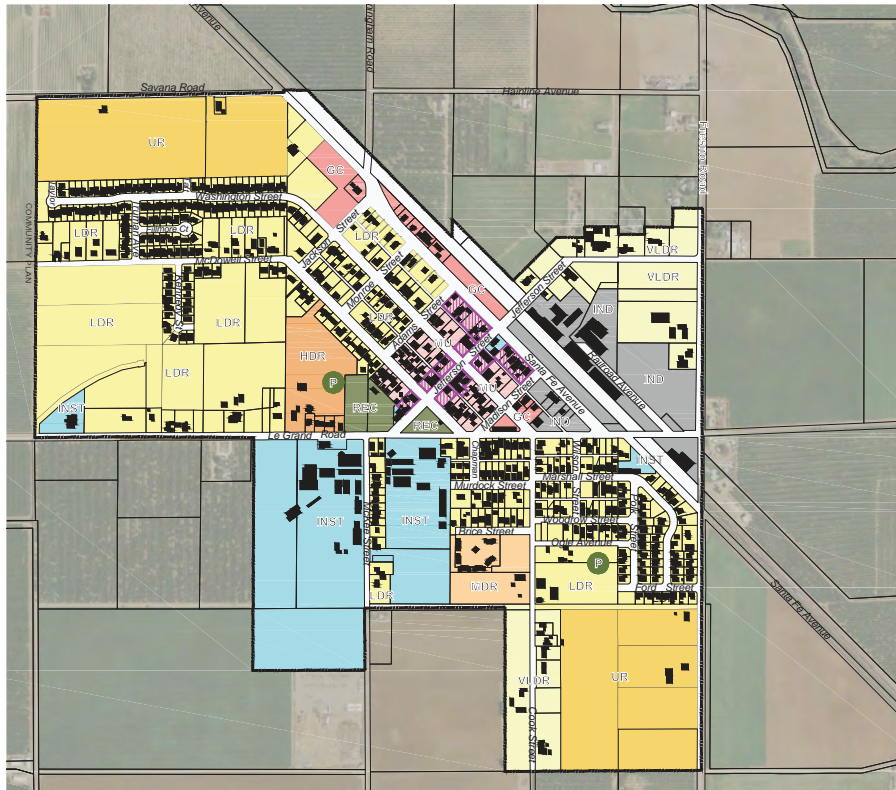


DRAFT Environmental Impact Report Appendices

Le Grand Community Plan SCH 2016101087



Merced County
Community And Economic Development Department



April 2019

Draft
Environmental Impact Report

Le Grand Community Plan
SCH #2016101087

Appendices

Prepared for:
Merced County

Prepared by:
Adrienne Graham
and Associates

April 2019

APPENDICES

- A. Notice of Preparation (NOP)
- B. Responses to the NOP
- C. Air Quality Calculations and Operational Mitigation
- D. Special-Status Species Table
- E. Greenhouse Gas Calculations
- F. Noise Report and Appendices
- G. Traffic Report and Appendices
- H. Water Supply Assessment
- I. Energy Calculations

Appendix A
Notice of Preparation (NOP)



**COMMUNITY AND ECONOMIC
DEVELOPMENT DEPARTMENT**

Mark J. Hendrickson
Director

Steven Maxey
Deputy Director

2222 "M" Street
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Equal Opportunity Employer

NOTICE OF PREPARATION

TO: Interested Persons

FROM: Merced County
Community and Economic Development Department
2222 M Street
Merced, CA 95340

CONTACT: Brian Guerrero, Planner III, Community and Economic Development Department

SUBJECT: Notice of Preparation: Draft Environmental Impact Report for the Le Grand Community Plan Update

PUBLIC REVIEW PERIOD PUBLIC REVIEW PERIOD: October 31 through November 30, 2016

Merced County will prepare an environmental impact report (EIR) for the proposed Le Grand Community Plan Update. We need to know the views of your agency as to the scope and content of the environmental information, which is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency will need to use the EIR prepared by our agency when considering your permit or other approval for the project.

A public scoping meeting will be held on Monday, November, 7, 2016, at the Le Grand Community Services Building, 13038 Jefferson St, at 6:00pm in Le Grand.

The project description, location, and the potential environmental effects are contained in the attached materials.

Due to the time limits mandated by State law, your response must be sent at the earliest possible date but not later than 30 days after receipt of this notice.

To ensure that the full range of issues related to this proposed action are addressed and all significant issues are identified, written comments and suggestions are invited from all interested parties. Comments or questions concerning the proposed EIR should be directed to Merced County by 5:00 p.m. on Wednesday, November 30, 2016. Please send your comments to Brian Guerrero, at the address shown above. We will need the name for a contact person in your agency.

Project Title: Le Grand Community Plan Update

Project Location: County: Merced Nearest City: Merced

Lead Agency and Project Applicant: Merced County

Date: 10/27/16

Signature: Brian Guerrero for
Brian Guerrero, Planner III

Notice of Preparation Le Grand Community Plan

Attachment 1

Background

Merced County will be preparing an Environmental Impact Report (EIR) to address the environmental effects of the Le Grand Community Plan (Proposed Project).

The proposed Le Grand Community Plan will serve as the long-range vision and land use strategy plan for guiding development within the unincorporated Community of Le Grand in Merced County. The County and its consultants have been working with community residents, businesses, property owners, and public agencies and organizations to identify and establish the direction and character of growth in Le Grand through the year 2035. This is the first comprehensive update to the original Le Grand Community Specific Plan adopted in 1984.

The Le Grand Community Plan EIR will be a program EIR as defined in CEQA Guidelines Section 15168, which is one type of EIR that can be prepared for planning projects. A program EIR evaluates the impacts of a series of actions that can be characterized as one large project and are related either:

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

The Le Grand Community Plan is a plan that will govern future development within the community plan area. Specific development projects are not proposed at this time, but will be subject to the policies, standards and guidelines set forth in the Community Plan and analyzed in the EIR.

The 2030 Merced County General Plan adopted in 2013 identifies Le Grand as an Urban Community. The General Plan defines Urban Communities as areas within unincorporated Merced County that have a range of housing densities, commercial uses, public sewer and/or water infrastructure, public services and employment-generating land uses. Approval of the proposed Community Plan would require amendment of the County General Plan to reflect the proposed land uses. Development within the plan area would be governed by both General Plan policies and Community Plan policies, standards and guidelines.

Project Location

Le Grand is an unincorporated community located in Merced County, approximately 12 miles southeast of the City of Merced (see Figure 1). The closest highway is Highway 99, approximately 6 miles to the west of Le Grand. Le Grand Road and Santa Fe Avenue are the primary roadways that connect Le Grand to other communities.

The Burlington Northern-Santa Fe Railroad runs along the northeast corner of the plan area, parallel to Santa Fe Avenue.

Existing Environment

Le Grand is a small, agriculturally-based community surrounded by rural agricultural operations typical of Merced County, including orchards, row crops and grazing land.

The present adopted Le Grand Community Plan area is approximately 458 acres. The proposed project would reduce the size of the Community Plan to 430 acres.

At the time of the 2010 census, there were approximately 500 residential units and 1,659 people living in Le Grand.

Land use designations within the Le Grand plan area include Agricultural Residential, Low and Medium Density Residential, Neighborhood Commercial, General Commercial, Industrial, Institutional/Public Facility, Recreation, and Residential Reserve.

Approximately 45 percent (192 acres) of the proposed plan area is developed with urban uses. Of the undeveloped area, 111 acres are identified as Prime Farmland. There are no agricultural easements or Williamson Act properties within the Le Grand community, although there are numerous Williamson Act properties in the surrounding area.

The community plan area is relatively flat. There is little undisturbed land within the plan area, because most of it has been developed with residential or commercial uses, or agricultural operations. Consequently, there are only a few areas that provide biological habitat, such as open fields and drainages.

There are two schools within Le Grand---Le Grand Elementary, which serves grades K through 8, and Le Grand High School. The elementary school had an enrollment of 416 in 2013-14. Le Grand High School serves students from both Le Grand and Planada.

There are two parks within Le Grand---the Le Grand Community Park, and Le Grand Elementary Sports Park. The Community Park has passive recreational facilities, such as picnic areas. The Sports Park, located across from the schools, has play fields.

The Merced County Fire Department provides fire, rescue and emergency medical services to all unincorporated parts of the County, including Le Grand. The Merced County Sheriffs Department provides law enforcement services.

Le Grand Community Service District (Le Grand CSD) provides water and sewer services to the Le Grand community. The Le Grand CSD has approximately 500 water and sewer connections. Domestic water is provided entirely from three groundwater wells with a combined peak capacity of approximately 1.8 million gallons per day (mgd) and an average usage of 0.96 mgd. The Le Grand CSD operates a wastewater treatment plant located to the southwest of the community. The WWTP has a design capacity of approximately 350,000 gallons per day (gpd) and a daily average flow of approximately 154,000 gpd.¹

A small portion of the plan area is located within the 100-year floodplain, generally north of Washington Street west of the UPRR tracks and north of Jefferson Street east of the tracks. Storm drainage facilities include existing roadside ditches and gutters. The County maintains

1. Merced County, *SB 244 Analysis: Disadvantaged Unincorporated Communities*, May 9, 2016, page 7.

stormwater basins in the area.²

Proposed Project Description

As stated above, the proposed Community Plan is intended to guide development in Le Grand through the year 2035. The proposed Community Plan would amend the County General Plan and provide policies to ensure that the Community Plan is implemented as envisioned by Le Grand residents and the County. The County zoning map would also be amended to reflect the zones associated with the proposed land use designations.

The proposed project would alter the boundaries of the community plan area. As shown in Figure 2, the proposed boundary would be coterminous with the current boundary, except that the area south of Le Grand Road and east of the UPRR tracks would be removed, as would the area south of Le Grand Road and west of the High School.

The Le Grand Community Plan provides for increases in residential and commercial development, accompanied by services needed to serve this growth. The proposed land uses are shown in Figure 3 and Table 1.

The proposed Community Plan is projected to increase the community population to a total of approximately 3,679 residents, an increase of approximately 120 percent. Commercial, mixed-use and business park development would increase to approximately 428,976 square feet, an increase of approximately 83 percent. No new schools are proposed, although the existing schools would be expanded to accommodate the growth in student population.

No new community parks are proposed. Neighborhood parks, ranging from one to seven acres in size, would be provided in new residential areas. New residential areas may also include pocket parks. The Community Plan also provides for an integrated plaza/pocket park and community gateway at the intersection of Jefferson Street and Santa Fe Avenue.

The proposed Community Plan does not include any specific development projects. In order to determine the potential impacts of the proposed Community Plan, the EIR will assume, at buildout, the land uses and levels of development shown in Table 1. If the proposed Community Plan is adopted, proposals for new development would need to demonstrate that they are consistent with the land use designations and policies of the adopted Community Plan.

Project Schedule

The proposed Community Plan, if adopted, is expected to take approximately 20 years to build out. The actual duration would depend on market and other factors.

CEQA Actions and Project Approvals

Prior to approving the proposed project, or any alternative project, the County is required to undertake CEQA review including:

- **Certification of the EIR** - Certification that the EIR adequately identifies any

2. Merced County, *SB 244 Analysis: Disadvantaged Unincorporated Communities*, May 9, 2016, page 7.

significant environmental effects of the Proposed Project, pursuant to CEQA and the CEQA Guidelines; and

- **Mitigation Monitoring** – Adoption of a Mitigation Monitoring Plan to reflect the measures required to mitigate significant impacts, if any, of the project.

The EIR is intended to provide the CEQA documentation for approval of the Community Plan and related General Plan amendments and rezoning, as needed to conform to the new community plan.

Because no individual projects or entitlements are included in the Proposed Project, and the community plan boundaries would not be expanded, no action by other agencies is necessary, except the possible removal of the 28 acres from the Sphere of Influence of the Le Grand Community Services District to match the Urban Community boundary – an action that would be taken by the Merced Local Agency Formation Commission (LAFCO). However, subsequent projects implemented under the Community Plan may require additional County action, including tentative subdivision maps, administrative and conditional use permits, improvement plans and building permits. In addition, the following actions of regulatory agencies may be necessary for subsequent projects.

- **Local Area Formation Commission** removal of 28 acres from the Sphere of Influence for the Le Grand Community Services District.
- **Section 7 or Section 10 Consultation** with the U.S. Fish and Wildlife Service if any federally-listed plant or wildlife species could be adversely affected by the proposed development.
- **404 permit** from the US Army Corps of Engineers if any waters of the US would be filled.
- **Section 1602 Streambed Alteration Agreement** from the California Department of Fish and Wildlife for potential disturbance to the bed or bank of jurisdictional waters.
- **Section 401** certification if a federal 404 permit is issued, and/or **National Pollutant Discharge Elimination Permit (NPDES)** from the Regional Water Quality Control Board if discharge to surface waters would be necessary or if discharges would increase over currently permitted levels.
- **State General Construction Activity Storm Water Permit**, issued by the State Water Quality Control Board.
- **Permit to Operate from the San Joaquin Air Quality Management District** for any industrial or commercial facility that would include stationary equipment that discharges certain pollutants to the air.
- **Can and Will Serve Letter for water and wastewater service** from the Le Grand Community Service District would be required as a condition of new development.

Scope of the EIR

As provided in the CEQA Guidelines (Section 15021), public agencies are charged with the duty to avoid or minimize environmental damage where feasible. In discharging this duty, the public agency has an obligation to balance a variety of public objectives, including economic, environmental, and social. The Le Grand Community Plan EIR will address the environmental impacts of developing the land uses allowed under the proposed Community Plan. The public agency is required to consider the information in the EIR, along with any other relevant information included in the public record, in making its decision on the project (Section 15121 of the CEQA Guidelines).

An Initial Study will be prepared in order to focus the EIR analysis on those issue areas where significant impacts could occur, or where there is particular public concern. At this time, based on a preliminary review, the Draft EIR is expected to focus on the following topics:

- **Land Use**, including compatibility with existing uses and consistency with adopted plans;
- **Agriculture**, including the conversion of farmland to other uses;
- **Biological Resources**, including adverse effects on special status species, riparian habitat, other sensitive habitats, and/or federally-protected wetlands, interference with the movement of any native resident or migratory fish or wildlife, and/or conflicts with local policies and/or conservation plans;
- **Cultural resources**, including adverse changes in the significance of historical or archaeological resources, destruction of paleontological resources, and/or disturbance of human remains;
- **Transportation and Circulation**, including increased traffic congestion, consistency with congestion management and other transportation plans, and effects on transit, bicycle and pedestrian facilities;
- **Air Quality**, including emissions of air pollutants during construction and operation and odors;
- **Climate Change**, including increased emissions of greenhouse gases;
- **Noise**, including construction, traffic and other operational noise; and
- **Utilities**, including water supply (including effects on groundwater supplies), wastewater treatment, and solid waste.

