, sleep, and learning
- Physiological effects such as hearing loss or sudden startling

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it.

With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- Outside of the laboratory, a 3 dBA change is considered a just-perceivable difference;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- A 10 dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6 dB per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.

CRITERIA FOR ACCEPTABLE NOISE EXPOSURE

Transportation Noise

The El Dorado County General Plan Noise Element establishes exterior and interior noise level standards for a variety of land uses affected by transportation noise sources. The El Dorado County Noise Element noise standards which would be applicable to this project are provided in Table 2. The criteria in Table 2 are applied at the outdoor activity area and interior spaces of residential land uses.

Table 2
El Dorado County General Plan Noise Element Standards Applicable at Residential Land Uses for Transportation Noise Sources

Land Use	Outdoor Activity Areas	Interior Spaces
Residential	60 dB Ldn[1]	45 dB Ldn

[1]For residential uses with front yards facing the identified noise source, an exterior noise level criterion of 65 dB Ldn shall be applied at the building façade, in addition to a 60 dB Ldn criterion at the outdoor activity area.

Source: Table 6-1 of the El Dorado County General Plan.

Table 6-1 of the El Dorado County Noise Element establishes an exterior noise level criterion of 60 dB Ldn at the outdoor activity area of residential land uses impacted by transportation noise sources. Where it is not possible to reduce noise in outdoor activity areas to 60 dB Ldn or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB Ldn may be allowed provided that available exterior noise level reduction measures have been implemented. In addition, an interior noise level criterion of 45 dB Ldn is applied to all residential land uses.

Non-Transportation Noise

The El Dorado County General Plan Noise Element also contains goals and standards for non-transportation noise affecting noise-sensitive receptors.

Goal 6.5: ACCEPTABLE NOISE LEVELS

Ensure that County residents are not subjected to noise beyond acceptable levels.

Objective 6.5.1 PROTECTION OF NOISE-SENSITIVE DEVELOPMENT

Protect existing noise-sensitive developments (e.g. hospitals, schools, churches and residential) from new uses that would generate noise levels incompatible with those uses and, conversely, discourage noise-sensitive uses from locating near sources of high noise levels.

Policy 6.5.1.7

Noise created by new proposed non-transportation noise sources shall be mitigated so as not to exceed the noise level standards of Table 6-2 for noise-sensitive uses.

Policy 6.5.1.13

When determining the significance of impacts and appropriate mitigation to reduce those impacts for new development projects, including ministerial development, the following criteria shall be taken into consideration:

A. In areas in which ambient noise levels are in accordance with the standards in Table 6-2, increases in ambient noise levels caused by new non-transportation noise sources that exceed 5 dBA shall be considered significant; and

B. In areas in which ambient noise levels are not in accordance with the standards in Table 6-2, increases in ambient noise levels caused by new non-transportation noise sources that exceed 3 dBA shall be considered significant.

Table 3 Noise Level Performance Protection Standards For Noise Sensitive Land Uses Affected by Non-Transportation Noise Sources						
Noise Level Descriptor	Daytime 7 a.m. - 7 p.m.		Evening 7 p.m. - 10 p.m.		Night 10 p.m. - 7 a.m.	
	Community	Rural	Community	Rural	Community	Rural
Hourly L_{eq}, dB	55	50	50	45	45	40
Lmax, dB	70	60	60	55	55	50

Each of the noise levels specified above shall be lowered by five dB for simple noises, noises consisting primarily of speech or music, or for recurring impulsive noises.

County can impose noise level standards which are up to 5 dB less than those specified above based upon determination of existing low ambient noise levels in the vicinity of the project site.

In Community areas the exterior noise level standard shall be applied to the property line of the receiving property. In Rural areas the exterior noise level shall be applied at a point 100 feet away from the residence.

Source: Table 6-2 of the El Dorado County General Plan.

The noise standards in Table 3 are divided into daytime hours (7 am to 7 pm), evening hours (7 pm to 10 pm), and nighttime hours (10 pm to 7 am).

EXISTING NOISE ENVIRONMENT

Existing Traffic Noise:

j.c. brennan & associates, Inc., utilizes the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA RD-77-108) for the prediction of traffic noise levels. The model is based upon the CALVENO noise emission factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site.

On March 24, 2014, j.c. brennan & associates, Inc. conducted two (2) sets of short-term noise level measurements and concurrent counts of traffic on Highway 50 on the project site. One set of measurements and traffic counts were at an elevation of 5-feet to represent the first floor. The second set of measurements were conducted at an elevation of 25-feet to represent third floor units. The purpose of the short-term traffic noise level measurements is to determine the accuracy of the FHWA model in describing the existing traffic noise environment on the project site, while accounting for shielding from existing intervening topography, actual travel speeds, and roadway grade. Noise measurement results were compared to the FHWA model results by entering the observed traffic volume, speed, and distance as inputs to the FHWA model.

Instrumentation used for the measurements was a Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meter which was calibrated in the field before use with an LDL CA200 acoustical calibrator. The sound level meter was programmed to collect all noise level data using the A-weighting filter and slow response. The equipment meets ANSI standards for Type 1 noise measurement equipment. The results of the traffic noise calibration process, which was conducted on the project site, is shown in Table 4. Based upon Table 4, the FHWA Model considerably over-predicted the traffic noise levels at the project site by 9 dBA at the first floor elevation, and 5.5 dBA at the third floor elevation. The reason was that Highway 50 is elevated and the west bound traffic is shielded. In addition, the project site is also partially shielded from Highway 50 by buildings and topography. A -9 dBA adjustment will be made to the predicted existing and future traffic noise levels at first and second floor facades, and a -5 dBA adjustment will be made for predicted existing and future traffic noise levels at third and fourth floors facades.

Table 4
Comparison of FHWA Model to Measured Highway 50 Traffic Noise Levels
El Dorado Hills Apartments

Vehicles/Hour.				Speed (mph)	Distance	Measured L_{eq}, dBA	Modeled L_{eq}, dBA*
Location	Autos	Med. Trks.	Hvy.Trks.				
First Floor	4,578	84	60	65	600 feet	53.0	62.0
Third Floor	4,752	90	30	65	600 feet	56.5	62.0

* Acoustically "soft" site assumed

A complete listing of FHWA Model inputs and results are shown in Appendix B.

j.c. brennan & associates, Inc. utilized the calibrated FHWA traffic noise prediction model and existing traffic volumes provided by Caltrans to predict existing traffic noise levels at various locations on the project site. Truck percentages on U.S. 50 were obtained from Caltrans. The predicted traffic noise levels and distances to traffic noise contours are shown in Table 5. A complete listing of the FHWA Model inputs and results are provided in Appendix B.

Table 5
Predicted Existing Highway 50 Traffic Noise Levels
El Dorado Hills Apartments

Location	Distance	Predicted Noise Level, Ldn	Distance to Noise Contours[1]		
			70 dB Ldn	65 dB Ldn	60 dB Ldn
First & Second Floor Facades	600'	56 dBA			
Third and Fourth Floor Facades	600'	59 dBA	119 feet	257 feet	554 feet
Nearest Outdoor Recreation Area	960'	53 dBA			

[1]Distances are measured from the roadway centerline. Contour distances include the minus 5 dBA due to shielding from intervening buildings and roadway grade.
Source: j.c. brennan & associates, Inc., Caltrans.

Future Traffic Noise Levels:

Future (2035) traffic data for U.S. 50 were obtained from the County staff (personal communication with Natalie Porter on April 7, 2014. Once again the FHWA model was used to predict future traffic noise levels at the apartment complex. Table 6 shows the results of the future traffic noise levels at the site.

Table 6 Predicted Future (Year 2035) Highway 50 Traffic Noise Levels El Dorado Hills Apartments					
Location	Distance	Predicted Noise Level, Ldn	Distance to Noise Contours[1]		
			70 dB Ldn	65 dB Ldn	60 dB Ldn
First & Second Floor Facades	600'	57 dBA			
Third and Fourth Floor Facades	600'	60 dBA	136 feet	293 feet	632 feet
Nearest Outdoor Recreation Area	960'	54 dBA			

[1]Distances are measured from the roadway centerline. Contour distances include the minus 5 dBA due to shielding from intervening buildings and roadway grade.
Source: j.c. brennan & associates, Inc., El Dorado County Planning Department, Caltrans.

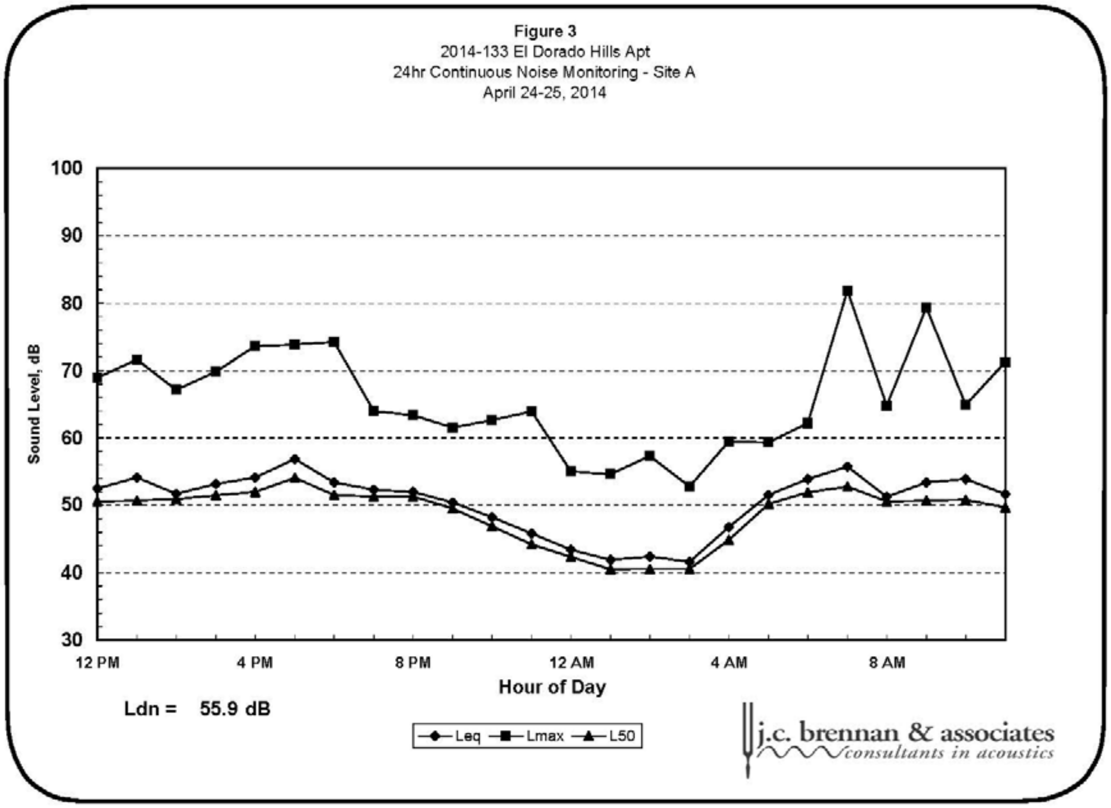
Based upon Tables 5 and 6, all outdoor activity areas, including balconies will comply with the 60 dBA Ldn exterior noise level standard. Based upon a typical exterior to interior noise level reduction of 25 dBA, the interior noise levels at the residential portion of the project site will comply with the 45 dBA interior noise level criterion.

Existing Town Center Noise:

Noise levels associated with the Town Center include roadway traffic on Latrobe Road, Town Center Boulevard, Vine Street, and Mercedes Lane, parking lot activities, and people conversing. j.c. brennan & associates, Inc. conducted continuous hourly noise measurements for a period of 24-hours, and short-term noise level measurements on the project site. The noise measurements were conducted on April 24th and 25th, 2014 See Figure 1 for the noise measurement locations. The noise measurements were conducted to determine existing background noise levels due to activities within the Town Center. Table 7 shows the results of the noise level measurements, and Figure 3 graphically shows the results of the continuous 24-hour noise measurements. Appendix C shows the results of the continuous 24-hour noise measurements.

Table 7 Summary of Existing Background Noise Measurement Data								
			Average Measured Hourly Noise Levels, dBA					
			Daytime (7am-10pm)			Nighttime (10pm-7am)		
Site	Date	L_{dn}	L_{eq}	L_{50}	L_{max}	L_{eq}	L_{50}	L_{max}
A	April 24-25, 2014	55.9 dBA	53.4	52	70.0	48.3	45	58.6
1	April 24, 2014	NA	51.4	51	64.6	@ 2:30 p.m.		
2	April 24, 2014	NA	54.7	55	66.4	@ 3:10 p.m.		
3	April 24, 2014	NA	55.0	53	69.7	@ 3.50 p.m.		

Source: j.c. brennan & associates, Inc., 2014.



Based upon the noise measurement data, the measured noise levels are consistent with the 55 dBA Leq and 70 dBA Lmax daytime noise level standards, and the 50 dBA Leq and 60 dBA Lmax evening noise level standards. These standards were used, based upon the fact that the stores are generally open during those periods. Although some of the measured noise levels did exceed the standards, traffic from U.S. 50 and Latrobe Road were equal contributors to the overall noise which was measured at Site A and Sites 1, 2 and 3. Therefore, the contribution of noise levels due to the Town Center are expected to be 3 dBA less than the overall measured noise levels shown in Table 7 and Figure 3.

CONCLUSION

A summary of the conclusions are as follows:

1) The project will not be exposed to roadway traffic noise levels which exceeds the exterior and interior noise level criteria of 60 dBA Ldn and 45 dBA Ldn, respectively;

2) The project will not be exposed to noise levels from the Town Center activities which exceed the exterior noise level criteria for non-transportation noise sources during the daytime and evening hours.

Appendix A

Acoustical Terminology

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of an acoustic signal.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
Frequency	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz (Hz).
L_{dn}	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
Leq	Equivalent or energy-averaged sound level.
L_{max}	The highest root-mean-square (RMS) sound level measured over a given period of time.
$L_{(n)}$	The sound level exceeded a described percentile over a measurement period. For instance, an hourly L_{50} is the sound level exceeded 50% of the time during the one hour period.
Loudness	A subjective term for the sensation of the magnitude of sound.
Noise	Unwanted sound.
NRC	Noise Reduction Coefficient. NRC is a single-number rating of the sound-absorption of a material equal to the arithmetic mean of the sound-absorption coefficients in the 250, 500, 1000, and 2,000 Hz octave frequency bands rounded to the nearest multiple of 0.05. It is a representation of the amount of sound energy absorbed upon striking a particular surface. An NRC of 0 indicates perfect reflection; an NRC of 1 indicates perfect absorption.
Peak Noise	The level corresponding to the highest (not RMS) sound pressure measured over a given period of time. This term is often confused with the "Maximum" level, which is the highest RMS level.
RT_{60}	The time it takes reverberant sound to decay by 60 dB once the source has been removed.
Sabin	The unit of sound absorption. One square foot of material absorbing 100% of incident sound has an absorption of 1 Sabin.
SEL	Sound Exposure Level. SEL is s rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy into a one-second event.
STC	Sound Transmission Class. STC is an integer rating of how well a building partition attenuates airborne sound. It is widely used to rate interior partitions, ceilings/floors, doors, windows and exterior wall configurations.
Threshold of Hearing	The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing.
Threshold of Pain	Approximately 120 dB above the threshold of hearing.
Impulsive	Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.
Simple Tone	Any sound which can be judged as audible as a single pitch or set of single pitches.

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Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2014-133
Description: Existing + Future
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Location	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	US 50 Existing	First floor façade	78,000	85		15	3	4	65	600	-9
2	US 50 Existing	Second floor façade	78,000	85		15	3	4	65	600	-5.5
3	US 50 Existing	Outdoor Recreation Area	78,000	85		15	3	4	65	960	-9
4	US 50 Future	First floor façade	95,000	85		15	3	4	65	600	-9
5	US 50 Future	Second floor façade	95,000	85		15	3	4	65	600	-5.5
6	US 50 Future	Outdoor Recreation Area	95,000	85		15	3	4	65	960	-9
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Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Predicted Levels

Project #: 2014-133
Description: Existing + Future
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Location	Autos	Medium Trucks	Heavy Trucks	Total
1	US 50 Existing	First floor façade	54.1	45.4	50.1	56
2	US 50 Existing	Second floor façade	57.6	48.9	53.6	59
3	US 50 Existing	Outdoor Recreation Area	51.1	42.3	47.0	53
4	US 50 Future	First floor façade	55.0	46.2	51.0	57
5	US 50 Future	Second floor façade	58.5	49.7	54.5	60
6	US 50 Future	Outdoor Recreation Area	51.9	43.2	47.9	54

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Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Noise Contour Output

Project #: 2014-133
Description: Existing + Future
Ldn/CNEL: Ldn
Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Location	75	70	65	60	55
1	US 50 Existing	First floor façade	32	70	150	324	698
2	US 50 Existing	Second floor façade	55	119	257	554	1194
3	US 50 Existing	Outdoor Recreation Area	32	70	150	324	698
4	US 50 Future	First floor façade	37	80	171	369	796
5	US 50 Future	Second floor façade	63	136	293	632	1362
6	US 50 Future	Outdoor Recreation Area	37	80	171	369	796

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Appendix C
2014-133 El Dorado Hills Apt
24hr Continuous Noise Monitoring - Site A
April 24-25, 2014

Hour	Leq	Lmax	L50	L90
12:00	53	69	51	48
13:00	54	72	51	48
14:00	52	67	51	49
15:00	53	70	51	49
16:00	54	74	52	50
17:00	57	74	54	51
18:00	53	74	52	50
19:00	52	64	51	50
20:00	52	63	51	50
21:00	50	62	50	46
22:00	48	63	47	44
23:00	46	64	44	41
0:00	43	55	42	40
1:00	42	55	40	38
2:00	42	57	41	39
3:00	42	53	41	38
4:00	47	59	45	40
5:00	52	59	50	46
6:00	54	62	52	49
7:00	56	82	53	51
8:00	51	65	51	49
9:00	53	79	51	49
10:00	54	65	51	48
11:00	52	71	50	48

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	56.9	50.4	53.4	53.9	41.6	48.3
Lmax (Maximum)	81.9	61.5	70.0	64.0	52.8	58.6
L50 (Median)	54.1	49.5	51.2	51.9	40.5	44.7
L90 (Background)	51.2	46.4	49.2	48.5	38.0	41.6

Computed Ldn, dB	55.9
% Daytime Energy	85%
% Nighttime Energy	15%

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APPENDIX E - TRANSPORTATION IMPACT ANALYSIS

El Dorado Hills Town Center Apartments

Transportation Impact Analysis

May 2014

Prepared for:
El Dorado County

Submitted by:
FEHR & PEERS

2990 Lava Ridge Court
Suite 200
Roseville, CA 95661

El Dorado Hills Town Center Apartments

Transportation Impact Analysis

Prepared for:
El Dorado County

May 2014

RS13-3184

FEHR & PEERS

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1.0 INTRODUCTION

1.1 REPORT OVERVIEW

This study presents the results of a transportation impact analysis completed for the El Dorado Hills Town Center Apartments (EDHTCA) (project) in El Dorado Hills, California, which is an unincorporated area of El Dorado County (County).

The purpose of this impact analysis is to identify potential environmental impacts to transportation facilities as required by the California Environmental Quality Act (CEQA). This study was performed in accordance with the *El Dorado County Department of Transportation's Traffic Impact Study Protocols and Procedures*, and the scope of work developed in collaboration with County staff and Caltrans.

The remaining sections of this report document the proposed project, analysis methodolgies, impacts, and mitigations.

1.2 PROJECT DESCRIPTION

The proposed EDHTCA includes the development of a 250-unit apartment complex in the Town Center Commercial Planned Development, which is located north of White Rock Road, south of US 50, and east of Latrobe Road. The project also includes a 436 stall parking structure. As shown on Figure 1, access to the parking structure will be provided from Vine Street and Town Center Boulevard (private roadways). A 20- to 25-foot emergency vehicle access will be provided on the west side of the project between the project and the existing path adjacent to the Town Center Lake.

The proposed project will require a General Plan amendment and rezone, revision to the El Dorado Hills Specific Plan, and revision to the Town Center East Development Plan. Figure 1 shows the proposed project and connections to the Town Center Roadways.

1.3 PROJECT SCOPING MEETING

A scoping meeting was held with Caltrans on April 16, 2014. This transportation analysis presented in this report is informed by comments received from this meeting. The following summarizes transportation-related comments received from Caltrans:

- Provide a complete project description. *Note: project description is included.*
- Include EB and WB mainline analysis on US 50 between the US 50/El Dorado Hills Boulevard/Latrobe Road interchange and the US 50/East Bidwell Street/Scott Road interchange in the City of Folsom. *Note: The analysis includes the requested mainline analysis.*
- Include EB on-ramp and WB off-ramp analysis at the US 50/East Bidwell Street/Scott Road interchange. *Note: Based on subsequent coordination between Caltrans and El Dorado County staff, the share of project traffic using US 50 to access areas west of El Dorado County will be provided instead of the requested analysis.*
- Count data used in the analysis should be 2012 or newer and should be collected midweek in the spring or fall (i.e., when school is in session). *Note: The count data used for the analysis satisfies the request.*

N:\2013Projects\3184_ElDoradoHillsTownCenter\Graphics\Draft\GIS\MXD\F01_ProjectLoc.mxd

Figure 1

Proposed Project

2.0 REGULATORY SETTING

Existing transportation polices, laws, and regulations that would apply to the proposed project are summarized below. This information provides a context for the impact discussion related to the project's consistency with applicable regulatory conditions.

2.1 STATE

2.1.1 CALIFORNIA DEPARTMENT OF TRANSPORTATION

The California Department of Transportation (Caltrans) is responsible for operating and maintaining the State highway system. In the project vicinity, US 50 falls under Caltrans jurisdiction. Caltrans provides administrative support for transportation programming decisions made by the California Transportation Commission (CTC) for state funding programs. The State Transportation Improvement Program (STIP) is a multi-year capital improvement program that sets priorities and funds transportation projects envisioned in long-range transportation plans.

In June 2010, Caltrans approved a *Transportation Corridor Concept Report (TCCR) for Highway 50*. Caltrans prepares a TCCR, which is a long-range (20-year) planning document, for each state highway. The purpose of each TCCR is to identify existing route conditions and future needs and includes a concept LOS standard and the facility needs to maintain the concept LOS. The cover of the TCCR states that the *US 50 Corridor System Management Plan* (Caltrans, May 2009), referred to as the CSMP, now serves as the TCCR from I-80 in West Sacramento to the Cedar Grove exit, which is east of the study area. Caltrans has established LOS F as the 'concept LOS' consistent with a four lane freeway with HOV lanes and auxiliary lanes. Since LOS F is identified as the concept LOS, no further degradation of service from existing "F" is acceptable. The concept LOS is a generalized LOS for large study segments used by Caltrans that reflect the minimum level of service or quality of operations acceptable for each route segment. However, the County General Plan LOS policy is used to identify impacts to US 50.

According to the *Guide for the Preparation of Traffic Impact Studies* (Caltrans, December 2002), the existing LOS should be maintained if a freeway facility is currently operating at an unacceptable LOS (e.g., LOS F). A project impact is said to occur if the project degrades LOS from an acceptable to unacceptable level. A project impact may also occur when the addition of project trips exacerbates existing LOS F conditions and leads to a perceptible increase in density on freeway mainline segments or ramp junctions, or a perceptible increase in service volumes in a weaving area. In addition, a project impact is said to occur when the addition of project trips causes a queue on the off-ramp approach to a ramp terminal intersection to extend beyond its storage area and onto the freeway mainline.

2.2 LOCAL

2.2.1 SACRAMENTO AREA COUNCIL OF GOVERNMENTS

The Sacramento Area Council of Governments (SACOG) is an association of local governments in the six-county Sacramento Region. Its members include the counties of Sacramento, El Dorado, Placer, Sutter, Yolo, and Yuba, as well as 22 cities. SACOG provides transportation planning and funding for the region, and serves as a forum for the study and resolution of regional issues. In addition to preparing the region's long-range transportation plan, SACOG assists in planning for transit, bicycle networks, clean air, and airport land uses.

The *Metropolitan Transportation Plan/Sustainable Communities Strategy* (MTP/SCS) *for 2035* (SACOG 2012) is a federally mandated long-range fiscally constrained transportation plan for the six-county area. Most of this area is designated a federal non-attainment area for ozone, indicating that the transportation system is required to meet stringent air quality emissions budgets to reduce pollutant levels that contribute to ozone formation. To receive federal funding, transportation projects nominated by cities, counties, and agencies must be consistent with the MTP/SCS.

The *2013/16 Metropolitan Transportation Improvement Program* (MTIP) is a list of transportation projects and programs to be funded and implemented over the next 3 years. SACOG submits this document to Caltrans and amends the program on a quarterly cycle. Only projects listed in the MTP/SCS may be included in the MTIP.

2.2.2 EL DORADO COUNTY TRANSPORTATION COMMISSION (EDCTC)

The EDCTC is the Regional Transportation Planning Agency (RTPA) for El Dorado County, except for the portion of the County within the Tahoe Basin, which is under the jurisdiction of the Tahoe Regional Planning Agency (TRPA).

One of the fundamental responsibilities which results from RTPA designation is the preparation of the County's Regional Transportation Plan. The *El Dorado County Regional Transportation Plan 2010 – 2030* (RTP) is designed to be a blueprint for the systematic development of a balanced, comprehensive, multi-modal transportation system. The EDCTC submits the RTP to SACOG for inclusion in the MTP/SCS process.

The *El Dorado County Bicycle Transportation Plan - 2010 Update* provides a blueprint for the development of a bicycle transportation system on the western slope of El Dorado County. The plan updates the currently adopted El Dorado County Bicycle Master Plan, which was adopted in January 2005.

In May 2013, the EDCTC completed the *El Dorado Hills Community Transit Needs Assessment and US 50 Corridor Operations Plan* (Plan), which explores how the recent growth and projected development impact the need for transit services, and identifies the most appropriate type and level of service needed given the demand. The Plan represents a recommendation from the Western El Dorado County 2008 Short-Range Transit Plan to study and consider improved transit service in the El Dorado Hills area.

In August 2008, the EDCTC adopted the *Coordinated Public Transit – Human Services Transportation Plan,* which is intended to improve mobility of individuals who are disabled, elderly, or of low-income status. The plan focuses on identifying needs specific to those population groups and identifying strategies to meet their needs.

2.2.3 COUNTY OF EL DORADO

The County of El Dorado provides for the mobility of people and goods within El Dorado Hills, which is an unincorporated area of the County. All of the study intersections are within the County's jurisdiction.

The Transportation and Circulation Element of the El Dorado County General Plan (amended January 2009) outlines goals and policies that coordinate the transportation and circulation system with planned land uses. The following goals and their associated policies are relevant to the project.

- GOAL TC-1: To plan for and provide a unified, coordinated, and cost-efficient countywide road and highway system that ensures the safe, orderly, and efficient movement of people and goods.
- GOAL TC-X: To coordinate planning and implementation of roadway improvements with new development to maintain adequate levels of service on County roads. (The LOS policy specific to this project is described in Section 4.2.)
- GOAL TC-2: To promote a safe and efficient transit system that provides service to all residents, including senior citizens, youths, the disabled, and those without access to automobiles that also helps to reduce congestion, and improves the environment.
- GOAL TC-3: To reduce travel demand on the County's road system and maximize the operating efficiency of transportation facilities, thereby reducing the quantity of motor vehicle emissions and the amount of investment required in new or expanded facilities.
- GOAL TC-4: To provide a safe, continuous, and easily accessible non-motorized transportation system that facilitates the use of the viable alternative transportation modes.

- GOAL TC-5: To provide safe, continuous, and accessible sidewalks and pedestrian facilities as a viable alternative transportation mode.

The *El Dorado County Department of Transportation's Traffic Impact Study Protocols and Procedures* sets forth the procedures for conducting transportation analysis in the County. This traffic analysis is consistent with the County-established methods.

2.2.4 EL DORADO COUNTY TRANSIT AUTHORITY

El Dorado County Transit Authority (EDCTA) operates El Dorado Transit, which provides public transit service within the project area. El Dorado Hills is currently served by El Dorado Transit Dial-A-Ride services, Commuter Service, and the Iron Point Connector Route.

The El Dorado Park-and-Ride Facilities Master Plan, November 2007 calls for constructing nine new facilities over 20 years. The Plan calls for EDCTA to assume primary responsibility for existing Park-and-Ride facilities in the county and sets forth an annual program to fund the upkeep and operation. The Plan reiterates that demand exceeds supply at the Park-and-Ride lot, referred to as the El Dorado Hills Multi-modal Facility, located in the northeast corner of the White Rock Road/Latrobe Road intersection. In particular, Table 2 of the Plan suggests that future (year 2027) deficiency at this location is 172 additional spaces. The Plan identifies the construction of a 325-space multi-story parking garage with ground floor retail as priority project #12 in the Capital Improvement Program list. The proposed location is the existing Park-and-Ride lot.

3.0 METHOD OF ANALYSIS

3.1 ANALYSIS PROCEDURES

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

3.1.1 INTERSECTIONS

Traffic operations at the study intersections were analyzed using procedures and methodologies contained in the Highway Capacity Manual (HCM) and the Transportation Research Board, 2000 and 2010 (as confirmed with County staff). These methodologies were applied using Synchro or SimTraffic software packages (Version 7), developed by Trafficware. Table 1 displays the delay range associated with each LOS category for signalized and unsignalized intersections based on the HCM.

The micro-simulation analysis software, SimTraffic, was used to analyze operations at the US 50/El Dorado Hills Boulevard interchange (Town Center Boulevard to Saratoga Way to accurately analyze the effect of closely-spaced intersections). Simulation was requested by El Dorado County staff and Caltrans. The SimTraffic micro-simulation analysis applied the following methodology:

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

The existing conditions SimTraffic model was validated to field measured traffic volumes and observed maximum vehicle queue lengths. Traffic operations along El Dorado Hills Boulevard and Latrobe Road (near the US 50 interchange) were very sensitive to the variation in construction traffic control associated with the on-going improvements at the US 50/El Dorado Hills Boulevard interchange. Existing conditions analysis is representative of average conditions observed in the area of the interchange.

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

The following procedures and assumptions were applied for the analysis of existing and cumulative conditions:

- Roadway geometric data were gathered using aerial photographs and field observations.
- Peak hour traffic volumes were entered according to the peak hour of each intersection, except for the US-50/El Dorado Hills Boulevard interchange and adjacent intersections. For the interchange and adjacent intersections, a consistent peak hour was used so that volumes would balance (a requirement for accurate simulation analysis). Due to volume balancing, some of the turning movement volumes used for analysis will not match existing turning movement traffic counts, since peak hour travel occurs at different times at several of the intersections. The volume balancing was small relative to the traffic through the interchange and within the daily variation of traffic flows. The traffic simulation was supported by extensive field observations of driver behavior, driver aggressiveness, and travel origin/destination flows at the interchange. The peak hour of the freeway is based traffic counts.
- Headway factors were adjusted for the SB right-turn movement at Intersection #1 and SB left-turn movement at Intersection #4 based on the driver behavior observed on the field. Drivers using the two movements were observed to be more aggressive and use smaller headway to travel through the intersections.
- The peak hour factor (PHF) was calculated based on traffic counts and applied by approach, except for the interchange and adjacent intersections, which applied the intersection PHF (a requirement for accurate simulation analysis).
- The counted pedestrian and bicycle volumes will be used with a minimum of two pedestrians per approach per peak hour.
- Heavy vehicle percentages were based on traffic counts and applied by movement.
- Signal phasing and timings were based on existing signal timing sheets provided by El Dorado County and observed timings where data from El Dorado County was not available due to construction.
- Speeds for the model network were based on the posted speed limit.
- The PHF calculated for existing conditions was used for cumulative conditions, except for the interchange and adjacent intersections. Those intersections used a PHF of 0.95.
- The existing heavy vehicle percentages were maintained for cumulative conditions.
- The existing pedestrian and bicycle volumes were maintained for cumulative conditions.
- Traffic signals were optimized to serve future traffic volumes.

TABLE 1: INTERSECTION LEVEL OF SERVICE CRITERIA

Level-of-Service	Average Control Delay (seconds/vehicle)		Description
	Signalized	Stop Controlled	
A	< 10.0	< 10.0	Very low delay. At signalized intersections, most vehicles do not stop.
B	10.1 to 20.0	10.1 to 15.0	Generally good progression of vehicles. Slight delays.
C	>20.1 to 35.0	>15.1 to 25.0	Fair progression. At signalized intersections, increased number of stopped vehicles.
D	>35.1 to 55.0	>25.1 to 35.0	Noticeable congestion. At signalized intersections, large portion of vehicles stopped.
E	>55.1 to 80.0	>35.1 to 50.0	Poor progression. High delays and frequent cycle failure.
F	>80.0	>50.0	Oversaturation. Forced flow. Extensive queuing.

Source: Highway Capacity Manual (Transportation Research Board, 2010)

3.1.2 FREEWAY FACILITIES

The Highway Capacity Manual (Transportation Research Board, 2010), includes three different tiers of analysis for freeway facilities, which include planning, design, and operations analysis. The different tiers are intended to provide flexibility to the user in selecting the appropriate analysis level given available resources (e.g., time and availability of analysis inputs) and the desired breadth of analysis coverage (e.g., more locations with less detail vs. fewer locations with more detail). For example, a planning level analysis requires relatively generalized analysis inputs and is regularly used when the breadth of coverage is more important than analysis detail. For example, Caltrans uses planning level analysis for long-range planning efforts like the US 50 Corridor System Management Plan, which groups many freeway facilities into single analysis segments. The project level analysis in this report is based on operations analysis methods and analyzes each freeway facility separately, focusing on analysis detail instead of breadth of coverage. The operations analysis method is consistent with General Plan Policy TC-Xd and Caltrans traffic impact study guidelines.

Freeway operations were analyzed using the procedures and methodologies contained in the Highway Capacity Manual (Transportation Research Board, 2010). Table 2 describes the HCM LOS criteria for freeway mainline, freeway ramp junctions, and freeway weaving segments. For weaving segments, Caltrans District 3 prefers analysis based on the Leisch Method, which is described in the *Highway Design Manual* (Caltrans, last updated July 1, 2008). For consistency with both the El Dorado County General Plan and Caltrans preference, analysis of freeway weaving segments was conducted using both the HCM and Leisch Methods.

TABLE 2:
FREEWAY FACILITY LEVEL OF SERVICE CRITERIA

Level-of-Service	Density (vehicles/mile/lane)	
	Mainline	Ramp Junction / Weaving
A	≤ 11	≤ 10
B	11 – 18	10 – 20
C	18 – 26	20 – 28
D	26 – 35	28 – 35
E	35 – 45	> 35
F	> 45	Demand exceeds capacity

Source: Transportation Research Board, 2010

3.2 THRESHOLDS OF SIGNIFICANCE

In accordance with CEQA, the effects of a project are evaluated to determine if they will result in a significant adverse impact on the environment. Informed by the 2012 California Environmental Quality Act (CEQA) Statues and Guidelines, specifically Appendix G, the following criteria have been established to determine whether or not the project would have a significant impact on transportation and circulation.

The intent of CEQA Section 15064 is for the responsible agency to establish the thresholds in the context of what their specific values are towards environmental resources or impacts. Therefore, the standards of significance in this analysis are based on the framework presented in CEQA Appendix G and the current practice of the appropriate regulatory agencies. For most areas related to transportation and circulation, policies from the *2004 El Dorado County General Plan* (amended January 2009) and *the El Dorado County Department of Transportation's Traffic Impact Study Protocols and Procedures* were used. For the freeway system, Caltrans' standards were used. Implementation of the project would have a potentially significant impact on transportation and circulation if it causes any of the following outcomes:

- Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness (MOEs) 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. The following specific MOEs, which have been generated by the regulatory agencies, are applicable to this project.

- General Plan Circulation Policy TC-Xd provides Level of Service standards for County-maintained roads and state highways as follows[1]:
  - 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 except as specified in Table TC-2. The volume to capacity ratio of the roadway segments listed in Table TC-2 as applicable shall not exceed the ratio specified in that table. *(Note: None of the study roadways are presented in Table TC-2)*
  - If a project causes the peak hour level of service or volume/capacity ratio on a county road or state highway that would otherwise meet the County standards (without the project) to the LOS threshold, then the impact shall be considered significant.
  - If any county road or state highway fails to meet the above listed county standards for peak hour level of service or volume/capacity ratios under existing conditions, and the project will "significantly worsen" conditions on the road or highway, then the impact shall be considered significant. The term "significantly worsen" is defined for the purpose of the paragraph according to General Plan Policy TC-Xe as follows:
    - A. A two (2) percent increase in traffic during the AM peak hour, PM peak hour or daily, OR
    - B. The addition of 100 or more daily trips, OR
    - C. The addition of 10 or more trips during the AM peak hour or the PM peak hour.
- Caltrans considers the following to be significant impacts:
  - Off-ramps with vehicle queues that extend into the ramp's deceleration area or onto the freeway (i.e., exceed the available storage capacity);
  - Project traffic increases that cause any ramp's merge/diverge level of service to be worse than the freeway's level of service.
  - Any additional traffic generated by the project is added to a facility already operating at LOS F[2].

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

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[1] *El Dorado County Department of Transportation's Traffic Impact Study Protocols and Procedures*
[2] The US 50 Transportation Corridor Concept Report identifies LOS F as the "Concept LOS" for US 50 from the Sacramento/El Dorado County line to Cameron Park Drive.

- Result in inadequate emergency access.
- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.
    - The County has published the following issues and General Plan goals as relevant to traffic impact study assessments. The project may trigger a potentially significant impact if it's in conflict with any of the following:
        - Access to Public Transit Services consistent with General Plan Circulation Element Goal TC-2: "To promote a safe and efficient transit system that provides service to all residents, including senior citizens, youths, the disabled, and those without access to automobiles that also helps to reduce congestion, and improves the environment."
        - Transportation System Management consistent with General Plan Circulation Element Goal TC-3: "To reduce travel demand on the County's road system and maximize the operating efficiency of transportation facilities, thereby reducing the quantity of motor vehicle emissions and the amount of investment required in new or expanded facilities."
        - Non-Motorized Transportation consistent with General Plan Circulation Element Goal TC-4: "To provide a safe, continuous, and easily accessible non-motorized transportation system that facilitates the use of the viable alternative transportation modes."
- Conflict with adopted policies, plans, or programs regarding the delivery of goods and services.

4.0 EXISTING SETTING

4.1 STUDY AREA

Based on coordination with the El Dorado County Community Development Agency (Long Range Planning) staff and Caltrans, the expected distribution of project trips, and review of the *El Dorado County Department of Transportation's Traffic Impact Study Protocols and Procedures,* the following study intersections and freeway facilities have been selected for analysis during both the AM and PM peak hours. Figure 2 identifies the study area.

The following lists both existing and planned intersections. Intersections 10 and 11 are applicable only to the Cumulative Conditions analysis (i.e., added with the US 50/Silva Valley Parkway interchange, currently under construction).

Existing Intersections:

1. El Dorado Hills Boulevard/Saratoga Way/Park Drive
2. El Dorado Hills Boulevard/US 50 WB Ramps
3. Latrobe Road/US 50 EB Ramps
4. Latrobe Road/Town Center Boulevard
5. Latrobe Road/White Rock Road
6. White Rock Road/Winfield Way
7. White Rock Road/Post Street
8. White Rock Road/Vine Street/Valley View Parkway
9. Town Center Boulevard/Post Street (Private Intersection – Will be addressed in Other Considerations Section)
10. Silva Valley Parkway/US 50 WB Ramps (Cumulative Conditions)
11. Silva Valley Parkway/US 50 EB Ramps (Cumulative Conditions)

Freeway Facilities:

- US 50 WB – East of Silva Valley Parkway to County Line
- US 50 EB – County Line to East of Silva Valley Parkway

4.2 ROADWAY NETWORK

The characteristics of the roadway system near the project are described below. Where applicable, the roadway designation given in the *2004 El Dorado County General Plan* (amended January 2009) is provided.

US Route 50 (US 50) is an east-west freeway located south of the project site. Generally, US 50 serves the majority of El Dorado County's major population centers and provides regional connections to the west (i.e., Sacramento) and to the east (i.e., State of Nevada). Primary access to the project from US 50 is provided via the US 50/El Dorado Hills Boulevard/Latrobe Road interchange. Near the project, westbound US 50 has a high-occupancy vehicle (HOV) lane and two general purpose travel lanes and eastbound US 50 has an HOV lane and three general purpose travel lanes. The General Plan identifies US 50 as an eight lane freeway under future conditions. US 50 serves about 80,000 vehicles per day east of Latrobe/El Dorado Hills Boulevard.

The US 50/El Dorado Hills Boulevard/Latrobe Road interchange is currently under construction to improve the westbound on- and off-ramps, add 1,000 feet of auxiliary lane to westbound US 50, and provide westbound ramp metering and a dedicated HOV on-ramp lane. Future improvements are planned for this interchange as described in Section 6.1, Table 9.

Construction of the new US 50/Silva Valley Parkway/White Rock Road interchange is expected to begin in early 2014 (Project awarded in October 2013). The interchange will be constructed in two phases. Phase 1 (CIP Project No: 71328) will construct a new connection to US 50 with new signalized slip on- and off-ramps westbound and a slip off-ramp and loop on-ramp eastbound. The mainline will have an overcrossing for Silva Valley Parkway and will be improved to include eastbound and westbound auxiliary lanes between the US 50/El Dorado Hills Boulevard/Latrobe Road interchange and the new US 50/Silva Valley interchange. Completion of Phase 1 is scheduled for 2016. Phase 2 will construct a westbound loop on-ramp and eastbound slip on-ramp (CIP Project No: 71345). The westbound loop on-ramp will begin the addition of an auxiliary lane that will continue westbound through the El Dorado Hills Boulevard interchange and terminate at the planned US 50/Empire Ranch interchange (CIP Project No: 53120).

The planned reconstruction of the US 50/Bass Lake Road interchange (CIP Project No: 71330 and GP148) will add a westbound auxiliary lane between the Bass Lake Road and Silva Valley Parkway interchanges.

El Dorado Hills Boulevard is a north-south roadway that continues as Salmon Falls Road on the north and Latrobe Road on the south. The roadway is four lanes with a center median between Park Drive and Governor Drive. Between US 50 and Park Drive, the roadway section widens to three lanes northbound to accommodate vehicle demand near the US 50 interchange. The County's General Plan identifies El Dorado Hills Boulevard as a four lane divided road except near US 50 where the designation changes to a six lane divided road. Project access points are proposed on El Dorado Hills Boulevard. El Dorado Hills Boulevard serves about 22,000 vehicles per day north of Wilson Boulevard.

Latrobe Road is a north-south roadway and is the continuation of El Dorado Hills Boulevard south of US 50. Latrobe Road is six lanes near the US 50 interchange, narrows to four lanes south of White Rock Road, and eventually narrows to two lanes as it continues south to connect with State Route 16 in Amador County. The General Plan identifies Latrobe Road as a six lane divided roadway near the US 50 interchange transitioning to a four lane divided road, then a two lane major road, and eventually a two lane regional road serving the southwest portion of the County. Latrobe Road serves about 26,000 vehicles per day north of White Rock Road.

Park Drive is a two lane local roadway serving the Raley's shopping center located in the northeast quadrant of the US 50/El Dorado Hills Boulevard interchange. Park Drive intersects El Dorado Hills Boulevard at two locations, opposite the new US 50 westbound loop off-ramp, and Saratoga Way. Park Drive serves about 6,000 vehicles per day east of El Dorado Hills Boulevard.

Saratoga Way is currently two lanes and extends west of El Dorado Hills Boulevard to Finders Way. Saratoga is planned as a four-lane divided arterial that will connect to Iron Point Road in the City of Folsom. Saratoga Way serves about 3,000 vehicles per day west of El Dorado Hills Boulevard.

Silva Valley Parkway is a north-south roadway that generally runs parallel to El Dorado Hills Boulevard north of US 50. Silva Valley Parkway ranges from two lanes to four lanes with a center median within the study area. The General Plan identifies Silva Valley Parkway as a four lane divided road. A new US 50 interchange at Silva Valley/White Rock Road is planned and included in the Cumulative conditions transportation analysis. The interchange project provides a realigned Silva Valley Parkway that will connect to the existing four-lane Silva Valley Parkway to the north and the existing two-lane White Rock Road on the south. A new signalized intersection will be installed where the new Silva Valley Parkway will intersect old White Rock Road on the south. Silva Valley Parkway serves about 9,300 vehicles per day north of US 50.

White Rock Road is the continuation of Silva Valley Parkway south of US 50. White Rock Road is predominately a two or three lane roadway until west of Latrobe Road where the cross section widens to four lanes. White Rock Road was recently widened east of Latrobe Road to Monte Verde Drive to accommodate four lanes, sidewalks, and Class II bicycle lanes. The General Plan identifies White Rock Road as a six lane divided road east of Latrobe Road and a four lane divided road west of Latrobe Road. The US 50/Silva Valley Parkway/White Rock Road interchange will modify the roadway alignment and introduce a new signalized intersection at the intersection of White Rock Road/Existing Silva Valley Parkway/New Silva Valley Parkway. White Rock Road serves about 10,000 vehicles per day west of Latrobe Road.

4.3 EXISTING CONDITIONS PEAK HOUR TRAFFIC VOLUMES

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

For study intersections, AM peak period (7 AM to 9 AM) and PM peak period (4 PM to 6 PM) intersection turning movement counts were collected in May 2012, January 2013, and May 2014. Construction was ongoing at the US 50/El Dorado Hills Boulevard interchange. Field observations conducted during the AM and PM peak periods identified extensive vehicle queuing near the US 50/El Dorado Hills Boulevard interchange, with the longest queues southbound during the AM peak hour and northbound during the PM peak hour. However, all queued vehicles were served during the peak hour, so the traffic counts are representative of peak hour travel demand. Each intersection's peak hour within the peak period was used for the analysis. For the majority of study intersections, the counts indicate that the AM peak hour is between 7:15 and 8:15 and the PM peak hour is between 5:00 and 6:00. Figure 3 provides peak hour traffic volumes, lane configurations and traffic controls at each of the study intersections.

For US 50, directional traffic counts were collected during the AM peak period (6 AM to 9 AM) and PM peak period (3 PM to 6 PM) and included vehicle classification (i.e., automobiles and trucks) and vehicles using the high occupancy vehicle (HOV) lanes. The freeway traffic counts were conducted midweek (i.e., Tuesday, Wednesday, and Thursday) in August 2013. The August 2013 traffic counts were verified for reasonableness by comparing to traffic data from Caltrans' Performance Measurement System (PeMS) and the Transportation Systems Network (TSN) data. PeMS data is collected continuously from traffic counts detectors located in the travel lanes of freeway facilities (HOV, general purpose, and on- and off-ramps). The TSN data includes an estimate of peak hour traffic based on seven day traffic counts. Based on the August 2013 counts, heavy vehicles (i.e., trucks) represented one- and two-percent of westbound traffic during the morning and evening peak hours, respectively. In the eastbound direction, heavy vehicles represented four- and one-percent of traffic during the morning and evening peak hours, respectively. These peak hour heavy vehicle percentages are lower than rates based on daily traffic volumes, since heavy vehicles avoid peak hour conditions.

Figure 2

Study Area

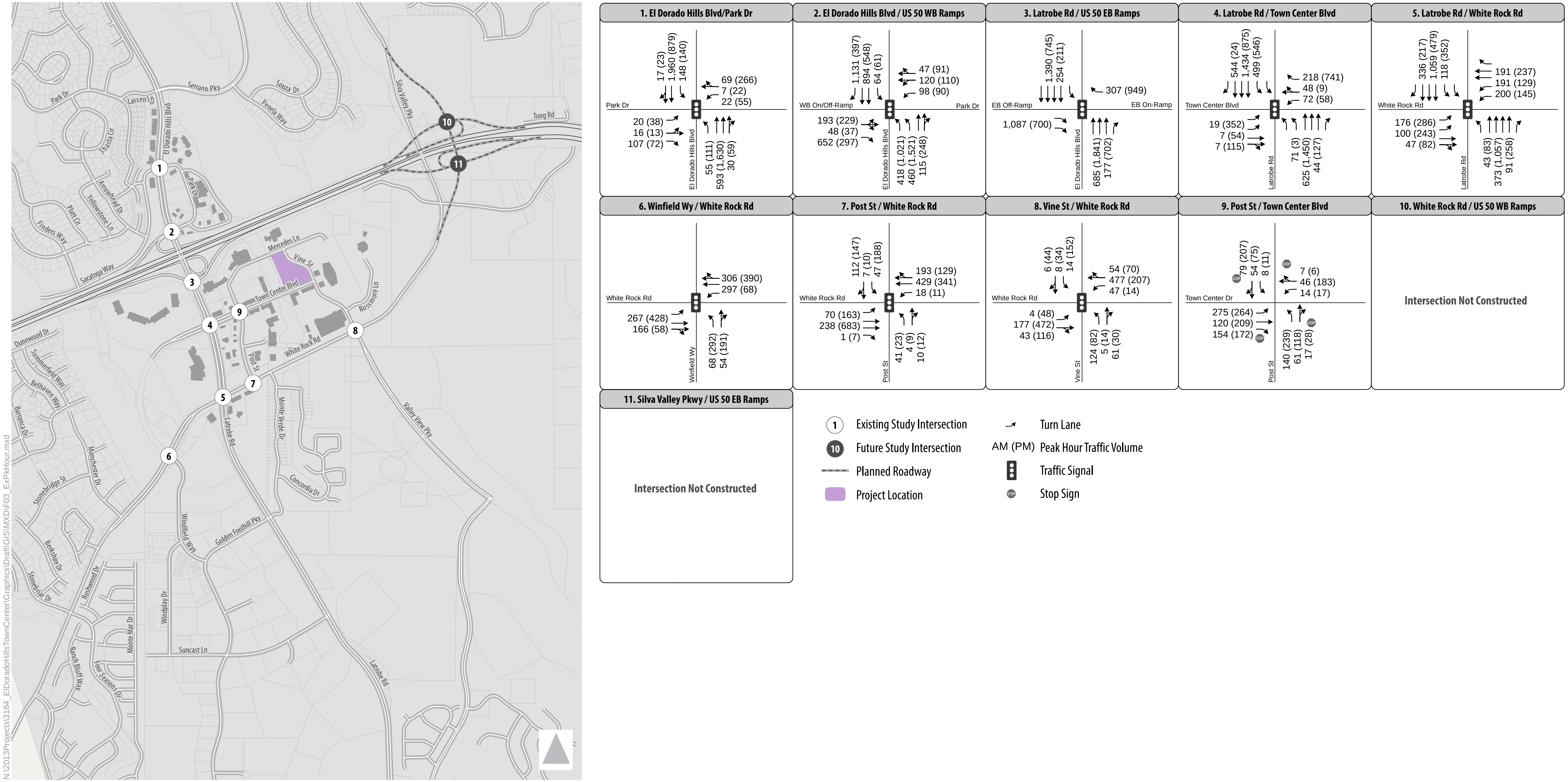

Figure 3

Peak Hour Traffic Volumes and Lane Configurations - Existing Conditions

4.4 EXISTING CONDITIONS PEAK HOUR VEHICLE LEVEL OF SERVICE

4.4.1 INTERSECTIONS

Table 3 summarizes existing conditions AM and PM peak hour Level of Service (LOS) for the study intersections. The LOS of a facility is a qualitative measure used to describe operating conditions. LOS ranges from A (best), which represents short delays, to LOS F (worst), which represents long delays and a facility that is operating at or near its functional capacity.

As described in Section 3.2, an intersection that is operating at LOS E or better in a Community Region is considered to operate at an acceptable level. Construction is ongoing at the US 50/El Dorado Hills Boulevard interchange. Field observations conducted during the AM and PM peak periods identified extensive vehicle queuing near the US 50/El Dorado Hills Boulevard interchange, with the longest queues southbound during the AM peak hour and northbound during the PM peak hour. The El Dorado Hills Boulevard/Saratoga Way/Park Drive intersection operates at LOS F during the AM peak hour. Poor operation is due to the interim (i.e., temporary) intersection improvements at the interchange associated with the ongoing construction. Vehicle queuing and inefficient vehicle progression results in LOS F operations.

Detailed LOS analysis sheets are contained in Appendix A. See Section 3.1 and Table 1 for a definition of LOS as it relates to intersection delay.

TABLE 3: PEAK HOUR LEVEL OF SERVICE – EXISTING CONDITIONS (INTERSECTION)

Intersection	Traffic Control	LOS / Delay (seconds)	
		AM Peak Hour	PM Peak Hour
1. El Dorado Hills Boulevard/Park Drive/Saratoga Way	Signal	**F / 85**	C / 23
2. El Dorado Hills Boulevard/US 50 WB Ramps	Signal	E / 68	E / 68
3. Latrobe Road/US 50 EB Ramps	Signal	C / 21	B / 19
4. Latrobe Road/Town Center Boulevard	Signal	C / 34	E / 64
5. Latrobe Road/White Rock Road	Signal	C / 31	D / 44
6. White Rock Road/Winfield Way	Signal	B / 15	B / 17
7. White Rock Road/Post Street	Signal	C / 26	C / 33
8. White Rock Road/Vine Street/Valley View Drive	Signal	C / 21	C / 27
9. Town Center Boulevard/Post Street	AWSC	B / 12	C / 16
10. Silva Valley Parkway/US 50 WB Ramps	Signal	Cumulative Conditions Only	
11. Silva Valley Parkway/US 50 EB Ramps	Signal	Cumulative Conditions Only	

Notes: SSSC = side-street stop-control, AWSC = all-way stop control

The average del average delay is measured in seconds per vehicle. For signalized and AWSC intersections, the delay shown is the average control delay for the overall intersection. For SSSC intersections, the LOS and control delay for the worst movement is shown. Intersection LOS and delay is calculated based on the procedures and methodology contained in the HCM (TRB, 2000). Intersections 5-8,were analyzed in Synchro 7. Intersections 1-4 and 9-11 were analyzed in SimTraffic.

Source: Fehr & Peers, 2014

4.4.2 FREEWAY FACILITIES

Freeway facilities in the County are under the jurisdiction of the California Department of Transportation (Caltrans). In recent years, US 50 and interchanges within or proximate to the study area have undergone or are undergoing various improvements to enhance traffic operations. These improvements include: High Occupancy Vehicle (HOV) lanes east to Cameron Park Drive and modifications to the US 50/El Dorado Hills Boulevard Latrobe Road interchange westbound ramps (currently under construction) and ongoing construction of the US 50/Silva Parkway/Latrobe Road interchange.

Table 4 summarizes existing peak hour freeway operating conditions. All of the study facilities currently operate acceptably. Detailed LOS analysis sheets are contained in Appendix A. See Section 3.1 and Table 2 for a definition of LOS as it relates to freeway facilities.

TABLE 4: FREEWAY FACILITY PEAK HOUR LEVEL OF SERVICE – EXISTING CONDITIONS

Freeway	Segment	Facility Type	Existing Density[1]/LOS	
			AM	**PM**
US 50 EB	Latrobe Rd off-ramp	Diverge	22 / C	31 / D
	El Dorado Hills Boulevard off-ramp	Diverge	14 / B	26 / C
	Latrobe Rd on-ramp	Merge	14 / B	26 / C
	El Dorado Hills Boulevard on-ramp to Bass Lake Rd off-ramp	Basic	10 / A	20 / C
US 50 WB	Bass Lake Rd on-ramp to El Dorado Hills Boulevard off-ramp	Basic	29 / D	17 / B
	El Dorado Hills Boulevard off-ramp	Diverge	33 / D	22 / C
	El Dorado Hills Boulevard on-ramp	Merge	34 / D	24 / C

Notes: [1]Density reported as passenger cars per mile per pane. Density is not reported for LOS F operations.
Source: Fehr & Peers, 2014

4.5 PEDESTRIAN CIRCULATION

Pedestrian facilities in Town Center include attached sidewalks on Town Center Boulevard, Post Street, Vine Street, Mercedes Lane, and an off-street path around Town Center Plan. Sidewalks on Town Center Boulevard connect to Latrobe Road, which has sidewalks north of Town Center on the east side of Latrobe Road. Continuous sidewalks are not provided on the west side of Latrobe Road or on the east side of Latrobe Road between Town Center Boulevard and White Rock Road. On White Rock Road, sidewalks are generally provided on improved frontages. All study intersections provide controlled pedestrian crossings with marked crosswalks.

4.6 BICYCLE CIRCULATION

Existing and planned bicycle facilities within the study area are displayed in Figure 4. Bicycle facilities are classified into three categories:

- Class I Bicycle Path– Off-street bike paths within exclusive right-of-way; usually shared with pedestrians
- Class II Bicycle Lane – Striped on-road bike lanes adjacent to the outside travel lane on preferred corridors for biking

- Class III Bicycle Route– Shared on-road facility, usually delineated by signage and pavement markings

According to the *El Dorado Bicycle Transportation Plan, 2010 Update (El Dorado County Transportation Commission)*, mapping information provided by the County, and field observations, the following major bikeway facilities are present within the study area:

- Class II bicycle lanes on Latrobe Road and White Rock Road
- Class I bicycle path, New York Creek Nature Trail, which is adjacent to El Dorado Hills Boulevard on the east side between Serrano Parkway to St Andrews Drive
- Class I bicycle path, Bull Frog Gully trail, on the north/west side of Serrano Parkway opposite Penela Way

Figure 4 also identifies planned bikeways presented in the *El Dorado Bicycle Transportation Plan, 2010 Update* and the *Sacramento Area Council of Governments (SACOG) Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) for 2035.*

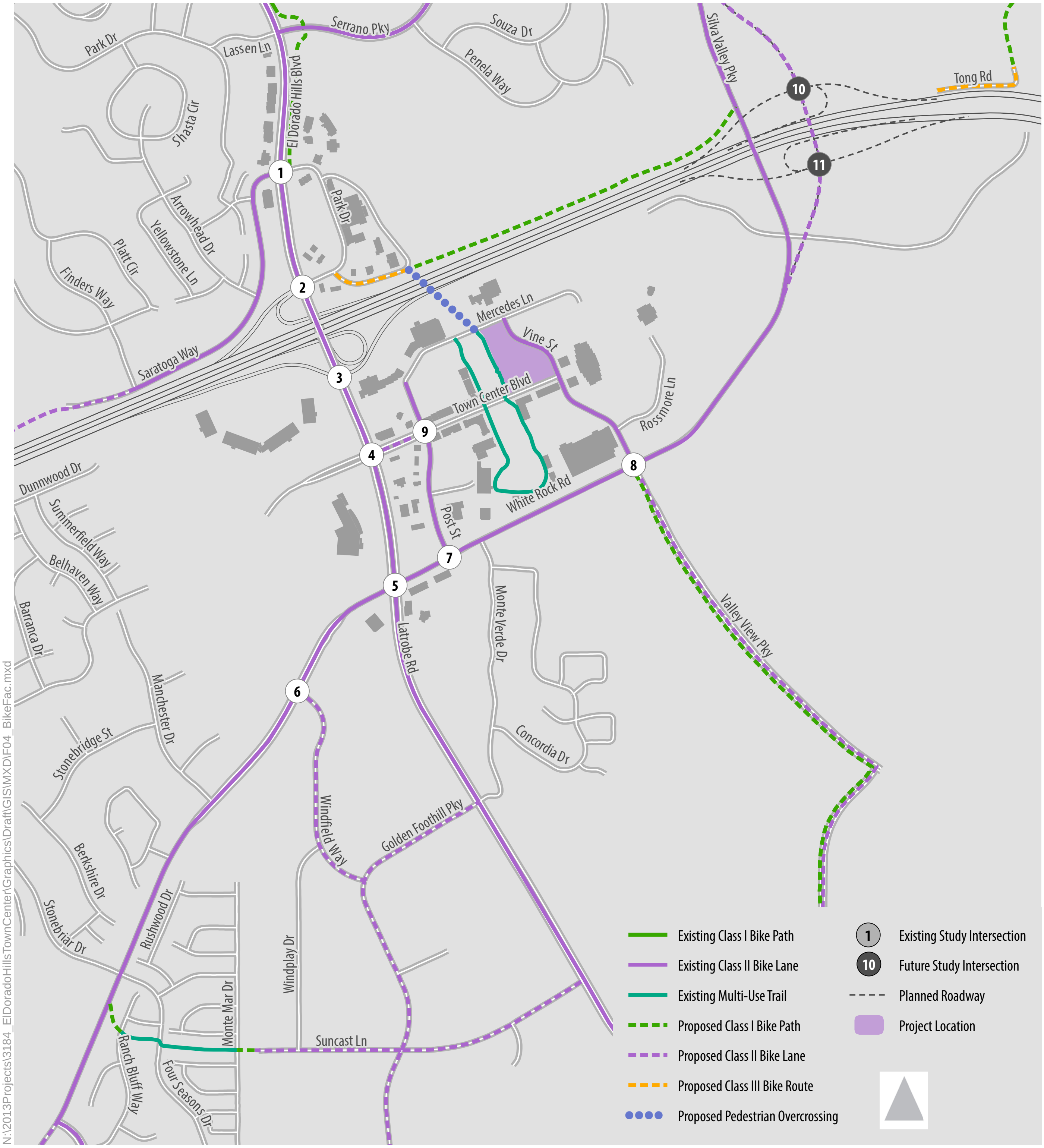

Figure 4

Existing and Planned Bicycle Facilities

4.7 TRANSIT

El Dorado County Transit Authority (El Dorado Transit) provides public transit service within the project area. El Dorado Hills is currently served by El Dorado Transit Dial-A-Ride services, Commuter Service, and the Iron Point Connector Route. Both the Commuter Service and the Iron Point Connector Route serve only the El Dorado Hills Park-and-Ride Lot and do not circulate within the community.

In May 2013, The EDCTC completed the *El Dorado Hills Community Transit Needs Assessment and US 50 Corridor Operations Plan* (Plan), which explores how the recent growth and projected development impact the need for transit services, and identifies the most appropriate type and level of service needed given the demand. All three services are addressed in the Plan and are described briefly below.

- **Dial-A-Ride** service is a demand response service designed for seniors and disabled passengers, with limited access available for the general public. The service is available on a first-come, first-serve basis Monday through Friday between the hours of 7:30 AM and 5:00 PM, and between 8:00 AM and 5:00 PM on Saturdays and Sundays. El Dorado Hills is one of twelve geographic zone service areas.
- **Commuter Service** is offered Monday through Friday between El Dorado County and downtown Sacramento. Morning departures from El Dorado County locations are scheduled from 5:10 AM to 8:00 AM, and afternoon eastbound departures from Sacramento occur from 2:40 PM to 6:00 PM. A reverse commuting service is offered. The El Dorado Hills Park-and-Ride located in Town Center at the White Rock Road/Post Street intersection is the nearest stop location for the project. According to the Plan, nearly half of commute passengers boarded at the El Dorado Hills Park-and-Ride in the morning, which makes this location the highest boarding stop offered as part of the Commuter Service.
- **Iron Point Connector (IPC) Route** provides direct service from El Dorado County to Folsom with connections to Sacramento Regional Transit light rail on weekdays. This route runs twice in the morning and twice in the afternoon from the Central Transit Center to the Iron Point Light Rail Station in Folsom. The El Dorado Hills Park-and-Ride located in Town Center at the White Rock Road/Post Street intersection is the nearest stop location for the project.

The El Dorado Hills Park-and-Ride Lot provides 120 parking spaces. The Plan reports that parking demand exceeds supply. Specifically, Table 19 of the Plan reports 96% parking utilization in 2004 and 108% parking utilization in 2005 based on Sacramento Area Council of Governments and Caltrans data. The Plan also describes other transit providers that serve western El Dorado County, including the Senior Shuttle Program, which has recently initiated service in El Dorado Hills.

5.0 EXISTING PLUS PROJECT CONDITIONS

5.1 TRIP GENERATION

Fehr & Peers prepared trip generation estimates for the project based on methodologies and trip rates presented in Trip Generation, 9th Edition (Institute of Transportation Engineers), with adjustments to account for internal vehicle trips and walking trips given that the project would be located in the Town Center.

This traffic study determined that the combined effects of the Project's land use, location, and development scale would contribute to a reduction in off-site average weekday vehicle "trips" (e.g., one vehicle trip is when a person drives from their home to shopping or their job. Their return drive home is another trip). This reduction is due largely to the Project's proximity to commercial and retail services and connections between the project and these services. That is, most of the reduction in total off-site vehicle trips generated by the Project is attributable to those trips beginning on the Project site, traveling to adjacent services, and ending on the Project site without using off-site roadways or by walking.

Traditionally, traffic engineers and transportation planners have estimated internalization of project trips using one of two methods. First, they would estimate it based on their professional judgment. Alternatively, professionals relied on the Institute of Transportation Engineers' (ITE) internalization methodology presented in the ITE Trip Generation Handbook. Although this has been applied in thousands of studies in California, the methodology was limited as it was based on only six surveys in Florida. Additionally, the ITE internalization methodology only accounts for the land use types on the mixed-use site. Given the limited input information (land use amount and type) and the limited range of data (six surveys), the accuracy of the internalization estimates has recently been found to generally under-estimate internalization of trips from mixed-use projects.

Recognizing the limitations of the simplified methodology applied in the ITE handbook, the United States Environmental Protection Agency commissioned a study to develop a more substantial, statistically superior methodology. This methodology, identified as MXD (or mixed-use development trip generation), begins with ITE rates and developed trip internalization estimates based on a series of factors tied to numerous site attributes. It should also be noted that the MXD model has been developed in cooperation with the US Environmental Protection Agency (EPA) and ITE, and that ITE is currently reviewing the model for potential inclusion in their updated recommended practice for evaluating MXD projects. The MXD methodology is described in greater detail below.

MXD Trip Internalization Methodology

The internal capture percentage reported is not an "assumed" number, but rather is a number that was derived using a best practices trip generation model designed specifically for mixed-use development (MXD) projects and estimates trip generation and internal capture by adjusting trip generation rates to account for the influence of built environment variables. A variety of research studies have demonstrated that these variables influence vehicle trip generation.

The MXD model used was developed based on household travel survey data obtained from 239 existing mixed-use developments in six metropolitan regions throughout the U.S., including developments in Sacramento. The internal capture percentage calculated for the project is reflective of the land uses that would be developed as part of the Project and land use near the project, which would reduce the need to travel beyond the Project site or surrounding area. A set of 16 independent mixed use sites that were not included in the initial model were tested to help validate the model. Among the validation sites, use of the MXD model produced superior statistical performance when comparing the model results to observed data. Given the statistical robustness of the MXD model, it was deemed the most appropriate approach for estimating internalization of project trips.

MXD Model Inputs and Trip Generation Estimates

To determine the amount of trips that would be internal to the Project site, an MXD trip generation estimate was prepared. The MXD analysis first begins with gross trip rates identified in the Institute of Transportation Engineers' Trip Generation (9th Edition, 2012). It then incorporates the MXD methodology for "matching" trips to estimate the amount of internalization within the project site. Table 5 summarize project land use, assumed trip rates, calculated trip generation totals, and adjustments to account for trips occurring between the project and Town Center.

The project is projected to generate 128 AM peak hour vehicle trips and 155 PM peak hour vehicle trips. About 28 trips in the PM peak hour are expected to occur in the Town Center. These trips will not use County roadways.

TABLE 5: TRIP GENERATION

Land Use	Quantity	ITE Code	Trip Rate		Trips					
			AM	PM	AM			PM		
					In	Out	Total	In	Out	Total
Multifamily Housing (Dwelling Units)	250	220	0.51	0.62	26	102	128	101	54	155
Town Center Trips								18	10	28
Vehicle Trips External to Town Center					26	102	128	83	44	127

Source: Institute of Transportation Engineers' Trip Generation (9th Edition, 2012)

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5.2 TRIP DISTRIBUTION AND ASSIGNMENT

The expected distribution of project trips is shown on Figure 5. The distribution was developed using the following sources and analytical techniques:

- Existing travel patterns based on the existing traffic counts
- Traffic assignment using the validated base year El Dorado County travel demand forecasting model
- Project access

As shown on Figure 5, the largest share of project trips (37 percent) will use US 50 to/from the west in the morning and evening with 11 percent traveling on US 50 to/from the east. Travel to/from the north on El Dorado Hills Boulevard represents about eight percent of project travel. Travel to/from the east and west on White Rock Road is fairly balanced at eight percent. About 20 percent of project travel will have an origin/destination south of White Rock Road. Figure 6 shows only project trips based on the trip distribution shown on Figure 5. The resulting AM and PM peak hour traffic volumes under existing plus project conditions are presented on Figure 7.

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Figure 5

Trip Distribution
Existing Conditions

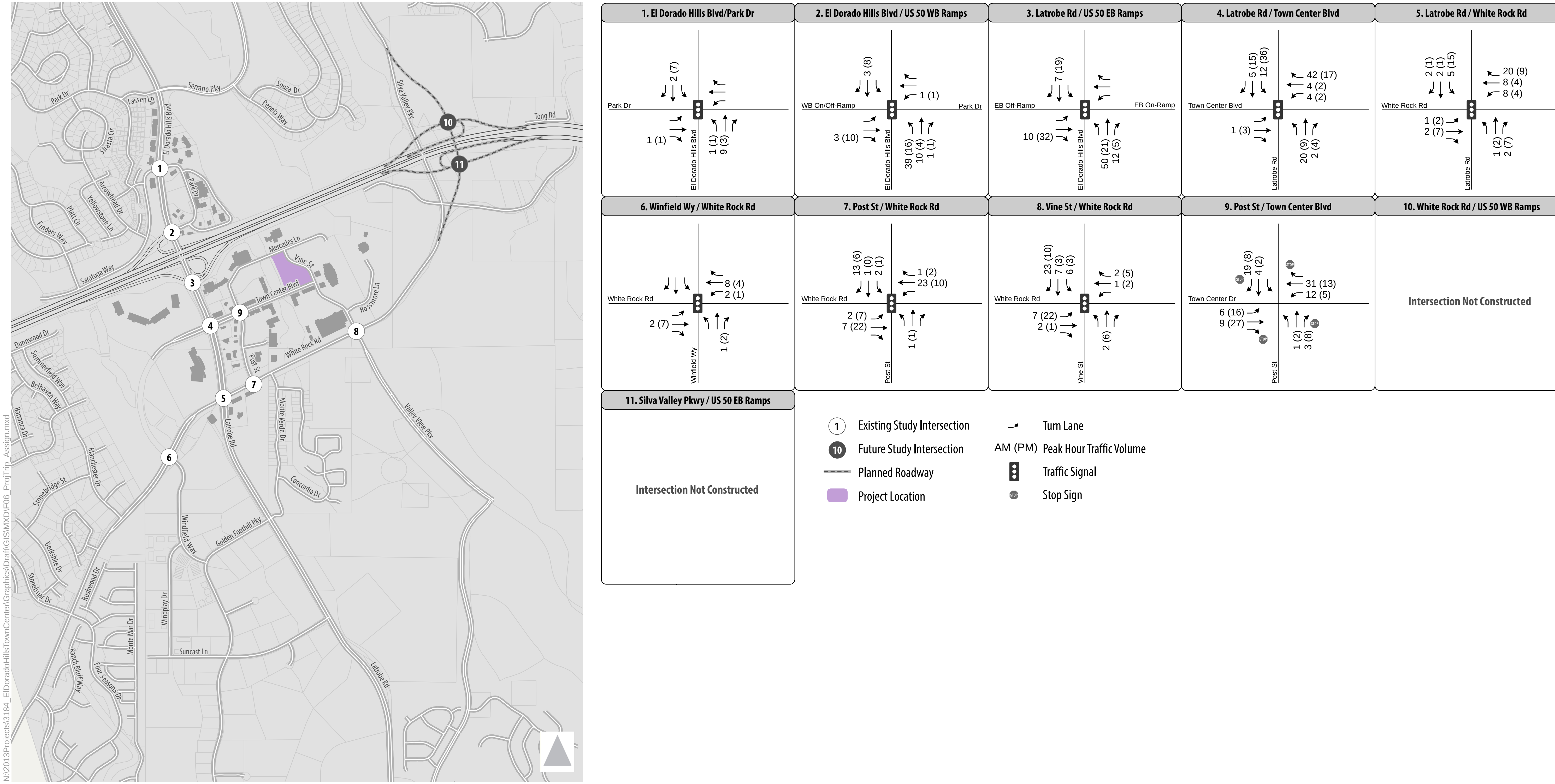

Figure 6

Peak Hour Traffic Volumes - Project Only Trip Assignment (Existing Conditions)

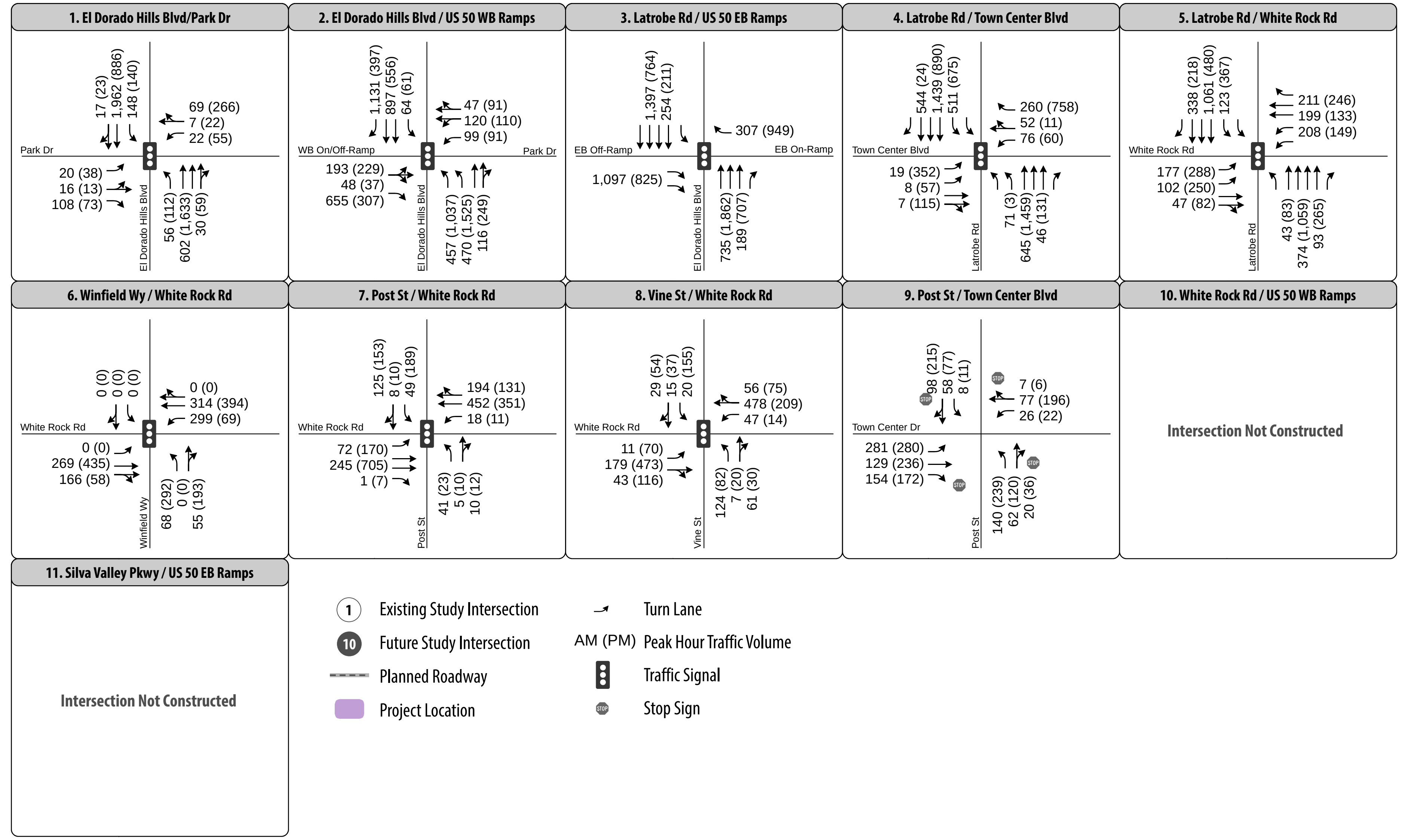

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Figure 7

Peak Hour Traffic Volumes and Lane Configurations - Existing Plus Project Conditions

5.3 PEAK HOUR VEHICLE LEVEL OF SERVICE

5.3.1 INTERSECTIONS

Analysis results, which are presented in Table 6, indicate that The El Dorado Hills Boulevard/Saratoga Way/Park Drive intersection operates at LOS F in the AM peak hour. Poor operation at this intersection is due to the interim (i.e., temporary) intersection improvements at the interchange associated with the ongoing construction at the US 50/El Dorado Hills Boulevard interchange. Traffic generated by the project result in potential impacts at the following locations:

- El Dorado Hills Boulevard/Saratoga Way/Park Drive (Intersection 1) – This intersection operates at LOS F without the project. According to established significance criteria, the project is projected to "significantly worsen" conditions, since it would add more than 10 trips to the intersection during the AM and PM peak hours.
- El Dorado Hills Boulevard/US 50 WB Ramps (Intersection 2) – This intersection operates at LOS E without the project. The project results in unacceptable LOS F conditions during the AM peak hour.