Based on the preliminary evaluation, the following possible environmental effects of the Proposed Project are expected to be less than significant, or reduced to less-than-significant levels with application of proposed Community Plan policies and standards, adopted General Plan policies, federal, state and local regulations and standard conditions and measures:

- **Aesthetics**, including adverse effect on a scenic vista, degradation of scenic resources, degradation of the existing visual quality of the area, and/or light or glare that could affect day and nighttime views;
- **Forestry resources**, including conflicts with forestland or timberland production zones, and/or loss or conversion of forest land to non-forest uses;
- **Geology and soils**, including exposure of people or structures to the risk of loss, injury or death from seismic-related effects, soils constraints and/or landslides, soil erosion or the loss of topsoil, and/or issues related to septic tanks;
- **Hazards and Hazardous Materials**, including hazards to the public or environment due to the routine transport, use or disposal of hazardous materials, or release of hazardous materials, emission or handling of hazardous materials within one-quarter mile of a school, development on a site included on a list of hazardous materials sites (e.g., Cortese List), hazards from public airports or private airstrips, interference with an adopted emergency response or evacuation plan, and/or exposure to risk of injury or loss from wildfire.
- **Hydrology and Water Quality**, including violation of water quality standards or waste discharge requirements, interference with groundwater recharge, alteration of existing drainage patterns, generation of runoff that exceeds the capacity of existing or planned drainage facilities, placement of housing in the 100-year floodplain, impediments to flood flows, loss, injury or death due to flooding and/or inundation by seiche, tsunami or

mudflow (note that impacts on groundwater supplies will be addressed in the Utilities chapter of the Draft EIR under water supply);

- **Land Use**, including physical division of a community or conflict with applicable habitat or natural community conservation plans (conflicts with applicable land use policies or regulations will be addressed in the Land Use chapter of the Draft EIR);
- **Mineral Resources**, including the loss of availability of known mineral resources and/or locally-important mineral resources;
- **Noise**, including exposure to excessive noise levels from a public airport or private airstrip (other noise issues will be fully addressed in the Noise chapter of the Draft EIR)
- **Population and Housing**, including displacement of people and/or the need to construct replacement housing (growth inducement will be addressed in the CEQA Considerations chapter of the Draft EIR);
- **Public Services**, including fire protection, police protection, schools, parks and other public facilities;
- **Recreation**, including increased use of existing parks construction or expansion of recreational facilities; and
- **Transportation**, including changes in air traffic patterns, increased hazards due to design features or incompatible uses, and/or inadequate emergency access (traffic congestion, conflicts with applicable transportation policies, congestion management and transit, bike or pedestrian plans will be addressed in the Transportation and Circulation chapter of the Draft EIR).

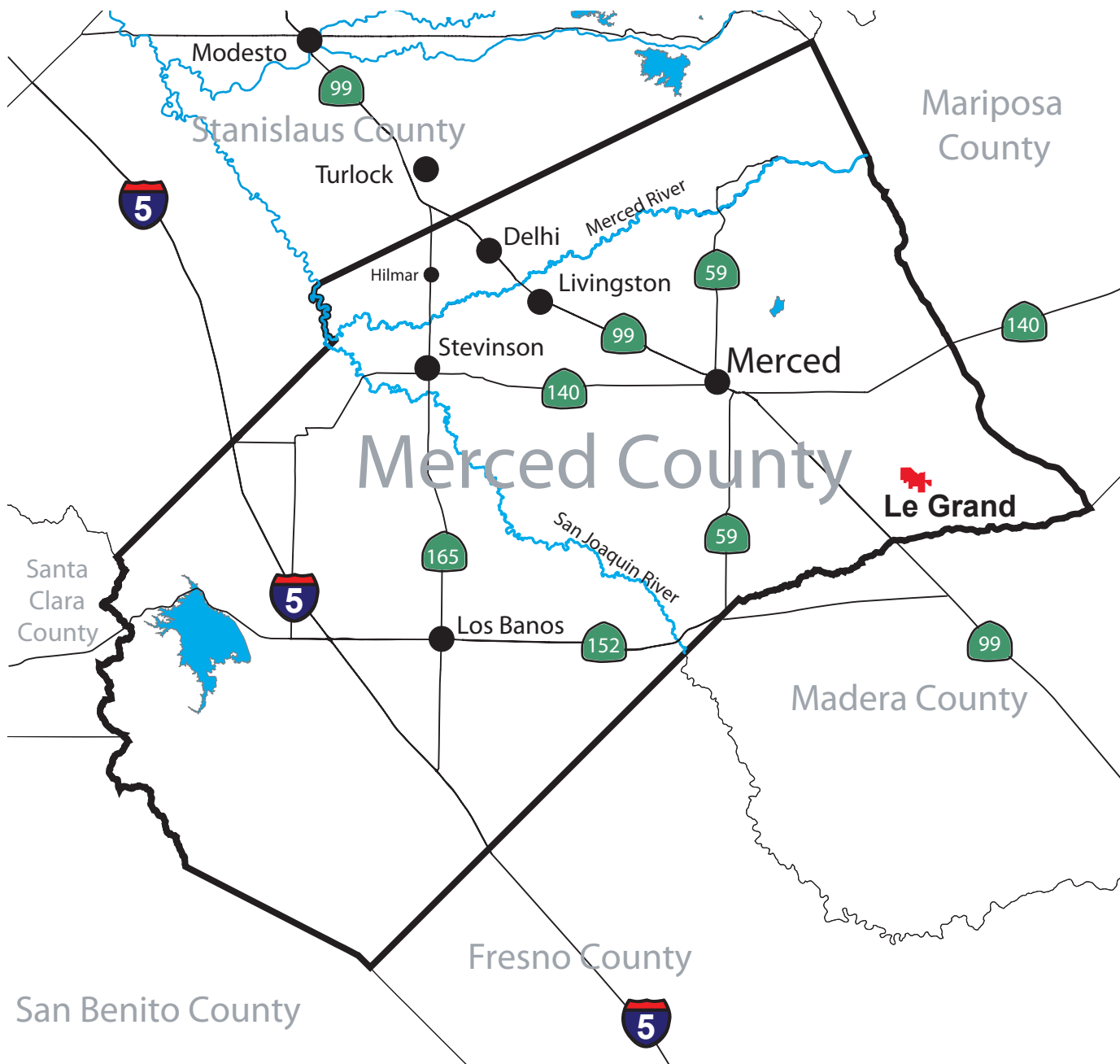
Comments Requested

To ensure that the full range of issues related to this proposed action are addressed and all significant issues are identified, written comments and suggestions are invited from all interested parties. Comments or questions concerning the proposed EIR should be directed to the name and address below by 5:00 p.m. on Wednesday, November 30, 2016.

Brian Guerrero, Planner III
Merced County
Community and Economic Development Department
2222 M Street
Merced, CA 95340
(209) 385-7654

Table 1 Le Grand Community Plan Land Use Summary				
Land Use	Acreage	Dwelling Units/Square Feet¹/Number		
	Total	Existing	Future⁵	Total
Residential				
Very Low Density (VLD)	32	16 du	19 du	33 du
Low Density (LD)	143	381 du	353 du	716 du
Medium Density (MD)	8	35 du	48 du	82 du
High Density (HD)	10	6 du	197 du	200 du
Mixed Use (MU) ²	12	49 du	8 du	37 ⁶ du
Non-Residential Designations ³		6 du	0 du	6 du
<i>Total Residential</i>	<i>205</i>	<i>493 du</i>	<i>625 du</i>	<i>1,074 du</i>
Non-Residential				
General Commercial (GC)	8	19,768 sf	68,422 sf	80,034 sf
Industrial (IND)	22	135,701 sf	128,175 sf	255,656 sf
Mixed Use (MU)	See above	47,287 sf	29,207 sf	63,228 sf
Non-residential uses within residential designations ³	n/a	31,424 sf	(1,366) sf	30,058 sf
<i>Total Non Residential</i>	<i>30</i>	<i>234,180 sf</i>	<i>224,438 sf</i>	<i>428,976 sf</i>
Schools				
Elementary School (INST)	17	1	0	1 school
High School (INST)	37	1	0	1 school
<i>Total Schools</i>	<i>54</i>	<i>2</i>	<i>0</i>	<i>2 schools</i>
Parks				
Community Park (REC) ⁴	4 acres	2 parks 480 sf	0	2 parks 480 sf
<i>Total Parks</i>	<i>4 acres</i>	<i>2</i>	<i>2</i>	<i>2 parks</i>
Other				
Other (INST)	14 acres	1 du	0	1 du 14 acres
Urban Reserve (UR)	63	5 du	0	63 acres 5 du
Other (e.g. roads, canals)	60	n/a	n/a	60 acres
<i>Total Other</i>	<i>137</i>	<i>n/a</i>	<i>n/a</i>	<i>6 du</i> <i>137 acres</i>
<i>Total</i> <i>430 acres</i>		<i>1,074 dwelling units</i> <i>429,456 sf non-residential</i>		

Table 1 Le Grand Community Plan Land Use Summary	
<p>Table 1 Notes:</p> <ol style="list-style-type: none"> 1. Potential building square footage is derived by multiplying the typical floor area ratio by proposed acreage. Existing building square footage has been subtracted from the total shown. 2. Assumes 25% of maximum development potential. 3. Some residential units are located within areas that are not zoned for residential development; it is assumed that these non-conforming units will be removed as development occurs. Similarly, some non-residential uses occur within residential areas. The dwelling units and square footage that are anticipated to be removed as nonconforming uses are included in the "Future" column (i.e., Future is the net of new minus existing-to-be-removed uses). 4. In addition to the existing Le Grand Community Park and Le Grand Sports Park (total of 4 acres), future residential subdivisions will be required to incorporate neighborhood and/or pocket parks, which are not included in this acreage because the size and location have not been determined. 5. Assumes that all nonconforming residences within the vertical overlay will be removed (approximately 20 du) and 8 new residences will be built within the MU, for a net reduction of 12 du. <p>du=dwelling units sf=square feet</p>	




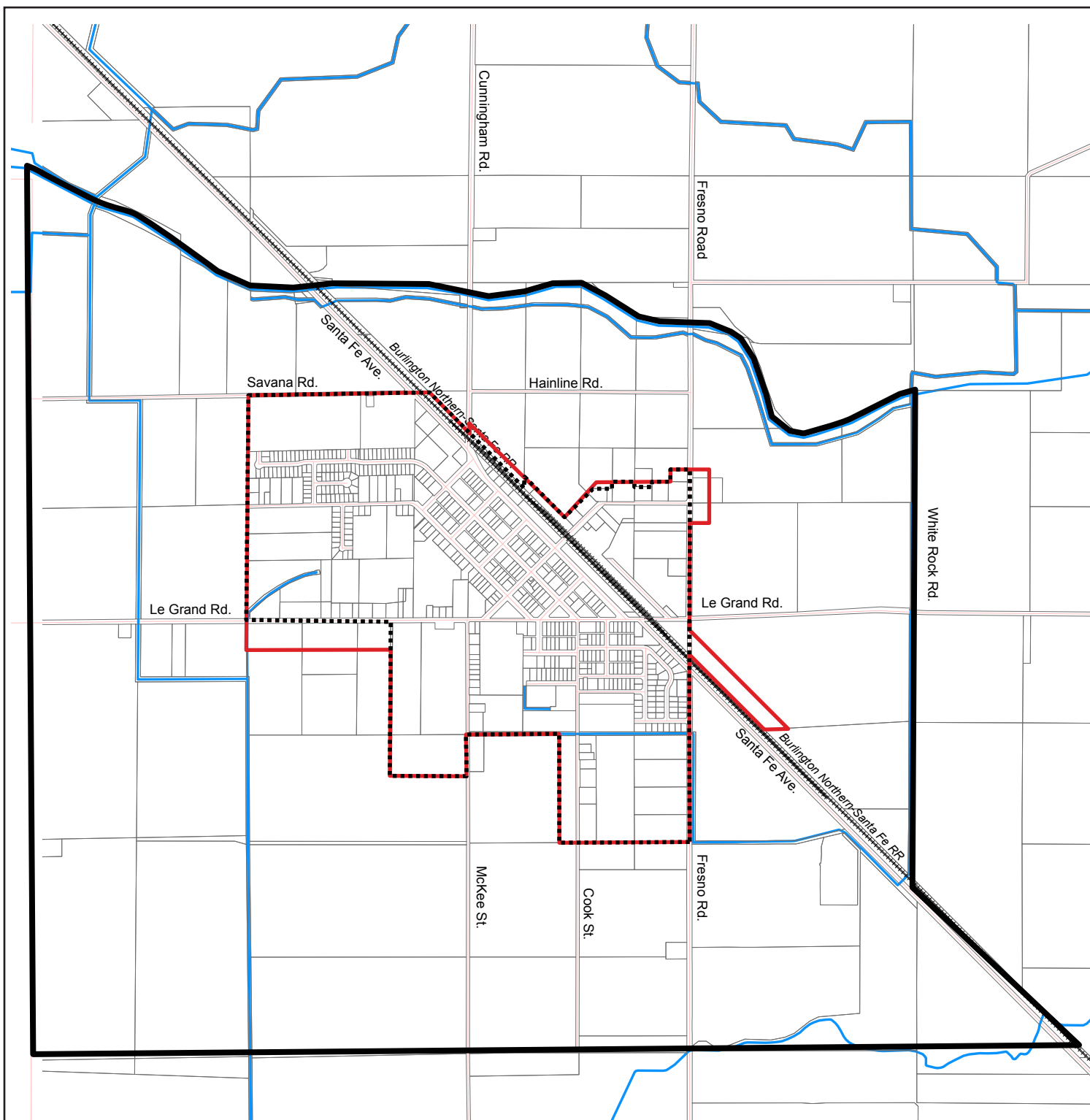
 Le Grand Community Plan Area

Figure 1
Regional Location

SOURCE: Merced County Planning and Community Development Dept., 2016.



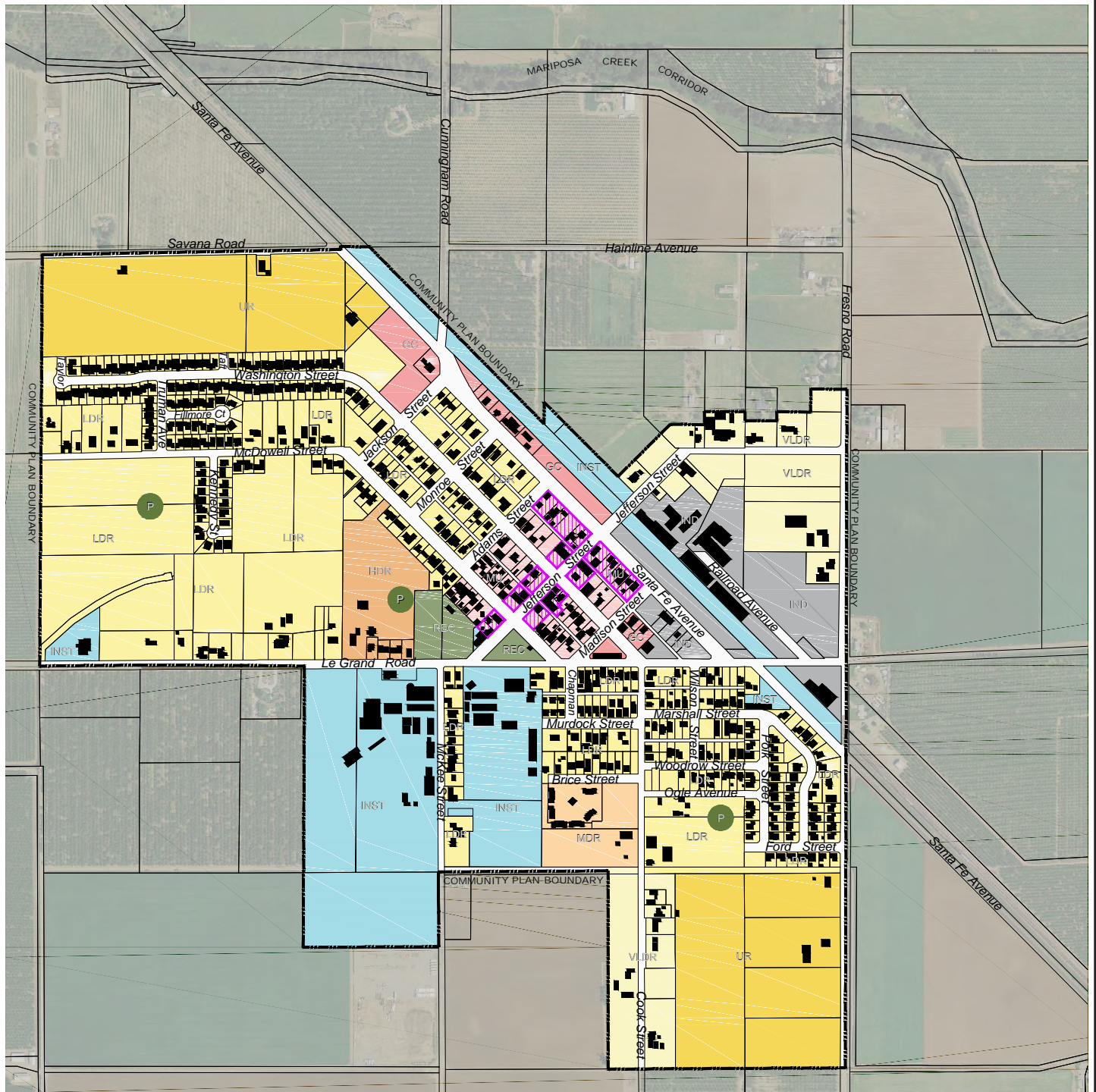
- Le Grand Community Plan Area Boundary
- Existing Boundary
- Proposed Boundary
- Study Area
- Natural Waterways and Canals



SOURCE: Merced County Planning and Community Development Dept., 2016.

0 1,000 2,000 3,000 4,000
Scale In Feet

**Figure 2
Community
Plan Area**



PROPOSED LAND USES

VLDR	Very Low Density Residential	MU	Mixed Use	REC	Recreational
LDR	Low Density Residential	MU	Vertical Mixed Use Overlay	INST	Institutional/Public Facilities
MDR	Medium Density Residential	GC	General Commercial	UR	Urban Reserve
HDR	High Density Residential	IND	Industrial		

FLOATING ZONES

P	Potential Neighborhood Park
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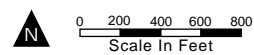


Figure 3
Proposed Community Plan
Land Use Designations

SOURCE: Merced County Planning and Community Development Dept., RRM Design Group, 2016.

Appendix B
Responses to the NOP

NATIVE AMERICAN HERITAGE COMMISSION

1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710
(916) 373-5471 Fax



November 15, 2016

Brian Guerrero
Merced County Community and Economic Development Department

Sent via e-mail: bguerrero@co.merced.ca.us

RE: Proposed Le Grand Community Plan Update Project, Community of Planada, Merced County, California

Dear Mr. Guerrero:

Government Code §65352.3 requires local governments to consult with California Native American tribes identified by the Native American Heritage Commission (NAHC) for the purpose of protecting, and/or mitigating impacts to cultural places in creating or amending general plans, including specific plans. Attached is a consultation list of tribes traditionally and culturally affiliated with the area that may have cultural places located within the boundaries of the project referenced above.

As a part of consultation, the NAHC recommends that local governments conduct record searches through the NAHC and California Historic Resources Information System (CHRIS) to determine if any cultural places are located within the area(s) affected by the proposed action. The form to request searches of the NAHC Sacred Lands File (SLF) can be found at <http://nahc.ca.gov/wp-content/uploads/2015/08/Local-Government-Tribal-Consultation-List-Request-Form-Update.pdf>.

Local governments should be aware that records maintained by the NAHC and CHRIS are not exhaustive, and a negative response to these searches does not preclude the existence of a cultural place. A tribe may be the only source of information regarding the existence of tribal cultural resources.

If you receive notification of change of addresses and phone numbers from tribes on the attached list, please notify me. With your assistance we are able to assure that our consultation list contains current information.

If you have any questions, please contact me at my email address: gayle.totton@nahc.ca.gov.

Sincerely,

A handwritten signature in blue ink that reads 'Gayle Totton'.

Gayle Totton, M.A., PhD.
Associate Governmental Program Analyst

**Native American Contact List
Merced Counties
November 15, 2016**

North Valley Yokuts Tribe
Katherine Erolinda Perez, Chairperson
P.O. Box 717 Ohlone/Costanoan
Linden , CA 95236 Northern Valley Yokuts
canutes@verizon.net Bay Miwok
(209) 887-3415

Southern Sierra Miwuk Nation
Lois Martin, Chairperson
P.O. Box 186 Miwok
Mariposa , CA 95338 Pauite
(209) 742-6867 Office Northern Valley Yokut

This list is current only as of the date of this document and is based on the information available to the Commission on the date it was produced.

Distribution of this list does not relieve any person or agency of statutory responsibility as defined in Public Resources Code Sections 21080.3.1 Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Le Grand Community Plan Update Project, Community of Planada, Merced County, California.



Comment Card

Date 11-7-16

Name Rick & Becky DeBusk

Address 12890 LeGrand Rd.

City/State LeGrand CA Zip 95333

Phone 209-389-4426 E-mail bdebusk@sbcglobal.net

Comments:

Concerned with rezoning our low residential
to HDR without our input.

Appendix C
Air Quality Calculations and Operational Mitigation

Assumptions and Calculation Summary

Le Grand Community Plan Update

Existing Assumptions

CalEEMod Inputs (Non-Default information only)

Project Location		CO intensity	2008 ¹	2015 ^{2,3}	2016 ²	2020 ³	2030 ³
County	Merced	% renewable	641	448.7	429.47	403.83	320.5
Air District	SJVAPCD		0%	30.00%	33.00%	37.00%	50.00%
Climate Zone	3		¹ CalEEMod - http://www.aqmd.gov/docs/default-source/caleemod/05_appendix-d2016-3-2.pdf?sfvrsn=4				
Operational Year	2016		² http://www.pgecorp.com/corp_responsibility/reports/2016/en02_climate_change.jsp				
Utility Provider	PG&E		³ http://www.cpuc.ca.gov/renewables/				

Land Use	Sq Ft	KSF	Units/Stude		CalEEMod Land Use Type		
			nts	Acers			
Residential							
	VLD/LDR		437	125.45	Single Family Residential		
	MDR						
	HDR - Residential		60	4.91	Apartment Mid Rise		
Retail							
	GC						
	MU-Retail	31,590	31.5898	2.64	Strip Mall		
Commercial							
	Industiral	135,701	135.7010	11.68	Industrial Park		
	MU-Office	35,465	35.4653	6.73	General Office		
Educational							
	Elementary School		401	8	Elementary School		
	Highschool		465	15	Highschool		
Institutional							
	Office Park	31,424	31.4240	3	Office Park		
	Park	480	0.4800	4	Park	234,660	234.6600
	Service Population	322	employees				
Service Population (# Employees)	1,468	Residents	SFR	(assumes 3.36 people per residence)			
	202	Residents	AMR	(assumes 3.36 people per residence)			
	1,992	Total					

Note: The square footage used in the Air Quality and GHG modeling is the gross square footaage to accurately account for the amount of emissions generated by the operation of the existing and project land uses.

Le Grand Community Plan Update Existing Assumptions

Transportation:

Trip Generation

Same as Project Growth

	Weekday	Saturday	Sunday	
Single Family Residential	9.52	9.91	8.62	per DU
Apartment Mid Rise	7.03	6.76	6.20	per DU
Strip Mall	28.20	26.75	13.00	per DU
Industrial Park	6.97	1.00	0.46	per KSF
General Office	10.96	2.44	1.04	per KSF
Elementary School	1.37	0.00	0.00	per student
Highschool	0.48	0.17	0.07	per student
Park	1.89	22.75	16.74	per acre
Office Park	10.96	2.44	1.04	per ksf

*Based on Traffic Study Information as provided.

- 1 Trips adjusted based on an approximately 34 percent reduction due to Pass-by trips for strip mall (retail) uses.
- 2 Single Family Residence VMT per trip adjusted to equal Transportation Study Annual VMT. Adjustments are as follows: H-W= 11.51; H-S = 8; H-O =8.201

Entrained Road Dust

(Merced County)	Freeway	Major	Collector	Local	Total	Composit
Travel Fractions	0.244	0.527	0.125	0.104	1	
Silt Loading	0.02	0.032	0.032	0.32		0.059024

*CARB 2014. *Miscellaneous Process Methodology 7.9 Entrained Road Travel, Paved Road Dust. Revised April 2014*

The default CalEEMod fleet mix for Merced County has heavy duty trucks at 15.08 percent of the total fleet. This is due to the rural nature of the county and the amount of agriculture that occurs. The proposed project is a mix of residential, commercial, industrial and retail uses which would not see that level of intensity of heavy duty trucks. Based on the project specific traffic study, the heavy duty vehicle travel from the project is 3.22 percent. Therefore, the fleet mix for the project was adjusted to reduce heavy duty vehicle trips to 3.22 percent as shown below.

Project Specific Fleet mix

LDA	0.6196	HHD	0.0322
LDT1	0.0304	OBUS	0.0026
LDT2	0.1834	UBUS	0.0016
MDV	0.0932	MCY	0.0061
LHD1	0.0094	SBUS	0.0014
LHD2	0.0035	MH	0.0004
MHD	0.0161		

Le Grand Community Plan Update

Existing Assumptions

Energy Use

<i>Electric</i>	<i>2016</i>	<i>2013</i>	<i>2008</i>	<i>2016</i>	<i>2013</i>	<i>2008</i>
		Title-24			Lighting	
Single Family Residential	995.93	1274.7904	1593.488	1608.84	1689.282	1858.2102
Apartment Mid Rise	700.71	896.9088	1121.136	741.44	778.512	856.3632
Strip Mall	2.14	2.247	2.80875	3.71	3.8955	4.28505
Industrial Park	2.62	2.751	3.43875	2.92	3.066	3.3726
General Office	2.62	2.751	3.43875	2.92	3.066	3.3726
Elementary School	2.14	2.247	2.80875	2.99	3.1395	3.45345
Highschool	2.14	2.247	2.80875	2.99	3.1395	3.45345
Park	0	0	0	0	0	0
Office Park	3.58	3.759	4.69875	3.59	3.7695	4.14645

<i>Natural Gas</i>	<i>2016</i>	<i>2013</i>	<i>2008</i>				
		Title-24			Elec	Light	NG
Single Family Residential	22422.24	28700.4672	35875.584	Residential			
Apartment Mid Rise	8454.86	10822.2208	13527.776	2016 to 2013	28%	5%	28%
Strip Mall	8.62	9.051	11.31375	2013 to 2008	25%	10%	25%
Industrial Park	12.77	13.4085	16.760625	Non Residential			
General Office	12.77	13.4085	16.760625	2016 to 2013	5%	5%	5%
Elementary School	23.19	24.3495	30.436875	2013 to 2008	25%	10%	25%
Highschool	23.19	24.3495	30.436875				
Park	0	0	0				
Office Park	21.96	23.058	28.8225				

*2013 Title 24 is more the current requirement and is 25% more restrictive than the 2008 Title 24. 2016 Title 24 (which will be in effect by the time the project is built) is conservatively estimated to be 5% more restrictive than 2013 Title 24 requirements for Electric and Natural Gas and 5% for lighting. These requirements are more restrictive than the ASHRE requirements. Additional reduction based on CO2e reductions assumed for 2016 compared to those assumed for 2013.

Lighting has a 10 percent reduction from 2008 based on 2013 Title 24. Additional 5% reduction assumed for increase to 2016 Title 24 requirements.

Le Grand Community Plan Update

Existing Assumptions

Energy Use

Electric

Default Values Used

Natural Gas

Default Values Used

Water Use

		Default	% total	Project
CalEEMod Default	Indoor	81,011,164	0.660619461	65104047.9
	Outdoor	41,617,927	0.339380539	33445952.1
	Total	122,629,091		98,550,000

	Indoor			Outdoor		
	Default	% total	Project	Default	% total	Project
Single Family Residential	28,472,309.20	0.35	22,881,569.61	17,949,934.06	0.43	14,425,337.36
Apartment Mid Rise	3,909,241.54	0.05	3,141,634.27	2,464,521.84	0.06	1,980,595.52
Strip Mall	2,339,950.95	0.03	1,880,485.01	1,434,163.49	0.03	1,152,555.33
Industrial Park	31,380,625.00	0.39	25,218,817.00	0.00	0.00	0.00
General Office	6,304,216.04	0.08	5,066,338.57	3,863,874.35	0.09	3,105,175.25
Elementary School	972,120.24	0.01	781,237.55	2,449,737.76	0.06	1,968,714.40
Highschool	2,048,306.40	0.03	1,646,106.93	5,267,076.60	0.13	4,232,848.80
Park	0	0.00	0.00	4,765,925.40	0.11	3,830,102.19
Office Park	5584394.36	0.07	4,487,858.97	3,422,693.32	0.08	2,750,623.24
Total	81,011,163.73			41,617,926.82		

Removal of Septic

Septic	Aerobic	Lagoons
10.33	87.46	2.21
	0.98	0.02
	10.08	0.25
0.00	97.54	2.46

* Multifamily indoor water use reduced by 35%

*Multifamily outdoor water use reduced by 25%

Title 24 2013 20% indoor for Non-Residential

Le Grand Community Plan Update
Existing Assumptions

Solid Waste Generation:

	Tons/year		
	per unit	#units	Existing
Single Family Residential	0.96	437.00	419.55
Apartment Mid Rise	0.43	60.00	25.74
Strip Mall	0.98	31.59	30.93
Industrial Park	1.16	135.70	156.93
General Office	0.87	35.47	30.76
Elementary School	0.17	401.00	68.25
Highschool	0.17	465.00	79.16
Park	0.09	4.00	0.34
Office Park	5.35	31.42	168.27
Total			811.32

Planada

Existing Operational CalEEMod Summary

CalEEMod Version 2016.3.1

	ROG	NO _x	CO	SO _x	PM10	PM2.5
	Tons/yr					
Area	7.72	0.52	21.60	0.06	2.93	2.93
Energy	0.14	1.21	0.66	0.01	0.10	0.10
Mobile	4.15	17.77	48.05	0.10	5.26	1.59
Project Total	12.00	19.50	70.31	0.17	8.29	4.62
Threshold	10	10	100	27	15	15

Le Grand Community Plan Update

Project Construction Assumptions

CalEEMod Inputs (Non-Default information only)

Project Location	
County	Merced
Air District	SJVAPCD
Climate Zone	3
Operational Year	2019
Utility Provider	PG&E

Land Use	Sq Ft	KSF	(Units/Stude nts)	Acers	CalEEMod Land Use Type
Residential					
	VLD/LDR		39.90	11.45	Single Family Residential
	MDR				
	HDR - Residential		20.90	1.71	Apartment Mid Rise
Retail					
	GC				
	MU-Retail	6.43		0.54	Strip Mall
Commercial					
	Industiral	12.00		1.03	Industrial Parak
	MU-Office	1.20		0.23	General Office
Educational					
	Elementary School	0.00		0.00	Elementary School
	Highschool	0.00		0.00	Highschool
Institutional					
	Office Park	0.00		0.00	Office Park
	Park	0.00		0.00	Park
		20		14.96	

Note: As a conservative estimate of emissions, 10% of total square footage is assumed to be built in one year beginning in 2019. No new schools are being built therefore no construction of schools is accounted for. Construction is based on square footage or number of dwelling units developed and not land use type, therefore the landuse type developed is irrelevant in determining construction emissions.

Le Grand Community Plan Update Project Construction Assumptions

Construction Schedule

Phases (if applicable)	CalEEMod Default Days)	(# Project Revised (# Days)	Start (month/date/year)	Finish (month/date/year)
Demolition	20	15	1/1/2019	1/21/2019
Site Preparation	10	8	1/21/2019	1/30/2019
Grading/Excavation	30	22	2/1/2019	3/4/2019
Building Construction	300	215	3/5/2019	12/30/2019
Architectural Coatings	20	15	3/5/2019	3/25/2019
Paving	20	15	12/11/2019	12/31/2019
Construction days*	360	260		

*Project days are based on the default construction days for demolition, Site Prep, Grading/Excavation and building construction and then are scaled to equal one year of construction activities (260 days). Architectural coating and Paving are assumed to overlap with building construction activities and therefore are not used in determining the number of construction days per phase. Default days are kept for Architectural Coating activities and Paving Activities.

All remaining construction information uses Default settings, with the exception of Silt loading as discussed below.