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TABLE 6: INTERSECTION LOS AND DELAY – EXISTING PLUS PROJECT CONDITIONS

Intersection	Control	Existing Conditions (LOS/Delay)		Existing Plus Project (LOS/Delay)	
		AM	PM	AM	PM
1. El Dorado Hills Boulevard/Saratoga Way/Park Drive	Signal	**F / 85**	C / 23	***F / 81***	C / 22
2. El Dorado Hills Boulevard/US 50 WB Ramps	Signal	E / 68	E / 68	***F / 85***	E / 68
3. Latrobe Rd/US 50 EB Ramps	Signal	C / 21	B / 19	C / 32	C / 30
4. Latrobe Rd/Town Center Boulevard	Signal	C / 34	E / 64	C / 35	E / 74
5. Latrobe Rd/White Rock Rd	Signal	C / 31	D / 44	C / 32	D / 45
6. White Rock Road/Winfield Way	Signal	B / 15	B / 17	B / 15	B / 17
7. White Rock Rd/Post St	Signal	C / 26	C / 33	C / 26	C / 33
8. White Rock Rd/Vine St /Valley View Parkway	Signal	C / 21	C / 27	C / 24	C / 28
9. Town Center Boulevard/Post Street	AWSC	B / 12	C / 16	B / 12	C / 19
10. Silva Valley Parkway/US 50 WB Ramps	Signal	Cumulative Conditions Only			
11. Silva Valley Parkway/US 50 EB Ramps	Signal	Cumulative Conditions Only			

Notes: SSSC = side-street stop-control, AWSC = all-way stop control

Bold text indicates LOS worse than established threshold. *Italic and underlined* text identifies a potential impact.

The average delay is measured in seconds per vehicle. For signalized and AWSC intersections, the delay shown is the average control delay for the overall intersection. For TWSC intersections, the LOS and control delay for the worst movement is shown. Intersection LOS and delay is calculated based on the procedures and methodology contained in the HCM (TRB, 2000). Intersections 5-8,were analyzed in Synchro 7. Intersections 1-4 and 9-11 were analyzed in SimTraffic.

Source: Fehr & Peers, 2014

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5.3.2 FREEWAY FACILITIES

Analysis results, which are presented in Table 7, indicate that all study freeway facilities will operate acceptably under existing conditions without or with the addition of project traffic.

TABLE 7: FREEWAY FACILITY PEAK HOUR LEVEL OF SERVICE – EXISTING PLUS PROJECT CONDITIONS

Freeway	Segment	Facility Type	Existing Density[1] / LOS		Existing + Project Density[1] / LOS	
			AM	PM	AM	PM
US 50 EB	Latrobe Rd off-ramp	Diverge	22 / C	31 / D	22 / C	32 / D
	El Dorado Hills Boulevard off-ramp	Diverge	14 / B	26 / C	14 / B	26 / C
	Latrobe Rd on-ramp	Merge	14 / B	26 / C	14 / B	26 / C
	El Dorado Hills Boulevard on-ramp to Bass lake Rd off-ramp	Basic	10 / A	20 / C	11 / A	20 / C
US 50 WB	Bass Lake Rd on-ramp to El Dorado Hills Boulevard off-ramp	Basic	29 / D	17 / B	29 / D	17 / B
	El Dorado Hills Boulevard off-ramp	Diverge	33 / D	22 / C	33 / D	22 / C
	El Dorado Hills Boulevard on-ramp	Merge	34 / D	24 / C	34 / D	25 / C

Notes: [1]Density reported as passenger cars per mile per pane. Density is not reported for LOS F operations.
Bold text indicates LOS worse than established threshold. *Italic and underlined* text identifies a potential impact.
Source: Fehr & Peers, 2014

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5.4 PEDESTRIAN AND BICYCLE CIRCULATION

Pedestrian facilities in Town Center include attached sidewalks on Town Center Boulevard, Post Street, Vine Street, and Mercedes Lane and an off-street path around Town Center Plan. The project will connect to existing bicycle and pedestrian facilities in the Town Center.

5.5 TRANSIT

Based on ridership data presented in the El Dorado Hills Community Transit Needs Assessment and US 50 Corridor Transit Operations Plan Final Report, 41,760 annual commute trips are made by El Dorado Hills residents using El Dorado Transit Commuter Service. Residents of El Dorado Hills account for about 72 percent of boardings at the El Dorado Hills Park-n-Ride lot (located in Town Center), which includes riders that park in the lot and riders that use other means to access the service (i.e., walk, bike, and drop-off).

Based on this information, about one annual commute trip is generated per El Dorado Hills resident, assuming a population of 42,100 (2010 Census) in El Dorado Hills. Therefore, the project's 250 dwelling units could result in demand of about 650 annual commute trips (assuming a household population of 2.6 persons), or about 3 commute trips per weekday.

6.0 CUMULATIVE CONDITIONS

This section presents the development and analysis of cumulative conditions.

6.1 TRAVEL DEMAND FORECASTS

For this project, traffic volume forecasts for cumulative conditions without the proposed project were developed using the El Dorado County model.

As is standard practice with large area travel demand models, a thorough model review was completed and the model was refined to ensure that it produced reasonable results in the study area.

The following refinements were implemented in the study area:

- Added roadway network detail
- Updated land use to reflect 2014 conditions
- Refined the traffic analysis zones (TAZs) in order to get more refined loading of trips in the study area
- Updated network attributes in the study area to reflect existing conditions (e.g. verified roadway network speeds, number of lanes on the roadway, and roadway capacities to reflect existing conditions)
- Updated the future year roadway network in the study area to only reflect the SACOG Metropolitan Transportation Plan (MTP) constrained roadway network, which is consistent with the County's 2013 Capital Improvement Program (CIP)
- Updated the future land use information to reflect approved and reasonably foreseeable projects in the study area
- Added peak hour assignment functionality

Specific information related to the model's performance is described below.

6.1.1 BASE YEAR MODEL VALIDATION

Before any model can be applied for use in a major specific plan application, it must first satisfy specific validation criteria identified by Caltrans, the Federal Highways Administration (FHWA), and the California Transportation Commission (CTC). These criteria were developed to ensure that a model is developed such that it can accurately forecast existing conditions based on land use and roadway network information, which improves the model's ability to accurately forecast future conditions. The state-of-the-practice for developing defensible forecasts for changes in the roadway network and/or changes in proposed land use is to use a valid base year model.

The first step of any model validation is to ensure that the model generally produces similar results to existing counts. Please note that, since the model is being used to generate AM peak hour and PM peak hour forecasts, the model must be valid at our study facilities for both time periods.

Key metrics for model validation guidelines are described below:

- The volume-to-count ratio is computed by dividing the volume assigned by the model and the actual traffic count for individual roadways (or intersections). The volume-to-count ratio should be less than 10%.
- The deviation is the difference between the model volume and the actual count divided by the actual count. Caltrans provides guidance on the maximum allowable deviation by facility type (e.g. lower-volume roadways can have a higher deviation than higher-volume roadways). 75% of the study facilities should be within the maximum allowable deviation.
- The correlation coefficient estimates the correlation between the actual traffic counts and the estimated traffic volumes from the model. The correlation coefficient should be greater than 0.88.
- The percent Root Mean Square Error (RMSE) is the square root of the model volume minus the actual count squared divided by the number of counts. It is a measure similar to standard deviation in that it assesses the accuracy of the entire model. The RMSE should be less than 40%.

The model validation statistics are summarized in Table 8. As shown in Table 8, the model meets or exceeds the identified model validation statistics in the study area. As such, the model is deemed appropriate for use in this assessment.

TABLE 8: TRAVEL DEMAND FORECASTING MODEL SUB AREA VALIDATION		
Metric	**Model Validation**	**Validation Target**
AM Peak Hour – 114 Count Locations		
Model/Count Ratio	1.04	Between 0.90 and 1.10
Percent Within Caltrans Maximum Deviation	85%	> 75%
Percent Root Mean Square Error	24%	< 40%
Correlation Coefficient	0.98	> 0.88
PM Peak Hour – 114 Count Locations		
Model/Count Ratio	1.06	between 0.90 and 1.10
Percent Within Caltrans Maximum Deviation	86%	> 75%
Percent Root Mean Square Error	21%	< 40%
Correlation Coefficient	0.98	> 0.88
Source: Fehr & Peers, 2014		

6.1.2 FUTURE (YEAR 2035) MODELING ASSUMPTIONS

All modifications incorporated into the validated Base Year model were incorporated into the future year (2035) travel demand forecasting model. Additionally, as previously mentioned, the model was also updated to include only roadway improvements consistent with the SACOG's MTP and the County's 2013 CIP.

Table 9 describes capacity-enhancing improvements to roadway facilities in the project study area that are planned to occur prior to year 2035 and are included in the cumulative analysis. This information is primarily based on El Dorado County's 2013 CIP (Section 8.1 – West Slop Road/Bridge Individual Project Summaries) and SACOG's MTP/SCS (Appendix A1: MTP/SCS Project List). All relevant projects with the El Dorado County Department of Transportation as the lead agency are identified in Table 9. As described above, the validated El Dorado County model was used to develop AM and PM peak hour forecasts for Cumulative No Project conditions, which corresponds to a 2035 horizon that accounts for planned (and funded) roadway improvements, land use growth consistent with the 2004 General Plan, and with approved and reasonably foreseeable projects in the study area, including the following:

- Bass Lake Hills Specific Plan
- Cameron Estates
- Carson Creek Specific Plan
- Dixon Ranch
- Central El Dorado Hills Specific Plan
- Lime Rock Valley Specific Plan
- Marble Valley Specific Plan
- Promontory
- Rancho Dorado
- Ridgeview
- San Stino Residential Project
- Serrano
- Tilden Park
- Valley View Specific Plan

In addition to these projects, the Cumulative No Project traffic volume forecasts include the approved land use for the project site, which is discussed in more detail below.

Consistent with state-of-the-practice travel demand forecasting practice, model error was corrected using the methodologies identified in the National Cooperative Highway Research Program Report 255 (Transportation Research Board, 1982) using the "difference method" (e.g. add model predicted growth to existing volumes) for roadway segments and intersections.

Figures 8 present AM and PM peak hour traffic volume forecasts for cumulative conditions without the proposed project.

TABLE 9: CAPACITY–ENHANCING ROADWAY IMPROVEMENTS (ASSUMED COMPLETION BY 2035)		
Project Name	**Project Description**	**Estimated Completion**
Bass Lake Road Frontage Improvements	Perform roadway operational improvements on Bass Lake Road constructed by Silver Springs development.	By 2020
Bass Lake Road Improvements - Phase 1A	Widen and reconstruct Bass Lake Road from US 50 to Hollow Oak Road to 2-lane divided road with 4-foot shoulders and bicycle/pedestrian paths. Includes an 8-foot median, sidewalk, and bike lane from Hollow Oak Road to US 50; median improvements only from Hollow Oak Road to Serrano Parkway; improvements of park-and-ride lot with frontage road improvement to Old Bass Lake Road and Tierra de Dios. (See ELD19225/CIP#GP166 for Phase 1B). CIP#66109	By 2035
Bass Lake Road Widening	Widen Bass Lake Road from US 50 to Silver Springs Pkwy to accommodate 4 lanes of traffic (divided), curb, gutter, and sidewalk. (See ELD19224 for Phase 1A)	By 2035
Country Club Drive – Silva Valley Parkway to "Old Lincoln Highway"	Construct new 2-lane road north of existing Tong Rd from Silva Valley Pkwy to the "Old Lincoln Hwy". This project is the first half of the ultimate project to connect Silva Valley Pkwy to Bass Lake Rd and provide parallel capacity to US 50. CIP#71335	By 2020
Country Club Drive Extension – Bass Lake Road to Silver Dove Road	Construct 2-lane extension of Country Club Drive from Bass Lake Road to Silver Dove Road. Roadway includes 6-foot paved shoulders and new intersection at Bass Lake Road. (Curb, gutter, and sidewalk may be included.) CIP#GP124	By 2035
Country Club Drive Extension - Silver Dove to west end Bass Lake Hills	Construct new 2-lane extension of Country Club Drive from Silver Dove Road to the west end of Bass Lake Hills Specific Plan boundary for future connection to Silva Valley Parkway. Project includes 6-foot paved shoulders. (Curb, gutter, and sidewalk may be included). CIP#GP125	By 2035
El Dorado Hills Boulevard /Francisco Drive – Realignment	Realign existing El Dorado Hills Boulevard / Francisco Drive / Brittany Way intersection and approach roadways to result in a new 4-way intersection with extensions and signal installation. Northern portion of El Dorado Hills Boulevard (at this intersection) will become new minor traffic way, and current Francisco Drive between El Dorado Hills Boulevard and Green Valley Road will become new major traffic way. CIP#72332	By 2035
El Dorado Hills Boulevard Widening - Lassen Lane to Park Drive	Widen El Dorado Hills Boulevard from Lassen Lane to Park Drive from 4 to 5 lanes (divided) by adding a third southbound lane. Project includes curb, gutter, and sidewalk. CIP#GP183	By 2035
Green Valley Rd	Widen Green Valley Rd from Francisco Dr to Salmon Falls Rd to 4-lanes	By 2035

TABLE 9: CAPACITY–ENHANCING ROADWAY IMPROVEMENTS (ASSUMED COMPLETION BY 2035)		
Project Name	**Project Description**	**Estimated Completion**
Widening - Francisco to Salmon Falls	divided with curb, gutter, and sidewalk. CIP#GP178	
Green Valley Road	Widen: 4-lanes from Salmon Falls Rd. east to Deer Valley Rd.	By 2035
Green Valley Road Widening - County Line to Francisco Drive	Construct a second eastbound through lane from the commercial area near Sophia Parkway intersection to Francisco Drive with traffic signal installation at the Green Valley Road/Browns Ravine/Miller Road intersection. Also add a second westbound lane from Francisco Drive to the commercial area near the Sophia Parkway intersection.	Completed
Latrobe Road Widening – Golden Foothill to Investment	Widen Latrobe Rd from Golden Foothill Pkwy (south end) to Investment Boulevard from 2-lanes undivided to 4-lanes divided with curb, gutter, and Class II bike lanes; modify signal at Investment Boulevard. CIP#72350	By 2035
Latrobe Road	Widen: 6 lanes (divided with 4-foot shoulders) from White Rock Rd. to Carson Creek (Suncast Ln.).	By 2035
Latrobe Rd / White Rock Rd Connector (New Road)	New connector road from the El Dorado Hills Business Park to White Rock Rd west of Four Seasons/Stonebriar intersection; Phase 1 to perform route alignment study and prepare PSR; Phase 2 will include environmental, design and construction; may require coordination with Sacramento County, City of Folsom, Southeast Connector JPA and area developers. CIP#66116	By 2035
Saratoga Wy Ext - Phase 1	Construct new 2-lane arterial to extend Saratoga Wy from current terminus near Finders Wy to Sacramento County Line; includes median, 6-ft shoulders, right-turn pocket onto Finders Way, asphalt path, drainage system, environmental clearance and secure ROW for future 4-lane road from County Line to El Dorado Hills Boulevard. CIP71324 (Phase 2 CIP#GP147 - See ELD19234 in MTP.)	By 2035
Saratoga Wy. (Phase 2)	Widen: 4 lanes from the Sacramento/El Dorado County line to El Dorado Hills Boulevard. Includes: full curb, gutter, and sidewalk. (See ELD16010 for Phase 1)	By 2035
Silva Valley Pkwy Widening from Entrada	Widen Silva Valley Pkwy (2 to 4 lanes) from Entrada Dr to 1000 feet south of Oak Meadow Elem School; includes sidewalk, bike lanes and left-turn storage for school entrance.CIP#72370	By 2020
Silva Valley Pkwy / Golden Eagle Ln - Signalization	Signalize intersection at Silva Valley Pkwy and Golden Eagle Ln (Silva Valley Elementary School). CIP#GP182	By 2035
Silver Springs Parkway	It is anticipated that Silver Springs Parkway will be built as a two-lane standard divided roadway with shoulders. It is planned to realign Bass Lake	By 2020

TABLE 9: CAPACITY–ENHANCING ROADWAY IMPROVEMENTS (ASSUMED COMPLETION BY 2035)		
Project Name	**Project Description**	**Estimated Completion**
to Bass Lake Road	Road south of Green Valley Road through the proposed Silver Springs subdivision, which is west of the existing Bass Lake Road. The new road is named Silver Springs Parkway. That development is responsible for building Silver Springs Parkway through their development. There is a portion of the new alignment that falls to the south of the Silver Springs development that must also be built to connect the new road to the existing Bass Lake Road to the south.	
Silver Springs Parkway to Green Valley Road	Construct new Silver Springs Parkway through the Silver Springs Development from Bass Lake Road to Green Valley Road and install signal at Silver Springs Parkway and Green Valley Road intersection. Connect to realigned Bass Lake Road north of Bass Lake.	By 2020
Sophia Parkway	Widen: 4 lanes (divided) from Alexandria Rd. to Empire Rancho Rd. at the County Line.	By 2035
US 50 / Bass Lake Road (Phase 2)	Add Auxiliary Lane: WB on US 50 between Bass Lake Rd. and Cambridge Rd. interchanges. Includes: additional ramp, road widening (Phase 2) (See ELD19182 for Phase 1).	By 2035
US 50 / Cambridge Road (Phase 2)	Add Auxiliary Lane: on US 50 EB between Cambridge Rd. and Cameron Park Dr. interchanges and WB between Cameron Park Dr. and Bass Lake Rd. interchanges. Includes bridge widening to add two lanes and ramp widening (Phase 2) (See Eld19181 for Phase 1).	By 2035
US 50 Aux Lane WB - El Dorado Hills to Empire Ranch	Widen US 50 and add auxiliary lane to westbound US 50 connecting the El Dorado Hills Boulevard/Latrobe Rd Interchange to the future Empire Ranch Rd Interchange located in the City of Folsom; (City of Folsom will construct the EB aux lane.) Timing of construction to be concurrent with or after the El Dorado Hills Boulevard Interchange (ELD15630/CIP71323) or Empire Ranch Interchange. CEQA/NEPA cleared through the Empire Ranch Interchange environmental document. CIP#53115	By 2035
US 50 50 Auxiliary Lane Eastbound – Cambridge to Ponderosa	Construct eastbound auxiliary lane on US 50 between Cambride Rd and Ponderosa Rd interchanges. CIP GP150	By 2035
US 50 Bus / Carpool Lanes	Bus/Carpool Lanes – Phase 3: Us 50-Ponderosa Road to Greenstone Road.	By 2035
US 50 HOV Lanes – Phase 1	Phase 1 (El Dorado Hills to Bass Lake Grade) - Add HOV lanes in median of US 50 between El Dorado Hills Boulevard/Latrobe Rd and Bass Lake Rd interchanges (PM 0.5 to PM 4.2 eastbound and PM 0.9 to PM 2.9 westbound); includes extension of EB truck climbing lane from Latrobe Rd to base of Bass Lake Grade, median widenings of Clarksville Rd and Bass Lake Rd undercrossings, and replacement of EDH Boulevard	Completed

TABLE 9: CAPACITY–ENHANCING ROADWAY IMPROVEMENTS (ASSUMED COMPLETION BY 2035)		
Project Name	**Project Description**	**Estimated Completion**
	undercrossings including EB off-ramp. (See ELD19287 for Phase 2A, ELD19290 for Phase 2B and ELD19289 for future unfunded Phase 3 in the MTP). Emission Benefits in kg/day: ROG 27, NOx: 28, PM10 15, CO 303. CIP#53110	
US 50 HOV Lanes – Phase 2A	Phase 2A (Bass Lake Rd to Cameron Park Dr) - Add HOV lanes in median of US 50 between Bass Lake Rd and Cameron Park Dr Interchanges. PA&ED completed by Caltrans. Caltrans advancing project design through Cooperative Agreement with the County. Intergovernmental Agreement between County and Shingle Springs Band of Miwok Indians for funding (coded as Local Agency Funds). (Emission Benefits in kg/day: 19 ROG, 20 NOx, 12 PM10.) (See ELD19211/CIP53113 for Phase 1, ELD19290/CIP53122 for Phase 2B and ELD19289/CIP#53116 for future unfunded Phase 3 in the MTP). CIP#53113	Completed
US 50 HOV Lanes – Phase 2B	Phase 2B (Cameron Park Dr to Ponderosa Rd.) - Add HOV lanes in median of US 50 between Cameron Park Dr. and Ponderosa Rd. interchanges. PA&ED completed by Caltrans. Caltrans advancing project design through Cooperative Agreement with the County. Intergovernmental Agreement between County and Shingle Springs Band of Miwok Indians for funding (coded as Local Agency Funds). (See ELD19211/CIP53113 for Phase 1, ELD19290/CIP53122 for Phase 2B and ELD19289/CIP53116 for future unfunded Phase 3 in the MTP). CIP53113	By 2035
US 50 Mainline Widening at El Dorado Hills	Construct new westbound aux lane within median of US 50 between Silva Valley Pkwy and Empire Ranch Rd future new interchanges; requires coordination with Silva Valley I/C (ELD15610/CIP#71328), El Dorado Hills I/C (ELD15630/CIP71323) and Empire Ranch I/C (City of Folsom project). CIP#53120	By 2035
US 50 / Bass Lake Rd Interchange - Phase 1	Interchange Improvements: this phase includes detailed study to determine complete improvements needed; Phase 1 may include ramp widening, road widening, signals, and WB auxiliary lane between Bass Lake and Silva Valley interchanges; Phase 1 assumes bridge replacement. (See ELD19217 for Phase 2). CIP#71330	By 2035
US 50 / Cambridge Rd. Interchange – Phase 1	Interchange Improvements: this phase includes widening existing EB and WB on-/off-ramps; addition of new WB on-ramp; reconstruction of local intersections; and installation of traffic signals at EB and WB ramp terminal intersections; preliminary engineering for Phase 2 to be performed under Phase 1. (See ELD19218 for Phase 2) CIP#71332	By 2035
US 50 / Cameron Park Dr. Interchange	Interchange Improvements: this project includes detailed study to identify capacity improvement alternatives and selection of preferred alternative; assumes reconstruction of US 50 bridges to widen Cameron Park Dr. to 8	By 2020

TABLE 9: CAPACITY–ENHANCING ROADWAY IMPROVEMENTS (ASSUMED COMPLETION BY 2035)		
Project Name	**Project Description**	**Estimated Completion**
Improvements	lanes under the overcrossing; road and ramp widening. CIP72361	
US 50 / El Dorado Hills Boulevard Interchange Eastbound Ramps	Reconstruct eastbound diagonal on-ramp and eastbound loop off-ramp for the ultimate configuration; add a lane to northbound El Dorado Hills Boulevard under the overpass (eliminates merge lane and improves traffic flow from the eastbound loop off-ramp); eastbound diagonal on-ramp will be metered and have an HOV bypass. Project split from ELD15630 (CIP#71323).	By 2020
US 50 / El Dorado Rd Interchange - Phase 1	Interchange Improvements: includes signalization and widening of existing ramps. (See ELD19272 for Phase 2). CIP#71347	Completed
US 50 / El Dorado Rd Interchange - Phase 2	Interchange Improvements: this phase involves construction of left and right turn lanes and additional through traffic lanes in all approaches to the interchange. (See ELD19178/CIP#71347 for Phase 1). CIP#71376	Ongoing
US 50 / El Dorado Hills Boulevard Interchange – Final Phase	Interchange Improvements: this final phase constructs new WB off-ramp undercrossing, improves WB on-/off-ramps and widens El Dorado Hills Boulevard. (Coordinates with ELD19215/CIP#53120, ELD19273/CIP#53115, ELD19173/CIP71340, and ELD19345). CIP#71323	Ongoing
US 50 / El Dorado Hills Boulevard Pedestrian Overcrossing	Construct ped/bike overcrossing over US 50 just east of El Dorado Hills Boulevard. Interchange; includes a Class 3 mixed use path; construction and ROW acquisition for 10-ft wide sidewalk and adjacent retaining walls, barriers, railings, and landscape replacement included with CIP71323 (see ELD15630). CIP71340.	By 2035
US 50 / Silva Valley Pkwy Interchange - Phase 1	New Interchange: Phase 1 includes US 50 on-/off-ramps, overcrossing, and US 50 aux lanes. (See ELD19291/CIP#71345 for Phase 2). CIP#71328	Ongoing
US 50 / Silva Valley Pkwy Interchange - Phase 2 (Connector Segment)	Final phase of new interchange: construction of eastbound diagonal and westbound loop on-ramps to US 50. (See ELD15610/CIP#71328 for Phases 1). CIP#71345	By 2035
White Rock Rd Widening - Manchester to County Line (Connector Segment)	Widen White Rock Rd from 2 to 4 lanes, divided, from Manchester Dr east to Sacramento County Line. CIP#GP137	By 2035
White Rock Rd Widening – Monte Verde to US 50 / Silva	Widen White Rock Rd from 2-lanes undivided to 4 lanes divided, from Monte Verde Dr east to new future US 50/Silva Valley Pkwy Interchange (ELD15610/CIP71328); includes curb, gutter, sidewalk, and Class II bike	By 2035

TABLE 9: CAPACITY–ENHANCING ROADWAY IMPROVEMENTS (ASSUMED COMPLETION BY 2035)

Project Name	Project Description	Estimated Completion
Valley (Connector Segment)	lanes. ROW costs include acquisition for ultimate 6-lane facility (see CIP#GP152/ELD19235 in MTP). CIP#72374	
White Rock Rd Widening – Latrobe to Monte Verde (Connector Segment)	Widen White Rock Rd (2 lanes undivided to 4 lanes divided) from Post St to the culvert east of Monte Verde Dr; install new traffic signal at White Rock Rd/Windfield Wy; includes curb, gutter, sidewalk, and Class II bike lanes. CIP#72372	By 2020
White Rock Rd (Connector Segment)	Widen: 6 lanes (divided) from Latrobe Rd. to U.S. 50 / Silva Valley Pkwy. Interchange.	By 2035
White Rock Rd / Post St - Signalization (Connector Segment)	Signalize intersection at White Rock Rd and Post St in El Dorado Hills. CIP#73310	Completed

Source: El Dorado County's CIP (Section 8.1 – West Slope Road/Bridge Individual Project Summaries) and SACOG's MTP/SCS (Appendix A1: MTP/SCS Project List).

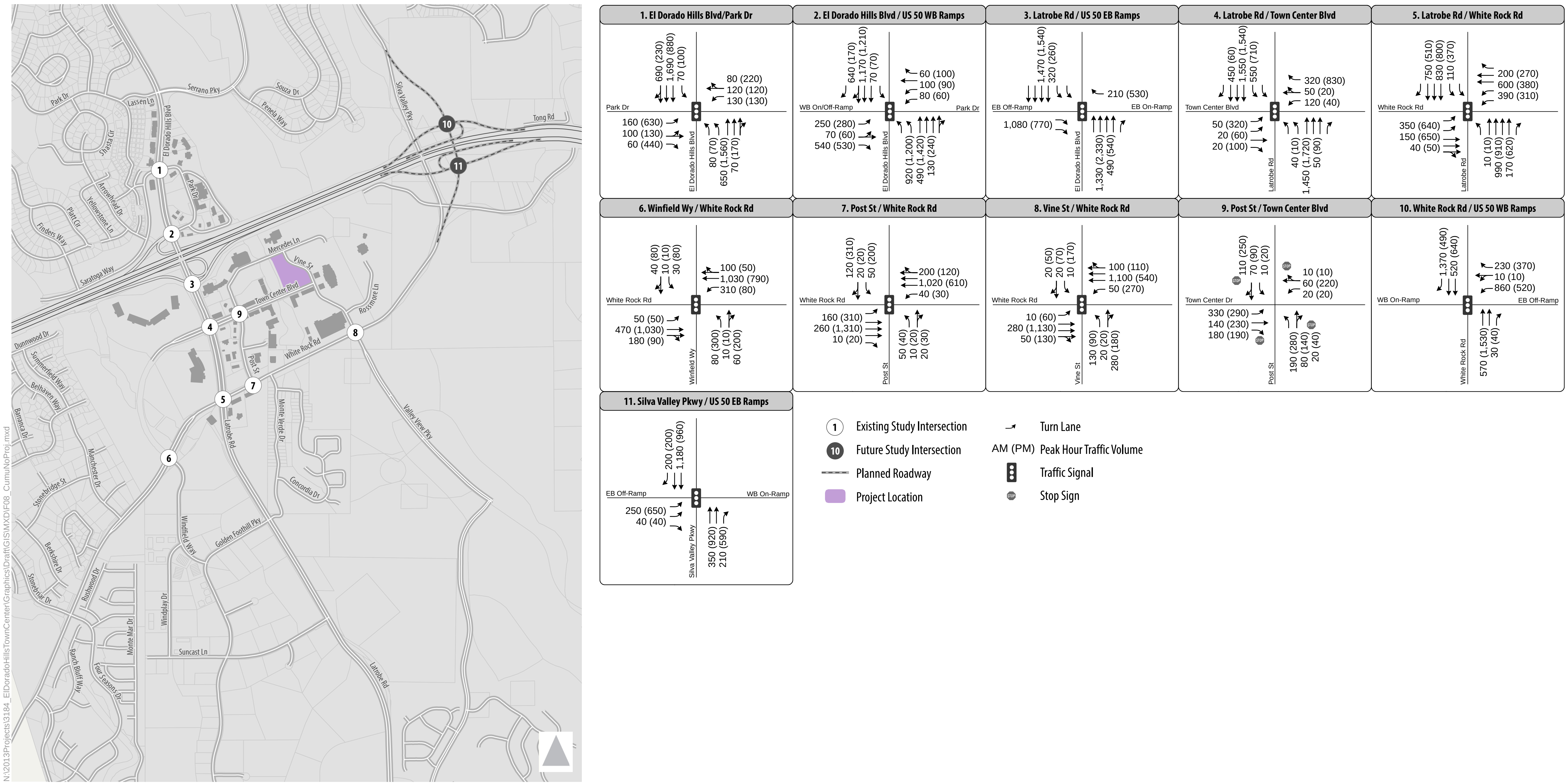


Figure 8

Peak Hour Traffic Volumes and Lane Configurations - Cumulative No Project Conditions

Cumulative Plus Project traffic volume forecasts were developed by manually assigning traffic from the approved land uses and the proposed project to the Cumulative No Project traffic volume forecasts shown on Figure 8. The development of the Cumulative Plus Project traffic volume forecasts is discussed in more detail below. The following outlines these steps:

Trip Distribution – Proposed Project and Approved Land Use

Separate trip distributions were developed for the proposed project (residential land use) and for the approved land use (commercial land use) using select zone assignments of the El Dorado County traffic model to account for the different distribution characteristics of residential and commercial land use. Figures 9 and 10 show the distribution of trips for the proposed project and approved land uses under cumulative conditions, respectively.

Trip Generation – Approved Land Use Trip Generation

According to the Declaration of Use Restrictions and Agreement to Grant Easements for El Dorado Hills Town Center East, Parcels 1-4, the project site can include the following land use:

- Parcel 1: general commercial and retail use with a maximum of 20,000 square feet of gross rentable area.
- Parcel 2: a full service hotel and conference center that will include, at a minimum, (i) 100 hotel rooms, (ii) a table service lunch and dinner restaurant containing not less than 4,000 square feet and not more than 4,500 square feet of gross rentable area, (iii) a conference facility sufficient to accommodate at least 250 person, and (iv) retail space with frontage on Town Center Boulevard containing no less than 3,000 square feet of gross rentable area.
- Parcel 3: general commercial and retail use with a minimum of 10,000 square feet of rentable retail shop space with frontage on Town Center Boulevard.

Trip generation for the approved land use is shown in Table 10, based on the use restrictions outline above. As shown, approved land use would result in about 99 trips in the AM peak hour and 192 trips in the PM peak hour.

TABLE 10: TRIP GENERATION–APPROVED LAND USE

Land Use	Quantity	ITE Code	Trip Rate		Trips					
			AM	PM	AM			PM		
					In	Out	Total	In	Out	Total
General Commercial/Retail	20,000 Square Feet	820[1]	0.96	3.71	12	7	19	36	38	74
Full Service Hotel	100 Rooms	310	0.67	0.70	39	28	67	34	36	70
Retail	3,000 Square Feet	820[1]	0.96	3.71	2	1	3	5	6	11
General Commercial/Retail	10,000 Square Feet	820[1]	0.96	3.71	6	4	10	18	19	37
				Total	59	40	99	93	99	192

Source: Institute of Transportation Engineers' Trip Generation (9th Edition, 2012)

ITE land use code 820 (Shopping Center) was used to estimate trip generation for the approved commercial/retail land use. Shopping centers are groups of integrated commercial establishments (like the Town Center). As integrated developments, many trips will occur between different establishments without traveling outside the shopping center, due to the convenience of having complementary land uses near eachother. This trip internalization increases with larger shopping centers. To account for trip internalization of the approved commercial land use, the average trip generation rate for ITE code 820 was applied, since it results in lower trip generation compared to using the fitted curve equation. This is a conservative assumption since it results in lower trip generation for the approved land uses.

Fehr & Peers, 2014

Trip Assignment – Proposed Project and Approved Land Use

Table 11 compares the expected trip generation from the proposed project to the trip generation based on the approved land use. As shown, the proposed project would generate about 29 more trips during the AM peak hour and 65 fewer trips in the PM peak hour. The net difference in trip generation between the proposed project and approved land uses were added to the Cumulative No Project traffic volume forecasts shown in Figure 8 to develop the Cumulative Plus Project traffic volume forecasts.

TABLE 11: TRIP GENERATION COMPARISON–PROPOSED PROJECT AND APPROVED LAND USE

Land Use Scenario	Trips					
	AM			PM		
	In	Out	Total	In	Out	Total
Proposed Project	26	102	128	83	44	127
Approved Land Use	59	40	99	93	99	192
Difference (Proposed Project – Approved Land Use)	-33	62	29	-10	-55	-65

Source: Institute of Transportation Engineers' Trip Generation (9th Edition, 2012)
Fehr & Peers, 2014

Figures 11 and 12 show AM and PM peak hour traffic assignment for the proposed project and approved land uses. Figure 13 show the corresponding AM and PM peak hour traffic volume for Cumulative Plus Project conditions.

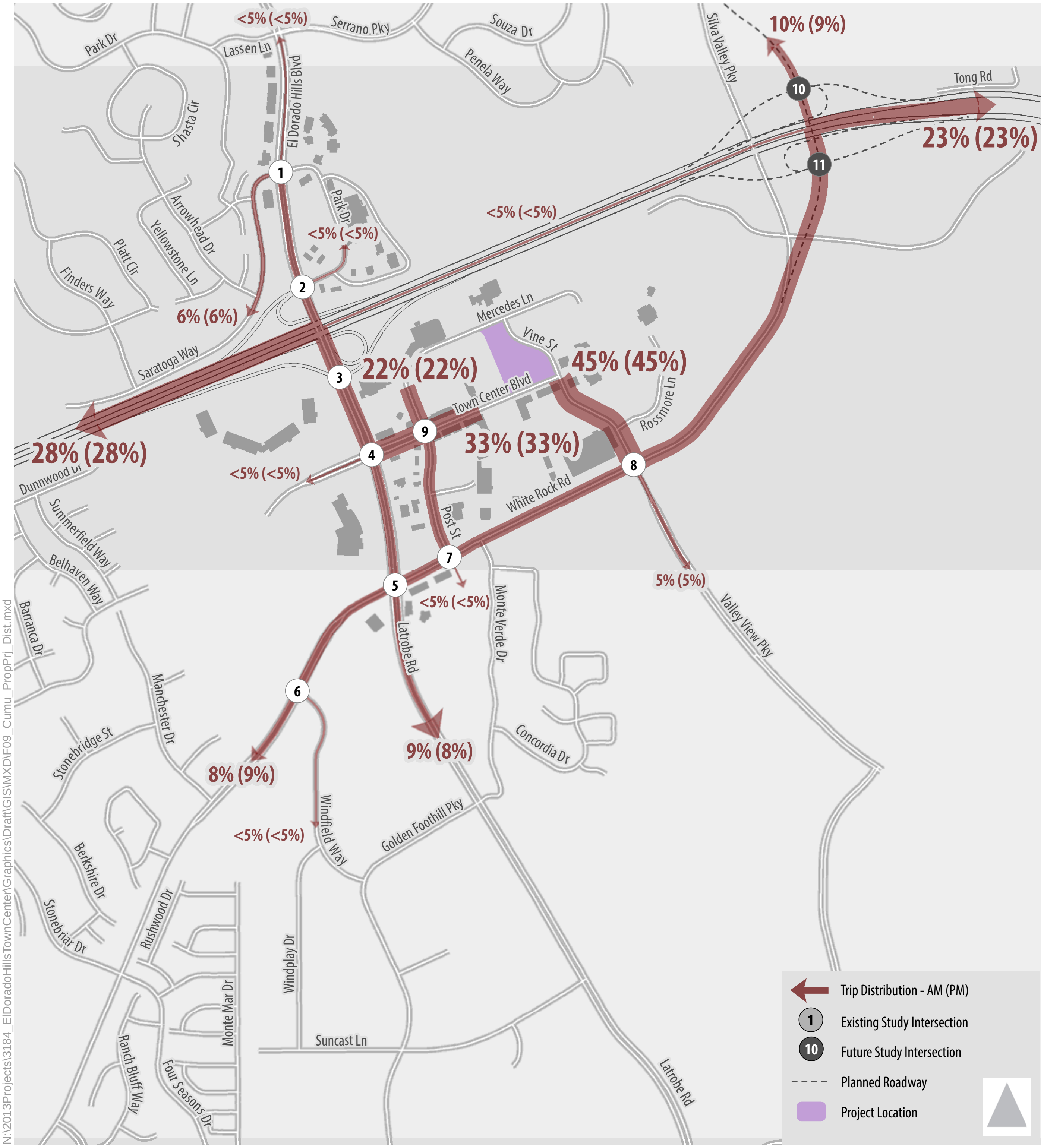


Figure 9

Proposed Project Distribution
Cumulative Conditions

Figure 10

Approved Land Use Distribution
Cumulative Conditions

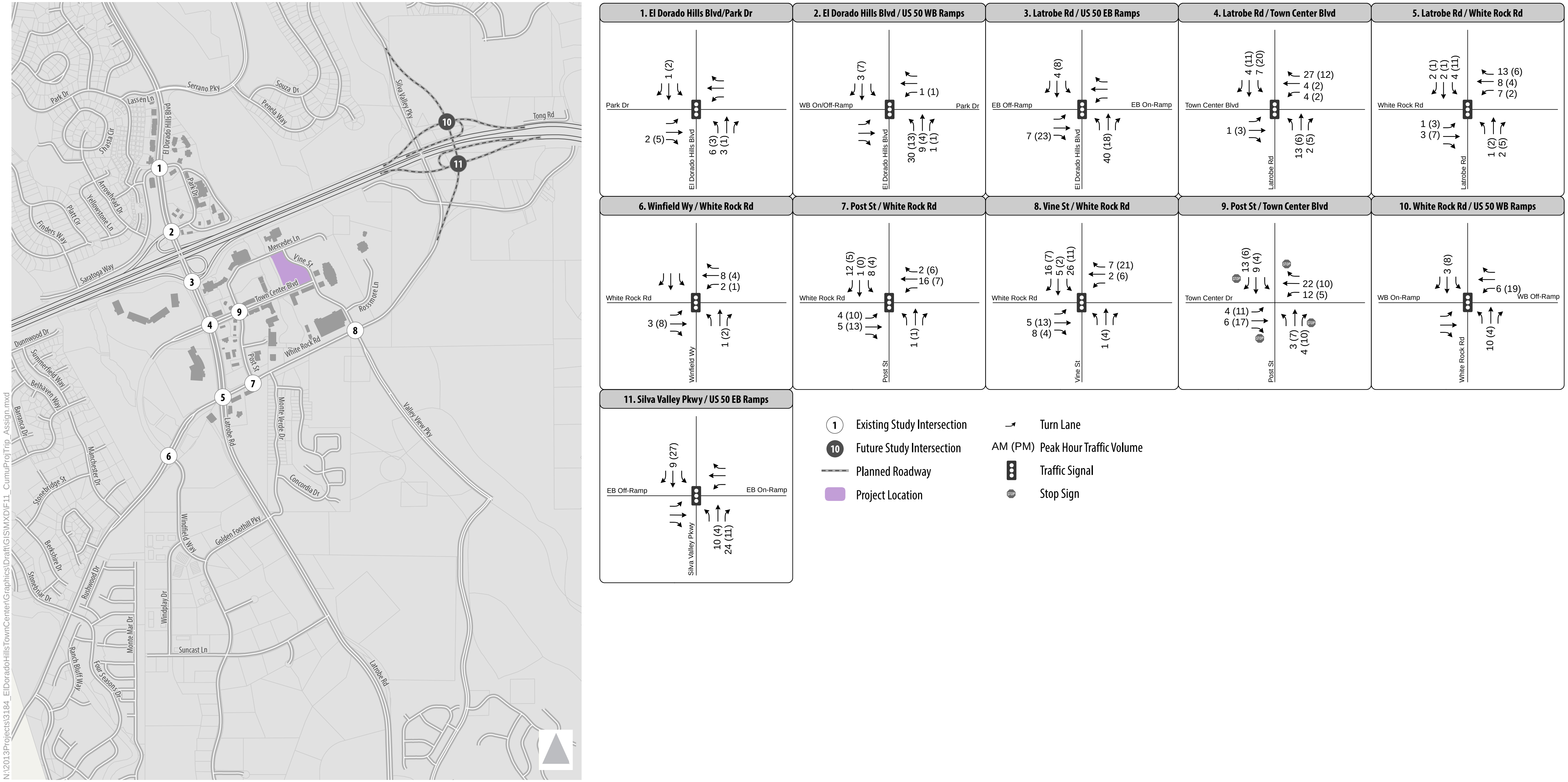
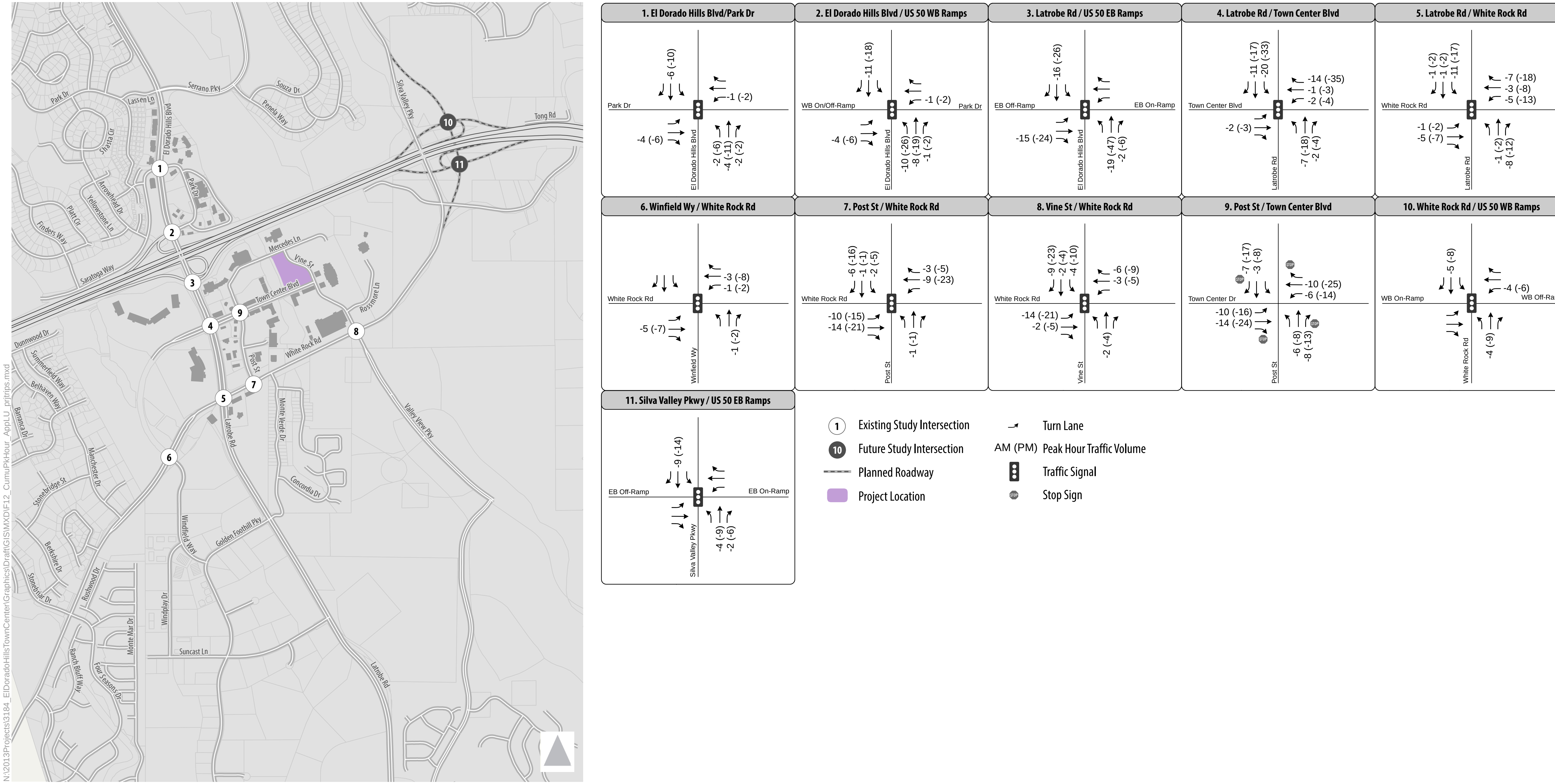


Figure 11

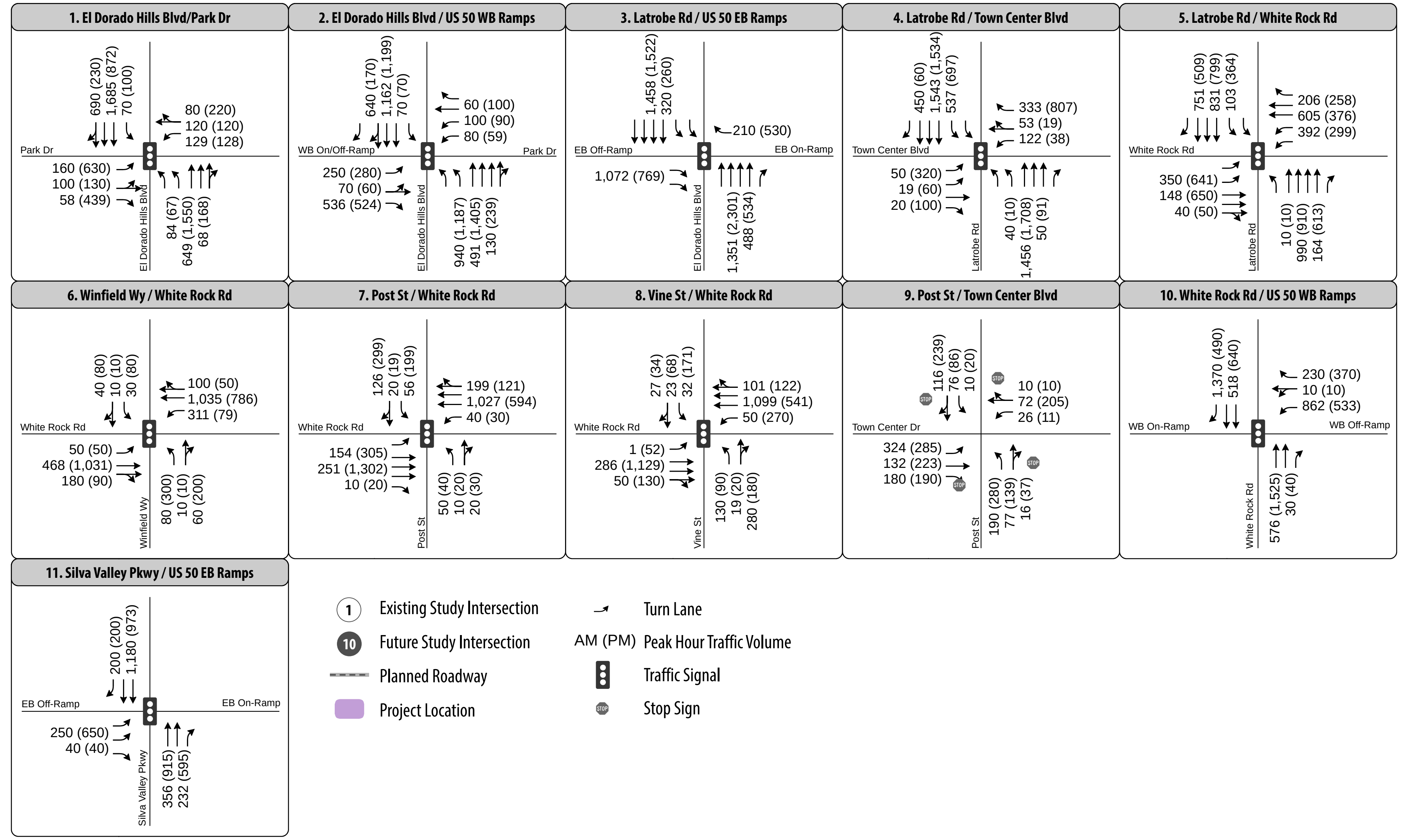
Peak Hour Traffic Volumes - Project Only Trip Assignment (Cumulative Conditions)



N:\2013Projects\3184_ElDoradoHillsTownCenter\Graphics\Draft\GIS\MXD\F12_CumuPkHour_AppLU_prjtrips.mxd

Figure 12

Peak Hour Traffic Volumes -
Approved Land Use Only Trip Assignment
(Cumulative Conditions)



N:\2013Projects\3184_ElDoradoHillsTownCenter\Graphics\Draft\GIS\MXD\F13_CumuPkHour_EPP.mxd

Figure 13

Peak Hour Traffic Volumes and Lane Configurations - Cumulative Plus Project Conditions

6.2 PEAK HOUR VEHICLE LEVEL OF SERVICE

6.2.1 INTERSECTIONS

Analysis results, which are presented in Table 12, indicate that most study intersections will operate acceptably under cumulative conditions, except for the following:

- El Dorado Hills Boulevard / Park Drive / Saratoga Way (Intersection 1) – This intersection will operate unacceptably at LOS F without or with the proposed project during the PM peak hour. Implementation of the proposed project would result in fewer trips using the intersection during the AM and PM peak hour compared land use currently approved for the project site. The reduced volume would result in lower delay with the proposed project.
- Latrobe Road / Town Center Boulevard (Intersection 17) – This intersection will operate unacceptably at LOS F without or with the proposed project during the PM peak hour. Implementation of the proposed project would result in fewer trips using the intersection during the PM peak hour compared land use currently approved for the project site. The reduced volume would result in about the same delay (slightly lower) with the proposed project.

TABLE 12: INTERSECTION LOS AND DELAY – CUMULATIVE PLUS PROJECT CONDITIONS

Intersection	Control	Cumulative Conditions (LOS/Delay)		Cumulative Plus Project (LOS/Delay)	
		AM	PM	AM	PM
1. El Dorado Hills Boulevard/Saratoga Way/Park Drive	Signal	D / 39	**F / 128**	D / 37	***F / 115***
2. El Dorado Hills Boulevard/US 50 WB Ramps	Signal	C / 32	D / 41	C / 33	D / 42
3. Latrobe Rd/US 50 EB Ramps	Signal	B / 14	B / 13	B / 14	B / 11
4. Latrobe Rd/Town Center Boulevard	Signal	E / 60	**F / 106**	E / 61	***F / 106***
5. Latrobe Rd/White Rock Rd	Signal	D / 41	E / 62	D / 42	E / 61
6. White Rock Rd/Winfield Way	Signal	C / 30	D / 43	C / 30	D / 43
7. White Rock Rd/Post St	Signal	C / 29	C / 34	C / 29	C / 34
8. White Rock Rd/Vine St /Valley View Parkway	Signal	C / 20	D / 37	B / 20	D / 37
9. Town Center Boulevard/Post Street	AWSC	B / 14	D / 33	C / 20	D / 30
10. Silva Valley Parkway/US 50 WB Ramps	Signal	D / 38	B / 17	D / 37	B / 17
11. Silva Valley Parkway/US 50 EB	Signal	8 / A	B / 16	A / 8	B / 18

Notes: SSSC = side-street stop-control, AWSC = all-way stop control

Bold and underlined text indicates LOS worse than established threshold. *Italic and underlined* text identifies a potential impact.

The average del average delay is measured in seconds per vehicle. For signalized and AWSC intersections, the delay shown is the average control delay for the overall intersection. For SSC intersections, the LOS and control delay for the worst movement is shown. Intersection LOS and delay is calculated based on the procedures and methodology contained in the HCM (TRB, 2000). Intersections 5-8,were analyzed in Synchro 7. Intersections 1-4 and 9-11 were analyzed in SimTraffic.

Source: Fehr & Peers, 2014

6.2.2 FREEWAY FACILITIES

Analysis results, which are presented in Table 13, indicate that all study freeway facilities will operate acceptably at LOS E or better under cumulative conditions without the proposed project. The capacity increasing projects from the County's 2013 CIP, which are documented in Table 9, include many projects that will add capacity of US 50, increase east/west parallel capacity, and add new interchange connections to US 50 that will provide alternatives to the existing US 50/El Dorado Hills Boulevard interchange. The following lists some of the more significant transportation improvements in the US 50 corridor:

Interchange Projects

- US 50/El Dorado Hills Boulevard Interchange Improvements (final improvement phases)
- US 50/Silva Valley Parkway Interchange (new connection to US 50)
- US 50/Empire Ranch Road Interchange (new connection to US 50)
- US 50/Bass Lake Road Interchange Upgrade
- US 50/Cambridge Road Interchange Upgrade

Mainline Projects

- Westbound US 50 interchange-to-interchange auxiliary lane (Bass Lake Road to Silva Valley Parkway)
- Westbound US 50 auxiliary lane (Silva Valley Parkway to Empire Ranch Road)
- Westbound US 50 interchange-to-interchange auxiliary lane (Silva Valley Parkway to El Dorado Hills Boulevard)
- Eastbound US 50 interchange-to-interchange auxiliary lane (El Dorado Hills Boulevard to Silva Valley Parkway)
- Westbound US 50 interchange-to-interchange auxiliary lane (Cambridge Drive to Bass Lake Road)
- Eastbound US 50 interchange-to-interchange auxiliary lane (Bass Lake Road to Cambridge Drive)

Arterial Roadway Projects

- Country Club Drive Extension from Bass Lake Road to Silva Valley Parkway
- Saratoga Way Extension from El Dorado Hills Boulevard to Iron Point Road
- Extension of Empire Ranch Road from US 50 to White Rock Road
- Latrobe Road Connector (new roadway between Latrobe Road and White Rock Road)

The westbound weaving sections between El Dorado Hills Boulevard and Empire Ranch Road will operate at LOS F during the AM peak hour without and with the proposed project, based on the HCM weave analysis method. However, analysis of the weaving section based on the Leisch Method (preferred by Caltrans District 3) indicates that these weave sections would operate at LOS D during the same period.

About 11 percent of project trips will have an origin/destination in Rancho Cordova or other areas to the west.

TABLE 13: PEAK HOUR LEVEL OF SERVICE – CUMULATIVE PLUS PROJECT CONDITIONS (FREEWAY)

Freeway	Segment	Facility Type	Cumulative Density[1] / LOS		Cumulative + Project Density[1] / LOS		Notes
			AM	PM	AM	PM	
US 50 EB	Latrobe Rd off-ramp	Diverge	28 / C	34 / D	28 / C	34 / D	
	El Dorado Hills Boulevard off-ramp	Diverge	21 / C	31 / D	21 / C	31 / D	
	El Dorado Hills Boulevard on-ramp to Silva Valley Pkwy off-ramp	Weave (HCM)	23 / C	38 / E	23 / C	41 / E	
		Weave (Leisch)	- / B	- / D	- / B	- / D	
		Basic					Outside the realm of weaving section analysis due to combination of weaving volume and segment length.
	Silva Valley Pkwy loop on-ramp	Merge	18 / B	26 / C	18 / B	25 / C	
	Silva Valley Pkwy slip-on ramp	Merge	17 / B	26 / D	17 / B	26 / C	
	Silva Valley Pkwy on-ramp to Bass Lake Rd off-ramp	Basic	21 / C	30 / D	21 / C	30 / D	
US 50 WB	Bass Lake Rd on-ramp to Silva Valley Pkwy off-ramp	Basic	26 / C	23 / C	26 / C	23 / C	Outside the realm of weaving section analysis due to combination of weaving volume and segment length.
	Silva Valley Pkwy Loop on-ramp	Merge	15 / B	14 / B	15 / B	14 / B	
	Silva Valley slip-on ramp to El Dorado Hills Boulevard off-ramp	Weave (HCM)	39 / E	27 / C	39 / E	27 / C	
		Weave (Leisch)	- / C		- / C		
		Basic		16 / B		15 / B	Outside the realm of weaving section analysis due to combination of weaving volume and segment length.
	El Dorado Hills on-ramp to Empire Ranch off-ramp	Weave (HCM)	**- / F**	34 / D	***- / F***	34 / D	
		Weave (Leisch)	- / D	- / C	- / D	- / C	

Notes: [1]Density reported as passenger cars per mile per pane. Density is not reported for LOS F operations or weave segments. Weave segment's operations are based on the HCM 2010 and Leisch Method. If the weave segment isoutside the realm of weaving it is analyzed as a basic segment. **Bold** text indicates LOS worse than established threshold. *Italic and underlined* text identifies a potential impact.

Source: Fehr & Peers, 2014

DRAFT

6.3 PEDESTRIAN AND BICYCLE CIRCULATION

Bicycle network improvements are planned within the study area. Figure 4 identifies planned bikeways presented in the *El Dorado Bicycle Transportation Plan, 2010 Update* and the *Sacramento Area Council of Governments (SACOG) Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) for 2035*. The following are planned improvement projects:

- El Dorado Hills Class I bike path - SMUD Corridor: Design and construct a Class I bike path between El Dorado Hills Boulevard and Silva Valley Parkway within the powerline easement operated by the Sacramento Municipal Utility District (SMUD). A portion of this project has been constructed between Silva Valley and New York Creek.
- Latrobe Road Class II bike lanes from Investment Boulevard to Deer Creek/SPTC
- Old Bass Lake Road – El Dorado Hills Boulevard to Bass Lake Road Connection, Phase 1: Use existing roadway as Class I path from Tong Road to Old Bass Lake Road
- Saratoga Way Extension Class II bike lanes included in extension of Saratoga Way from Finders Way to County Line. (Alternatively construct a Class I bike path prior to construction of extension of Saratoga Way to Iron Point Road) An informal trail exists connecting these roadways.
- Bass Lake Road Class II bike lanes from Green Valley Road to US 50
- Bike path parallel to US 50 on the north side – El Dorado Hills Boulevard to Bass Lake Road Connection, Phase 2: Connect Silva Valley Road to El Dorado Hills Village Center Shopping Center. As outlined below, the project will implement a portion of this bike path.
- El Dorado Hills Boulevard bike lanes, Phase 1: Saratoga Way to Governor Drive/St. Andrews
- El Dorado Hills Boulevard bike path, Phase 2: Utilizing an existing golf cart undercrossing of Serrano Parkway, extend the bike path from the current terminus at Serrano Parkway to Raley's Center. As outlined below, the proposed project will implement this improvement.
- El Dorado Hills Boulevard to Bass Lake Connection, Phase 1; Class III bike route on Tong Road, Class III bike route on Old Bass Lake Road.
- Green Valley Road Class II bike lanes from Francisco Drive to Pleasant Grove Middle School
- Harvard Way bike path from Clermont Road to El Dorado Hills Boulevard
- Silva Valley Parkway bike lanes from the new connection with White Rock Road to Green Valley Road
- SPTC/El Dorado Trail Class I bike path from Latrobe Road to County Line

- Class I bike path and US 50 Undercrossing or overcrossing between the El Dorado Hills Town Center and El Dorado Hills Village Center (not fully funded or listed in MTP/SCS).
- Class I bike path within the SMUD power line easement between El Dorado Hills Boulevard and Sophia Parkway (not fully funded or listed in the MTP/SCS)

The project will connect to existing bicycle and pedestrian facilities in the Town Center and will be located near the planned pedestrian overcrossing of US 50 (just east of the El Dorado Hills Interchange).

6.4 TRANSIT

Based on ridership data presented in the El Dorado Hills Community Transit Needs Assessment and US 50 Corridor Transit Operations Plan Final Report, 41,760 annual commute trips are made by El Dorado Hills residents using El Dorado Transit Commuter Service. Residents of El Dorado Hills account for about 72 percent of boardings at the El Dorado Hills Park-n-Ride lot (located in Town Center), which includes riders that park in the lot and riders that use other means to access the service (i.e., walk, bike, and drop-off). Therefore, about one annual commute trip is generated per El Dorado Hills resident, assuming a population of 42,100 (2010 Census) in El Dorado Hills. The project's 250 dwelling units could result in demand of about 650 annual commute trips (assuming a household population of 2.6 persons), or about 3 commute trips per weekday.

7.0 IMPACT STATEMENTS AND MITIGATION MEASURES

Project impacts were determined by comparing conditions with the project to conditions without the project in accordance with the established significance criteria presented in Section 3.2.

7.1 EXISTING PLUS PROJECT

Analysis results indicate that the addition of the project would significantly worsen unacceptable operations at one intersection and result in unacceptable operation at another study intersection. The following discusses these impacts and associated mitigation:

7.1.1 INTERSECTIONS

Impacts

Impact 1 - El Dorado Hills Boulevard/Saratoga Way/Park Drive (Intersection 1) – This intersection operates at LOS F without the project. According to established significance criteria, the project is projected to "significantly worsen" conditions, since it would add more than 10 trips to the intersection during the AM and PM peak hours. Unacceptable operations at this intersection are due primarily to poor lane utilization and inefficient traffic signal operation associated with temporary conditions during construction. **This is a significant impact**.

Impact 2 - El Dorado Hills Boulevard/US 50 WB Ramps (Intersection 2) – This intersection operates at LOS E without the project. The project results in unacceptable LOS F conditions during the AM peak hour. Unacceptable operations at this intersection are due primarily to poor lane utilization and inefficient traffic signal operation associated with temporary conditions during construction. **This is a significant impact**.

Mitigation

Mitigation 1 - El Dorado Hills Boulevard/Saratoga Way/Park Drive (Intersection 1) US 50/El Dorado Hills Boulevard interchange improvements, which are currently under construction, would result in acceptable LOS B and C operations at the El Dorado Hills Boulevard/Saratoga Way/Park Drive intersection during the AM and PM peak hours, respectively. The following lane configurations will be provided at the intersection with the interchange improvements:

- Two left-turn lanes, two through lanes, and a shared through right-turn lane on the northbound approach.
- One left-turn lane, two through lanes, and a shared through right-turn lane on the southbound approach. The interchange improvements will provide four receiving lanes southbound with the curb lane transitioning to the southbound to westbound US 50 on-ramp.
- One left-turn lane, a shared left-turn/through lane, and a separate right-turn lane on the eastbound approach.
- One left-turn lane and a shared through/right-turn lane on the westbound approach.

With this improvement, this impact would be **less than significant.**

This improvement will be completed prior to development in the project site. Therefore, payment of traffic impact mitigation fees will satisfy the project's fair share obligation towards this improvement.

Mitigation 2 - El Dorado Hills Boulevard/US 50 WB Ramps (Intersection 2) – Implementation of the US 50/El Dorado Hills Boulevard interchange improvements, which are currently under construction, would result in acceptable LOS C and D operations at the El Dorado Hills Boulevard/US 50 WB Ramps intersection during the AM and PM peak hours, respectively. The following lane configurations will be provided at the intersection with the interchange improvements:

- Two left-turn lanes, three through lanes, and a shared through right-turn lane on the northbound approach.
- One left-turn lane, three through lanes, and a right-turn lane on the southbound approach.
- One left-turn lane, a shared left-turn/through lane, and a separate right-turn lane on the eastbound approach. The right turn-lane will enter southbound El Dorado Hills Boulevard into its own lane.
- Two left-turn lanes, one through lane, and a right-turn lane on the westbound approach.

Mitigation 3 - With this improvement, this impact would be **less than significant.**

This improvement will be completed prior to development in the project site. Therefore, payment of traffic impact mitigation fees will satisfy the project's fair share obligation towards this improvement.

7.1.2 FREEWAY FACILITIES

The addition of project traffic will add traffic to US 50 under existing conditions.

Impacts

Impact 3 - The addition of the proposed project will add traffic to US 50 during the AM and PM Peak hour. However, the addition of project trips will not result in unacceptable operations. **This is a less than significant impact.**

Mitigation

Mitigation 4 - No mitigation required.

7.2 CUMULATIVE PLUS PROJECT

Implementation of the proposed project would alter study area traffic at intersection that would operate unacceptably without the project. The following discusses operations at these intersections:

7.2.1 INTERSECTIONS

Impacts

Impact 4 - El Dorado Hills Boulevard/Park Drive/Saratoga Way (Intersection 1) – This intersection will operate unacceptably at LOS F without or with the proposed project during the PM peak hour. Implementation of the proposed project would result in fewer trips using the intersection during the AM and PM peak hour compared land use currently approved for the project site. The reduced volume would result in lower delay with the proposed project. **This is a less than significant impact.**

Impact 5 - Latrobe Road/Town Center Boulevard (Intersection 4) – This intersection will operate unacceptably at LOS F without or with the proposed project during the PM peak hour. Implementation of the proposed project would result in fewer trips using the intersection during the PM peak hour compared land use currently approved for the project site. The reduced volume would result in about the same delay (slightly lower) with the proposed project. **This is a less than significant impact.**

Mitigation

Mitigation 5 - No mitigation required.

Mitigation 6 - No mitigation required.

7.2.2 FREEWAY FACILITIES

Analysis results indicate that the project would significantly worsen unacceptable operations on one study freeway facility. The following discusses this impact and associated mitigation:

Impact 6 - US 50 Westbound Weave Section (El Dorado Hills Boulevard to Empire Ranch Road) – The addition of project traffic would significantly worsen LOS F conditions at the US 50 westbound weave section between El Dorado Hills Boulevard and Empire Ranch Road. **This is a significant impact.**

Mitigation 6 - US 50 Westbound Weave Section (El Dorado Hills Boulevard to Empire Ranch Road) – Implement the Latrobe Road Connection (CIP Project Number 66166) as a four-lane roadway. With this improvement, this impact would be **less than significant**.

The Latrobe Road connection is in the County's 2013 CIP; however, specific design characteristics are not known at this time, so for the purposes of the transportation analysis, the Latrobe Road Connection was conservatively assumed as a two-lane connection.. The connection will improve accessibility for planned development south of US 50 and provide an alternative to the US 50/El Dorado Hills Boulevard Interchange and US 50 between El Dorado Hills Boulevard and Empire Ranch Road.

Since the Latrobe Road Connection is in the County's 2013 CIP, payment of traffic impact mitigation fees will satisfy the project's fair share obligation towards improvements at this intersection.

7.2.3 PEDESTRIAN AND BICYCLE FACILITIES

Impact 7 - Implementation of the proposed project will increase demand for pedestrian and bicycle facilities. The project is located in the Town Center Specific Plan, which is a mixed-use development. Placing the project near jobs and service will encourage walking and bicycling for trips that would ordinarily be made by auto if the project would located in a more remote location further from jobs and services. **This is a less than significant impact.**

Mitigation 7 - No mitigation required

7.2.4 TRANSIT

Impact 8 - Implementation of the proposed project will increase demand transit. As outlined in Section 6.4, the project could result in demand for about 650 annual commute trips (assuming a household population of 2.6 persons), or about 3 commute trips per weekday. This increase represents less than a two percent increase in El Dorado Transit Commuter Service, which is generally in line with historic population growth rates in El Dorado County. Consequently, the growth in these trips would not likely exceed the ability to serve this ridership growth through existing funding sources for transit that are tied to population growth. Project residents accessing the El Dorado Transit Commuter Service would likely walk to the El Dorado Hills park-n-ride lot. Consequently, implementation of the proposed project would not likely increase demand for the El Dorado Hills park-n-ride lot, which operates at capacity. **This is a less than significant impact.**

Mitigation 8 - No Mitigation Required

7.2.5 EMERGENCY ACCESS

Impact 9 - The proposed project will provide an emergency vehicle access on the west side of the project adjacent to the Town Center Lake that will extend between Town Center Boulevard and Mercedes Lane. This is a **less than significant impact**.

Mitigation 9 - No mitigation required

8.0 OTHER CONSIDERATIONS

8.1 INTERSECTION VEHICLE QUEUING EVALUATION

Tables 14 summarize estimated vehicle queues for the off ramps at the US 50/El Dorado Hills Boulevard interchange and the US 50/Silva Valley Parkway interchange. As shown, proposed storage will accommodate estimated vehicle queues. These results indicate that traffic operations on El Dorado Hills Boulevard and Silva Valley Parkway will not cause vehicles to back onto US 50 and impact freeway operations.

TABLE 14: 95TH PERCENTILE FREEWAY OFF-RAMP VEHICLE QUEUES – CUMULATIVE CONDITIONS

Freeway	Available Storage	95th Percentile Queue (feet)[1]			
		Cumulative Conditions		Cumulative + Project Conditions	
		AM	PM	AM	PM
US 50 EB off-ramp at Latrobe Road	1,680 ft	230	250	240	220
US 50 EB off-ramp at El Dorado Hills Boulevard	1,230 ft	–	–	–	–
US 50 WB off-ramp at El Dorado Hills Boulevard	1,300 ft	240	240	230	280
US 50 EB off-ramp at Silva Valley Parkway	1,470 ft	130	200	140	200
US 50 WB off-ramp at Silva Valley Parkway	1,350 ft	390	270	380	250

Notes: [1]95th percentile queue based on output from SimTraffic model. Values rounded to the nearest 25 feet. Greater queue (for either left or right movement) is reported.

Bold and underlined text indicates queue that exceeds available.

" – " No queuing reported for free movements.