Soils are anticipated to be balanced onsite

Silt loading is the same as used for operational purposes and based on Merced County specifics

Le Grand Community Plan Update

Construction Inputs from CalEEMod

Unmitigated Construction

		ROG	NOx	CO	SOx	PM10	PM2.5
		tons/year					
Demolition	Total	0.03	0.27	0.17	0.00	0.02	0.01
	Onsite	0.03	0.27	0.17	0.00	0.01	0.01
	Offsite	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	Total	0.02	0.18	0.09	0.00	0.08	0.05
	Onsite	0.02	0.18	0.09	0.00	0.08	0.05
	Offsite	0.00	0.00	0.00	0.00	0.00	0.00
Grading	Total	0.05	0.60	0.38	0.00	0.13	0.07
	Onsite	0.05	0.60	0.37	0.00	0.13	0.06
	Offsite	0.00	0.00	0.01	0.00	0.00	0.00
Building Construction	Total	0.28	2.42	2.03	0.00	0.18	0.14
	onsite	0.25	2.27	1.85	0.00	0.14	0.13
	offsite	0.03	0.16	0.18	0.00	0.04	0.01
Paving	Total	0.01	0.11	0.11	0.00	0.01	0.01
	onsite	0.01	0.11	0.11	0.00	0.01	0.01
	offsite	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Total	1.01	0.01	0.02	0.00	0.00	0.00
	onsite	1.01	0.01	0.01	0.00	0.00	0.00
	offsite	0.00	0.00	0.00	0.00	0.00	0.00
Total Emissions		1.40	3.60	2.79	0.00	0.42	0.28
3 times total emissions		4.20	10.81	8.38	0.01	1.26	0.83
SJVAPCD Thresholds		10	10	100	27	15	15
Significant		No	Yes	No	No	No	No

lbs/day

Total Emissions	10.77	27.73	21.49	0.04	3.22	2.12
3 times total emissions	32.32	83.19	64.48	0.11	9.66	6.37
SJVAPCD Thresholds	100	100	100	100	100	100
Significant	No	No	No	No	No	No

Mitigation:

Required

Le Grand Community Plan Update

Construction Inputs from CalEEMod

Mitigated Construction

		ROG	NOx	CO	SOx	PM10	PM2.5
		tons/year					
Demolition	Total	0.01	0.14	0.19	0.00	0.01	0.01
	Onsite	0.01	0.14	0.19	0.00	0.01	0.01
	Offsite	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	Total	0.00	0.08	0.09	0.00	0.04	0.02
	Onsite	0.00	0.08	0.09	0.00	0.04	0.02
	Offsite	0.00	0.00	0.00	0.00	0.00	0.00
Grading	Total	0.02	0.33	0.41	0.00	0.06	0.03
	Onsite	0.02	0.33	0.40	0.00	0.06	0.03
	Offsite	0.00	0.00	0.01	0.00	0.00	0.00
Building Construction	Total	0.13	1.68	2.14	0.00	0.14	0.11
	onsite	0.10	1.52	1.95	0.00	0.10	0.10
	offsite	0.03	0.16	0.18	0.00	0.04	0.01
Paving	Total	0.00	0.09	0.13	0.00	0.01	0.00
	onsite	0.00	0.08	0.13	0.00	0.00	0.00
	offsite	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Total	1.01	0.01	0.02	0.00	0.00	0.00
	onsite	1.01	0.01	0.01	0.00	0.00	0.00
	offsite	0.00	0.00	0.00	0.00	0.00	0.00
Total Emissions		1.17	2.32	2.98	0.00	0.25	0.18
3 times total emissions		3.52	6.96	8.95	0.01	0.76	0.53
SJVAPCD Thresholds		10	10	100	27	15	15
Significant		No	No	No	No	No	No

lbs/day

Total Emissions	9.02	17.85	22.95	0.04	1.94	1.35
3 times total emissions	27.06	53.56	68.85	0.11	5.82	4.06
SJVAPCD Thresholds	100	100	100	100	100	100
Significant	No	No	No	No	No	No

Mitigation Measures:

AIR-1 Tier 3 Or equivalent Onsite Equipment

Le Grand Community Plan Update

Project Assumptions

CalEEMod Inputs (Non-Default information only)

Project Location		CO intensity	2008 ¹	2015 ^{2,3}	2016 ²	2020 ³	2030 ³
County	Merced	% renewable	641	448.7	429.47	403.83	320.5
Air District	SJVAPCD		0%	30.00%	33.00%	37.00%	50.00%
Climate Zone	3		¹ CalEEMod				
Operational Year	2020/2035		² http://www.pgecorp.com/corp_responsibility/reports/2016/en02_climate_change.jsp				
Utility Provider	PG&E		³ http://www.cpuc.ca.gov/renewables/				

		Units/Student			
Land Use	Sq Ft	KSF	s	Acers	CalEEMod Land Use Type
Residential					
	VLD/LDR	718,200	399	114.55	Single Family Residential
	MDR				
	HDR - Residential	209,000	209	17.09	Apartment Mid Rise
Retail					
	GC	64,251	64.2513	5.36	Strip Mall
	MU-Retail				
Commercial					
	Industiral	119,955	119.96	10.32	Industrial Parak
	MU-Office	11,956	11.96	2.27	General Office
Educational					
	Elementary School	0	441	9	Elementary School
	Highschool	0	685	22.03913043	Highschool
Institutional					
	Office Park	0	0	0	Office Park
	Park	0	0	0	Park
	Service Population	339	employees		
		1,340	Residents	SFR	(assumes 3.36 people per residence)
		702	Residents	AMR	(assumes 3.36 people per residence)
		2,381	Total		

Le Grand Community Plan Update Project Assumptions

Transportation:

Trip Generation

	Traffic Study		Project			
	trips	Adj. Trips ¹	Weekday	Saturday	Sunday	
Single Family Residential	3,798	3,798	9.52	9.91	8.62	per DU
Apartment Mid Rise	1,470	1,470	7.03	6.76	6.20	per DU
Strip Mall	2,746	1,812	28.20	26.75	13.00	per KSF
Industrial Parak	836	836	6.9693	1.0008	0.4638	per KSF
General Office	131	131	10.9571	2.4437	1.0431	per KSF
Elementary School	602	602	1.37	0.00	0.00	per student
Highschool	327	327	0.48	0.17	0.07	per student
		8,976				

*Based on Traffic Study Information as provided.

- 1 Retail trips adjusted based on an approximately 34 percent reduction due to Pass-by trips for strip mall (retail) uses.
- 2 Single Family Residence VMT per trip adjusted to equal Transportation Study Annual VMT. Adjustments are as follows: H-W= 11.51; H-S = 8; H-O =8.201

Total Daily VMT 60,480 for growth

22,075,200 Annual VMT for growth

Entrained Road Dust

(Merced County)	Freeway	Major	Collector	Local	Total	Composit
Travel Fractions	0.244	0.527	0.125	0.104	1	
Silt Loading	0.02	0.032	0.032	0.32		0.059024

*CARB 2014. *Miscellaneous Process Methodology 7.9 Entrained Road Travel, Paved Road Dust*. Revised April 2014

The default CalEEMod fleet mix for Merced County has heavy duty trucks at 15.08 percent of the total fleet. This is due to the rural nature of the county and the amount of agriculture that occurs. The proposed project is a mix of residential, commercial, industrial and retail uses which would not see that level of intensity of heavy duty trucks. Based on the project specific traffic study, the heavy duty vehicle travel from the project is 3.22 percent. Therefore, the fleet mix for the project was adjusted to reduce heavy duty vehicle trips to 3.22 percent as shown below.

Project Specific Fleet mix

LDA	0.6196	LHD2	0.0035	MCY	0.0061
LDT1	0.0304	MHD	0.0161	SBUS	0.0014
LDT2	0.1834	HHD	0.0322	MH	0.0004
MDV	0.0932	OBUS	0.0026		
LHD1	0.0094	UBUS	0.0016		

Le Grand Community Plan Update

Project Assumptions

Area Source

Hearth No woodburning stoves. Default number of fireplaces

Energy Use

Electric Default Values Used

Natural Gas Default Values Used

Water Use

		Default	% total	Project
CalEEMod Default	Indoor	78,415,740.15	0.663879543	70,271,650
	Outdoor	39,701,681.78	0.336120457	35,578,350
	Total	118,117,422		105,850,000

	Indoor				Outdoor			
	Default	% total	Project		Default	% total	Project	
Single Family Residential	25,996,456.22	0.33	23,296,520.07	23.30	16,389,070.23	0.41	14,686,936.57	14.69
Apartment Mid Rise	13,617,191.35	0.17	12,202,939.08	12.20	8,584,751.07	0.22	7,693,157.25	7.69
Strip Mall	4,759,159.51	0.06	4,264,883.42	4.26	2,916,904.21	0.07	2,613,960.80	2.61
Industrial Parak	27,740,750.00	0.35	24,859,655.24	24.86	0.00	0.00	0.00	0.00
General Office	2,125,695.63	0.03	1,904,925.44	1.90	1,302,845.71	0.03	1,167,534.95	1.17
Elementary School	1,069,089.84	0.01	958,056.46	0.96	2,749,088.16	0.07	2,463,573.76	2.46
Highschool	3107397.6	0.04	2,784,669.95	2.78	7759022.4	0.20	6,953,186.99	6.95
Total	78,415,740.15		70,271,649.68		39,701,681.78		35,578,350.32	
							105,850,000.00	

Removal of Septic

Septic	Aerobic	Lagoons
10.33	87.46	2.21
	0.98	0.02
	10.08	0.25
0.00	97.54	2.46

* Multifamily indoor water use reduced by 35%

*Multifamily outdoor water use reduced by 25%

Title 24 2013 20% indoor for Non-Residential

Le Grand Community Plan Update

Project Assumptions

Solid Waste Generation:

	Tons/year			
	Default	% Default	Project	per unit
Single Family Residential	410.76	0.44	383.07	0.960075272
Apartment Mid Rise	96.14	0.10	89.66	0.428990689
Strip Mall	67.46	0.07	62.91	0.97916254
Industrial Parak	148.75	0.16	138.72	1.156454775
General Office	11.12	0.01	10.37	0.867397161
Elementary School	80.48	0.09	75.05	0.170192106
Highschool	125	0.13	116.61	0.170234833
Total	940		876.4	

Le Grand Community Plan Update Operational CalEEMod Summary

CalEEMod Version 2016.3.1

Unmitigated

	ROG	NO _x	CO	SO _x	PM10	PM2.5
Tons/yr						
Area	6.14	0.28	4.61	0.00	0.04	0.04
Energy	0.10	0.87	0.49	0.01	0.07	0.07
Mobile	1.35	7.66	17.76	0.07	5.63	1.59
Project Total	7.59	8.82	22.85	0.08	5.74	1.71
Threshold	10	10	100	27	15	15
Significant	No	No	No	No	No	No
Onsite lbs/day	36.07	8.78	34.18	0.06	2.25	1.10
Threshold	100	100	100	100	100	100
Significant	No	No	No	No	No	No

Mitigation None Required

Existing Conditions CalEEMod Output

Le Grand Community Plan - Existing - Merced County, Annual

Le Grand Community Plan - Existing

Merced County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	35.47	1000sqft	6.73	35,465.30	0
Elementary School	401.00	Student	0.77	33,524.95	0
High School	465.00	Student	1.42	61,687.35	0
Industrial Park	135.70	1000sqft	11.68	135,701.00	0
Apartments Mid Rise	60.00	Dwelling Unit	4.91	60,000.00	202
Single Family Housing	437.00	Dwelling Unit	125.45	786,600.00	1468
Strip Mall	31.59	1000sqft	2.64	31,589.80	0
City Park	4.00	Acre	4.00	174,240.00	0
Office Park	31.42	1000sqft	3.00	31,424.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	49
Climate Zone	3			Operational Year	2016
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	429.47	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - No Construction

Vehicle Trips - See Assumptions

Road Dust - See Assumptions

Energy Use - See Assumptions

Water And Wastewater - See Assumptions

Solid Waste - See Assumptions

Fleet Mix - See Assumptions

Woodstoves - see assumptions

Table Name	Column Name	Default Value	New Value
tblEnergyUse	LightingElect	741.44	856.36
tblEnergyUse	LightingElect	2.99	3.45
tblEnergyUse	LightingElect	2.92	3.37
tblEnergyUse	LightingElect	2.99	3.45
tblEnergyUse	LightingElect	2.92	3.37
tblEnergyUse	LightingElect	1,608.84	1,858.21
tblEnergyUse	LightingElect	3.71	4.29
tblEnergyUse	LightingElect	3.59	4.15
tblEnergyUse	T24E	700.71	1,121.14
tblEnergyUse	T24E	2.14	2.81
tblEnergyUse	T24E	2.62	3.44
tblEnergyUse	T24E	2.14	2.81
tblEnergyUse	T24E	2.62	3.44
tblEnergyUse	T24E	995.93	1,593.49
tblEnergyUse	T24E	2.14	2.81
tblEnergyUse	T24E	3.58	4.70
tblEnergyUse	T24NG	8,454.86	13,527.78
tblEnergyUse	T24NG	23.19	30.44
tblEnergyUse	T24NG	12.77	16.76
tblEnergyUse	T24NG	23.19	30.44

[illegible]

tblFleetMix	LDT1	0.04	0.03
tblFleetMix	LDT2	0.16	0.18
tblFleetMix	LDT2	0.16	0.18
tblFleetMix	LDT2	0.16	0.18
tblFleetMix	LDT2	0.16	0.18
tblFleetMix	LDT2	0.16	0.18
tblFleetMix	LDT2	0.16	0.18
tblFleetMix	LDT2	0.16	0.18
tblFleetMix	LDT2	0.16	0.18
tblFleetMix	LDT2	0.16	0.18
tblFleetMix	LHD1	0.03	9.3669e-003
tblFleetMix	LHD1	0.03	9.3669e-003
tblFleetMix	LHD1	0.03	9.3669e-003
tblFleetMix	LHD1	0.03	9.3669e-003
tblFleetMix	LHD1	0.03	9.3669e-003
tblFleetMix	LHD1	0.03	9.3669e-003
tblFleetMix	LHD1	0.03	9.3669e-003
tblFleetMix	LHD1	0.03	9.3669e-003
tblFleetMix	LHD1	0.03	9.3669e-003
tblFleetMix	LHD2	6.3960e-003	3.5347e-003
tblFleetMix	LHD2	6.3960e-003	3.5347e-003
tblFleetMix	LHD2	6.3960e-003	3.5347e-003
tblFleetMix	LHD2	6.3960e-003	3.5347e-003
tblFleetMix	LHD2	6.3960e-003	3.5347e-003
tblFleetMix	LHD2	6.3960e-003	3.5347e-003
tblFleetMix	LHD2	6.3960e-003	3.5347e-003
tblFleetMix	LHD2	6.3960e-003	3.5347e-003
tblFleetMix	LHD2	6.3960e-003	3.5347e-003
tblFleetMix	MCY	7.0870e-003	6.1255e-003
tblFleetMix	MCY	7.0870e-003	6.1255e-003

tblFleetMix	MCY	7.0870e-003	6.1255e-003
tblFleetMix	MCY	7.0870e-003	6.1255e-003
tblFleetMix	MCY	7.0870e-003	6.1255e-003
tblFleetMix	MCY	7.0870e-003	6.1255e-003
tblFleetMix	MCY	7.0870e-003	6.1255e-003
tblFleetMix	MCY	7.0870e-003	6.1255e-003
tblFleetMix	MCY	7.0870e-003	6.1255e-003
tblFleetMix	MDV	0.15	0.09
tblFleetMix	MDV	0.15	0.09
tblFleetMix	MDV	0.15	0.09
tblFleetMix	MDV	0.15	0.09
tblFleetMix	MDV	0.15	0.09
tblFleetMix	MDV	0.15	0.09
tblFleetMix	MDV	0.15	0.09
tblFleetMix	MDV	0.15	0.09
tblFleetMix	MDV	0.15	0.09
tblFleetMix	MH	9.2400e-004	4.4941e-004
tblFleetMix	MH	9.2400e-004	4.4941e-004
tblFleetMix	MH	9.2400e-004	4.4941e-004
tblFleetMix	MH	9.2400e-004	4.4941e-004
tblFleetMix	MH	9.2400e-004	4.4941e-004
tblFleetMix	MH	9.2400e-004	4.4941e-004
tblFleetMix	MH	9.2400e-004	4.4941e-004
tblFleetMix	MH	9.2400e-004	4.4941e-004
tblFleetMix	MH	9.2400e-004	4.4941e-004
tblFleetMix	MHD	0.02	0.02
tblFleetMix	MHD	0.02	0.02
tblFleetMix	MHD	0.02	0.02
tblFleetMix	MHD	0.02	0.02
tblFleetMix	MHD	0.02	0.02