Source: Fehr & Peers, 2014

APPENDIX A:

Existing Conditions Technical Calculations

All Traffic Data

(916) 771-8700

City of El Dorado Hills
Bicycles on Bank 1
Heavy Vehicles on Bank 2

File Name : 12-7225-005 El Dorado Hills-Park
Site Code : 00000000
Start Date : 5/22/2012
Page No : 1

Groups Printed- Unshifted

	El Dorado Hills Blvd Southbound					Park Dr Westbound					El Dorado Hills Blvd Northbound					Eastbound						
Start Time	Left	Thr	Rig	Ped	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00	11	356	0	0	367	40	0	7	0	47	0	124	35	0	159	0	0	0	0	0	573	573
07:15	17	459	0	0	476	50	0	12	0	62	0	122	47	0	169	0	0	0	0	0	707	707
07:30	15	484	0	0	499	55	0	9	0	64	0	139	40	0	179	0	0	0	0	0	742	742
07:45	21	532	0	0	553	62	0	16	0	78	0	182	53	0	235	0	0	0	0	0	866	866
Total	64	1831	0	0	1895	207	0	44	0	251	0	567	175	0	742	0	0	0	0	0	2888	2888
08:00	11	467	0	0	478	51	0	9	0	60	0	176	45	0	221	0	0	0	0	0	759	759
08:15	13	372	0	0	385	39	0	16	0	55	0	163	48	0	211	0	0	0	0	0	651	651
08:30	12	382	0	0	394	35	0	13	0	48	0	168	40	0	208	0	0	0	0	0	650	650
08:45	13	370	0	0	383	44	0	5	0	49	0	204	39	0	243	0	0	0	0	0	675	675
Total	49	1591	0	0	1640	169	0	43	0	212	0	711	172	0	883	0	0	0	0	0	2735	2735
16:00	9	208	0	0	217	55	0	27	0	82	0	320	91	0	411	0	0	0	0	0	710	710
16:15	10	202	0	0	212	57	0	20	0	77	0	311	73	0	384	0	0	0	0	0	673	673
16:30	14	235	0	0	249	45	0	20	0	65	0	359	72	0	431	0	0	0	0	0	745	745
16:45	15	209	0	0	224	41	0	24	2	65	0	342	75	0	417	0	0	0	0	2	706	708
Total	48	854	0	0	902	198	0	91	2	289	0	1332	311	0	1643	0	0	0	0	2	2834	2836
17:00	18	245	0	3	263	60	0	22	0	82	0	441	94	0	535	0	0	0	0	3	880	883
17:15	18	232	0	0	250	55	0	28	0	83	0	438	79	0	517	0	0	0	0	0	850	850
17:30	16	215	0	0	231	41	0	20	0	61	0	423	86	0	509	0	0	0	0	0	801	801
17:45	9	236	0	0	245	45	0	21	0	66	0	388	67	0	455	0	0	0	0	0	766	766
Total	61	928	0	3	989	201	0	91	0	292	0	1690	326	0	2016	0	0	0	0	3	3297	3300
Grand Total	222	5204	0	3	5426	775	0	269	2	1044	0	4300	984	0	5284	0	0	0	0	5	11754	11759
Apprch %	4.1	95.9	0			74.2	0	25.8			0	81.4	18.6			0	0	0				
Total %	1.9	44.3	0		46.2	6.6	0	2.3		8.9	0	36.6	8.4		45	0	0	0	0	0	100	

All Traffic Data

(916) 771-8700

City of El Dorado Hills
Bicycles on Bank 1
Heavy Vehicles on Bank 2

File Name : 12-7225-005 El Dorado Hills-Park
Site Code : 00000000
Start Date : 5/22/2012
Page No : 2

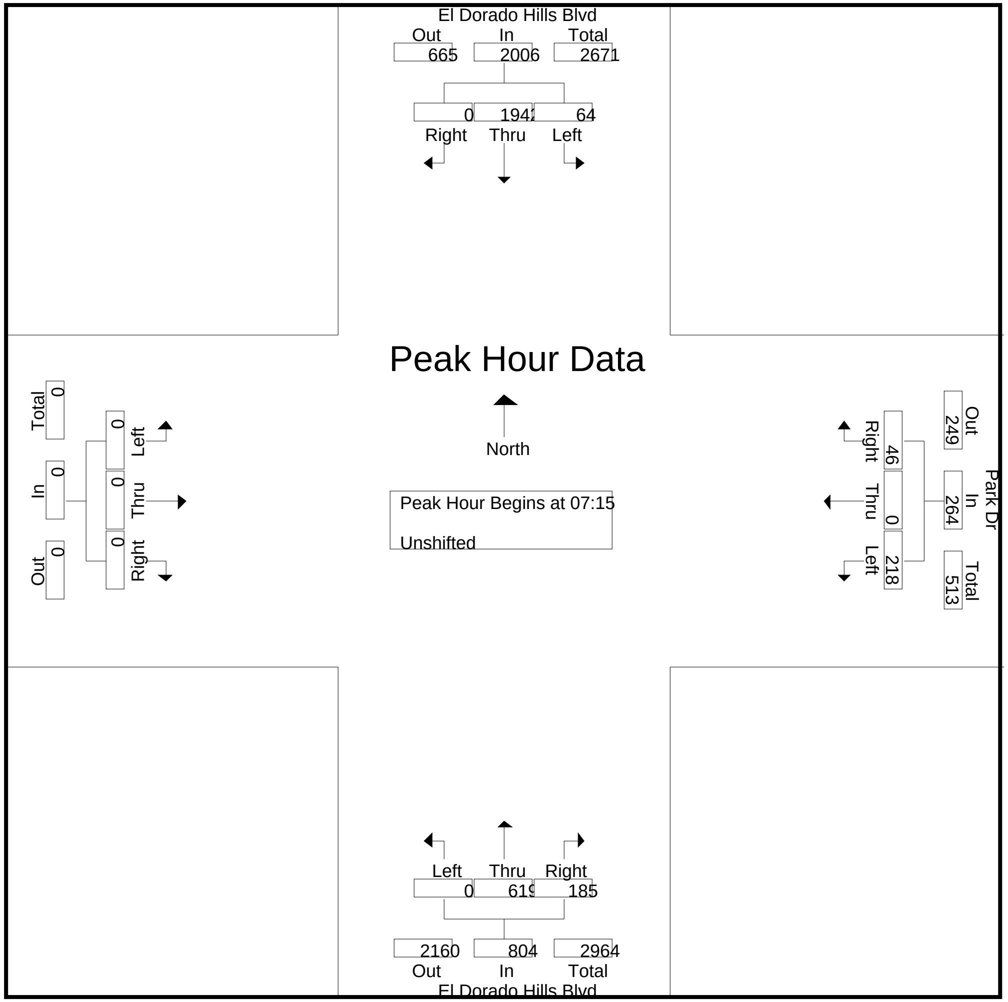
	El Dorado Hills Blvd Southbound				Park Dr Westbound				El Dorado Hills Blvd Northbound				Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15																	
07:15	17	459	0	476	50	0	12	62	0	122	47	169	0	0	0	0	707
07:30	15	484	0	499	55	0	9	64	0	139	40	179	0	0	0	0	742
07:45	**21**	**532**	0	**553**	**62**	0	**16**	**78**	0	**182**	**53**	**235**	0	0	0	0	**866**
08:00	11	467	0	478	51	0	9	60	0	176	45	221	0	0	0	0	759
Total Volume	64	1942	0	2006	218	0	46	264	0	619	185	804	0	0	0	0	3074
% App. Total	3.2	96.8	0		82.6	0	17.4		0	77	23		0	0	0		
PHF	.762	.913	.000	.907	.879	.000	.719	.846	.000	.850	.873	.855	.000	.000	.000	.000	.887

All Traffic Data

(916) 771-8700

City of El Dorado Hills
Bicycles on Bank 1
Heavy Vehicles on Bank 2

File Name : 12-7225-005 El Dorado Hills-Park
Site Code : 00000000
Start Date : 5/22/2012
Page No : 3



All Traffic Data

(916) 771-8700

City of El Dorado Hills
Bicycles on Bank 1
Heavy Vehicles on Bank 2

File Name : 12-7225-005 El Dorado Hills-Park
Site Code : 00000000
Start Date : 5/22/2012
Page No : 4

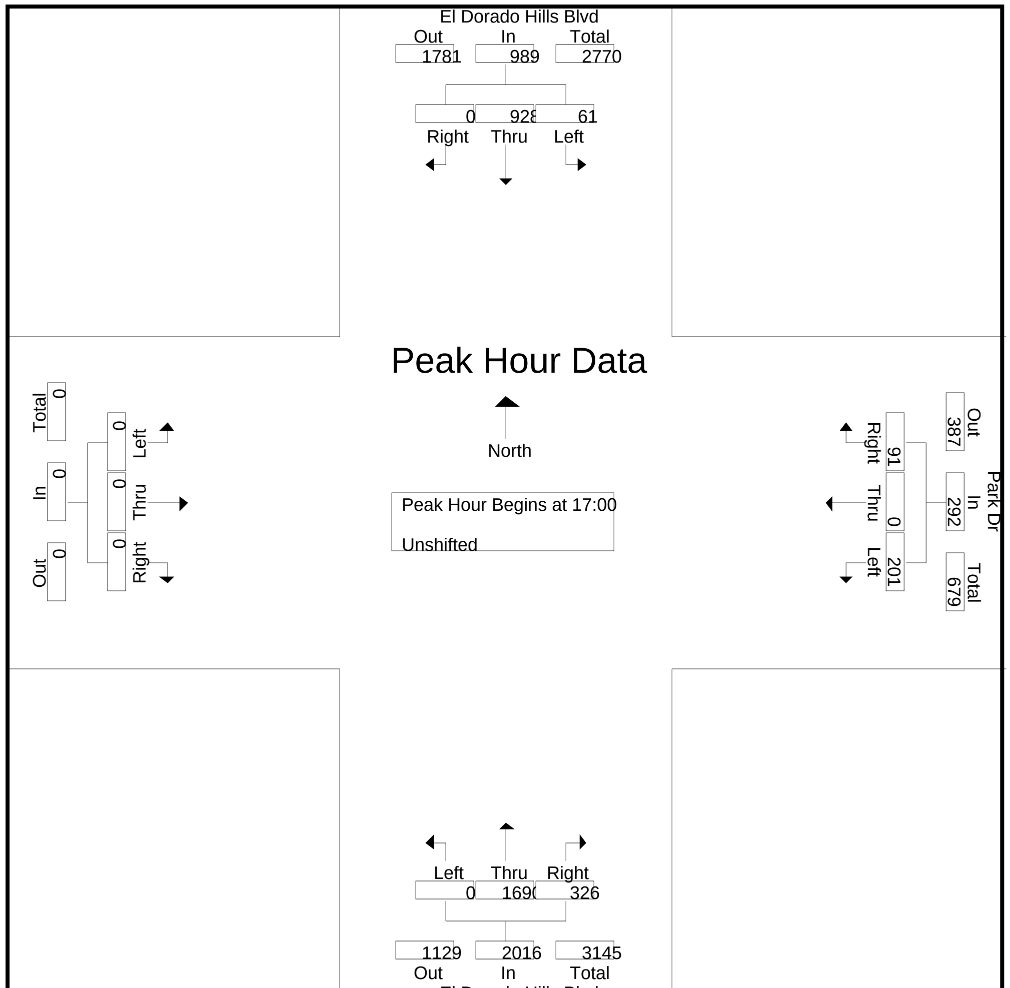
	El Dorado Hills Blvd Southbound				Park Dr Westbound				El Dorado Hills Blvd Northbound				Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	**18**	**245**	0	**263**	**60**	0	22	82	0	**441**	**94**	**535**	0	0	0	0	**880**
17:15	18	232	0	250	55	0	**28**	**83**	0	438	79	517	0	0	0	0	850
17:30	16	215	0	231	41	0	20	61	0	423	86	509	0	0	0	0	801
17:45	9	236	0	245	45	0	21	66	0	388	67	455	0	0	0	0	766
Total Volume	61	928	0	989	201	0	91	292	0	1690	326	2016	0	0	0	0	3297
% App. Total	6.2	93.8	0		68.8	0	31.2		0	83.8	16.2		0	0	0		
PHF	.847	.947	.000	.940	.838	.000	.813	.880	.000	.958	.867	.942	.000	.000	.000	.000	.937

All Traffic Data

(916) 771-8700

City of El Dorado Hills
Bicycles on Bank 1
Heavy Vehicles on Bank 2

File Name : 12-7225-005 El Dorado Hills-Park
Site Code : 00000000
Start Date : 5/22/2012
Page No : 5



All Traffic Data

(916) 771-8700

City of El Dorado Hills
Bicycles on Bank 1
Heavy Vehicles on Bank 2

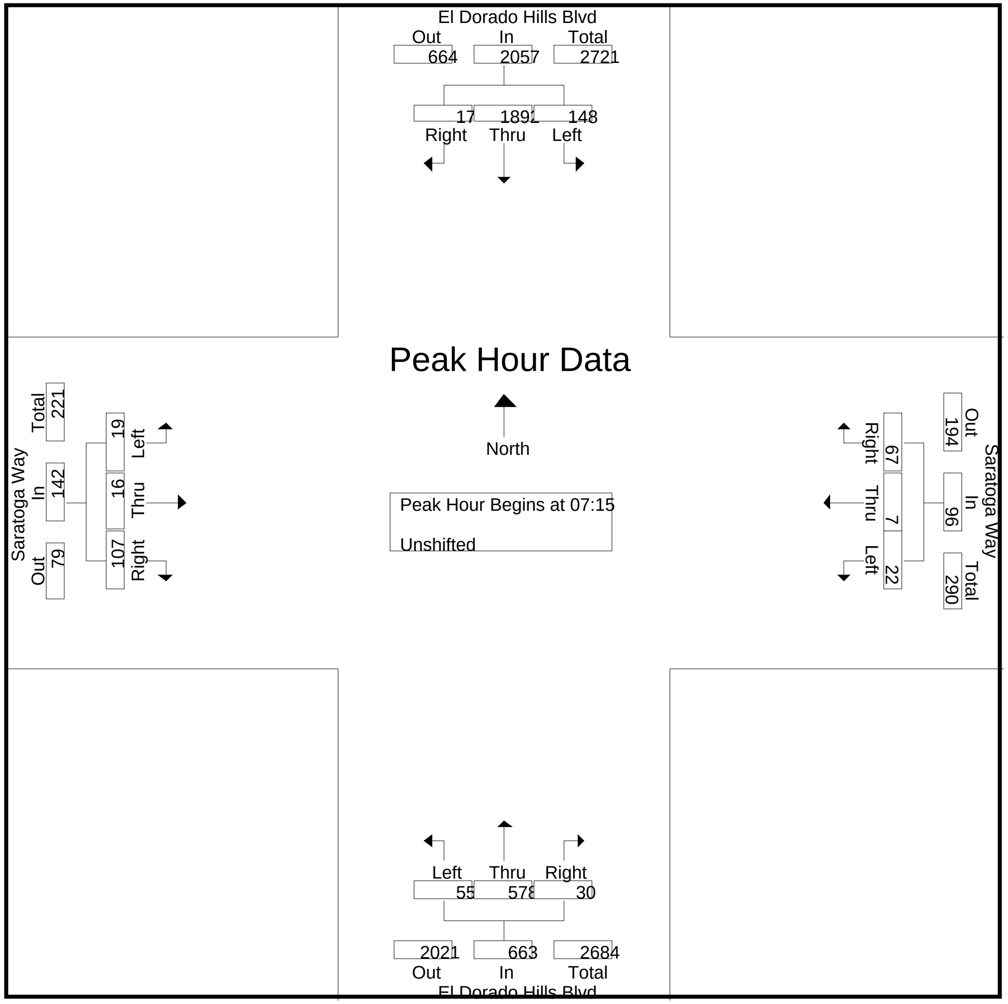
File Name : 12-7225-004 El Dorado Hills-Saratoga
Site Code : 00000000
Start Date : 5/22/2012
Page No : 1

Groups Printed- Unshifted

	El Dorado Hills Blvd Southbound					Saratoga Way Westbound					El Dorado Hills Blvd Northbound					Saratoga Way Eastbound							
Start Time	Left	Thr	Rig	Ped	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00	32	372	6	0	410	4	1	10	0	15	8	124	2	0	134	7	2	21	0	30	0	589	589
07:15	34	458	4	0	496	5	1	11	0	17	11	108	5	0	124	9	4	14	0	27	0	664	664
07:30	35	474	4	1	513	7	0	14	0	21	11	132	7	0	150	3	7	36	0	46	1	730	731
07:45	47	541	3	0	591	3	2	15	0	20	16	172	10	0	198	5	2	23	0	30	0	839	839
Total	148	1845	17	1	2010	19	4	50	0	73	46	536	24	0	606	24	15	94	0	133	1	2822	2823
08:00	32	419	6	0	457	7	4	27	0	38	17	166	8	0	191	2	3	34	0	39	0	725	725
08:15	38	365	1	1	404	4	1	10	0	15	16	162	13	0	191	5	1	24	0	30	1	640	641
08:30	29	348	5	0	382	4	5	17	0	26	11	150	13	0	174	5	3	33	0	41	0	623	623
08:45	35	325	4	2	364	3	3	18	1	24	30	166	16	0	212	4	5	44	0	53	3	653	656
Total	134	1457	16	3	1607	18	13	72	1	103	74	644	50	0	768	16	12	135	0	163	4	2641	2645
16:00	36	197	3	0	236	14	2	50	0	66	14	308	14	0	336	4	6	10	0	20	0	658	658
16:15	31	177	8	0	216	7	4	72	0	83	20	308	16	0	344	10	5	20	0	35	0	678	678
16:30	45	230	5	0	280	11	7	58	0	76	19	336	10	0	365	5	6	19	0	30	0	751	751
16:45	36	216	5	2	257	7	3	66	2	76	22	333	24	0	379	10	4	15	0	29	4	741	745
Total	148	820	21	2	989	39	16	246	2	301	75	1285	64	0	1424	29	21	64	0	114	4	2828	2832
17:00	33	211	6	0	250	20	6	67	0	93	24	433	17	0	474	11	3	17	0	31	0	848	848
17:15	41	212	7	1	260	14	4	60	0	78	37	409	11	0	457	8	5	19	0	32	1	827	828
17:30	41	199	6	1	246	11	7	71	1	89	27	410	15	0	452	8	3	25	0	36	2	823	825
17:45	25	201	4	0	230	10	5	68	0	83	23	378	16	0	417	11	2	11	0	24	0	754	754
Total	140	823	23	2	986	55	22	266	1	343	111	1630	59	0	1800	38	13	72	0	123	3	3252	3255
Grand Total	570	4945	77	8	5592	131	55	634	4	820	306	4095	197	0	4598	107	61	365	0	533	12	11543	11555
Apprch %	10.2	88.4	1.4			16	6.7	77.3			6.7	89.1	4.3			20.1	11.4	68.5					
Total %	4.9	42.8	0.7		48.4	1.1	0.5	5.5		7.1	2.7	35.5	1.7		39.8	0.9	0.5	3.2		4.6	0.1	99.9	

	El Dorado Hills Blvd Southbound				Saratoga Way Westbound				El Dorado Hills Blvd Northbound				Saratoga Way Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15																	
07:15	34	458	4	496	5	1	11	17	11	108	5	124	**9**	4	14	27	664
07:30	35	474	4	513	**7**	0	14	21	11	132	7	150	3	**7**	**36**	**46**	730
07:45	**47**	**541**	3	**591**	3	2	15	20	16	**172**	**10**	**198**	5	2	23	30	**839**
08:00	32	419	**6**	457	7	**4**	**27**	**38**	**17**	166	8	191	2	3	34	39	725
Total Volume	148	1892	17	2057	22	7	67	96	55	578	30	663	19	16	107	142	2958

% App. Total	7.2	92	0.8		22.9	7.3	69.8		8.3	87.2	4.5		13.4	11.3	75.4		
PHF	.787	.874	.708	.870	.786	.438	.620	.632	.809	.840	.750	.837	.528	.571	.743	.772	.881



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 17:00

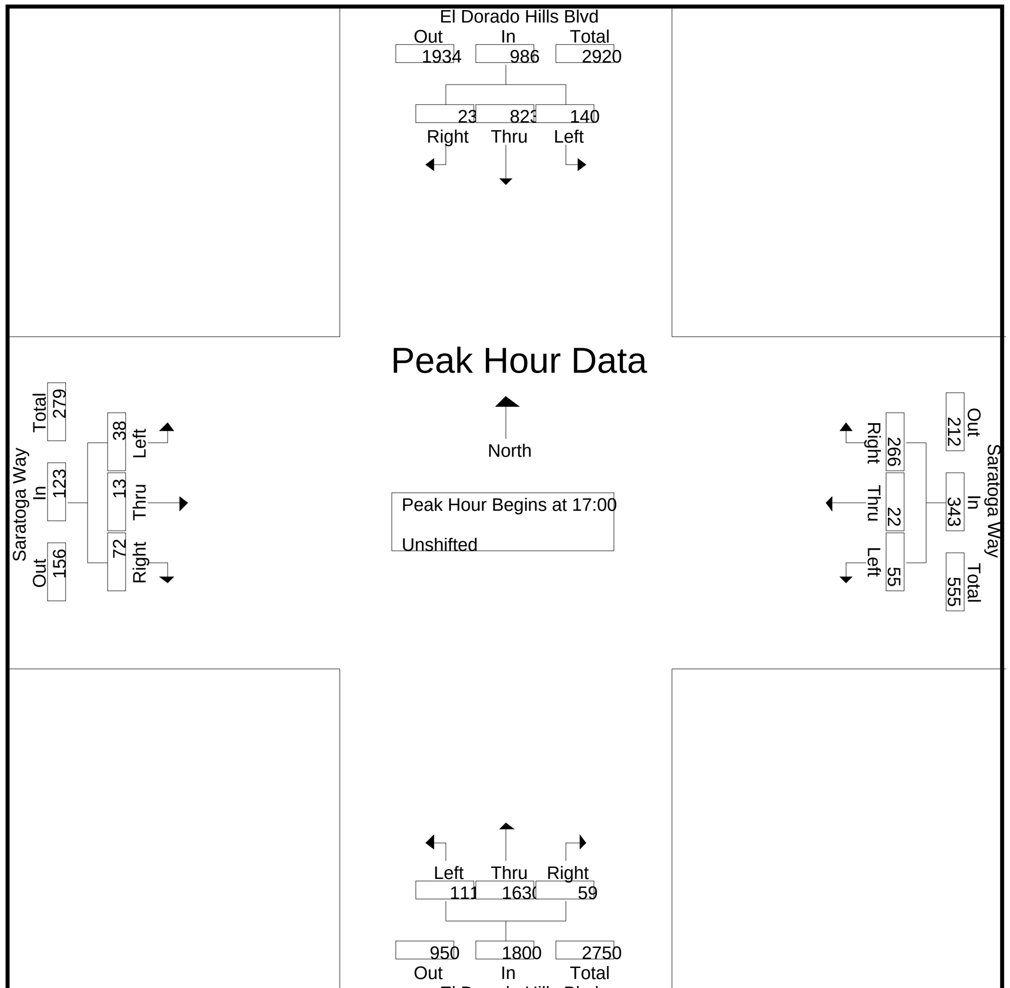
17:00	33	211	6	250	**20**	6	67	**93**	24	**433**	**17**	**474**	**11**	3	17	31	**848**
17:15	**41**	**212**	**7**	**260**	14	4	60	78	**37**	409	11	457	8	**5**	19	32	827
17:30	41	199	6	246	11	**7**	**71**	89	27	410	15	452	8	3	**25**	**36**	823
17:45	25	201	4	230	10	5	68	83	23	378	16	417	11	2	11	24	754
Total Volume	140	823	23	986	55	22	266	343	111	1630	59	1800	38	13	72	123	3252
% App. Total	14.2	83.5	2.3		16	6.4	77.6		6.2	90.6	3.3		30.9	10.6	58.5		
PHF	.854	.971	.821	.948	.688	.786	.937	.922	.750	.941	.868	.949	.864	.650	.720	.854	.959

All Traffic Data

(916) 771-8700

City of El Dorado Hills
Bicycles on Bank 1
Heavy Vehicles on Bank 2

File Name : 12-7225-004 El Dorado Hills-Saratoga
Site Code : 00000000
Start Date : 5/22/2012
Page No : 3



All Traffic Data

(916) 771-8700

City of El Dorado Hills
Bicycles on Bank 1
Heavy Vehicles on Bank 2

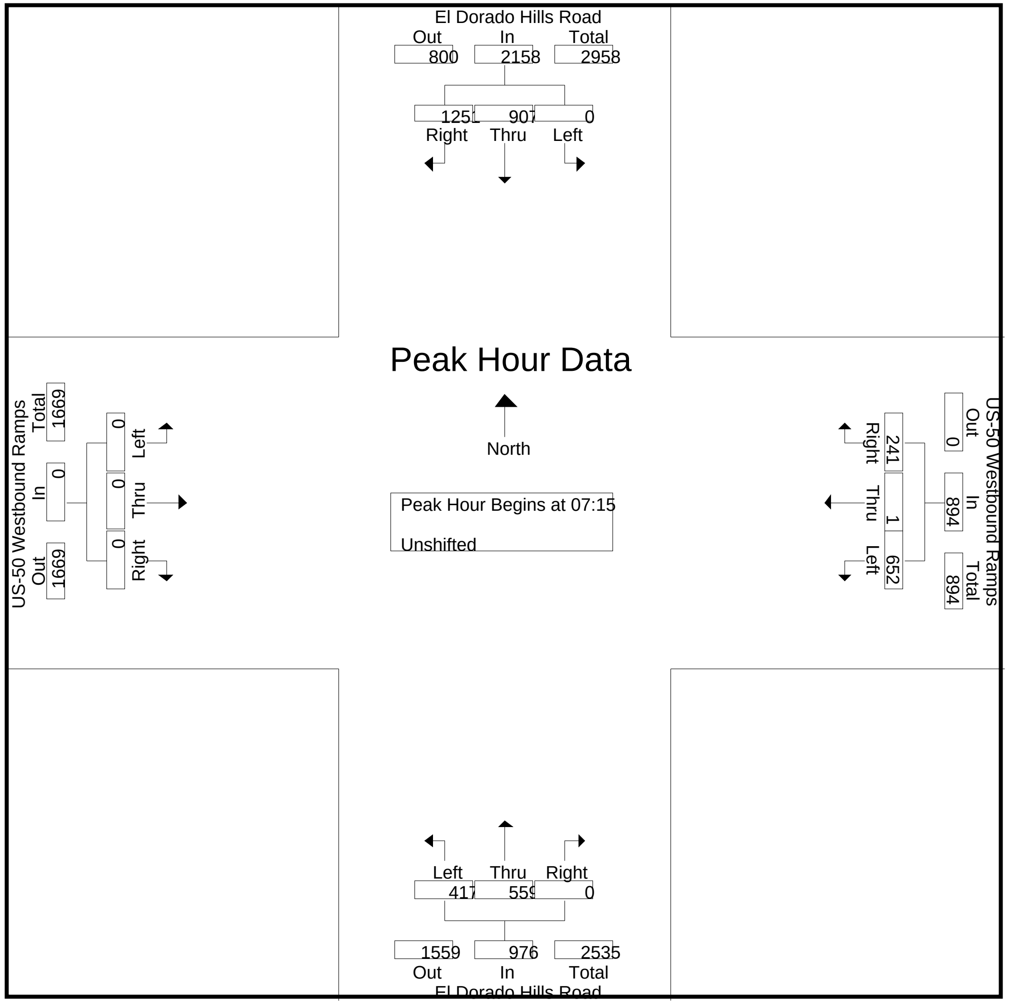
File Name : 12-7225-006 El Dorado Hills-US50 WB Ramps
Site Code : 00000000
Start Date : 5/22/2012
Page No : 1

Groups Printed- Unshifted

	El Dorado Hills Road Southbound					US-50 Westbound Ramps Westbound					El Dorado Hills Road Northbound					US-50 Westbound Ramps Eastbound							
Start Time	Left	Thr	Rig	Ped	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00	0	114	286	0	400	117	0	43	0	160	85	122	0	0	207	0	0	0	0	0	0	767	767
07:15	0	192	328	0	520	137	0	57	0	194	90	108	0	0	198	0	0	0	0	0	0	912	912
07:30	0	197	331	0	528	145	0	51	0	196	101	124	0	0	225	0	0	0	0	0	0	949	949
07:45	0	295	320	0	615	207	1	70	1	278	100	173	0	0	273	0	0	0	0	0	1	1166	1167
Total	0	798	1265	0	2063	606	1	221	1	828	376	527	0	0	903	0	0	0	0	0	1	3794	3795
08:00	0	223	272	0	495	163	0	63	0	226	126	154	0	0	280	0	0	0	0	0	0	1001	1001
08:15	0	180	244	0	424	127	0	63	0	190	107	150	0	0	257	0	0	0	0	0	0	871	871
08:30	0	167	239	0	406	100	0	41	1	141	144	156	0	0	300	0	0	0	0	0	1	847	848
08:45	0	207	214	0	421	124	0	53	0	177	102	188	0	0	290	0	0	0	0	0	0	888	888
Total	0	777	969	0	1746	514	0	220	1	734	479	648	0	0	1127	0	0	0	0	0	1	3607	3608
16:00	0	127	139	0	266	72	0	48	0	120	240	352	0	0	592	0	0	0	0	0	0	978	978
16:15	0	151	111	0	262	58	2	55	1	115	181	341	0	0	522	0	0	0	0	0	1	899	900
16:30	0	131	130	0	261	60	0	48	0	108	311	381	0	0	692	0	0	0	0	0	0	1061	1061
16:45	0	142	120	0	262	78	0	41	3	119	214	385	0	0	599	0	0	0	0	0	3	980	983
Total	0	551	500	0	1051	268	2	192	4	462	946	1459	0	0	2405	0	0	0	0	0	4	3918	3922
17:00	0	182	127	0	309	61	0	65	0	126	322	457	0	0	779	0	0	0	0	0	0	1214	1214
17:15	0	153	124	0	277	92	1	69	1	162	262	443	0	0	705	0	0	0	0	0	1	1144	1145
17:30	0	141	112	0	253	62	0	51	1	113	251	456	0	0	707	0	0	0	0	0	1	1073	1074
17:45	0	152	124	0	276	82	0	60	0	142	186	393	0	0	579	0	0	0	0	0	0	997	997
Total	0	628	487	0	1115	297	1	245	2	543	1021	1749	0	0	2770	0	0	0	0	0	2	4428	4430
Grand Total	0	2754	3221	0	5975	1685	4	878	8	2567	2822	4383	0	0	7205	0	0	0	0	0	8	15747	15755
Apprch %	0	46.1	53.9			65.6	0.2	34.2			39.2	60.8	0			0	0	0					
Total %	0	17.5	20.5		37.9	10.7	0	5.6		16.3	17.9	27.8	0		45.8	0	0	0		0	0.1	99.9	

	El Dorado Hills Road Southbound				US-50 Westbound Ramps Westbound				El Dorado Hills Road Northbound				US-50 Westbound Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15																	
07:15	0	192	328	520	137	0	57	194	90	108	0	198	0	0	0	0	912
07:30	0	197	**331**	528	145	0	51	196	101	124	0	225	0	0	0	0	949
07:45	0	**295**	320	**615**	**207**	**1**	**70**	**278**	100	**173**	0	273	0	0	0	0	**1166**
08:00	0	223	272	495	163	0	63	226	**126**	154	0	**280**	0	0	0	0	1001
Total Volume	0	907	1251	2158	652	1	241	894	417	559	0	976	0	0	0	0	4028

% App. Total	0	42	58		72.9	0.1	27		42.7	57.3	0		0	0	0		
PHF	.000	.769	.945	.877	.787	.250	.861	.804	.827	.808	.000	.871	.000	.000	.000	.000	.864



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 17:00

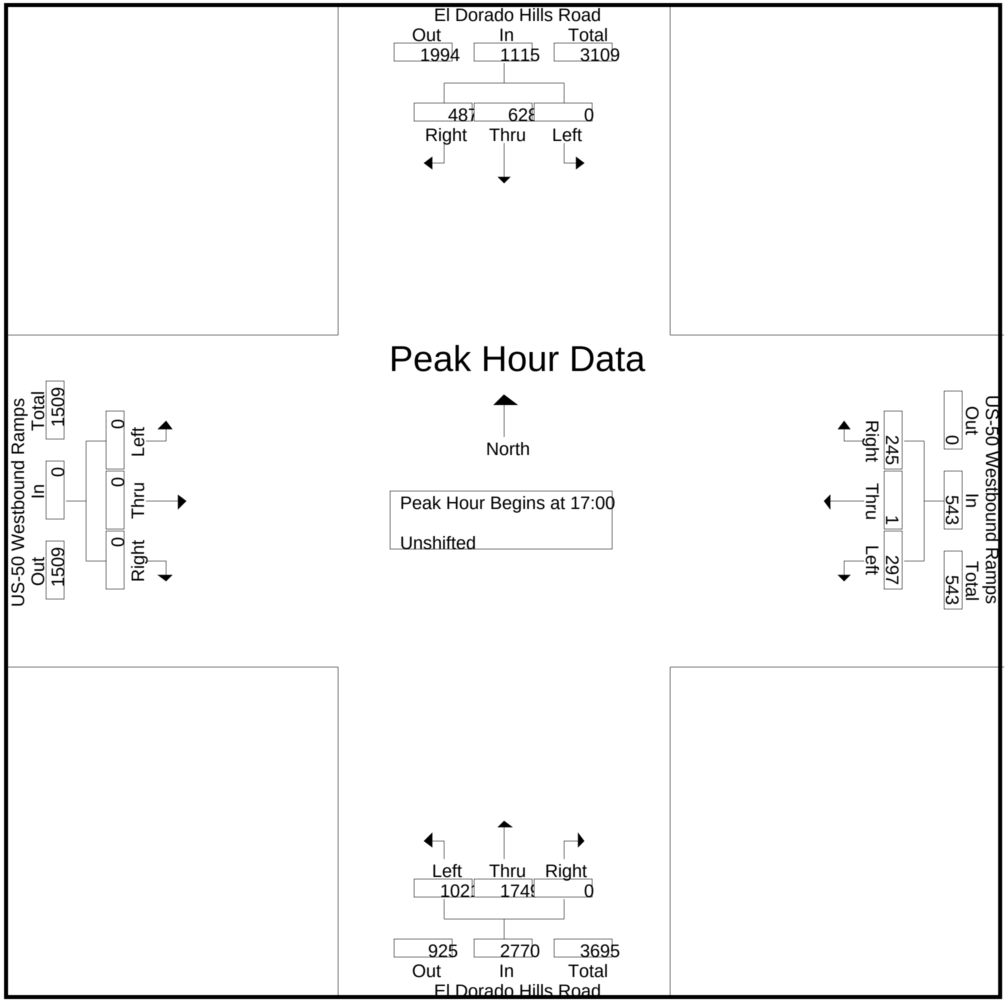
17:00	0	**182**	**127**	**309**	61	0	65	126	**322**	**457**	0	**779**	0	0	0	0	**1214**
17:15	0	153	124	277	**92**	**1**	**69**	**162**	262	443	0	705	0	0	0	0	1144
17:30	0	141	112	253	62	0	51	113	251	456	0	707	0	0	0	0	1073
17:45	0	152	124	276	82	0	60	142	186	393	0	579	0	0	0	0	997
Total Volume	0	628	487	1115	297	1	245	543	1021	1749	0	2770	0	0	0	0	4428
% App. Total	0	56.3	43.7		54.7	0.2	45.1		36.9	63.1	0		0	0	0		
PHF	.000	.863	.959	.902	.807	.250	.888	.838	.793	.957	.000	.889	.000	.000	.000	.000	.912

All Traffic Data

(916) 771-8700

City of El Dorado Hills
Bicycles on Bank 1
Heavy Vehicles on Bank 2

File Name : 12-7225-006 El Dorado Hills-US50 WB Ramps
Site Code : 00000000
Start Date : 5/22/2012
Page No : 3



All Traffic Data

(916) 771-8700

City of El Dorado Hills
Bicycles on Bank 1
Heavy Vehicles on Bank 2

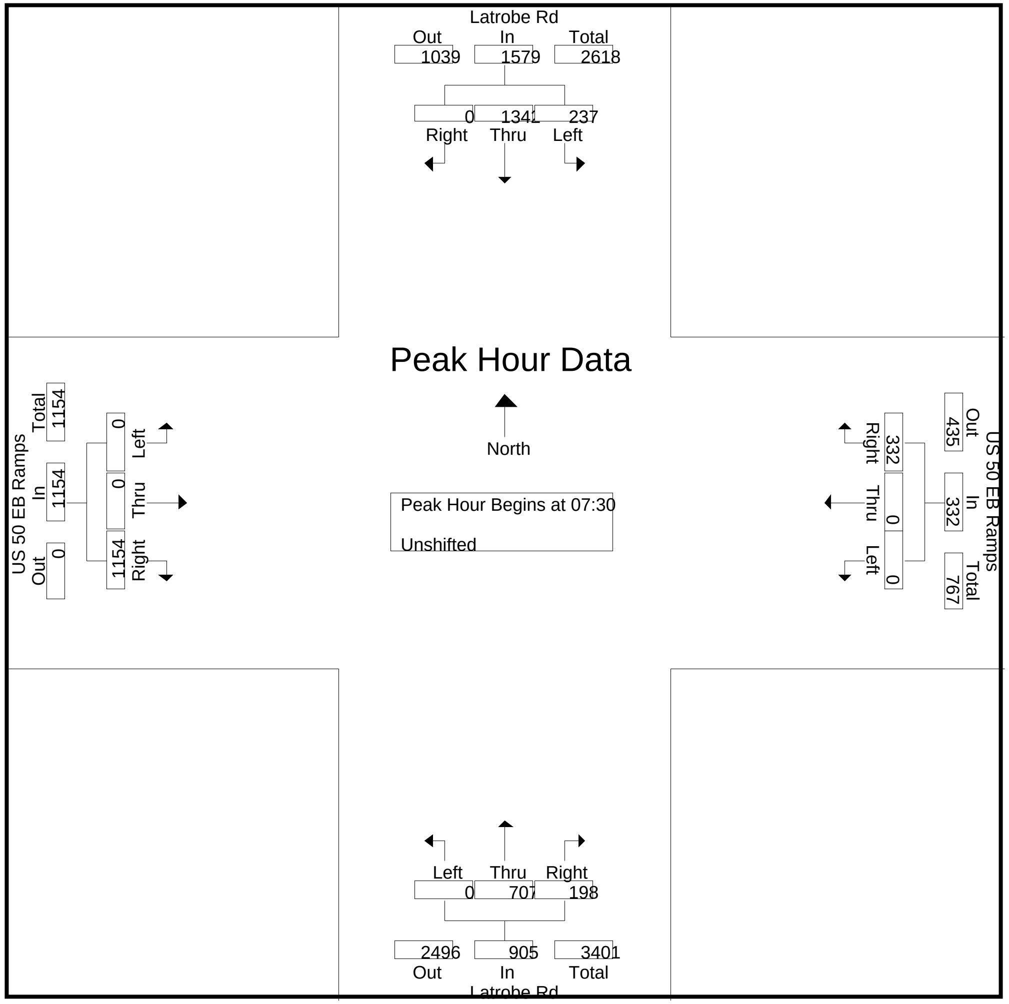
File Name : 12-7225-007 Latrobe-US50 EB Ramps
Site Code : 00000000
Start Date : 5/22/2012
Page No : 1

Groups Printed- Unshifted

	Latrobe Rd Southbound					US 50 EB Ramps Westbound					Latrobe Rd Northbound					US 50 EB Ramps Eastbound							
Start Time	Left	Thr	Rig	Ped	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00	37	198	0	0	235	0	0	65	0	65	0	147	43	0	190	0	0	209	0	209	0	699	699
07:15	52	264	0	0	316	0	0	52	0	52	0	132	38	0	170	0	0	238	0	238	0	776	776
07:30	71	302	0	0	373	0	0	74	0	74	0	154	47	0	201	0	0	256	0	256	0	904	904
07:45	83	398	0	0	481	0	0	96	1	96	0	167	42	0	209	0	0	309	0	309	1	1095	1096
Total	243	1162	0	0	1405	0	0	287	1	287	0	600	170	0	770	0	0	1012	0	1012	1	3474	3475
08:00	48	362	0	0	410	0	0	85	0	85	0	187	50	0	237	0	0	284	0	284	0	1016	1016
08:15	35	280	0	0	315	0	0	77	0	77	0	199	59	0	258	0	0	305	0	305	0	955	955
08:30	41	230	0	0	271	0	0	83	1	83	0	214	63	0	277	0	0	225	0	225	1	856	857
08:45	37	280	0	0	317	0	0	78	0	78	0	211	39	0	250	0	0	222	0	222	0	867	867
Total	161	1152	0	0	1313	0	0	323	1	323	0	811	211	0	1022	0	0	1036	0	1036	1	3694	3695
16:00	38	160	0	0	198	0	0	202	0	202	0	402	144	0	546	0	0	146	0	146	0	1092	1092
16:15	47	176	0	0	223	0	0	185	1	185	0	334	123	0	457	0	0	174	0	174	1	1039	1040
16:30	38	145	0	0	183	0	0	235	0	235	0	432	182	0	614	0	0	181	0	181	0	1213	1213
16:45	44	175	0	0	219	0	0	221	0	221	0	405	179	0	584	0	0	197	0	197	0	1221	1221
Total	167	656	0	0	823	0	0	843	1	843	0	1573	628	0	2201	0	0	698	0	698	1	4565	4566
17:00	77	168	0	0	245	0	0	251	1	251	0	542	196	0	738	0	0	160	0	160	1	1394	1395
17:15	40	201	0	0	241	0	0	170	1	170	0	522	226	0	748	0	0	202	0	202	1	1361	1362
17:30	40	155	0	0	195	0	0	279	1	279	0	387	146	0	533	0	0	195	0	195	1	1202	1203
17:45	54	198	0	0	252	0	0	249	0	249	0	336	134	0	470	0	0	212	0	212	0	1183	1183
Total	211	722	0	0	933	0	0	949	3	949	0	1787	702	0	2489	0	0	769	0	769	3	5140	5143
Grand Total	782	3692	0	0	4474	0	0	2402	6	2402	0	4771	1711	0	6482	0	0	3515	0	3515	6	16873	16879
Apprch %	17.5	82.5	0			0	0	100			0	73.6	26.4			0	0	100					
Total %	4.6	21.9	0		26.5	0	0	14.2		14.2	0	28.3	10.1		38.4	0	0	20.8		20.8	0	100	

	Latrobe Rd Southbound				US 50 EB Ramps Westbound				Latrobe Rd Northbound				US 50 EB Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30																	
07:30	71	302	0	373	0	0	74	74	0	154	47	201	0	0	256	256	904
07:45	**83**	**398**	0	**481**	0	0	**96**	**96**	0	167	42	209	0	0	**309**	**309**	**1095**
08:00	48	362	0	410	0	0	85	85	0	187	50	237	0	0	284	284	1016
08:15	35	280	0	315	0	0	77	77	0	**199**	**59**	**258**	0	0	305	305	955
Total Volume	237	1342	0	1579	0	0	332	332	0	707	198	905	0	0	1154	1154	3970

% App. Total	15	85	0		0	0	100		0	78.1	21.9		0	0	100		
PHF	.714	.843	.000	.821	.000	.000	.865	.865	.000	.888	.839	.877	.000	.000	.934	.934	.906



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 16:30

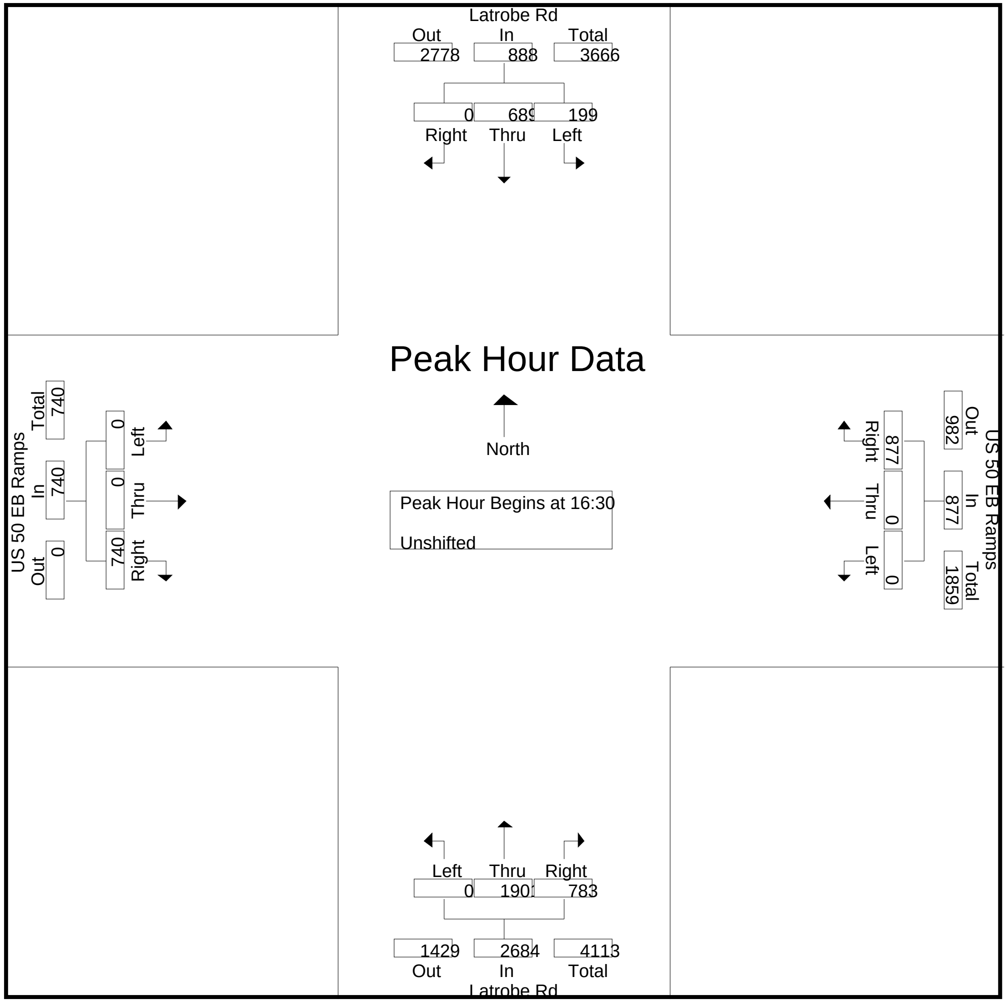
16:30	38	145	0	183	0	0	235	235	0	432	182	614	0	0	181	181	1213
16:45	44	175	0	219	0	0	221	221	0	405	179	584	0	0	197	197	1221
17:00	**77**	168	0	**245**	0	0	**251**	**251**	0	**542**	196	738	0	0	160	160	**1394**
17:15	40	**201**	0	241	0	0	170	170	0	522	**226**	**748**	0	0	**202**	**202**	1361
Total Volume	199	689	0	888	0	0	877	877	0	1901	783	2684	0	0	740	740	5189
% App. Total	22.4	77.6	0		0	0	100		0	70.8	29.2		0	0	100		
PHF	.646	.857	.000	.906	.000	.000	.874	.874	.000	.877	.866	.897	.000	.000	.916	.916	.931

All Traffic Data

(916) 771-8700

City of El Dorado Hills
Bicycles on Bank 1
Heavy Vehicles on Bank 2

File Name : 12-7225-007 Latrobe-US50 EB Ramps
Site Code : 00000000
Start Date : 5/22/2012
Page No : 3



All Traffic Data

(916) 771-8700

El Dorado County
Bicycles on Bank 1
Heavy Vehicles on Bank 2

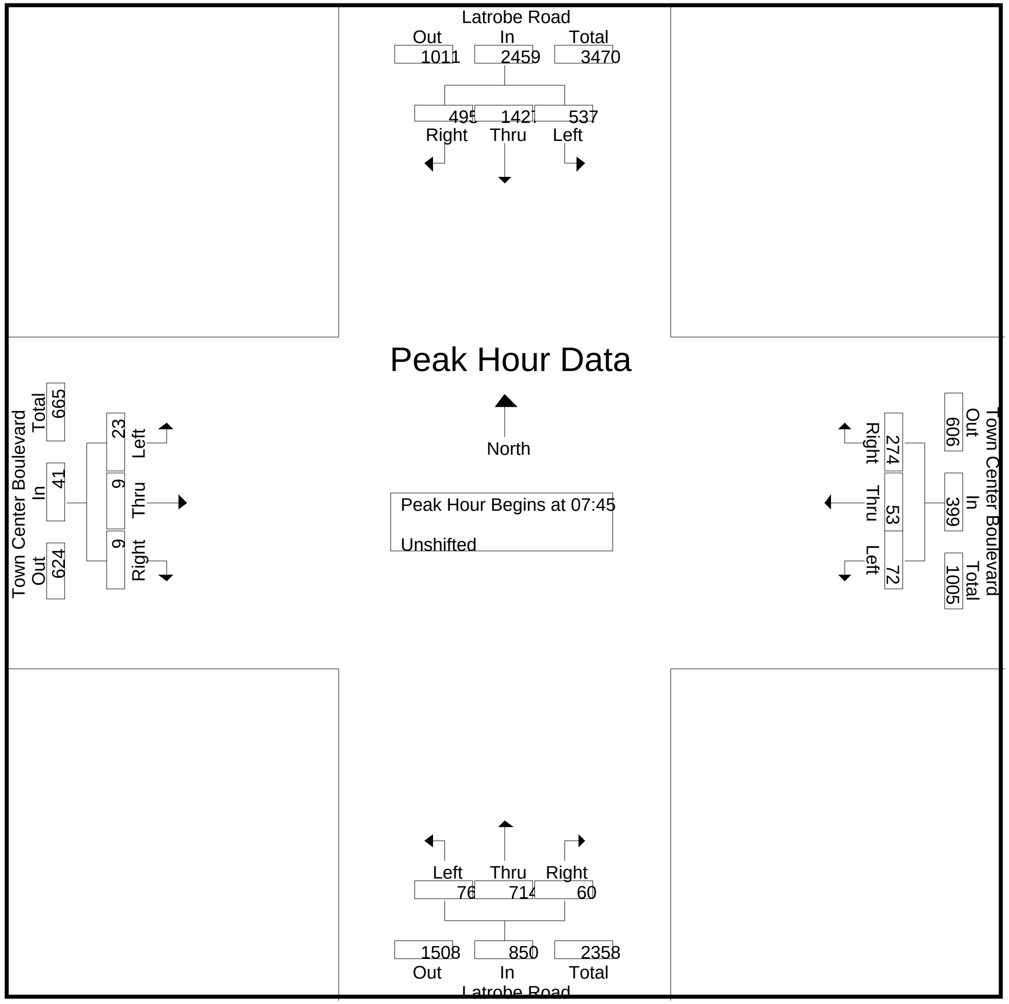
File Name : 12-7225-008 Latrobe-Town Center
Site Code : 00000000
Start Date : 5/22/2012
Page No : 1

Groups Printed- Unshifted

	Latrobe Road Southbound					Town Center Boulevard Westbound					Latrobe Road Northbound					Town Center Boulevard Eastbound							
Start Time	Left	Thr	Rig	Ped	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00	88	243	61	0	392	15	8	40	0	63	10	146	12	0	168	2	1	1	0	4	0	627	627
07:15	110	306	106	0	522	13	11	53	0	77	15	130	8	0	153	3	0	1	0	4	0	756	756
07:30	115	297	124	0	536	15	10	48	0	73	15	144	5	4	164	5	0	0	3	5	7	778	785
07:45	158	423	169	0	750	21	15	57	0	93	26	164	15	1	205	4	3	3	0	10	1	1058	1059
Total	471	1269	460	0	2200	64	44	198	0	306	66	584	40	5	690	14	4	5	3	23	8	3219	3227
08:00	116	408	145	0	669	23	12	60	0	95	15	174	16	1	205	7	4	3	0	14	1	983	984
08:15	126	347	103	0	576	17	16	67	0	100	15	183	12	1	210	4	0	0	0	4	1	890	891
08:30	137	249	78	0	464	11	10	90	0	111	20	193	17	0	230	8	2	3	0	13	0	818	818
08:45	142	288	71	0	501	14	7	98	0	119	13	157	25	5	195	3	2	2	0	7	5	822	827
Total	521	1292	397	0	2210	65	45	315	0	425	63	707	70	7	840	22	8	8	0	38	7	3513	3520
16:00	117	152	4	0	273	16	1	162	0	179	4	314	27	0	345	83	9	13	0	105	0	902	902
16:15	159	196	5	0	360	7	2	156	0	165	4	263	27	2	294	63	17	18	3	98	5	917	922
16:30	122	188	5	0	315	12	3	176	0	191	1	316	12	0	329	112	17	26	0	155	0	990	990
16:45	159	192	9	0	360	11	2	191	0	204	0	356	39	0	395	84	11	28	0	123	0	1082	1082
Total	557	728	23	0	1308	46	8	685	0	739	9	1249	105	2	1363	342	54	85	3	481	5	3891	3896
17:00	147	183	6	0	336	16	3	191	0	210	1	428	37	2	466	113	32	51	2	196	4	1208	1212
17:15	204	253	4	0	461	19	2	225	0	246	1	397	37	0	435	103	10	40	0	153	0	1295	1295
17:30	121	214	4	0	339	13	2	154	0	169	1	292	29	0	322	65	7	13	0	85	0	915	915
17:45	167	225	10	0	402	10	2	141	0	153	0	279	24	0	303	57	5	11	0	73	0	931	931
Total	639	875	24	0	1538	58	9	711	0	778	3	1396	127	2	1526	338	54	115	2	507	4	4349	4353
Grand Total	2188	4164	904	0	7256	233	106	1909	0	2248	141	3936	342	16	4419	716	120	213	8	1049	24	14972	14996
Apprch %	30.2	57.4	12.5			10.4	4.7	84.9			3.2	89.1	7.7			68.3	11.4	20.3					
Total %	14.6	27.8	6		48.5	1.6	0.7	12.8		15	0.9	26.3	2.3		29.5	4.8	0.8	1.4		7	0.2	99.8	

	Latrobe Road Southbound				Town Center Boulevard Westbound				Latrobe Road Northbound				Town Center Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45																	
07:45	**158**	**423**	**169**	**750**	21	15	57	93	**26**	164	15	205	4	3	**3**	10	**1058**
08:00	116	408	145	669	**23**	12	60	95	15	174	16	205	7	**4**	3	**14**	983
08:15	126	347	103	576	17	**16**	67	100	15	183	12	210	4	0	0	4	890
08:30	137	249	78	464	11	10	**90**	**111**	20	**193**	**17**	**230**	**8**	2	3	13	818
Total Volume	537	1427	495	2459	72	53	274	399	76	714	60	850	23	9	9	41	3749

% App. Total	21.8	58	20.1		18	13.3	68.7		8.9	84	7.1		56.1	22	22		
PHF	.850	.843	.732	.820	.783	.828	.761	.899	.731	.925	.882	.924	.719	.563	.750	.732	.886



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 16:30

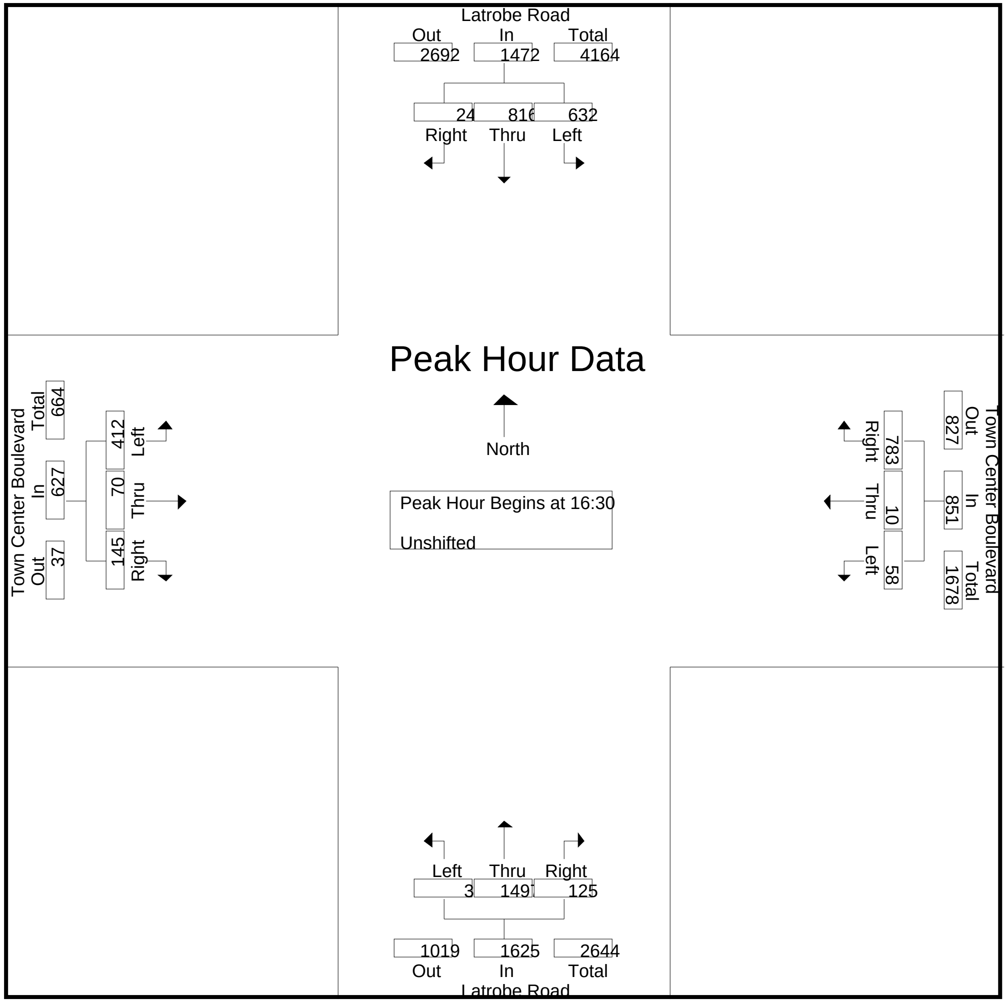
16:30	122	188	5	315	12	**3**	176	191	**1**	316	12	329	112	17	26	155	990
16:45	159	192	**9**	360	11	2	191	204	0	356	**39**	395	84	11	28	123	1082
17:00	147	183	6	336	16	3	191	210	1	**428**	37	**466**	**113**	**32**	**51**	**196**	1208
17:15	**204**	**253**	4	**461**	**19**	2	**225**	**246**	1	397	37	435	103	10	40	153	**1295**
Total Volume	632	816	24	1472	58	10	783	851	3	1497	125	1625	412	70	145	627	4575
% App. Total	42.9	55.4	1.6		6.8	1.2	92		0.2	92.1	7.7		65.7	11.2	23.1		
PHF	.775	.806	.667	.798	.763	.833	.870	.865	.750	.874	.801	.872	.912	.547	.711	.800	.883

All Traffic Data

(916) 771-8700

El Dorado County
Bicycles on Bank 1
Heavy Vehicles on Bank 2

File Name : 12-7225-008 Latrobe-Town Center
Site Code : 00000000
Start Date : 5/22/2012
Page No : 3



All Traffic Data

(916) 771-8700

El Dorado County
Bicycles on Bank 1
Heavy Vehicles on Bank 2

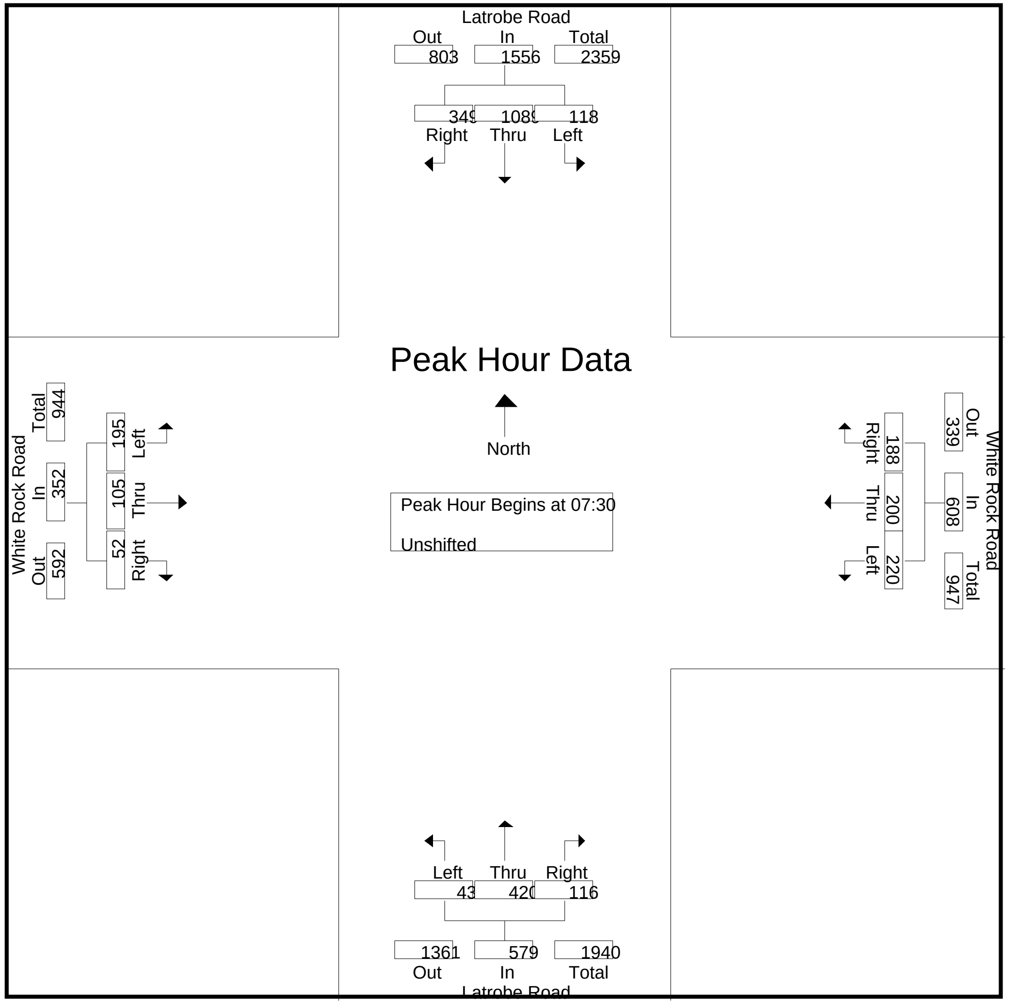
File Name : 12-7225-009 Latrobe-White Rock
Site Code : 00000000
Start Date : 5/22/2012
Page No : 1

Groups Printed- Unshifted

	Latrobe Road Southbound					White Rock Road Westbound					Latrobe Road Northbound					White Rock Road Eastbound							
Start Time	Left	Thr	Rig	Ped	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00	17	207	48	0	272	22	27	32	0	81	5	97	12	0	114	44	17	9	0	70	0	537	537
07:15	28	215	61	0	304	37	41	46	0	124	11	69	12	0	92	27	21	7	0	55	0	575	575
07:30	32	219	71	0	322	31	50	54	0	135	13	82	18	3	113	45	37	8	0	90	3	660	663
07:45	28	305	97	0	430	66	63	49	0	178	8	105	17	0	130	49	20	15	0	84	0	822	822
Total	105	946	277	0	1328	156	181	181	0	518	37	353	59	3	449	165	95	39	0	299	3	2594	2597
08:00	30	283	107	0	420	66	37	42	0	145	11	116	44	1	171	55	22	17	0	94	1	830	831
08:15	28	282	74	0	384	57	50	43	1	150	11	117	37	1	165	46	26	12	0	84	2	783	785
08:30	24	190	55	0	269	60	28	50	0	138	14	128	31	2	173	44	19	14	0	77	2	657	659
08:45	32	220	54	0	306	41	18	45	0	104	10	101	30	0	141	54	22	11	0	87	0	638	638
Total	114	975	290	0	1379	224	133	180	1	537	46	462	142	4	650	199	89	54	0	342	5	2908	2913
16:00	61	77	43	0	181	31	27	56	0	114	22	281	65	0	368	79	55	11	0	145	0	808	808
16:15	79	85	48	0	212	41	28	49	0	118	16	173	41	0	230	57	53	16	0	126	0	686	686
16:30	77	105	48	1	230	34	32	59	1	125	20	289	79	0	388	53	54	11	0	118	2	861	863
16:45	77	114	57	0	248	30	29	41	0	100	17	233	82	0	332	77	58	14	0	149	0	829	829
Total	294	381	196	1	871	136	116	205	1	457	75	976	267	0	1318	266	220	52	0	538	2	3184	3186
17:00	81	87	64	0	232	28	37	76	0	141	32	323	89	1	444	110	79	12	0	201	1	1018	1019
17:15	83	137	66	2	286	50	23	62	0	135	11	216	65	0	292	68	61	25	1	154	3	867	870
17:30	98	129	41	0	268	27	22	55	0	104	27	236	66	0	329	55	53	22	0	130	0	831	831
17:45	90	115	46	0	251	40	37	44	0	121	13	192	38	0	243	53	50	23	0	126	0	741	741
Total	352	468	217	2	1037	145	119	237	0	501	83	967	258	1	1308	286	243	82	1	611	4	3457	3461
Grand Total	865	2770	980	3	4615	661	549	803	2	2013	241	2758	726	8	3725	916	647	227	1	1790	14	12143	12157
Apprch %	18.7	60	21.2			32.8	27.3	39.9			6.5	74	19.5			51.2	36.1	12.7					
Total %	7.1	22.8	8.1		38	5.4	4.5	6.6		16.6	2	22.7	6		30.7	7.5	5.3	1.9		14.7	0.1	99.9	

	Latrobe Road Southbound				White Rock Road Westbound				Latrobe Road Northbound				White Rock Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30																	
07:30	**32**	219	71	322	31	50	**54**	135	**13**	82	18	113	45	**37**	8	90	660
07:45	28	**305**	97	**430**	**66**	**63**	49	**178**	8	105	17	130	49	20	15	84	822
08:00	30	283	**107**	420	66	37	42	145	11	116	**44**	**171**	**55**	22	**17**	**94**	**830**
08:15	28	282	74	384	57	50	43	150	11	**117**	37	165	46	26	12	84	783
Total Volume	118	1089	349	1556	220	200	188	608	43	420	116	579	195	105	52	352	3095

% App. Total	7.6	70	22.4		36.2	32.9	30.9		7.4	72.5	20		55.4	29.8	14.8		
PHF	.922	.893	.815	.905	.833	.794	.870	.854	.827	.897	.659	.846	.886	.709	.765	.936	.932



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 16:30

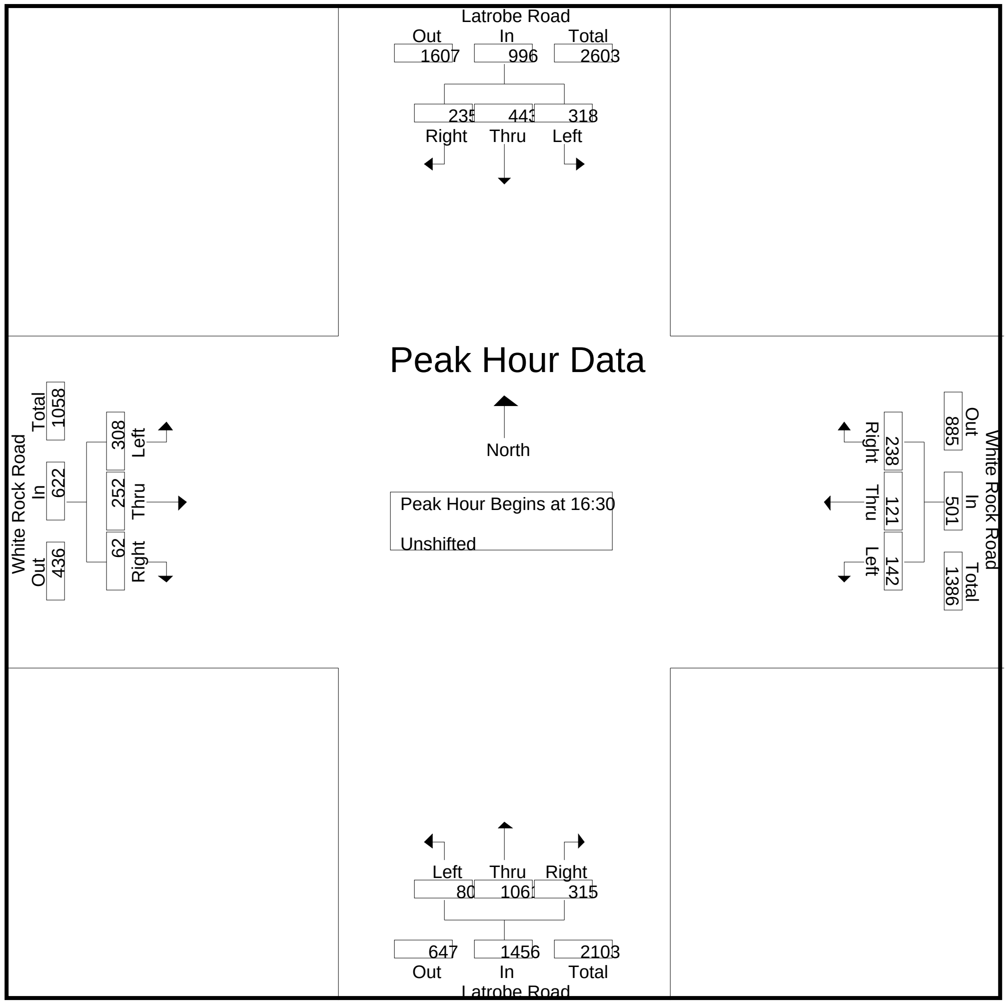
16:30	77	105	48	230	34	32	59	125	20	289	79	388	53	54	11	118	861
16:45	77	114	57	248	30	29	41	100	17	233	82	332	77	58	14	149	829
17:00	81	87	64	232	28	**37**	**76**	**141**	**32**	**323**	**89**	**444**	**110**	**79**	12	**201**	**1018**
17:15	**83**	**137**	**66**	**286**	**50**	23	62	135	11	216	65	292	68	61	**25**	154	867
Total Volume	318	443	235	996	142	121	238	501	80	1061	315	1456	308	252	62	622	3575
% App. Total	31.9	44.5	23.6		28.3	24.2	47.5		5.5	72.9	21.6		49.5	40.5	10		
PHF	.958	.808	.890	.871	.710	.818	.783	.888	.625	.821	.885	.820	.700	.797	.620	.774	.878

All Traffic Data

(916) 771-8700

El Dorado County
Bicycles on Bank 1
Heavy Vehicles on Bank 2

File Name : 12-7225-009 Latrobe-White Rock
Site Code : 00000000
Start Date : 5/22/2012
Page No : 3

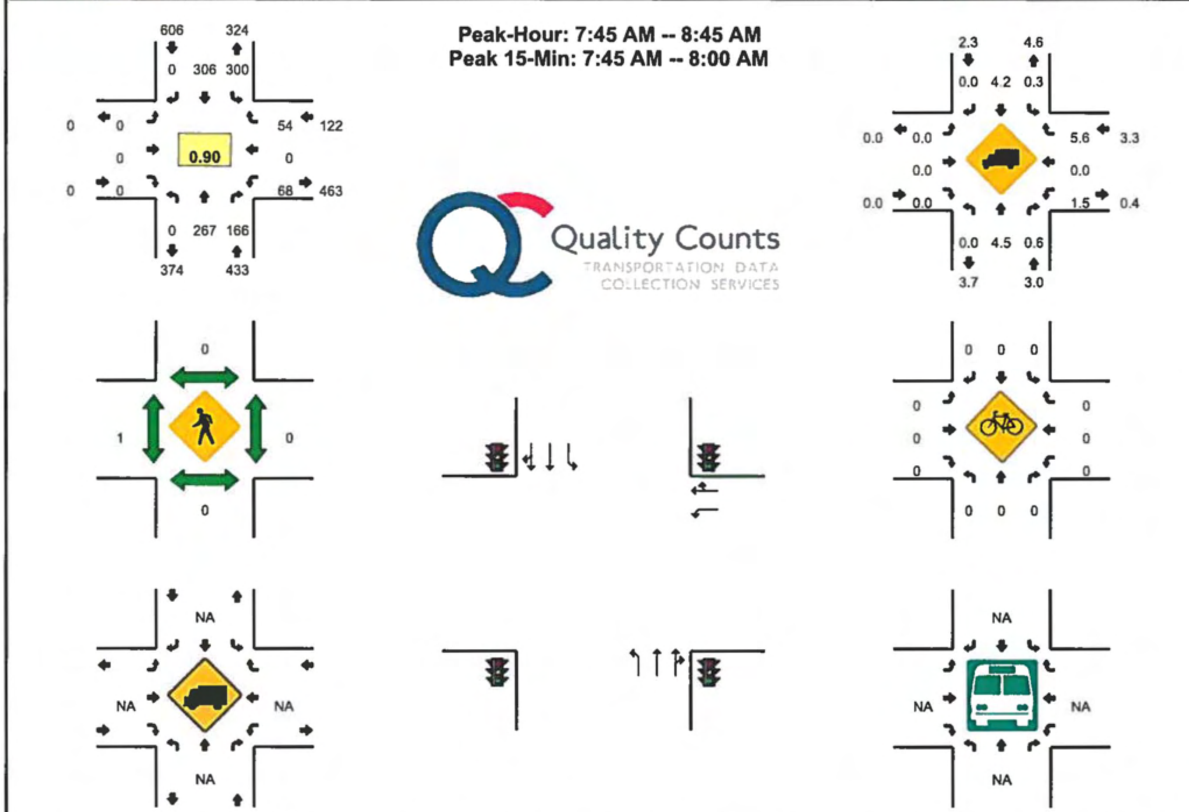


Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

LOCATION: White Rock Rd -- Windfield Way | **QC JOB #:** 11592201

CITY/STATE: El Dorado Hills, CA | **DATE:** Wed, Dec 11 2013

Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 7:45 AM -- 8:00 AM



5-Min Count Period Beginning At	White Rock Rd (Northbound) Left	Thru	Right	U	White Rock Rd (Southbound) Left	Thru	Right	U	Windfield Way (Eastbound) Left	Thru	Right	U	Windfield Way (Westbound) Left	Thru	Right	U	Total	Hourly Totals
7:00 AM	0	18	3	0	6	12	0	0	0	0	0	0	1	0	7	0	47	357
7:05 AM	0	20	8	0	9	26	0	0	0	0	0	0	2	0	4	0	69	405
7:10 AM	0	24	5	0	8	25	0	0	0	0	0	0	1	0	4	0	67	457
7:15 AM	0	19	5	0	10	31	0	0	0	0	0	0	3	0	4	0	72	508
7:20 AM	0	27	16	0	6	23	0	0	0	0	0	0	3	0	2	0	77	571
7:25 AM	0	23	15	0	7	25	0	0	0	0	0	0	1	0	2	0	73	622
7:30 AM	0	24	7	0	13	42	0	0	0	0	0	0	0	0	1	0	87	681
7:35 AM	0	23	6	0	14	19	0	1	0	0	0	0	2	0	1	0	66	714
7:40 AM	0	26	13	0	9	27	0	0	0	0	0	0	1	0	0	0	76	766
7:45 AM	0	31	15	0	15	27	0	0	0	0	0	0	4	0	5	0	97	825
7:50 AM	0	16	15	0	36	38	0	1	0	0	0	0	1	0	0	0	107	890
7:55 AM	0	25	19	0	36	32	0	0	0	0	0	0	3	0	3	0	118	956
8:00 AM	0	19	13	0	25	20	0	0	0	0	0	0	6	0	4	0	87	996
8:05 AM	0	27	13	0	28	23	0	0	0	0	0	0	12	0	2	0	105	1032
8:10 AM	0	10	16	0	30	32	0	0	0	0	0	0	8	0	5	0	101	1066
8:15 AM	0	23	14	0	24	19	0	0	0	0	0	0	9	0	7	0	96	1090
8:20 AM	0	27	12	0	16	23	0	1	0	0	0	0	11	0	3	0	93	1106
8:25 AM	0	19	14	0	37	24	0	0	0	0	0	0	2	0	5	0	101	1134
8:30 AM	0	13	12	0	21	19	0	0	0	0	0	0	6	0	8	0	79	1126
8:35 AM	0	21	16	0	20	18	0	1	0	0	0	0	4	0	7	0	87	1147
8:40 AM	0	36	7	0	9	31	0	0	0	0	0	0	2	0	5	0	90	1161
8:45 AM	0	32	13	0	15	28	0	1	0	0	0	0	3	0	5	0	97	1161
8:50 AM	0	18	7	0	25	25	0	0	0	0	0	0	1	0	4	0	80	1134
8:55 AM	0	19	6	0	15	31	0	1	0	0	0	0	2	0	4	0	78	1094

Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	0	288	196	0	348	388	0	4	0	0	0	0	32	0	32	0	1288
Heavy Trucks	0	24	0		0	12	0		0	0	0		0	0	4		40
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

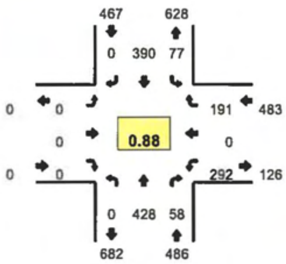
Comments:

Report generated on 12/20/2013 8:49 AM

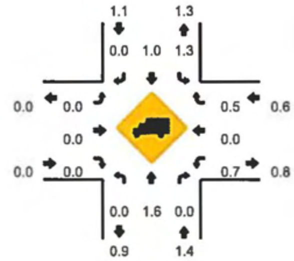
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

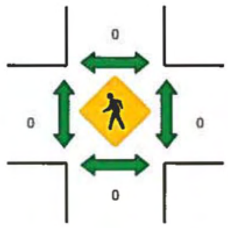
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

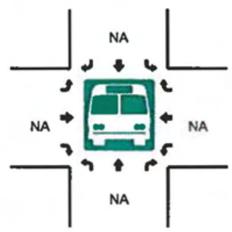
LOCATION: White Rock Rd -- Windfield Way | **QC JOB #:** 11592202
CITY/STATE: El Dorado Hills, CA | **DATE:** Wed, Dec 11 2013



Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:00 PM -- 5:15 PM







5-Min Count Period Beginning At	White Rock Rd (Northbound)				White Rock Rd (Southbound)				Windfield Way (Eastbound)				Windfield Way (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	30	0	0	10	29	0	1	0	0	0	0	15	0	10	0	95	
4:05 PM	0	24	0	0	10	20	0	0	0	0	0	0	24	0	16	0	94	
4:10 PM	0	41	2	0	4	34	0	1	0	0	0	0	16	0	9	0	107	
4:15 PM	0	21	5	0	7	22	0	1	0	0	0	0	14	0	8	0	78	
4:20 PM	0	40	9	0	6	29	0	2	0	0	0	0	9	0	9	0	104	
4:25 PM	0	30	5	0	9	28	0	2	0	0	0	0	18	0	13	0	105	
4:30 PM	0	30	5	0	2	29	0	1	0	0	0	0	17	0	16	0	100	
4:35 PM	0	39	6	0	4	42	0	0	0	0	0	0	37	0	16	0	144	
4:40 PM	0	25	7	0	7	51	0	2	0	0	0	0	27	0	12	0	131	
4:45 PM	0	39	5	0	3	32	0	0	0	0	0	0	17	0	10	0	106	
4:50 PM	0	29	4	0	12	30	0	2	0	0	0	0	16	0	18	0	111	
4:55 PM	0	40	5	0	3	19	0	2	0	0	0	0	25	0	9	0	103	1278
5:00 PM	0	41	6	0	7	31	0	0	0	0	0	0	17	0	35	0	137	1320
5:05 PM	0	34	3	0	5	29	0	1	0	0	0	0	48	0	26	0	146	1372
5:10 PM	0	48	3	0	5	37	0	0	0	0	0	0	19	0	15	0	127	1392
5:15 PM	0	27	8	0	3	32	0	1	0	0	0	0	32	0	11	0	114	1428
5:20 PM	0	37	1	0	9	35	0	0	0	0	0	0	15	0	14	0	111	1435
5:25 PM	0	39	5	0	8	23	0	0	0	0	0	0	22	0	9	0	106	1436
5:30 PM	0	38	5	0	3	33	0	1	0	0	0	0	6	0	6	0	92	1428
5:35 PM	0	51	4	0	2	32	0	0	0	0	0	0	14	0	20	0	123	1407
5:40 PM	0	43	6	0	1	25	0	1	0	0	0	0	16	0	11	0	103	1379
5:45 PM	0	40	9	0	0	28	0	1	0	0	0	0	19	0	13	0	110	1383
5:50 PM	0	40	4	0	2	29	0	0	0	0	0	0	8	0	8	0	91	1363
5:55 PM	0	27	6	0	1	20	0	1	0	0	0	0	4	0	10	0	69	1329

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	492	48	0	68	388	0	4	0	0	0	0	336	0	304	0	1640
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/20/2013 8:49 AM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

All Traffic Data

(916) 771-8700

El Dorado County
Bicycles on Bank 1
Heavy Vehicles on Bank 2

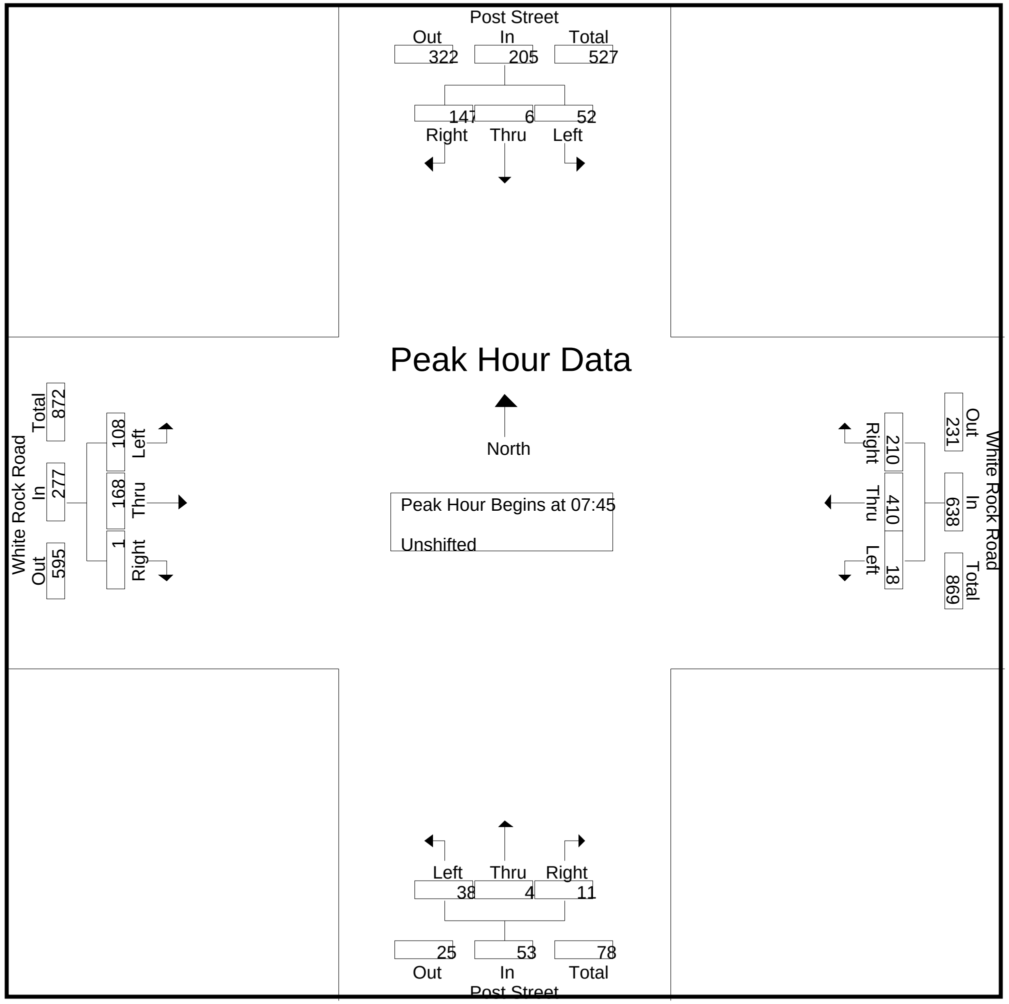
File Name : 12-7225-010 Post-White Rock
Site Code : 00000000
Start Date : 5/22/2012
Page No : 1

Groups Printed- Unshifted

	Post Street Southbound					White Rock Road Westbound					Post Street Northbound					White Rock Road Eastbound							
Start Time	Left	Thr	Rig	Ped	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00	10	0	21	1	31	3	58	31	1	92	4	0	0	0	4	14	28	0	0	42	2	169	171
07:15	11	1	27	0	39	7	105	44	0	156	11	0	0	0	11	13	46	0	0	59	0	265	265
07:30	11	3	23	0	37	3	93	35	0	131	13	1	2	0	16	12	50	0	0	62	0	246	246
07:45	9	1	35	0	45	5	136	58	0	199	5	1	1	0	7	16	38	0	0	54	0	305	305
Total	41	5	106	1	152	18	392	168	1	578	33	2	3	0	38	55	162	0	0	217	2	985	987
08:00	16	2	27	0	45	3	92	56	0	151	12	2	7	0	21	29	45	1	1	75	1	292	293
08:15	15	2	36	1	53	8	105	47	0	160	10	0	2	0	12	39	44	0	0	83	1	308	309
08:30	12	1	49	1	62	2	77	49	0	128	11	1	1	0	13	24	41	0	1	65	2	268	270
08:45	19	3	28	0	50	5	81	37	0	123	4	1	0	0	5	27	44	0	0	71	0	249	249
Total	62	8	140	2	210	18	355	189	0	562	37	4	10	0	51	119	174	1	2	294	4	1117	1121
16:00	34	4	45	0	83	6	57	29	0	92	18	3	8	0	29	33	132	1	0	166	0	370	370
16:15	35	3	22	0	60	6	85	32	0	123	12	2	3	1	17	42	120	1	0	163	1	363	364
16:30	33	4	38	1	75	2	80	34	0	116	6	5	1	0	12	48	139	0	0	187	1	390	391
16:45	39	5	40	0	84	6	66	34	0	106	4	7	7	0	18	55	129	0	1	184	1	392	393
Total	141	16	145	1	302	20	288	129	0	437	40	17	19	1	76	178	520	2	1	700	3	1515	1518
17:00	35	4	44	0	83	1	89	27	0	117	11	2	3	2	16	58	171	4	1	233	3	449	452
17:15	59	3	48	0	110	3	83	29	0	115	4	5	4	0	13	31	155	1	0	187	0	425	425
17:30	48	1	27	1	76	2	78	32	0	112	1	1	2	0	4	36	164	0	0	200	1	392	393
17:45	46	2	28	0	76	5	91	41	0	137	7	1	3	0	11	37	132	2	1	171	1	395	396
Total	188	10	147	1	345	11	341	129	0	481	23	9	12	2	44	162	622	7	2	791	5	1661	1666
Grand Total	432	39	538	5	1009	67	1376	615	1	2058	133	32	44	3	209	514	1478	10	5	2002	14	5278	5292
Apprch %	42.8	3.9	53.3			3.3	66.9	29.9			63.6	15.3	21.1			25.7	73.8	0.5					
Total %	8.2	0.7	10.2		19.1	1.3	26.1	11.7		39	2.5	0.6	0.8		4	9.7	28	0.2		37.9	0.3	99.7	