[illegible]

tblFleetMix	UBUS	2.8360e-003	1.6152e-003
tblLandUse	LandUseSquareFeet	35,470.00	35,465.30
tblLandUse	LandUseSquareFeet	135,700.00	135,701.00
tblLandUse	LotAcreage	0.81	6.73
tblLandUse	LotAcreage	3.12	11.68
tblLandUse	LotAcreage	1.58	4.91
tblLandUse	LotAcreage	141.88	125.45
tblLandUse	LotAcreage	0.73	2.64
tblLandUse	LotAcreage	0.72	3.00
tblLandUse	Population	172.00	202.00
tblLandUse	Population	1,250.00	1,468.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	429.47
tblRoadDust	RoadSiltLoading	0.1	0.059024
tblSolidWaste	SolidWasteGenerationRate	27.60	25.74
tblSolidWaste	SolidWasteGenerationRate	73.18	68.25
tblSolidWaste	SolidWasteGenerationRate	32.99	168.27
tblSolidWaste	SolidWasteGenerationRate	84.86	79.16
tblSolidWaste	SolidWasteGenerationRate	168.27	156.93
tblSolidWaste	SolidWasteGenerationRate	528.48	419.55
tblSolidWaste	SolidWasteGenerationRate	33.17	30.93
tblSolidWaste	SolidWasteGenerationRate	29.22	31.42
tblVehicleTrips	HO_TL	7.50	8.20
tblVehicleTrips	HS_TL	7.30	8.00
tblVehicleTrips	HW_TL	10.80	11.51
tblVehicleTrips	ST_TR	6.39	6.76
tblVehicleTrips	ST_TR	2.46	2.44
tblVehicleTrips	ST_TR	0.61	0.17
tblVehicleTrips	ST_TR	2.49	1.00
tblVehicleTrips	ST_TR	42.04	26.75
tblVehicleTrips	ST_TR	1.64	2.44

[illegible]

tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	2.46
tblWater	OutdoorWaterUseRate	2,464,521.84	1,980,595.52
tblWater	OutdoorWaterUseRate	2,499,737.76	1,968,714.40
tblWater	OutdoorWaterUseRate	3,863,874.35	3,105,175.25
tblWater	OutdoorWaterUseRate	5,267,073.60	4,232,848.80
tblWater	OutdoorWaterUseRate	4,765,925.40	3,830,102.19
tblWater	OutdoorWaterUseRate	1,434,163.49	1,152,555.33
tblWater	OutdoorWaterUseRate	3,422,693.32	3,830,102.19
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWoodstoves	NumberCatalytic	4.91	0.00
tblWoodstoves	NumberCatalytic	125.45	96.00
tblWoodstoves	NumberNoncatalytic	4.91	0.00
tblWoodstoves	NumberNoncatalytic	125.45	96.00

2.0 Emissions Summary

2.1 Overall Construction

- No Construction

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	7.7171	0.5196	21.5986	0.0594		2.9337	2.9337		2.9337	2.9337	388.1014	221.3518	609.4532	1.8246	3.9500e-003	656.2450
Energy	0.1385	1.2055	0.6623	7.5600e-003		0.0957	0.0957		0.0957	0.0957	0.0000	2,884.8506	2,884.8506	0.1285	0.0463	2,901.8559
Mobile	4.1488	17.7741	48.0569	0.1034	5.0706	0.1850	5.2556	1.4132	0.1752	1.5883	0.0000	9,431.8558	9,431.8558	0.6351	0.0000	9,447.7331
Waste						0.0000	0.0000		0.0000	0.0000	199.0509	0.0000	199.0509	11.7636	0.0000	493.1402
Water						0.0000	0.0000		0.0000	0.0000	28.6619	111.3358	139.9977	0.8304	0.0639	179.7951
Total	12.0044	19.4992	70.3179	0.1703	5.0706	3.2144	8.2850	1.4132	3.2046	4.6177	615.8142	12,649.3940	13,265.2082	15.1822	0.1141	13,678.7692

Mitigated Operational

- Mitigation not Used

3.0 Construction Detail

- No Construction

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

- Mitigation not used

	ROG	NOx	CO	SO2	Fugitive 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					
Unmitigated	4.1488	17.7741	48.0569	0.1034	5.0706	0.1850	5.2556	1.4132	0.1752	1.5883	0.0000	9,431.8558	9,431.8558	0.6351	0.0000	9,447.7331

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	421.80	405.60	372.00	1,201,118	1,201,118
Elementary School	549.37	0.00	0.00	865,234	865,234
General Office Building	388.75	86.55	36.89	705,725	705,725
High School	223.20	79.05	32.55	459,151	459,151
Industrial Park	945.83	135.70	62.42	1,845,493	1,845,493
City Park	7.56	91.00	66.96	59,703	59,703
Single Family Housing	4,160.24	4,330.67	3766.94	12,965,141	12,965,141
Strip Mall	890.83	845.03	410.67	1,256,195	1,256,195
Office Park	344.41	76.67	32.68	655,703	655,703
Total	7,931.99	6,050.27	4,781.11	20,013,462	20,013,462

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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	46.90	17.40	35.70	86	11	3
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
High School	9.50	7.30	7.30	77.80	17.20	5.00	75	19	6
Industrial Park	9.50	7.30	7.30	59.00	28.00	13.00	79	19	2
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Single Family Housing	11.51	8.00	8.20	46.90	17.40	35.70	86	11	3
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15
Office Park	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.619633	0.030402	0.183386	0.093166	0.009367	0.003535	0.016106	0.032208	0.002642	0.001615	0.006125	0.001365	0.000449
Elementary School	0.619633	0.030402	0.183386	0.093166	0.009367	0.003535	0.016106	0.032208	0.002642	0.001615	0.006125	0.001365	0.000449
General Office Building	0.619633	0.030402	0.183386	0.093166	0.009367	0.003535	0.016106	0.032208	0.002642	0.001615	0.006125	0.001365	0.000449
High School	0.619633	0.030402	0.183386	0.093166	0.009367	0.003535	0.016106	0.032208	0.002642	0.001615	0.006125	0.001365	0.000449
Industrial Park	0.619633	0.030402	0.183386	0.093166	0.009367	0.003535	0.016106	0.032208	0.002642	0.001615	0.006125	0.001365	0.000449
City Park	0.619633	0.030402	0.183386	0.093166	0.009367	0.003535	0.016106	0.032208	0.002642	0.001615	0.006125	0.001365	0.000449

Single Family Housing	0.619633	0.030402	0.183386	0.093166	0.009367	0.003535	0.016106	0.032208	0.002642	0.001615	0.006125	0.001365	0.000449
Strip Mall	0.619633	0.030402	0.183386	0.093166	0.009367	0.003535	0.016106	0.032208	0.002642	0.001615	0.006125	0.001365	0.000449
Office Park	0.619633	0.030402	0.183386	0.093166	0.009367	0.003535	0.016106	0.032208	0.002642	0.001615	0.006125	0.001365	0.000449

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,513.8398	1,513.8398	0.1022	0.0212	1,522.6978
NaturalGas Unmitigated	0.1385	1.2055	0.6623	7.5600e-003		0.0957	0.0957		0.0957	0.0957	0.0000	1,371.0108	1,371.0108	0.0263	0.0251	1,379.1581

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	1.03505e+006	5.5800e-003	0.0477	0.0203	3.0000e-004		3.8600e-003	3.8600e-003		3.8600e-003	3.8600e-003	0.0000	55.2340	55.2340	1.0600e-003	1.0100e-003	55.5623
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Elementary School	1.08476e+006	5.8500e-003	0.0532	0.0447	3.2000e-004		4.0400e-003	4.0400e-003		4.0400e-003	4.0400e-003	0.0000	57.8871	57.8871	1.1100e-003	1.0600e-003	58.2311

General Office Building	604351	3.2600e-003	0.0296	0.0249	1.8000e-004		2.2500e-003	2.2500e-003		2.2500e-003	2.2500e-003	0.0000	32.2505	32.2505	6.2000e-004	5.9000e-004	32.4421
High School	1.99601e+006	0.0108	0.0978	0.0822	5.9000e-004		7.4400e-003	7.4400e-003		7.4400e-003	7.4400e-003	0.0000	106.5147	106.5147	2.0400e-003	1.9500e-003	107.1477
Industrial Park	2.31243e+006	0.0125	0.1134	0.0952	6.8000e-004		8.6100e-003	8.6100e-003		8.6100e-003	8.6100e-003	0.0000	123.4001	123.4001	2.3700e-003	2.2600e-003	124.1334
Office Park	931486	5.0200e-003	0.0457	0.0384	2.7000e-004		3.4700e-003	3.4700e-003		3.4700e-003	3.4700e-003	0.0000	49.7076	49.7076	9.5000e-004	9.1000e-004	50.0030
Single Family Housing	1.73046e+007	0.0933	0.7974	0.3393	5.0900e-003		0.0645	0.0645		0.0645	0.0645	0.0000	923.4384	923.4384	0.0177	0.0169	928.9259
Strip Mall	423106	2.2800e-003	0.0207	0.0174	1.2000e-004		1.5800e-003	1.5800e-003		1.5800e-003	1.5800e-003	0.0000	22.5785	22.5785	4.3000e-004	4.1000e-004	22.7127
Total		0.1385	1.2055	0.6624	7.5500e-003		0.0957	0.0957		0.0957	0.0957	0.0000	1,371.0108	1,371.0108	0.0263	0.0251	1,379.1581

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	301896	58.8106	3.9700e-003	8.2000e-004	59.1548
City Park	0	0.0000	0.0000	0.0000	0.0000
Elementary School	273302	53.2404	3.6000e-003	7.4000e-004	53.5520
General Office Building	368532	71.7917	4.8500e-003	1.0000e-003	72.2118
High School	502888	97.9647	6.6200e-003	1.3700e-003	98.5379
Industrial Park	1.41012e+006	274.6968	0.0186	3.8400e-003	276.3042
Office Park	419045	81.6318	5.5100e-003	1.1400e-003	82.1095
Single Family Housing	4.19855e+006	817.8959	0.0552	0.0114	822.6817
Strip Mall	296748	57.8078	3.9000e-003	8.1000e-004	58.1461

Total		1,513.8398	0.1022	0.0212	1,522.6979
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6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Unmitigated	7.7171	0.5196	21.5986	0.0594		2.9337	2.9337		2.9337	2.9337	388.1014	221.3518	609.4532	1.8246	3.9500e-003	656.2450

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	1.0239					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.5961					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.9782	0.4758	17.8465	0.0592		2.9135	2.9135		2.9135	2.9135	388.1014	215.3041	603.4055	1.8184	3.9500e-003	650.0423
Landscaping	0.1189	0.0439	3.7521	2.0000e-004		0.0202	0.0202		0.0202	0.0202	0.0000	6.0477	6.0477	6.2000e-003	0.0000	6.2027

Total	7.7171	0.5196	21.5986	0.0594		2.9337	2.9337		2.9337	2.9337	388.1014	221.3518	609.4532	1.8246	3.9500e-003	656.2450
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7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	139.9977	0.8304	0.0639	179.7951

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	3.90924 / 1.9806	6.8542	0.0401	3.0800e-003	8.7752
City Park	0 / 3.8301	2.6114	1.8000e-004	4.0000e-005	2.6267
Elementary School	0.97212 / 1.96871	2.7109	0.0100	7.8000e-004	3.1945
General Office Building	6.30422 / 3.10518	10.9928	0.0646	4.9700e-003	14.0904
High School	2.04831 / 4.23285	5.7698	0.0212	1.6500e-003	6.7891

Industrial Park	31.3806 / 03	44.1804	0.3210	0.0246	59.5376
Office Park	5.58439 / 3.8301	10.4736	0.0573	4.4200e-003	13.2218
Single Family Housing	28.4723 / 17.9499	52.3244	0.2921	0.0225	66.3299
Strip Mall	2.33995 / 1.15256	4.0802	0.0240	1.8500e-003	5.2300
Total		139.9977	0.8304	0.0639	179.7951

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	199.0509	11.7636	0.0000	493.1402

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			

Apartments Mid Rise	25.74	5.2250	0.3088	0.0000	12.9447
City Park	0.34	0.0690	4.0800e-003	0.0000	0.1710
Elementary School	68.25	13.8541	0.8188	0.0000	34.3230
General Office Building	168.27	34.1573	2.0186	0.0000	84.6232
High School	79.16	16.0688	0.9496	0.0000	39.8097
Industrial Park	156.93	31.8554	1.8826	0.0000	78.9203
Office Park	31.42	6.3780	0.3769	0.0000	15.8012
Single Family Housing	419.55	85.1649	5.0331	0.0000	210.9923
Strip Mall	30.93	6.2785	0.3711	0.0000	15.5547
Total		199.0509	11.7636	0.0000	493.1402

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

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

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Construction CalEEmod Output

Le Grand Community Plan - Construction - Merced County, Annual

Le Grand Community Plan - Construction

Merced County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	1.20	1000sqft	0.23	1,200.00	0
Industrial Park	12.00	1000sqft	1.03	12,000.00	0
Apartments Mid Rise	21.00	Dwelling Unit	1.71	21,000.00	70
Single Family Housing	40.00	Dwelling Unit	11.45	72,000.00	134
Strip Mall	6.43	1000sqft	0.54	6,430.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	49
Climate Zone	3			Operational Year	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	403.83	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - See Assumptions

On-road Fugitive Dust - See Assumptions

Demolition - See Assumptions

Construction Off-road Equipment Mitigation - See Assumptions

[illegible]

tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	20.00	15.00
tblConstructionPhase	NumDays	300.00	215.00
tblConstructionPhase	NumDays	20.00	15.00
tblConstructionPhase	NumDays	30.00	22.00
tblConstructionPhase	NumDays	20.00	15.00
tblConstructionPhase	NumDays	10.00	8.00
tblConstructionPhase	PhaseEndDate	7/13/2020	12/31/2019
tblConstructionPhase	PhaseEndDate	5/18/2020	12/30/2019
tblConstructionPhase	PhaseEndDate	1/28/2019	1/21/2019
tblConstructionPhase	PhaseEndDate	3/25/2019	3/4/2019
tblConstructionPhase	PhaseEndDate	6/15/2020	3/25/2019
tblConstructionPhase	PhaseEndDate	2/11/2019	1/31/2019
tblConstructionPhase	PhaseStartDate	6/16/2020	12/11/2019
tblConstructionPhase	PhaseStartDate	3/26/2019	3/5/2019
tblConstructionPhase	PhaseStartDate	2/12/2019	2/1/2019
tblConstructionPhase	PhaseStartDate	5/19/2020	3/5/2019
tblConstructionPhase	PhaseStartDate	1/29/2019	1/22/2019
tblGrading	AcresOfGrading	55.00	75.00
tblLandUse	LotAcreage	0.03	0.23
tblLandUse	LotAcreage	0.28	1.03
tblLandUse	LotAcreage	0.55	1.71
tblLandUse	LotAcreage	12.99	11.45
tblLandUse	LotAcreage	0.15	0.54
tblLandUse	Population	60.00	70.00
tblLandUse	Population	114.00	134.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	403.83
tblWoodstoves	NumberCatalytic	1.71	0.90
tblWoodstoves	NumberCatalytic	11.45	9.90
tblWoodstoves	NumberNoncatalytic	1.71	0.90

tblWoodstoves	NumberNoncatalytic	11.45	9.90
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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					
2019	1.4004	3.6047	2.7942	4.9000e-003	0.2224	0.1964	0.4188	0.0922	0.1837	0.2760	0.0000	434.7057	434.7057	0.1018	0.0000	437.2518
Maximum	1.4004	3.6047	2.7942	4.9000e-003	0.2224	0.1964	0.4188	0.0922	0.1837	0.2760	0.0000	434.7057	434.7057	0.1018	0.0000	437.2518