	Post Street Southbound				White Rock Road Westbound				Post Street Northbound				White Rock Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45																	
07:45	9	1	35	45	5	**136**	**58**	**199**	5	1	1	7	16	38	0	54	305
08:00	**16**	**2**	27	45	3	92	56	151	**12**	**2**	**7**	**21**	29	**45**	**1**	75	292
08:15	15	2	36	53	**8**	105	47	160	10	0	2	12	**39**	44	0	**83**	**308**
08:30	12	1	**49**	**62**	2	77	49	128	11	1	1	13	24	41	0	65	268
Total Volume	52	6	147	205	18	410	210	638	38	4	11	53	108	168	1	277	1173

% App. Total	25.4	2.9	71.7		2.8	64.3	32.9		71.7	7.5	20.8		39	60.6	0.4		
PHF	.813	.750	.750	.827	.563	.754	.905	.802	.792	.500	.393	.631	.692	.933	.250	.834	.952



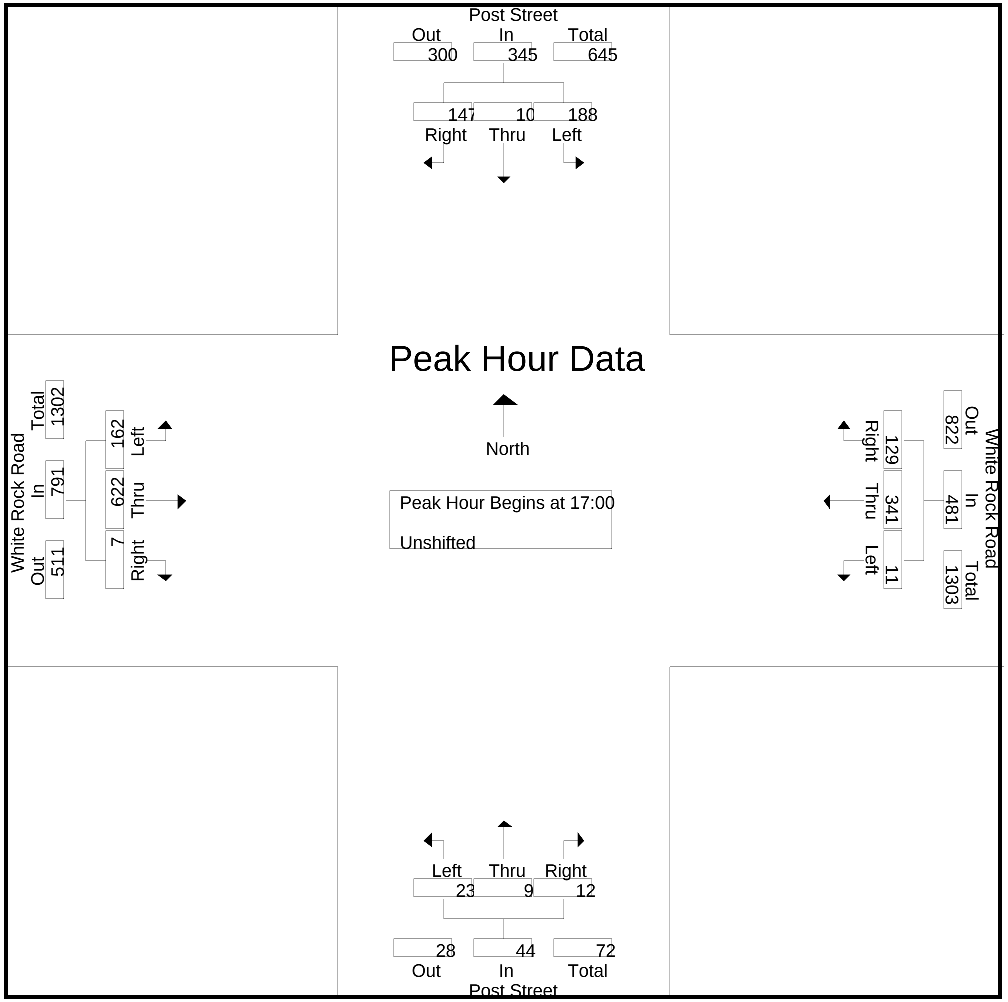
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 17:00

17:00	35	**4**	44	83	1	89	27	117	**11**	2	3	**16**	**58**	**171**	**4**	**233**	**449**
17:15	**59**	3	**48**	**110**	3	83	29	115	4	**5**	**4**	13	31	155	1	187	425
17:30	48	1	27	76	2	78	32	112	1	1	2	4	36	164	0	200	392
17:45	46	2	28	76	**5**	**91**	**41**	**137**	7	1	3	11	37	132	2	171	395
Total Volume	188	10	147	345	11	341	129	481	23	9	12	44	162	622	7	791	1661
% App. Total	54.5	2.9	42.6		2.3	70.9	26.8		52.3	20.5	27.3		20.5	78.6	0.9		
PHF	.797	.625	.766	.784	.550	.937	.787	.878	.523	.450	.750	.688	.698	.909	.438	.849	.925

All Traffic Data
(916) 771-8700

El Dorado County
Bicycles on Bank 1
Heavy Vehicles on Bank 2

File Name : 12-7225-010 Post-White Rock
Site Code : 00000000
Start Date : 5/22/2012
Page No : 3



All Traffic Data

(916) 771-8700

El Dorado County
Bicycles on Bank 1
Heavy Vehicles on Bank 2

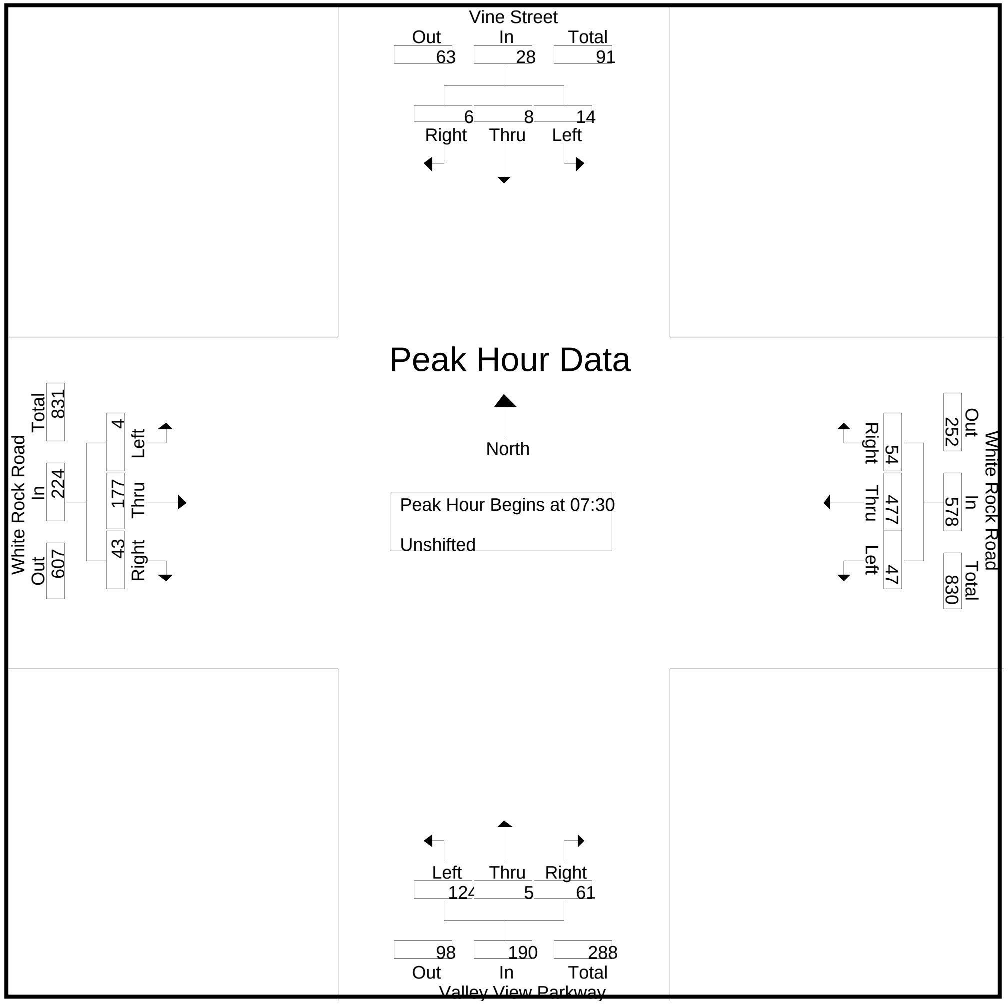
File Name : 12-7225-011 Valley View-White Rock
Site Code : 00000000
Start Date : 5/22/2012
Page No : 1

Groups Printed- Unshifted

	Vine Street Southbound					White Rock Road Westbound					Valley View Parkway Northbound					White Rock Road Eastbound							
Start Time	Left	Thr	Rig	Ped	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00	3	1	0	0	4	2	57	2	0	61	28	1	7	0	36	0	32	4	1	36	1	137	138
07:15	2	0	0	0	2	4	97	3	0	104	35	2	21	1	58	1	47	6	1	54	2	218	220
07:30	3	2	2	0	7	12	89	11	0	112	31	0	23	0	54	1	55	7	1	63	1	236	237
07:45	1	3	1	0	5	18	178	14	0	210	31	3	21	0	55	1	48	13	1	62	1	332	333
Total	9	6	3	0	18	36	421	30	0	487	125	6	72	1	203	3	182	30	4	215	5	923	928
08:00	4	2	1	1	7	9	105	19	2	133	28	2	6	0	36	2	40	12	1	54	4	230	234
08:15	6	1	2	0	9	8	105	10	0	123	34	0	11	0	45	0	34	11	0	45	0	222	222
08:30	8	1	3	1	12	7	79	11	0	97	22	4	4	0	30	2	29	10	6	41	7	180	187
08:45	7	4	1	0	12	4	71	15	0	90	20	6	6	0	32	4	39	7	2	50	2	184	186
Total	25	8	7	2	40	28	360	55	2	443	104	12	27	0	143	8	142	40	9	190	13	816	829
16:00	41	5	6	0	52	5	44	20	0	69	15	2	7	0	24	14	107	18	0	139	0	284	284
16:15	29	8	10	0	47	4	68	18	0	90	16	5	4	0	25	14	82	14	3	110	3	272	275
16:30	24	7	16	0	47	7	51	24	0	82	12	10	4	0	26	10	108	18	0	136	0	291	291
16:45	35	7	8	0	50	7	51	16	0	74	13	4	11	0	28	19	107	28	3	154	3	306	309
Total	129	27	40	0	196	23	214	78	0	315	56	21	26	0	103	57	404	78	6	539	6	1153	1159
17:00	42	7	12	0	61	4	50	13	0	67	21	3	6	0	30	16	133	25	3	174	3	332	335
17:15	40	5	19	0	64	2	50	18	0	70	15	2	10	0	27	9	113	31	3	153	3	314	317
17:30	38	8	7	0	53	2	42	17	0	61	20	3	7	0	30	8	125	32	4	165	4	309	313
17:45	32	14	6	0	52	6	65	22	0	93	26	6	7	0	39	15	101	28	1	144	1	328	329
Total	152	34	44	0	230	14	207	70	0	291	82	14	30	0	126	48	472	116	11	636	11	1283	1294
Grand Total	315	75	94	2	484	101	1202	233	2	1536	367	53	155	1	575	116	1200	264	30	1580	35	4175	4210
Apprch %	65.1	15.5	19.4			6.6	78.3	15.2			63.8	9.2	27			7.3	75.9	16.7					
Total %	7.5	1.8	2.3		11.6	2.4	28.8	5.6		36.8	8.8	1.3	3.7		13.8	2.8	28.7	6.3		37.8	0.8	99.2	

	Vine Street Southbound				White Rock Road Westbound				Valley View Parkway Northbound				White Rock Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30																	
07:30	3	2	**2**	7	12	89	11	112	31	0	**23**	54	1	**55**	7	**63**	236
07:45	1	**3**	1	5	**18**	**178**	14	**210**	31	**3**	21	**55**	1	48	**13**	62	**332**
08:00	4	2	1	7	9	105	**19**	133	28	2	6	36	**2**	40	12	54	230
08:15	**6**	1	2	**9**	8	105	10	123	**34**	0	11	45	0	34	11	45	222
Total Volume	14	8	6	28	47	477	54	578	124	5	61	190	4	177	43	224	1020

% App. Total	50	28.6	21.4		8.1	82.5	9.3		65.3	2.6	32.1		1.8	79	19.2		
PHF	.583	.667	.750	.778	.653	.670	.711	.688	.912	.417	.663	.864	.500	.805	.827	.889	.768



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 17:00

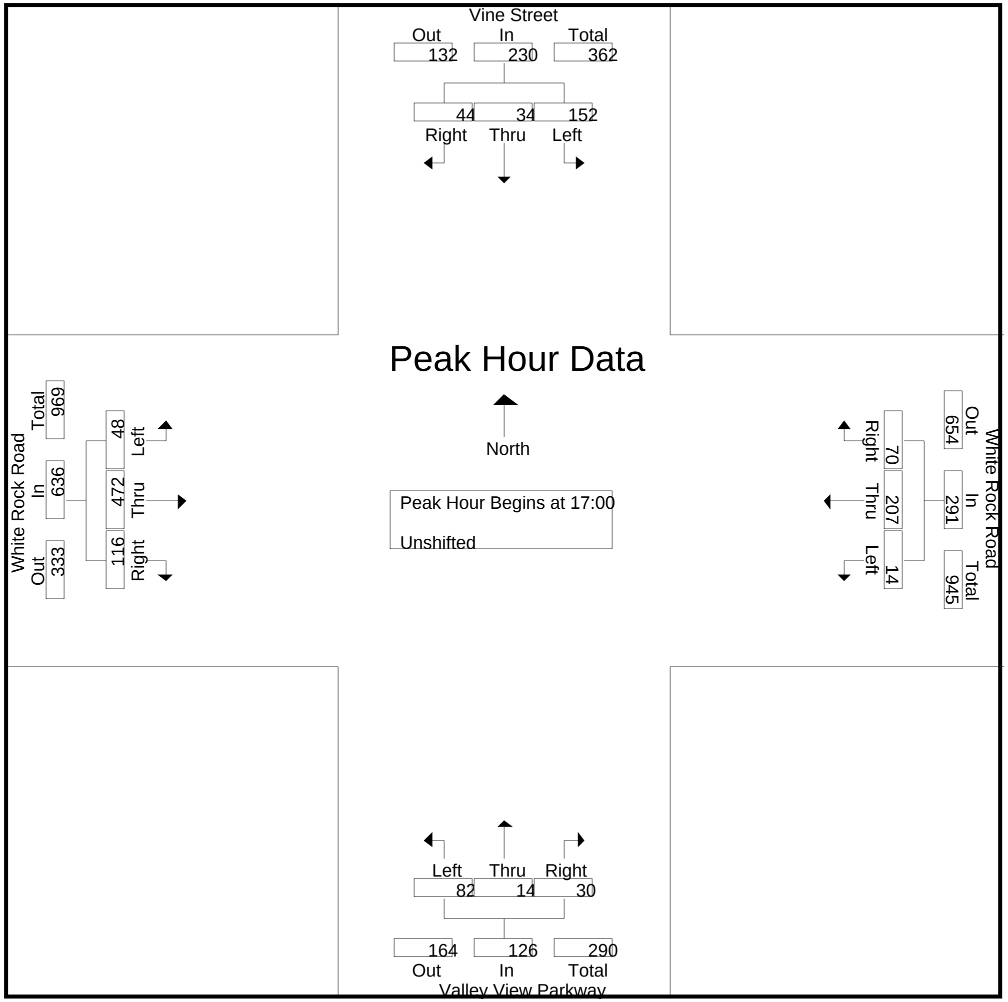
17:00	**42**	7	12	61	4	50	13	67	21	3	6	30	**16**	**133**	25	**174**	**332**
17:15	40	5	**19**	**64**	2	50	18	70	15	2	**10**	27	9	113	31	153	314
17:30	38	8	7	53	2	42	17	61	20	3	7	30	8	125	**32**	165	309
17:45	32	**14**	6	52	**6**	**65**	**22**	**93**	**26**	**6**	7	**39**	15	101	28	144	328
Total Volume	152	34	44	230	14	207	70	291	82	14	30	126	48	472	116	636	1283
% App. Total	66.1	14.8	19.1		4.8	71.1	24.1		65.1	11.1	23.8		7.5	74.2	18.2		
PHF	.905	.607	.579	.898	.583	.796	.795	.782	.788	.583	.750	.808	.750	.887	.906	.914	.966

All Traffic Data

(916) 771-8700

El Dorado County
Bicycles on Bank 1
Heavy Vehicles on Bank 2

File Name : 12-7225-011 Valley View-White Rock
Site Code : 00000000
Start Date : 5/22/2012
Page No : 3



ALL TRAFFIC DATA

El Dorado County
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7305-001 Post Street-Town Center Boulevard
Date : 5/6/2014

Unshifted Count = All Vehicles

	Post Street Southbound					Town Center Boulevard Westbound					Post Street Northbound					Town Center Boulevard 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	Uturn Total
07:00	0	4	7	0	11	1	9	0	0	10	32	12	0	0	44	49	9	33	4	95	160	4
07:15	0	15	22	0	37	0	4	0	0	4	35	17	4	0	56	50	16	34	2	102	199	2
07:30	2	11	22	0	35	3	4	1	0	8	46	20	0	0	66	56	23	37	1	117	226	1
07:45	2	8	10	0	20	1	14	3	0	18	47	10	2	0	59	63	36	52	1	152	249	1
Total	4	38	61	0	103	5	31	4	0	40	160	59	6	0	225	218	84	156	8	466	834	8
08:00	2	12	16	0	30	5	8	4	0	17	26	16	7	0	49	63	35	41	1	140	236	1
08:15	3	18	17	0	38	3	8	1	0	12	41	14	3	0	58	64	24	32	0	120	228	0
08:30	2	17	23	0	42	4	13	1	0	18	41	15	6	0	62	57	34	41	1	133	255	1
08:45	1	7	23	0	31	2	17	1	0	20	32	16	1	0	49	91	27	40	2	160	260	2
Total	8	54	79	0	141	14	46	7	0	67	140	61	17	0	218	275	120	154	4	553	979	4
16:00	3	13	63	0	79	3	37	4	0	44	52	21	6	0	79	67	39	42	1	149	351	1
16:15	0	15	56	0	71	2	47	2	0	51	39	28	9	0	76	62	43	48	0	153	351	0
16:30	3	19	43	0	65	5	39	2	0	46	62	31	8	0	101	64	54	45	1	164	376	1
16:45	3	15	43	0	61	7	49	0	0	56	40	26	6	0	72	67	49	46	2	164	353	2
Total	9	62	205	0	276	17	172	8	0	197	193	106	29	0	328	260	185	181	4	630	1431	4
17:00	3	23	58	0	84	3	49	1	0	53	78	31	6	0	115	65	51	40	2	158	410	2
17:15	2	18	63	0	83	2	46	3	0	51	59	30	8	0	97	68	55	41	0	164	395	0
17:30	5	23	59	0	87	7	35	3	0	45	40	30	5	0	75	54	54	25	2	135	342	2
17:45	2	23	43	0	68	4	36	2	0	42	58	22	8	0	88	65	60	50	1	176	374	1
Total	12	87	223	0	322	16	166	9	0	191	235	113	27	0	375	252	220	156	5	633	1521	5
Grand Total	33	241	568	0	842	52	415	28	0	495	728	339	79	0	1146	1005	609	647	21	2282	4765	21
Apprch %	3.9%	28.6%	67.5%	0.0%		10.5%	83.8%	5.7%	0.0%		63.5%	29.6%	6.9%	0.0%		44.0%	26.7%	28.4%	0.9%			
Total %	0.7%	5.1%	11.9%	0.0%	17.7%	1.1%	8.7%	0.6%	0.0%	10.4%	15.3%	7.1%	1.7%	0.0%	24.1%	21.1%	12.8%	13.6%	0.4%	47.9%	100.0%	

ALL TRAFFIC DATA

(916) 771-8700

orders@atdtraffic.com

El Dorado County
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

File Name : 14-7305-001 Post Street-Town Center Boulevard
Date : 5/6/2014

Unshifted Count = All Vehicles

AM PEAK HOUR	Post Street Southbound					Town Center Boulevard Westbound					Post Street Northbound					Town Center Boulevard 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																					
08:00	2	12	16	0	30	5	8	4	0	17	26	16	7	0	49	63	35	41	1	140	236
08:15	3	18	17	0	38	3	8	1	0	12	41	14	3	0	58	64	24	32	0	120	228
08:30	2	17	23	0	42	4	13	1	0	18	41	15	6	0	62	57	34	41	1	133	255
08:45	1	7	23	0	31	2	17	1	0	20	32	16	1	0	49	91	27	40	2	160	260
Total Volume	8	54	79	0	141	14	46	7	0	67	140	61	17	0	218	275	120	154	4	553	979
% App Total	5.7%	38.3%	56.0%	0.0%		20.9%	68.7%	10.4%	0.0%		64.2%	28.0%	7.8%	0.0%		49.7%	21.7%	27.8%	0.7%		
PHF	.667	.750	.859	.000	.839	.700	.676	.438	.000	.838	.854	.953	.607	.000	.879	.755	.857	.939	.500	.864	.941

PM PEAK HOUR	Post Street Southbound					Town Center Boulevard Westbound					Post Street Northbound					Town Center Boulevard 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	3	19	43	0	65	5	39	2	0	46	62	31	8	0	101	64	54	45	1	164	376
16:45	3	15	43	0	61	7	49	0	0	56	40	26	6	0	72	67	49	46	2	164	353
17:00	3	23	58	0	84	3	49	1	0	53	78	31	6	0	115	65	51	40	2	158	410
17:15	2	18	63	0	83	2	46	3	0	51	59	30	8	0	97	68	55	41	0	164	395
Total Volume	11	75	207	0	293	17	183	6	0	206	239	118	28	0	385	264	209	172	5	650	1534
% App Total	3.8%	25.6%	70.6%	0.0%		8.3%	88.8%	2.9%	0.0%		62.1%	30.6%	7.3%	0.0%		40.6%	32.2%	26.5%	0.8%		
PHF	.917	.815	.821	.000	.872	.607	.934	.500	.000	.920	.766	.952	.875	.000	.837	.971	.950	.935	.625	.991	.935

13-7462-001 El Dorado Hills Mainline Count
US-50 between El Dorado Hills Blvd and East Bidwell Street
Tuesday, August 20, 2013

Eastbound

	Non-HOV		HOV Lane		
	Vehicles	Trucks	HOV Lane	HOV Trucks	Total
6:00 AM	202	12	9	0	223
6:15 AM	266	21	11	0	298
6:30 AM	385	22	17	0	424
6:45 AM	496	24	16	0	536
7:00 AM	477	35	12	0	524
7:15 AM	558	24	26	0	608
7:30 AM	566	20	27	0	613
7:45 AM	714	20	28	0	762
8:00 AM	617	23	30	0	670
8:15 AM	611	37	34	0	682
8:30 AM	598	33	32	0	663
8:45 AM	580	31	33	0	644
Totals:	6070	302	275	0	6647

	Non-HOV		HOV Lane		
	Vehicles	Trucks	HOV Lane	HOV Trucks	Total
3:00 PM	716	12	76	0	804
3:15 PM	815	9	84	0	908
3:30 PM	887	13	129	0	1029
3:45 PM	972	8	109	0	1089
4:00 PM	974	12	119	0	1105
4:15 PM	970	5	121	0	1096
4:30 PM	1009	8	122	0	1139
4:45 PM	1068	3	148	0	1219
5:00 PM	1066	8	123	0	1197
5:15 PM	1133	8	129	0	1270
5:30 PM	1052	2	102	0	1156
5:45 PM	997	6	111	0	1114
Totals:	11659	94	1373	0	13126

Westbound

	Non-HOV		HOV Lane		
	Vehicles	Trucks	HOV Lane	HOV Trucks	Total
6:00 AM	626	14	61	4	705
6:15 AM	765	16	58	0	839
6:30 AM	887	16	79	1	983
6:45 AM	938	15	80	1	1034
7:00 AM	1086	11	80	0	1177
7:15 AM	1072	18	118	1	1209
7:30 AM	893	6	123	0	1022
7:45 AM	725	19	144	1	889
8:00 AM	852	21	119	0	992
8:15 AM	872	20	103	0	995
8:30 AM	881	23	76	0	980
8:45 AM	771	17	58	0	846
Totals:	10368	196	1099	8	11671

	Non-HOV		HOV Lane		
	Vehicles	Trucks	HOV Lane	HOV Trucks	Total
3:00 PM	655	22	56	1	734
3:15 PM	643	23	79	0	745
3:30 PM	683	34	74	1	792
3:45 PM	631	17	62	0	710
4:00 PM	664	19	66	0	749
4:15 PM	731	16	58	0	805
4:30 PM	698	19	53	0	770
4:45 PM	667	27	57	1	752
5:00 PM	784	16	65	0	865
5:15 PM	778	4	67	0	849
5:30 PM	714	6	66	0	786
5:45 PM	680	12	66	0	758
Totals:	8328	215	769	3	9315

13-7462-001 El Dorado Hills Mainline Count

US-50 between El Dorado Hills Blvd and East Bidwell Street

Wednesday, August 21, 2013

Eastbound

	Non-HOV		HOV Lane		
	Vehicles	Trucks	HOV Lane	HOV Trucks	Total
6:00 AM	218	12	12	0	242
6:15 AM	248	25	10	0	283
6:30 AM	361	28	30	0	419
6:45 AM	532	43	21	0	596
7:00 AM	426	32	25	0	483
7:15 AM	562	29	29	0	620
7:30 AM	631	35	43	0	709
7:45 AM	674	22	43	0	739
8:00 AM	558	29	40	0	627
8:15 AM	581	30	28	0	639
8:30 AM	582	25	33	0	640
8:45 AM	557	31	27	0	615
Totals:	5930	341	341	0	6612

	Non-HOV		HOV Lane		
	Vehicles	Trucks	HOV Lane	HOV Trucks	Total
3:00 PM	785	8	103	0	896
3:15 PM	777	9	76	0	862
3:30 PM	868	9	121	0	998
3:45 PM	994	8	119	0	1121
4:00 PM	932	7	117	0	1056
4:15 PM	1038	6	129	0	1173
4:30 PM	1068	8	108	0	1184
4:45 PM	988	4	135	0	1127
5:00 PM	1044	6	125	0	1175
5:15 PM	1066	5	136	0	1207
5:30 PM	1046	8	128	0	1182
5:45 PM	1006	6	137	0	1149
Totals:	11612	84	1434	0	13130

Westbound

	Non-HOV		HOV Lane		
	Vehicles	Trucks	HOV Lane	HOV Trucks	Total
6:00 AM	579	14	55	0	648
6:15 AM	718	15	59	0	792
6:30 AM	876	15	81	0	972
6:45 AM	959	12	67	0	1038
7:00 AM	1028	17	88	0	1133
7:15 AM	1047	14	141	0	1202
7:30 AM	1016	25	164	0	1205
7:45 AM	944	19	124	1	1088
8:00 AM	965	20	99	0	1084
8:15 AM	820	26	72	0	918
8:30 AM	777	28	80	0	885
8:45 AM	769	28	57	0	854
Totals:	10498	233	1087	1	11819

	Non-HOV		HOV Lane		
	Vehicles	Trucks	HOV Lane	HOV Trucks	Total
3:00 PM	680	28	69	0	777
3:15 PM	663	22	67	0	752
3:30 PM	655	34	68	0	757
3:45 PM	659	23	63	0	745
4:00 PM	700	13	47	1	761
4:15 PM	681	17	51	0	749
4:30 PM	730	10	60	0	800
4:45 PM	717	17	68	1	803
5:00 PM	711	15	59	0	785
5:15 PM	770	11	56	0	837
5:30 PM	638	14	50	0	702
5:45 PM	655	11	46	0	712
Totals:	8259	215	704	2	9180

13-7462-001 El Dorado Hills Mainline Count
US-50 between El Dorado Hills Blvd and East Bidwell Street
Thursday, August 22, 2013

Eastbound

	Non-HOV		HOV Lane		
	Vehicles	Trucks	HOV Lane	HOV Trucks	Total
6:00 AM	179	22	5	0	206
6:15 AM	254	27	13	0	294
6:30 AM	408	28	19	0	455
6:45 AM	490	20	27	0	537
7:00 AM	451	22	25	0	498
7:15 AM	581	21	48	0	650
7:30 AM	675	33	53	0	761
7:45 AM	673	22	25	0	720
8:00 AM	596	22	33	0	651
8:15 AM	646	36	35	0	717
8:30 AM	627	40	41	0	708
8:45 AM	682	19	34	0	735
Totals:	6262	312	358	0	6932

	Non-HOV		HOV Lane		
	Vehicles	Trucks	HOV Lane	HOV Trucks	Total
3:00 PM	839	15	105	0	959
3:15 PM	871	14	115	1	1001
3:30 PM	869	17	128	0	1014
3:45 PM	981	5	115	0	1101
4:00 PM	951	9	108	0	1068
4:15 PM	1044	9	129	0	1182
4:30 PM	1048	4	125	0	1177
4:45 PM	1149	6	165	0	1320
5:00 PM	1067	4	148	0	1219
5:15 PM	1137	7	141	0	1285
5:30 PM	1095	5	140	0	1240
5:45 PM	1026	2	137	0	1165
Totals:	12077	97	1556	1	13731

Westbound

	Non-HOV		HOV Lane		
	Vehicles	Trucks	HOV Lane	HOV Trucks	Total
6:00 AM	599	10	49	0	658
6:15 AM	677	11	50	0	738
6:30 AM	860	18	83	0	961
6:45 AM	949	16	79	0	1044
7:00 AM	1000	15	91	0	1106
7:15 AM	1012	19	125	1	1157
7:30 AM	985	17	122	1	1125
7:45 AM	964	21	129	0	1114
8:00 AM	915	22	112	3	1052
8:15 AM	849	15	65	0	929
8:30 AM	807	15	72	0	894
8:45 AM	738	20	53	0	811
Totals:	10355	199	1030	5	11589

	Non-HOV		HOV Lane		
	Vehicles	Trucks	HOV Lane	HOV Trucks	Total
3:00 PM	645	36	67	1	749
3:15 PM	671	36	70	0	777
3:30 PM	694	29	60	1	784
3:45 PM	681	23	85	0	789
4:00 PM	675	19	71	0	765
4:15 PM	736	15	78	0	829
4:30 PM	678	21	58	0	757
4:45 PM	712	23	81	0	816
5:00 PM	744	17	56	0	817
5:15 PM	730	11	62	0	803
5:30 PM	697	11	51	0	759
5:45 PM	617	22	60	0	699
Totals:	8280	263	799	2	9344

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

EDH Town Center
Existing Conditions
AM Peak Hour

Intersection 1 — **El Dorado Hills Boulevard/Saratoga Way-Park Drive** — **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	55	59	107.8%	53.2	3.5	D
	Through	593	620	104.6%	12.5	2.2	B
	Right Turn	30	32	105.3%	9.5	3.5	A
	Subtotal	**678**	**711**	**104.9%**	**15.7**	**2.0**	**B**
SB	Left Turn	148	121	81.5%	165.1	10.9	F
	Through	1960	1617	82.5%	116.3	10.9	F
	Right Turn	17	15	85.9%	109.4	8.7	F
	Subtotal	**2125**	**1752**	**82.5%**	**119.6**	**10.9**	**F**
EB	Left Turn	20	19	95.5%	44.2	8.0	D
	Through	16	17	103.1%	45.9	7.6	D
	Right Turn	107	107	100.3%	42.6	5.0	D
	Subtotal	**143**	**143**	**99.9%**	**43.2**	**3.6**	**D**
WB	Left Turn	22	22	100.0%	60.1	15.0	E
	Through	7	8	111.4%	46.7	19.8	D
	Right Turn	69	72	104.2%	7.8	4.0	A
	Subtotal	**98**	**102**	**103.8%**	**22.2**	**7.7**	**C**
Total		**3044**	**2708**	**89.0%**	**84.6**	**6.9**	**F**

Intersection 2 — **El Dorado Hills Boulevard/US 50 WB Ramps** — **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	418	385	92.1%	180.3	49.0	F
	Through	460	468	101.8%	15.1	1.3	B
	Right Turn	115	119	103.0%	10.9	1.4	B
	Subtotal	**993**	**972**	**97.9%**	**80.0**	**19.3**	**E**
SB	Left Turn	64	53	82.2%	72.8	8.3	E
	Through	894	757	84.7%	24.9	2.4	C
	Right Turn	1131	950	84.0%	75.3	3.6	E
	Subtotal	**2089**	**1759**	**84.2%**	**53.6**	**2.1**	**D**
EB	Left Turn	193	193	100.1%	111.1	44.1	F
	Through	48	49	102.5%	112.3	41.2	F
	Right Turn	652	644	98.7%	47.0	16.9	D
	Subtotal	**893**	**886**	**99.2%**	**64.9**	**18.4**	**E**
WB	Left Turn	98	102	104.2%	97.5	20.1	F
	Through	120	117	97.6%	137.4	29.9	F
	Right Turn	47	49	104.3%	164.1	35.8	F
	Subtotal	**265**	**268**	**101.2%**	**127.3**	**27.0**	**F**
Total		**4240**	**3885**	**91.6%**	**67.9**	**6.3**	**E**

Intersection 3 **Latrobe Road/US 50 EB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	685	690	100.8%	6.9	0.9	A
	Right Turn	177	176	99.6%	7.3	0.8	A
	Subtotal	**862**	**867**	**100.5%**	**7.0**	**0.8**	**A**
SB	Left Turn	254	217	85.4%	47.2	2.2	D
	Through	1390	1287	92.6%	9.0	1.1	A
	Right Turn						
	Subtotal	**1644**	**1504**	**91.5%**	**14.5**	**1.1**	**B**
EB	Left Turn						
	Through						
	Right Turn	1087	1084	99.8%	47.5	23.2	D
	Subtotal	**1087**	**1084**	**99.8%**	**47.5**	**23.2**	**D**
WB	Left Turn						
	Through						
	Right Turn	307	305	99.4%	1.0	0.1	A
	Subtotal	**307**	**305**	**99.4%**	**1.0**	**0.1**	**A**
Total		**3900**	**3760**	**96.4%**	**21.2**	**6.9**	**C**

Intersection 4 **Latrobe Road/Town Center Boulevard** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	71	71	100.4%	107.6	18.2	F
	Through	625	629	100.6%	23.1	1.8	C
	Right Turn	44	45	102.0%	7.0	2.0	A
	Subtotal	**740**	**745**	**100.7%**	**30.3**	**2.6**	**C**
SB	Left Turn	499	472	94.6%	126.9	21.2	F
	Through	1434	1372	95.6%	13.7	1.9	B
	Right Turn	544	526	96.6%	5.7	0.5	A
	Subtotal	**2477**	**2369**	**95.7%**	**34.5**	**5.6**	**C**
EB	Left Turn	19	19	98.4%	90.0	17.0	F
	Through	7	8	107.1%	81.6	21.3	F
	Right Turn	7	7	100.0%	10.5	5.7	B
	Subtotal	**33**	**33**	**100.6%**	**71.0**	**8.3**	**E**
WB	Left Turn	72	72	100.4%	81.3	5.8	F
	Through	48	49	102.5%	78.2	13.1	E
	Right Turn	218	219	100.6%	10.5	1.2	B
	Subtotal	**338**	**341**	**100.9%**	**35.2**	**2.5**	**D**
Total		**3588**	**3488**	**97.2%**	**34.0**	**4.1**	**C**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	176	100	47	200	191	191	43	373	91	118	1059	336
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	5.7		6.0	5.8	5.8	5.0	5.7	5.7	5.0	5.7	5.7
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	0.86	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3354		3433	3539	1561	1770	6408	1561	3433	5085	1561
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3354		3433	3539	1561	1770	6408	1561	3433	5085	1561
Peak-hour factor, PHF	0.94	0.94	0.94	0.85	0.85	0.85	0.85	0.85	0.85	0.91	0.91	0.91
Adj. Flow (vph)	187	106	50	235	225	225	51	439	107	130	1164	369
RTOR Reduction (vph)	0	44	0	0	0	195	0	0	33	0	0	162
Lane Group Flow (vph)	187	112	0	235	225	30	51	439	74	130	1164	207
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	11.8	16.8		13.1	18.0	18.0	7.0	73.3	73.3	9.4	75.7	75.7
Effective Green, g (s)	11.8	16.8		13.1	18.0	18.0	7.0	73.3	73.3	9.4	75.7	75.7
Actuated g/C Ratio	0.09	0.12		0.10	0.13	0.13	0.05	0.54	0.54	0.07	0.56	0.56
Clearance Time (s)	6.0	5.7		6.0	5.8	5.8	5.0	5.7	5.7	5.0	5.7	5.7
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	300	417		333	472	208	92	3479	848	239	2851	875
v/s Ratio Prot	0.05	0.03		c0.07	c0.06		0.03	0.07		c0.04	c0.23	
v/s Ratio Perm						0.02			0.05			0.13
v/c Ratio	0.62	0.27		0.71	0.48	0.14	0.55	0.13	0.09	0.54	0.41	0.24
Uniform Delay, d1	59.5	53.5		59.1	54.1	51.7	62.5	15.1	14.8	60.7	16.9	15.0
Progression Factor	1.00	1.00		1.06	0.85	0.84	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.0	0.3		6.4	0.7	0.3	7.1	0.1	0.2	2.5	0.4	0.6
Delay (s)	63.5	53.9		68.8	46.9	43.8	69.5	15.2	15.0	63.2	17.3	15.7
Level of Service	E	D		E	D	D	E	B	B	E	B	B
Approach Delay (s)		59.1			53.4			19.8			20.5	
Approach LOS		E			D			B			C	

Intersection Summary			
HCM Average Control Delay	31.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	267	166	297	306	0	68	0	54	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7		5.0	5.7		5.3	5.3				
Lane Util. Factor		0.95		1.00	0.95		1.00	1.00				
Frt		0.94		1.00	1.00		1.00	0.85				
Flt Protected		1.00		0.95	1.00		0.95	1.00				
Satd. Flow (prot)		3335		1770	3539		1770	1583				
Flt Permitted		1.00		0.95	1.00		0.76	1.00				
Satd. Flow (perm)		3335		1770	3539		1410	1583				
Peak-hour factor, PHF	0.89	0.89	0.89	0.81	0.81	0.81	0.71	0.71	0.71	0.71	0.71	0.71
Adj. Flow (vph)	0	300	187	367	378	0	96	0	76	0	0	0
RTOR Reduction (vph)	0	137	0	0	0	0	0	66	0	0	0	0
Lane Group Flow (vph)	0	350	0	367	378	0	96	10	0	0	0	0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)		12.2		20.9	38.1		7.6	7.6				
Effective Green, g (s)		12.2		20.9	38.1		7.6	7.6				
Actuated g/C Ratio		0.22		0.37	0.67		0.13	0.13				
Clearance Time (s)		5.7		5.0	5.7		5.3	5.3				
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0				
Lane Grp Cap (vph)		718		652	2378		189	212				
v/s Ratio Prot		c0.10		c0.21	0.11			0.01				
v/s Ratio Perm							c0.07					
v/c Ratio		0.49		0.56	0.16		0.51	0.05				
Uniform Delay, d1		19.5		14.3	3.4		22.8	21.4				
Progression Factor		1.00		1.00	1.00		1.00	1.00				
Incremental Delay, d2		0.5		1.1	0.0		2.1	0.1				
Delay (s)		20.0		15.4	3.4		25.0	21.5				
Level of Service		C		B	A		C	C				
Approach Delay (s)		20.0			9.3			23.4			0.0	
Approach LOS		C			A			C			A	

Intersection Summary			
HCM Average Control Delay	14.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	56.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	47.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	238	1	18	429	193	41	4	10	47	7	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	6.0	6.0	4.5	6.0		5.2	6.0		4.5	4.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	0.99		1.00	0.98		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.95		1.00	0.89		1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1539	1770	3346		1770	1622		1770	1577	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1539	1770	3346		1770	1622		1770	1577	
Peak-hour factor, PHF	0.83	0.83	0.83	0.80	0.80	0.80	0.63	0.63	0.63	0.83	0.83	0.83
Adj. Flow (vph)	84	287	1	22	536	241	65	6	16	57	8	135
RTOR Reduction (vph)	0	0	0	0	22	0	0	16	0	0	123	0
Lane Group Flow (vph)	84	287	1	22	755	0	65	6	0	57	20	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	5	2		1	6		7	3		4	8	
Permitted Phases			2									
Actuated Green, G (s)	9.8	91.4	91.4	3.7	84.6		7.5	4.2		14.7	12.2	
Effective Green, g (s)	9.8	91.4	91.4	3.7	84.6		7.5	4.2		14.7	12.2	
Actuated g/C Ratio	0.07	0.68	0.68	0.03	0.63		0.06	0.03		0.11	0.09	
Clearance Time (s)	5.2	6.0	6.0	4.5	6.0		5.2	6.0		4.5	4.5	
Vehicle Extension (s)	1.0	3.6	3.6	1.0	3.6		1.0	1.0		3.0	3.0	
Lane Grp Cap (vph)	128	2396	1042	49	2097		98	50		193	143	
v/s Ratio Prot	c0.05	0.08		0.01	c0.23		c0.04	0.00		c0.03	0.01	
v/s Ratio Perm			0.00									
v/c Ratio	0.66	0.12	0.00	0.45	0.36		0.66	0.13		0.30	0.14	
Uniform Delay, d1	61.0	7.7	7.0	64.6	12.1		62.5	63.6		55.4	56.6	
Progression Factor	0.98	1.21	1.72	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	8.7	0.1	0.0	2.4	0.5		12.3	0.4		0.9	0.5	
Delay (s)	68.2	9.3	12.1	67.0	12.6		74.8	64.1		56.2	57.0	
Level of Service	E	A	B	E	B		E	E		E	E	
Approach Delay (s)		22.6			14.1			72.1			56.8	
Approach LOS		C			B			E			E	

Intersection Summary			
HCM Average Control Delay	25.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	45.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	177	43	47	477	54	124	5	61	14	8	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.0		3.5	5.3		4.2	4.2		4.2	4.2	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.98		1.00	0.86		1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1768	1800		1770	1830		1770	1571		1770	1719	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1768	1800		1770	1830		1770	1571		1770	1719	
Peak-hour factor, PHF	0.89	0.89	0.89	0.69	0.69	0.69	0.86	0.86	0.86	0.78	0.78	0.78
Adj. Flow (vph)	4	199	48	68	691	78	144	6	71	18	10	8
RTOR Reduction (vph)	0	4	0	0	2	0	0	60	0	0	7	0
Lane Group Flow (vph)	4	243	0	68	767	0	144	17	0	18	11	0
Confl. Peds. (#/hr)	2		2			2			2			3
Turn Type	Prot			Prot			Split			Split		
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases												
Actuated Green, G (s)	0.8	40.9		6.5	47.3		13.3	13.3		6.3	6.3	
Effective Green, g (s)	0.8	40.9		6.5	47.3		13.3	13.3		6.3	6.3	
Actuated g/C Ratio	0.01	0.48		0.08	0.56		0.16	0.16		0.07	0.07	
Clearance Time (s)	3.5	6.0		3.5	5.3		4.2	4.2		4.2	4.2	
Vehicle Extension (s)	2.0	3.7		2.0	3.0		3.6	3.6		3.6	3.6	
Lane Grp Cap (vph)	17	867		136	1020		277	246		131	128	
v/s Ratio Prot	0.00	0.13		c0.04	c0.42		c0.08	0.01		c0.01	0.01	
v/s Ratio Perm												
v/c Ratio	0.24	0.28		0.50	0.75		0.52	0.07		0.14	0.08	
Uniform Delay, d1	41.7	13.2		37.6	14.3		32.9	30.5		36.8	36.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.6	0.2		1.1	3.2		2.0	0.1		0.6	0.3	
Delay (s)	44.3	13.4		38.7	17.5		34.8	30.7		37.3	36.9	
Level of Service	D	B		D	B		C	C		D	D	
Approach Delay (s)		13.9			19.2			33.4			37.1	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM Average Control Delay	21.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	84.9	Sum of lost time (s)	17.2
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection 9 **Post Street/Town Center Boulevard** **Unsignalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	140	135	96.6%	10.5	0.6	B
	Through	61	63	102.6%	8.2	0.8	A
	Right Turn	17	17	101.8%	4.1	1.1	A
	Subtotal	**218**	**215**	**98.7%**	**9.3**	**0.6**	**A**
SB	Left Turn	8	7	90.0%	10.2	1.3	B
	Through	54	52	96.1%	6.6	0.5	A
	Right Turn	79	82	103.3%	3.8	0.4	A
	Subtotal	**141**	**141**	**99.8%**	**5.1**	**0.5**	**A**
EB	Left Turn	275	266	96.8%	19.4	1.8	C
	Through	120	113	93.8%	12.6	0.7	B
	Right Turn	154	147	95.6%	10.9	0.9	B
	Subtotal	**549**	**526**	**95.8%**	**15.6**	**1.1**	**C**
WB	Left Turn	14	14	98.6%	9.7	0.2	A
	Through	46	52	113.9%	7.4	0.3	A
	Right Turn	7	9	122.9%	4.0	0.7	A
	Subtotal	**67**	**75**	**111.6%**	**7.4**	**0.3**	**A**
Total		**975**	**957**	**98.1%**	**12.0**	**0.7**	**B**

SimTraffic Post-Processor | **EDH Town Center**
Average Results from 10 Runs | **Existing Conditions**
Volume and Delay by Movement | **PM Peak Hour**

Intersection 1 **El Dorado Hills Boulevard/Saratoga Way-Park Drive** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	111	111	99.8%	58.5	6.3	E
	Through	1630	1655	101.5%	18.8	3.2	B
	Right Turn	59	58	97.8%	17.9	3.5	B
	Subtotal	**1800**	**1823**	**101.3%**	**21.2**	**3.1**	**C**
SB	Left Turn	140	138	98.2%	62.1	4.7	E
	Through	879	901	102.5%	17.8	1.5	B
	Right Turn	23	22	95.7%	12.9	3.6	B
	Subtotal	**1042**	**1060**	**101.8%**	**23.4**	**1.8**	**C**
EB	Left Turn	38	41	107.4%	52.8	3.7	D
	Through	13	13	99.2%	55.4	11.4	E
	Right Turn	72	76	105.3%	10.7	1.4	B
	Subtotal	**123**	**130**	**105.3%**	**28.4**	**3.6**	**C**
WB	Left Turn	55	57	103.5%	38.7	5.1	D
	Through	22	24	109.1%	55.8	10.5	E
	Right Turn	266	269	101.3%	28.7	5.5	C
	Subtotal	**343**	**350**	**102.1%**	**32.2**	**4.8**	**C**
Total		**3308**	**3364**	**101.7%**	**23.3**	**2.4**	**C**

Intersection 2 **El Dorado Hills Boulevard/US 50 WB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	1021	1012	99.1%	65.1	12.5	E
	Through	1521	1516	99.7%	50.3	7.3	D
	Right Turn	248	249	100.3%	51.3	9.1	D
	Subtotal	**2790**	**2777**	**99.5%**	**55.8**	**6.3**	**E**
SB	Left Turn	61	59	96.6%	107.8	46.2	F
	Through	548	579	105.6%	72.9	15.9	E
	Right Turn	397	393	98.9%	27.5	1.6	C
	Subtotal	**1006**	**1030**	**102.4%**	**57.6**	**10.1**	**E**
EB	Left Turn	229	222	97.1%	109.4	66.7	F
	Through	37	39	105.4%	113.0	62.6	F
	Right Turn	297	297	100.1%	9.6	5.0	A
	Subtotal	**563**	**559**	**99.3%**	**57.3**	**36.1**	**E**
WB	Left Turn	90	85	94.1%	212.7	136.1	F
	Through	110	102	93.1%	248.0	139.4	F
	Right Turn	91	86	94.5%	302.5	160.6	F
	Subtotal	**291**	**273**	**93.8%**	**254.6**	**145.7**	**F**
Total		**4650**	**4639**	**99.8%**	**68.0**	**9.8**	**E**

Intersection 3 **Latrobe Road/US 50 EB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	1841	1836	99.8%	19.9	6.4	B
	Right Turn	702	716	102.0%	15.6	2.4	B
	Subtotal	**2543**	**2553**	**100.4%**	**18.7**	**5.3**	**B**
SB	Left Turn	211	213	101.1%	55.1	1.4	E
	Through	745	750	100.7%	8.9	3.6	A
	Right Turn						
	Subtotal	**956**	**963**	**100.8%**	**19.2**	**2.6**	**B**
EB	Left Turn						
	Through						
	Right Turn	793	707	89.2%	20.2	12.0	C
	Subtotal	**793**	**707**	**89.2%**	**20.2**	**12.0**	**C**
WB	Left Turn						
	Through						
	Right Turn	949	947	99.7%	18.1	17.3	B
	Subtotal	**949**	**947**	**99.7%**	**18.1**	**17.3**	**B**
Total		**5241**	**5169**	**98.6%**	**18.9**	**5.9**	**B**

Intersection 4 **Latrobe Road/Town Center Boulevard** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	3	3	86.7%	122.2	69.0	F
	Through	1450	1440	99.3%	92.7	20.3	F
	Right Turn	127	132	104.1%	10.0	1.5	A
	Subtotal	**1580**	**1575**	**99.7%**	**85.8**	**18.6**	**F**
SB	Left Turn	639	548	85.8%	86.3	9.0	F
	Through	875	885	101.1%	20.6	2.4	C
	Right Turn	24	24	99.6%	1.8	0.4	A
	Subtotal	**1538**	**1457**	**94.7%**	**45.1**	**5.3**	**D**
EB	Left Turn	352	351	99.8%	85.3	5.6	F
	Through	54	56	102.8%	70.8	4.9	E
	Right Turn	115	119	103.5%	22.7	5.9	C
	Subtotal	**521**	**526**	**100.9%**	**69.6**	**5.2**	**E**
WB	Left Turn	58	58	99.7%	78.0	3.6	E
	Through	9	10	107.8%	64.4	14.6	E
	Right Turn	741	762	102.8%	48.1	2.8	D
	Subtotal	**808**	**829**	**102.6%**	**50.3**	**2.5**	**D**
Total		**4447**	**4386**	**98.6%**	**63.7**	**6.6**	**E**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	286	243	82	145	129	237	83	1057	258	352	479	217
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	5.7		6.0	5.8	5.8	5.0	5.7	5.7	5.0	5.7	5.7
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	0.86	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3394		3433	3539	1561	1770	6408	1561	3433	5085	1561
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3394		3433	3539	1561	1770	6408	1561	3433	5085	1561
Peak-hour factor, PHF	0.77	0.77	0.77	0.89	0.89	0.89	0.82	0.82	0.82	0.87	0.87	0.87
Adj. Flow (vph)	371	316	106	163	145	266	101	1289	315	405	551	249
RTOR Reduction (vph)	0	27	0	0	0	209	0	0	30	0	0	124
Lane Group Flow (vph)	371	395	0	163	145	57	101	1289	285	405	551	125
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	20.7	25.9		12.4	17.5	17.5	12.8	67.7	67.7	19.6	74.5	74.5
Effective Green, g (s)	20.7	25.9		12.4	17.5	17.5	12.8	67.7	67.7	19.6	74.5	74.5
Actuated g/C Ratio	0.14	0.17		0.08	0.12	0.12	0.09	0.46	0.46	0.13	0.50	0.50
Clearance Time (s)	6.0	5.7		6.0	5.8	5.8	5.0	5.7	5.7	5.0	5.7	5.7
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	480	594		288	418	185	153	2931	714	455	2560	786
v/s Ratio Prot	c0.11	c0.12		0.05	0.04		0.06	c0.20		c0.12	0.11	
v/s Ratio Perm						0.04			0.18			0.08
v/c Ratio	0.77	0.66		0.57	0.35	0.31	0.66	0.44	0.40	0.89	0.22	0.16
Uniform Delay, d1	61.4	57.0		65.2	60.0	59.7	65.5	27.3	26.6	63.1	20.5	19.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.6	2.8		2.5	0.5	1.0	10.2	0.5	1.7	19.1	0.2	0.4
Delay (s)	69.0	59.8		67.8	60.5	60.7	75.7	27.8	28.3	82.2	20.7	20.3
Level of Service	E	E		E	E	E	E	C	C	F	C	C
Approach Delay (s)		64.1			62.6			30.7			41.3	
Approach LOS		E			E			C			D	

Intersection Summary			
HCM Average Control Delay	44.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	148.0	Sum of lost time (s)	22.4
Intersection Capacity Utilization	76.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	428	58	68	390	0	292	0	191	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7		5.0	5.7		5.3	5.3				
Lane Util. Factor		0.95		1.00	0.95		1.00	1.00				
Frt		0.98		1.00	1.00		1.00	0.85				
Flt Protected		1.00		0.95	1.00		0.95	1.00				
Satd. Flow (prot)		3476		1770	3539		1770	1583				
Flt Permitted		1.00		0.95	1.00		0.76	1.00				
Satd. Flow (perm)		3476		1770	3539		1410	1583				
Peak-hour factor, PHF	0.90	0.90	0.90	0.83	0.83	0.83	0.75	0.75	0.75	0.75	0.75	0.75
Adj. Flow (vph)	0	476	64	82	470	0	389	0	255	0	0	0
RTOR Reduction (vph)	0	14	0	0	0	0	0	164	0	0	0	0
Lane Group Flow (vph)	0	526	0	82	470	0	389	91	0	0	0	0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)		14.4		6.6	26.0		20.4	20.4				
Effective Green, g (s)		14.4		6.6	26.0		20.4	20.4				
Actuated g/C Ratio		0.25		0.11	0.45		0.36	0.36				
Clearance Time (s)		5.7		5.0	5.7		5.3	5.3				
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0				
Lane Grp Cap (vph)		872		204	1603		501	563				
v/s Ratio Prot		c0.15		0.05	c0.13			0.06				
v/s Ratio Perm							c0.28					
v/c Ratio		0.60		0.40	0.29		0.78	0.16				
Uniform Delay, d1		19.0		23.6	9.9		16.5	12.6				
Progression Factor		1.00		1.00	1.00		1.00	1.00				
Incremental Delay, d2		1.2		1.3	0.1		7.4	0.1				
Delay (s)		20.2		24.9	10.0		23.9	12.8				
Level of Service		C		C	B		C	B				
Approach Delay (s)		20.2			12.2			19.5			0.0	
Approach LOS		C			B			B			A	

Intersection Summary			
HCM Average Control Delay	17.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	57.4	Sum of lost time (s)	16.7
Intersection Capacity Utilization	47.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	163	683	7	11	341	129	23	9	12	188	10	147
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	6.0	6.0	4.5	6.0		5.2	6.0		4.5	4.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	0.99		1.00	0.98		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	0.92		1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1539	1770	3368		1770	1675		1770	1579	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1539	1770	3368		1770	1675		1770	1579	
Peak-hour factor, PHF	0.85	0.85	0.85	0.88	0.88	0.88	0.69	0.69	0.69	0.78	0.78	0.78
Adj. Flow (vph)	192	804	8	12	388	147	33	13	17	241	13	188
RTOR Reduction (vph)	0	0	3	0	22	0	0	16	0	0	156	0
Lane Group Flow (vph)	192	804	5	12	513	0	33	14	0	241	45	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	5	2		1	6		7	3		4	8	
Permitted Phases			2									
Actuated Green, G (s)	17.3	85.1	85.1	2.1	69.2		4.4	4.3		22.5	23.2	
Effective Green, g (s)	17.3	85.1	85.1	2.1	69.2		4.4	4.3		22.5	23.2	
Actuated g/C Ratio	0.13	0.63	0.63	0.02	0.51		0.03	0.03		0.17	0.17	
Clearance Time (s)	5.2	6.0	6.0	4.5	6.0		5.2	6.0		4.5	4.5	
Vehicle Extension (s)	1.0	3.6	3.6	1.0	3.6		1.0	1.0		3.0	3.0	
Lane Grp Cap (vph)	227	2231	970	28	1726		58	53		295	271	
v/s Ratio Prot	c0.11	c0.23		0.01	0.15		c0.02	0.01		c0.14	0.03	
v/s Ratio Perm			0.00									
v/c Ratio	0.85	0.36	0.01	0.43	0.30		0.57	0.26		0.82	0.17	
Uniform Delay, d1	57.5	11.9	9.3	65.9	18.9		64.4	63.8		54.3	47.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	23.2	0.5	0.0	3.8	0.4		7.4	0.9		15.9	0.3	
Delay (s)	80.8	12.4	9.3	69.7	19.4		71.8	64.7		70.2	48.0	
Level of Service	F	B	A	E	B		E	E		E	D	
Approach Delay (s)		25.4			20.5			68.4			60.1	
Approach LOS		C			C			E			E	

Intersection Summary			
HCM Average Control Delay	32.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	14.9
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	472	116	14	207	70	82	14	30	152	34	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.0		3.5	5.3		4.2	4.2		4.2	4.2	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	0.98		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.96		1.00	0.90		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1799		1770	1781		1770	1644		1770	1681	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1799		1770	1781		1770	1644		1770	1681	
Peak-hour factor, PHF	0.91	0.91	0.91	0.78	0.78	0.78	0.81	0.81	0.81	0.90	0.90	0.90
Adj. Flow (vph)	53	519	127	18	265	90	101	17	37	169	38	49
RTOR Reduction (vph)	0	4	0	0	6	0	0	32	0	0	32	0
Lane Group Flow (vph)	53	642	0	18	349	0	101	22	0	169	55	0
Confl. Peds. (#/hr)	2		2			2			2			3
Turn Type	Prot			Prot			Split			Split		
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases												
Actuated Green, G (s)	6.3	46.2		2.3	42.9		12.8	12.8		15.3	15.3	
Effective Green, g (s)	6.3	46.2		2.3	42.9		12.8	12.8		15.3	15.3	
Actuated g/C Ratio	0.07	0.49		0.02	0.45		0.14	0.14		0.16	0.16	
Clearance Time (s)	3.5	6.0		3.5	5.3		4.2	4.2		4.2	4.2	
Vehicle Extension (s)	2.0	3.7		2.0	3.0		3.6	3.6		3.6	3.6	
Lane Grp Cap (vph)	118	880		43	809		240	223		287	272	
v/s Ratio Prot	c0.03	c0.36		0.01	0.20		c0.06	0.01		c0.10	0.03	
v/s Ratio Perm												
v/c Ratio	0.45	0.73		0.42	0.43		0.42	0.10		0.59	0.20	
Uniform Delay, d1	42.4	19.2		45.4	17.5		37.5	35.8		36.7	34.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.0	3.2		2.4	0.4		1.5	0.2		3.4	0.5	
Delay (s)	43.4	22.4		47.8	17.9		38.9	36.0		40.0	34.8	
Level of Service	D	C		D	B		D	D		D	C	
Approach Delay (s)		24.0			19.3			37.9			38.2	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM Average Control Delay	26.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	94.5	Sum of lost time (s)	11.9
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		

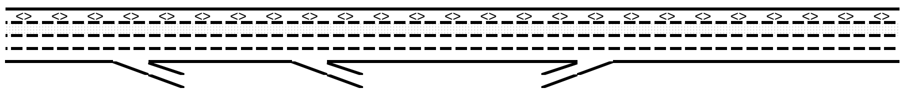
c Critical Lane Group

Intersection 9 **Post Street/Town Center Boulevard** **Unsignalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	239	238	99.5%	16.4	0.9	C
	Through	118	121	102.5%	11.7	0.6	B
	Right Turn	28	30	107.1%	7.7	0.6	A
	Subtotal	**385**	**389**	**101.0%**	**14.2**	**0.6**	**B**
SB	Left Turn	11	10	93.6%	12.9	2.4	B
	Through	75	74	99.2%	14.0	4.0	B
	Right Turn	207	207	100.2%	10.2	3.8	B
	Subtotal	**293**	**292**	**99.7%**	**11.3**	**3.7**	**B**
EB	Left Turn	264	261	99.0%	25.4	2.7	D
	Through	209	209	100.1%	19.4	1.5	C
	Right Turn	172	178	103.3%	12.4	1.0	B
	Subtotal	**645**	**648**	**100.5%**	**19.9**	**1.8**	**C**
WB	Left Turn	17	18	104.7%	12.4	2.0	B
	Through	183	192	105.0%	14.2	1.9	B
	Right Turn	6	6	100.0%	12.3	5.0	B
	Subtotal	**206**	**216**	**104.9%**	**14.0**	**1.7**	**B**
Total		**1529**	**1545**	**101.1%**	**16.1**	**1.2**	**C**

Project: El Dorado Hills Town Center Apartments **Alternative:** Existing Condition

Freeway Corridor: Eastbound US 50 **Time Period:** AM Peak Hour



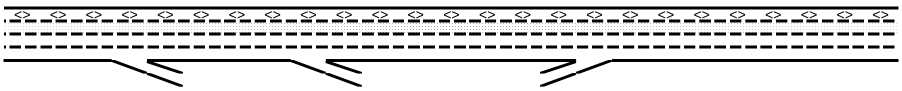
Key

<> Express Lane (HOV)

No Trucks

Location	1	2	3	4	5
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd on-ramp	El Dorado Hills Blvd to Bass Lake Rd
Define Freeway Segment					
Type	Diverge	Diverge	Basic	Merge	Basic
Length (ft)	1,500	850	1,975	1,500	7,500
Accel Length				275	
Decel Length	150	150			
Mainline Volume	2,560	1,473	1,166	1,166	1,597
On Ramp Volume				431	
Off Ramp Volume	1,087	307			
Express Lane Volume	128	74	58	58	80
EL On Ramp Volume					
EL Off Ramp Volume					
Calculate Flow Rate in General Purpose Lanes (GP)					
GP Volume (vph)	2,432	1,399	1,108	1,539	1,517
PHF	0.87	0.87	0.87	0.87	0.87
GP Lanes	3	3	3	3	3
Terrain	Level	Level	Level	Level	Grade
Grade %	0.0%	0.0%	0.0%	0.0%	7.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	1.00
Truck & Bus %	4.0%	4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	5.0
E_R	1.2	1.2	1.2	1.2	6.0
f_{HV}	0.980	0.980	0.980	0.980	0.862
f_P	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	2,851	1,641	1,299	1,804	2,023
GP Flow (pcphpl)	950	547	433	601	674
Calculate Speed in General Purpose Lanes					
Lane Width (ft)	12	12	12	12	12
Shoulder Width	>6	>6	>6	>6	>6
TRD	3.0	3.0	3.0	3.0	3.0
f_{LW}	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0
Calc'd FFS	67.3	67.3	67.3	67.3	67.3
Measured FFS	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65
Calculate Operations in General Purpose Lanes					
v/c ratio	0.40	0.23	0.18	0.26	0.29
Speed (mph)	65.0	65.0	65.0	65.0	65.0
Density (pcphpl)	14.6	8.4	6.7	9.3	10.4
LOS	B	A	A	A	A
Calculate Operations for Entering GP Lanes					
GP_{IN} Vol (pcph)				1,331	
GP_{IN} Cap (pcph)				7,050	
GP_{IN} v/c ratio				0.19	
Calculate Operations for Exiting GP Lanes					
GP_{OUT} Vol (pcph)	1,658	1,304			
GP_{OUT} Cap (pcph)	7,050	7,050			
GP_{OUT} v/c ratio	0.24	0.18			

Location	1	2	3	4	5



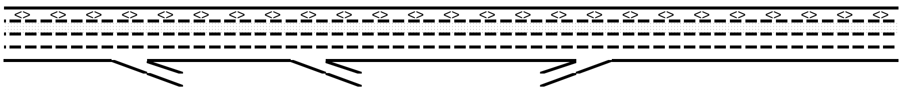
Key

<> Express Lane (HOV)

No Trucks

Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd on-ramp	El Dorado Hills Blvd to Bass Lake Rd
Calculate Flow Rate in Express Lanes (EL)					
EL Volume (vph)	128	74	58	58	80
PHF	0.78	0.78	0.78	0.78	0.78
Express Lanes	1	1	1	1	1
Terrain	Level	Level	Level	Level	Grade
Grade %	0.0%	0.0%	0.0%	0.0%	7.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	1.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	5.5
E_R	1.2	1.2	1.2	1.2	6.0
f_{HV}	0.990	0.990	0.990	0.990	0.917
f_P	1.00	1.00	1.00	1.00	1.00
EL Flow (pcph)	166	95	75	75	112
EL Flow (pcphpl)	166	95	75	75	112
Calculate Speed in Express Lanes					
Lane Width (ft)					
Shoulder Width					
TRD					
f_{LW}					
f_{LC}					
Calc'd FFS					
Measured FFS	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65
Calculate Operations in Express Lanes					
EL_{IN} v/c ratio	0.09	0.05	0.04	0.04	0.06
Calculate On Ramp Flow Rate					
On Volume (vph)				431	
PHF				0.92	
Total Lanes				1	
Terrain				Level	
Grade %				0.0%	
Grade Length (mi)				0.00	
Truck & Bus %				2.0%	
RV %				0.0%	
E_T				1.5	
E_R				1.2	
f_{HV}				0.990	
f_P				1.00	
On Flow (pcph)				473	
On Flow (pcphpl)				473	
Calculate On Ramp Roadway Operations					
On Ramp Type				Right	
On Ramp Speed (mph)				45	
On Ramp Cap (pcph)				2,100	
On Ramp v/c ratio				0.23	

Location	1	2	3	4	5



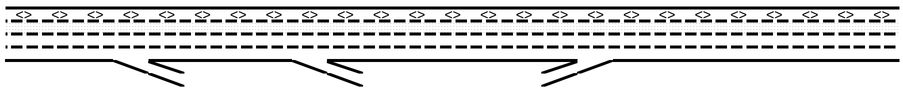
Key

<> Express Lane (HOV)

No Trucks

Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd on-ramp	El Dorado Hills Blvd to Bass Lake Rd
Calculate Off Ramp Flow Rate					
Off Volume (vph)	1,087	307			
PHF	0.92	0.92			
Total Lanes	1	1			
Terrain	Level	Level			
Grade %	0.0%	0.0%			
Grade Length (mi)	0.00	0.00			
Truck & Bus %	2.0%	2.0%			
RV %	0.0%	0.0%			
E_T	1.5	1.5			
E_R	1.2	1.2			
f_{HV}	0.990	0.990			
f_P	1.00	1.00			
Off Flow (pcph)	1,193	337			
Off Flow (pcphpl)	1,193	337			
Calculate Off Ramp Roadway Operations					
Off Ramp Type	Right	Right			
Off Ramp Speed	45	25			
Off Ramp Cap (pcph)	2,100	1,900			
Off Ramp v/c ratio	0.57	0.18			
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps					
Up Type		Off		Off	
Up Distance		2,350		1,975	
Up Flow (pcph)		1,193		337	
Down Type	Off	On		Off	
Down Distance	850	1,975		10,500	
Down Flow (pcph)	337	473		262	
Calculate Merge Influence Area Operations					
Effective v_P (pcph)				1,331	
Up Ramp L_{EQ}				460	
Down Ramp L_{EQ}				1,885	
P_{FM} (Eqn 13-3)				0.585	
P_{FM} (Eqn 13-4)		#VALUE!		0.681	
P_{FM} (Eqn 13-5)	0.653			0.555	
P_{FM}				0.681	
v_{12} (pcph)				906	
v_3 (pcph)				425	
v_{34} (pcph)					
v_{12a} (pcph)				906	
v_{R12a} (pcph)				1,379	
Merge Speed Index				0.31	
Merge Area Speed				57.8	
Outer Lanes Volume				425	
Outer Lanes Speed				65.0	
Segment Speed				59.4	
Merge v/c ratio				0.30	
Merge Density				14.3	
Merge LOS				B	

Location	1	2	3	4	5



Key

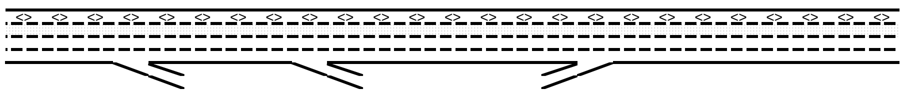
<> Express Lane (HOV)

No Trucks

Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd on-ramp	El Dorado Hills Blvd to Bass Lake Rd
Calculate Diverge Influence Area Operations					
Effective v_P (pcph)	2,851	1,641			
Up Ramp L_{EQ}		14,357			
Down Ramp L_{EQ}	545	486			
P_{FD} (Eqn 13-9)	0.634	0.703			
P_{FD} (Eqn 13-10)					
P_{FD} (Eqn 13-11)	0.606			#VALUE!	
P_{FD}	0.634	0.703			
v_{12} (pcph)	2,244	1,254			
v_3 (pcph)	607	387			
v_{34} (pcph)					
v_{12a} (pcph)	2,244	1,254			
Diverge Speed Index	0.41	0.59			
Diverge Area Speed	55.7	51.5			
Outer Lanes Volume	607	387			
Outer Lanes Speed	71.3	71.3			
Segment Speed	58.4	55.1			
Diverge v/c ratio	0.51	0.29			
Diverge Density	22.2	13.7			
Diverge LOS	C	B			
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments					
Calculate On Ramp to Mainline Flow Rate for Weave Segments					
Calculate Mainline to Off Ramp Flow Rate for Weave Segments					
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments					
Calculate Weave Segment Operations					
Summarize Segment Operations					
Segment v/c ratio	0.51	0.29	0.18	0.30	0.29
Segment Density	22.2	13.7	6.7	14.3	10.4
Segment LOS	C	B	A	B	A
Over Capacity					

Project: El Dorado Hills Town Center Apartments **Alternative:** Existing Condition
Freeway Corridor: Eastbound US 50 **Time Period:** PM Peak Hour

Location	1	2	3	4	5



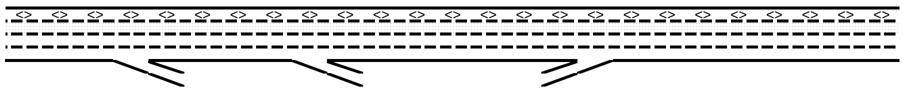
Key

<> Express Lane (HOV)

No Trucks

Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd on-ramp	El Dorado Hills Blvd to Bass Lake Rd
Define Freeway Segment					
Type	Diverge	Diverge	Basic	Merge	Basic
Length (ft)	1,500	850	1,975	1,500	7,500
Accel Length				275	
Decel Length	150	150			
Mainline Volume	4,870	4,077	3,128	3,128	4,041
On Ramp Volume				913	
Off Ramp Volume	793	949			
Express Lane Volume	536	448	344	344	445
EL On Ramp Volume					
EL Off Ramp Volume					
Calculate Flow Rate in General Purpose Lanes (GP)					
GP Volume (vph)	4,334	3,629	2,784	3,697	3,596
PHF	0.97	0.97	0.97	0.97	0.97
GP Lanes	3	3	3	3	3
Terrain	Level	Level	Level	Level	Grade
Grade %	0.0%	0.0%	0.0%	0.0%	7.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	1.00
Truck & Bus %	1.0%	1.0%	1.0%	1.0%	1.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	6.0
E_R	1.2	1.2	1.2	1.2	6.0
f_{HV}	0.995	0.995	0.995	0.995	0.952
f_P	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	4,491	3,759	2,884	3,830	3,893
GP Flow (pcphpl)	1,497	1,253	961	1,277	1,298
Calculate Speed in General Purpose Lanes					
Lane Width (ft)	12	12	12	12	12
Shoulder Width	>6	>6	>6	>6	>6
TRD	3.0	3.0	3.0	3.0	3.0
f_{LW}	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0
Calc'd FFS	67.3	67.3	67.3	67.3	67.3
Measured FFS	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65
Calculate Operations in General Purpose Lanes					
v/c ratio	0.64	0.53	0.41	0.54	0.55
Speed (mph)	64.9	65.0	65.0	65.0	65.0
Density (pcphpl)	23.1	19.3	14.8	19.6	20.0
LOS	C	C	B	C	C
Calculate Operations for Entering GP Lanes					
GP_{IN} Vol (pcph)				2,828	
GP_{IN} Cap (pcph)				7,050	
GP_{IN} v/c ratio				0.40	
Calculate Operations for Exiting GP Lanes					
GP_{OUT} Vol (pcph)	3,620	2,718			
GP_{OUT} Cap (pcph)	7,050	7,050			
GP_{OUT} v/c ratio	0.51	0.39			

Location	1	2	3	4	5

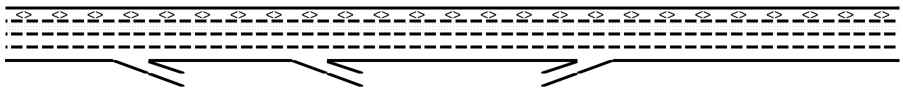


Key

<> Express Lane (HOV)

No Trucks

Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd on-ramp	El Dorado Hills Blvd to Bass Lake Rd
Calculate Flow Rate in Express Lanes (EL)					
EL Volume (vph)	536	448	344	344	445
PHF	0.9	0.9	0.9	0.9	0.9
Express Lanes	1	1	1	1	1
Terrain	Level	Level	Level	Level	Grade
Grade %	0.0%	0.0%	0.0%	0.0%	7.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	1.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	5.5
E_R	1.2	1.2	1.2	1.2	6.0
f_{HV}	0.990	0.990	0.990	0.990	0.917
f_P	1.00	1.00	1.00	1.00	1.00
EL Flow (pcph)	601	503	386	386	538
EL Flow (pcphpl)	601	503	386	386	538
Calculate Speed in Express Lanes					
Lane Width (ft)					
Shoulder Width					
TRD					
f_{LW}					
f_{LC}					
Calc'd FFS					
Measured FFS	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65
Calculate Operations in Express Lanes					
EL_{IN} v/c ratio	0.34	0.29	0.22	0.22	0.31
Calculate On Ramp Flow Rate					
On Volume (vph)				913	
PHF				0.92	
Total Lanes				1	
Terrain				Level	
Grade %				0.0%	
Grade Length (mi)				0.00	
Truck & Bus %				2.0%	
RV %				0.0%	
E_T				1.5	
E_R				1.2	
f_{HV}				0.990	
f_P				1.00	
On Flow (pcph)				1,002	
On Flow (pcphpl)				1,002	
Calculate On Ramp Roadway Operations					
On Ramp Type				Right	
On Ramp Speed (mph)				45	
On Ramp Cap (pcph)				2,100	
On Ramp v/c ratio				0.48	



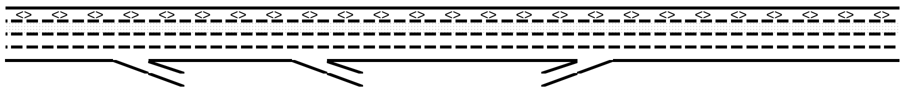
Key

<> Express Lane (HOV)

No Trucks

Location	1	2	3	4	5
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd on-ramp	El Dorado Hills Blvd to Bass Lake Rd
Calculate Off Ramp Flow Rate					
Off Volume (vph)	793	949			
PHF	0.92	0.92			
Total Lanes	1	1			
Terrain	Level	Level			
Grade %	0.0%	0.0%			
Grade Length (mi)	0.00	0.00			
Truck & Bus %	2.0%	2.0%			
RV %	0.0%	0.0%			
E_T	1.5	1.5			
E_R	1.2	1.2			
f_{HV}	0.990	0.990			
f_P	1.00	1.00			
Off Flow (pcph)	871	1,042			
Off Flow (pcphpl)	871	1,042			
Calculate Off Ramp Roadway Operations					
Off Ramp Type	Right	Right			
Off Ramp Speed	45	25			
Off Ramp Cap (pcph)	2,100	1,900			
Off Ramp v/c ratio	0.41	0.55			
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps					
Up Type		Off		Off	
Up Distance		2,350		1,975	
Up Flow (pcph)		871		1,042	
Down Type	Off	On		Off	
Down Distance	850	1,975		10,500	
Down Flow (pcph)	1,042	1,002		643	
Calculate Merge Influence Area Operations					
Effective v_P (pcph)				2,828	
Up Ramp L_{EQ}				893	
Down Ramp L_{EQ}				4,629	
P_{FM} (Eqn 13-3)				0.585	
P_{FM} (Eqn 13-4)		#VALUE!		0.653	
P_{FM} (Eqn 13-5)	0.871			0.565	
P_{FM}				0.653	
v_{12} (pcph)				1,848	
v_3 (pcph)				980	
v_{34} (pcph)					
v_{12a} (pcph)				1,848	
v_{R12a} (pcph)				2,850	
Merge Speed Index				0.36	
Merge Area Speed				56.6	
Outer Lanes Volume				980	
Outer Lanes Speed				63.3	
Segment Speed				58.2	
Merge v/c ratio				0.62	
Merge Density				25.5	
Merge LOS				C	