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					
2019	1.1723	2.3207	2.9835	4.9000e-003	0.1240	0.1280	0.2520	0.0480	0.1280	0.1759	0.0000	434.7053	434.7053	0.1018	0.0000	437.2513
Maximum	1.1723	2.3207	2.9835	4.9000e-003	0.1240	0.1280	0.2520	0.0480	0.1280	0.1759	0.0000	434.7053	434.7053	0.1018	0.0000	437.2513

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	16.28	35.62	-6.78	0.00	44.26	34.80	39.82	48.02	30.35	36.26	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2019	3-31-2019	1.5239	0.8328
2	4-1-2019	6-30-2019	0.8169	0.5463
3	7-1-2019	9-30-2019	0.8259	0.5523
		Highest	1.5239	0.8328

2.2 Overall Operational

-Operational Modeled Separately

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2019	1/21/2019	5	15	
2	Site Preparation	Site Preparation	1/22/2019	1/31/2019	5	8	
3	Grading	Grading	2/1/2019	3/4/2019	5	22	
4	Building Construction	Building Construction	3/5/2019	12/30/2019	5	215	
5	Paving	Paving	3/5/2019	3/25/2019	5	15	
6	Architectural Coating	Architectural Coating	12/11/2019	12/31/2019	5	15	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 0

Residential Indoor: 188,325; Residential Outdoor: 62,775; Non-Residential Indoor: 29,445; Non-Residential Outdoor: 9,815; Striped

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40

Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	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	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	6.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	37.00	10.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	7.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2019

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					6.7000e-004	0.0000	6.7000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0264	0.2684	0.1655	2.9000e-004		0.0135	0.0135		0.0125	0.0125	0.0000	25.9698	25.9698	7.2200e-003	0.0000	26.1504
Total	0.0264	0.2684	0.1655	2.9000e-004	6.7000e-004	0.0135	0.0141	1.0000e-004	0.0125	0.0126	0.0000	25.9698	25.9698	7.2200e-003	0.0000	26.1504

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	3.0000e-005	9.0000e-004	1.3000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.2313	0.2313	2.0000e-005	0.0000	0.2317
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	5.7000e-004	4.1000e-004	4.2300e-003	1.0000e-005	9.0000e-004	1.0000e-005	9.0000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.8421	0.8421	3.0000e-005	0.0000	0.8429
Total	6.0000e-004	1.3100e-003	4.3600e-003	1.0000e-005	9.5000e-004	1.0000e-005	9.5000e-004	2.5000e-004	1.0000e-005	2.7000e-004	0.0000	1.0734	1.0734	5.0000e-005	0.0000	1.0746

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					3.0000e-004	0.0000	3.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.9300e-003	0.1374	0.1851	2.9000e-004		6.4700e-003	6.4700e-003		6.4700e-003	6.4700e-003	0.0000	25.9697	25.9697	7.2200e-003	0.0000	26.1503
Total	6.9300e-003	0.1374	0.1851	2.9000e-004	3.0000e-004	6.4700e-003	6.7700e-003	5.0000e-005	6.4700e-003	6.5200e-003	0.0000	25.9697	25.9697	7.2200e-003	0.0000	26.1503

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	3.0000e-005	9.0000e-004	1.3000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.2313	0.2313	2.0000e-005	0.0000	0.2317
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	5.7000e-004	4.1000e-004	4.2300e-003	1.0000e-005	9.0000e-004	1.0000e-005	9.0000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.8421	0.8421	3.0000e-005	0.0000	0.8429
Total	6.0000e-004	1.3100e-003	4.3600e-003	1.0000e-005	9.5000e-004	1.0000e-005	9.5000e-004	2.5000e-004	1.0000e-005	2.7000e-004	0.0000	1.0734	1.0734	5.0000e-005	0.0000	1.0746

3.3 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Fugitive Dust					0.0723	0.0000	0.0723	0.0397	0.0000	0.0397	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0173	0.1823	0.0883	1.5000e-004		9.5600e-003	9.5600e-003		8.8000e-003	8.8000e-003	0.0000	13.6675	13.6675	4.3200e-003	0.0000	13.7756
Total	0.0173	0.1823	0.0883	1.5000e-004	0.0723	9.5600e-003	0.0818	0.0397	8.8000e-003	0.0485	0.0000	13.6675	13.6675	4.3200e-003	0.0000	13.7756

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6000e-004	2.6000e-004	2.7100e-003	1.0000e-005	5.7000e-004	0.0000	5.8000e-004	1.5000e-004	0.0000	1.6000e-004	0.0000	0.5390	0.5390	2.0000e-005	0.0000	0.5395
Total	3.6000e-004	2.6000e-004	2.7100e-003	1.0000e-005	5.7000e-004	0.0000	5.8000e-004	1.5000e-004	0.0000	1.6000e-004	0.0000	0.5390	0.5390	2.0000e-005	0.0000	0.5395

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					0.0325	0.0000	0.0325	0.0179	0.0000	0.0179	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.7200e-003	0.0763	0.0918	1.5000e-004		3.7800e-003	3.7800e-003		3.7800e-003	3.7800e-003	0.0000	13.6675	13.6675	4.3200e-003	0.0000	13.7756
Total	3.7200e-003	0.0763	0.0918	1.5000e-004	0.0325	3.7800e-003	0.0363	0.0179	3.7800e-003	0.0217	0.0000	13.6675	13.6675	4.3200e-003	0.0000	13.7756

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6000e-004	2.6000e-004	2.7100e-003	1.0000e-005	5.7000e-004	0.0000	5.8000e-004	1.5000e-004	0.0000	1.6000e-004	0.0000	0.5390	0.5390	2.0000e-005	0.0000	0.5395
Total	3.6000e-004	2.6000e-004	2.7100e-003	1.0000e-005	5.7000e-004	0.0000	5.8000e-004	1.5000e-004	0.0000	1.6000e-004	0.0000	0.5390	0.5390	2.0000e-005	0.0000	0.5395

3.4 Grading - 2019

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					0.1060	0.0000	0.1060	0.0407	0.0000	0.0407	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0521	0.5997	0.3671	6.8000e-004		0.0262	0.0262		0.0241	0.0241	0.0000	61.2715	61.2715	0.0194	0.0000	61.7561
Total	0.0521	0.5997	0.3671	6.8000e-004	0.1060	0.0262	0.1322	0.0407	0.0241	0.0648	0.0000	61.2715	61.2715	0.0194	0.0000	61.7561

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
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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	1.1100e-003	8.1000e-004	8.2800e-003	2.0000e-005	1.7500e-003	1.0000e-005	1.7700e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.6468	1.6468	6.0000e-005	0.0000	1.6484
Total	1.1100e-003	8.1000e-004	8.2800e-003	2.0000e-005	1.7500e-003	1.0000e-005	1.7700e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.6468	1.6468	6.0000e-005	0.0000	1.6484

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					0.0477	0.0000	0.0477	0.0183	0.0000	0.0183	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0168	0.3298	0.4040	6.8000e-004		0.0143	0.0143		0.0143	0.0143	0.0000	61.2714	61.2714	0.0194	0.0000	61.7560
Total	0.0168	0.3298	0.4040	6.8000e-004	0.0477	0.0143	0.0620	0.0183	0.0143	0.0326	0.0000	61.2714	61.2714	0.0194	0.0000	61.7560

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	1.1100e-003	8.1000e-004	8.2800e-003	2.0000e-005	1.7500e-003	1.0000e-005	1.7700e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.6468	1.6468	6.0000e-005	0.0000	1.6484

Total	1.1100e-003	8.1000e-004	8.2800e-003	2.0000e-005	1.7500e-003	1.0000e-005	1.7700e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.6468	1.6468	6.0000e-005	0.0000	1.6484
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3.5 Building Construction - 2019

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	0.2538	2.2660	1.8451	2.8900e-003		0.1387	0.1387		0.1304	0.1304	0.0000	252.7370	252.7370	0.0616	0.0000	254.2762
Total	0.2538	2.2660	1.8451	2.8900e-003		0.1387	0.1387		0.1304	0.1304	0.0000	252.7370	252.7370	0.0616	0.0000	254.2762

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	5.5600e-003	0.1427	0.0332	3.1000e-004	7.1200e-003	1.0500e-003	8.1700e-003	2.0600e-003	1.0100e-003	3.0600e-003	0.0000	29.5204	29.5204	3.0500e-003	0.0000	29.5965
Worker	0.0200	0.0146	0.1496	3.3000e-004	0.0317	2.6000e-004	0.0320	8.4300e-003	2.4000e-004	8.6700e-003	0.0000	29.7740	29.7740	1.1000e-003	0.0000	29.8014
Total	0.0256	0.1573	0.1829	6.4000e-004	0.0388	1.3100e-003	0.0402	0.0105	1.2500e-003	0.0117	0.0000	59.2943	59.2943	4.1500e-003	0.0000	59.3980

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	0.1025	1.5222	1.9548	2.8900e-003		0.0969	0.0969		0.0969	0.0969	0.0000	252.7367	252.7367	0.0616	0.0000	254.2759
Total	0.1025	1.5222	1.9548	2.8900e-003		0.0969	0.0969		0.0969	0.0969	0.0000	252.7367	252.7367	0.0616	0.0000	254.2759

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	5.5600e-003	0.1427	0.0332	3.1000e-004	7.1200e-003	1.0500e-003	8.1700e-003	2.0600e-003	1.0100e-003	3.0600e-003	0.0000	29.5204	29.5204	3.0500e-003	0.0000	29.5965
Worker	0.0200	0.0146	0.1496	3.3000e-004	0.0317	2.6000e-004	0.0320	8.4300e-003	2.4000e-004	8.6700e-003	0.0000	29.7740	29.7740	1.1000e-003	0.0000	29.8014
Total	0.0256	0.1573	0.1829	6.4000e-004	0.0388	1.3100e-003	0.0402	0.0105	1.2500e-003	0.0117	0.0000	59.2943	59.2943	4.1500e-003	0.0000	59.3980

3.6 Paving - 2019

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	0.0109	0.1143	0.1100	1.7000e-004		6.1800e-003	6.1800e-003		5.6900e-003	5.6900e-003	0.0000	15.3564	15.3564	4.8600e-003	0.0000	15.4779
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0109	0.1143	0.1100	1.7000e-004		6.1800e-003	6.1800e-003		5.6900e-003	5.6900e-003	0.0000	15.3564	15.3564	4.8600e-003	0.0000	15.4779

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	5.7000e-004	4.1000e-004	4.2300e-003	1.0000e-005	9.0000e-004	1.0000e-005	9.0000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.8421	0.8421	3.0000e-005	0.0000	0.8429
Total	5.7000e-004	4.1000e-004	4.2300e-003	1.0000e-005	9.0000e-004	1.0000e-005	9.0000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.8421	0.8421	3.0000e-005	0.0000	0.8429

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	4.2100e-003	0.0847	0.1297	1.7000e-004		4.5700e-003	4.5700e-003		4.5700e-003	4.5700e-003	0.0000	15.3564	15.3564	4.8600e-003	0.0000	15.4778
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	4.2100e-003	0.0847	0.1297	1.7000e-004		4.5700e-003	4.5700e-003		4.5700e-003	4.5700e-003	0.0000	15.3564	15.3564	4.8600e-003	0.0000	15.4778

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	5.7000e-004	4.1000e-004	4.2300e-003	1.0000e-005	9.0000e-004	1.0000e-005	9.0000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.8421	0.8421	3.0000e-005	0.0000	0.8429
Total	5.7000e-004	4.1000e-004	4.2300e-003	1.0000e-005	9.0000e-004	1.0000e-005	9.0000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.8421	0.8421	3.0000e-005	0.0000	0.8429

3.7 Architectural Coating - 2019

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	1.0094					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0000e-003	0.0138	0.0138	2.0000e-005		9.7000e-004	9.7000e-004		9.7000e-004	9.7000e-004	0.0000	1.9149	1.9149	1.6000e-004	0.0000	1.9190
Total	1.0114	0.0138	0.0138	2.0000e-005		9.7000e-004	9.7000e-004		9.7000e-004	9.7000e-004	0.0000	1.9149	1.9149	1.6000e-004	0.0000	1.9190

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
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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	2.6000e-004	1.9000e-004	1.9700e-003	0.0000	4.2000e-004	0.0000	4.2000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3930	0.3930	1.0000e-005	0.0000	0.3934
Total	2.6000e-004	1.9000e-004	1.9700e-003	0.0000	4.2000e-004	0.0000	4.2000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3930	0.3930	1.0000e-005	0.0000	0.3934

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	1.0094					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.5000e-004	0.0102	0.0137	2.0000e-005		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004	0.0000	1.9149	1.9149	1.6000e-004	0.0000	1.9190
Total	1.0098	0.0102	0.0137	2.0000e-005		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004	0.0000	1.9149	1.9149	1.6000e-004	0.0000	1.9190

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	2.6000e-004	1.9000e-004	1.9700e-003	0.0000	4.2000e-004	0.0000	4.2000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3930	0.3930	1.0000e-005	0.0000	0.3934

Total	2.6000e-004	1.9000e-004	1.9700e-003	0.0000	4.2000e-004	0.0000	4.2000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3930	0.3930	1.0000e-005	0.0000	0.3934
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4.0 Operational Detail - Mobile

-Operational Modeled Separately

Operational CalEEmod Output

Le Grand Community Plan - 2035 Operational - Merced County, Annual

Le Grand Community Plan - 2035 Operational

Merced County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	11.96	1000sqft	2.27	11,960.00	0
Elementary School	441.00	Student	9.00	36,869.09	0
High School	685.00	Student	22.00	90,872.77	0
Industrial Park	119.96	1000sqft	10.32	119,960.00	0
Apartments Mid Rise	209.00	Dwelling Unit	17.09	209,000.00	702
Single Family Housing	399.00	Dwelling Unit	114.55	718,200.00	1340
Strip Mall	64.25	1000sqft	5.36	64,250.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	49
Climate Zone	3			Operational Year	2035
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	320.5	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - No Construction

Vehicle Trips - See Assumptions

Road Dust - See Assumptions

Woodstoves - See Assumptions

Energy Use -

Water And Wastewater - See Assumptions

Solid Waste - See Assumptions

Mobile Land Use Mitigation -

Mobile Commute Mitigation - See Assumptions

Area Mitigation - See Assumptions

Energy Mitigation -

Fleet Mix - See Assumptions

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	150	10
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	150	10
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblAreaMitigation	UseLowVOCPaintParkingValue	150	10
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	150	10
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	150	10
tblFleetMix	HHD	0.15	0.03
tblFleetMix	HHD	0.15	0.03
tblFleetMix	HHD	0.15	0.03
tblFleetMix	HHD	0.15	0.03
tblFleetMix	HHD	0.15	0.03
tblFleetMix	HHD	0.15	0.03
tblFleetMix	HHD	0.15	0.03
tblFleetMix	LDA	0.54	0.62
tblFleetMix	LDA	0.54	0.62
tblFleetMix	LDA	0.54	0.62
tblFleetMix	LDA	0.54	0.62
tblFleetMix	LDA	0.54	0.62

[illegible]

tblFleetMix	MCY	5.3750e-003	6.1250e-003
tblFleetMix	MCY	5.3750e-003	6.1250e-003
tblFleetMix	MCY	5.3750e-003	6.1250e-003
tblFleetMix	MCY	5.3750e-003	6.1250e-003
tblFleetMix	MCY	5.3750e-003	6.1250e-003
tblFleetMix	MCY	5.3750e-003	6.1250e-003
tblFleetMix	MCY	5.3750e-003	6.1250e-003
tblFleetMix	MDV	0.08	0.09
tblFleetMix	MDV	0.08	0.09
tblFleetMix	MDV	0.08	0.09
tblFleetMix	MDV	0.08	0.09
tblFleetMix	MDV	0.08	0.09
tblFleetMix	MDV	0.08	0.09
tblFleetMix	MDV	0.08	0.09
tblFleetMix	MDV	0.08	0.09
tblFleetMix	MH	3.9400e-004	4.4900e-004
tblFleetMix	MH	3.9400e-004	4.4900e-004
tblFleetMix	MH	3.9400e-004	4.4900e-004
tblFleetMix	MH	3.9400e-004	4.4900e-004
tblFleetMix	MH	3.9400e-004	4.4900e-004
tblFleetMix	MH	3.9400e-004	4.4900e-004
tblFleetMix	MH	3.9400e-004	4.4900e-004
tblFleetMix	MHD	0.01	0.02
tblFleetMix	MHD	0.01	0.02
tblFleetMix	MHD	0.01	0.02
tblFleetMix	MHD	0.01	0.02
tblFleetMix	MHD	0.01	0.02
tblFleetMix	MHD	0.01	0.02
tblFleetMix	MHD	0.01	0.02
tblFleetMix	OBUS	2.3180e-003	2.6420e-003
tblFleetMix	OBUS	2.3180e-003	2.6420e-003

tblFleetMix	OBUS	2.3180e-003	2.6420e-003
tblFleetMix	OBUS	2.3180e-003	2.6420e-003
tblFleetMix	OBUS	2.3180e-003	2.6420e-003
tblFleetMix	OBUS	2.3180e-003	2.6420e-003
tblFleetMix	OBUS	2.3180e-003	2.6420e-003
tblFleetMix	SBUS	1.1980e-003	1.3650e-003
tblFleetMix	SBUS	1.1980e-003	1.3650e-003
tblFleetMix	SBUS	1.1980e-003	1.3650e-003
tblFleetMix	SBUS	1.1980e-003	1.3650e-003
tblFleetMix	SBUS	1.1980e-003	1.3650e-003
tblFleetMix	SBUS	1.1980e-003	1.3650e-003
tblFleetMix	SBUS	1.1980e-003	1.3650e-003
tblFleetMix	UBUS	1.4170e-003	1.6150e-003
tblFleetMix	UBUS	1.4170e-003	1.6150e-003
tblFleetMix	UBUS	1.4170e-003	1.6150e-003
tblFleetMix	UBUS	1.4170e-003	1.6150e-003
tblFleetMix	UBUS	1.4170e-003	1.6150e-003
tblFleetMix	UBUS	1.4170e-003	1.6150e-003
tblLandUse	LotAcreage	0.27	2.27
tblLandUse	LotAcreage	0.85	9.00
tblLandUse	LotAcreage	2.09	22.00
tblLandUse	LotAcreage	2.75	10.32
tblLandUse	LotAcreage	5.50	17.09
tblLandUse	LotAcreage	129.55	114.55
tblLandUse	LotAcreage	1.47	5.36
tblLandUse	Population	598.00	702.00
tblLandUse	Population	1,141.00	1,340.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	320.5
tblRoadDust	RoadSiltLoading	0.1	0.059024

tblSolidWaste	SolidWasteGenerationRate	96.14	89.66
tblSolidWaste	SolidWasteGenerationRate	80.48	75.05
tblSolidWaste	SolidWasteGenerationRate	11.12	10.37
tblSolidWaste	SolidWasteGenerationRate	125.01	116.61
tblSolidWaste	SolidWasteGenerationRate	148.75	138.72
tblSolidWaste	SolidWasteGenerationRate	410.76	383.07
tblSolidWaste	SolidWasteGenerationRate	67.46	62.91
tblVehicleTrips	HO_TL	7.50	8.21
tblVehicleTrips	HS_TL	7.30	8.00
tblVehicleTrips	HW_TL	10.80	11.51
tblVehicleTrips	ST_TR	6.39	6.76
tblVehicleTrips	ST_TR	2.46	2.44
tblVehicleTrips	ST_TR	0.61	0.17
tblVehicleTrips	ST_TR	2.49	1.00
tblVehicleTrips	ST_TR	42.04	26.75
tblVehicleTrips	SU_TR	5.86	6.20
tblVehicleTrips	SU_TR	1.05	1.04
tblVehicleTrips	SU_TR	0.25	0.07
tblVehicleTrips	SU_TR	0.73	0.46
tblVehicleTrips	SU_TR	20.43	13.00
tblVehicleTrips	WD_TR	6.65	7.03
tblVehicleTrips	WD_TR	1.29	1.37
tblVehicleTrips	WD_TR	11.03	10.96
tblVehicleTrips	WD_TR	1.71	0.48
tblVehicleTrips	WD_TR	6.83	6.97
tblVehicleTrips	WD_TR	44.32	28.20
tblWater	AerobicPercent	87.46	97.54
tblWater	AerobicPercent	87.46	97.54
tblWater	AerobicPercent	87.46	97.54
tblWater	AerobicPercent	87.46	97.54

tblWoodstoves	NumberCatalytic	17.09	0.00
tblWoodstoves	NumberCatalytic	114.55	0.00
tblWoodstoves	NumberNoncatalytic	17.09	0.00
tblWoodstoves	NumberNoncatalytic	114.55	0.00

2.0 Emissions Summary

2.1 Overall Construction

- Construction modeled Separately

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	6.1439	0.2794	4.6075	1.6900e-003		0.0435	0.0435		0.0435	0.0435	0.0000	270.7880	270.7880	0.0121	4.8300e-003	272.5302
Energy	0.1003	0.8733	0.4857	5.4700e-003		0.0693	0.0693		0.0693	0.0693	0.0000	2,018.4084	2,018.4084	0.1119	0.0374	2,032.3509
Mobile	1.3500	7.6633	14.7566	0.0746	5.5924	0.0392	5.6316	1.5584	0.0365	1.5948	0.0000	6,881.3469	6,881.3469	0.3866	0.0000	6,891.0129
Waste						0.0000	0.0000		0.0000	0.0000	177.8993	0.0000	177.8993	10.5135	0.0000	440.7379
Water						0.0000	0.0000		0.0000	0.0000	24.8622	73.3808	98.2430	0.7204	0.0554	132.7748
Total	7.5942	8.8160	19.8498	0.0818	5.5924	0.1519	5.7444	1.5584	0.1492	1.7076	202.7615	9,243.9241	9,446.6856	11.7446	0.0977	9,769.4066

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
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Category	tons/yr										MT/yr					
Area	5.0949	0.0520	4.5107	2.4000e-004		0.0251	0.0251		0.0251	0.0251	0.0000	7.3979	7.3979	7.0800e-003	0.0000	7.5750
Energy	0.0831	0.7236	0.4009	4.5300e-003		0.0574	0.0574		0.0574	0.0574	0.0000	1,810.7515	1,810.7515	0.1052	0.0336	1,823.3882
Mobile	1.1708	6.8424	11.1217	0.0543	3.9063	0.0289	3.9351	1.0885	0.0268	1.1154	0.0000	5,009.9586	5,009.9586	0.3425	0.0000	5,018.5201
Waste						0.0000	0.0000		0.0000	0.0000	177.8993	0.0000	177.8993	10.5135	0.0000	440.7379
Water						0.0000	0.0000		0.0000	0.0000	24.8622	73.3808	98.2430	0.7204	0.0554	132.7748
Total	6.3487	7.6179	16.0333	0.0591	3.9063	0.1114	4.0176	1.0885	0.1093	1.1978	202.7615	6,901.4888	7,104.2503	11.6887	0.0890	7,422.9958

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	16.40	13.59	19.23	27.78	30.15	26.70	30.06	30.15	26.72	29.85	0.00	25.34	24.80	0.48	8.86	24.02

3.0 Construction Detail

- Construction modeled Separately

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

- Increase Diversity
- Implement Trip Reduction Program
- Employee Vanpool/Shuttle

	ROG	NOx	CO	SO2	Fugitive 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	1.1708	6.8424	11.1217	0.0543	3.9063	0.0289	3.9351	1.0885	0.0268	1.1154	0.0000	5,009.9586	5,009.9586	0.3425	0.0000	5,018.5201
Unmitigated	1.3500	7.6633	14.7566	0.0746	5.5924	0.0392	5.6316	1.5584	0.0365	1.5948	0.0000	6,881.3469	6,881.3469	0.3866	0.0000	6,891.0129

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,469.27	1,412.84	1295.80	4,183,895	2,923,213
Elementary School	604.17	0.00	0.00	951,541	663,941
General Office Building	131.08	29.18	12.44	237,961	166,111
High School	328.80	116.45	47.95	676,383	471,946
Industrial Park	836.12	119.96	55.18	1,631,432	1,138,599
Single Family Housing	3,798.48	3,954.09	3439.38	11,841,650	8,273,735
Strip Mall	1,811.85	1,718.69	835.25	2,554,956	1,783,562
Total	8,979.77	7,351.21	5,686.00	22,077,818	15,421,108

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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	46.90	17.40	35.70	86	11	3
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
High School	9.50	7.30	7.30	77.80	17.20	5.00	75	19	6
Industrial Park	9.50	7.30	7.30	59.00	28.00	13.00	79	19	2
Single Family Housing	11.51	8.00	8.21	46.90	17.40	35.70	86	11	3
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.619633	0.030402	0.183386	0.093166	0.009367	0.003535	0.016106	0.032208	0.002642	0.001615	0.006125	0.001365	0.000449
Elementary School	0.619633	0.030402	0.183386	0.093166	0.009367	0.003535	0.016106	0.032208	0.002642	0.001615	0.006125	0.001365	0.000449
General Office Building	0.619633	0.030402	0.183386	0.093166	0.009367	0.003535	0.016106	0.032208	0.002642	0.001615	0.006125	0.001365	0.000449
High School	0.619633	0.030402	0.183386	0.093166	0.009367	0.003535	0.016106	0.032208	0.002642	0.001615	0.006125	0.001365	0.000449
Industrial Park	0.619633	0.030402	0.183386	0.093166	0.009367	0.003535	0.016106	0.032208	0.002642	0.001615	0.006125	0.001365	0.000449

Single Family Housing	0.619633	0.030402	0.183386	0.093166	0.009367	0.003535	0.016106	0.032208	0.002642	0.001615	0.006125	0.001365	0.000449
Strip Mall	0.619633	0.030402	0.183386	0.093166	0.009367	0.003535	0.016106	0.032208	0.002642	0.001615	0.006125	0.001365	0.000449

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	988.3679	988.3679	0.0894	0.0185	996.1175
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,026.1750	1,026.1750	0.0929	0.0192	1,034.2211
NaturalGas Mitigated	0.0831	0.7236	0.4009	4.5300e-003		0.0574	0.0574		0.0574	0.0574	0.0000	822.3836	822.3836	0.0158	0.0151	827.2707
NaturalGas Unmitigated	0.1003	0.8733	0.4857	5.4700e-003		0.0693	0.0693		0.0693	0.0693	0.0000	992.2335	992.2335	0.0190	0.0182	998.1298

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	2.54517e+006	0.0137	0.1173	0.0499	7.5000e-004		9.4800e-003	9.4800e-003		9.4800e-003	9.4800e-003	0.0000	135.8201	135.8201	2.6000e-003	2.4900e-003	136.6272

Elementary School	925783	4.9900e-003	0.0454	0.0381	2.7000e-004		3.4500e-003	3.4500e-003		3.4500e-003	3.4500e-003	0.0000	49.4033	49.4033	9.5000e-004	9.1000e-004	49.6969
General Office Building	156078	8.4000e-004	7.6500e-003	6.4300e-003	5.0000e-005		5.8000e-004	5.8000e-004		5.8000e-004	5.8000e-004	0.0000	8.3289	8.3289	1.6000e-004	1.5000e-004	8.3784
High School	2.28182e+006	0.0123	0.1119	0.0940	6.7000e-004		8.5000e-003	8.5000e-003		8.5000e-003	8.5000e-003	0.0000	121.7664	121.7664	2.3300e-003	2.2300e-003	122.4900
Industrial Park	1.56548e+006	8.4400e-003	0.0767	0.0645	4.6000e-004		5.8300e-003	5.8300e-003		5.8300e-003	5.8300e-003	0.0000	83.5399	83.5399	1.6000e-003	1.5300e-003	84.0363
Single Family Housing	1.0432e+007	0.0563	0.4807	0.2046	3.0700e-003		0.0389	0.0389		0.0389	0.0389	0.0000	556.6886	556.6886	0.0107	0.0102	559.9967
Strip Mall	687475	3.7100e-003	0.0337	0.0283	2.0000e-004		2.5600e-003	2.5600e-003		2.5600e-003	2.5600e-003	0.0000	36.6863	36.6863	7.0000e-004	6.7000e-004	36.9043
Total		0.1003	0.8733	0.4857	5.4700e-003		0.0693	0.0693		0.0693	0.0693	0.0000	992.2335	992.2335	0.0190	0.0182	998.1298

Mitigated

	Natural Gas 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	2.19176e+006	0.0118	0.1010	0.0430	6.4000e-004		8.1700e-003	8.1700e-003		8.1700e-003	8.1700e-003	0.0000	116.9606	116.9606	2.2400e-003	2.1400e-003	117.6557
Elementary School	754784	4.0700e-003	0.0370	0.0311	2.2000e-004		2.8100e-003	2.8100e-003		2.8100e-003	2.8100e-003	0.0000	40.2782	40.2782	7.7000e-004	7.4000e-004	40.5175
General Office Building	125532	6.8000e-004	6.1500e-003	5.1700e-003	4.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	6.6989	6.6989	1.3000e-004	1.2000e-004	6.7387
High School	1.86035e+006	0.0100	0.0912	0.0766	5.5000e-004		6.9300e-003	6.9300e-003		6.9300e-003	6.9300e-003	0.0000	99.2752	99.2752	1.9000e-003	1.8200e-003	99.8652
Industrial Park	1.2591e+006	6.7900e-003	0.0617	0.0519	3.7000e-004		4.6900e-003	4.6900e-003		4.6900e-003	4.6900e-003	0.0000	67.1904	67.1904	1.2900e-003	1.2300e-003	67.5897
Single Family Housing	8.64266e+006	0.0466	0.3982	0.1695	2.5400e-003		0.0322	0.0322		0.0322	0.0322	0.0000	461.2050	461.2050	8.8400e-003	8.4600e-003	463.9458
Strip Mall	576708	3.1100e-003	0.0283	0.0238	1.7000e-004		2.1500e-003	2.1500e-003		2.1500e-003	2.1500e-003	0.0000	30.7753	30.7753	5.9000e-004	5.6000e-004	30.9582
Total		0.0831	0.7236	0.4009	4.5300e-003		0.0574	0.0574		0.0574	0.0574	0.0000	822.3836	822.3836	0.0158	0.0151	827.2707

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	939716	136.6125	0.0124	2.5600e-003	137.6837
Elementary School	258821	37.6265	3.4000e-003	7.0000e-004	37.9215
General Office Building	109075	15.8570	1.4300e-003	3.0000e-004	15.9813
High School	637927	92.7395	8.3900e-003	1.7400e-003	93.4666
Industrial Park	1.09404e+006	159.0469	0.0144	2.9800e-003	160.2939
Single Family Housing	3.49554e+006	508.1682	0.0460	9.5100e-003	512.1527
Strip Mall	523637	76.1245	6.8900e-003	1.4300e-003	76.7214
Total		1,026.1749	0.0928	0.0192	1,034.2211