Location	1	2	3	4	5



Key

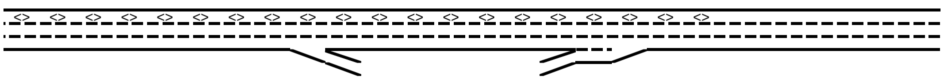
<> Express Lane (HOV)

No Trucks

Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd on-ramp	El Dorado Hills Blvd to Bass Lake Rd
Calculate Diverge Influence Area Operations					
Effective v_P (pcph)	4,491	3,759			
Up Ramp L_{EQ}		11,120			
Down Ramp L_{EQ}	1,521	1,553			
P_{FD} (Eqn 13-9)	0.608	0.618			
P_{FD} (Eqn 13-10)					
P_{FD} (Eqn 13-11)	0.675			#VALUE!	
P_{FD}	0.675	0.618			
v_{12} (pcph)	3,313	2,722			
v_3 (pcph)	1,178	1,038			
v_{34} (pcph)					
v_{12a} (pcph)	3,313	2,722			
Diverge Speed Index	0.38	0.65			
Diverge Area Speed	56.3	50.0			
Outer Lanes Volume	1,178	1,038			
Outer Lanes Speed	70.6	71.2			
Segment Speed	59.5	54.5			
Diverge v/c ratio	0.75	0.62			
Diverge Density	31.4	26.3			
Diverge LOS	D	C			
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments					
Calculate On Ramp to Mainline Flow Rate for Weave Segments					
Calculate Mainline to Off Ramp Flow Rate for Weave Segments					
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments					
Calculate Weave Segment Operations					
Summarize Segment Operations					
Segment v/c ratio	0.75	0.62	0.41	0.62	0.55
Segment Density	31.4	26.3	14.8	25.5	20.0
Segment LOS	D	C	B	C	C
Over Capacity					

Project: El Dorado Hills Town Center Apartments **Alternative:** Existing Conditions

Freeway Corridor: Westbound US 50 **Time Period:** AM Peak Hour



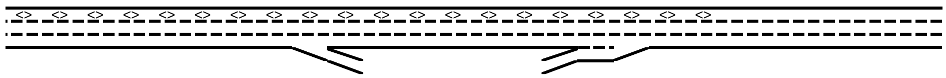
Key

<> Express Lane (HOV)

No Trucks

Location	8	9	10	11
Name	Bass Lake Rd to El Dorado Hills Blvd	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp
Define Freeway Segment				
Type	Basic	Diverge	Basic	Merge
Length (ft)	7,500	1,500	3,250	1,500
Accel Length				880
Decel Length		150		
Mainline Volume	3,701	3,701	2,807	2,807
On Ramp Volume				1,669
Off Ramp Volume		894		
Express Lane Volume	407	407	309	309
EL On Ramp Volume				
EL Off Ramp Volume				
Calculate Flow Rate in General Purpose Lanes (GP)				
GP Volume (vph)	3,294	3,294	2,498	4,167
PHF	0.92	0.94	0.94	0.94
GP Lanes	2	2	2	2
Terrain	Grade	Level	Level	Level
Grade %	-7.0%	0.0%	0.0%	0.0%
Grade Length (mi)	1.00	0.00	0.00	0.00
Truck & Bus %	1.0%	1.0%	1.0%	1.0%
RV %	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2
f_{HV}	0.995	0.995	0.995	0.995
f_P	1.00	1.00	1.00	1.00
GP Flow (pcph)	3,598	3,522	2,671	4,455
GP Flow (pcphpl)	1,799	1,761	1,335	2,228
Calculate Speed in General Purpose Lanes				
Lane Width (ft)	12	12	12	12
Shoulder Width	>6	>6	>6	>6
TRD	2.0	3.0	3.0	3.0
f_{LW}	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0
Calc'd FFS	69.6	67.3	67.3	67.3
Measured FFS	65.0	65.0	65.0	65.0
FFS	65	65	65	65
Calculate Operations in General Purpose Lanes				
v/c ratio	0.77	0.75	0.57	0.95
Speed (mph)	62.7	63.2	65.0	55.3
Density (pcphpl)	28.7	27.9	20.5	40.3
LOS	D	D	C	E
Calculate Operations for Entering GP Lanes				
GP_{IN} Vol (pcph)				2,623
GP_{IN} Cap (pcph)				4,700
GP_{IN} v/c ratio				0.56
Calculate Operations for Exiting GP Lanes				
GP_{OUT} Vol (pcph)		2,540		
GP_{OUT} Cap (pcph)		4,700		
GP_{OUT} v/c ratio		0.54		

Location	8	9	10	11	

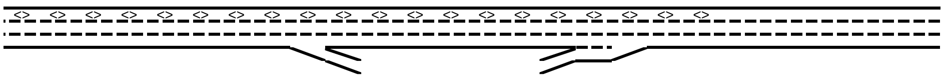


Key

<> Express Lane (HOV)

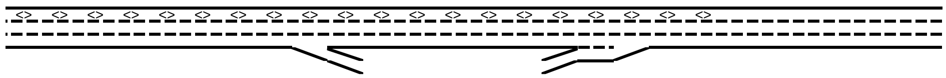
No Trucks

Name	Bass Lake Rd to El Dorado Hills Blvd	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp	
Calculate Flow Rate in Express Lanes (EL)					
EL Volume (vph)	407	407	309	309	
PHF	0.89	0.89	0.89	0.89	
Express Lanes	1	1	1	1	
Terrain	Grade	Level	Level	Level	
Grade %	-7.0%	0.0%	0.0%	0.0%	
Grade Length (mi)	1.00	0.00	0.00	0.00	
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	
RV %	0.0%	0.0%	0.0%	0.0%	
E_T	1.5	1.5	1.5	1.5	
E_R	1.2	1.2	1.2	1.2	
f_{HV}	0.990	0.990	0.990	0.990	
f_P	1.00	1.00	1.00	1.00	
EL Flow (pcph)	462	462	350	350	
EL Flow (pcphpl)	462	462	350	350	
Calculate Speed in Express Lanes					
Lane Width (ft)					
Shoulder Width					
TRD					
f_{LW}					
f_{LC}					
Calc'd FFS					
Measured FFS	65.0	65.0	65.0	65.0	
FFS	65	65	65	65	
Calculate Operations in Express Lanes					
EL_{IN} v/c ratio	0.26	0.26	0.20	0.20	
Calculate On Ramp Flow Rate					
On Volume (vph)				1,669	
PHF				0.92	
Total Lanes				1	
Terrain				Level	
Grade %				0.0%	
Grade Length (mi)				0.00	
Truck & Bus %				2.0%	
RV %				0.0%	
E_T				1.5	
E_R				1.2	
f_{HV}				0.990	
f_P				1.00	
On Flow (pcph)				1,832	
On Flow (pcphpl)				1,832	
Calculate On Ramp Roadway Operations					
On Ramp Type				Right	
On Ramp Speed (mph)				45	
On Ramp Cap (pcph)				2,100	
On Ramp v/c ratio				0.87	



Key
<> Express Lane (HOV)
No Trucks

Location	8	9	10	11	
Name	Bass Lake Rd to El Dorado Hills Blvd	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp	
Calculate Off Ramp Flow Rate					
Off Volume (vph)		894			
PHF		0.92			
Total Lanes		1			
Terrain		Level			
Grade %		0.0%			
Grade Length (mi)		0.00			
Truck & Bus %		2.0%			
RV %		0.0%			
E_T		1.5			
E_R		1.2			
f_{HV}		0.990			
f_P		1.00			
Off Flow (pcph)		981			
Off Flow (pcphpl)		981			
Calculate Off Ramp Roadway Operations					
Off Ramp Type		Right			
Off Ramp Speed		45			
Off Ramp Cap (pcph)		2,100			
Off Ramp v/c ratio		0.47			
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps					
Up Type					
Up Distance					
Up Flow (pcph)					
Down Type					
Down Distance					
Down Flow (pcph)					
Calculate Merge Influence Area Operations					
Effective v_P (pcph)				2,623	
Up Ramp L_{EQ}					
Down Ramp L_{EQ}					
P_{FM} (Eqn 13-3)				0.602	
P_{FM} (Eqn 13-4)					
P_{FM} (Eqn 13-5)					
P_{FM}				1.000	
v_{12} (pcph)				2,623	
v_3 (pcph)					
v_{34} (pcph)					
v_{12a} (pcph)				2,623	
v_{R12a} (pcph)				4,455	
Merge Speed Index				0.58	
Merge Area Speed				51.7	
Outer Lanes Volume					
Outer Lanes Speed					
Segment Speed				51.7	
Merge v/c ratio				0.97	
Merge Density				33.9	
Merge LOS				D	



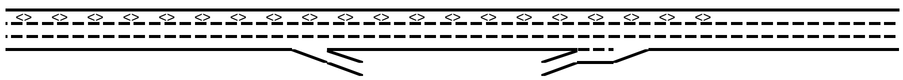
Key

<> Express Lane (HOV)

No Trucks

Location	8	9	10	11	
Name	Bass Lake Rd to El Dorado Hills Blvd	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp	
Calculate Diverge Influence Area Operations					
Effective v_P (pcph)		3,522			
Up Ramp L_{EQ}					
Down Ramp L_{EQ}					
P_{FD} (Eqn 13-9)		0.627			
P_{FD} (Eqn 13-10)					
P_{FD} (Eqn 13-11)					
P_{FD}		1.000			
v_{12} (pcph)		3,522			
v_3 (pcph)					
v_{34} (pcph)					
v_{12a} (pcph)		3,522			
Diverge Speed Index		0.39			
Diverge Area Speed		56.1			
Outer Lanes Volume					
Outer Lanes Speed					
Segment Speed		56.1			
Diverge v/c ratio		0.80			
Diverge Density		33.2			
Diverge LOS		D			
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments					
Calculate On Ramp to Mainline Flow Rate for Weave Segments					
Calculate Mainline to Off Ramp Flow Rate for Weave Segments					
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments					
Calculate Weave Segment Operations					
Summarize Segment Operations					
Segment v/c ratio	0.77	0.80	0.57	0.97	
Segment Density	28.7	33.2	20.5	33.9	
Segment LOS	D	D	C	D	
Over Capacity					

Project:	**El Dorado Hills Town Center Apartments**	**Alternative:**	**Existing Condition**	
Freeway Corridor:	**Westbound US 50**	**Time Period:**	**PM Peak Hour**	



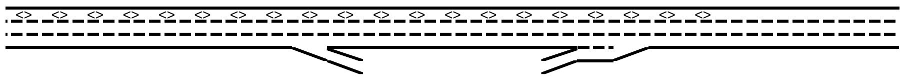
Key

<> Express Lane (HOV)

No Trucks

Location	8	9	10	11
Name	Bass Lake Rd to El Dorado Hills Blvd	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp
Define Freeway Segment				
Type	Basic	Diverge	Basic	Merge
Length (ft)	7,500	1,500	3,250	1,500
Accel Length				880
Decel Length		150		
Mainline Volume	2,246	2,246	1,682	1,682
On Ramp Volume				1,528
Off Ramp Volume		564		
Express Lane Volume	180	180	135	135
EL On Ramp Volume				
EL Off Ramp Volume				
Calculate Flow Rate in General Purpose Lanes (GP)				
GP Volume (vph)	2,066	2,066	1,547	3,075
PHF	0.96	0.96	0.96	0.96
GP Lanes	2	2	2	2
Terrain	Grade	Level	Level	Level
Grade %	-7.0%	0.0%	0.0%	0.0%
Grade Length (mi)	1.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00
GP Flow (pcph)	2,174	2,174	1,628	3,236
GP Flow (pcphpl)	1,087	1,087	814	1,618
Calculate Speed in General Purpose Lanes				
Lane Width (ft)	12	12	12	12
Shoulder Width	>6	>6	>6	>6
TRD	2.0	3.0	3.0	3.0
f_{LW}	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0
Calc'd FFS	69.6	67.3	67.3	67.3
Measured FFS	65.0	65.0	65.0	65.0
FFS	65	65	65	65
Calculate Operations in General Purpose Lanes				
v/c ratio	0.46	0.46	0.35	0.69
Speed (mph)	65.0	65.0	65.0	64.3
Density (pcphpl)	16.7	16.7	12.5	25.1
LOS	B	B	B	C
Calculate Operations for Entering GP Lanes				
GP_{IN} Vol (pcph)				1,558
GP_{IN} Cap (pcph)				4,700
GP_{IN} v/c ratio				0.33
Calculate Operations for Exiting GP Lanes				
GP_{OUT} Vol (pcph)		1,555		
GP_{OUT} Cap (pcph)		4,700		
GP_{OUT} v/c ratio		0.33		

Location	8	9	10	11	

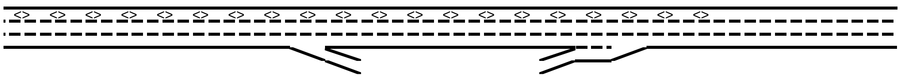


Key

<> Express Lane (HOV)

No Trucks

Name	Bass Lake Rd to El Dorado Hills Blvd	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp	
Calculate Flow Rate in Express Lanes (EL)					
EL Volume (vph)	180	180	135	135	
PHF	0.9	0.9	0.9	0.9	
Express Lanes	1	1	1	1	
Terrain	Grade	Level	Level	Level	
Grade %	-7.0%	0.0%	0.0%	0.0%	
Grade Length (mi)	1.00	0.00	0.00	0.00	
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	
RV %	0.0%	0.0%	0.0%	0.0%	
E_T	1.5	1.5	1.5	1.5	
E_R	1.2	1.2	1.2	1.2	
f_{HV}	0.990	0.990	0.990	0.990	
f_P	1.00	1.00	1.00	1.00	
EL Flow (pcph)	202	202	151	151	
EL Flow (pcphpl)	202	202	151	151	
Calculate Speed in Express Lanes					
Lane Width (ft)					
Shoulder Width					
TRD					
f_{LW}					
f_{LC}					
Calc'd FFS					
Measured FFS	65.0	65.0	65.0	65.0	
FFS	65	65	65	65	
Calculate Operations in Express Lanes					
EL_{IN} v/c ratio	0.12	0.12	0.09	0.09	
Calculate On Ramp Flow Rate					
On Volume (vph)				1,528	
PHF				0.92	
Total Lanes				1	
Terrain				Level	
Grade %				0.0%	
Grade Length (mi)				0.00	
Truck & Bus %				2.0%	
RV %				0.0%	
E_T				1.5	
E_R				1.2	
f_{HV}				0.990	
f_P				1.00	
On Flow (pcph)				1,677	
On Flow (pcphpl)				1,677	
Calculate On Ramp Roadway Operations					
On Ramp Type				Right	
On Ramp Speed (mph)				45	
On Ramp Cap (pcph)				2,100	
On Ramp v/c ratio				0.80	



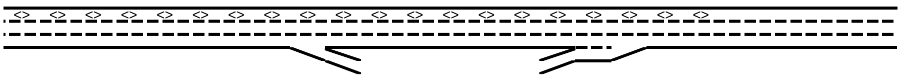
Key

<> Express Lane (HOV)

No Trucks

Location	8	9	10	11	
Name	Bass Lake Rd to El Dorado Hills Blvd	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp	
Calculate Off Ramp Flow Rate					
Off Volume (vph)		564			
PHF		0.92			
Total Lanes		1			
Terrain		Level			
Grade %		0.0%			
Grade Length (mi)		0.00			
Truck & Bus %		2.0%			
RV %		0.0%			
E_T		1.5			
E_R		1.2			
f_{HV}		0.990			
f_P		1.00			
Off Flow (pcph)		619			
Off Flow (pcphpl)		619			
Calculate Off Ramp Roadway Operations					
Off Ramp Type		Right			
Off Ramp Speed		45			
Off Ramp Cap (pcph)		2,100			
Off Ramp v/c ratio		0.29			
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps					
Up Type					
Up Distance					
Up Flow (pcph)					
Down Type					
Down Distance					
Down Flow (pcph)					
Calculate Merge Influence Area Operations					
Effective v_P (pcph)				1,558	
Up Ramp L_{EQ}					
Down Ramp L_{EQ}					
P_{FM} (Eqn 13-3)				0.602	
P_{FM} (Eqn 13-4)					
P_{FM} (Eqn 13-5)					
P_{FM}				1.000	
v_{12} (pcph)				1,558	
v_3 (pcph)					
v_{34} (pcph)					
v_{12a} (pcph)				1,558	
v_{R12a} (pcph)				3,236	
Merge Speed Index				0.34	
Merge Area Speed				57.2	
Outer Lanes Volume					
Outer Lanes Speed					
Segment Speed				57.2	
Merge v/c ratio				0.70	
Merge Density				24.4	
Merge LOS				C	

Location	8	9	10	11	



Key

<> Express Lane (HOV)

No Trucks

Name	Bass Lake Rd to El Dorado Hills Blvd	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp	
Calculate Diverge Influence Area Operations					
Effective v_P (pcph)		2,174			
Up Ramp L_{EQ}					
Down Ramp L_{EQ}					
P_{FD} (Eqn 13-9)		0.677			
P_{FD} (Eqn 13-10)					
P_{FD} (Eqn 13-11)					
P_{FD}		1.000			
v_{12} (pcph)		2,174			
v_3 (pcph)					
v_{34} (pcph)					
v_{12a} (pcph)		2,174			
Diverge Speed Index		0.35			
Diverge Area Speed		56.9			
Outer Lanes Volume					
Outer Lanes Speed					
Segment Speed		56.9			
Diverge v/c ratio		0.49			
Diverge Density		21.6			
Diverge LOS		C			
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments					
Calculate On Ramp to Mainline Flow Rate for Weave Segments					
Calculate Mainline to Off Ramp Flow Rate for Weave Segments					
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments					
Calculate Weave Segment Operations					
Summarize Segment Operations					
Segment v/c ratio	0.46	0.49	0.35	0.70	
Segment Density	16.7	21.6	12.5	24.4	
Segment LOS	B	C	B	C	
Over Capacity					

APPENDIX A:

Existing Plus Project Conditions Technical Calculations

SimTraffic Post-Processor | **EDH Town Center**
Average Results from 10 Runs | **Existing Plus Project Conditions**
Volume and Delay by Movement | **AM Peak Hour**

Intersection 1 — El Dorado Hills Boulevard/Saratoga Way-Park Drive — Signalized

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	56	51	90.2%	53.4	4.7	D
	Through	602	614	101.9%	14.9	2.6	B
	Right Turn	30	30	100.0%	11.5	3.4	B
	Subtotal	**688**	**694**	**100.9%**	**17.6**	**2.2**	**B**
SB	Left Turn	148	122	82.2%	155.7	9.8	F
	Through	1962	1648	84.0%	108.9	6.8	F
	Right Turn	17	16	91.8%	96.1	13.1	F
	Subtotal	**2127**	**1786**	**83.9%**	**112.0**	**6.8**	**F**
EB	Left Turn	20	21	102.5%	45.1	5.9	D
	Through	16	16	99.4%	49.5	11.9	D
	Right Turn	108	109	101.1%	40.0	3.0	D
	Subtotal	**144**	**146**	**101.1%**	**41.8**	**2.9**	**D**
WB	Left Turn	22	20	88.6%	54.2	11.6	D
	Through	7	7	97.1%	51.9	11.7	D
	Right Turn	69	69	100.3%	8.0	1.6	A
	Subtotal	**98**	**96**	**97.4%**	**20.4**	**4.1**	**C**
Total		**3057**	**2721**	**89.0%**	**80.9**	**5.1**	**F**

Intersection 2 — El Dorado Hills Boulevard/US 50 WB Ramps — Signalized

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	457	388	84.9%	319.2	61.1	F
	Through	470	458	97.4%	24.0	5.7	C
	Right Turn	116	117	100.7%	19.1	5.6	B
	Subtotal	**1043**	**963**	**92.3%**	**142.1**	**26.3**	**F**
SB	Left Turn	64	59	92.5%	71.0	7.3	E
	Through	897	776	86.5%	25.2	3.4	C
	Right Turn	1131	950	84.0%	75.8	1.6	E
	Subtotal	**2092**	**1785**	**85.3%**	**53.7**	**1.6**	**D**
EB	Left Turn	193	185	95.6%	89.7	28.7	F
	Through	48	43	89.2%	88.4	28.3	F
	Right Turn	655	644	98.4%	75.5	57.3	E
	Subtotal	**896**	**872**	**97.3%**	**79.4**	**47.8**	**E**
WB	Left Turn	99	102	103.2%	79.3	25.2	E
	Through	120	113	93.8%	102.4	32.3	F
	Right Turn	47	52	110.9%	119.0	39.0	F
	Subtotal	**266**	**267**	**100.3%**	**97.0**	**30.2**	**F**
Total		**4297**	**3886**	**90.4%**	**84.6**	**10.0**	**F**

Intersection 3 **Latrobe Road/US 50 EB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	735	710	96.5%	44.7	37.9	D
	Right Turn	189	189	100.1%	14.9	9.6	B
	Subtotal	**924**	**899**	**97.3%**	**38.6**	**32.0**	**D**
SB	Left Turn	254	211	83.1%	51.5	5.5	D
	Through	1397	1309	93.7%	10.3	2.3	B
	Right Turn						
	Subtotal	**1651**	**1520**	**92.1%**	**15.9**	**2.3**	**B**
EB	Left Turn						
	Through						
	Right Turn	1097	1096	99.9%	55.7	41.0	E
	Subtotal	**1097**	**1096**	**99.9%**	**55.7**	**41.0**	**E**
WB	Left Turn						
	Through						
	Right Turn	307	304	98.9%	2.9	1.6	A
	Subtotal	**307**	**304**	**98.9%**	**2.9**	**1.6**	**A**
Total		**3979**	**3818**	**96.0%**	**31.6**	**17.0**	**C**

Intersection 4 **Latrobe Road/Town Center Boulevard** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	71	69	96.9%	110.7	15.5	F
	Through	645	631	97.9%	23.6	2.3	C
	Right Turn	46	44	94.8%	6.3	2.2	A
	Subtotal	**762**	**744**	**97.6%**	**30.7**	**2.7**	**C**
SB	Left Turn	511	476	93.2%	129.9	30.3	F
	Through	1439	1385	96.3%	14.4	2.3	B
	Right Turn	544	532	97.8%	5.7	0.5	A
	Subtotal	**2494**	**2393**	**96.0%**	**35.6**	**7.7**	**D**
EB	Left Turn	19	17	87.9%	88.0	15.1	F
	Through	8	8	103.8%	89.1	21.2	F
	Right Turn	7	8	115.7%	9.9	4.4	A
	Subtotal	**34**	**33**	**97.4%**	**69.1**	**5.6**	**E**
WB	Left Turn	76	73	96.1%	79.4	5.2	E
	Through	52	57	109.2%	79.4	11.5	E
	Right Turn	260	265	102.0%	12.6	1.5	B
	Subtotal	**388**	**395**	**101.8%**	**34.6**	**2.0**	**C**
Total		**3678**	**3565**	**96.9%**	**34.8**	**5.4**	**C**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	177	102	47	208	199	211	43	374	93	123	1061	338
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	5.7		6.0	5.8	5.8	5.0	5.7	5.7	5.0	5.7	5.7
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	0.86	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3357		3433	3539	1561	1770	6408	1561	3433	5085	1561
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3357		3433	3539	1561	1770	6408	1561	3433	5085	1561
Peak-hour factor, PHF	0.94	0.94	0.94	0.85	0.85	0.85	0.85	0.85	0.85	0.91	0.91	0.91
Adj. Flow (vph)	188	109	50	245	234	248	51	440	109	135	1166	371
RTOR Reduction (vph)	0	44	0	0	0	214	0	0	34	0	0	164
Lane Group Flow (vph)	188	115	0	245	234	34	51	440	75	135	1166	207
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	11.8	17.1		13.2	18.4	18.4	7.0	72.9	72.9	9.4	75.3	75.3
Effective Green, g (s)	11.8	17.1		13.2	18.4	18.4	7.0	72.9	72.9	9.4	75.3	75.3
Actuated g/C Ratio	0.09	0.13		0.10	0.14	0.14	0.05	0.54	0.54	0.07	0.56	0.56
Clearance Time (s)	6.0	5.7		6.0	5.8	5.8	5.0	5.7	5.7	5.0	5.7	5.7
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	300	425		336	482	213	92	3460	843	239	2836	871
v/s Ratio Prot	0.05	0.03		c0.07	c0.07		0.03	0.07		c0.04	c0.23	
v/s Ratio Perm						0.02			0.05			0.13
v/c Ratio	0.63	0.27		0.73	0.49	0.16	0.55	0.13	0.09	0.56	0.41	0.24
Uniform Delay, d1	59.5	53.3		59.2	53.9	51.5	62.5	15.3	15.0	60.8	17.1	15.2
Progression Factor	1.00	1.00		1.05	0.85	0.86	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.1	0.3		7.3	0.7	0.3	7.1	0.1	0.2	3.0	0.4	0.6
Delay (s)	63.5	53.7		69.5	46.4	44.5	69.5	15.4	15.2	63.9	17.6	15.9
Level of Service	E	D		E	D	D	E	B	B	E	B	B
Approach Delay (s)		59.0			53.6			20.0			20.9	
Approach LOS		E			D			B			C	

Intersection Summary			
HCM Average Control Delay	31.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	269	166	299	314	0	68	0	55	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7		5.0	5.7		5.3	5.3				
Lane Util. Factor		0.95		1.00	0.95		1.00	1.00				
Frt		0.94		1.00	1.00		1.00	0.85				
Flt Protected		1.00		0.95	1.00		0.95	1.00				
Satd. Flow (prot)		3336		1770	3539		1770	1583				
Flt Permitted		1.00		0.95	1.00		0.76	1.00				
Satd. Flow (perm)		3336		1770	3539		1410	1583				
Peak-hour factor, PHF	0.89	0.89	0.89	0.81	0.81	0.81	0.71	0.71	0.71	0.71	0.71	0.71
Adj. Flow (vph)	0	302	187	369	388	0	96	0	77	0	0	0
RTOR Reduction (vph)	0	135	0	0	0	0	0	67	0	0	0	0
Lane Group Flow (vph)	0	354	0	369	388	0	96	10	0	0	0	0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)		12.5		20.8	38.3		7.6	7.6				
Effective Green, g (s)		12.5		20.8	38.3		7.6	7.6				
Actuated g/C Ratio		0.22		0.37	0.67		0.13	0.13				
Clearance Time (s)		5.7		5.0	5.7		5.3	5.3				
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0				
Lane Grp Cap (vph)		733		647	2382		188	211				
v/s Ratio Prot		c0.11		c0.21	0.11			0.01				
v/s Ratio Perm							c0.07					
v/c Ratio		0.48		0.57	0.16		0.51	0.05				
Uniform Delay, d1		19.4		14.5	3.4		22.9	21.5				
Progression Factor		1.00		1.00	1.00		1.00	1.00				
Incremental Delay, d2		0.5		1.2	0.0		2.3	0.1				
Delay (s)		19.9		15.7	3.4		25.3	21.6				
Level of Service		B		B	A		C	C				
Approach Delay (s)		19.9			9.4			23.6			0.0	
Approach LOS		B			A			C			A	

Intersection Summary			
HCM Average Control Delay	14.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	56.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	72	245	1	18	452	194	41	5	10	49	8	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	6.0	6.0	4.5	6.0		5.2	6.0		4.5	4.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	0.99		1.00	0.98		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	0.90		1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1539	1770	3352		1770	1642		1770	1579	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1539	1770	3352		1770	1642		1770	1579	
Peak-hour factor, PHF	0.83	0.83	0.83	0.80	0.80	0.80	0.63	0.63	0.63	0.83	0.83	0.83
Adj. Flow (vph)	87	295	1	22	565	242	65	8	16	59	10	151
RTOR Reduction (vph)	0	0	0	0	20	0	0	16	0	0	137	0
Lane Group Flow (vph)	87	295	1	22	787	0	65	8	0	59	24	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	5	2		1	6		7	3		4	8	
Permitted Phases			2									
Actuated Green, G (s)	10.1	91.3	91.3	3.7	84.2		7.5	4.2		14.8	12.3	
Effective Green, g (s)	10.1	91.3	91.3	3.7	84.2		7.5	4.2		14.8	12.3	
Actuated g/C Ratio	0.07	0.68	0.68	0.03	0.62		0.06	0.03		0.11	0.09	
Clearance Time (s)	5.2	6.0	6.0	4.5	6.0		5.2	6.0		4.5	4.5	
Vehicle Extension (s)	1.0	3.6	3.6	1.0	3.6		1.0	1.0		3.0	3.0	
Lane Grp Cap (vph)	132	2393	1041	49	2091		98	51		194	144	
v/s Ratio Prot	c0.05	0.08		0.01	c0.23		c0.04	0.01		c0.03	0.02	
v/s Ratio Perm			0.00									
v/c Ratio	0.66	0.12	0.00	0.45	0.38		0.66	0.17		0.30	0.16	
Uniform Delay, d1	60.8	7.7	7.1	64.6	12.5		62.5	63.7		55.4	56.6	
Progression Factor	0.98	1.23	1.76	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	8.5	0.1	0.0	2.4	0.5		12.3	0.6		0.9	0.5	
Delay (s)	68.0	9.6	12.5	67.0	13.0		74.8	64.3		56.2	57.2	
Level of Service	E	A	B	E	B		E	E		E	E	
Approach Delay (s)		22.9			14.4			72.0			56.9	
Approach LOS		C			B			E			E	

Intersection Summary			
HCM Average Control Delay	26.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	179	43	47	478	56	124	7	61	20	15	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.0		3.5	5.3		4.2	4.2		4.2	4.2	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.98		1.00	0.87		1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1768	1801		1770	1829		1770	1578		1770	1650	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1768	1801		1770	1829		1770	1578		1770	1650	
Peak-hour factor, PHF	0.89	0.89	0.89	0.69	0.69	0.69	0.86	0.86	0.86	0.78	0.78	0.78
Adj. Flow (vph)	12	201	48	68	693	81	144	8	71	26	19	37
RTOR Reduction (vph)	0	4	0	0	2	0	0	60	0	0	34	0
Lane Group Flow (vph)	12	245	0	68	772	0	144	19	0	26	22	0
Confl. Peds. (#/hr)	2		2			2			2			3
Turn Type	Prot			Prot			Split			Split		
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases												
Actuated Green, G (s)	0.9	40.6		6.6	47.0		13.7	13.7		8.2	8.2	
Effective Green, g (s)	0.9	40.6		6.6	47.0		13.7	13.7		8.2	8.2	
Actuated g/C Ratio	0.01	0.47		0.08	0.54		0.16	0.16		0.09	0.09	
Clearance Time (s)	3.5	6.0		3.5	5.3		4.2	4.2		4.2	4.2	
Vehicle Extension (s)	2.0	3.7		2.0	3.0		3.6	3.6		3.6	3.6	
Lane Grp Cap (vph)	18	840		134	988		279	248		167	156	
v/s Ratio Prot	0.01	0.14		c0.04	c0.42		c0.08	0.01		c0.01	0.01	
v/s Ratio Perm												
v/c Ratio	0.67	0.29		0.51	0.78		0.52	0.08		0.16	0.14	
Uniform Delay, d1	42.9	14.3		38.6	15.9		33.6	31.3		36.2	36.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	54.1	0.2		1.1	4.1		1.9	0.2		0.5	0.5	
Delay (s)	97.0	14.6		39.7	20.0		35.5	31.4		36.7	36.7	
Level of Service	F	B		D	B		D	C		D	D	
Approach Delay (s)		18.4			21.6			34.1			36.7	
Approach LOS		B			C			C			D	

Intersection Summary			
HCM Average Control Delay	23.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	87.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection 9 **Post Street/Town Center Boulevard** **Unsignalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	140	141	100.8%	11.0	0.6	B
	Through	62	67	108.1%	8.5	0.6	A
	Right Turn	20	23	116.0%	4.6	0.9	A
	Subtotal	**222**	**231**	**104.2%**	**9.6**	**0.6**	**A**
SB	Left Turn	8	7	90.0%	10.1	0.6	B
	Through	58	58	99.8%	7.0	0.6	A
	Right Turn	98	100	101.7%	3.9	0.5	A
	Subtotal	**164**	**165**	**100.5%**	**5.3**	**0.5**	**A**
EB	Left Turn	281	261	92.9%	19.6	1.4	C
	Through	129	123	95.3%	13.3	1.5	B
	Right Turn	154	144	93.4%	11.0	0.5	B
	Subtotal	**564**	**528**	**93.6%**	**15.8**	**1.1**	**C**
WB	Left Turn	26	24	93.5%	10.0	0.5	A
	Through	77	80	103.6%	7.9	0.5	A
	Right Turn	7	8	112.9%	4.4	0.9	A
	Subtotal	**110**	**112**	**101.8%**	**8.1**	**0.5**	**A**
Total		**1060**	**1036**	**97.7%**	**11.9**	**0.7**	**B**

Intersection 1 **El Dorado Hills Boulevard/Saratoga Way-Park Drive** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	112	109	97.7%	56.5	2.3	E
	Through	1633	1642	100.6%	17.9	1.5	B
	Right Turn	59	56	94.1%	16.6	2.9	B
	Subtotal	**1804**	**1807**	**100.2%**	**20.2**	**1.6**	**C**
SB	Left Turn	140	138	98.4%	56.5	4.3	E
	Through	886	909	102.6%	16.9	1.0	B
	Right Turn	23	24	102.2%	14.2	3.0	B
	Subtotal	**1049**	**1070**	**102.0%**	**22.0**	**1.5**	**C**
EB	Left Turn	38	37	97.1%	53.0	3.0	D
	Through	13	15	115.4%	56.2	10.7	E
	Right Turn	73	66	91.0%	11.2	1.2	B
	Subtotal	**124**	**118**	**95.4%**	**30.0**	**2.4**	**C**
WB	Left Turn	55	57	102.9%	38.7	4.5	D
	Through	22	19	85.9%	46.1	4.7	D
	Right Turn	266	261	97.9%	23.2	2.1	C
	Subtotal	**343**	**336**	**98.0%**	**27.1**	**2.0**	**C**
Total		**3320**	**3332**	**100.3%**	**21.8**	**1.2**	**C**

Intersection 2 **El Dorado Hills Boulevard/US 50 WB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	1037	1030	99.3%	68.6	8.3	E
	Through	1525	1504	98.6%	53.5	7.9	D
	Right Turn	249	255	102.3%	54.0	9.9	D
	Subtotal	**2811**	**2789**	**99.2%**	**59.1**	**5.4**	**E**
SB	Left Turn	61	63	103.1%	102.5	44.2	F
	Through	556	577	103.8%	71.4	7.0	E
	Right Turn	397	394	99.2%	28.8	2.9	C
	Subtotal	**1014**	**1034**	**102.0%**	**57.1**	**6.4**	**E**
EB	Left Turn	229	223	97.5%	95.9	24.1	F
	Through	37	36	97.6%	98.9	32.2	F
	Right Turn	307	304	98.9%	8.2	1.2	A
	Subtotal	**573**	**563**	**98.3%**	**49.0**	**12.4**	**D**
WB	Left Turn	91	80	87.9%	186.8	120.7	F
	Through	110	109	98.8%	231.3	128.9	F
	Right Turn	91	82	89.9%	274.1	145.0	F
	Subtotal	**292**	**271**	**92.6%**	**231.4**	**131.2**	**F**
Total		**4690**	**4657**	**99.3%**	**67.5**	**8.8**	**E**

Intersection 3 **Latrobe Road/US 50 EB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	1862	1853	99.5%	24.0	5.6	C
	Right Turn	707	687	97.2%	17.7	2.9	B
	Subtotal	**2569**	**2540**	**98.9%**	**22.3**	**4.8**	**C**
SB	Left Turn	211	208	98.6%	54.4	4.3	D
	Through	764	752	98.4%	14.0	4.3	B
	Right Turn						
	Subtotal	**975**	**960**	**98.4%**	**22.8**	**3.8**	**C**
EB	Left Turn						
	Through						
	Right Turn	732	721	98.5%	70.0	70.8	E
	Subtotal	**732**	**721**	**98.5%**	**70.0**	**70.8**	**E**
WB	Left Turn						
	Through						
	Right Turn	949	959	101.1%	26.4	29.5	C
	Subtotal	**949**	**959**	**101.1%**	**26.4**	**29.5**	**C**
Total		**5225**	**5180**	**99.1%**	**29.8**	**8.5**	**C**

Intersection 4 **Latrobe Road/Town Center Boulevard** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	3	2	66.7%	112.7	81.6	F
	Through	1459	1445	99.0%	110.4	23.2	F
	Right Turn	131	125	95.3%	11.0	1.3	B
	Subtotal	**1593**	**1572**	**98.7%**	**102.6**	**21.5**	**F**
SB	Left Turn	582	562	96.5%	109.0	14.6	F
	Through	890	885	99.4%	24.3	2.7	C
	Right Turn	24	25	103.3%	1.8	0.4	A
	Subtotal	**1496**	**1471**	**98.3%**	**56.3**	**7.2**	**E**
EB	Left Turn	352	354	100.5%	92.3	9.1	F
	Through	57	56	98.1%	68.2	9.2	E
	Right Turn	115	119	103.4%	22.4	5.2	C
	Subtotal	**524**	**528**	**100.8%**	**74.1**	**6.0**	**E**
WB	Left Turn	60	56	94.0%	77.6	6.4	E
	Through	11	11	101.8%	80.1	10.9	F
	Right Turn	758	745	98.3%	49.5	3.4	D
	Subtotal	**829**	**813**	**98.0%**	**51.8**	**3.1**	**D**
Total		**4442**	**4384**	**98.7%**	**74.3**	**7.8**	**E**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	288	250	82	149	133	246	83	1059	265	367	480	218
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	5.7		6.0	5.8	5.8	5.0	5.7	5.7	5.0	5.7	5.7
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	0.86	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3397		3433	3539	1561	1770	6408	1561	3433	5085	1561
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3397		3433	3539	1561	1770	6408	1561	3433	5085	1561
Peak-hour factor, PHF	0.77	0.77	0.77	0.89	0.89	0.89	0.82	0.82	0.82	0.87	0.87	0.87
Adj. Flow (vph)	374	325	106	167	149	276	101	1291	323	422	552	251
RTOR Reduction (vph)	0	26	0	0	0	208	0	0	31	0	0	125
Lane Group Flow (vph)	374	405	0	167	149	68	101	1291	292	422	552	126
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	20.8	26.2		12.5	17.8	17.8	12.8	67.1	67.1	19.8	74.1	74.1
Effective Green, g (s)	20.8	26.2		12.5	17.8	17.8	12.8	67.1	67.1	19.8	74.1	74.1
Actuated g/C Ratio	0.14	0.18		0.08	0.12	0.12	0.09	0.45	0.45	0.13	0.50	0.50
Clearance Time (s)	6.0	5.7		6.0	5.8	5.8	5.0	5.7	5.7	5.0	5.7	5.7
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	482	601		290	426	188	153	2905	708	459	2546	782
v/s Ratio Prot	c0.11	c0.12		0.05	0.04		0.06	c0.20		c0.12	0.11	
v/s Ratio Perm						0.04			0.19			0.08
v/c Ratio	0.78	0.67		0.58	0.35	0.36	0.66	0.44	0.41	0.92	0.22	0.16
Uniform Delay, d1	61.4	56.9		65.2	59.8	59.9	65.5	27.7	27.2	63.3	20.7	20.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.7	3.0		2.8	0.5	1.2	10.2	0.5	1.8	23.3	0.2	0.4
Delay (s)	69.0	59.9		68.0	60.3	61.1	75.7	28.2	29.0	86.6	20.9	20.5
Level of Service	E	E		E	E	E	E	C	C	F	C	C
Approach Delay (s)		64.1			62.8			31.1			43.5	
Approach LOS		E			E			C			D	

Intersection Summary			
HCM Average Control Delay	45.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	148.0	Sum of lost time (s)	22.4
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	435	58	69	394	0	292	0	193	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7		5.0	5.7		5.3	5.3				
Lane Util. Factor		0.95		1.00	0.95		1.00	1.00				
Frt		0.98		1.00	1.00		1.00	0.85				
Flt Protected		1.00		0.95	1.00		0.95	1.00				
Satd. Flow (prot)		3477		1770	3539		1770	1583				
Flt Permitted		1.00		0.95	1.00		0.76	1.00				
Satd. Flow (perm)		3477		1770	3539		1410	1583				
Peak-hour factor, PHF	0.90	0.90	0.90	0.83	0.83	0.83	0.75	0.75	0.75	0.75	0.75	0.75
Adj. Flow (vph)	0	483	64	83	475	0	389	0	257	0	0	0
RTOR Reduction (vph)	0	13	0	0	0	0	0	166	0	0	0	0
Lane Group Flow (vph)	0	534	0	83	475	0	389	91	0	0	0	0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)		14.5		6.6	26.1		20.3	20.3				
Effective Green, g (s)		14.5		6.6	26.1		20.3	20.3				
Actuated g/C Ratio		0.25		0.11	0.45		0.35	0.35				
Clearance Time (s)		5.7		5.0	5.7		5.3	5.3				
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0				
Lane Grp Cap (vph)		878		204	1609		499	560				
v/s Ratio Prot		c0.15		c0.05	0.13			0.06				
v/s Ratio Perm							c0.28					
v/c Ratio		0.61		0.41	0.30		0.78	0.16				
Uniform Delay, d1		18.9		23.6	9.9		16.6	12.7				
Progression Factor		1.00		1.00	1.00		1.00	1.00				
Incremental Delay, d2		1.2		1.3	0.1		7.6	0.1				
Delay (s)		20.1		24.9	10.0		24.1	12.9				
Level of Service		C		C	A		C	B				
Approach Delay (s)		20.1			12.2			19.6			0.0	
Approach LOS		C			B			B			A	

Intersection Summary			
HCM Average Control Delay	17.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	57.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	47.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	170	705	7	11	351	131	23	10	12	189	10	153
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	6.0	6.0	4.5	6.0		5.2	6.0		4.5	4.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	0.99		1.00	0.98		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	0.92		1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1539	1770	3370		1770	1681		1770	1579	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1539	1770	3370		1770	1681		1770	1579	
Peak-hour factor, PHF	0.85	0.85	0.85	0.88	0.88	0.88	0.69	0.69	0.69	0.78	0.78	0.78
Adj. Flow (vph)	200	829	8	12	399	149	33	14	17	242	13	196
RTOR Reduction (vph)	0	0	3	0	22	0	0	16	0	0	162	0
Lane Group Flow (vph)	200	829	5	12	526	0	33	15	0	242	47	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	5	2		1	6		7	3		4	8	
Permitted Phases			2									
Actuated Green, G (s)	17.7	85.0	85.0	2.1	68.7		4.4	4.3		22.6	23.3	
Effective Green, g (s)	17.7	85.0	85.0	2.1	68.7		4.4	4.3		22.6	23.3	
Actuated g/C Ratio	0.13	0.63	0.63	0.02	0.51		0.03	0.03		0.17	0.17	
Clearance Time (s)	5.2	6.0	6.0	4.5	6.0		5.2	6.0		4.5	4.5	
Vehicle Extension (s)	1.0	3.6	3.6	1.0	3.6		1.0	1.0		3.0	3.0	
Lane Grp Cap (vph)	232	2228	969	28	1715		58	54		296	273	
v/s Ratio Prot	c0.11	c0.23		0.01	0.16		c0.02	0.01		c0.14	0.03	
v/s Ratio Perm			0.00									
v/c Ratio	0.86	0.37	0.01	0.43	0.31		0.57	0.27		0.82	0.17	
Uniform Delay, d1	57.5	12.1	9.3	65.9	19.3		64.4	63.8		54.2	47.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	25.7	0.5	0.0	3.8	0.5		7.4	1.0		15.9	0.3	
Delay (s)	83.1	12.6	9.3	69.7	19.8		71.8	64.8		70.1	47.9	
Level of Service	F	B	A	E	B		E	E		E	D	
Approach Delay (s)		26.2			20.8			68.4			59.8	
Approach LOS		C			C			E			E	

Intersection Summary			
HCM Average Control Delay	33.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	14.9
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	473	116	14	209	75	82	20	30	155	37	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.0		3.5	5.3		4.2	4.2		4.2	4.2	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	0.99		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.96		1.00	0.91		1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1799		1770	1778		1770	1672		1770	1671	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1799		1770	1778		1770	1672		1770	1671	
Peak-hour factor, PHF	0.91	0.91	0.91	0.78	0.78	0.78	0.81	0.81	0.81	0.90	0.90	0.90
Adj. Flow (vph)	77	520	127	18	268	96	101	25	37	172	41	60
RTOR Reduction (vph)	0	4	0	0	6	0	0	32	0	0	36	0
Lane Group Flow (vph)	77	643	0	18	358	0	101	30	0	172	65	0
Confl. Peds. (#/hr)	2		2			2			2			3
Turn Type	Prot			Prot			Split			Split		
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases												
Actuated Green, G (s)	7.5	46.2		2.3	41.7		12.8	12.8		15.5	15.5	
Effective Green, g (s)	7.5	46.2		2.3	41.7		12.8	12.8		15.5	15.5	
Actuated g/C Ratio	0.08	0.49		0.02	0.44		0.14	0.14		0.16	0.16	
Clearance Time (s)	3.5	6.0		3.5	5.3		4.2	4.2		4.2	4.2	
Vehicle Extension (s)	2.0	3.7		2.0	3.0		3.6	3.6		3.6	3.6	
Lane Grp Cap (vph)	140	878		43	783		239	226		290	274	
v/s Ratio Prot	c0.04	c0.36		0.01	0.20		c0.06	0.02		c0.10	0.04	
v/s Ratio Perm												
v/c Ratio	0.55	0.73		0.42	0.46		0.42	0.13		0.59	0.24	
Uniform Delay, d1	42.0	19.3		45.5	18.6		37.6	36.1		36.7	34.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.6	3.3		2.4	0.4		1.5	0.3		3.5	0.5	
Delay (s)	44.6	22.6		47.9	19.0		39.0	36.4		40.2	35.0	
Level of Service	D	C		D	B		D	D		D	D	
Approach Delay (s)		25.0			20.4			38.0			38.3	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	27.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	94.7	Sum of lost time (s)	11.9
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection 9 **Post Street/Town Center Boulevard** **Unsignalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	239	235	98.3%	18.1	2.3	C
	Through	120	115	95.5%	12.1	1.0	B
	Right Turn	36	34	95.6%	7.8	1.3	A
	Subtotal	**395**	**384**	**97.2%**	**15.4**	**1.7**	**C**
SB	Left Turn	11	10	90.0%	18.1	14.6	C
	Through	77	76	99.2%	19.8	12.5	C
	Right Turn	215	212	98.6%	16.9	14.1	C
	Subtotal	**303**	**298**	**98.4%**	**17.7**	**13.6**	**C**
EB	Left Turn	280	268	95.8%	26.5	3.3	D
	Through	236	228	96.7%	21.9	1.7	C
	Right Turn	172	165	96.0%	13.4	1.2	B
	Subtotal	**688**	**662**	**96.2%**	**21.7**	**2.0**	**C**
WB	Left Turn	22	22	97.7%	13.0	1.1	B
	Through	196	188	95.9%	15.7	3.3	C
	Right Turn	6	7	108.3%	13.0	7.7	B
	Subtotal	**224**	**216**	**96.4%**	**15.4**	**3.1**	**C**
Total		**1610**	**1560**	**96.9%**	**18.6**	**4.1**	**C**

Intersection 1 **El Dorado Hills Boulevard/Saratoga Way-Park Drive** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	56	54	96.1%	63.6	11.6	E
	Through	602	603	100.1%	6.9	0.7	A
	Right Turn	30	33	109.7%	5.3	1.7	A
	Subtotal	**688**	**689**	**100.2%**	**11.2**	**1.4**	**B**
SB	Left Turn	148	150	101.3%	103.1	14.7	F
	Through	1962	1962	100.0%	12.3	2.3	B
	Right Turn	17	16	94.1%	9.9	4.6	A
	Subtotal	**2127**	**2128**	**100.0%**	**18.6**	**3.2**	**B**
EB	Left Turn	20	19	96.5%	58.7	6.9	E
	Through	16	17	106.3%	66.6	8.9	E
	Right Turn	108	109	101.3%	17.7	5.2	B
	Subtotal	**144**	**146**	**101.2%**	**28.8**	**5.3**	**C**
WB	Left Turn	22	22	100.0%	57.4	11.2	E
	Through	7	9	122.9%	54.9	16.8	D
	Right Turn	69	68	99.1%	10.2	3.7	B
	Subtotal	**98**	**99**	**101.0%**	**25.1**	**5.2**	**C**
Total		**3057**	**3061**	**100.1%**	**17.7**	**2.4**	**B**

Intersection 2 **El Dorado Hills Boulevard/US 50 WB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	457	454	99.4%	37.9	3.3	D
	Through	470	476	101.2%	13.5	0.6	B
	Right Turn	116	113	97.7%	4.0	0.3	A
	Subtotal	**1043**	**1043**	**100.0%**	**23.1**	**1.7**	**C**
SB	Left Turn	64	60	93.8%	70.0	8.0	E
	Through	897	902	100.5%	27.1	2.8	C
	Right Turn	1131	1133	100.2%	9.1	1.2	A
	Subtotal	**2092**	**2094**	**100.1%**	**18.6**	**1.6**	**B**
EB	Left Turn	193	180	93.4%	51.0	3.2	D
	Through	48	47	96.9%	54.7	4.7	D
	Right Turn	655	664	101.4%	7.4	0.6	A
	Subtotal	**896**	**891**	**99.4%**	**18.7**	**0.8**	**B**
WB	Left Turn	99	96	97.4%	51.6	4.6	D
	Through	120	125	104.4%	56.7	5.5	E
	Right Turn	47	44	94.5%	3.9	1.3	A
	Subtotal	**266**	**266**	**100.0%**	**46.0**	**3.6**	**D**
Total		**4297**	**4295**	**99.9%**	**21.4**	**1.0**	**C**

Intersection 1 **El Dorado Hills Boulevard/Saratoga Way-Park Drive** **Signalized**

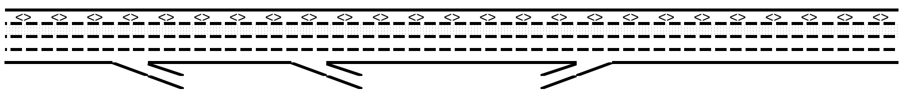
		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	112	111	98.8%	69.0	3.7	E
	Through	1633	1677	102.7%	26.8	2.0	C
	Right Turn	59	59	100.3%	25.4	3.3	C
	Subtotal	**1804**	**1847**	**102.4%**	**29.3**	**1.8**	**C**
SB	Left Turn	140	144	102.9%	88.7	11.7	F
	Through	886	930	105.0%	12.5	1.5	B
	Right Turn	23	22	97.0%	8.3	2.4	A
	Subtotal	**1049**	**1097**	**104.5%**	**22.5**	**3.0**	**C**
EB	Left Turn	38	34	89.7%	68.6	4.2	E
	Through	13	12	93.8%	71.9	11.2	E
	Right Turn	73	77	105.5%	4.9	0.7	A
	Subtotal	**124**	**123**	**99.4%**	**29.0**	**3.6**	**C**
WB	Left Turn	55	52	95.3%	61.4	5.7	E
	Through	22	21	96.4%	68.3	9.5	E
	Right Turn	266	261	98.0%	38.8	6.4	D
	Subtotal	**343**	**334**	**97.5%**	**44.1**	**5.3**	**D**
Total		**3320**	**3401**	**102.5%**	**28.5**	**1.4**	**C**

Intersection 2 **El Dorado Hills Boulevard/US 50 WB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	1037	1021	98.5%	70.0	2.4	E
	Through	1525	1539	100.9%	19.3	0.8	B
	Right Turn	249	243	97.7%	9.0	0.6	A
	Subtotal	**2811**	**2803**	**99.7%**	**36.8**	**1.5**	**D**
SB	Left Turn	61	64	105.6%	115.1	34.7	F
	Through	556	594	106.8%	51.2	2.5	D
	Right Turn	397	402	101.1%	5.7	0.8	A
	Subtotal	**1014**	**1060**	**104.5%**	**37.9**	**3.3**	**D**
EB	Left Turn	229	230	100.3%	60.7	3.2	E
	Through	37	33	90.0%	60.7	5.7	E
	Right Turn	307	303	98.5%	4.6	0.3	A
	Subtotal	**573**	**565**	**98.7%**	**30.7**	**1.6**	**C**
WB	Left Turn	91	93	102.0%	109.2	46.4	F
	Through	110	110	99.5%	131.6	60.9	F
	Right Turn	91	92	101.0%	31.9	34.4	C
	Subtotal	**292**	**294**	**100.8%**	**93.7**	**48.8**	**F**
Total		**4690**	**4722**	**100.7%**	**40.0**	**3.2**	**D**

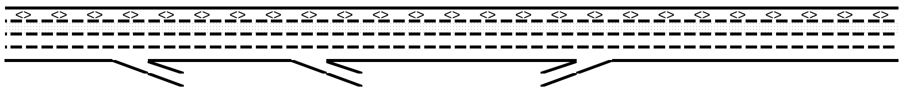
Project: El Dorado Hills Town Center Apartments
Freeway Corridor: Eastbound US 50

Location	1	2	3	4	5



Key
<> Express Lane (HOV)
No Trucks

Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd on-ramp	El Dorado Hills Blvd to Bass Lake Rd
Define Freeway Segment					
Type	Diverge	Diverge	Basic	Merge	Basic
Length (ft)	1,500	850	1,975	1,500	7,500
Accel Length				275	
Decel Length	150	150			
Mainline Volume	2,570	1,473	1,166	1,166	1,609
On Ramp Volume				443	
Off Ramp Volume	1,097	307			
Express Lane Volume	129	74	58	58	80
EL On Ramp Volume					
EL Off Ramp Volume					
Calculate Flow Rate in General Purpose Lanes (GP)					
GP Volume (vph)	2,442	1,399	1,108	1,551	1,529
PHF	0.87	0.87	0.87	0.87	0.87
GP Lanes	3	3	3	3	3
Terrain	Level	Level	Level	Level	Grade
Grade %	0.0%	0.0%	0.0%	0.0%	7.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	1.00
Truck & Bus %	4.0%	4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	5.0
E_R	1.2	1.2	1.2	1.2	6.0
f_{HV}	0.980	0.980	0.980	0.980	0.862
f_P	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	2,862	1,641	1,299	1,818	2,038
GP Flow (pcphpl)	954	547	433	606	679
Calculate Speed in General Purpose Lanes					
Lane Width (ft)	12	12	12	12	12
Shoulder Width	>6	>6	>6	>6	>6
TRD	3.0	3.0	3.0	3.0	3.0
f_{LW}	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0
Calc'd FFS	67.3	67.3	67.3	67.3	67.3
Measured FFS	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65
Calculate Operations in General Purpose Lanes					
v/c ratio	0.41	0.23	0.18	0.26	0.29
Speed (mph)	65.0	65.0	65.0	65.0	65.0
Density (pcphpl)	14.7	8.4	6.7	9.3	10.5
LOS	B	A	A	A	A
Calculate Operations for Entering GP Lanes					
GP_{IN} Vol (pcph)				1,332	
GP_{IN} Cap (pcph)				7,050	
GP_{IN} v/c ratio				0.19	
Calculate Operations for Exiting GP Lanes					
GP_{OUT} Vol (pcph)	1,658	1,304			
GP_{OUT} Cap (pcph)	7,050	7,050			
GP_{OUT} v/c ratio	0.24	0.18			

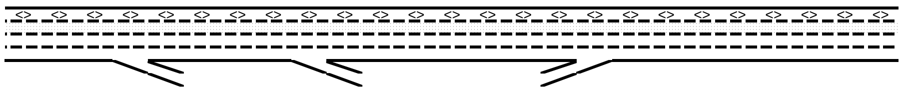


Key

<> Express Lane (HOV)

No Trucks

Location	1	2	3	4	5
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd on-ramp	El Dorado Hills Blvd to Bass Lake Rd
Calculate Flow Rate in Express Lanes (EL)					
EL Volume (vph)	129	74	58	58	80
PHF	0.78	0.78	0.78	0.78	0.78
Express Lanes	1	1	1	1	1
Terrain	Level	Level	Level	Level	Grade
Grade %	0.0%	0.0%	0.0%	0.0%	7.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	1.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	5.5
E_R	1.2	1.2	1.2	1.2	6.0
f_{HV}	0.990	0.990	0.990	0.990	0.917
f_P	1.00	1.00	1.00	1.00	1.00
EL Flow (pcph)	166	95	75	75	112
EL Flow (pcphpl)	166	95	75	75	112
Calculate Speed in Express Lanes					
Lane Width (ft)					
Shoulder Width					
TRD					
f_{LW}					
f_{LC}					
Calc'd FFS					
Measured FFS	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65
Calculate Operations in Express Lanes					
EL_{IN} v/c ratio	0.10	0.05	0.04	0.04	0.06
Calculate On Ramp Flow Rate					
On Volume (vph)				443	
PHF				0.92	
Total Lanes				1	
Terrain				Level	
Grade %				0.0%	
Grade Length (mi)				0.00	
Truck & Bus %				2.0%	
RV %				0.0%	
E_T				1.5	
E_R				1.2	
f_{HV}				0.990	
f_P				1.00	
On Flow (pcph)				486	
On Flow (pcphpl)				486	
Calculate On Ramp Roadway Operations					
On Ramp Type				Right	
On Ramp Speed (mph)				45	
On Ramp Cap (pcph)				2,100	
On Ramp v/c ratio				0.23	



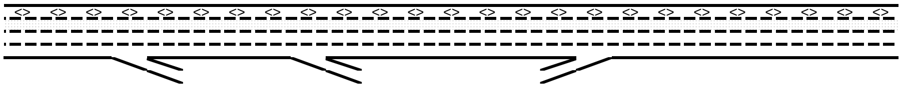
Key

<> Express Lane (HOV)

No Trucks

Location	1	2	3	4	5
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd on-ramp	El Dorado Hills Blvd to Bass Lake Rd
Calculate Off Ramp Flow Rate					
Off Volume (vph)	1,097	307			
PHF	0.92	0.92			
Total Lanes	1	1			
Terrain	Level	Level			
Grade %	0.0%	0.0%			
Grade Length (mi)	0.00	0.00			
Truck & Bus %	2.0%	2.0%			
RV %	0.0%	0.0%			
E_T	1.5	1.5			
E_R	1.2	1.2			
f_{HV}	0.990	0.990			
f_P	1.00	1.00			
Off Flow (pcph)	1,204	337			
Off Flow (pcphpl)	1,204	337			
Calculate Off Ramp Roadway Operations					
Off Ramp Type	Right	Right			
Off Ramp Speed	45	25			
Off Ramp Cap (pcph)	2,100	1,900			
Off Ramp v/c ratio	0.57	0.18			
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps					
Up Type		Off		Off	
Up Distance		2,350		1,975	
Up Flow (pcph)		1,204		337	
Down Type	Off	On		Off	
Down Distance	850	1,975		10,500	
Down Flow (pcph)	337	486		262	
Calculate Merge Influence Area Operations					
Effective v_P (pcph)				1,332	
Up Ramp L_{EQ}				463	
Down Ramp L_{EQ}				1,885	
P_{FM} (Eqn 13-3)				0.585	
P_{FM} (Eqn 13-4)		#VALUE!		0.680	
P_{FM} (Eqn 13-5)	0.653			0.555	
P_{FM}				0.680	
v_{12} (pcph)				906	
v_3 (pcph)				426	
v_{34} (pcph)					
v_{12a} (pcph)				906	
v_{R12a} (pcph)				1,393	
Merge Speed Index				0.31	
Merge Area Speed				57.8	
Outer Lanes Volume				426	
Outer Lanes Speed				65.0	
Segment Speed				59.4	
Merge v/c ratio				0.30	
Merge Density				14.4	
Merge LOS				B	

Location	1	2	3	4	5



Key

<> Express Lane (HOV)

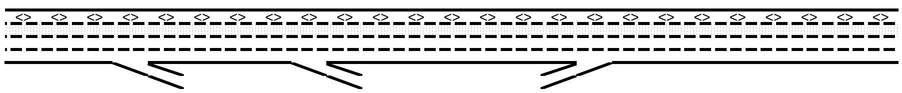
No Trucks

Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd on-ramp	El Dorado Hills Blvd to Bass Lake Rd
Calculate Diverge Influence Area Operations					
Effective v_P (pcph)	2,862	1,641			
Up Ramp L_{EQ}		14,489			
Down Ramp L_{EQ}	549	500			
P_{FD} (Eqn 13-9)	0.633	0.703			
P_{FD} (Eqn 13-10)					
P_{FD} (Eqn 13-11)	0.605			#VALUE!	
P_{FD}	0.633	0.703			
v_{12} (pcph)	2,254	1,254			
v_3 (pcph)	608	387			
v_{34} (pcph)					
v_{12a} (pcph)	2,254	1,254			
Diverge Speed Index	0.41	0.59			
Diverge Area Speed	55.7	51.5			
Outer Lanes Volume	608	387			
Outer Lanes Speed	71.3	71.3			
Segment Speed	58.4	55.1			
Diverge v/c ratio	0.51	0.29			
Diverge Density	22.3	13.7			
Diverge LOS	C	B			
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments					
Calculate On Ramp to Mainline Flow Rate for Weave Segments					
Calculate Mainline to Off Ramp Flow Rate for Weave Segments					
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments					
Calculate Weave Segment Operations					
Summarize Segment Operations					
Segment v/c ratio	0.51	0.29	0.18	0.30	0.29
Segment Density	22.3	13.7	6.7	14.4	10.5
Segment LOS	C	B	A	B	A
Over Capacity					

Project: **El Dorado Hills Town Center Apartments**

Freeway Corridor: **Eastbound US 50**

Location	1	2	3	4	5



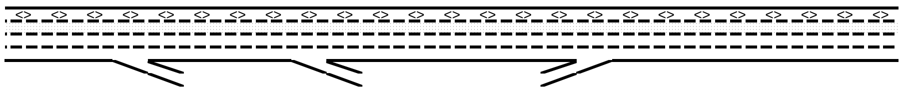
Key

<> Express Lane (HOV)

No Trucks

Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd on-ramp	El Dorado Hills Blvd to Bass Lake Rd
Define Freeway Segment					
Type	Diverge	Diverge	Basic	Merge	Basic
Length (ft)	1,500	850	1,975	1,500	7,500
Accel Length				275	
Decel Length	150	150			
Mainline Volume	4,902	4,077	3,128	3,128	4,046
On Ramp Volume				918	
Off Ramp Volume	825	949			
Express Lane Volume	539	448	344	344	445
EL On Ramp Volume					
EL Off Ramp Volume					
Calculate Flow Rate in General Purpose Lanes (GP)					
GP Volume (vph)	4,363	3,629	2,784	3,702	3,601
PHF	0.97	0.97	0.97	0.97	0.97
GP Lanes	3	3	3	3	3
Terrain	Level	Level	Level	Level	Grade
Grade %	0.0%	0.0%	0.0%	0.0%	7.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	1.00
Truck & Bus %	1.0%	1.0%	1.0%	1.0%	1.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	6.0
E_R	1.2	1.2	1.2	1.2	6.0
f_{HV}	0.995	0.995	0.995	0.995	0.952
f_P	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	4,520	3,759	2,884	3,835	3,898
GP Flow (pcphpl)	1,507	1,253	961	1,278	1,299
Calculate Speed in General Purpose Lanes					
Lane Width (ft)	12	12	12	12	12
Shoulder Width	>6	>6	>6	>6	>6
TRD	3.0	3.0	3.0	3.0	3.0
f_{LW}	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0
Calc'd FFS	67.3	67.3	67.3	67.3	67.3
Measured FFS	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65
Calculate Operations in General Purpose Lanes					
v/c ratio	0.64	0.53	0.41	0.54	0.55
Speed (mph)	64.8	65.0	65.0	65.0	65.0
Density (pcphpl)	23.2	19.3	14.8	19.7	20.0
LOS	C	C	B	C	C
Calculate Operations for Entering GP Lanes					
GP_{IN} Vol (pcph)				2,828	
GP_{IN} Cap (pcph)				7,050	
GP_{IN} v/c ratio				0.40	
Calculate Operations for Exiting GP Lanes					
GP_{OUT} Vol (pcph)	3,614	2,718			
GP_{OUT} Cap (pcph)	7,050	7,050			
GP_{OUT} v/c ratio	0.51	0.39			

Location	1	2	3	4	5



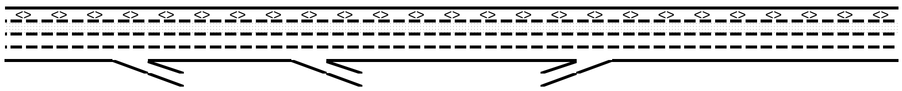
Key

<> Express Lane (HOV)

No Trucks

Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd on-ramp	El Dorado Hills Blvd to Bass Lake Rd
Calculate Flow Rate in Express Lanes (EL)					
EL Volume (vph)	539	448	344	344	445
PHF	0.9	0.9	0.9	0.9	0.9
Express Lanes	1	1	1	1	1
Terrain	Level	Level	Level	Level	Grade
Grade %	0.0%	0.0%	0.0%	0.0%	7.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	1.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	5.5
E_R	1.2	1.2	1.2	1.2	6.0
f_{HV}	0.990	0.990	0.990	0.990	0.917
f_P	1.00	1.00	1.00	1.00	1.00
EL Flow (pcph)	605	503	386	386	539
EL Flow (pcphpl)	605	503	386	386	539
Calculate Speed in Express Lanes					
Lane Width (ft)					
Shoulder Width					
TRD					
f_{LW}					
f_{LC}					
Calc'd FFS					
Measured FFS	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65
Calculate Operations in Express Lanes					
EL_{IN} v/c ratio	0.35	0.29	0.22	0.22	0.31
Calculate On Ramp Flow Rate					
On Volume (vph)				918	
PHF				0.92	
Total Lanes				1	
Terrain				Level	
Grade %				0.0%	
Grade Length (mi)				0.00	
Truck & Bus %				2.0%	
RV %				0.0%	
E_T				1.5	
E_R				1.2	
f_{HV}				0.990	
f_P				1.00	
On Flow (pcph)				1,008	
On Flow (pcphpl)				1,008	
Calculate On Ramp Roadway Operations					
On Ramp Type				Right	
On Ramp Speed (mph)				45	
On Ramp Cap (pcph)				2,100	
On Ramp v/c ratio				0.48	

Location	1	2	3	4	5



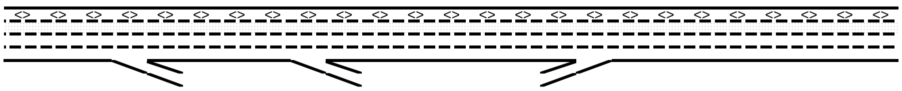
Key

<> Express Lane (HOV)

No Trucks

Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd on-ramp	El Dorado Hills Blvd to Bass Lake Rd
Calculate Off Ramp Flow Rate					
Off Volume (vph)	825	949			
PHF	0.92	0.92			
Total Lanes	1	1			
Terrain	Level	Level			
Grade %	0.0%	0.0%			
Grade Length (mi)	0.00	0.00			
Truck & Bus %	2.0%	2.0%			
RV %	0.0%	0.0%			
E_T	1.5	1.5			
E_R	1.2	1.2			
f_{HV}	0.990	0.990			
f_P	1.00	1.00			
Off Flow (pcph)	906	1,042			
Off Flow (pcphpl)	906	1,042			
Calculate Off Ramp Roadway Operations					
Off Ramp Type	Right	Right			
Off Ramp Speed	45	25			
Off Ramp Cap (pcph)	2,100	1,900			
Off Ramp v/c ratio	0.43	0.55			
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps					
Up Type		Off		Off	
Up Distance		2,350		1,975	
Up Flow (pcph)		906		1,042	
Down Type	Off	On		Off	
Down Distance	850	1,975		10,500	
Down Flow (pcph)	1,042	1,008		643	
Calculate Merge Influence Area Operations					
Effective v_P (pcph)				2,828	
Up Ramp L_{EQ}				894	
Down Ramp L_{EQ}				4,629	
P_{FM} (Eqn 13-3)				0.585	
P_{FM} (Eqn 13-4)		#VALUE!		0.653	
P_{FM} (Eqn 13-5)	0.871			0.565	
P_{FM}				0.653	
v_{12} (pcph)				1,847	
v_3 (pcph)				981	
v_{34} (pcph)					
v_{12a} (pcph)				1,847	
v_{R12a} (pcph)				2,855	
Merge Speed Index				0.36	
Merge Area Speed				56.6	
Outer Lanes Volume				981	
Outer Lanes Speed				63.3	
Segment Speed				58.2	
Merge v/c ratio				0.62	
Merge Density				25.6	
Merge LOS				C	

Location	1	2	3	4	5



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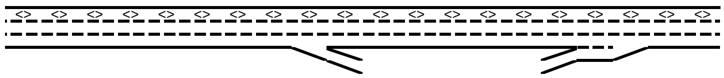
<> Express Lane (HOV)

No Trucks

Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd on-ramp	El Dorado Hills Blvd to Bass Lake Rd
Calculate Diverge Influence Area Operations					
Effective v_P (pcph)	4,520	3,759			
Up Ramp L_{EQ}		11,569			
Down Ramp L_{EQ}	1,552	1,562			
P_{FD} (Eqn 13-9)	0.605	0.618			
P_{FD} (Eqn 13-10)					
P_{FD} (Eqn 13-11)	0.674			#VALUE!	
P_{FD}	0.674	0.618			
v_{12} (pcph)	3,342	2,722			
v_3 (pcph)	1,178	1,038			
v_{34} (pcph)					
v_{12a} (pcph)	3,342	2,722			
Diverge Speed Index	0.38	0.65			
Diverge Area Speed	56.3	50.0			
Outer Lanes Volume	1,178	1,038			
Outer Lanes Speed	70.6	71.2			
Segment Speed	59.4	54.5			
Diverge v/c ratio	0.76	0.62			
Diverge Density	31.6	26.3			
Diverge LOS	D	C			
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments					
Calculate On Ramp to Mainline Flow Rate for Weave Segments					
Calculate Mainline to Off Ramp Flow Rate for Weave Segments					
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments					
Calculate Weave Segment Operations					
Summarize Segment Operations					
Segment v/c ratio	0.76	0.62	0.41	0.62	0.55
Segment Density	31.6	26.3	14.8	25.6	20.0
Segment LOS	D	C	B	C	C
Over Capacity					

Project: El Dorado Hills Town Center Apartments
Freeway Corridor: Westbound US 50

Location	8	9	10	11



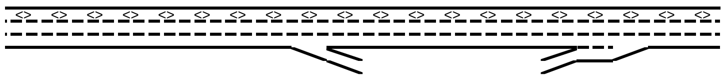
Key
<> Express Lane (HOV)
No Trucks

Name	Bass Lake Rd to El Dorado Hills Blvd	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp
Define Freeway Segment				
Type	Basic	Diverge	Basic	Merge
Length (ft)	7,500	1,500	3,250	1,500
Accel Length				880
Decel Length		150		
Mainline Volume	3,704	3,704	2,808	2,808
On Ramp Volume				1,708
Off Ramp Volume		896		
Express Lane Volume	407	407	309	309
EL On Ramp Volume				
EL Off Ramp Volume				
Calculate Flow Rate in General Purpose Lanes (GP)				
GP Volume (vph)	3,297	3,297	2,499	4,207
PHF	0.92	0.94	0.94	0.94
GP Lanes	2	2	2	2
Terrain	Grade	Level	Level	Level
Grade %	-7.0%	0.0%	0.0%	0.0%
Grade Length (mi)	1.00	0.00	0.00	0.00
Truck & Bus %	1.0%	1.0%	1.0%	1.0%
RV %	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2
f_{HV}	0.995	0.995	0.995	0.995
f_P	1.00	1.00	1.00	1.00
GP Flow (pcph)	3,601	3,525	2,672	4,498
GP Flow (pcphpl)	1,801	1,762	1,336	2,249
Calculate Speed in General Purpose Lanes				
Lane Width (ft)	12	12	12	12
Shoulder Width	>6	>6	>6	>6
TRD	2.0	3.0	3.0	3.0
f_{LW}	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0
Calc'd FFS	69.6	67.3	67.3	67.3
Measured FFS	65.0	65.0	65.0	65.0
FFS	65	65	65	65
Calculate Operations in General Purpose Lanes				
v/c ratio	0.77	0.75	0.57	0.96
Speed (mph)	62.7	63.1	65.0	54.8
Density (pcphpl)	28.7	27.9	20.6	41.1
LOS	D	D	C	E
Calculate Operations for Entering GP Lanes				
GP_{IN} Vol (pcph)				2,623
GP_{IN} Cap (pcph)				4,700
GP_{IN} v/c ratio				0.56
Calculate Operations for Exiting GP Lanes				
GP_{OUT} Vol (pcph)		2,541		
GP_{OUT} Cap (pcph)		4,700		
GP_{OUT} v/c ratio		0.54		

Project: El Dorado Hills Town Center Apartments

Alternative: Existing Plus Project Conditions
Time Period: AM Peak Hour

Location	8	9	10	11



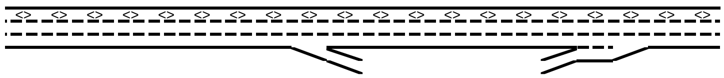
Key

<> Express Lane (HOV)

No Trucks

Name	Bass Lake Rd to El Dorado Hills Blvd	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp
Calculate Flow Rate in Express Lanes (EL)				
EL Volume (vph)	407	407	309	309
PHF	0.89	0.89	0.89	0.89
Express Lanes	1	1	1	1
Terrain	Grade	Level	Level	Level
Grade %	-7.0%	0.0%	0.0%	0.0%
Grade Length (mi)	1.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00
EL Flow (pcph)	462	462	351	351
EL Flow (pcphpl)	462	462	351	351
Calculate Speed in Express Lanes				
Lane Width (ft)				
Shoulder Width				
TRD				
f_{LW}				
f_{LC}				
Calc'd FFS				
Measured FFS	65.0	65.0	65.0	65.0
FFS	65	65	65	65
Calculate Operations in Express Lanes				
EL_{IN} v/c ratio	0.26	0.26	0.20	0.20
Calculate On Ramp Flow Rate				
On Volume (vph)				1,708
PHF				0.92
Total Lanes				1
Terrain				Level
Grade %				0.0%
Grade Length (mi)				0.00
Truck & Bus %				2.0%
RV %				0.0%
E_T				1.5
E_R				1.2
f_{HV}				0.990
f_P				1.00
On Flow (pcph)				1,875
On Flow (pcphpl)				1,875
Calculate On Ramp Roadway Operations				
On Ramp Type				Right
On Ramp Speed (mph)				45
On Ramp Cap (pcph)				2,100
On Ramp v/c ratio				0.89

Location	8	9	10	11



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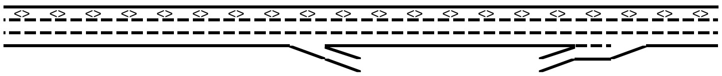
<> Express Lane (HOV)

No Trucks

Name	Bass Lake Rd to El Dorado Hills Blvd	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp
Calculate Off Ramp Flow Rate				
Off Volume (vph)		896		
PHF		0.92		
Total Lanes		1		
Terrain		Level		
Grade %		0.0%		
Grade Length (mi)		0.00		
Truck & Bus %		2.0%		
RV %		0.0%		
E_T		1.5		
E_R		1.2		
f_{HV}		0.990		
f_P		1.00		
Off Flow (pcph)		984		
Off Flow (pcphpl)		984		
Calculate Off Ramp Roadway Operations				
Off Ramp Type		Right		
Off Ramp Speed		45		
Off Ramp Cap (pcph)		2,100		
Off Ramp v/c ratio		0.47		
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps				
Up Type				
Up Distance				
Up Flow (pcph)				
Down Type				
Down Distance				
Down Flow (pcph)				
Calculate Merge Influence Area Operations				
Effective v_P (pcph)				2,623
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FM} (Eqn 13-3)				0.602
P_{FM} (Eqn 13-4)				
P_{FM} (Eqn 13-5)				
P_{FM}				1.000
v_{12} (pcph)				2,623
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)				2,623
v_{R12a} (pcph)				4,498
Merge Speed Index				0.59
Merge Area Speed				51.4
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed				51.4
Merge v/c ratio				0.98
Merge Density				34.2
Merge LOS				D

Location	8	9	10	11



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<> Express Lane (HOV)

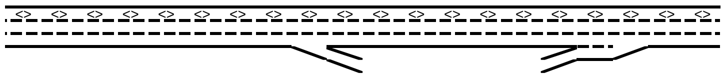
No Trucks

Name	Bass Lake Rd to El Dorado Hills Blvd	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp
Calculate Diverge Influence Area Operations				
Effective v_P (pcph)		3,525		
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FD} (Eqn 13-9)		0.627		
P_{FD} (Eqn 13-10)				
P_{FD} (Eqn 13-11)				
P_{FD}		1.000		
v_{12} (pcph)		3,525		
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)		3,525		
Diverge Speed Index		0.39		
Diverge Area Speed		56.1		
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed		56.1		
Diverge v/c ratio		0.80		
Diverge Density		33.2		
Diverge LOS		D		
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments				
Calculate On Ramp to Mainline Flow Rate for Weave Segments				
Calculate Mainline to Off Ramp Flow Rate for Weave Segments				
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments				
Calculate Weave Segment Operations				
Summarize Segment Operations				
Segment v/c ratio	0.77	0.80	0.57	0.98
Segment Density	28.7	33.2	20.6	34.2
Segment LOS	D	D	C	D
Over Capacity				

Project: El Dorado Hills Town Center Apartments

Freeway Corridor: Westbound US 50

Location	8	9	10	11



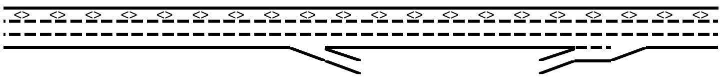
Key

<> Express Lane (HOV)

No Trucks

Name	Bass Lake Rd to El Dorado Hills Blvd	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp
Define Freeway Segment				
Type	Basic	Diverge	Basic	Merge
Length (ft)	7,500	1,500	3,250	1,500
Accel Length				880
Decel Length		150		
Mainline Volume	2,255	2,255	1,682	1,682
On Ramp Volume				1,544
Off Ramp Volume		573		
Express Lane Volume	180	180	135	135
EL On Ramp Volume				
EL Off Ramp Volume				
Calculate Flow Rate in General Purpose Lanes (GP)				
GP Volume (vph)	2,075	2,075	1,547	3,091
PHF	0.96	0.96	0.96	0.96
GP Lanes	2	2	2	2
Terrain	Grade	Level	Level	Level
Grade %	-7.0%	0.0%	0.0%	0.0%
Grade Length (mi)	1.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00
GP Flow (pcph)	2,183	2,183	1,628	3,252
GP Flow (pcphpl)	1,091	1,091	814	1,626
Calculate Speed in General Purpose Lanes				
Lane Width (ft)	12	12	12	12
Shoulder Width	>6	>6	>6	>6
TRD	2.0	3.0	3.0	3.0
f_{LW}	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0
Calc'd FFS	69.6	67.3	67.3	67.3
Measured FFS	65.0	65.0	65.0	65.0
FFS	65	65	65	65
Calculate Operations in General Purpose Lanes				
v/c ratio	0.46	0.46	0.35	0.69
Speed (mph)	65.0	65.0	65.0	64.3
Density (pcphpl)	16.8	16.8	12.5	25.3
LOS	B	B	B	C
Calculate Operations for Entering GP Lanes				
GP_{IN} Vol (pcph)				1,557
GP_{IN} Cap (pcph)				4,700
GP_{IN} v/c ratio				0.33
Calculate Operations for Exiting GP Lanes				
GP_{OUT} Vol (pcph)		1,554		
GP_{OUT} Cap (pcph)		4,700		
GP_{OUT} v/c ratio		0.33		

Location	8	9	10	11



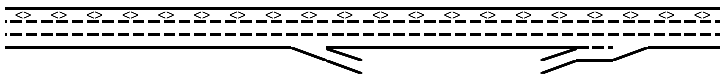
Key

<> Express Lane (HOV)

No Trucks

Name	Bass Lake Rd to El Dorado Hills Blvd	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp
Calculate Flow Rate in Express Lanes (EL)				
EL Volume (vph)	180	180	135	135
PHF	0.9	0.9	0.9	0.9
Express Lanes	1	1	1	1
Terrain	Grade	Level	Level	Level
Grade %	-7.0%	0.0%	0.0%	0.0%
Grade Length (mi)	1.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00
EL Flow (pcph)	202	202	151	151
EL Flow (pcphpl)	202	202	151	151
Calculate Speed in Express Lanes				
Lane Width (ft)				
Shoulder Width				
TRD				
f_{LW}				
f_{LC}				
Calc'd FFS				
Measured FFS	65.0	65.0	65.0	65.0
FFS	65	65	65	65
Calculate Operations in Express Lanes				
EL_{IN} v/c ratio	0.12	0.12	0.09	0.09
Calculate On Ramp Flow Rate				
On Volume (vph)				1,544
PHF				0.92
Total Lanes				1
Terrain				Level
Grade %				0.0%
Grade Length (mi)				0.00
Truck & Bus %				2.0%
RV %				0.0%
E_T				1.5
E_R				1.2
f_{HV}				0.990
f_P				1.00
On Flow (pcph)				1,695
On Flow (pcphpl)				1,695
Calculate On Ramp Roadway Operations				
On Ramp Type				Right
On Ramp Speed (mph)				45
On Ramp Cap (pcph)				2,100
On Ramp v/c ratio				0.81

Location	8	9	10	11



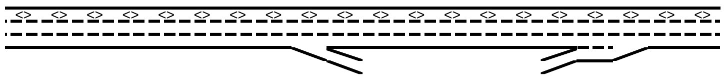
Key

<> Express Lane (HOV)

No Trucks

Name	Bass Lake Rd to El Dorado Hills Blvd	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp
Calculate Off Ramp Flow Rate				
Off Volume (vph)		573		
PHF		0.92		
Total Lanes		1		
Terrain		Level		
Grade %		0.0%		
Grade Length (mi)		0.00		
Truck & Bus %		2.0%		
RV %		0.0%		
E_T		1.5		
E_R		1.2		
f_{HV}		0.990		
f_P		1.00		
Off Flow (pcph)		629		
Off Flow (pcphpl)		629		
Calculate Off Ramp Roadway Operations				
Off Ramp Type		Right		
Off Ramp Speed		45		
Off Ramp Cap (pcph)		2,100		
Off Ramp v/c ratio		0.30		
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps				
Up Type				
Up Distance				
Up Flow (pcph)				
Down Type				
Down Distance				
Down Flow (pcph)				
Calculate Merge Influence Area Operations				
Effective v_P (pcph)				1,557
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FM} (Eqn 13-3)				0.602
P_{FM} (Eqn 13-4)				
P_{FM} (Eqn 13-5)				
P_{FM}				1.000
v_{12} (pcph)				1,557
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)				1,557
v_{R12a} (pcph)				3,252
Merge Speed Index				0.34
Merge Area Speed				57.1
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed				57.1
Merge v/c ratio				0.71
Merge Density				24.5
Merge LOS				C

Location	8	9	10	11



Key

<> Express Lane (HOV)

No Trucks

Name	Bass Lake Rd to El Dorado Hills Blvd	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp
Calculate Diverge Influence Area Operations				
Effective v_P (pcph)		2,183		
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FD} (Eqn 13-9)		0.676		
P_{FD} (Eqn 13-10)				
P_{FD} (Eqn 13-11)				
P_{FD}		1.000		
v_{12} (pcph)		2,183		
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)		2,183		
Diverge Speed Index		0.35		
Diverge Area Speed		56.8		
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed		56.8		
Diverge v/c ratio		0.50		
Diverge Density		21.7		
Diverge LOS		C		
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments				
Calculate On Ramp to Mainline Flow Rate for Weave Segments				
Calculate Mainline to Off Ramp Flow Rate for Weave Segments				
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments				
Calculate Weave Segment Operations				
Summarize Segment Operations				
Segment v/c ratio	0.46	0.50	0.35	0.71
Segment Density	16.8	21.7	12.5	24.5
Segment LOS	B	C	B	C
Over Capacity				

APPENDIX A:

Cumulative Technical Calculations

Intersection 1 **El Dorado Hills Boulevard/Saratoga Way-Park Drive** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	80	78	97.6%	87.1	21.5	F
	Through	650	640	98.5%	10.2	0.9	B
	Right Turn	70	77	109.9%	6.6	1.4	A
	Subtotal	**800**	**795**	**99.4%**	**17.4**	**2.0**	**B**
SB	Left Turn	70	71	100.9%	72.1	4.6	E
	Through	1690	1672	99.0%	25.1	1.8	C
	Right Turn	690	697	101.0%	41.6	3.3	D
	Subtotal	**2450**	**2440**	**99.6%**	**31.2**	**1.8**	**C**
EB	Left Turn	160	152	94.7%	161.1	54.1	F
	Through	100	105	105.0%	196.1	51.3	F
	Right Turn	60	62	103.8%	10.7	2.9	B
	Subtotal	**320**	**319**	**99.6%**	**143.3**	**42.4**	**F**
WB	Left Turn	130	132	101.8%	46.8	3.3	D
	Through	120	118	98.5%	48.7	4.0	D
	Right Turn	80	83	103.1%	30.3	4.6	C
	Subtotal	**330**	**333**	**100.9%**	**43.4**	**1.8**	**D**
Total		**3900**	**3887**	**99.7%**	**38.6**	**3.2**	**D**

Intersection 2 **El Dorado Hills Boulevard/US 50 WB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	920	866	94.1%	55.7	6.0	E
	Through	490	494	100.8%	8.8	0.6	A
	Right Turn	130	123	94.8%	3.7	0.4	A
	Subtotal	**1540**	**1483**	**96.3%**	**35.7**	**3.4**	**D**
SB	Left Turn	70	67	95.7%	87.9	14.2	F
	Through	1170	1165	99.5%	22.6	1.4	C
	Right Turn	640	637	99.6%	3.8	0.3	A
	Subtotal	**1880**	**1869**	**99.4%**	**18.5**	**0.9**	**B**
EB	Left Turn	250	252	100.6%	63.6	6.3	E
	Through	70	72	102.1%	75.5	9.1	E
	Right Turn	540	545	100.9%	6.9	0.4	A
	Subtotal	**860**	**868**	**100.9%**	**29.0**	**3.1**	**C**
WB	Left Turn	80	79	98.1%	98.9	77.4	F
	Through	100	100	100.4%	170.6	94.1	F
	Right Turn	60	61	102.3%	38.7	67.5	D
	Subtotal	**240**	**240**	**100.1%**	**113.7**	**82.6**	**F**
Total		**4520**	**4460**	**98.7%**	**31.6**	**4.8**	**C**

Intersection 3 **Latrobe Road/US 50 EB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	1330	1273	95.7%	10.5	0.4	B
	Right Turn	490	475	96.8%	10.3	0.5	B
	Subtotal	**1820**	**1747**	**96.0%**	**10.5**	**0.4**	**B**
SB	Left Turn	320	303	94.8%	23.9	2.1	C
	Through	1470	1483	100.9%	17.7	1.4	B
	Right Turn						
	Subtotal	**1790**	**1787**	**99.8%**	**18.7**	**1.1**	**B**
EB	Left Turn						
	Through						
	Right Turn	1080	1075	99.5%	15.4	0.5	B
	Subtotal	**1080**	**1075**	**99.5%**	**15.4**	**0.5**	**B**
WB	Left Turn						
	Through						
	Right Turn	210	200	95.4%	0.8	0.1	A
	Subtotal	**210**	**200**	**95.4%**	**0.8**	**0.1**	**A**
Total		**4900**	**4809**	**98.1%**	**14.2**	**0.4**	**B**

Intersection 4 **Latrobe Road/Town Center Boulevard** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	40	33	82.3%	222.4	86.8	F
	Through	1450	1405	96.9%	119.5	41.1	F
	Right Turn	50	53	106.2%	8.8	5.5	A
	Subtotal	**1540**	**1491**	**96.8%**	**117.7**	**40.2**	**F**
SB	Left Turn	550	556	101.0%	61.5	9.5	E
	Through	1550	1557	100.4%	14.5	1.3	B
	Right Turn	450	443	98.5%	6.0	0.4	A
	Subtotal	**2550**	**2556**	**100.2%**	**23.3**	**2.6**	**C**
EB	Left Turn	50	52	103.0%	52.0	3.2	D
	Through	20	20	97.5%	53.5	11.5	D
	Right Turn	20	22	108.5%	16.1	3.4	B
	Subtotal	**90**	**93**	**103.0%**	**44.2**	**4.4**	**D**
WB	Left Turn	120	109	91.1%	145.2	24.6	F
	Through	50	50	99.0%	125.9	27.2	F
	Right Turn	320	306	95.6%	48.7	13.2	D
	Subtotal	**490**	**465**	**94.8%**	**79.8**	**17.3**	**E**
Total		**4670**	**4604**	**98.6%**	**59.8**	**11.4**	**E**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	350	150	40	390	600	200	10	990	170	110	830	750
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7		6.0	5.8	5.8	5.0	5.7	5.7	5.0	5.7	5.7
Lane Util. Factor	0.97	0.91		0.97	0.95	1.00	1.00	0.86	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4909		3433	3539	1583	1770	6408	1561	3433	5085	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4909		3433	3539	1583	1770	6408	1561	3433	5085	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.85	0.85	0.85	0.85	0.85	0.85	0.91	0.91	0.91
Adj. Flow (vph)	372	160	43	459	706	235	12	1165	200	121	912	824
RTOR Reduction (vph)	0	32	0	0	0	85	0	0	33	0	0	200
Lane Group Flow (vph)	372	171	0	459	706	150	12	1165	167	121	912	624
Confl. Peds. (#/hr)			2						2			
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	14.0	29.5		14.0	31.4	31.4	1.2	45.1	45.1	9.0	52.9	52.9
Effective Green, g (s)	14.0	29.5		14.0	31.4	31.4	1.2	45.1	45.1	9.0	52.9	52.9
Actuated g/C Ratio	0.12	0.25		0.12	0.26	0.26	0.01	0.38	0.38	0.08	0.44	0.44
Clearance Time (s)	4.0	5.7		6.0	5.8	5.8	5.0	5.7	5.7	5.0	5.7	5.7
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	401	1207		401	926	414	18	2408	587	257	2242	698
v/s Ratio Prot	0.11	0.03		c0.13	c0.20		0.01	c0.18		0.04	0.18	
v/s Ratio Perm						0.09			0.11			c0.39
v/c Ratio	0.93	0.14		1.14	0.76	0.36	0.67	0.48	0.28	0.47	0.41	0.89
Uniform Delay, d1	52.5	35.4		53.0	40.9	36.1	59.2	28.6	26.2	53.2	22.9	31.0
Progression Factor	1.00	1.00		0.96	0.54	0.38	1.00	1.00	1.00	0.86	0.67	0.78
Incremental Delay, d2	27.3	0.1		86.8	3.1	0.4	66.1	0.7	1.2	1.1	0.5	14.1
Delay (s)	79.8	35.4		137.4	25.2	14.2	125.3	29.3	27.4	47.0	15.9	38.4
Level of Service	E	D		F	C	B	F	C	C	D	B	D
Approach Delay (s)		64.1			60.1			29.8			27.9	
Approach LOS		E			E			C			C	

Intersection Summary			
HCM Average Control Delay	41.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.4
Intersection Capacity Utilization	80.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	470	180	310	1030	100	80	10	60	30	10	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.7		5.0	5.7		5.0	5.3		5.0	5.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.99		1.00	0.87		1.00	0.88	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3392		1770	3492		1770	1623		1770	1639	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3392		1770	3492		1770	1623		1770	1639	
Peak-hour factor, PHF	0.89	0.89	0.89	0.81	0.81	0.81	0.71	0.71	0.71	0.71	0.71	0.71
Adj. Flow (vph)	56	528	202	383	1272	123	113	14	85	42	14	56
RTOR Reduction (vph)	0	37	0	0	6	0	0	71	0	0	49	0
Lane Group Flow (vph)	56	693	0	383	1389	0	113	28	0	42	21	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	3.1	21.9		19.6	38.4		5.5	12.6		3.4	10.5	
Effective Green, g (s)	3.1	21.9		19.6	38.4		5.5	12.6		3.4	10.5	
Actuated g/C Ratio	0.04	0.28		0.25	0.49		0.07	0.16		0.04	0.13	
Clearance Time (s)	5.0	5.7		5.0	5.7		5.0	5.3		5.0	5.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	70	946		442	1708		124	261		77	219	
v/s Ratio Prot	0.03	0.20		c0.22	c0.40		c0.06	c0.02		0.02	0.01	
v/s Ratio Perm												
v/c Ratio	0.80	0.73		0.87	0.81		0.91	0.11		0.55	0.10	
Uniform Delay, d1	37.4	25.6		28.2	17.0		36.3	28.1		36.8	29.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	46.2	3.0		16.2	3.1		54.2	0.2		7.7	0.2	
Delay (s)	83.6	28.6		44.4	20.1		90.4	28.3		44.5	30.0	
Level of Service	F	C		D	C		F	C		D	C	
Approach Delay (s)		32.5			25.3			61.4			35.5	
Approach LOS		C			C			E			D	

Intersection Summary			
HCM Average Control Delay	30.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	78.5	Sum of lost time (s)	10.0
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	160	260	10	40	1020	200	50	10	20	50	20	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	6.0	6.0	4.5	6.0		5.2	6.0		4.5	4.5	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00		1.00	0.98		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.90		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5085	1540	1770	4939		1770	1649		1770	1603	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5085	1540	1770	4939		1770	1649		1770	1603	
Peak-hour factor, PHF	0.83	0.83	0.83	0.80	0.80	0.80	0.63	0.63	0.63	0.83	0.83	0.83
Adj. Flow (vph)	193	313	12	50	1275	250	79	16	32	60	24	145
RTOR Reduction (vph)	0	0	5	0	19	0	0	31	0	0	131	0
Lane Group Flow (vph)	193	313	7	50	1506	0	79	17	0	60	39	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	5	2		1	6		7	3		4	8	
Permitted Phases			2									
Actuated Green, G (s)	19.7	74.0	74.0	5.9	59.5		7.9	5.6		13.5	12.0	
Effective Green, g (s)	19.7	74.0	74.0	5.9	59.5		7.9	5.6		13.5	12.0	
Actuated g/C Ratio	0.16	0.62	0.62	0.05	0.50		0.07	0.05		0.11	0.10	
Clearance Time (s)	5.2	6.0	6.0	4.5	6.0		5.2	6.0		4.5	4.5	
Vehicle Extension (s)	1.0	3.6	3.6	1.0	3.6		1.0	1.0		3.0	3.0	
Lane Grp Cap (vph)	291	3136	950	87	2449		117	77		199	160	
v/s Ratio Prot	c0.11	0.06		0.03	c0.30		c0.04	0.01		c0.03	c0.02	
v/s Ratio Perm			0.00									
v/c Ratio	0.66	0.10	0.01	0.57	0.61		0.68	0.23		0.30	0.24	
Uniform Delay, d1	47.0	9.4	8.9	55.8	21.9		54.8	55.1		48.9	49.8	
Progression Factor	0.98	0.99	1.36	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.2	0.1	0.0	5.6	1.2		11.4	0.5		0.9	0.8	
Delay (s)	50.2	9.3	12.1	61.4	23.1		66.2	55.7		49.8	50.6	
Level of Service	D	A	B	E	C		E	E		D	D	
Approach Delay (s)		24.6			24.3			62.2			50.4	
Approach LOS		C			C			E			D	

Intersection Summary			
HCM Average Control Delay	28.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	25.4
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	280	50	50	1100	100	130	20	280	10	20	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.0		3.5	5.3		4.2	4.2		4.2	4.2	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.86		1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1769	4953		1770	5012		1770	1581		1770	1710	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1769	4953		1770	5012		1770	1581		1770	1710	
Peak-hour factor, PHF	0.89	0.89	0.89	0.69	0.69	0.69	0.86	0.86	0.86	0.78	0.78	0.78
Adj. Flow (vph)	11	315	56	72	1594	145	151	23	326	13	26	26
RTOR Reduction (vph)	0	19	0	0	8	0	0	264	0	0	23	0
Lane Group Flow (vph)	11	352	0	72	1731	0	151	85	0	13	29	0
Confl. Peds. (#/hr)	2		2			2			2			3
Turn Type	Prot			Prot			Split			Split		
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases												
Actuated Green, G (s)	0.6	30.3		6.2	36.6		14.6	14.6		7.7	7.7	
Effective Green, g (s)	0.6	30.3		6.2	36.6		14.6	14.6		7.7	7.7	
Actuated g/C Ratio	0.01	0.40		0.08	0.48		0.19	0.19		0.10	0.10	
Clearance Time (s)	3.5	6.0		3.5	5.3		4.2	4.2		4.2	4.2	
Vehicle Extension (s)	2.0	3.7		2.0	3.0		3.6	3.6		3.6	3.6	
Lane Grp Cap (vph)	14	1957		143	2392		337	301		178	172	
v/s Ratio Prot	0.01	0.07		c0.04	c0.35		c0.09	0.05		0.01	c0.02	
v/s Ratio Perm												
v/c Ratio	0.79	0.18		0.50	0.72		0.45	0.28		0.07	0.17	
Uniform Delay, d1	38.0	15.1		33.8	16.0		27.5	26.6		31.3	31.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	123.8	0.1		1.0	1.1		1.2	0.6		0.2	0.6	
Delay (s)	161.8	15.2		34.8	17.1		28.6	27.2		31.5	32.1	
Level of Service	F	B		C	B		C	C		C	C	
Approach Delay (s)		19.4			17.8			27.6			32.0	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	20.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	76.7	Sum of lost time (s)	11.9
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection 9 **Post Street/Town Center Boulevard** **Unsignalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	190	187	98.3%	21.9	11.9	C
	Through	80	81	101.8%	11.1	4.0	B
	Right Turn	20	18	92.0%	6.9	4.7	A
	Subtotal	**290**	**287**	**98.8%**	**18.0**	**9.2**	**C**
SB	Left Turn	10	11	111.0%	11.8	1.9	B
	Through	70	66	94.4%	15.3	9.8	C
	Right Turn	110	112	102.2%	10.5	7.4	B
	Subtotal	**190**	**190**	**99.8%**	**12.3**	**7.9**	**B**
EB	Left Turn	330	324	98.1%	17.6	3.2	C
	Through	140	147	104.8%	10.4	2.3	B
	Right Turn	180	154	85.7%	6.8	1.6	A
	Subtotal	**650**	**625**	**96.1%**	**13.3**	**2.5**	**B**
WB	Left Turn	20	23	113.0%	11.3	1.7	B
	Through	60	60	99.5%	14.0	7.7	B
	Right Turn	10	9	91.0%	8.6	7.8	A
	Subtotal	**90**	**91**	**101.6%**	**12.9**	**6.1**	**B**
Total		**1220**	**1192**	**97.7%**	**14.3**	**4.9**	**B**

Intersection 10 **Silva Valley Parkway/US 50 WB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	570	579	101.6%	14.1	0.6	B
	Right Turn	30	30	99.3%	2.3	0.3	A
	Subtotal	**600**	**609**	**101.5%**	**13.6**	**0.6**	**B**
SB	Left Turn						
	Through	520	514	98.8%	24.2	1.2	C
	Right Turn	1370	1243	90.7%	58.3	2.2	E
	Subtotal	**1890**	**1757**	**93.0%**	**48.4**	**1.7**	**D**
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	860	888	103.3%	39.9	5.0	D
	Through	10	10	95.0%	42.6	11.1	D
	Right Turn	230	231	100.5%	14.5	1.3	B
	Subtotal	**1100**	**1129**	**102.6%**	**34.8**	**4.3**	**C**
Total		**3590**	**3495**	**97.3%**	**37.9**	**1.2**	**D**

Intersection 11 **Silva Valley Parkway/US 50 EB Ramps** **Signalized**

Direction	Movement	Volume (veh/hr)			Total Delay (sec/veh)		
		Demand	Served	% Served	Average	Std. Dev.	LOS
NB	Left Turn						
	Through	350	353	100.9%	3.6	0.3	A
	Right Turn	210	207	98.6%	7.4	0.3	A
	Subtotal	**560**	**560**	**100.1%**	**5.0**	**0.3**	**A**
SB	Left Turn						
	Through	1180	1205	102.1%	4.1	0.3	A
	Right Turn	200	198	99.2%	4.6	0.2	A
	Subtotal	**1380**	**1403**	**101.7%**	**4.2**	**0.3**	**A**
EB	Left Turn	250	256	102.3%	36.3	1.2	D
	Through						
	Right Turn	40	39	96.5%	16.5	0.9	B
	Subtotal	**290**	**294**	**101.5%**	**33.7**	**1.1**	**C**
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		**2230**	**2258**	**101.2%**	**8.2**	**0.5**	**A**

Intersection 1 **El Dorado Hills Boulevard/Saratoga Way-Park Drive** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	70	61	87.3%	77.7	5.3	E
	Through	1560	1408	90.2%	41.0	1.2	D
	Right Turn	170	145	85.4%	42.8	1.6	D
	Subtotal	**1800**	**1614**	**89.7%**	**42.5**	**1.1**	**D**
SB	Left Turn	100	96	96.0%	371.0	148.4	F
	Through	880	863	98.1%	70.0	20.8	E
	Right Turn	230	220	95.8%	30.2	4.0	C
	Subtotal	**1210**	**1180**	**97.5%**	**87.6**	**28.4**	**F**
EB	Left Turn	630	468	74.3%	368.7	7.3	F
	Through	130	95	73.3%	376.8	7.5	F
	Right Turn	440	340	77.3%	118.8	9.9	F
	Subtotal	**1200**	**904**	**75.3%**	**275.7**	**8.7**	**F**
WB	Left Turn	130	117	90.2%	83.8	23.4	F
	Through	120	108	89.6%	323.5	89.7	F
	Right Turn	220	210	95.3%	297.2	86.9	F
	Subtotal	**470**	**434**	**92.4%**	**245.6**	**68.0**	**F**
Total		**4680**	**4132**	**88.3%**	**127.7**	**10.1**	**F**

Intersection 2 **El Dorado Hills Boulevard/US 50 WB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	1200	969	80.7%	59.2	4.2	E
	Through	1420	1253	88.2%	15.5	0.8	B
	Right Turn	240	213	88.8%	6.5	0.4	A
	Subtotal	**2860**	**2435**	**85.1%**	**32.1**	**2.0**	**C**
SB	Left Turn	70	61	86.4%	92.9	11.6	F
	Through	1210	1112	91.9%	69.9	9.4	E
	Right Turn	170	155	90.9%	1.8	0.4	A
	Subtotal	**1450**	**1327**	**91.5%**	**63.0**	**8.0**	**E**
EB	Left Turn	280	273	97.6%	61.4	2.7	E
	Through	60	57	94.5%	65.2	3.3	E
	Right Turn	530	530	100.0%	7.1	0.3	A
	Subtotal	**870**	**860**	**98.9%**	**28.2**	**1.2**	**C**
WB	Left Turn	60	59	98.2%	70.1	2.7	E
	Through	90	86	95.3%	85.5	12.4	F
	Right Turn	100	102	101.9%	5.2	1.4	A
	Subtotal	**250**	**247**	**98.6%**	**48.9**	**6.1**	**D**
Total		**5430**	**4868**	**89.6%**	**40.7**	**2.5**	**D**

Intersection 3 **Latrobe Road/US 50 EB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	2330	1887	81.0%	7.7	1.0	A
	Right Turn	540	450	83.4%	7.7	0.4	A
	Subtotal	**2870**	**2337**	**81.4%**	**7.7**	**0.8**	**A**
SB	Left Turn	260	224	86.0%	49.7	2.3	D
	Through	1540	1468	95.3%	18.1	7.8	B
	Right Turn						
	Subtotal	**1800**	**1691**	**94.0%**	**22.3**	**6.9**	**C**
EB	Left Turn						
	Through						
	Right Turn	770	767	99.6%	17.4	2.5	B
	Subtotal	**770**	**767**	**99.6%**	**17.4**	**2.5**	**B**
WB	Left Turn						
	Through						
	Right Turn	530	524	98.8%	1.8	0.1	A
	Subtotal	**530**	**524**	**98.8%**	**1.8**	**0.1**	**A**
Total		**5970**	**5319**	**89.1%**	**13.2**	**2.4**	**B**

Intersection 4 **Latrobe Road/Town Center Boulevard** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	10	7	68.0%	354.1	43.6	F
	Through	1720	1212	70.5%	285.0	10.1	F
	Right Turn	90	71	78.3%	38.5	6.4	D
	Subtotal	**1820**	**1289**	**70.8%**	**271.9**	**10.7**	**F**
SB	Left Turn	710	667	94.0%	111.5	22.2	F
	Through	1540	1500	97.4%	17.8	1.6	B
	Right Turn	60	54	90.2%	3.1	0.6	A
	Subtotal	**2310**	**2222**	**96.2%**	**45.6**	**7.6**	**D**
EB	Left Turn	320	316	98.8%	63.0	2.5	E
	Through	60	52	86.8%	56.6	5.4	E
	Right Turn	100	97	96.7%	25.6	4.0	C
	Subtotal	**480**	**465**	**96.9%**	**54.5**	**2.3**	**D**
WB	Left Turn	40	35	87.8%	96.0	23.3	F
	Through	20	29	145.5%	73.9	19.9	E
	Right Turn	830	819	98.6%	37.3	5.7	D
	Subtotal	**890**	**883**	**99.2%**	**40.8**	**6.4**	**D**
Total		**5500**	**4858**	**88.3%**	**105.6**	**4.3**	**F**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	640	650	50	310	380	270	10	910	620	370	800	510
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7		6.0	5.8	5.8	5.0	5.7	5.7	5.0	5.7	5.7
Lane Util. Factor	0.97	0.91		0.97	0.95	1.00	1.00	0.86	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5026		3433	3539	1583	1770	6408	1561	3433	5085	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5026		3433	3539	1583	1770	6408	1561	3433	5085	1583
Peak-hour factor, PHF	0.77	0.77	0.77	0.89	0.89	0.89	0.82	0.82	0.82	0.87	0.87	0.87
Adj. Flow (vph)	831	844	65	348	427	303	12	1110	756	425	920	586
RTOR Reduction (vph)	0	6	0	0	0	130	0	0	116	0	0	274
Lane Group Flow (vph)	831	903	0	348	427	173	12	1110	640	425	920	312
Confl. Peds. (#/hr)			2						2			
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	33.2	39.5		17.6	25.8	25.8	3.6	50.3	50.3	20.2	66.9	66.9
Effective Green, g (s)	33.2	39.5		17.6	25.8	25.8	3.6	50.3	50.3	20.2	66.9	66.9
Actuated g/C Ratio	0.22	0.26		0.12	0.17	0.17	0.02	0.34	0.34	0.13	0.45	0.45
Clearance Time (s)	4.0	5.7		6.0	5.8	5.8	5.0	5.7	5.7	5.0	5.7	5.7
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	760	1324		403	609	272	42	2149	523	462	2268	706
v/s Ratio Prot	c0.24	c0.18		c0.10	0.12		0.01	0.17		c0.12	0.18	
v/s Ratio Perm						0.11			c0.41			0.20
v/c Ratio	1.09	0.68		0.86	0.70	0.64	0.29	0.52	1.22	0.92	0.41	0.44
Uniform Delay, d1	58.4	49.6		65.0	58.5	57.7	71.9	40.1	49.9	64.1	28.1	28.7
Progression Factor	1.00	1.00		0.60	0.64	0.56	1.00	1.00	1.00	0.72	0.34	0.39
Incremental Delay, d2	61.1	1.5		14.7	3.0	4.0	3.7	0.9	117.2	20.8	0.5	1.7
Delay (s)	119.5	51.1		53.7	40.7	36.4	75.7	41.0	167.0	66.7	9.9	12.8
Level of Service	F	D		D	D	D	E	D	F	E	A	B
Approach Delay (s)		83.8			43.7			91.9			23.3	
Approach LOS		F			D			F			C	

Intersection Summary			
HCM Average Control Delay	61.9	HCM Level of Service	E
HCM Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.4
Intersection Capacity Utilization	88.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	1030	90	80	790	50	300	10	200	80	10	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.7		5.0	5.7		5.0	5.3		5.0	5.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.86		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3497		1770	3508		1770	1596		1770	1614	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3497		1770	3508		1770	1596		1770	1614	
Peak-hour factor, PHF	0.90	0.90	0.90	0.83	0.83	0.83	0.75	0.75	0.75	0.75	0.75	0.75
Adj. Flow (vph)	56	1144	100	96	952	60	400	13	267	107	13	107
RTOR Reduction (vph)	0	5	0	0	3	0	0	145	0	0	95	0
Lane Group Flow (vph)	56	1239	0	96	1009	0	400	135	0	107	25	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	4.0	37.7		5.1	38.8		21.2	21.6		10.5	10.9	
Effective Green, g (s)	4.0	37.7		5.1	38.8		21.2	21.6		10.5	10.9	
Actuated g/C Ratio	0.04	0.39		0.05	0.40		0.22	0.23		0.11	0.11	
Clearance Time (s)	5.0	5.7		5.0	5.7		5.0	5.3		5.0	5.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	74	1375		94	1419		391	359		194	183	
v/s Ratio Prot	0.03	c0.35		c0.05	0.29		c0.23	c0.08		0.06	0.02	
v/s Ratio Perm												
v/c Ratio	0.76	0.90		1.02	0.71		1.02	0.38		0.55	0.14	
Uniform Delay, d1	45.5	27.3		45.4	23.9		37.4	31.4		40.5	38.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	35.0	8.4		98.7	1.7		51.5	0.7		3.4	0.3	
Delay (s)	80.5	35.8		144.1	25.6		88.9	32.1		43.8	38.6	
Level of Service	F	D		F	C		F	C		D	D	
Approach Delay (s)		37.7			35.8			65.5			41.1	
Approach LOS		D			D			E			D	

Intersection Summary			
HCM Average Control Delay	43.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	95.9	Sum of lost time (s)	15.7
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	310	1310	20	30	610	120	40	20	30	200	20	310
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	6.0	6.0	4.5	6.0		5.2	6.0		4.5	4.5	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.91		1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5085	1537	1770	4937		1770	1672		1770	1578	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5085	1537	1770	4937		1770	1672		1770	1578	
Peak-hour factor, PHF	0.85	0.85	0.85	0.88	0.88	0.88	0.69	0.69	0.69	0.78	0.78	0.78
Adj. Flow (vph)	365	1541	24	34	693	136	58	29	43	256	26	397
RTOR Reduction (vph)	0	0	6	0	18	0	0	36	0	0	338	0
Lane Group Flow (vph)	365	1541	18	34	811	0	58	36	0	256	85	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	5	2		1	6		7	3		4	8	
Permitted Phases			2									
Actuated Green, G (s)	48.7	88.5	88.5	5.6	44.7		13.5	7.7		27.2	22.2	
Effective Green, g (s)	48.7	88.5	88.5	5.6	44.7		13.5	7.7		27.2	22.2	
Actuated g/C Ratio	0.32	0.59	0.59	0.04	0.30		0.09	0.05		0.18	0.15	
Clearance Time (s)	5.2	6.0	6.0	4.5	6.0		5.2	6.0		4.5	4.5	
Vehicle Extension (s)	1.0	3.6	3.6	1.0	3.6		1.0	1.0		3.0	3.0	
Lane Grp Cap (vph)	575	3000	907	66	1471		159	86		321	234	
v/s Ratio Prot	c0.21	0.30		0.02	c0.16		0.03	0.02		c0.14	c0.05	
v/s Ratio Perm			0.01									
v/c Ratio	0.63	0.51	0.02	0.52	0.55		0.36	0.42		0.80	0.36	
Uniform Delay, d1	43.1	18.1	12.8	70.9	44.2		64.2	69.0		58.8	57.5	
Progression Factor	0.75	0.67	0.53	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	0.2	0.0	2.8	1.5		0.5	1.2		12.9	1.0	
Delay (s)	33.0	12.3	6.8	73.7	45.7		64.7	70.2		71.7	58.5	
Level of Service	C	B	A	E	D		E	E		E	E	
Approach Delay (s)		16.2			46.8			67.7			63.4	
Approach LOS		B			D			E			E	

Intersection Summary			
HCM Average Control Delay	34.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	20.2
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	1130	130	270	540	110	90	20	180	170	70	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.0		3.5	5.3		4.2	4.2		4.2	4.2	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.97		1.00	0.87		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	4994		1770	4936		1770	1590		1770	1734	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	4994		1770	4936		1770	1590		1770	1734	
Peak-hour factor, PHF	0.91	0.91	0.91	0.78	0.78	0.78	0.81	0.81	0.81	0.90	0.90	0.90
Adj. Flow (vph)	66	1242	143	346	692	141	111	25	222	189	78	56
RTOR Reduction (vph)	0	10	0	0	20	0	0	194	0	0	21	0
Lane Group Flow (vph)	66	1375	0	346	813	0	111	53	0	189	113	0
Confl. Peds. (#/hr)	2		2			2			2			3
Turn Type	Prot			Prot			Split			Split		
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases												
Actuated Green, G (s)	6.9	36.6		25.5	55.9		13.9	13.9		17.5	17.5	
Effective Green, g (s)	6.9	36.6		25.5	55.9		13.9	13.9		17.5	17.5	
Actuated g/C Ratio	0.06	0.33		0.23	0.50		0.12	0.12		0.16	0.16	
Clearance Time (s)	3.5	6.0		3.5	5.3		4.2	4.2		4.2	4.2	
Vehicle Extension (s)	2.0	3.7		2.0	3.0		3.6	3.6		3.6	3.6	
Lane Grp Cap (vph)	110	1641		405	2477		221	198		278	272	
v/s Ratio Prot	0.04	c0.28		c0.20	0.16		c0.06	0.03		c0.11	0.07	
v/s Ratio Perm												
v/c Ratio	0.60	0.84		0.85	0.33		0.50	0.27		0.68	0.42	
Uniform Delay, d1	50.9	34.7		41.2	16.6		45.5	44.1		44.3	42.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.8	4.0		15.4	0.1		2.2	0.9		6.8	1.3	
Delay (s)	56.7	38.7		56.6	16.6		47.7	45.0		51.1	43.6	
Level of Service	E	D		E	B		D	D		D	D	
Approach Delay (s)		39.5			28.4			45.8			48.0	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	37.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	111.4	Sum of lost time (s)	17.9
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection 9 **Post Street/Town Center Boulevard** **Unsignalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	280	279	99.8%	47.3	17.9	E
	Through	140	146	103.9%	27.6	11.1	D
	Right Turn	40	44	109.8%	20.1	7.7	C
	Subtotal	**460**	**469**	**101.9%**	**38.5**	**14.3**	**E**
SB	Left Turn	20	22	111.5%	37.0	25.4	E
	Through	90	88	97.4%	49.4	33.6	E
	Right Turn	250	240	96.0%	42.1	28.8	E
	Subtotal	**360**	**350**	**97.2%**	**43.6**	**29.7**	**E**
EB	Left Turn	290	265	91.3%	27.7	3.5	D
	Through	230	212	92.0%	19.6	2.5	C
	Right Turn	190	172	90.4%	8.9	1.5	A
	Subtotal	**710**	**648**	**91.3%**	**20.1**	**2.4**	**C**
WB	Left Turn	20	19	95.5%	30.7	19.9	D
	Through	220	228	103.6%	43.0	21.9	E
	Right Turn	10	11	113.0%	45.3	29.3	E
	Subtotal	**250**	**258**	**103.4%**	**42.2**	**21.7**	**E**
Total		**1780**	**1725**	**96.9%**	**33.3**	**12.8**	**D**

Intersection 10 **Silva Valley Parkway/US 50 WB Ramps** **Signalized**

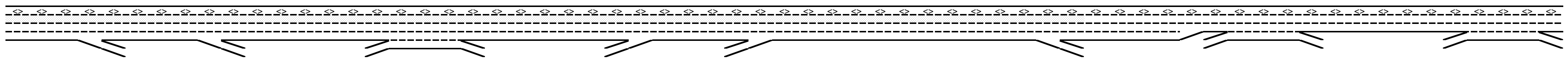
		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	1530	1535	100.4%	14.1	0.8	B
	Right Turn	40	45	113.3%	3.2	0.3	A
	Subtotal	**1570**	**1581**	**100.7%**	**13.8**	**0.8**	**B**
SB	Left Turn						
	Through	640	644	100.7%	12.3	1.2	B
	Right Turn	490	483	98.6%	12.7	0.9	B
	Subtotal	**1130**	**1128**	**99.8%**	**12.5**	**1.1**	**B**
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	520	545	104.8%	25.2	1.0	C
	Through	10	10	101.0%	30.1	4.7	C
	Right Turn	370	389	105.2%	32.6	3.4	C
	Subtotal	**900**	**944**	**104.9%**	**28.3**	**1.6**	**C**
Total		**3600**	**3652**	**101.5%**	**17.1**	**0.6**	**B**

Intersection 11 **Silva Valley Parkway/US 50 EB Ramps** **Signalized**

Direction	Movement	Volume (veh/hr)			Total Delay (sec/veh)		
		Demand	Served	% Served	Average	Std. Dev.	LOS
NB	Left Turn						
	Through	920	922	100.2%	21.6	5.2	C
	Right Turn	590	590	100.1%	21.0	5.6	C
	Subtotal	**1510**	**1512**	**100.2%**	**21.4**	**5.3**	**C**
SB	Left Turn						
	Through	960	987	102.8%	8.6	0.5	A
	Right Turn	200	200	100.0%	4.3	0.3	A
	Subtotal	**1160**	**1187**	**102.3%**	**7.9**	**0.4**	**A**
EB	Left Turn	650	653	100.5%	20.4	0.7	C
	Through						
	Right Turn	40	41	101.8%	14.0	1.1	B
	Subtotal	**690**	**694**	**100.5%**	**20.0**	**0.7**	**B**
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		**3360**	**3393**	**101.0%**	**16.4**	**2.4**	**B**

Project: EDHTCA **Alternative:** Cumulative
Freeway Corridor: Eastbound US 50 **Time Period:** AM Peak Hour

Data Entry Value
Calculated Value



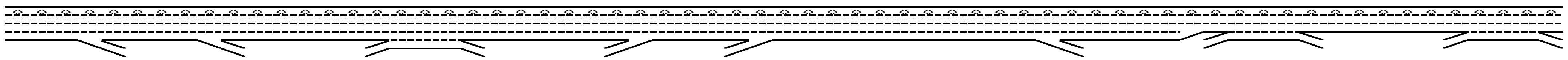
Key
<> Express Lane (HOV)
No Trucks

Location	1	2	3	4	5	6	7	8	9	10	11	12	13
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off to on-ramp	Cambridge Rd to Cameron Park
Define Freeway Segment													
Type	Diverge	Diverge	Basic	Weave	Basic	Merge	Basic	Basic	Diverge	Basic	Weave	Basic	Weave
Length (ft)	1,500	850	1,975	3,000	1,575	800	3,400	3,400	1,500	2,100	5,725	1,350	8,250
Accel Length						550							
Decel Length	150	150							150				
Mainline Volume	4,040	2,960	2,750	2,750	3,270	3,270	3,470	3,680	3,680	2,830	2,830	2,910	2,910
On Ramp Volume				810		200	210				440		1,220
Off Ramp Volume	1,080	210		290					850		360		1,140
Express Lane Volume	444	326	303	303	458	458	486	515	515	396	368	378	378
EL On Ramp Volume													
EL Off Ramp Volume													
Calculate Flow Rate in General Purpose Lanes (GP)													
GP Volume (vph)	3,596	2,634	2,448	3,258	2,812	3,012	2,984	3,165	3,165	2,434	2,902	2,532	3,752
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
GP Lanes	3	3	3	4	3	3	3	3	3	3	3	2	3
Terrain	Level	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
RV %	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%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	5.0	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	6.0	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.862	0.980	0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	3,986	2,921	2,714	3,612	3,118	3,340	3,309	3,990	3,509	2,698	3,218	2,807	4,159
GP Flow (pcphpl)	1,329	974	905	903	1,039	1,113	1,103	1,330	1,170	899	1,073	1,403	1,386
Calculate Speed in General Purpose Lanes													
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	12
Shoulder Width	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6
TRD	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0
f_{LW}	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
f_{LC}	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
Calc'd FFS	67.3	67.3	67.3	67.3	67.3	67.3	67.3	67.3	69.6	69.6	69.6	69.6	69.6
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes													
v/c ratio	0.57	0.41	0.38	0.38	0.44	0.47	0.47	0.57	0.50	0.38	0.46	0.60	0.59
Speed (mph)	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
Density (pcphpl)	20.4	15.0	13.9	13.9	16.0	17.1	17.0	20.5	18.0	13.8	16.5	21.6	21.3
LOS	C	B	B	B	B	B	B	C	B	B	B	C	C
Calculate Operations for Entering GP Lanes													
GP_{IN} Vol (pcph)				2,722		3,120	3,078				2,592		2,814
GP_{IN} Cap (pcph)				7,050		7,050	7,050				4,700		4,700
GP_{IN} v/c ratio				0.39		0.44	0.44				0.55		0.60
Calculate Operations for Exiting GP Lanes													
GP_{OUT} Vol (pcph)	2,801	2,690		3,302					2,349	2,698	2,833		2,894
GP_{OUT} Cap (pcph)	7,050	7,050		7,050					7,050	4,700	4,700		4,700
GP_{OUT} v/c ratio	0.40	0.38		0.47					0.33	0.57	0.60		0.62

Project:

Alternative: Cumulative
Time Period: AM Peak Hour

Location	1	2	3	4	5	6	7	8	9	10	11	12	13



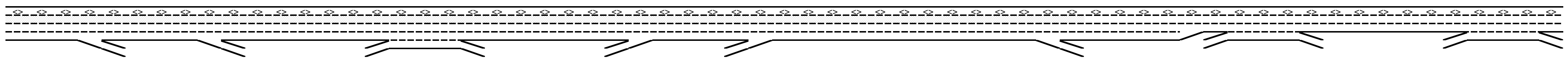
Key
<> Express Lane (HOV)
No Trucks

Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off to on-ramp	Cambridge Rd to Cameron Park
Calculate Flow Rate in Express Lanes (EL)													
EL Volume (vph)	444	326	303	303	458	458	486	515	515	396	368	378	378
PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Express Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1
Terrain	Level	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	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%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	5.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	6.0	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.917	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
EL Flow (pcph)	528	387	359	359	544	544	577	661	612	471	437	450	450
EL Flow (pcphpl)	528	387	359	359	544	544	577	661	612	471	437	450	450
Calculate Speed in Express Lanes													
Lane Width (ft)													
Shoulder Width													
TRD													
f_{LW}													
f_{LC}													
Calc'd FFS													
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in Express Lanes													
EL_{IN} v/c ratio	0.30	0.22	0.21	0.21	0.31	0.31	0.33	0.38	0.35	0.27	0.25	0.26	0.26
Calculate On Ramp Flow Rate													
On Volume (vph)				810		200	210				440		1,220
PHF				0.92		0.92	0.92				0.71		0.92
Total Lanes				1		1	1				1		1
Terrain				Level		Level	Level				Level		Level
Grade %				0.0%		0.0%	0.0%				0.0%		0.0%
Grade Length (mi)				0.00		0.00	0.00				0.00		0.00
Truck & Bus %				2.0%		2.0%	2.0%				2.0%		3.0%
RV %				0.0%		0.0%	0.0%				0.0%		0.0%
E_T				1.5		1.5	1.5				1.5		1.5
E_R				1.2		1.2	1.2				1.2		1.2
f_{HV}				0.990		0.990	0.990				0.990		0.985
f_P				1.00		1.00	1.00				1.00		1.00
On Flow (pcph)				889		220	231				626		1,346
On Flow (pcphpl)				889		220	231				626		1,346
Calculate On Ramp Roadway Operations													
On Ramp Type				Right		Right	Right				Right		Right
On Ramp Speed (mph)				45		25	45				45		45
On Ramp Cap (pcph)				2,100		1,900	2,100				2,100		2,100
On Ramp v/c ratio				0.42		0.12	0.11				0.30		0.64

Project:

Alternative: Cumulative
Time Period: AM Peak Hour

Location	1	2	3	4	5	6	7	8	9	10	11	12	13



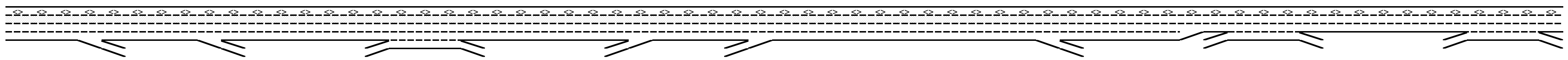
Key

<> Express Lane (HOV)

No Trucks

Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off to on-ramp	Cambridge Rd to Cameron Park
Calculate Off Ramp Flow Rate													
Off Volume (vph)	1,080	210		290					850		360		1,140
PHF	0.92	0.92		0.95					0.74		0.95		0.91
Total Lanes	1	1		1					1		1		1
Terrain	Level	Level		Level					Level		Level		Level
Grade %	0.0%	0.0%		0.0%					0.0%		0.0%		0.0%
Grade Length (mi)	0.00	0.00		0.00					0.00		0.00		0.00
Truck & Bus %	2.0%	2.0%		3.0%					2.0%		3.0%		2.0%
RV %	0.0%	0.0%		0.0%					0.0%		0.0%		0.0%
E_T	1.5	1.5		1.5					1.5		1.5		1.5
E_R	1.2	1.2		1.2					1.2		1.2		1.2
f_{HV}	0.990	0.990		0.985					0.990		0.985		0.990
f_P	1.00	1.00		1.00					1.00		1.00		1.00
Off Flow (pcph)	1,186	231		310					1,160		385		1,265
Off Flow (pcphpl)	1,186	231		310					1,160		385		1,265
Calculate Off Ramp Roadway Operations													
Off Ramp Type	Right	Right		Right					Right		Right		Right
Off Ramp Speed	45	25		45					45		45		45
Off Ramp Cap (pcph)	2,100	1,900		2,100					2,100		2,100		2,100
Off Ramp v/c ratio	0.56	0.12		0.15					0.55		0.18		0.60
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps													
Up Type		Off				Off	On		Off		Off		Off
Up Distance		2,350				1,575	800		4,900		2,100		1,350
Up Flow (pcph)		1,186				310	220		310		1,160		385
Down Type	Off	On				On	On		On		On		No
Down Distance	850	1,975				2,900	3,400		2,100		1,350		
Down Flow (pcph)	231	889				626	626		626		1,346		
Calculate Merge Influence Area Operations													
Effective v_P (pcph)						3,120							
Up Ramp L_{EQ}						-136							
Down Ramp L_{EQ}						3,716							
P_{FM} (Eqn 13-3)						0.593							
P_{FM} (Eqn 13-4)		#VALUE!				0.701			#VALUE!		#VALUE!		#VALUE!
P_{FM} (Eqn 13-5)	0.620												
P_{FM}						0.593							
v_{12} (pcph)						1,850							
v_3 (pcph)						1,270							
v_{34} (pcph)													
v_{12a} (pcph)						1,850							
v_{R12a} (pcph)						2,069							
Merge Speed Index						0.32							
Merge Area Speed						57.5							
Outer Lanes Volume						1,270							
Outer Lanes Speed						62.2							
Segment Speed						59.2							
Merge v/c ratio						0.45							
Merge Density						18.1							
Merge LOS						B							

Location	1	2	3	4	5	6	7	8	9	10	11	12	13



Key

<> Express Lane (HOV)

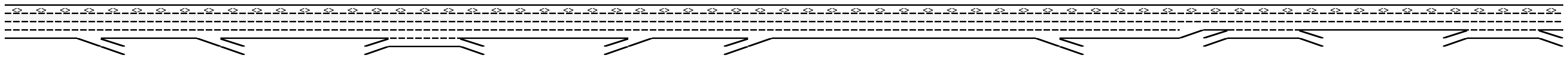
No Trucks

Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off to on-ramp	Cambridge Rd to Cameron Park
Calculate Diverge Influence Area Operations													
Effective v_P (pcph)	3,986	2,921							3,509				
Up Ramp L_{EQ}		9,827							4,877				
Down Ramp L_{EQ}	394	915							1,027				
P_{FD} (Eqn 13-9)	0.606	0.676							0.619				
P_{FD} (Eqn 13-10)													
P_{FD} (Eqn 13-11)	0.566												
P_{FD}	0.606	0.676							0.619				
v_{12} (pcph)	2,882	2,050							2,614				
v_3 (pcph)	1,104	871							895				
v_{34} (pcph)													
v_{12a} (pcph)	2,882	2,050							2,614				
Diverge Speed Index	0.40	0.58							0.40				
Diverge Area Speed	55.7	51.7							55.7				
Outer Lanes Volume	1,104	871							895				
Outer Lanes Speed	70.9	71.3							71.3				
Segment Speed	59.2	56.3							59.0				
Diverge v/c ratio	0.66	0.47							0.59				
Diverge Density	27.7	20.5							25.4				
Diverge LOS	C	C							C				
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments													
On to Off Volume (vph)				50							10		460
PHF				0.92							0.92		0.92
Terrain				Level							Level		Level
Grade %				0.0%							0.0%		0.0%
Grade Length (mi)				0.00							0.00		0.00
Truck & Bus %				3.0%							2.0%		2.0%
RV %				0.0%							0.0%		0.0%
E_T				1.5							1.5		1.5
E_R				1.2							1.2		1.2
f_{HV}				0.985							0.990		0.990
f_P				1.00							1.00		1.00
On to Off Flow (pcph)				55							11		505
Calculate On Ramp to Mainline Flow Rate for Weave Segments													
On to ML Volume (vph)				760							430		760
PHF				0.92							0.92		0.92
Terrain				Level							Level		Level
Grade %				0.0%							0.0%		0.0%
Grade Length (mi)				0.00							0.00		0.00
Truck & Bus %				3.0%							2.0%		2.0%
RV %				0.0%							0.0%		0.0%
E_T				1.5							1.5		1.5
E_R				1.2							1.2		1.2
f_{HV}				0.985							0.990		0.990
f_P				1.00							1.00		1.00
On to ML Flow (pcph)				838							472		834
Calculate Mainline to Off Ramp Flow Rate for Weave Segments													
ML to Off Volume (vph)				240							350		680
PHF				0.95							0.92		0.92
Terrain				Level							Level		Level
Grade %				0.0%							0.0%		0.0%
Grade Length (mi)				0.00							0.00		0.00
Truck & Bus %				6.0%							4.0%		4.0%
RV %				0.0%							0.0%		0.0%
E_T				1.5							1.5		1.5
E_R				1.2							1.2		1.2
f_{HV}				0.971							0.980		0.980
f_P				1.00							1.00		1.00
ML to Off Flow (pcph)				260							388		754

Project:

Alternative: Cumulative
Time Period: AM Peak Hour

Location	1	2	3	4	5	6	7	8	9	10	11	12	13



Key
<> Express Lane (HOV)
No Trucks

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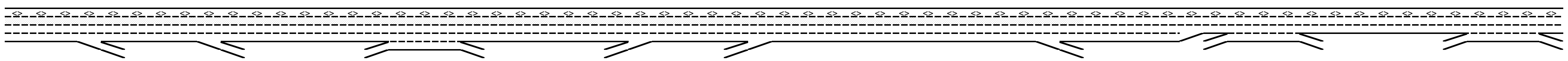
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments													
GP to GP Volume (vph)				2,208							2,112		1,852
PHF				0.95							0.92		0.92
Terrain				Level							Level		Level
Grade %				0.0%							0.0%		0.0%
Grade Length (mi)				0.00							0.00		0.00
Truck & Bus %				6.0%							4.0%		4.0%
RV %				0.0%							0.0%		0.0%
E_T				1.5							1.5		1.5
E_R				1.2							1.2		1.2
f_{HV}				0.971							0.980		0.980
f_P				1.00							1.00		1.00
GP to GP Flow (pcph)				2,393							2,342		2,053
Calculate Weave Segment Operations													
Weave Type				One-sided							One-sided		One-sided
Weave Length				2,000							4,725		7,250
Segment Lanes				3							2		2
Weave Lanes				3					3		2		2
Weave Flow (pcph)				1,099							860		1,588
Non-Weave Flow				2,449							2,353		2,558
Segment Flow				3,547							3,213		4,146
Max Weave Length				4,123							5,240		6,492
Length Check				OK							OK		Not a Weave
Ideal Weave Capacity				2,188							2,311		2,408
f_{HV}				0.974							0.982		0.984
f_P				0.997							0.999		0.998
Capacity Condition 1				6,373							4,531		4,727
Capacity Condition 2				10,973							8,789		6,150
Weave v/c ratio				0.54							0.70		0.86
Interchange Density				3							5		2
Lane Changes On to ML				1							1		1
Lane Changes ML to Off				1							1		1
Lane Changes On to Off				0							0		0
Min Lane Change Rate				1,099							860		1,588
Weave LC Rate				1,694							2,590		4,351
Non-Weave LC Rate 1				1,011							2,660		4,071
Non-Weave LC Rate 2				2,235							2,214		2,259
Non-Weave LC Rate 3				1,329							-266		-2,644
Segment LC Rate				3,024							4,803		6,610
Weave Intensity Factor				0.313							0.229		0.210
Weave Speed				53.1							55.7		56.3
Non-Weave Speed				51.4							51.1		43.6
Segment Speed				51.9							52.2		47.7
Weave Density				22.8							30.7		-
Weave LOS				C							D		Basic
Summarize Segment Operations													
Segment v/c ratio	0.66	0.47	0.38	0.54	0.44	0.45	0.47	0.57	0.59	0.38	0.70	0.60	0.59
Segment Density	27.7	20.5	13.9	22.8	16.0	18.1	17.0	20.5	25.4	13.8	30.7	21.6	21.3
Segment LOS	C	C	B	C	B	B	B	C	C	B	D	C	C
Over Capacity													

Project: EDHTCA
Freeway Corridor: Eastbound US 50

Alternative: Cumulative
Time Period: PM Peak Hour

Data Entry Value
Calculated Value

Location	1	2	3	4	5	6	7	8	9	10	11	12	13



Key
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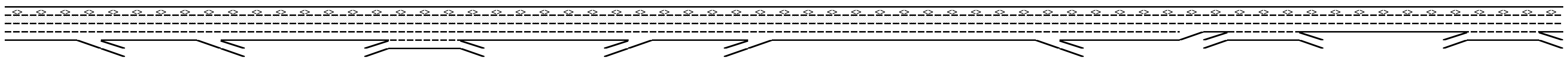
No Trucks

Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off to on-ramp	Cambridge Rd to Cameron Park
Define Freeway Segment													
Type	Diverge	Diverge	Basic	Weave	Basic	Merge	Basic	Basic	Diverge	Basic	Weave	Basic	Weave
Length (ft)	1,500	850	1,975	3,000	1,575	800	3,400	3,400	1,500	2,100	6,625	1,350	8,250
Accel Length						550							
Decel Length	150	150							150				
Mainline Volume	6,440	5,670	5,140	5,140	5,250	5,250	5,450	6,040	6,040	4,470	4,470	4,190	4,190
On Ramp Volume				800		200	590				440		1,120
Off Ramp Volume	770	530		690					1,570		720		1,690
Express Lane Volume	966	851	771	668	683	683	709	906	906	671	671	629	587
EL On Ramp Volume													
EL Off Ramp Volume													
Calculate Flow Rate in General Purpose Lanes (GP)													
GP Volume (vph)	5,474	4,820	4,369	5,272	4,568	4,768	4,742	5,134	5,134	3,800	4,240	3,562	4,723
PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
GP Lanes	3	3	3	4	3	3	3	3	3	3	3	2	3
Terrain	Level	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
RV %	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%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	6.0	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	6.0	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.952	0.995	0.995	0.995	0.995	0.995
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	5,672	4,993	4,527	5,462	4,732	4,940	4,913	5,557	5,319	3,937	4,392	3,690	4,894
GP Flow (pcphpl)	1,891	1,664	1,509	1,366	1,577	1,647	1,638	1,852	1,773	1,312	1,464	1,845	1,631
Calculate Speed in General Purpose Lanes													
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	12
Shoulder Width	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6
TRD	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0
f_{LW}	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
f_{LC}	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
Calc'd FFS	67.3	67.3	67.3	67.3	67.3	67.3	67.3	67.3	69.6	69.6	69.6	69.6	69.6
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes													
v/c ratio	0.80	0.71	0.64	0.58	0.67	0.70	0.70	0.79	0.75	0.56	0.62	0.79	0.69
Speed (mph)	61.6	64.0	64.8	65.0	64.6	64.1	64.2	62.1	63.0	65.0	64.9	62.2	64.2
Density (pcphpl)	30.7	26.0	23.3	21.0	24.4	25.7	25.5	29.8	28.1	20.2	22.5	29.7	25.4
LOS	D	D	C	C	C	C	C	D	D	C	C	D	C
Calculate Operations for Entering GP Lanes													
GP_{IN} Vol (pcph)				4,584		4,720	4,265				3,767		3,697
GP_{IN} Cap (pcph)				7,050		7,050	7,050				4,700		4,700
GP_{IN} v/c ratio				0.65		0.67	0.60				0.80		0.79
Calculate Operations for Exiting GP Lanes													
GP_{OUT} Vol (pcph)	4,826	4,412		4,701					3,685	3,937	3,623		3,018
GP_{OUT} Cap (pcph)	7,050	7,050		7,050					7,050	4,700	4,700		4,700
GP_{OUT} v/c ratio	0.68	0.63		0.67					0.52	0.84	0.77		0.64

Location	1	2	3	4	5	6	7	8	9	10	11	12	13



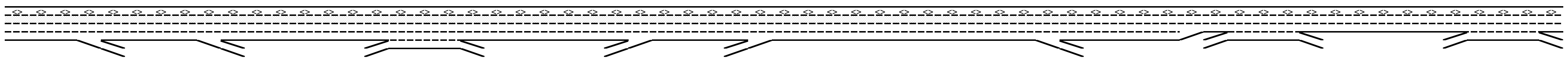
Key
<> Express Lane (HOV)
No Trucks

Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off to on-ramp	Cambridge Rd to Cameron Park
Calculate Flow Rate in Express Lanes (EL)													
EL Volume (vph)	966	851	771	668	683	683	709	906	906	671	671	629	587
PHF	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Express Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1
Terrain	Level	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	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%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	5.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	6.0	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.917	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
EL Flow (pcph)	1,084	954	865	750	766	766	795	1,097	1,017	752	752	705	658
EL Flow (pcphpl)	1,084	954	865	750	766	766	795	1,097	1,017	752	752	705	658
Calculate Speed in Express Lanes													
Lane Width (ft)													
Shoulder Width													
TRD													
f_{LW}													
f_{LC}													
Calc'd FFS													
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in Express Lanes													
EL_{IN} v/c ratio	0.62	0.55	0.49	0.43	0.44	0.44	0.45	0.63	0.58	0.43	0.43	0.40	0.38
Calculate On Ramp Flow Rate													
On Volume (vph)				800		200	590				440		1,120
PHF				0.92		0.92	0.92				0.71		0.95
Total Lanes				1		1	1				1		1
Terrain				Level		Level	Level				Level		Level
Grade %				0.0%		0.0%	0.0%				0.0%		0.0%
Grade Length (mi)				0.00		0.00	0.00				0.00		0.00
Truck & Bus %				2.0%		2.0%	2.0%				2.0%		3.0%
RV %				0.0%		0.0%	0.0%				0.0%		0.0%
E_T				1.5		1.5	1.5				1.5		1.5
E_R				1.2		1.2	1.2				1.2		1.2
f_{HV}				0.990		0.990	0.990				0.990		0.985
f_P				1.00		1.00	1.00				1.00		1.00
On Flow (pcph)				878		220	648				626		1,197
On Flow (pcphpl)				878		220	648				626		1,197
Calculate On Ramp Roadway Operations													
On Ramp Type				Right		Right	Right				Right		
On Ramp Speed (mph)				45		25	45				45		
On Ramp Cap (pcph)				2,100		1,900	2,100				2,100		
On Ramp v/c ratio				0.42		0.12	0.31				0.30		

Project:

Alternative: Cumulative
Time Period: PM Peak Hour

Location	1	2	3	4	5	6	7	8	9	10	11	12	13



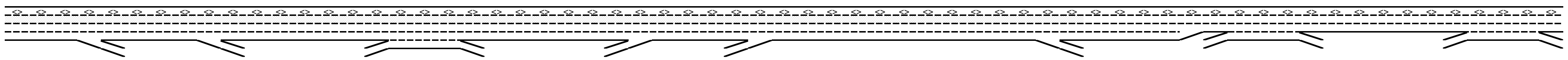
Key

<> Express Lane (HOV)

No Trucks

Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off to on-ramp	Cambridge Rd to Cameron Park
Calculate Off Ramp Flow Rate													
Off Volume (vph)	770	530		690					1,570		720		1,690
PHF	0.92	0.92		0.92					0.97		0.95		0.91
Total Lanes	1	1		1					1		1		1
Terrain	Level	Level		Level					Level		Level		Level
Grade %	0.0%	0.0%		0.0%					0.0%		0.0%		0.0%
Grade Length (mi)	0.00	0.00		0.00					0.00		0.00		0.00
Truck & Bus %	2.0%	2.0%		3.0%					2.0%		3.0%		2.0%
RV %	0.0%	0.0%		0.0%					0.0%		0.0%		0.0%
E_T	1.5	1.5		1.5					1.5		1.5		1.5
E_R	1.2	1.2		1.2					1.2		1.2		1.2
f_{HV}	0.990	0.990		0.985					0.990		0.985		0.990
f_P	1.00	1.00		1.00					1.00		1.00		1.00
Off Flow (pcph)	845	582		761					1,635		769		1,876
Off Flow (pcphpl)	845	582		761					1,635		769		1,876
Calculate Off Ramp Roadway Operations													
Off Ramp Type	Right	Right		Right					Right				Right
Off Ramp Speed	45	25		45					45				45
Off Ramp Cap (pcph)	2,100	1,900		2,100					2,100				2,100
Off Ramp v/c ratio	0.40	0.31		0.36					0.78				0.89
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps													
Up Type		Off				Off	On		Off		Off		No
Up Distance		2,350				1,575	800		4,900		2,100		
Up Flow (pcph)		845				761	220		761		1,635		
Down Type	Off	On				On	On		On		No		#REF!
Down Distance	850	1,975				2,900	3,400		2,100				#REF!
Down Flow (pcph)	582	878				626	626		626				#REF!
Calculate Merge Influence Area Operations													
Effective v_F (pcph)						4,720							
Up Ramp L_{EQ}						206							
Down Ramp L_{EQ}						3,716							
P_{FM} (Eqn 13-3)						0.593							
P_{FM} (Eqn 13-4)		#VALUE!				0.679			#VALUE!		#VALUE!		
P_{FM} (Eqn 13-5)	0.729												#REF!
P_{FM}						0.593							
v_{12} (pcph)						2,798							
v_3 (pcph)						1,921							
v_{34} (pcph)													
v_{12a} (pcph)						2,798							
v_{R12a} (pcph)						3,018							
Merge Speed Index						0.37							
Merge Area Speed						56.4							
Outer Lanes Volume						1,921							
Outer Lanes Speed						59.9							
Segment Speed						57.7							
Merge v/c ratio						0.66							
Merge Density						25.5							
Merge LOS						C							

Location	1	2	3	4	5	6	7	8	9	10	11	12	13



Key

<> Express Lane (HOV)

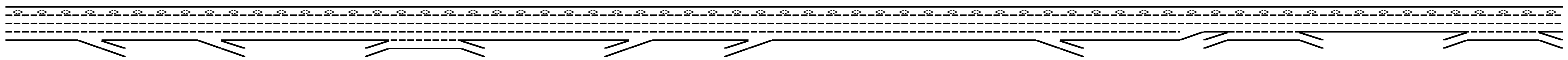
No Trucks

Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off to on-ramp	Cambridge Rd to Cameron Park
Calculate Diverge Influence Area Operations													
Effective v_P (pcph)	5,672	4,993							5,319				
Up Ramp L_{EQ}		5,969							11,016				
Down Ramp L_{EQ}	886	1,132							1,662				
P_{FD} (Eqn 13-9)	0.579	0.608							0.552				
P_{FD} (Eqn 13-10)													
P_{FD} (Eqn 13-11)	0.582												#REF!
P_{FD}	0.582	0.608							0.552				
v_{12} (pcph)	3,656	3,266							3,668				
v_3 (pcph)	2,016	1,728							1,651				
v_{34} (pcph)													
v_{12a} (pcph)	3,656	3,266							3,668				
Diverge Speed Index	0.37	0.61							0.45				
Diverge Area Speed	56.4	51.0							54.8				
Outer Lanes Volume	2,016	1,728							1,651				
Outer Lanes Speed	67.3	68.5							68.8				
Segment Speed	59.9	55.9							58.5				
Diverge v/c ratio	0.83	0.74							0.83				
Diverge Density	34.3	31.0							34.4				
Diverge LOS	D	D							D				
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments													
On to Off Volume (vph)				419							162		551
PHF				0.92							0.92		0.92
Terrain				Level							Level		Level
Grade %				0.0%							0.0%		0.0%
Grade Length (mi)				0.00							0.00		0.00
Truck & Bus %				2.0%							2.0%		2.0%
RV %				0.0%							0.0%		0.0%
E_T				1.5							1.5		1.5
E_R				1.2							1.2		1.2
f_{HV}				0.990							0.990		0.990
f_P				1.00							1.00		1.00
On to Off Flow (pcph)				460							178		605
Calculate On Ramp to Mainline Flow Rate for Weave Segments													
On to ML Volume (vph)				381							278		569
PHF				0.92							0.92		0.92
Terrain				Level							Level		Level
Grade %				0.0%							0.0%		0.0%
Grade Length (mi)				0.00							0.00		0.00
Truck & Bus %				2.0%							2.0%		2.0%
RV %				0.0%							0.0%		0.0%
E_T				1.5							1.5		1.5
E_R				1.2							1.2		1.2
f_{HV}				0.990							0.990		0.990
f_P				1.00							1.00		1.00
On to ML Flow (pcph)				418							305		625
Calculate Mainline to Off Ramp Flow Rate for Weave Segments													
ML to Off Volume (vph)				271							558		1,139
PHF				0.97							0.97		0.97
Terrain				Level							Level		Level
Grade %				0.0%							0.0%		0.0%
Grade Length (mi)				0.00							0.00		0.00
Truck & Bus %				1.0%							1.0%		1.0%
RV %				0.0%							0.0%		0.0%
E_T				1.5							1.5		1.5
E_R				1.2							1.2		1.2
f_{HV}				0.995							0.995		0.995
f_P				1.00							1.00		1.00
ML to Off Flow (pcph)				281							578		1,180

Project:

Alternative: Cumulative
eriod: PM Peak Hour

Location	1	2	3	4	5	6	7	8	9	10	11	12	13



Key
<> Express Lane (HOV)
No Trucks

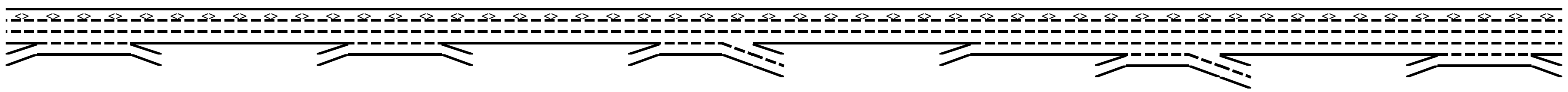
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off to on-ramp	Cambridge Rd to Cameron Park
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments													
GP to GP Volume (vph)				4,201							3,242		2,464
PHF				0.92							0.97		0.97
Terrain				Level							Level		Level
Grade %				0.0%							0.0%		0.0%
Grade Length (mi)				0.00							0.00		0.00
Truck & Bus %				1.0%							1.0%		1.0%
RV %				0.0%							0.0%		0.0%
E_T				1.5							1.5		1.5
E_R				1.2							1.2		1.2
f_{HV}				0.995							0.995		0.995
f_P				1.00							1.00		1.00
GP to GP Flow (pcph)				4,589							3,358		2,553
Calculate Weave Segment Operations													
Weave Type				One-sided							One-sided		One-sided
Weave Length				2,000							5,625		7,250
Segment Lanes				3							2		2
Weave Lanes				3					3		2		2
Weave Flow (pcph)				699							883		1,805
Non-Weave Flow				5,049							3,536		3,158
Segment Flow				5,748							4,420		4,963
Max Weave Length				2,185							4,535		6,277
Length Check				OK							Not a Weave		Not a Weave
Ideal Weave Capacity				2,336							2,433		2,424
f_{HV}				0.994							0.994		0.994
f_P				0.999							0.999		0.999
Capacity Condition 1				6,962							4,837		4,813
Capacity Condition 2				28,593							11,934		6,551
Weave v/c ratio				0.82							0.91		1.02
Interchange Density				3							5		2
Lane Changes On to ML				1							1		1
Lane Changes ML to Off				1							1		1
Lane Changes On to Off				0							0		0
Min Lane Change Rate				699							883		1,805
Weave LC Rate				1,295							2,964		4,567
Non-Weave LC Rate 1				1,546							3,392		4,195
Non-Weave LC Rate 2				2,815							2,478		2,393
Non-Weave LC Rate 3				4,922							-8,771		-4,895
Segment LC Rate				4,110							5,441		6,960
Weave Intensity Factor				0.399							0.220		0.219
Weave Speed				50.7							56.0		56.0
Non-Weave Speed				50.8							48.0		40.1
Segment Speed				50.8							49.4		44.7
Weave Density				37.7							-		-
Weave LOS				E							Basic		Basic
Summarize Segment Operations													
Segment v/c ratio	0.83	0.74	0.64	0.82	0.67	0.66	0.70	0.79	0.83	0.56	0.62	0.79	0.69
Segment Density	34.3	31.0	23.3	37.7	24.4	25.5	25.5	29.8	34.4	20.2	22.5	29.7	25.4
Segment LOS	D	D	C	E	C	C	C	D	D	C	C	D	C
Over Capacity													

Project: EDHTCA
Freeway Corridor: Westbound US 50

Alternative: Cumulative
Time Period: AM Peak Hour

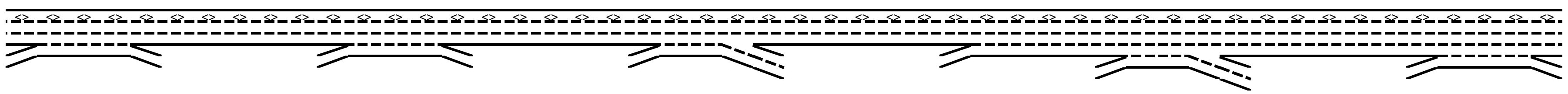
Data Entry Value
Calculated Value

Location	1	2	3	4	5	6	7	8	9	10



Key
<> Express Lane (HOV)
No Trucks

Name	Cameron Park to Cambridge	Cambridge Rd off to on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off to on-ramp	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Define Freeway Segment										
Type	Weave	Basic	Weave	Basic	Weave	Basic	Basic	Weave	Basic	Weave
Length (ft)	7,325	1,250	8,250	2,350	6,500	2,350	800	4,425	2,300	4,775
Accel Length										
Decel Length										
Mainline Volume	3,290	3,300	3,300	3,690	3,690	4,160	4,160	4,190	4,700	4,700
On Ramp Volume	950		660		1,570		30	1,370		1,660
Off Ramp Volume	940		270		1,100			860		2,020
Express Lane Volume	494	495	528	590	590	666	666	629	846	846
EL On Ramp Volume										
EL Off Ramp Volume										
Calculate Flow Rate in General Purpose Lanes (GP)										
GP Volume (vph)	3,747	2,805	3,432	3,100	4,670	3,494	3,524	4,932	3,854	5,514
PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
GP Lanes	3	2	3	2	3	2	4	4	3	4
Terrain	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	-7.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	4,006	2,999	3,669	3,314	4,992	3,736	3,768	5,273	4,121	5,895
GP Flow (pcphpl)	1,335	1,499	1,223	1,657	1,664	1,868	942	1,318	1,374	1,474
Calculate Speed in General Purpose Lanes										
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12
Shoulder Width	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6
TRD	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calc'd FFS	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes										
v/c ratio	0.57	0.64	0.52	0.71	0.71	0.79	0.40	0.56	0.58	0.63
Speed (mph)	65.0	64.9	65.0	64.1	64.0	61.9	65.0	65.0	65.0	64.9
Density (pcphpl)	20.5	23.1	18.8	25.9	26.0	30.2	14.5	20.3	21.1	22.7
LOS	C	C	C	C	C	D	B	C	C	C
Calculate Operations for Entering GP Lanes										
GP_{IN} Vol (pcph)	2,963		2,975		3,315		3,734	3,718		4,011
GP_{IN} Cap (pcph)	4,700		4,700		4,700		4,700	7,050		7,050
GP_{IN} v/c ratio	0.63		0.63		0.71		0.79	0.53		0.57
Calculate Operations for Exiting GP Lanes										
GP_{OUT} Vol (pcph)	2,567		3,381		3,171			4,354		3,737
GP_{OUT} Cap (pcph)	4,700		4,700		4,700			7,050		7,050
GP_{OUT} v/c ratio	0.55		0.72		0.67			0.62		0.53



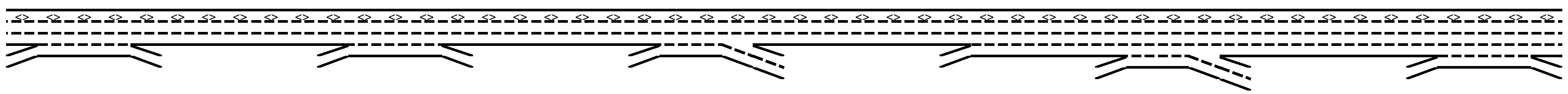
Key
<> Express Lane (HOV)
No Trucks

Location	1	2	3	4	5	6	7	8	9	10
Name	Cameron Park to Cambridge	Cambridge Rd off to on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off to on-ramp	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Calculate Flow Rate in Express Lanes (EL)										
EL Volume (vph)	494	495	528	590	590	666	666	629	846	846
PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Express Lanes	1	1	1	1	1	1	1	1	1	1
Terrain	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	-7.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
EL Flow (pcph)	560	562	599	670	670	755	755	713	960	960
EL Flow (pcphpl)	560	562	599	670	670	755	755	713	960	960
Calculate Speed in Express Lanes										
Lane Width (ft)										
Shoulder Width										
TRD										
f_{LW}										
f_{LC}										
Calc'd FFS										
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65
Calculate Operations in Express Lanes										
EL_{IN} v/c ratio	0.32	0.32	0.34	0.38	0.38	0.43	0.43	0.41	0.55	0.55
Calculate On Ramp Flow Rate										
On Volume (vph)	950		660		1,570		30	1,370		1,660
PHF	0.92		0.96		0.95		0.89	0.89		0.89
Total Lanes	1		1		1		1	1		1
Terrain	Level		Level		Level		Level	Level		Level
Grade %	0.0%		0.0%		0.0%		0.0%	0.0%		0.0%
Grade Length (mi)	0.00		0.00		0.00		0.00	0.00		0.00
Truck & Bus %	2.0%		2.0%		3.0%		2.0%	2.0%		2.0%
RV %	0.0%		0.0%		0.0%		0.0%	0.0%		0.0%
E_T	1.5		1.5		1.5		1.5	1.5		1.5
E_R	1.2		1.2		1.2		1.2	1.2		1.2
f_{HV}	0.990		0.990		0.985		0.990	0.990		0.990
f_P	1.00		1.00		1.00		1.00	1.00		1.00
On Flow (pcph)	1,043		694		1,677		34	1,555		1,884
On Flow (pcphpl)	1,043		694		1,677		34	1,555		1,884
Calculate On Ramp Roadway Operations										
On Ramp Type	Right		Right				Right	Right		Right
On Ramp Speed (mph)	45		25				45	45		45
On Ramp Cap (pcph)	2,100		1,900				2,100	2,100		2,100
On Ramp v/c ratio	0.50		0.37				0.02	0.74		0.90

Project:

Alternative: Cumulative
Time Period: AM Peak Hour

Location	1	2	3	4	5	6	7	8	9	10

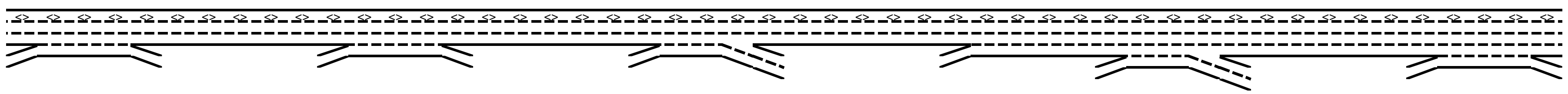


Key

<> Express Lane (HOV)

No Trucks

Name	Cameron Park to Cambridge	Cambridge Rd off to on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off to on-ramp	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Calculate Off Ramp Flow Rate										
Off Volume (vph)	940		270		1,100			860		2,020
PHF	0.66		0.95		0.61			0.95		0.95
Total Lanes	1		1		2			2		1
Terrain	Level		Level		Level			Level		Level
Grade %	0.0%		0.0%		0.0%			0.0%		0.0%
Grade Length (mi)	0.00		0.00		0.00			0.00		0.00
Truck & Bus %	2.0%		3.0%		2.0%			3.0%		3.0%
RV %	0.0%		0.0%		0.0%			0.0%		0.0%
E_T	1.5		1.5		1.5			1.5		1.5
E_R	1.2		1.2		1.2			1.2		1.2
f_{HV}	0.990		0.985		0.990			0.985		0.985
f_P	1.00		1.00		1.00			1.00		1.00
Off Flow (pcph)	1,438		288		1,821			919		2,158
Off Flow (pcphpl)	1,438		288		911			459		2,158
Calculate Off Ramp Roadway Operations										
Off Ramp Type	Right		Right		Right			Right		Right
Off Ramp Speed	45		45		45			25		45
Off Ramp Cap (pcph)	2,100		2,100		4,200			3,800		2,100
Off Ramp v/c ratio	0.68		0.14		0.43			0.24		1.03
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps										
Up Type			Off		Off					
Up Distance			1,250		2,350					
Up Flow (pcph)			1,438		288					
Down Type	On		No		On					
Down Distance	1,250				8,850					
Down Flow (pcph)	694				34					
Calculate Merge Influence Area Operations										



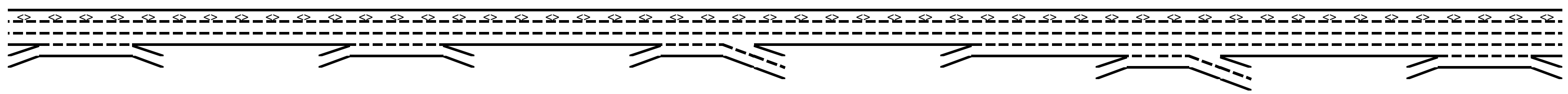
Key

<> Express Lane (HOV)

No Trucks

Location	1	2	3	4	5	6	7	8	9	10
Name	Cameron Park to Cambridge	Cambridge Rd off to on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off to on-ramp	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Calculate Diverge Influence Area Operations										
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments										
On to Off Volume (vph)	228		112		785			164		830
PHF	0.92		0.92		0.92			0.92		0.92
Terrain	Level		Level		Level			Level		Level
Grade %	0.0%		0.0%		0.0%			0.0%		0.0%
Grade Length (mi)	0.00		0.00		0.00			0.00		0.00
Truck & Bus %	2.0%		2.0%		2.0%			2.0%		2.0%
RV %	0.0%		0.0%		0.0%			0.0%		0.0%
E_T	1.5		1.5		1.5			1.5		1.5
E_R	1.2		1.2		1.2			1.2		1.2
f_{HV}	0.990		0.990		0.990			0.990		0.990
f_P	1.00		1.00		1.00			1.00		1.00
On to Off Flow (pcph)	250		123		862			180		911
Calculate On Ramp to Mainline Flow Rate for Weave Segments										
On to ML Volume (vph)	722		548		785			1,206		830
PHF	0.92		0.92		0.92			0.92		0.92
Terrain	Level		Level		Level			Level		Level
Grade %	0.0%		0.0%		-7.0%			0.0%		0.0%
Grade Length (mi)	0.00		0.00		0.00			0.00		0.00
Truck & Bus %	1.0%		2.0%		2.0%			2.0%		2.0%
RV %	0.0%		0.0%		0.0%			0.0%		0.0%
E_T	1.5		1.5		1.5			1.5		1.5
E_R	1.2		1.2		1.2			1.2		1.2
f_{HV}	0.995		0.990		0.990			0.990		0.990
f_P	1.00		1.00		1.00			1.00		1.00
On to ML Flow (pcph)	789		601		862			1,324		911

Location	1	2	3	4	5	6	7	8	9	10



Key

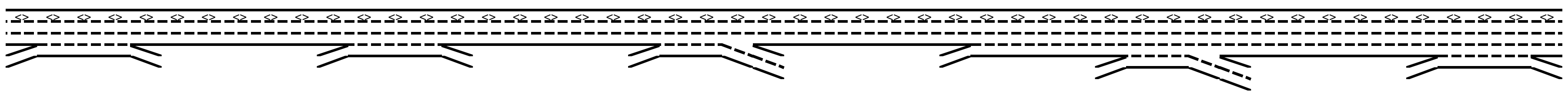
<> Express Lane (HOV)

No Trucks

Name	Cameron Park to Cambridge	Cambridge Rd off to on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off to on-ramp	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Calculate Mainline to Off Ramp Flow Rate for Weave Segments										
ML to Off Volume (vph)	712		158		315			696		1,190
PHF	0.94		0.94		0.94			0.94		0.94
Terrain	Level		Level		Level			Level		Level
Grade %	0.0%		0.0%		-7.0%			0.0%		0.0%
Grade Length (mi)	0.00		0.00		0.00			0.00		0.00
Truck & Bus %	1.0%		1.0%		1.0%			1.0%		1.0%
RV %	0.0%		0.0%		0.0%			0.0%		0.0%
E_T	1.5		1.5		1.5			1.5		1.5
E_R	1.2		1.2		1.2			1.2		1.2
f_{HV}	0.995		0.995		0.995			0.995		0.995
f_P	1.00		1.00		1.00			1.00		1.00
ML to Off Flow (pcph)	761		169		337			744		1,272
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments										
GP to GP Volume (vph)	2,085		2,614		2,785			2,866		2,664
PHF	0.94		0.94		0.94			0.94		0.94
Terrain	Level		Level		Level			Level		Level
Grade %	0.0%		0.0%		0.0%			0.0%		0.0%
Grade Length (mi)	0.00		0.00		0.00			0.00		0.00
Truck & Bus %	1.0%		1.0%		1.0%			1.0%		1.0%
RV %	0.0%		0.0%		0.0%			0.0%		0.0%
E_T	1.5		1.5		1.5			1.5		1.5
E_R	1.2		1.2		1.2			1.2		1.2
f_{HV}	0.995		0.995		0.995			0.995		0.995
f_P	1.00		1.00		1.00			1.00		1.00
GP to GP Flow (pcph)	2,229		2,795		2,977			3,064		2,848

Project:

Alternative: Cumulative
Time Period: AM Peak Hour



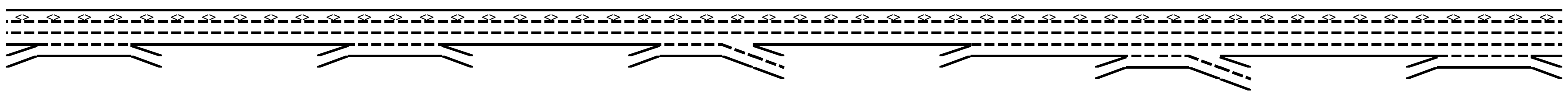
Key
<> Express Lane (HOV)
No Trucks

Location	1	2	3	4	5	6	7	8	9	10
Name	Cameron Park to Cambridge	Cambridge Rd off to on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off to on-ramp	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Calculate Weave Segment Operations										
Weave Type	One-sided		One-sided		One-sided			One-sided		One-sided
Weave Length	6,325		7,250		5,500			3,425		3,775
Segment Lanes	2		2		2			3		3
Weave Lanes	2		2		3			3		3
Weave Flow (pcph)	1,550		770		1,199			2,067		2,183
Non-Weave Flow	2,479		2,918		3,839			3,245		3,759
Segment Flow	4,029		3,688		5,038			5,312		5,943
Max Weave Length	6,510		4,626		3,362			4,994		4,752
Length Check	OK		Not a Weave		Not a Weave			OK		OK
Ideal Weave Capacity	2,336		2,551		2,514			2,230		2,275
f_{HV}	0.995		0.994		0.993			0.994		0.994
f_P	0.999		0.998		0.998			0.998		0.998
Capacity Condition 1	4,642		5,063		4,985			6,631		6,771
Capacity Condition 2	6,200		11,408		14,588			8,914		9,450
Weave v/c ratio	0.86		0.72		1.00			0.79		0.87
Interchange Density	3		5		5			4		3
Lane Changes On to ML	1		1		1			1		1
Lane Changes ML to Off	1		1		1			1		1
Lane Changes On to Off	0		0		0			0		0
Min Lane Change Rate	1,550		770		1,199			2,067		2,183
Weave LC Rate	3,935		3,484		3,230			3,183		3,471
Non-Weave LC Rate 1	3,554		4,145		3,387			1,947		2,243
Non-Weave LC Rate 2	2,242		2,340		2,545			2,413		2,527
Non-Weave LC Rate 3	-3,316		-21,629		-8,598			4,200		3,538
Segment LC Rate	6,177		5,824		5,775			5,595		5,999
Weave Intensity Factor	0.222		0.190		0.235			0.333		0.326
Weave Speed	55.9		57.0		55.5			52.5		52.7
Non-Weave Speed	44.2		50.6		44.3			41.6		39.8
Segment Speed	48.1		51.8		46.5			45.3		43.7
Weave Density	41.9		-		-			39.1		-
Weave LOS	E		Basic		Basic			E		F
Summarize Segment Operations										
Segment v/c ratio	0.86	0.64	0.52	0.71	0.71	0.79	0.40	0.79	0.58	0.87
Segment Density	41.9	23.1	18.8	25.9	26.0	30.2	14.5	39.1	21.1	-
Segment LOS	E	C	C	C	C	D	B	E	C	F
Over Capacity										Off Ramp Roadway

Project: **EDHTCA**
Freeway Corridor: **Westbound US 50**
Alternative: **Cumulative**
Time Period: **PM Peak Hour**

Data Entry Value
Calculated Value

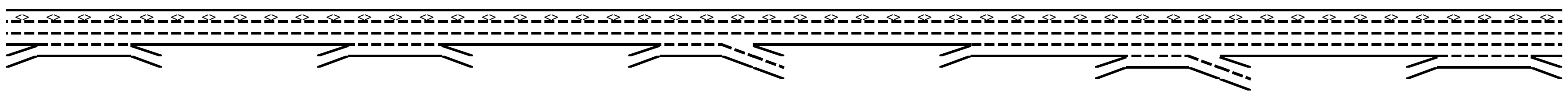
Location	1	2	3	4	5	6	7	8	9	10



Key
<> Express Lane (HOV)
No Trucks

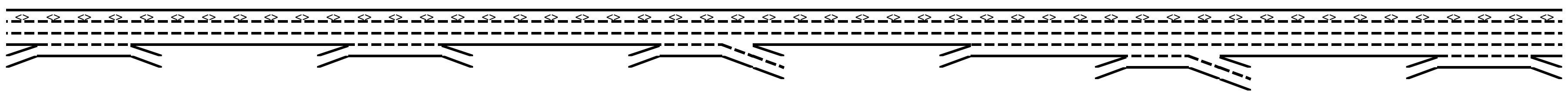
Name	Cameron Park to Cambridge	Cambridge Rd off to on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off to on-ramp	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Define Freeway Segment										
Type	Weave	Basic	Weave	Basic	Weave	Basic	Basic	Weave	Basic	Weave
Length (ft)	7,325	1,250	8,250	2,350	6,500	2,350	800	4,425	2,300	4,775
Accel Length										
Decel Length										
Mainline Volume	4,180	3,760	3,760	3,690	3,690	3,910	3,910	3,950	3,570	3,570
On Ramp Volume	1,010		600		1,110		40	490		1,460
Off Ramp Volume	1,430		670		890			870		1,790
Express Lane Volume	627	564	639	627	554	587	547	553	500	500
EL On Ramp Volume										
EL Off Ramp Volume										
Calculate Flow Rate in General Purpose Lanes (GP)										
GP Volume (vph)	4,563	3,196	3,721	3,063	4,247	3,324	3,403	3,887	3,070	4,530
PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
GP Lanes	3	2	3	2	3	2	4	4	3	4
Terrain	Level	Level	Level	Level	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	-7.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	4,777	3,346	3,895	3,206	4,446	3,479	3,562	4,069	3,214	4,743
GP Flow (pcphpl)	1,592	1,673	1,298	1,603	1,482	1,740	891	1,017	1,071	1,186
Calculate Speed in General Purpose Lanes										
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12
Shoulder Width	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6
TRD	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calc'd FFS	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes										
v/c ratio	0.68	0.71	0.55	0.68	0.63	0.74	0.38	0.43	0.46	0.50
Speed (mph)	64.5	63.9	65.0	64.4	64.9	63.4	65.0	65.0	65.0	65.0
Density (pcphpl)	24.7	26.2	20.0	24.9	22.8	27.5	13.7	15.7	16.5	18.2
LOS	C	D	C	C	C	D	B	B	B	C
Calculate Operations for Entering GP Lanes										
GP_{IN} Vol (pcph)	3,631		3,264		3,260		3,518	3,513		3,086
GP_{IN} Cap (pcph)	4,700		4,700		4,700		4,700	7,050		7,050
GP_{IN} v/c ratio	0.77		0.69		0.69		0.75	0.50		0.44
Calculate Operations for Exiting GP Lanes										
GP_{OUT} Vol (pcph)	2,589		3,179		2,972			3,140		2,830
GP_{OUT} Cap (pcph)	4,700		4,700		4,700			7,050		7,050
GP_{OUT} v/c ratio	0.55		0.68		0.63			0.45		0.40

Location	1	2	3	4	5	6	7	8	9	10



Key
<> Express Lane (HOV)
No Trucks

Name	Cameron Park to Cambridge	Cambridge Rd off to on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off to on-ramp	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Calculate Flow Rate in Express Lanes (EL)										
EL Volume (vph)	627	564	639	627	554	587	547	553	500	500
PHF	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Express Lanes	1	1	1	1	1	1	1	1	1	1
Terrain	Level	Level	Level	Level	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	-7.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
EL Flow (pcph)	704	633	717	704	621	658	614	621	561	561
EL Flow (pcphpl)	704	633	717	704	621	658	614	621	561	561
Calculate Speed in Express Lanes										
Lane Width (ft)										
Shoulder Width										
TRD										
f_{LW}										
f_{LC}										
Calc'd FFS										
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65
Calculate Operations in Express Lanes										
EL_{IN} v/c ratio	0.40	0.36	0.41	0.40	0.35	0.38	0.35	0.35	0.32	0.32
Calculate On Ramp Flow Rate										
On Volume (vph)	1,010		600		1,110		40	490		1,460
PHF	0.89		0.96		0.95		0.92	0.89		0.89
Total Lanes	1		1		1		1	1		1
Terrain	Level		Level		Level		Level	Level		Level
Grade %	0.0%		0.0%		0.0%		0.0%	0.0%		0.0%
Grade Length (mi)	0.00		0.00		0.00		0.00	0.00		0.00
Truck & Bus %	2.0%		2.0%		3.0%		2.0%	2.0%		2.0%
RV %	0.0%		0.0%		0.0%		0.0%	0.0%		0.0%
E_T	1.5		1.5		1.5		1.5	1.5		1.5
E_R	1.2		1.2		1.2		1.2	1.2		1.2
f_{HV}	0.990		0.990		0.985		0.990	0.990		0.990
f_P	1.00		1.00		1.00		1.00	1.00		1.00
On Flow (pcph)	1,146		631		1,186		44	556		1,657
On Flow (pcphpl)	1,146		631		1,186		44	556		1,657
Calculate On Ramp Roadway Operations										
On Ramp Type			Right				Right	Right		Right
On Ramp Speed (mph)	45		25				45	45		45
On Ramp Cap (pcph)			1,900				2,100	2,100		2,100
On Ramp v/c ratio			0.33				0.02	0.26		0.79



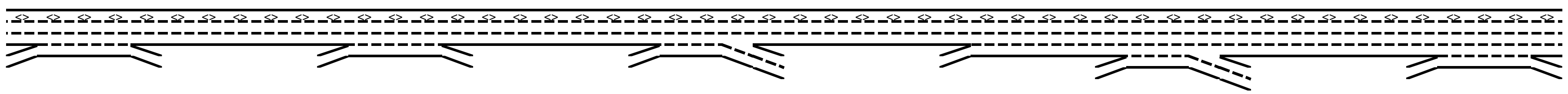
Key

<> Express Lane (HOV)

No Trucks

Location	1	2	3	4	5	6	7	8	9	10
Name	Cameron Park to Cambridge	Cambridge Rd off to on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off to on-ramp	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Calculate Off Ramp Flow Rate										
Off Volume (vph)	1,430		670		890			870		1,790
PHF	0.66		0.95		0.61			0.95		0.95
Total Lanes	1		1		2			2		1
Terrain	Level		Level		Level			Level		Level
Grade %	0.0%		0.0%		0.0%			0.0%		0.0%
Grade Length (mi)	0.00		0.00		0.00			0.00		0.00
Truck & Bus %	2.0%		3.0%		2.0%			3.0%		3.0%
RV %	0.0%		0.0%		0.0%			0.0%		0.0%
E_T	1.5		1.5		1.5			1.5		1.5
E_R	1.2		1.2		1.2			1.2		1.2
f_{HV}	0.990		0.985		0.990			0.985		0.985
f_P	1.00		1.00		1.00			1.00		1.00
Off Flow (pcph)	2,188		716		1,474			930		1,912
Off Flow (pcphpl)	2,188		716		737			465		1,912
Calculate Off Ramp Roadway Operations										
Off Ramp Type	Right		Right		Right			Right		Right
Off Ramp Speed	45		45		45			25		45
Off Ramp Cap (pcph)	2,100		2,100		4,200			3,800		2,100
Off Ramp v/c ratio	1.04		0.34		0.35			0.24		0.91
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps										
Up Type			Off		Off					
Up Distance			1,250		2,350					
Up Flow (pcph)			2,188		716					
Down Type	On		No		On					
Down Distance	1,250				8,850					
Down Flow (pcph)	631				44					
Calculate Merge Influence Area Operations										

Location	1	2	3	4	5	6	7	8	9	10



Key

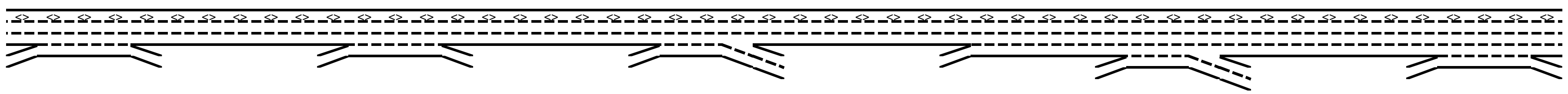
<> Express Lane (HOV)

No Trucks

Name	Cameron Park to Cambridge	Cambridge Rd off to on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off to on-ramp	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Calculate Diverge Influence Area Operations										
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments										
On to Off Volume (vph)	434		150		400			83		686
PHF	0.92		0.92		0.92			0.92		0.92
Terrain	Level		Level		Level			Level		Level
Grade %	0.0%		0.0%		0.0%			0.0%		0.0%
Grade Length (mi)	0.00		0.00		0.00			0.00		0.00
Truck & Bus %	2.0%		2.0%		2.0%			2.0%		2.0%
RV %	0.0%		0.0%		0.0%			0.0%		0.0%
E_T	1.5		1.5		1.5			1.5		1.5
E_R	1.2		1.2		1.2			1.2		1.2
f_{HV}	0.990		0.990		0.990			0.990		0.990
f_P	1.00		1.00		1.00			1.00		1.00
On to Off Flow (pcph)	477		165		439			91		753
Calculate On Ramp to Mainline Flow Rate for Weave Segments										
On to ML Volume (vph)	576		450		710			407		774
PHF	0.96		0.96		0.96			0.96		0.96
Terrain	Level		Level		Grade			Level		Level
Grade %	0.0%		0.0%		-7.0%			0.0%		0.0%
Grade Length (mi)	0.00		0.00		0.00			0.00		0.00
Truck & Bus %	1.0%		1.0%		1.0%			1.0%		1.0%
RV %	0.0%		0.0%		0.0%			0.0%		0.0%
E_T	1.5		1.5		1.5			1.5		1.5
E_R	1.2		1.2		1.2			1.2		1.2
f_{HV}	0.995		0.995		0.995			0.995		0.995
f_P	1.00		1.00		1.00			1.00		1.00
On to ML Flow (pcph)	603		471		744			426		810

Project:

Alternative: Cumulative
Time Period: PM Peak Hour

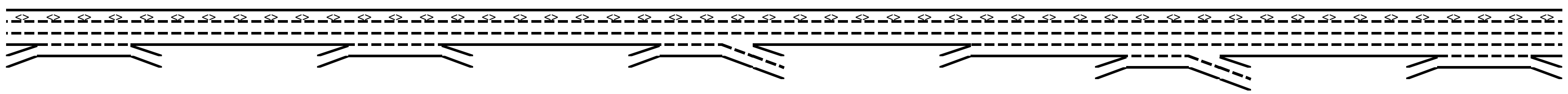


Key

<> Express Lane (HOV)

No Trucks

Location	1	2	3	4	5	6	7	8	9	10
Name	Cameron Park to Cambridge	Cambridge Rd off to on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off to on-ramp	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Calculate Mainline to Off Ramp Flow Rate for Weave Segments										
ML to Off Volume (vph)	996		520		490			787		1,104
PHF	0.96		0.96		0.95			0.96		0.96
Terrain	Level		Level		Grade			Level		Level
Grade %	0.0%		0.0%		-7.0%			0.0%		0.0%
Grade Length (mi)	0.00		0.00		0.00			0.00		0.00
Truck & Bus %	1.0%		1.0%		1.0%			1.0%		1.0%
RV %	0.0%		0.0%		0.0%			0.0%		0.0%
E_T	1.5		1.5		1.5			1.5		1.5
E_R	1.2		1.2		1.2			1.2		1.2
f_{HV}	0.995		0.995		0.995			0.995		0.995
f_P	1.00		1.00		1.00			1.00		1.00
ML to Off Flow (pcph)	1,042		544		519			824		1,156
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments										
GP to GP Volume (vph)	2,557		2,601		2,646			2,610		1,966
PHF	0.96		0.96		0.96			0.96		0.96
Terrain	Level		Level		Grade			Level		Level
Grade %	0.0%		0.0%		-7.0%			0.0%		0.0%
Grade Length (mi)	0.00		0.00		0.00			0.00		0.00
Truck & Bus %	1.0%		1.0%		1.0%			1.0%		1.0%
RV %	0.0%		0.0%		0.0%			0.0%		0.0%
E_T	1.5		1.5		1.5			1.5		1.5
E_R	1.2		1.2		1.2			1.2		1.2
f_{HV}	0.995		0.995		0.995			0.995		0.995
f_P	1.00		1.00		1.00			1.00		1.00
GP to GP Flow (pcph)	2,677		2,723		2,770			2,733		2,059



Key

<> Express Lane (HOV)

No Trucks

Location	1	2	3	4	5	6	7	8	9	10
Name	Cameron Park to Cambridge	Cambridge Rd off to on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off to on-ramp	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Calculate Weave Segment Operations										
Weave Type	One-sided		One-sided		One-sided			One-sided		One-sided
Weave Length	6,325		7,250		5,500			3,425		3,775
Segment Lanes	2		2		2			3		3
Weave Lanes	2		2		3			3		3
Weave Flow (pcph)	1,645		1,015		1,262			1,249		1,966
Non-Weave Flow	3,154		2,887		3,209			2,824		2,812
Segment Flow	4,799		3,903		4,471			4,073		4,778
Max Weave Length	6,047		5,161		3,829			4,090		5,244
Length Check	Not a Weave		Not a Weave		Not a Weave			OK		OK
Ideal Weave Capacity	2,371		2,510		2,478			2,299		2,238
f_{HV}	0.995		0.995		0.995			0.995		0.994
f_P	0.999		0.999		0.999			0.999		0.999
Capacity Condition 1	4,714		4,991		4,924			6,859		6,669
Capacity Condition 2	6,959		9,171		12,318			11,348		8,451
Weave v/c ratio	1.01		0.78		0.90			0.59		0.71
Interchange Density	3		5		5			4		3
Lane Changes On to ML	1		1		1			1		1
Lane Changes ML to Off	1		1		1			1		1
Lane Changes On to Off	0		0		0			0		0
Min Lane Change Rate	1,645		1,015		1,262			1,249		1,966
Weave LC Rate	4,030		3,730		3,294			2,365		3,254
Non-Weave LC Rate 1	3,693		4,139		3,257			1,860		2,048
Non-Weave LC Rate 2	2,392		2,333		2,405			2,319		2,316
Non-Weave LC Rate 3	-5,679		-21,333		-6,609			3,672		2,826
Segment LC Rate	6,422		6,063		5,699			4,684		5,570
Weave Intensity Factor	0.229		0.196		0.232			0.289		0.307
Weave Speed	55.7		56.8		55.6			53.8		53.3
Non-Weave Speed	41.6		48.3		45.2			49.5		43.2
Segment Speed	45.6		50.3		47.7			50.7		46.8
Weave Density	-		-		-			26.8		34.0
Weave LOS	Basic		Basic		Basic			C		D
Summarize Segment Operations										
Segment v/c ratio	0.68	0.71	0.55	0.68	0.63	0.74	0.38	0.59	0.46	0.71
Segment Density	24.7	26.2	20.0	24.9	22.8	27.5	13.7	26.8	16.5	34.0
Segment LOS	C	D	C	C	C	D	B	C	B	D
Over Capacity										

Leisch Method for Weaving Analysis

Data Input

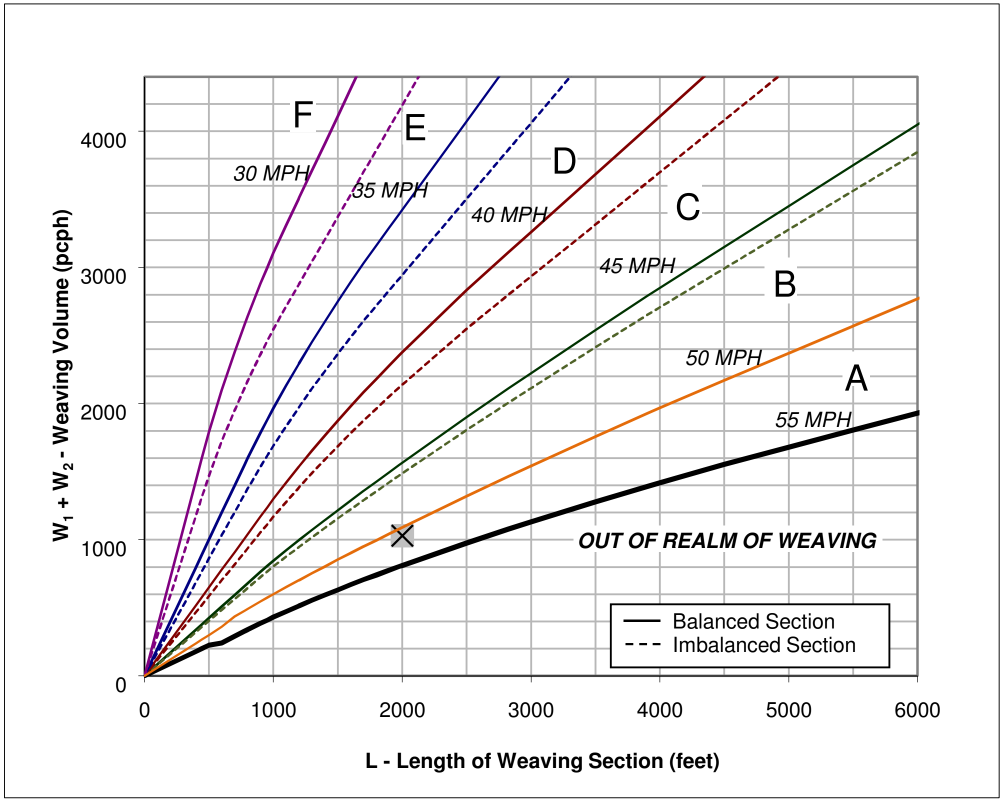
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	2,000

Project Information

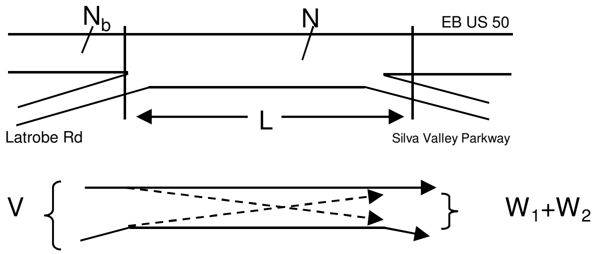
Project	EDHTCA
Scenario	Cumulative - AM Pk Hr
Freeway	EB US 50
On-ramp	Latrobe Rd
Off-ramp	Silva Valley Parkway

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	3,596	Volume (vph)*	770	Volume (vph)*	250
Truck Percentage	4%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,668	Volume (pcph)	777	Volume (pcph)	252

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   50 MPH and **55 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) 51.1
4. Weaving Intensity Factor (k) 1.00
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ 917
6. Level of Service (LOS) B

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983 and *Highway Design Manual*, California Department of Transportation, July 24, 2009

Leisch Method for Weaving Analysis

Data Input

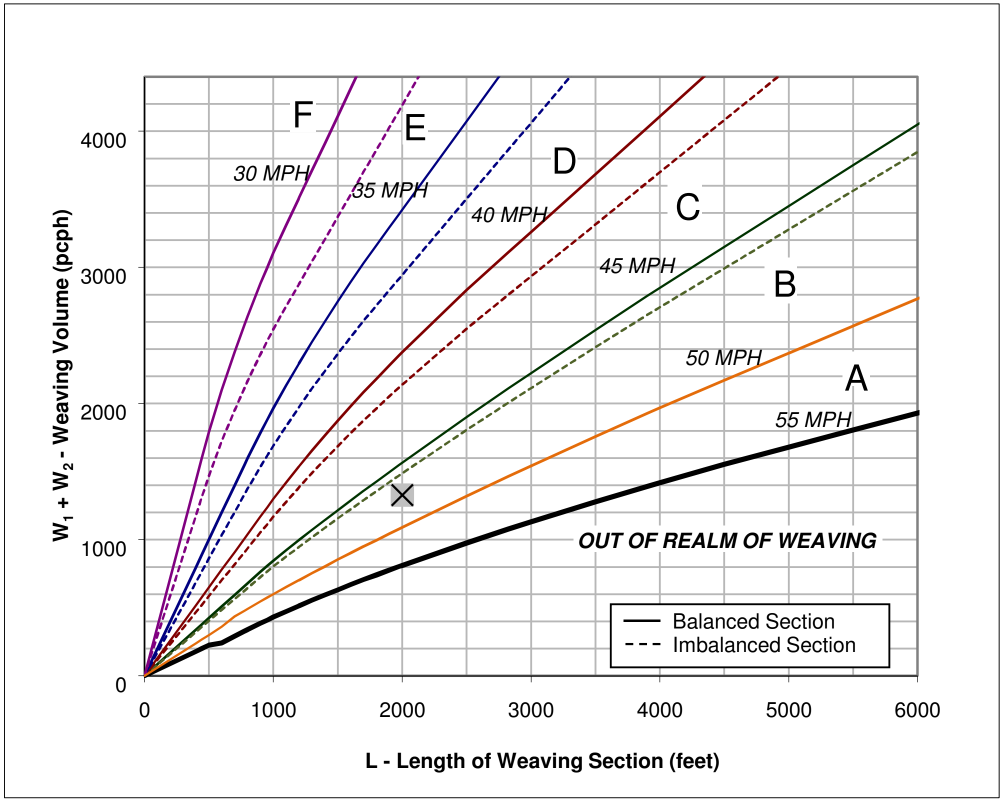
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	2,000

Project Information

Project	EDHTCA
Scenario	Cumulative - PM Pk Hr
Freeway	EB US 50
On-ramp	Latrobe Rd
Off-ramp	Silva Valley Parkway

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	5,272	Volume (vph)*	712	Volume (vph)*	602
Truck Percentage	1%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	5,298	Volume (pcph)	719	Volume (pcph)	608

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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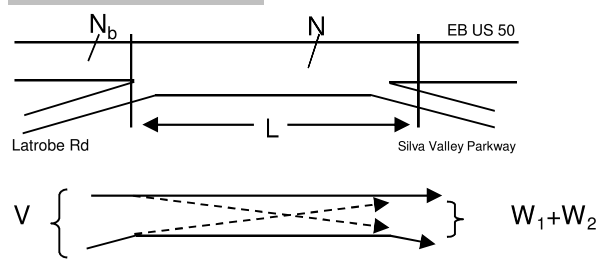


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   45 MPH and **50 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) 47.5
4. Weaving Intensity Factor (k) 1.60
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ 1,416
6. Level of Service (LOS) D

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983 and *Highway Design Manual*, California Department of Transportation, July 24, 2009

Leisch Method for Weaving Analysis

Data Input

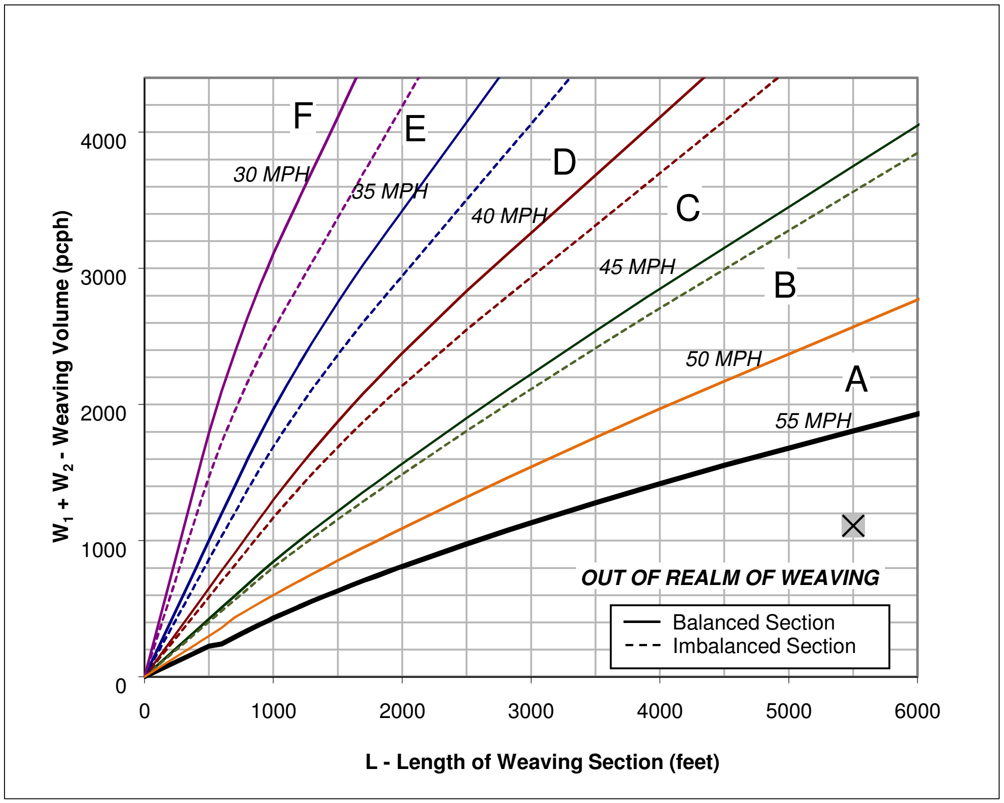
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	5,500

Project Information

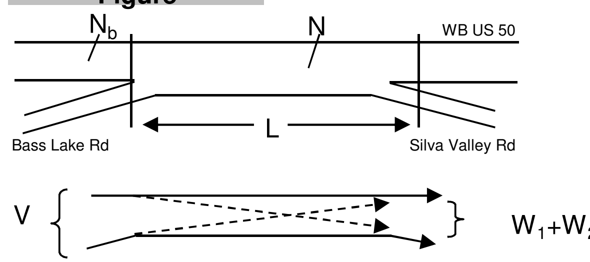
Project	EDHTCA
Scenario	Cumulative - AM Pk Hr
Freeway	WB US 50
On-ramp	Bass Lake Rd
Off-ramp	Silva Valley Rd

~~Total Weaving Section (V)~~		~~On-ramp to Mainline (W_1)~~		~~Mainline to Off-ramp (W_2)~~	
Volume (vph)*	4,670	Volume (vph)*	785	Volume (vph)*	315
Truck Percentage	1%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,693	Volume (pcph)	793	Volume (pcph)	318

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   50 MPH and **55 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) — 59.5
4. Weaving Intensity Factor (k) — 1.00
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ — 1,564
6. Level of Service (LOS) — E

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983 and *Highway Design Manual*, California Department of Transportation, July 24, 2009

Leisch Method for Weaving Analysis

Data Input

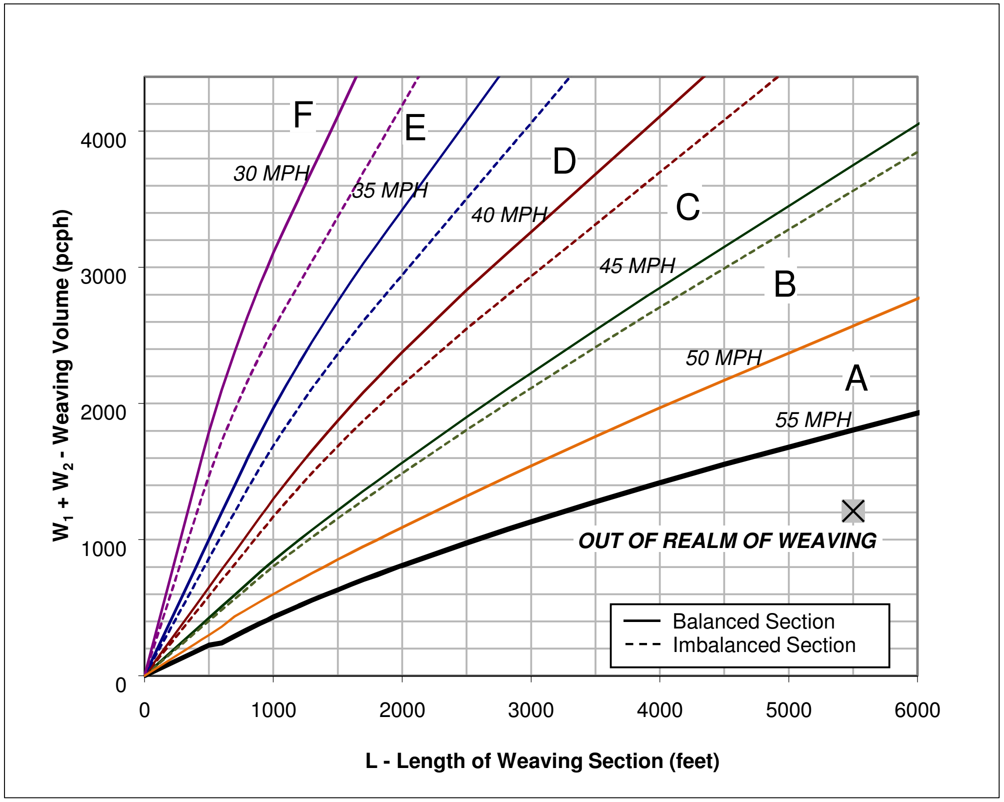
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	5,500

Project Information

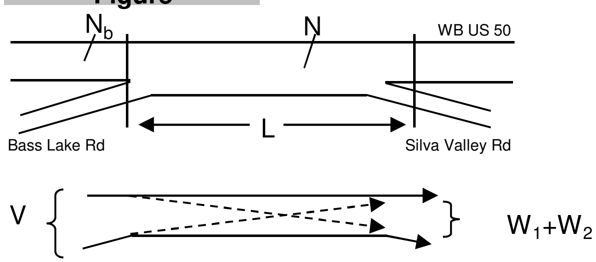
Project	EDHTCA
Scenario	Cumulative - PM Pk Hr
Freeway	WB US 50
On-ramp	Bass Lake Rd
Off-ramp	Silva Valley Rd

~~Total Weaving Section (V)~~		~~On-ramp to Mainline (W_1)~~		~~Mainline to Off-ramp (W_2)~~	
Volume (vph)*	4,246	Volume (vph)*	704	Volume (vph)*	494
Truck Percentage	1%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,267	Volume (pcph)	711	Volume (pcph)	499

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   50 MPH and **55 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) 58.9
4. Weaving Intensity Factor (k) 1.00
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ 1,422
6. Level of Service (LOS) D

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983 and *Highway Design Manual*, California Department of Transportation, July 24, 2009

Leisch Method for Weaving Analysis

Data Input

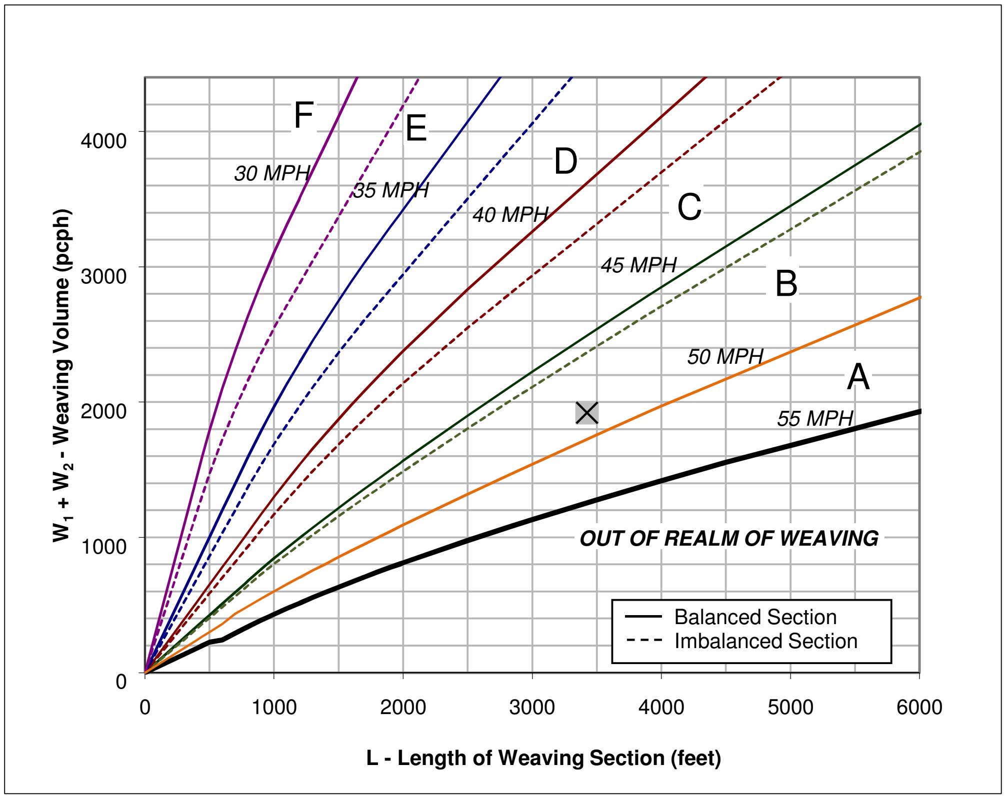
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3,425

Project Information

Project	EDHTCA
Scenario	Cumulative - AM Pk Hr
Freeway	WB US 50
On-ramp	Silva Valley Rd
Off-ramp	El Dorado Hills Blvd

~~Total Weaving Section (V)~~		~~On-ramp to Mainline (W_1)~~		~~Mainline to Off-ramp (W_2)~~	
Volume (vph)*	4,931	Volume (vph)*	1,206	Volume (vph)*	696
Truck Percentage	1%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,956	Volume (pcph)	1,218	Volume (pcph)	703

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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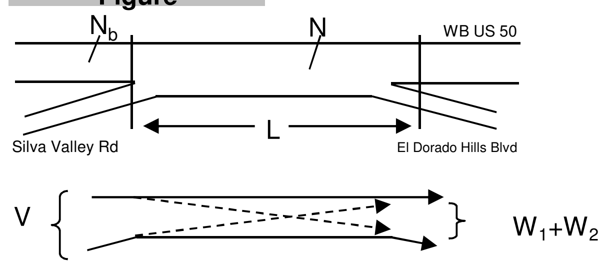


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left,
   which two speed curves is the black "x" between?
   45 MPH and **50 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) — 48.7
4. Weaving Intensity Factor (k) — 1.40
5. Service Volume (SV, pcph)
   SV = (1/N)*[V + (k - 1)*min(W_1, W_2)] — 1,310
6. Level of Service (LOS) — C

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983 and *Highway Design Manual*, California Department of Transportation, July 24, 2009

Leisch Method for Weaving Analysis

Data Input

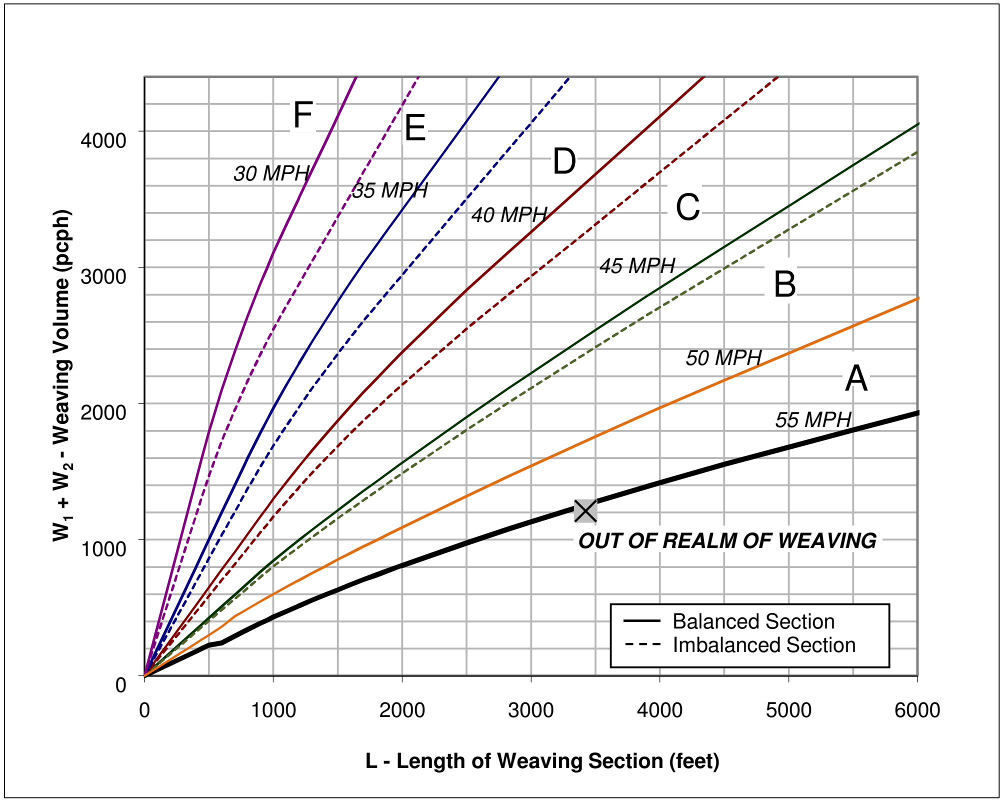
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3,425

Project Information

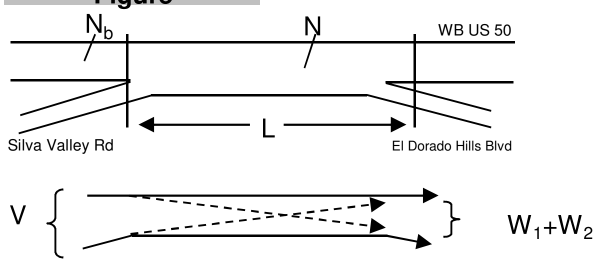
Project	EDHTCA
Scenario	Cumulative - PM Pk Hr
Freeway	WB US 50
On-ramp	Silva Valley Rd
Off-ramp	El Dorado Hills Blvd

~~Total Weaving Section (V)~~		~~On-ramp to Mainline (W_1)~~		~~Mainline to Off-ramp (W_2)~~	
Volume (vph)*	3,847	Volume (vph)*	412	Volume (vph)*	787
Truck Percentage	1%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,866	Volume (pcph)	416	Volume (pcph)	795

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   50 MPH and **55 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) — 55.5
4. Weaving Intensity Factor (k) — 1.00
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ — 967
6. Level of Service (LOS) — B

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983 and *Highway Design Manual*, California Department of Transportation, July 24, 2009

Leisch Method for Weaving Analysis

Data Input

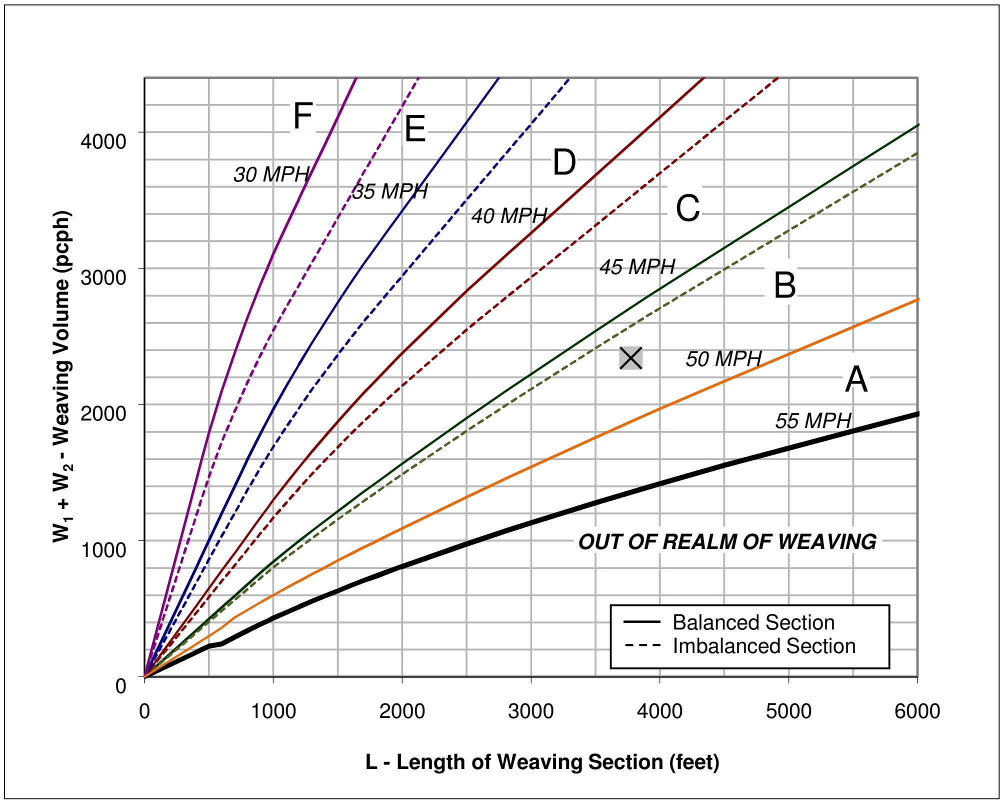
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3,775

Project Information

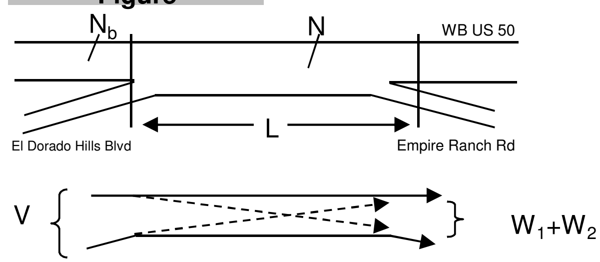
Project	EDHTCA
Scenario	Cumulative - AM Pk Hr
Freeway	WB US 50
On-ramp	El Dorado Hills Blvd
Off-ramp	Empire Ranch Rd

~~Total Weaving Section (V)~~		~~On-ramp to Mainline (W_1)~~		~~Mainline to Off-ramp (W_2)~~	
Volume (vph)*	5,514	Volume (vph)*	979	Volume (vph)*	1,339
Truck Percentage	1%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	5,542	Volume (pcph)	989	Volume (pcph)	1,353

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   45 MPH and **50 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph): 47.2
4. Weaving Intensity Factor (k): 1.65
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$: 1,545
6. Level of Service (LOS): D

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983 and *Highway Design Manual*, California Department of Transportation, July 24, 2009

Leisch Method for Weaving Analysis

Data Input

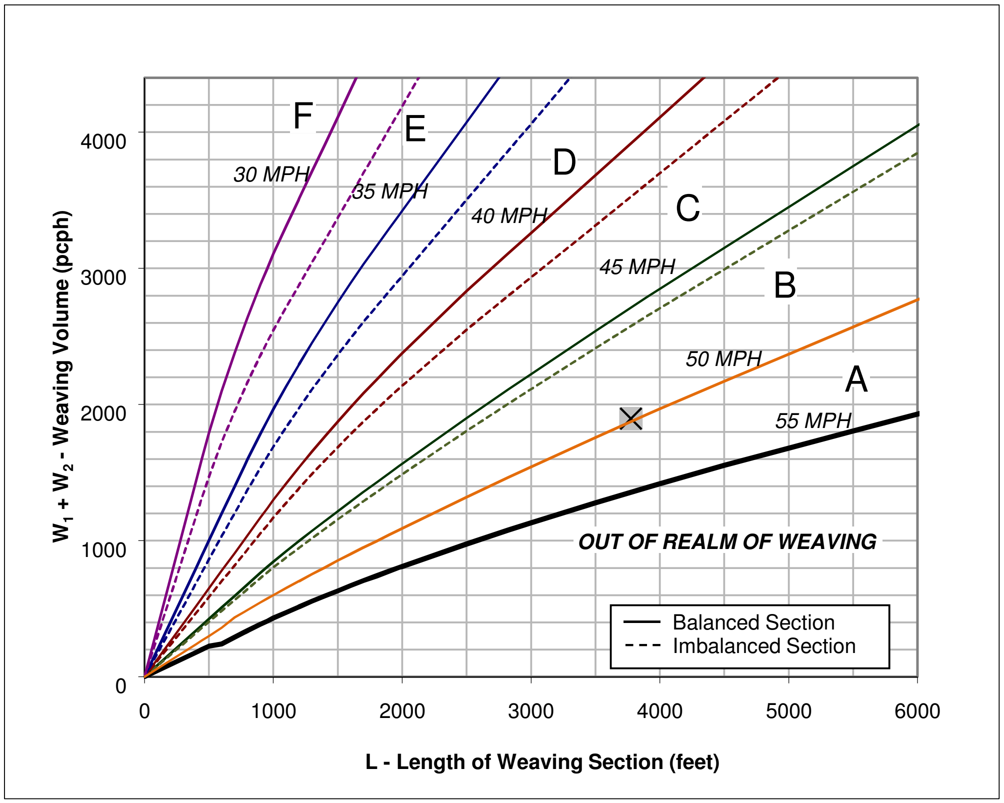
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3,775

Project Information

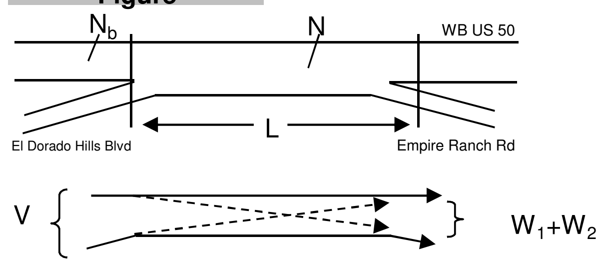
Project	EDHTCA
Scenario	Cumulative - PM Pk Hr
Freeway	WB US 50
On-ramp	El Dorado Hills Blvd
Off-ramp	Empire Ranch Rd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	4,530	Volume (vph)*	774	Volume (vph)*	1,104
Truck Percentage	1%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,553	Volume (pcph)	782	Volume (pcph)	1,115

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   45 MPH and **50 MPH**

   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) 49.9
4. Weaving Intensity Factor (k) 1.20
5. Service Volume (SV, pcph)
   SV = (1/N)*[V + (k - 1)*min(W_1, W_2)] 1,177
6. Level of Service (LOS) C

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983 and *Highway Design Manual*, California Department of Transportation, July 24, 2009

HCM 2010
Basic Freeway Segments
Operational Analysis

Jurisdiction El Dorado County
Analysis Year Cumulative Year
Sceanrio
Agency or Company Fehr & Peers
Date 3/28/2014
Project Description EDHTCA

General Information				Flow Rate Calculation																	Results		
	Freeway/ Direction	From/To	Analysis Time Period	Volume (vph)	PHF	Lanes	HOV Lane?	HOV Lane Volume	Terrain	Truck/ Bus %	RV %	E_T	E_R	f_{HV}	f_P	Flow Rate v_p (pcphpl)	Measured FFS (mph)	FFS (mph)	v_p/c	Speed, S (mph)	Density, D (pcplpm)	Level of Service
1	EB US-50	Bass Lake Rd to Cambridge Rd	AM	3,270	0.92	4	Yes	425	Level	4%	0%	1.5	1.2	0.980	1.00	1,051	65.0	65	0.45	65.0	**16.2**	**B**
4	WB US-50	Cameron Park Dr to Cambridge Rd	AM	4,240	0.94	4	Yes	636	Level	1%	0%	1.5	1.2	0.995	1.00	1,284	65.0	65	0.55	65.0	**19.8**	**C**
7	WB US-50	Silva Valley Pkwy to El Dorado Hills Blvd	PM	4,440	0.96	5	Yes	622	Grade	1%	0%	1.5	1.2	0.995	1.00	999	65.0	65	0.43	65.0	**15.4**	**B**

APPENDIX A:

Cumulative Plus Project Technical Calculations

Intersection 1 **El Dorado Hills Boulevard/Saratoga Way-Park Drive** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	84	83	99.0%	83.0	7.4	F
	Through	649	647	99.7%	10.0	0.5	A
	Right Turn	68	70	103.5%	7.4	2.1	A
	Subtotal	**801**	**801**	**100.0%**	**17.4**	**1.5**	**B**
SB	Left Turn	70	70	100.6%	71.3	6.3	E
	Through	1685	1661	98.6%	25.4	1.4	C
	Right Turn	690	685	99.3%	41.6	4.1	D
	Subtotal	**2445**	**2417**	**98.8%**	**31.4**	**2.1**	**C**
EB	Left Turn	160	155	96.7%	126.5	53.8	F
	Through	100	98	98.1%	159.1	59.8	F
	Right Turn	58	60	103.1%	10.8	2.7	B
	Subtotal	**318**	**313**	**98.3%**	**115.0**	**46.1**	**F**
WB	Left Turn	129	131	101.4%	46.8	2.3	D
	Through	120	111	92.4%	54.9	8.3	D
	Right Turn	80	81	101.1%	33.4	8.0	C
	Subtotal	**329**	**323**	**98.1%**	**46.1**	**4.7**	**D**
Total		**3893**	**3853**	**99.0%**	**36.6**	**4.0**	**D**

Intersection 2 **El Dorado Hills Boulevard/US 50 WB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	940	883	93.9%	60.7	11.5	E
	Through	491	499	101.6%	9.4	0.9	A
	Right Turn	130	131	101.1%	3.7	0.4	A
	Subtotal	**1561**	**1513**	**96.9%**	**38.9**	**7.3**	**D**
SB	Left Turn	70	69	99.0%	102.7	36.3	F
	Through	1162	1145	98.5%	22.6	1.3	C
	Right Turn	640	640	100.0%	3.9	0.3	A
	Subtotal	**1872**	**1854**	**99.0%**	**19.2**	**1.9**	**B**
EB	Left Turn	250	250	99.9%	57.9	3.6	E
	Through	70	66	94.0%	70.7	6.0	E
	Right Turn	536	545	101.7%	6.8	0.4	A
	Subtotal	**856**	**861**	**100.5%**	**26.5**	**1.9**	**C**
WB	Left Turn	80	83	103.4%	103.4	51.3	F
	Through	100	95	94.7%	173.2	86.1	F
	Right Turn	60	68	112.5%	38.9	50.3	D
	Subtotal	**240**	**245**	**102.0%**	**113.1**	**64.7**	**F**
Total		**4529**	**4473**	**98.8%**	**32.5**	**4.7**	**C**

Intersection 3 **Latrobe Road/US 50 EB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	1351	1290	95.5%	11.0	0.7	B
	Right Turn	488	462	94.6%	9.6	0.4	A
	Subtotal	**1839**	**1751**	**95.2%**	**10.6**	**0.5**	**B**
SB	Left Turn	320	309	96.4%	22.9	1.7	C
	Through	1458	1461	100.2%	17.2	0.8	B
	Right Turn						
	Subtotal	**1778**	**1770**	**99.6%**	**18.2**	**0.8**	**B**
EB	Left Turn						
	Through						
	Right Turn	1072	1078	100.6%	15.7	1.7	B
	Subtotal	**1072**	**1078**	**100.6%**	**15.7**	**1.7**	**B**
WB	Left Turn						
	Through						
	Right Turn	210	214	102.1%	0.9	0.1	A
	Subtotal	**210**	**214**	**102.1%**	**0.9**	**0.1**	**A**
Total		**4899**	**4814**	**98.3%**	**14.1**	**0.6**	**B**

Intersection 4 **Latrobe Road/Town Center Boulevard** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	40	41	101.3%	230.1	68.7	F
	Through	1456	1416	97.2%	119.1	36.6	F
	Right Turn	50	52	104.2%	9.7	6.6	A
	Subtotal	**1546**	**1508**	**97.6%**	**118.2**	**36.1**	**F**
SB	Left Turn	537	538	100.3%	57.3	11.8	E
	Through	1543	1552	100.6%	14.0	0.8	B
	Right Turn	450	458	101.7%	6.2	0.4	A
	Subtotal	**2530**	**2548**	**100.7%**	**21.8**	**2.7**	**C**
EB	Left Turn	50	48	95.2%	53.9	3.5	D
	Through	19	20	102.6%	55.2	11.7	E
	Right Turn	20	22	109.0%	15.1	5.0	B
	Subtotal	**89**	**89**	**99.9%**	**44.5**	**4.0**	**D**
WB	Left Turn	122	108	88.3%	162.2	19.3	F
	Through	53	51	96.0%	147.0	22.2	F
	Right Turn	333	308	92.5%	60.9	8.4	E
	Subtotal	**508**	**467**	**91.8%**	**93.8**	**12.3**	**F**
Total		**4673**	**4612**	**98.7%**	**60.9**	**11.1**	**E**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	468	180	311	1035	100	80	10	60	30	10	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.7		5.0	5.7		5.0	5.3		5.0	5.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.99		1.00	0.87		1.00	0.88	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3392		1770	3493		1770	1623		1770	1639	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3392		1770	3493		1770	1623		1770	1639	
Peak-hour factor, PHF	0.89	0.89	0.89	0.81	0.81	0.81	0.71	0.71	0.71	0.71	0.71	0.71
Adj. Flow (vph)	56	526	202	384	1278	123	113	14	85	42	14	56
RTOR Reduction (vph)	0	37	0	0	6	0	0	71	0	0	49	0
Lane Group Flow (vph)	56	691	0	384	1395	0	113	28	0	42	21	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	3.1	21.9		19.6	38.4		5.5	12.6		3.4	10.5	
Effective Green, g (s)	3.1	21.9		19.6	38.4		5.5	12.6		3.4	10.5	
Actuated g/C Ratio	0.04	0.28		0.25	0.49		0.07	0.16		0.04	0.13	
Clearance Time (s)	5.0	5.7		5.0	5.7		5.0	5.3		5.0	5.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	70	946		442	1709		124	261		77	219	
v/s Ratio Prot	0.03	0.20		c0.22	c0.40		c0.06	c0.02		0.02	0.01	
v/s Ratio Perm												
v/c Ratio	0.80	0.73		0.87	0.82		0.91	0.11		0.55	0.10	
Uniform Delay, d1	37.4	25.6		28.2	17.1		36.3	28.1		36.8	29.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	46.2	2.9		16.4	3.1		54.2	0.2		7.7	0.2	
Delay (s)	83.6	28.6		44.6	20.2		90.4	28.3		44.5	30.0	
Level of Service	F	C		D	C		F	C		D	C	
Approach Delay (s)		32.5			25.4			61.4			35.5	
Approach LOS		C			C			E			D	

Intersection Summary			
HCM Average Control Delay	30.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	78.5	Sum of lost time (s)	10.0
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Intersection 9 **Post Street/Town Center Boulevard** **Unsignalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	190	185	97.6%	40.9	30.9	E
	Through	77	72	93.9%	18.0	12.1	C
	Right Turn	16	16	98.1%	11.1	7.3	B
	Subtotal	**283**	**273**	**96.6%**	**33.2**	**24.4**	**D**
SB	Left Turn	10	9	91.0%	15.7	8.8	C
	Through	76	76	100.3%	20.1	15.5	C
	Right Turn	116	119	102.6%	18.6	14.3	C
	Subtotal	**202**	**204**	**101.1%**	**19.0**	**14.1**	**C**
EB	Left Turn	324	326	100.7%	19.3	3.1	C
	Through	132	134	101.3%	11.7	2.4	B
	Right Turn	180	150	83.3%	8.3	2.6	A
	Subtotal	**636**	**610**	**95.9%**	**14.9**	**2.6**	**B**
WB	Left Turn	26	27	103.8%	11.9	1.2	B
	Through	72	72	99.6%	19.5	8.3	C
	Right Turn	10	9	92.0%	9.3	4.3	A
	Subtotal	**108**	**108**	**99.9%**	**16.8**	**6.0**	**C**
Total		**1229**	**1196**	**97.3%**	**20.0**	**9.3**	**C**

Intersection 10 **Silva Valley Parkway/US 50 WB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	576	581	100.9%	14.3	0.6	B
	Right Turn	30	32	105.7%	2.2	0.3	A
	Subtotal	**606**	**613**	**101.1%**	**13.7**	**0.6**	**B**
SB	Left Turn						
	Through	518	514	99.3%	23.1	1.5	C
	Right Turn	1370	1249	91.2%	56.6	3.4	E
	Subtotal	**1888**	**1764**	**93.4%**	**46.9**	**2.6**	**D**
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	862	836	97.0%	39.5	4.9	D
	Through	10	10	98.0%	41.9	6.4	D
	Right Turn	230	229	99.7%	14.1	1.6	B
	Subtotal	**1102**	**1075**	**97.6%**	**34.1**	**4.0**	**C**
Total		**3596**	**3452**	**96.0%**	**37.0**	**1.0**	**D**

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

EDH Town Center
Cumulative Plus Project Conditions
AM Peak Hour

Intersection 11 **Silva Valley Parkway/US 50 EB Ramps** **Signalized**

Direction	Movement	Volume (veh/hr)			Total Delay (sec/veh)		
		Demand	Served	% Served	Average	Std. Dev.	LOS
NB	Left Turn						
	Through	356	364	102.3%	3.5	0.4	A
	Right Turn	232	225	97.1%	7.6	0.3	A
	Subtotal	**588**	**589**	**100.2%**	**5.0**	**0.3**	**A**
SB	Left Turn						
	Through	1180	1156	98.0%	4.1	0.3	A
	Right Turn	200	195	97.5%	4.6	0.1	A
	Subtotal	**1380**	**1351**	**97.9%**	**4.1**	**0.3**	**A**
EB	Left Turn	250	249	99.5%	37.0	2.1	D
	Through						
	Right Turn	40	40	101.0%	16.6	2.4	B
	Subtotal	**290**	**289**	**99.7%**	**34.2**	**1.8**	**C**
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		**2258**	**2230**	**98.7%**	**8.3**	**0.3**	**A**

Intersection 1 **El Dorado Hills Boulevard/Saratoga Way-Park Drive** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	67	63	94.6%	81.8	6.7	F
	Through	1550	1413	91.1%	40.5	1.5	D
	Right Turn	168	150	89.0%	41.6	3.3	D
	Subtotal	**1785**	**1626**	**91.1%**	**42.2**	**1.7**	**D**
SB	Left Turn	100	94	93.9%	289.7	145.0	F
	Through	872	863	98.9%	57.7	21.7	E
	Right Turn	230	234	101.6%	29.1	3.2	C
	Subtotal	**1202**	**1190**	**99.0%**	**70.8**	**27.7**	**E**
EB	Left Turn	630	468	74.3%	368.1	9.3	F
	Through	130	98	75.7%	376.3	11.2	F
	Right Turn	439	333	75.9%	113.9	9.0	F
	Subtotal	**1199**	**900**	**75.1%**	**274.9**	**10.4**	**F**
WB	Left Turn	128	116	90.8%	68.0	24.4	E
	Through	120	109	91.0%	234.1	97.8	F
	Right Turn	220	205	93.4%	207.4	98.9	F
	Subtotal	**468**	**431**	**92.1%**	**176.2**	**76.7**	**F**
Total		**4654**	**4147**	**89.1%**	**114.9**	**11.9**	**F**

Intersection 2 **El Dorado Hills Boulevard/US 50 WB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	1187	975	82.1%	62.6	7.3	E
	Through	1405	1265	90.0%	16.0	0.6	B
	Right Turn	239	212	88.5%	6.8	0.4	A
	Subtotal	**2831**	**2451**	**86.6%**	**33.7**	**3.0**	**C**
SB	Left Turn	70	66	93.6%	107.3	33.9	F
	Through	1199	1080	90.0%	69.0	12.4	E
	Right Turn	170	155	90.9%	1.7	0.3	A
	Subtotal	**1439**	**1300**	**90.3%**	**63.0**	**11.2**	**E**
EB	Left Turn	280	276	98.5%	62.2	4.7	E
	Through	60	57	95.0%	65.9	6.1	E
	Right Turn	524	530	101.0%	7.3	1.0	A
	Subtotal	**864**	**862**	**99.8%**	**28.8**	**2.5**	**C**
WB	Left Turn	59	58	97.5%	83.5	27.6	F
	Through	90	91	101.6%	110.6	40.6	F
	Right Turn	100	101	101.3%	12.7	13.5	B
	Subtotal	**249**	**250**	**100.5%**	**65.4**	**29.6**	**E**
Total		**5383**	**4863**	**90.3%**	**42.3**	**3.6**	**D**

Intersection 3 **Latrobe Road/US 50 EB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	2301	1890	82.1%	8.2	0.9	A
	Right Turn	534	441	82.7%	7.6	0.3	A
	Subtotal	**2835**	**2331**	**82.2%**	**8.1**	**0.7**	**A**
SB	Left Turn	260	229	87.9%	48.4	2.7	D
	Through	1522	1441	94.7%	11.8	1.7	B
	Right Turn						
	Subtotal	**1782**	**1670**	**93.7%**	**16.8**	**1.4**	**B**
EB	Left Turn						
	Through						
	Right Turn	769	764	99.4%	15.3	0.8	B
	Subtotal	**769**	**764**	**99.4%**	**15.3**	**0.8**	**B**
WB	Left Turn						
	Through						
	Right Turn	530	536	101.2%	1.8	0.1	A
	Subtotal	**530**	**536**	**101.2%**	**1.8**	**0.1**	**A**
Total		**5916**	**5301**	**89.6%**	**11.2**	**0.5**	**B**

Intersection 4 **Latrobe Road/Town Center Boulevard** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	10	6	57.0%	372.3	51.1	F
	Through	1708	1217	71.3%	287.0	7.9	F
	Right Turn	91	68	75.2%	37.4	6.1	D
	Subtotal	**1809**	**1292**	**71.4%**	**274.2**	**7.7**	**F**
SB	Left Turn	697	663	95.1%	97.5	15.3	F
	Through	1534	1476	96.2%	17.4	0.7	B
	Right Turn	60	58	97.2%	2.7	0.4	A
	Subtotal	**2291**	**2197**	**95.9%**	**41.2**	**4.8**	**D**
EB	Left Turn	320	329	102.7%	64.5	5.2	E
	Through	60	60	99.3%	57.3	5.3	E
	Right Turn	100	98	98.4%	25.5	3.2	C
	Subtotal	**480**	**487**	**101.4%**	**55.8**	**3.7**	**E**
WB	Left Turn	38	36	93.7%	91.0	10.5	F
	Through	19	33	173.7%	75.9	6.5	E
	Right Turn	807	794	98.4%	41.6	7.1	D
	Subtotal	**864**	**863**	**99.9%**	**44.9**	**7.1**	**D**
Total		**5444**	**4838**	**88.9%**	**105.5**	**4.4**	**F**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	641	650	50	299	376	258	10	910	613	364	799	509
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7		6.0	5.8	5.8	5.0	5.7	5.7	5.0	5.7	5.7
Lane Util. Factor	0.97	0.91		0.97	0.95	1.00	1.00	0.86	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5026		3433	3539	1583	1770	6408	1561	3433	5085	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5026		3433	3539	1583	1770	6408	1561	3433	5085	1583
Peak-hour factor, PHF	0.77	0.77	0.77	0.89	0.89	0.89	0.82	0.82	0.82	0.87	0.87	0.87
Adj. Flow (vph)	832	844	65	336	422	290	12	1110	748	418	918	585
RTOR Reduction (vph)	0	6	0	0	0	130	0	0	114	0	0	275
Lane Group Flow (vph)	832	903	0	336	422	160	12	1110	634	418	918	310
Confl. Peds. (#/hr)			2						2			
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	33.4	39.6		17.5	25.6	25.6	3.6	50.3	50.3	20.2	66.9	66.9
Effective Green, g (s)	33.4	39.6		17.5	25.6	25.6	3.6	50.3	50.3	20.2	66.9	66.9
Actuated g/C Ratio	0.22	0.26		0.12	0.17	0.17	0.02	0.34	0.34	0.13	0.45	0.45
Clearance Time (s)	4.0	5.7		6.0	5.8	5.8	5.0	5.7	5.7	5.0	5.7	5.7
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	764	1327		401	604	270	42	2149	523	462	2268	706
v/s Ratio Prot	c0.24	c0.18		c0.10	0.12		0.01	0.17		c0.12	0.18	
v/s Ratio Perm						0.10			c0.41			0.20
v/c Ratio	1.09	0.68		0.84	0.70	0.59	0.29	0.52	1.21	0.90	0.40	0.44
Uniform Delay, d1	58.3	49.5		64.9	58.6	57.4	71.9	40.1	49.9	64.0	28.1	28.6
Progression Factor	1.00	1.00		0.60	0.65	0.58	1.00	1.00	1.00	0.72	0.35	0.41
Incremental Delay, d2	59.5	1.5		12.2	3.0	2.9	3.7	0.9	112.0	18.6	0.5	1.7
Delay (s)	117.8	51.0		51.2	40.8	36.0	75.7	41.0	161.8	64.7	10.2	13.3
Level of Service	F	D		D	D	D	E	D	F	E	B	B
Approach Delay (s)		82.9			42.8			89.5			23.0	
Approach LOS		F			D			F			C	

Intersection Summary			
HCM Average Control Delay	60.9	HCM Level of Service	E
HCM Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.4
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	1031	90	79	786	50	300	10	200	80	10	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.7		5.0	5.7		5.0	5.3		5.0	5.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.86		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3497		1770	3508		1770	1596		1770	1614	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3497		1770	3508		1770	1596		1770	1614	
Peak-hour factor, PHF	0.90	0.90	0.90	0.83	0.83	0.83	0.75	0.75	0.75	0.75	0.75	0.75
Adj. Flow (vph)	56	1146	100	95	947	60	400	13	267	107	13	107
RTOR Reduction (vph)	0	5	0	0	3	0	0	145	0	0	95	0
Lane Group Flow (vph)	56	1241	0	95	1004	0	400	135	0	107	25	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	4.0	37.7		5.1	38.8		21.2	21.6		10.5	10.9	
Effective Green, g (s)	4.0	37.7		5.1	38.8		21.2	21.6		10.5	10.9	
Actuated g/C Ratio	0.04	0.39		0.05	0.40		0.22	0.23		0.11	0.11	
Clearance Time (s)	5.0	5.7		5.0	5.7		5.0	5.3		5.0	5.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	74	1375		94	1419		391	359		194	183	
v/s Ratio Prot	0.03	c0.35		c0.05	0.29		c0.23	c0.08		0.06	0.02	
v/s Ratio Perm												
v/c Ratio	0.76	0.90		1.01	0.71		1.02	0.38		0.55	0.14	
Uniform Delay, d1	45.5	27.4		45.4	23.8		37.4	31.4		40.5	38.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	35.0	8.5		95.7	1.6		51.5	0.7		3.4	0.3	
Delay (s)	80.5	35.9		141.1	25.5		88.9	32.1		43.8	38.6	
Level of Service	F	D		F	C		F	C		D	D	
Approach Delay (s)		37.8			35.4			65.5			41.1	
Approach LOS		D			D			E			D	

Intersection Summary			
HCM Average Control Delay	42.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	95.9	Sum of lost time (s)	15.7
Intersection Capacity Utilization	75.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	305	1302	20	30	594	121	40	20	30	199	19	299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	6.0	6.0	4.5	6.0		5.2	6.0		4.5	4.5	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.91		1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5085	1537	1770	4932		1770	1672		1770	1577	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5085	1537	1770	4932		1770	1672		1770	1577	
Peak-hour factor, PHF	0.85	0.85	0.85	0.88	0.88	0.88	0.69	0.69	0.69	0.78	0.78	0.78
Adj. Flow (vph)	359	1532	24	34	675	138	58	29	43	255	24	383
RTOR Reduction (vph)	0	0	6	0	20	0	0	36	0	0	328	0
Lane Group Flow (vph)	359	1532	18	34	793	0	58	36	0	255	79	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	5	2		1	6		7	3		4	8	
Permitted Phases			2									
Actuated Green, G (s)	48.8	88.6	88.6	5.6	44.7		13.9	7.7		27.1	21.7	
Effective Green, g (s)	48.8	88.6	88.6	5.6	44.7		13.9	7.7		27.1	21.7	
Actuated g/C Ratio	0.33	0.59	0.59	0.04	0.30		0.09	0.05		0.18	0.14	
Clearance Time (s)	5.2	6.0	6.0	4.5	6.0		5.2	6.0		4.5	4.5	
Vehicle Extension (s)	1.0	3.6	3.6	1.0	3.6		1.0	1.0		3.0	3.0	
Lane Grp Cap (vph)	576	3004	908	66	1470		164	86		320	228	
v/s Ratio Prot	c0.20	0.30		0.02	c0.16		0.03	0.02		c0.14	c0.05	
v/s Ratio Perm			0.01									
v/c Ratio	0.62	0.51	0.02	0.52	0.54		0.35	0.42		0.80	0.35	
Uniform Delay, d1	42.8	18.0	12.7	70.9	44.0		63.8	69.0		58.8	57.8	
Progression Factor	0.75	0.67	0.53	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	0.2	0.0	2.8	1.4		0.5	1.2		12.9	0.9	
Delay (s)	32.6	12.2	6.8	73.7	45.5		64.3	70.2		71.7	58.7	
Level of Service	C	B	A	E	D		E	E		E	E	
Approach Delay (s)		16.0			46.6			67.6			63.7	
Approach LOS		B			D			E			E	

Intersection Summary			
HCM Average Control Delay	34.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	20.2
Intersection Capacity Utilization	72.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	52	1129	130	270	541	122	90	20	180	171	68	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.0		3.5	5.3		4.2	4.2		4.2	4.2	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.97		1.00	0.87		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	4994		1770	4923		1770	1590		1770	1760	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	4994		1770	4923		1770	1590		1770	1760	
Peak-hour factor, PHF	0.91	0.91	0.91	0.78	0.78	0.78	0.81	0.81	0.81	0.90	0.90	0.90
Adj. Flow (vph)	57	1241	143	346	694	156	111	25	222	190	76	38
RTOR Reduction (vph)	0	10	0	0	23	0	0	194	0	0	14	0
Lane Group Flow (vph)	57	1374	0	346	827	0	111	53	0	190	100	0
Confl. Peds. (#/hr)	2		2			2			2			3
Turn Type	Prot			Prot			Split			Split		
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases												
Actuated Green, G (s)	6.6	36.7		25.5	56.3		13.9	13.9		17.5	17.5	
Effective Green, g (s)	6.6	36.7		25.5	56.3		13.9	13.9		17.5	17.5	
Actuated g/C Ratio	0.06	0.33		0.23	0.50		0.12	0.12		0.16	0.16	
Clearance Time (s)	3.5	6.0		3.5	5.3		4.2	4.2		4.2	4.2	
Vehicle Extension (s)	2.0	3.7		2.0	3.0		3.6	3.6		3.6	3.6	
Lane Grp Cap (vph)	105	1644		405	2486		221	198		278	276	
v/s Ratio Prot	0.03	c0.28		c0.20	0.17		c0.06	0.03		c0.11	0.06	
v/s Ratio Perm												
v/c Ratio	0.54	0.84		0.85	0.33		0.50	0.27		0.68	0.36	
Uniform Delay, d1	51.0	34.6		41.2	16.4		45.6	44.2		44.4	42.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.0	4.0		15.4	0.1		2.2	0.9		7.1	1.0	
Delay (s)	54.0	38.6		56.6	16.5		47.8	45.1		51.5	43.0	
Level of Service	D	D		E	B		D	D		D	D	
Approach Delay (s)		39.2			28.1			45.9			48.3	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	36.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	111.5	Sum of lost time (s)	17.9
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection 9 **Post Street/Town Center Boulevard** **Unsignalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	280	282	100.6%	42.6	31.6	E
	Through	139	144	103.4%	25.8	18.4	D
	Right Turn	37	36	95.9%	23.9	21.5	C
	Subtotal	**456**	**461**	**101.1%**	**36.0**	**26.9**	**E**
SB	Left Turn	20	19	92.5%	31.3	20.7	D
	Through	86	88	102.6%	35.7	19.2	E
	Right Turn	239	234	97.9%	31.8	19.9	D
	Subtotal	**345**	**341**	**98.8%**	**32.7**	**19.5**	**D**
EB	Left Turn	285	268	94.2%	31.1	4.0	D
	Through	223	203	91.2%	22.8	2.9	C
	Right Turn	190	176	92.6%	13.7	1.8	B
	Subtotal	**698**	**648**	**92.8%**	**23.8**	**2.9**	**C**
WB	Left Turn	11	10	94.5%	20.2	16.6	C
	Through	205	203	98.8%	29.9	16.9	D
	Right Turn	10	10	95.0%	23.1	15.6	C
	Subtotal	**226**	**222**	**98.4%**	**29.2**	**16.4**	**D**
Total		**1725**	**1672**	**96.9%**	**29.7**	**13.4**	**D**

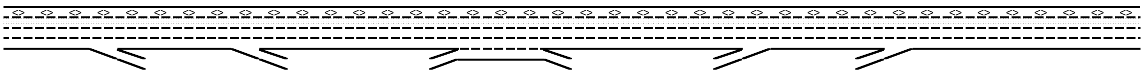
Intersection 10 **Silva Valley Parkway/US 50 WB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	1525	1538	100.8%	14.4	1.2	B
	Right Turn	40	38	95.0%	3.0	0.3	A
	Subtotal	**1565**	**1576**	**100.7%**	**14.1**	**1.2**	**B**
SB	Left Turn						
	Through	640	634	99.1%	12.3	1.0	B
	Right Turn	490	481	98.1%	12.6	1.1	B
	Subtotal	**1130**	**1115**	**98.7%**	**12.4**	**1.0**	**B**
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	533	534	100.2%	25.0	1.1	C
	Through	10	11	110.0%	28.5	7.6	C
	Right Turn	370	360	97.3%	30.0	2.3	C
	Subtotal	**913**	**905**	**99.1%**	**27.0**	**1.1**	**C**
Total		**3608**	**3596**	**99.7%**	**16.8**	**0.7**	**B**

Intersection 11 **Silva Valley Parkway/US 50 EB Ramps** **Signalized**

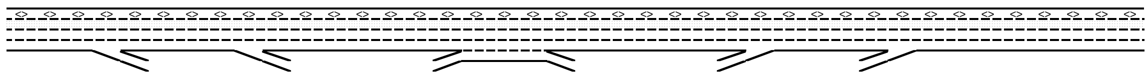
Direction	Movement	Volume (veh/hr)			Total Delay (sec/veh)		
		Demand	Served	% Served	Average	Std. Dev.	LOS
NB	Left Turn						
	Through	915	912	99.7%	25.4	4.6	C
	Right Turn	595	603	101.4%	24.2	4.3	C
	Subtotal	**1510**	**1515**	**100.3%**	**24.9**	**4.4**	**C**
SB	Left Turn						
	Through	973	974	100.1%	8.8	0.5	A
	Right Turn	200	195	97.4%	4.3	0.2	A
	Subtotal	**1173**	**1169**	**99.7%**	**8.0**	**0.4**	**A**
EB	Left Turn	650	661	101.7%	20.1	1.0	C
	Through						
	Right Turn	40	41	102.0%	12.7	0.9	B
	Subtotal	**690**	**702**	**101.7%**	**19.6**	**1.0**	**B**
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		**3373**	**3386**	**100.4%**	**18.0**	**2.0**	**B**

Project: El Dorado Hills Town Center Apartments **Alternative:** Cumulative Plus Project
Freeway Corridor: Eastbound US 50 **Time Period:** AM Peak Hour



Key
<> Express Lane (HOV)
No Trucks

Location	1	2	3	4	5	6	7	8
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy loop on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd
Define Freeway Segment								
Type	Diverge	Diverge	Basic	Weave	Basic	Merge	Basic	Basic
Length (ft)	1,500	850	1,975	3,000	1,575	800	3,400	3,400
Accel Length						550		
Decel Length	150	150						
Mainline Volume	4,032	2,960	2,750	2,750	3,268	3,268	3,468	3,678
On Ramp Volume				808		200	210	
Off Ramp Volume	1,072	210		290				
Express Lane Volume	444	326	303	303	458	458	486	515
EL On Ramp Volume								
EL Off Ramp Volume								
Calculate Flow Rate in General Purpose Lanes (GP)								
GP Volume (vph)	3,588	2,634	2,448	3,256	2,810	3,010	2,982	3,163
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
GP Lanes	3	3	3	4	3	3	3	3
Terrain	Level	Level	Level	Level	Level	Level	Level	Grade
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Truck & Bus %	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	5.0
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	6.0
f_{HV}	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.862
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	3,979	2,921	2,714	3,609	3,116	3,338	3,307	3,988
GP Flow (pcphpl)	1,326	974	905	902	1,039	1,113	1,102	1,329
Calculate Speed in General Purpose Lanes								
Lane Width (ft)	12	12	12	12	12	12	12	12
Shoulder Width	>6	>6	>6	>6	>6	>6	>6	>6
TRD	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calc'd FFS	67.3	67.3	67.3	67.3	67.3	67.3	67.3	67.3
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes								
v/c ratio	0.56	0.41	0.38	0.38	0.44	0.47	0.47	0.57
Speed (mph)	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
Density (pcphpl)	20.4	15.0	13.9	13.9	16.0	17.1	17.0	20.5
LOS	C	B	B	B	B	B	B	C
Calculate Operations for Entering GP Lanes								
GP_{IN} Vol (pcph)				2,722		3,118	3,076	
GP_{IN} Cap (pcph)				7,050		7,050	7,050	
GP_{IN} v/c ratio				0.39		0.44	0.44	
Calculate Operations for Exiting GP Lanes								
GP_{OUT} Vol (pcph)	2,802	2,690		3,300				
GP_{OUT} Cap (pcph)	7,050	7,050		7,050				
GP_{OUT} v/c ratio	0.40	0.38		0.47				

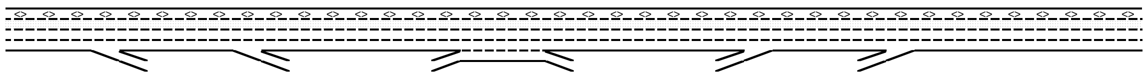


Key

<> Express Lane (HOV)

No Trucks

Location	1	2	3	4	5	6	7	8
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy loop on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd
Calculate Flow Rate in Express Lanes (EL)								
EL Volume (vph)	444	326	303	303	458	458	486	515
PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Express Lanes	1	1	1	1	1	1	1	1
Terrain	Level	Level	Level	Level	Level	Level	Level	Grade
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	5.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	6.0
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.917
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
EL Flow (pcph)	527	387	359	359	544	544	577	660
EL Flow (pcphpl)	527	387	359	359	544	544	577	660
Calculate Speed in Express Lanes								
Lane Width (ft)								
Shoulder Width								
TRD								
f_{LW}								
f_{LC}								
Calc'd FFS								
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65
Calculate Operations in Express Lanes								
EL_{IN} v/c ratio	0.30	0.22	0.21	0.21	0.31	0.31	0.33	0.38
Calculate On Ramp Flow Rate								
On Volume (vph)				808		200	210	
PHF				0.92		0.92	0.92	
Total Lanes				1		1	1	
Terrain				Level		Level	Level	
Grade %				0.0%		0.0%	0.0%	
Grade Length (mi)				0.00		0.00	0.00	
Truck & Bus %				2.0%		2.0%	2.0%	
RV %				0.0%		0.0%	0.0%	
E_T				1.5		1.5	1.5	
E_R				1.2		1.2	1.2	
f_{HV}				0.990		0.990	0.990	
f_P				1.00		1.00	1.00	
On Flow (pcph)				887		220	231	
On Flow (pcphpl)				887		220	231	
Calculate On Ramp Roadway Operations								
On Ramp Type				Right		Right	Right	
On Ramp Speed (mph)				45		25	45	
On Ramp Cap (pcph)				2,100		1,900	2,100	
On Ramp v/c ratio				0.42		0.12	0.11	



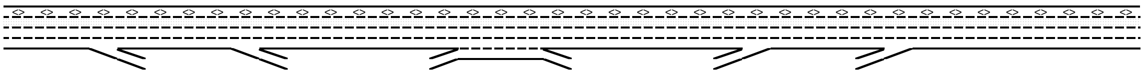
Key

<> Express Lane (HOV)

No Trucks

Location	1	2	3	4	5	6	7	8
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy loop on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd
Calculate Off Ramp Flow Rate								
Off Volume (vph)	1,072	210		290				
PHF	0.92	0.92		0.95				
Total Lanes	1	1		1				
Terrain	Level	Level		Level				
Grade %	0.0%	0.0%		0.0%				
Grade Length (mi)	0.00	0.00		0.00				
Truck & Bus %	2.0%	2.0%		3.0%				
RV %	0.0%	0.0%		0.0%				
E_T	1.5	1.5		1.5				
E_R	1.2	1.2		1.2				
f_{HV}	0.990	0.990		0.985				
f_P	1.00	1.00		1.00				
Off Flow (pcph)	1,177	231		310				
Off Flow (pcphpl)	1,177	231		310				
Calculate Off Ramp Roadway Operations								
Off Ramp Type	Right	Right		Right				
Off Ramp Speed	45	25		45				
Off Ramp Cap (pcph)	2,100	1,900		2,100				
Off Ramp v/c ratio	0.56	0.12		0.15				
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps								
Up Type		Off				Off	On	
Up Distance		2,350				1,575	800	
Up Flow (pcph)		1,177				310	220	
Down Type	Off	On				On	On	
Down Distance	850	1,975				2,900	3,400	
Down Flow (pcph)	231	887				626	626	
Calculate Merge Influence Area Operations								
Effective v_P (pcph)						3,118		
Up Ramp L_{EQ}						-137		
Down Ramp L_{EQ}						3,716		
P_{FM} (Eqn 13-3)						0.593		
P_{FM} (Eqn 13-4)		#VALUE!				0.701		
P_{FM} (Eqn 13-5)	0.620							
P_{FM}						0.593		
v_{12} (pcph)						1,849		
v_3 (pcph)						1,269		
v_{34} (pcph)								
v_{12a} (pcph)						1,849		
v_{R12a} (pcph)						2,068		
Merge Speed Index						0.32		
Merge Area Speed						57.5		
Outer Lanes Volume						1,269		
Outer Lanes Speed						62.2		
Segment Speed						59.2		
Merge v/c ratio						0.45		
Merge Density						18.1		
Merge LOS						B		

Location	1	2	3	4	5	6	7	8



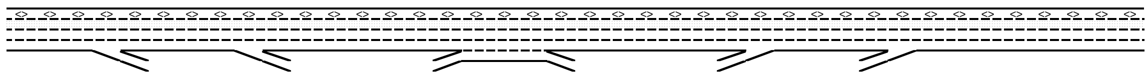
Key

<> Express Lane (HOV)

No Trucks

Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy loop on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd
Calculate Diverge Influence Area Operations								
Effective v_P (pcph)	3,979	2,921						
Up Ramp L_{EQ}		9,754						
Down Ramp L_{EQ}	392	913						
P_{FD} (Eqn 13-9)	0.606	0.676						
P_{FD} (Eqn 13-10)								
P_{FD} (Eqn 13-11)	0.566							
P_{FD}	0.606	0.676						
v_{12} (pcph)	2,876	2,050						
v_3 (pcph)	1,103	871						
v_{34} (pcph)								
v_{12a} (pcph)	2,876	2,050						
Diverge Speed Index	0.40	0.58						
Diverge Area Speed	55.7	51.7						
Outer Lanes Volume	1,103	871						
Outer Lanes Speed	70.9	71.3						
Segment Speed	59.2	56.3						
Diverge v/c ratio	0.65	0.47						
Diverge Density	27.6	20.5						
Diverge LOS	C	C						
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments								
On to Off Volume (vph)				40				
PHF				0.92				
Terrain				Level				
Grade %				0.0%				
Grade Length (mi)				0.00				
Truck & Bus %				3.0%				
RV %				0.0%				
E_T				1.5				
E_R				1.2				
f_{HV}				0.985				
f_P				1.00				
On to Off Flow (pcph)				44				
Calculate On Ramp to Mainline Flow Rate for Weave Segments								
On to ML Volume (vph)				768				
PHF				0.92				
Terrain				Level				
Grade %				0.0%				
Grade Length (mi)				0.00				
Truck & Bus %				3.0%				
RV %				0.0%				
E_T				1.5				
E_R				1.2				
f_{HV}				0.985				
f_P				1.00				
On to ML Flow (pcph)				847				
Calculate Mainline to Off Ramp Flow Rate for Weave Segments								
ML to Off Volume (vph)				250				
PHF				0.95				
Terrain				Level				
Grade %				0.0%				
Grade Length (mi)				0.00				
Truck & Bus %				6.0%				
RV %				0.0%				
E_T				1.5				
E_R				1.2				
f_{HV}				0.971				
f_P				1.00				
ML to Off Flow (pcph)				271				

Location	1	2	3	4	5	6	7	8



Key

<> Express Lane (HOV)

No Trucks

Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy loop on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments								
GP to GP Volume (vph)				2,198				
PHF				0.95				
Terrain				Level				
Grade %				0.0%				
Grade Length (mi)				0.00				
Truck & Bus %				6.0%				
RV %				0.0%				
E_T				1.5				
E_R				1.2				
f_{HV}				0.971				
f_P				1.00				
GP to GP Flow (pcph)				2,383				
Calculate Weave Segment Operations								
Weave Type				One-sided				
Weave Length				2,000				
Segment Lanes				3				
Weave Lanes				3				
Weave Flow (pcph)				1,118				
Non-Weave Flow				2,427				
Segment Flow				3,545				
Max Weave Length				4,184				
Length Check				OK				
Ideal Weave Capacity				2,183				
f_{HV}				0.974				
f_P				0.996				
Capacity Condition 1				6,359				
Capacity Condition 2				10,773				
Weave v/c ratio				0.54				
Interchange Density				3				
Lane Changes On to ML				1				
Lane Changes ML to Off				1				
Lane Changes On to Off				0				
Min Lane Change Rate				1,118				
Weave LC Rate				1,714				
Non-Weave LC Rate 1				1,006				
Non-Weave LC Rate 2				2,230				
Non-Weave LC Rate 3				1,300				
Segment LC Rate				3,014				
Weave Intensity Factor				0.312				
Weave Speed				53.1				
Non-Weave Speed				51.3				
Segment Speed				51.8				
Weave Density				22.8				
Weave LOS				C				
Summarize Segment Operations								
Segment v/c ratio	0.65	0.47	0.38	0.54	0.44	0.45	0.47	0.57
Segment Density	27.6	20.5	13.9	22.8	16.0	18.1	17.0	20.5
Segment LOS	C	C	B	C	B	B	B	C
Over Capacity								

Leisch Method for Weaving Analysis

Data Input

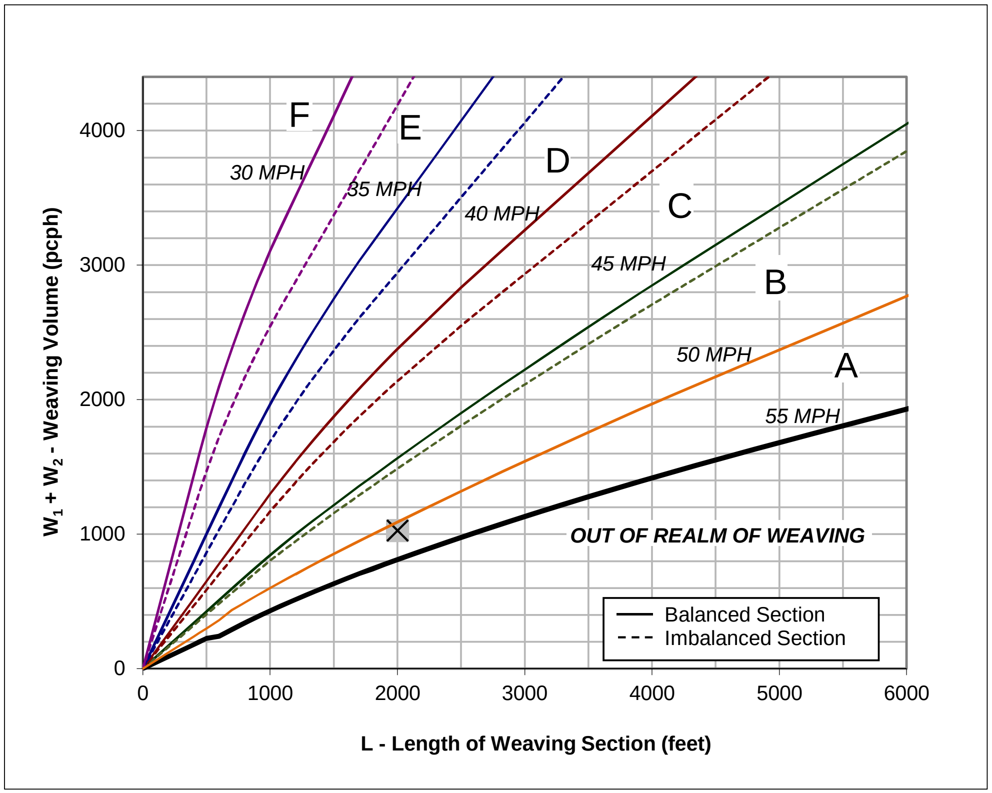
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	2,000

Project Information

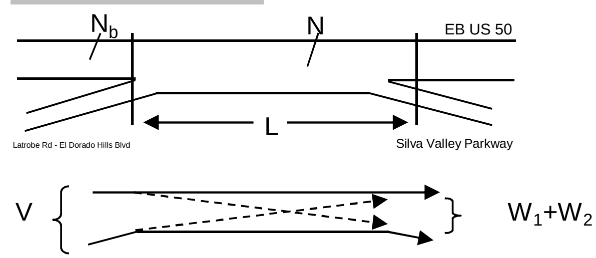
Project	El Dorado Hills Town Center Apartment
Scenario	Cumulative Plus Project - AM Pk Hr
Freeway	EB US 50
On-ramp	Latrobe Rd - El Dorado Hills Blvd
Off-ramp	Silva Valley Parkway

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	3,256	Volume (vph)*	768	Volume (vph)*	250
Truck Percentage	4%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,321	Volume (pcph)	775	Volume (pcph)	252

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left,
   which two speed curves is the black "x" between?
   50 MPH and **55 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) 51.1
4. Weaving Intensity Factor (k) 1.00
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ 830
6. Level of Service (LOS) B

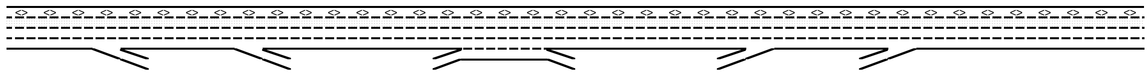
The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, July 24, 2009

Project: El Dorado Hills Town Center Apartments **Alternative:** Cumulative Plus Project
Freeway Corridor: Eastbound US 50 **Time Period:** PM Peak Hour

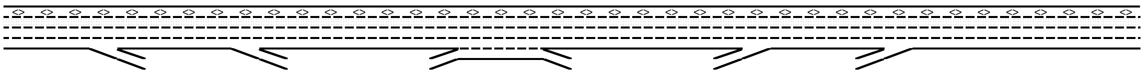
Location	1	2	3	4	5	6	7	8



Key
<> Express Lane (HOV)
No Trucks

Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy loop on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd
Define Freeway Segment								
Type	Diverge	Diverge	Basic	Weave	Basic	Merge	Basic	Basic
Length (ft)	1,500	850	1,975	3,000	1,575	800	3,400	3,400
Accel Length						550		
Decel Length	150	150						
Mainline Volume	6,439	5,670	5,140	5,140	5,244	5,244	5,444	6,034
On Ramp Volume				794		200	590	
Off Ramp Volume	769	530		690				
Express Lane Volume	966	851	771	668	682	682	708	905
EL On Ramp Volume								
EL Off Ramp Volume								
Calculate Flow Rate in General Purpose Lanes (GP)								
GP Volume (vph)	5,473	4,820	4,369	5,266	4,562	4,762	4,736	5,129
PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
GP Lanes	3	3	3	4	3	3	3	3
Terrain	Level	Level	Level	Level	Level	Level	Level	Grade
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Truck & Bus %	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	6.0
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	6.0
f_{HV}	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.952
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	5,671	4,993	4,527	5,456	4,727	4,934	4,907	5,552
GP Flow (pcphpl)	1,890	1,664	1,509	1,364	1,576	1,645	1,636	1,851
Calculate Speed in General Purpose Lanes								
Lane Width (ft)	12	12	12	12	12	12	12	12
Shoulder Width	>6	>6	>6	>6	>6	>6	>6	>6
TRD	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calc'd FFS	67.3	67.3	67.3	67.3	67.3	67.3	67.3	67.3
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes								
v/c ratio	0.80	0.71	0.64	0.58	0.67	0.70	0.70	0.79
Speed (mph)	61.6	64.0	64.8	65.0	64.6	64.2	64.2	62.1
Density (pcphpl)	30.7	26.0	23.3	21.0	24.4	25.6	25.5	29.8
LOS	D	D	C	C	C	C	C	D
Calculate Operations for Entering GP Lanes								
GP_{IN} Vol (pcph)				4,584		4,715	4,259	
GP_{IN} Cap (pcph)				7,050		7,050	7,050	
GP_{IN} v/c ratio				0.65		0.67	0.60	
Calculate Operations for Exiting GP Lanes								
GP_{OUT} Vol (pcph)	4,826	4,412		4,695				
GP_{OUT} Cap (pcph)	7,050	7,050		7,050				
GP_{OUT} v/c ratio	0.68	0.63		0.67				

Location	1	2	3	4	5	6	7	8



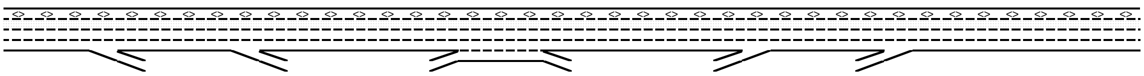
Key

<> Express Lane (HOV)

No Trucks

Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy loop on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd
Calculate Flow Rate in Express Lanes (EL)								
EL Volume (vph)	966	851	771	668	682	682	708	905
PHF	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Express Lanes	1	1	1	1	1	1	1	1
Terrain	Level	Level	Level	Level	Level	Level	Level	Grade
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	5.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	6.0
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.917
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
EL Flow (pcph)	1,084	954	865	750	765	765	794	1,096
EL Flow (pcphpl)	1,084	954	865	750	765	765	794	1,096
Calculate Speed in Express Lanes								
Lane Width (ft)								
Shoulder Width								
TRD								
f_{LW}								
f_{LC}								
Calc'd FFS								
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65
Calculate Operations in Express Lanes								
EL_{IN} v/c ratio	0.62	0.55	0.49	0.43	0.44	0.44	0.45	0.63
Calculate On Ramp Flow Rate								
On Volume (vph)				794		200	590	
PHF				0.92		0.92	0.92	
Total Lanes				1		1	1	
Terrain				Level		Level	Level	
Grade %				0.0%		0.0%	0.0%	
Grade Length (mi)				0.00		0.00	0.00	
Truck & Bus %				2.0%		2.0%	2.0%	
RV %				0.0%		0.0%	0.0%	
E_T				1.5		1.5	1.5	
E_R				1.2		1.2	1.2	
f_{HV}				0.990		0.990	0.990	
f_P				1.00		1.00	1.00	
On Flow (pcph)				872		220	648	
On Flow (pcphpl)				872		220	648	
Calculate On Ramp Roadway Operations								
On Ramp Type				Right		Right	Right	
On Ramp Speed (mph)				45		25	45	
On Ramp Cap (pcph)				2,100		1,900	2,100	
On Ramp v/c ratio				0.42		0.12	0.31	

Location	1	2	3	4	5	6	7	8



Key

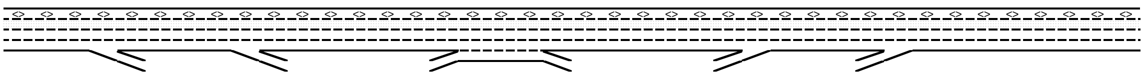
<> Express Lane (HOV)

No Trucks

Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy loop on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd
Calculate Off Ramp Flow Rate								
Off Volume (vph)	769	530		690				
PHF	0.92	0.92		0.92				
Total Lanes	1	1		1				
Terrain	Level	Level		Level				
Grade %	0.0%	0.0%		0.0%				
Grade Length (mi)	0.00	0.00		0.00				
Truck & Bus %	2.0%	2.0%		3.0%				
RV %	0.0%	0.0%		0.0%				
E_T	1.5	1.5		1.5				
E_R	1.2	1.2		1.2				
f_{HV}	0.990	0.990		0.985				
f_P	1.00	1.00		1.00				
Off Flow (pcph)	844	582		761				
Off Flow (pcphpl)	844	582		761				
Calculate Off Ramp Roadway Operations								
Off Ramp Type	Right	Right		Right				
Off Ramp Speed	45	25		45				
Off Ramp Cap (pcph)	2,100	1,900		2,100				
Off Ramp v/c ratio	0.40	0.31		0.36				
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps								
Up Type		Off				Off	On	
Up Distance		2,350				1,575	800	
Up Flow (pcph)		844				761	220	
Down Type	Off	On				On	On	
Down Distance	850	1,975				2,900	3,400	
Down Flow (pcph)	582	872				626	626	
Calculate Merge Influence Area Operations								
Effective v_P (pcph)						4,715		
Up Ramp L_{EQ}						205		
Down Ramp L_{EQ}						3,716		
P_{FM} (Eqn 13-3)						0.593		
P_{FM} (Eqn 13-4)		#VALUE!				0.679		
P_{FM} (Eqn 13-5)	0.729							
P_{FM}						0.593		
v_{12} (pcph)						2,795		
v_3 (pcph)						1,919		
v_{34} (pcph)								
v_{12a} (pcph)						2,795		
v_{R12a} (pcph)						3,015		
Merge Speed Index						0.37		
Merge Area Speed						56.4		
Outer Lanes Volume						1,919		
Outer Lanes Speed						59.9		
Segment Speed						57.7		
Merge v/c ratio						0.66		
Merge Density						25.4		
Merge LOS						C		

Project: El Dorado Hills Town Center Apartments

Alternative: Cumulative Plus Project Conditions
Time Period: PM Peak Hour

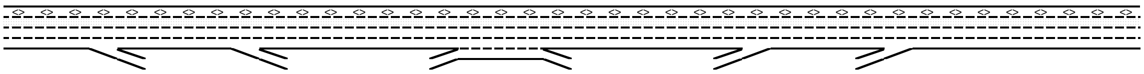


Key

<> Express Lane (HOV)

No Trucks

Location	1	2	3	4	5	6	7	8
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy loop on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd
Calculate Diverge Influence Area Operations								
Effective v_P (pcph)	5,671	4,993						
Up Ramp L_{EQ}		5,961						
Down Ramp L_{EQ}	886	1,124						
P_{FD} (Eqn 13-9)	0.579	0.608						
P_{FD} (Eqn 13-10)								
P_{FD} (Eqn 13-11)	0.582							
P_{FD}	0.582	0.608						
v_{12} (pcph)	3,655	3,266						
v_3 (pcph)	2,016	1,728						
v_{34} (pcph)								
v_{12a} (pcph)	3,655	3,266						
Diverge Speed Index	0.37	0.61						
Diverge Area Speed	56.4	51.0						
Outer Lanes Volume	2,016	1,728						
Outer Lanes Speed	67.3	68.5						
Segment Speed	59.9	55.9						
Diverge v/c ratio	0.83	0.74						
Diverge Density	34.3	31.0						
Diverge LOS	D	D						
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments								
On to Off Volume (vph)				87				
PHF				0.92				
Terrain				Level				
Grade %				0.0%				
Grade Length (mi)				0.00				
Truck & Bus %				2.0%				
RV %				0.0%				
E_T				1.5				
E_R				1.2				
f_{HV}				0.990				
f_P				1.00				
On to Off Flow (pcph)				96				
Calculate On Ramp to Mainline Flow Rate for Weave Segments								
On to ML Volume (vph)				707				
PHF				0.92				
Terrain				Level				
Grade %				0.0%				
Grade Length (mi)				0.00				
Truck & Bus %				2.0%				
RV %				0.0%				
E_T				1.5				
E_R				1.2				
f_{HV}				0.990				
f_P				1.00				
On to ML Flow (pcph)				776				
Calculate Mainline to Off Ramp Flow Rate for Weave Segments								
ML to Off Volume (vph)				603				
PHF				0.97				
Terrain				Level				
Grade %				0.0%				
Grade Length (mi)				0.00				
Truck & Bus %				1.0%				
RV %				0.0%				
E_T				1.5				
E_R				1.2				
f_{HV}				0.995				
f_P				1.00				
ML to Off Flow (pcph)				625				



Key

<> Express Lane (HOV)

No Trucks

Location	1	2	3	4	5	6	7	8
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy loop on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments								
GP to GP Volume (vph)				3,869				
PHF				0.92				
Terrain				Level				
Grade %				0.0%				
Grade Length (mi)				0.00				
Truck & Bus %				1.0%				
RV %				0.0%				
E_T				1.5				
E_R				1.2				
f_{HV}				0.995				
f_P				1.00				
GP to GP Flow (pcph)				4,226				
Calculate Weave Segment Operations								
Weave Type				One-sided				
Weave Length				2,000				
Segment Lanes				3				
Weave Lanes				3				
Weave Flow (pcph)				1,401				
Non-Weave Flow				4,322				
Segment Flow				5,723				
Max Weave Length				3,433				
Length Check				OK				
Ideal Weave Capacity				2,240				
f_{HV}				0.994				
f_P				0.999				
Capacity Condition 1				6,674				
Capacity Condition 2				14,196				
Weave v/c ratio				0.85				
Interchange Density				3				
Lane Changes On to ML				1				
Lane Changes ML to Off				1				
Lane Changes On to Off				0				
Min Lane Change Rate				1,401				
Weave LC Rate				1,997				
Non-Weave LC Rate 1				1,396				
Non-Weave LC Rate 2				2,653				
Non-Weave LC Rate 3				3,896				
Segment LC Rate				4,649				
Weave Intensity Factor				0.440				
Weave Speed				49.7				
Non-Weave Speed				45.8				
Segment Speed				46.7				
Weave Density				40.9				
Weave LOS				E				
Summarize Segment Operations								
Segment v/c ratio	0.83	0.74	0.64	0.85	0.67	0.66	0.70	0.79
Segment Density	34.3	31.0	23.3	40.9	24.4	25.4	25.5	29.8
Segment LOS	D	D	C	E	C	C	C	D
Over Capacity								

Leisch Method for Weaving Analysis

Data Input

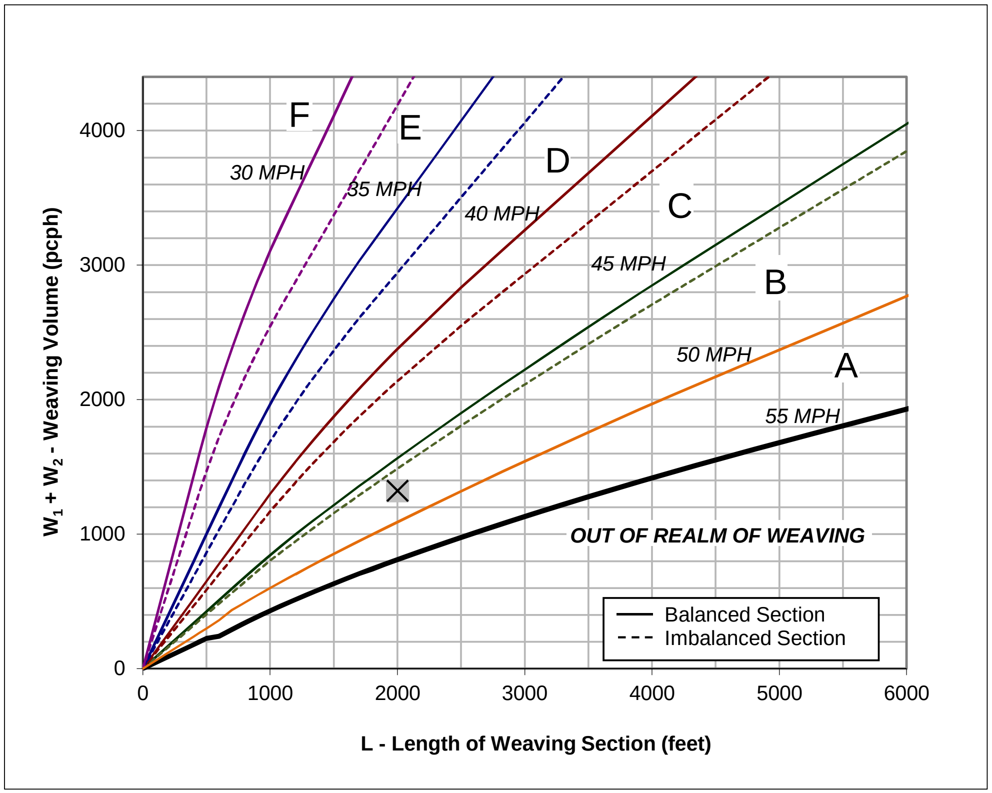
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	2,000

Project Information

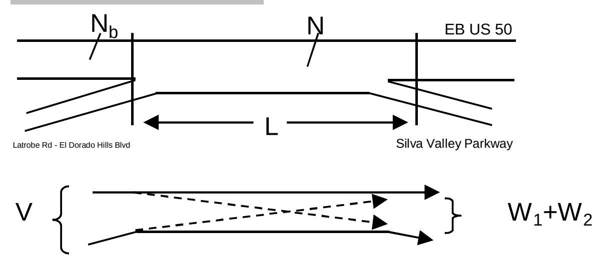
Project	El Dorado Hills Town Center Apartment
Scenario	Cumulative Plus Project - PM Pk Hr
Freeway	EB US 50
On-ramp	Latrobe Rd - El Dorado Hills Blvd
Off-ramp	Silva Valley Parkway

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	5,267	Volume (vph)*	707	Volume (vph)*	603
Truck Percentage	1%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	5,293	Volume (pcph)	714	Volume (pcph)	609

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   45 MPH and **50 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) 47.6
4. Weaving Intensity Factor (k) 1.58
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ 1,412
6. Level of Service (LOS) D

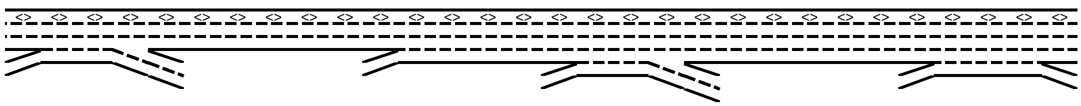
The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, July 24, 2009

Project: El Dorado Hills Town Center Apartments
Freeway Corridor: Westbound US 50

Location	5	6	7	8	9	10



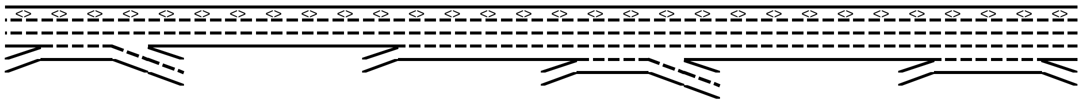
Key

<> Express Lane (HOV)

No Trucks

Name	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Define Freeway Segment						
Type	Weave	Basic	Basic	Weave	Basic	Weave
Length (ft)	6,500	2,350	800	4,425	2,300	4,775
Accel Length						
Decel Length						
Mainline Volume	3,690	4,160	4,160	4,190	4,704	4,704
On Ramp Volume	1,570		30	1,370		1,680
Off Ramp Volume	1,100			856		2,020
Express Lane Volume	590	666	666	629	847	847
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP)						
GP Volume (vph)	4,670	3,494	3,524	4,932	3,857	5,537
PHF	0.94	0.94	0.94	0.94	0.94	0.94
GP Lanes	3	2	4	4	3	4
Terrain	Grade	Level	Level	Level	Level	Level
Grade %	-7.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.995	0.995	0.995	0.995	0.995	0.995
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	4,992	3,736	3,768	5,273	4,124	5,920
GP Flow (pcphpl)	1,664	1,868	942	1,318	1,375	1,480
Calculate Speed in General Purpose Lanes						
Lane Width (ft)	12	12	12	12	12	12
Shoulder Width	>6	>6	>6	>6	>6	>6
TRD	2.0	2.0	2.0	2.0	2.0	2.0
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0
Calc'd FFS	69.6	69.6	69.6	69.6	69.6	69.6
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.71	0.79	0.40	0.56	0.58	0.63
Speed (mph)	64.0	61.9	65.0	65.0	65.0	64.9
Density (pcphpl)	26.0	30.2	14.5	20.3	21.1	22.8
LOS	C	D	B	C	C	C
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)	3,315		3,734	3,718		4,014
GP_{IN} Cap (pcph)	4,700		4,700	7,050		7,050
GP_{IN} v/c ratio	0.71		0.79	0.53		0.57
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)	3,171			4,358		3,762
GP_{OUT} Cap (pcph)	4,700			7,050		7,050
GP_{OUT} v/c ratio	0.67			0.62		0.53

Location	5	6	7	8	9	10



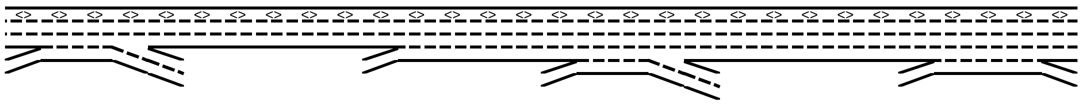
Key

<> Express Lane (HOV)

No Trucks

Name	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)	590	666	666	629	847	847
PHF	0.89	0.89	0.89	0.89	0.89	0.89
Express Lanes	1	1	1	1	1	1
Terrain	Grade	Level	Level	Level	Level	Level
Grade %	-7.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
EL Flow (pcph)	670	755	755	713	961	961
EL Flow (pcphpl)	670	755	755	713	961	961
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio	0.38	0.43	0.43	0.41	0.55	0.55
Calculate On Ramp Flow Rate						
On Volume (vph)	1,570		30	1,370		1,680
PHF	0.95		0.89	0.89		0.89
Total Lanes	1		1	1		1
Terrain	Level		Level	Level		Level
Grade %	0.0%		0.0%	0.0%		0.0%
Grade Length (mi)	0.00		0.00	0.00		0.00
Truck & Bus %	3.0%		2.0%	2.0%		2.0%
RV %	0.0%		0.0%	0.0%		0.0%
E_T	1.5		1.5	1.5		1.5
E_R	1.2		1.2	1.2		1.2
f_{HV}	0.985		0.990	0.990		0.990
f_P	1.00		1.00	1.00		1.00
On Flow (pcph)	1,677		34	1,555		1,907
On Flow (pcphpl)	1,677		34	1,555		1,907
Calculate On Ramp Roadway Operations						
On Ramp Type			Right	Right		Right
On Ramp Speed (mph)			45	45		45
On Ramp Cap (pcph)			2,100	2,100		2,100
On Ramp v/c ratio			0.02	0.74		0.91

Location	5	6	7	8	9	10



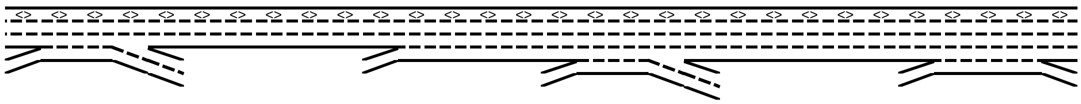
Key

<> Express Lane (HOV)

No Trucks

Name	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Calculate Off Ramp Flow Rate						
Off Volume (vph)	1,100			856		2,020
PHF	0.61			0.95		0.95
Total Lanes	2			2		1
Terrain	Level			Level		Level
Grade %	0.0%			0.0%		0.0%
Grade Length (mi)	0.00			0.00		0.00
Truck & Bus %	2.0%			3.0%		3.0%
RV %	0.0%			0.0%		0.0%
E_T	1.5			1.5		1.5
E_R	1.2			1.2		1.2
f_{HV}	0.990			0.985		0.985
f_P	1.00			1.00		1.00
Off Flow (pcph)	1,821			915		2,158
Off Flow (pcphpl)	911			457		2,158
Calculate Off Ramp Roadway Operations						
Off Ramp Type	Right			Right		Right
Off Ramp Speed	45			25		45
Off Ramp Cap (pcph)	4,200			3,800		2,100
Off Ramp v/c ratio	0.43			0.24		1.03
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps						
Up Type	Off					
Up Distance	2,350					
Up Flow (pcph)	288					
Down Type	On					
Down Distance	8,850					
Down Flow (pcph)	34					
Calculate Merge Influence Area Operations						

Location	5	6	7	8	9	10

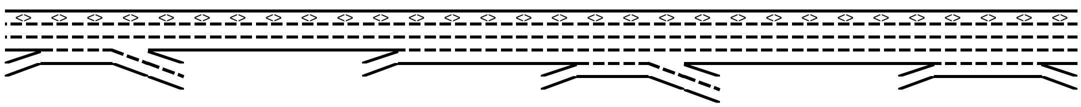


Key

<> Express Lane (HOV)

No Trucks

Name	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Calculate Diverge Influence Area Operations						
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments						
On to Off Volume (vph)	785			164		689
PHF	0.92			0.92		0.92
Terrain	Level			Level		Level
Grade %	0.0%			0.0%		0.0%
Grade Length (mi)	0.00			0.00		0.00
Truck & Bus %	2.0%			2.0%		2.0%
RV %	0.0%			0.0%		0.0%
E_T	1.5			1.5		1.5
E_R	1.2			1.2		1.2
f_{HV}	0.990			0.990		0.990
f_P	1.00			1.00		1.00
On to Off Flow (pcph)	862			180		756
Calculate On Ramp to Mainline Flow Rate for Weave Segments						
On to ML Volume (vph)	785			1,206		991
PHF	0.92			0.92		0.92
Terrain	Level			Level		Level
Grade %	-7.0%			0.0%		0.0%
Grade Length (mi)	0.00			0.00		0.00
Truck & Bus %	2.0%			2.0%		2.0%
RV %	0.0%			0.0%		0.0%
E_T	1.5			1.5		1.5
E_R	1.2			1.2		1.2
f_{HV}	0.990			0.990		0.990
f_P	1.00			1.00		1.00
On to ML Flow (pcph)	862			1,324		1,088



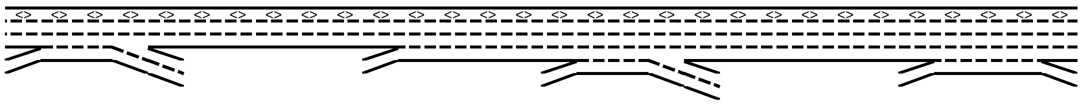
Key

<> Express Lane (HOV)

No Trucks

Location	5	6	7	8	9	10
Name	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Calculate Mainline to Off Ramp Flow Rate for Weave Segments						
ML to Off Volume (vph)	315			692		1,331
PHF	0.94			0.94		0.94
Terrain	Level			Level		Level
Grade %	-7.0%			0.0%		0.0%
Grade Length (mi)	0.00			0.00		0.00
Truck & Bus %	1.0%			1.0%		1.0%
RV %	0.0%			0.0%		0.0%
E_T	1.5			1.5		1.5
E_R	1.2			1.2		1.2
f_{HV}	0.995			0.995		0.995
f_P	1.00			1.00		1.00
ML to Off Flow (pcph)	337			739		1,423
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments						
GP to GP Volume (vph)	2,785			2,870		2,526
PHF	0.94			0.94		0.94
Terrain	Level			Level		Level
Grade %	0.0%			0.0%		0.0%
Grade Length (mi)	0.00			0.00		0.00
Truck & Bus %	1.0%			1.0%		1.0%
RV %	0.0%			0.0%		0.0%
E_T	1.5			1.5		1.5
E_R	1.2			1.2		1.2
f_{HV}	0.995			0.995		0.995
f_P	1.00			1.00		1.00
GP to GP Flow (pcph)	2,977			3,068		2,701

Location	5	6	7	8	9	10



Key

<> Express Lane (HOV)

No Trucks

Name	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Calculate Weave Segment Operations						
Weave Type	One-sided			One-sided		One-sided
Weave Length	5,500			3,425		3,775
Segment Lanes	2			3		3
Weave Lanes	3			3		3
Weave Flow (pcph)	1,199			2,063		2,511
Non-Weave Flow	3,839			3,249		3,457
Segment Flow	5,038			5,312		5,968
Max Weave Length	3,362			4,985		5,348
Length Check	Not a Weave			OK		OK
Ideal Weave Capacity	2,514			2,231		2,230
f_{HV}	0.993			0.994		0.994
f_P	0.998			0.998		0.998
Capacity Condition 1	4,985			6,633		6,633
Capacity Condition 2	14,588			8,932		8,250
Weave v/c ratio	1.00			0.79		0.89
Interchange Density	5			4		3
Lane Changes On to ML	1			1		1
Lane Changes ML to Off	1			1		1
Lane Changes On to Off	0			0		0
Min Lane Change Rate	1,199			2,063		2,511
Weave LC Rate	3,230			3,178		3,799
Non-Weave LC Rate 1	3,387			1,948		2,180
Non-Weave LC Rate 2	2,545			2,413		2,460
Non-Weave LC Rate 3	-8,598			4,205		3,305
Segment LC Rate	5,775			5,592		6,259
Weave Intensity Factor	0.235			0.333		0.337
Weave Speed	55.5			52.5		52.4
Non-Weave Speed	44.3			41.6		37.4
Segment Speed	46.5			45.3		42.5
Weave Density	-			39.1		-
Weave LOS	Basic			E		F
Summarize Segment Operations						
Segment v/c ratio	0.71	0.79	0.40	0.79	0.58	0.89
Segment Density	26.0	30.2	14.5	39.1	21.1	-
Segment LOS	C	D	B	E	C	F
Over Capacity						Off Ramp Roadway

Leisch Method for Weaving Analysis

Data Input

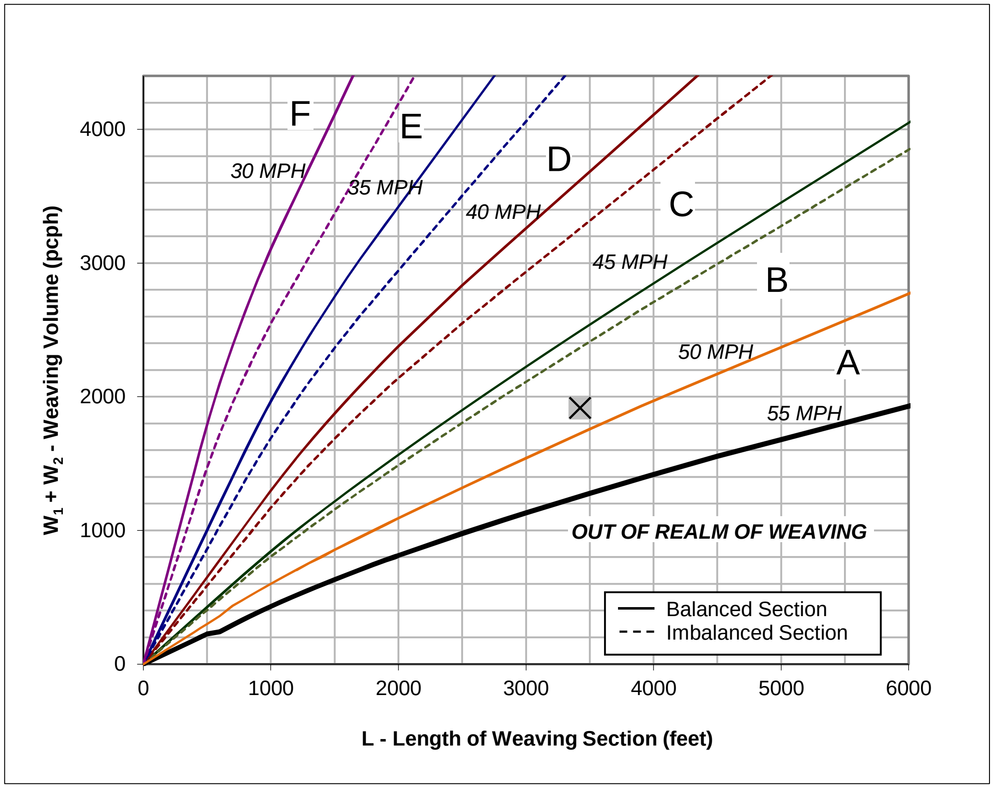
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3,425

Project Information

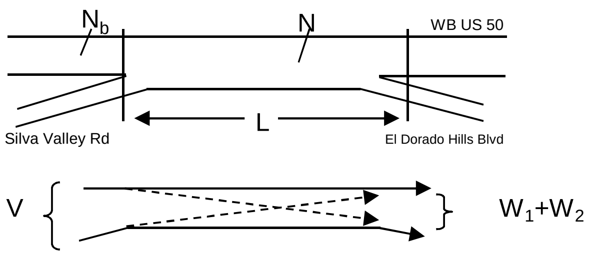
Project	El Dorado Hills Town Center Apartment
Scenario	Cumulative Plus Project - AM Pk Hr
Freeway	WB US 50
On-ramp	Silva Valley Rd
Off-ramp	El Dorado Hills Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	4,932	Volume (vph)*	1,206	Volume (vph)*	692
Truck Percentage	1%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,957	Volume (pcph)	1,218	Volume (pcph)	699

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left,
   which two speed curves is the black "x" between?
   45 MPH and **50 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) 48.8
4. Weaving Intensity Factor (k) 1.39
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ 1,307
6. Level of Service (LOS) C

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, July 24, 2009

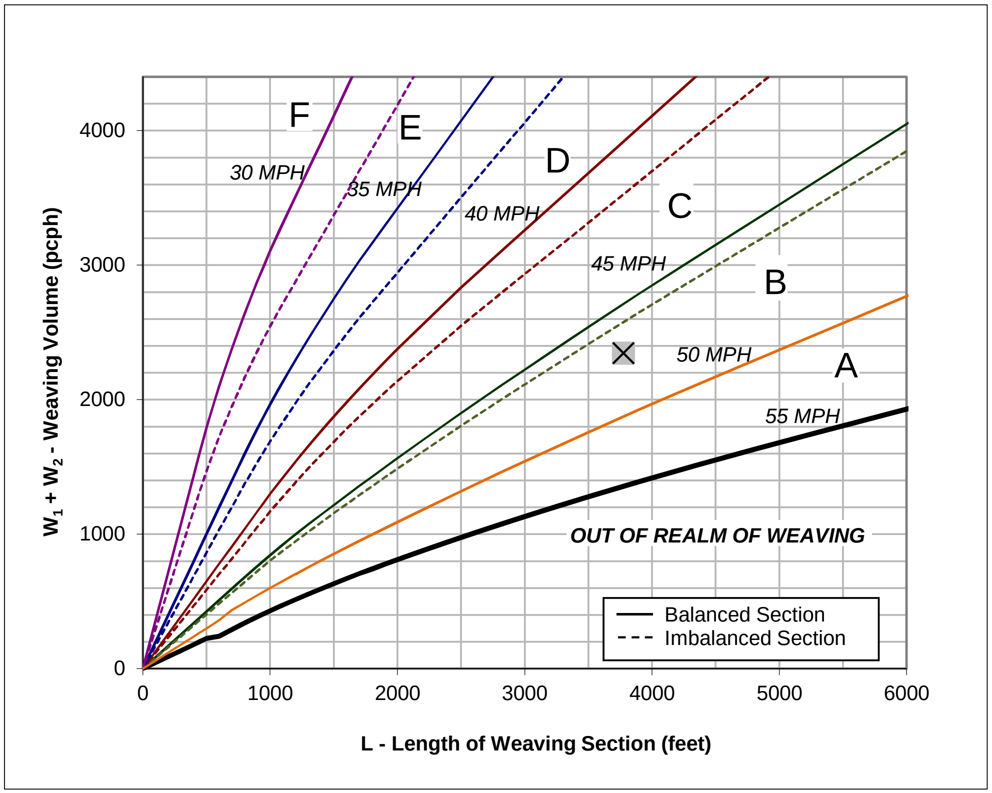
Leisch Method for Weaving Analysis

Data Input		
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3,775

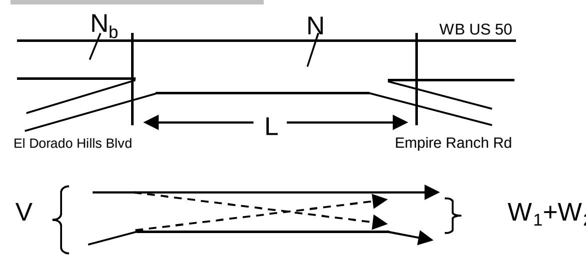
Project Information	
Project	El Dorado Hills Town Center Apartment
Scenario	Cumulative Plus Project - AM Pk Hr
Freeway	WB US 50
On-ramp	El Dorado Hills Blvd
Off-ramp	Empire Ranch Rd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	5,537	Volume (vph)*	991	Volume (vph)*	1,331
Truck Percentage	1%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	5,565	Volume (pcph)	1,001	Volume (pcph)	1,345

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   45 MPH and **50 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) 47.2
4. Weaving Intensity Factor (k) 1.65
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*min(W_1, W_2)]$ 1,553
6. Level of Service (LOS) D

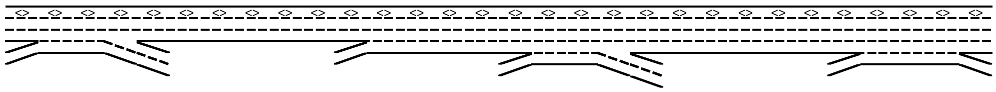
The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, July 24, 2009

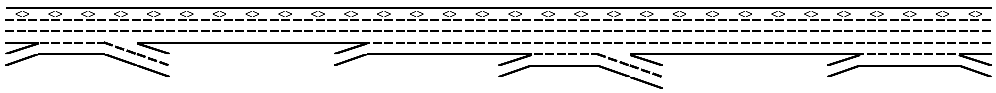
Project: El Dorado Hills Town Center Apartments
Freeway Corridor: Westbound US 50

Location	5	6	7	8	9	10



Key
<> Express Lane (HOV)
No Trucks

Name	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Define Freeway Segment						
Type	Weave	Basic	Basic	Weave	Basic	Weave
Length (ft)	6,500	2,350	800	4,425	2,300	4,775
Accel Length						
Decel Length						
Mainline Volume	3,690	3,910	3,910	3,950	3,576	3,576
On Ramp Volume	1,110		40	490		1,447
Off Ramp Volume	890			864		1,790
Express Lane Volume	554	587	547	553	501	501
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP)						
GP Volume (vph)	4,247	3,324	3,403	3,887	3,075	4,522
PHF	0.96	0.96	0.96	0.96	0.96	0.96
GP Lanes	3	2	4	4	3	4
Terrain	Level	Level	Level	Level	Level	Level
Grade %	-7.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.995	0.995	0.995	0.995	0.995	0.995
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	4,446	3,479	3,562	4,069	3,220	4,734
GP Flow (pcphpl)	1,482	1,740	891	1,017	1,073	1,184
Calculate Speed in General Purpose Lanes						
Lane Width (ft)	12	12	12	12	12	12
Shoulder Width	>6	>6	>6	>6	>6	>6
TRD	2.0	2.0	2.0	2.0	2.0	2.0
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0
Calc'd FFS	69.6	69.6	69.6	69.6	69.6	69.6
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.63	0.74	0.38	0.43	0.46	0.50
Speed (mph)	64.9	63.4	65.0	65.0	65.0	65.0
Density (pcphpl)	22.8	27.5	13.7	15.7	16.5	18.2
LOS	C	D	B	B	B	C
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)	3,260		3,518	3,513		3,092
GP_{IN} Cap (pcph)	4,700		4,700	7,050		7,050
GP_{IN} v/c ratio	0.69		0.75	0.50		0.44
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)	2,972			3,146		2,822
GP_{OUT} Cap (pcph)	4,700			7,050		7,050
GP_{OUT} v/c ratio	0.63			0.45		0.40



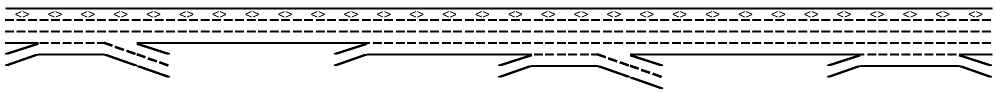
Key

<> Express Lane (HOV)

No Trucks

Location	5	6	7	8	9	10
Name	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)	554	587	547	553	501	501
PHF	0.9	0.9	0.9	0.9	0.9	0.9
Express Lanes	1	1	1	1	1	1
Terrain	Level	Level	Level	Level	Level	Level
Grade %	-7.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
EL Flow (pcph)	621	658	614	621	562	562
EL Flow (pcphpl)	621	658	614	621	562	562
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio	0.35	0.38	0.35	0.35	0.32	0.32
Calculate On Ramp Flow Rate						
On Volume (vph)	1,110		40	490		1,447
PHF	0.95		0.92	0.89		0.89
Total Lanes	1		1	1		1
Terrain	Level		Level	Level		Level
Grade %	0.0%		0.0%	0.0%		0.0%
Grade Length (mi)	0.00		0.00	0.00		0.00
Truck & Bus %	3.0%		2.0%	2.0%		2.0%
RV %	0.0%		0.0%	0.0%		0.0%
E_T	1.5		1.5	1.5		1.5
E_R	1.2		1.2	1.2		1.2
f_{HV}	0.985		0.990	0.990		0.990
f_P	1.00		1.00	1.00		1.00
On Flow (pcph)	1,186		44	556		1,642
On Flow (pcphpl)	1,186		44	556		1,642
Calculate On Ramp Roadway Operations						
On Ramp Type			Right	Right		Right
On Ramp Speed (mph)			45	45		45
On Ramp Cap (pcph)			2,100	2,100		2,100
On Ramp v/c ratio			0.02	0.26		0.78

Location	5	6	7	8	9	10



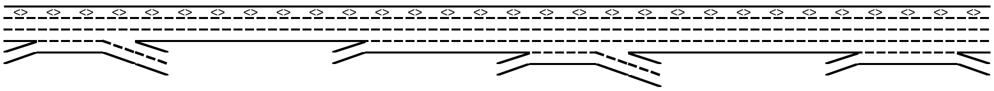
Key

<> Express Lane (HOV)

No Trucks

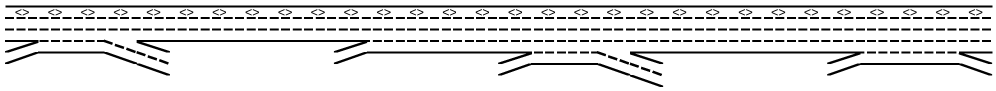
Name	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Calculate Off Ramp Flow Rate						
Off Volume (vph)	890			864		1,790
PHF	0.61			0.95		0.95
Total Lanes	2			2		1
Terrain	Level			Level		Level
Grade %	0.0%			0.0%		0.0%
Grade Length (mi)	0.00			0.00		0.00
Truck & Bus %	2.0%			3.0%		3.0%
RV %	0.0%			0.0%		0.0%
E_T	1.5			1.5		1.5
E_R	1.2			1.2		1.2
f_{HV}	0.990			0.985		0.985
f_P	1.00			1.00		1.00
Off Flow (pcph)	1,474			923		1,912
Off Flow (pcphpl)	737			462		1,912
Calculate Off Ramp Roadway Operations						
Off Ramp Type	Right			Right		Right
Off Ramp Speed	45			25		45
Off Ramp Cap (pcph)	4,200			3,800		2,100
Off Ramp v/c ratio	0.35			0.24		0.91
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps						
Up Type	Off					
Up Distance	2,350					
Up Flow (pcph)	716					
Down Type	On					
Down Distance	8,850					
Down Flow (pcph)	44					
Calculate Merge Influence Area Operations						

Location	5	6	7	8	9	10



Key
<> Express Lane (HOV)
No Trucks

Name	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Calculate Diverge Influence Area Operations						
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments						
On to Off Volume (vph)	400			83		680
PHF	0.92			0.92		0.92
Terrain	Level			Level		Level
Grade %	0.0%			0.0%		0.0%
Grade Length (mi)	0.00			0.00		0.00
Truck & Bus %	2.0%			2.0%		2.0%
RV %	0.0%			0.0%		0.0%
E_T	1.5			1.5		1.5
E_R	1.2			1.2		1.2
f_{HV}	0.990			0.990		0.990
f_P	1.00			1.00		1.00
On to Off Flow (pcph)	439			91		747
Calculate On Ramp to Mainline Flow Rate for Weave Segments						
On to ML Volume (vph)	710			407		767
PHF	0.96			0.96		0.96
Terrain	Grade			Level		Level
Grade %	-7.0%			0.0%		0.0%
Grade Length (mi)	0.00			0.00		0.00
Truck & Bus %	1.0%			1.0%		1.0%
RV %	0.0%			0.0%		0.0%
E_T	1.5			1.5		1.5
E_R	1.2			1.2		1.2
f_{HV}	0.995			0.995		0.995
f_P	1.00			1.00		1.00
On to ML Flow (pcph)	744			426		803



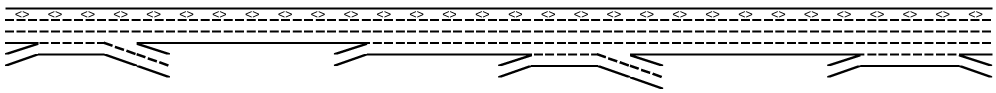
Key

<> Express Lane (HOV)

No Trucks

Location	5	6	7	8	9	10
Name	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Calculate Mainline to Off Ramp Flow Rate for Weave Segments						
ML to Off Volume (vph)	490			781		1,110
PHF	0.95			0.96		0.96
Terrain	Grade			Level		Level
Grade %	-7.0%			0.0%		0.0%
Grade Length (mi)	0.00			0.00		0.00
Truck & Bus %	1.0%			1.0%		1.0%
RV %	0.0%			0.0%		0.0%
E_T	1.5			1.5		1.5
E_R	1.2			1.2		1.2
f_{HV}	0.995			0.995		0.995
f_P	1.00			1.00		1.00
ML to Off Flow (pcph)	519			817		1,162
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments						
GP to GP Volume (vph)	2,646			2,616		1,965
PHF	0.96			0.96		0.96
Terrain	Grade			Level		Level
Grade %	-7.0%			0.0%		0.0%
Grade Length (mi)	0.00			0.00		0.00
Truck & Bus %	1.0%			1.0%		1.0%
RV %	0.0%			0.0%		0.0%
E_T	1.5			1.5		1.5
E_R	1.2			1.2		1.2
f_{HV}	0.995			0.995		0.995
f_P	1.00			1.00		1.00
GP to GP Flow (pcph)	2,770			2,739		2,057

Location	5	6	7	8	9	10



Key

<> Express Lane (HOV)

No Trucks

Name	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Calculate Weave Segment Operations						
Weave Type	One-sided			One-sided		One-sided
Weave Length	5,500			3,425		3,775
Segment Lanes	2			3		3
Weave Lanes	3			3		3
Weave Flow (pcph)	1,262			1,243		1,965
Non-Weave Flow	3,209			2,830		2,804
Segment Flow	4,471			4,073		4,769
Max Weave Length	3,829			4,073		5,250
Length Check	Not a Weave			OK		OK
Ideal Weave Capacity	2,478			2,300		2,237
f_{HV}	0.995			0.995		0.994
f_P	0.999			0.999		0.999
Capacity Condition 1	4,924			6,863		6,667
Capacity Condition 2	12,318			11,405		8,439
Weave v/c ratio	0.90			0.59		0.71
Interchange Density	5			4		3
Lane Changes On to ML	1			1		1
Lane Changes ML to Off	1			1		1
Lane Changes On to Off	0			0		0
Min Lane Change Rate	1,262			1,243		1,965
Weave LC Rate	3,294			2,358		3,253
Non-Weave LC Rate 1	3,257			1,862		2,046
Non-Weave LC Rate 2	2,405			2,320		2,314
Non-Weave LC Rate 3	-6,609			3,680		2,820
Segment LC Rate	5,699			4,679		5,567
Weave Intensity Factor	0.232			0.289		0.307
Weave Speed	55.6			53.8		53.3
Non-Weave Speed	45.2			49.5		43.2
Segment Speed	47.7			50.8		46.9
Weave Density	-			26.8		33.9
Weave LOS	Basic			C		D
Summarize Segment Operations						
Segment v/c ratio	0.63	0.74	0.38	0.59	0.46	0.71
Segment Density	22.8	27.5	13.7	26.8	16.5	33.9
Segment LOS	C	D	B	C	B	D
Over Capacity						

Leisch Method for Weaving Analysis

Data Input

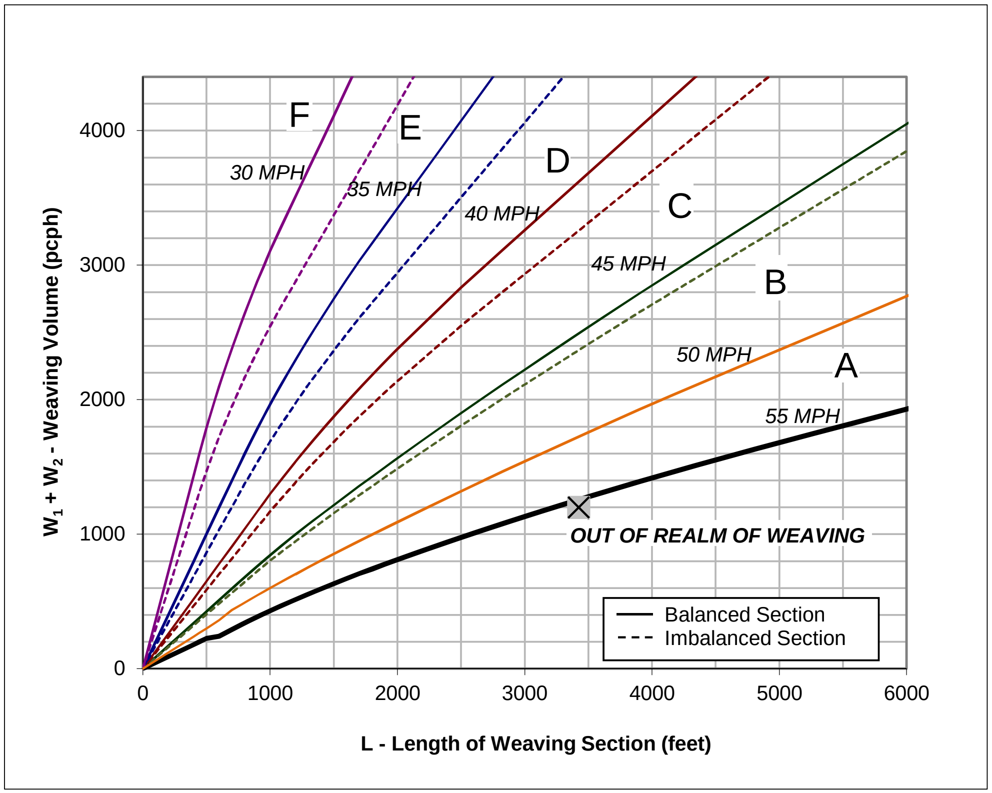
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3,425

Project Information

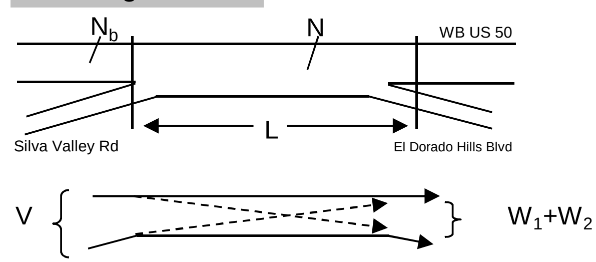
Project	El Dorado Hills Town Center Apartment
Scenario	Cumulative Plus Project - PM Pk Hr
Freeway	WB US 50
On-ramp	Silva Valley Rd
Off-ramp	El Dorado Hills Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	3,887	Volume (vph)*	407	Volume (vph)*	781
Truck Percentage	1%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,906	Volume (pcph)	411	Volume (pcph)	789

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   50 MPH and **55 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) — 55.6
4. Weaving Intensity Factor (k) — 1.00
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ — 977
6. Level of Service (LOS) — B

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, July 24, 2009

HCM 2010
Basic Freeway Segments
Operational Analysis

Jurisdiction: El Dorado County
Analysis Year: Cumulative Year
Sceanrio: Plus Project

Agency or Company: Fehr & Peers
Date: 5/13/2014
Project Description: El Dorado Hills Town Center Apartments

General Information				*Flow Rate Calculation*																*Results*		
	Freeway/ Direction	From/To	Analysis Time Period	Volume (vph)	PHF	Lanes	HOV Lane?	HOV Lane Volume	Terrain	Truck/ Bus %	RV %	E_T	E_R	f_{HV}	f_P	Flow Rate v_p (pcphpl)	Measured FFS (mph)	FFS (mph)	v_p/c	Speed, S (mph)	Density, D (pcplpm)	Level of Service
7	WB US-50	Silva Valley Pkwy to El Dorado Hills Blvd	PM	4,440	0.96	5	Yes	622	Grade	1%	0%	1.5	1.2	0.995	1.00	999	65.0	65	0.43	65.0	**15.4**	**B**

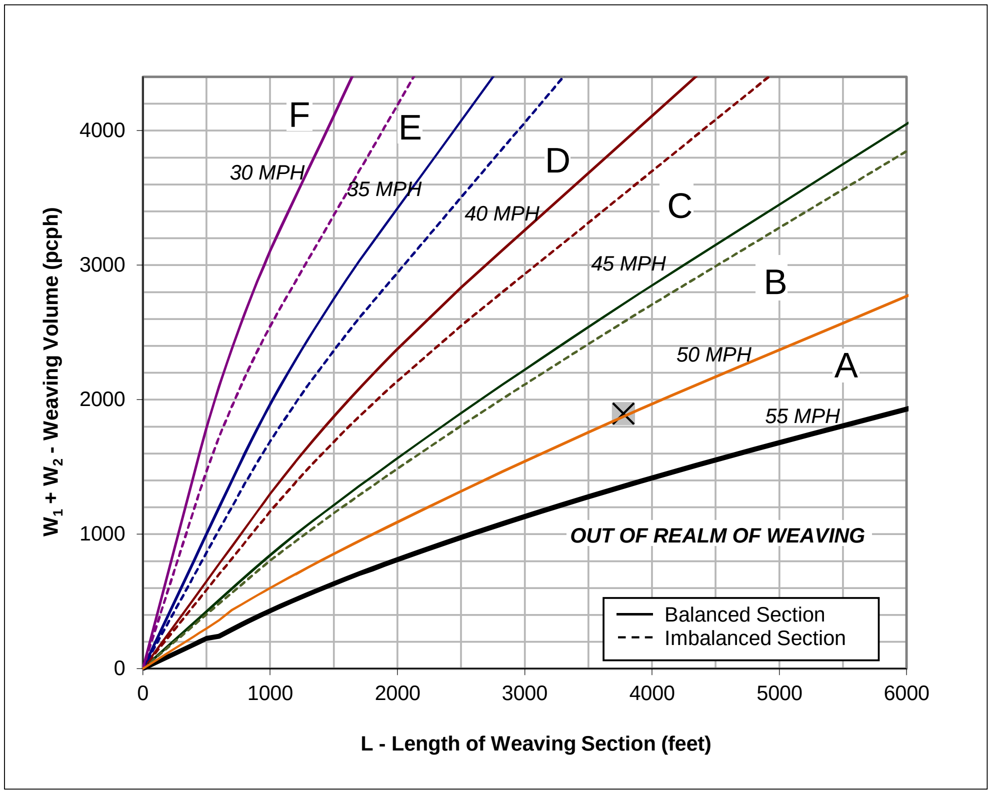
Leisch Method for Weaving Analysis

Data Input		
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3,775

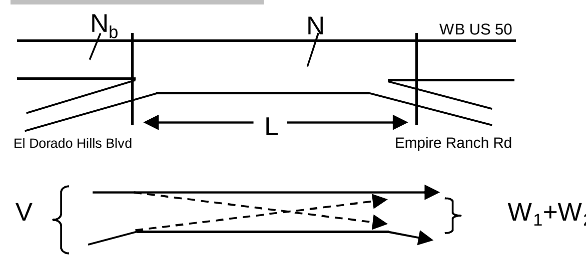
Project Information	
Project	Marble Valley/Lime Rock/Pedregal
Scenario	Cumulative Plus Project - PM Pk Hr
Freeway	WB US 50
On-ramp	El Dorado Hills Blvd
Off-ramp	Empire Ranch Rd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	4,522	Volume (vph)*	767	Volume (vph)*	1,110
Truck Percentage	1%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,545	Volume (pcph)	775	Volume (pcph)	1,121

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   45 MPH and **50 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) — 49.9
4. Weaving Intensity Factor (k) — 1.20
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ — 1,174
6. Level of Service (LOS) — C

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, July 24, 2009