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	910427	132.3545	0.0120	2.4800e-003	133.3923
Elementary School	243041	35.3324	3.2000e-003	6.6000e-004	35.6095
General Office Building	102808	14.9459	1.3500e-003	2.8000e-004	15.0631
High School	599033	87.0853	7.8800e-003	1.6300e-003	87.7681
Industrial Park	1.03118e+006	149.9086	0.0136	2.8100e-003	151.0841

Single Family Housing	3.41606e+006	496.6144	0.0449	9.3000e-003	500.5083
Strip Mall	496139	72.1268	6.5300e-003	1.3500e-003	72.6923
Total		988.3679	0.0894	0.0185	996.1175

6.0 Area Detail

6.1 Mitigation Measures Area

- Use Low VOC Paint - Residential Interior
- Use Low VOC Paint - Residential Exterior
- Use Low VOC Paint - Non-Residential Interior
- Use Low VOC Paint - Non-Residential Exterior
- No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive 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	5.0949	0.0520	4.5107	2.4000e-004		0.0251	0.0251		0.0251	0.0251	0.0000	7.3979	7.3979	7.0800e-003	0.0000	7.5750
Unmitigated	6.1439	0.2794	4.6075	1.6900e-003		0.0435	0.0435		0.0435	0.0435	0.0000	270.7880	270.7880	0.0121	4.8300e-003	272.5302

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
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SubCategory	tons/yr										MT/yr					
Architectural Coating	1.0955					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.8862					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0266	0.2274	0.0968	1.4500e-003		0.0184	0.0184		0.0184	0.0184	0.0000	263.3901	263.3901	5.0500e-003	4.8300e-003	264.9553
Landscaping	0.1356	0.0520	4.5107	2.4000e-004		0.0251	0.0251		0.0251	0.0251	0.0000	7.3979	7.3979	7.0800e-003	0.0000	7.5750
Total	6.1439	0.2794	4.6075	1.6900e-003		0.0435	0.0435		0.0435	0.0435	0.0000	270.7880	270.7880	0.0121	4.8300e-003	272.5302

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	0.0730					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.8862					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1356	0.0520	4.5107	2.4000e-004		0.0251	0.0251		0.0251	0.0251	0.0000	7.3979	7.3979	7.0800e-003	0.0000	7.5750
Total	5.0949	0.0520	4.5107	2.4000e-004		0.0251	0.0251		0.0251	0.0251	0.0000	7.3979	7.3979	7.0800e-003	0.0000	7.5750

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	98.2430	0.7204	0.0554	132.7748
Unmitigated	98.2430	0.7204	0.0554	132.7748

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	12.2029 / 7.69316	17.8311	0.1252	9.6400e-003	23.8337
Elementary School	0.958056 / 2.46357	2.3461	9.9100e-003	7.7000e-004	2.8248
General Office Building	1.90493 / 1.16753	2.7665	0.0195	1.5000e-003	3.7034
High School	2.78467 / 6.95319	6.7136	0.0288	2.2500e-003	8.1041
Industrial Park	24.8597 / 0	28.3508	0.2543	0.0195	40.5167
Single Family Housing	23.2965 / 14.6869	34.0411	0.2390	0.0184	45.5006
Strip Mall	4.26488 / 2.61396	6.1938	0.0437	3.3700e-003	8.2914
Total		98.2430	0.7204	0.0554	132.7747

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	12.2029 / 7.69316	17.8311	0.1252	9.6400e-003	23.8337
Elementary School	0.958056 / 2.46357	2.3461	9.9100e-003	7.7000e-004	2.8248
General Office Building	1.90493 / 1.16753	2.7665	0.0195	1.5000e-003	3.7034
High School	2.78467 / 6.95319	6.7136	0.0288	2.2500e-003	8.1041
Industrial Park	24.8597 / 0	28.3508	0.2543	0.0195	40.5167
Single Family Housing	23.2965 / 14.6869	34.0411	0.2390	0.0184	45.5006
Strip Mall	4.26488 / 2.61396	6.1938	0.0437	3.3700e-003	8.2914
Total		98.2430	0.7204	0.0554	132.7747

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	177.8993	10.5135	0.0000	440.7379
Unmitigated	177.8993	10.5135	0.0000	440.7379

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	89.66	18.2002	1.0756	0.0000	45.0902
Elementary School	75.05	15.2345	0.9003	0.0000	37.7428
General Office Building	10.37	2.1050	0.1244	0.0000	5.2151
High School	116.61	23.6708	1.3989	0.0000	58.6434
Industrial Park	138.72	28.1589	1.6641	0.0000	69.7625
Single Family Housing	383.07	77.7598	4.5955	0.0000	192.6465
Strip Mall	62.91	12.7702	0.7547	0.0000	31.6375
Total		177.8993	10.5135	0.0000	440.7379

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	89.66	18.2002	1.0756	0.0000	45.0902
Elementary School	75.05	15.2345	0.9003	0.0000	37.7428
General Office Building	10.37	2.1050	0.1244	0.0000	5.2151
High School	116.61	23.6708	1.3989	0.0000	58.6434

Industrial Park	138.72	28.1589	1.6641	0.0000	69.7625
Single Family Housing	383.07	77.7598	4.5955	0.0000	192.6465
Strip Mall	62.91	12.7702	0.7547	0.0000	31.6375
Total		177.8993	10.5135	0.0000	440.7379

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

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

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Appendix D
Special-Status Species Table

**TABLE D-1
SPECIAL-STATUS SPECIES RECORDED OR POTENTIALLY OCCURRING
WITHIN THE VICINITY OF THE LE GRAND PLANNING AREA, MERCED COUNTY**

Genus/Species	Common Name	Status Federal/CA/Other	Habitats and Seasonal Distribution in California	Likelihood of Occurrence within Planning Area
PLANTS				
<i>Atriplex cordulata</i> var. <i>cordulata</i>	Heartscale	none/none/CNPS list 1B.2	This annual saltbush occurs in chenopod scrub, valley and foothill grassland, and vernal pools (typically on alkaline soils and frequently in scalded areas). It is known from Alameda, Contra Costa, Butte, Fresno, Glenn, Kings, Kern, Madera, Merced, San Joaquin, Solano, Stanislaus, Tulare, and Yolo counties. It blooms from April to October.	No Potential. No alkaline soils associated with chenopod scrub, valley and foothill grassland, or vernal pools are located within the Plan Area. Therefore, suitable habitat for this taxon does not occur within the Plan Area and it has no potential to occur within the Plan Area.
<i>Atriplex minuscula</i>	Lesser saltscale	none/none/CNPS list 1B.1	This annual saltbush grows in sandy alkaline areas in chenopod scrub, playas, and valley and foothill grassland. It blooms from May to October. It is known from only five locations in Butte, Fresno, Madera, Merced, and Tulare counties.	No Potential. No sandy, alkaline soils associated with chenopod scrub, valley and foothill grassland, or playas are located within the Plan Area. Therefore, suitable habitat for this species does not occur within the Plan Area and it has no potential to occur within the Plan Area.
<i>Atriplex subtilis</i>	Subtle orache	none/none/CNPS list 1B.2	This annual saltbush is known from fewer than 20 occurrences in Butte, Fresno, Kings, Kern, Madera,	No Potential. Though valley and foothill grassland occurs within the Plan Area, it has been regularly disturbed

**TABLE D-1
SPECIAL-STATUS SPECIES RECORDED OR POTENTIALLY OCCURRING
WITHIN THE VICINITY OF THE LE GRAND PLANNING AREA, MERCED COUNTY**

Genus/Species	Common Name	Status Federal/CA/Other	Habitats and Seasonal Distribution in California	Likelihood of Occurrence within Planning Area
			Merced, and Tulare counties. It grows in valley and foothill grassland and blooms during June to October.	due to disking and hay-cropping activities for many years. Consequently, it is considered unsuitable for this species and it has no potential to occur within the Plan Area.
<i>Calycadenia hooveri</i>	Hoover's calycadenia	none/none/CNPS list 1B.3	An annual herb that blooms from July-September. It occurs in valley and foothill grassland (particularly in rocky soils). It has been recorded in Calaveras, Madera, Merced, Mariposa, and Stanislaus counties.	No Potential. Though valley and foothill grassland occurs within the Plan Area, it has been regularly disturbed due to disking and hay-cropping activities for many years. Consequently, it is considered unsuitable for this species and it has no potential to occur within the Plan Area.
<i>Castilleja campestris</i> ssp. <i>succulenta</i>	Succulent owl's-clover	FT/SE/CNPS list 1B.2	This taxon is currently known from sites in eastern Merced, southeastern Stanislaus, Madera, San Joaquin and northern Fresno counties where it occurs on the margins of vernal pools, swales, and some seasonal wetlands (often on acidic soils). It blooms in May.	No Potential. No vernal pools, swales, or seasonal wetlands are located within the Plan Area. Therefore, suitable habitat for this taxon does not occur within the Plan Area and it has no potential to occur within the Plan Area.
<i>Clarkia rostrata</i>	Beaked clarkia	none/none/CNPS list 1B.3	The species is an annual that blooms from April to May and occurs in valley and foothill	No Potential. Though valley and foothill grassland occurs within the Plan Area, it has been regularly disturbed

**TABLE D-1
SPECIAL-STATUS SPECIES RECORDED OR POTENTIALLY OCCURRING
WITHIN THE VICINITY OF THE LE GRAND PLANNING AREA, MERCED COUNTY**

Genus/Species	Common Name	Status Federal/CA/Other	Habitats and Seasonal Distribution in California	Likelihood of Occurrence within Planning Area
			grassland and cismontane woodland. It has been recorded in Merced, Mariposa, Stanislaus, and Tuolumne counties.	due to disking and hay-cropping activities for many years. Consequently, it is considered unsuitable for this species and it has no potential to occur within the Plan Area.
<i>Calochortus clavatus</i> var. <i>avius</i>	Pleasant Valley mariposa-lily	none/none/CNPS list 1B.2	This perennial bulbiferous herb blooms from May to July and is known from Amador, Calaveras, El Dorado, Mariposa, and Placer counties. It occurs in lower montane coniferous forest (Josephine silt loam and volcanic soils).	No Potential. No lower montane coniferous forest (particularly on Josephine silt loam or volcanic soils) is located within the Plan Area. Therefore, suitable habitat for this species does not occur within the Plan Area and it has no potential to occur within the Plan Area.
<i>Calycadenia hooveri</i>	Hoover's calycadenia	none/none/CNPS list 1B.3	This species is an annual herb that blooms from July to September. It occurs in valley and foothill grassland (particularly in rocky soils of the lone Formation). It has been recorded in Calaveras, Madera, Merced, Mariposa, and Stanislaus counties.	No Potential. Though valley and foothill grassland occurs within the project area, the species is known exclusively from Hornitos Sandstone outcrops or derived soils (lone Formation) in Merced County. Such outcrops or soils do not occur within the project site. Therefore, the species has no potential to occur within the project site.
<i>Delphinium</i>	recurved	none/none/CNPS	This perennial herb occurs in	No Potential. No alkaline soils in

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Genus/Species	Common Name	Status Federal/CA/Other	Habitats and Seasonal Distribution in California	Likelihood of Occurrence within Planning Area
<i>recurvatum</i>	larkspur	list 1B.2	alkaline areas in chenopod scrub, cismontane woodland, and valley and foothill grassland. It is known from Alameda, Butte, Contra Costa, Colusa, Fresno, Glenn, Kings, Kern, Madera, Merced, Monterey, San Joaquin, San Luis Obispo, Solano, Sutter, and Tulare counties. It blooms from March to June.	chenopod scrub, cismontane woodland, or valley and foothill grassland are located within the project area. The nearest known records of the species are from lower elevations on the valley floor. Therefore, suitable habitat for this species does not occur within the project site and it has no potential to occur within the project site.
<i>Downingia pusilla</i>	Dwarf downingia	none/none/CNPS list 2.2	This annual herb blooms from March to May and is known from Merced, Mariposa, Napa, Placer, Sacramento, Solano, Sonoma, Stanislaus, Tehama, and Yuba counties. It occurs in vernal pools and mesic grasslands.	No Potential. No vernal pools or similar mesic habitats in valley and foothill grassland are located within the Plan Area. Therefore, suitable habitat for this species does not occur within the Plan Area and it has no potential to occur within the Plan Area.
<i>Eryngium spinosepalum</i>	Spiny-sepaled button-celery	none/none/CNPS list 1B.2	This perennial species occurs in wet valley and foothill grassland and vernal pools. Known occurrences have been documented in the San Joaquin Valley (Kern to Stanislaus counties), along the Central Coast (Monterey and San Luis Obispo counties), and in Contra Costa	No Potential. No vernal pools or similar mesic habitats in valley and foothill grassland are located within the Plan Area. Therefore, suitable habitat for this species does not occur within the Plan Area and it has no potential to occur within the Plan Area.

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Genus/Species	Common Name	Status Federal/CA/Other	Habitats and Seasonal Distribution in California	Likelihood of Occurrence within Planning Area
			County. Blooming occurs during April to May.	
<i>Gratiola heterosepala</i>	Boggs Lake hedge-hyssop	none/SE/CNPS list 1B.2	This annual species is found in Fresno, Lake, Lassen, Madera, Merced, Modoc, Placer, Sacramento, Shasta, Siskiyou, San Joaquin, Solano, and Tehama counties. It blooms from April to August. It occurs on clay soils of vernal pools, lake margins, and marshes.	No Potential. No vernal pools, lakes, or marshes are located within the Plan Area. Therefore, suitable habitat for this species does not occur within the Plan Area and it has no potential to occur within the Plan Area.
<i>Navarretia myersii</i> ssp. <i>myersii</i>	Pincushion navarretia	FSC/none/CNPS list 1B.1	This annual herb is known from fewer than 20 occurrences in Amador, Lake, Merced, and Sacramento counties. It blooms from April to May and occurs in vernal pools (often on acidic soils).	No Potential. No vernal pools are located within the Plan Area. Therefore, suitable habitat for this taxon does not occur within the Plan Area and it has no potential to occur within the Plan Area.
<i>Navarretia nigelliformis</i> ssp. <i>radians</i>	Shining navarretia	none/none/CNPS list 1B.2	The species is an annual herb that occurs in vernal pools in valley and foothill grassland and cismontane woodland. It blooms from May to July and has been found in Fresno, Merced, Monterey, San Benito, and San Luis Obispo counties.	No Potential. No vernal pools or similar mesic habitats in valley and foothill grassland or cismontane woodland are located within the Plan Area. Therefore, suitable habitat for this taxon does not occur within the Plan Area and it has no potential to

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Genus/Species	Common Name	Status Federal/CA/Other	Habitats and Seasonal Distribution in California	Likelihood of Occurrence within Planning Area
				occur within the Plan Area.
<i>Neostapfia colusana</i>	Colusa grass	FT/SE/CNPS list 1B.1	This grass occurs in vernal pools (typically larger or more persistent pools) and some manmade wetlands (e.g., stock ponds) within valley and foothill grassland. It is distributed primarily along the eastern margin of the San Joaquin Valley in Stanislaus and Merced counties, but also occurs in Solano and Yolo counties. It flowers from May to July.	No Potential. No vernal pools are located within the Plan Area. Therefore, suitable habitat for this taxon does not occur within the Plan Area and it has no potential to occur within the Plan Area.
<i>Orcuttia pilosa</i>	Hairy orcutt grass	FE/SE/CNPS list 1B.1	This grass occurs in vernal pools (typically larger or more persistent pools) within valley and foothill grassland. It is distributed along the eastern margin of the Sacramento and San Joaquin valleys from Tehama County south to Stanislaus, Merced, and Madera counties. It flowers from May to September.	No Potential. No vernal pools are located within the Plan Area. Therefore, suitable habitat for this taxon does not occur within the Plan Area and it has no potential to occur within the Plan Area.
<i>Orcuttia inaequalis</i>	San Joaquin Valley orcutt	FT/SE/CNPS list 1B.2	This grass occurs in vernal pools (typically larger or more persistent	No Potential. No vernal pools are located within the Plan Area.

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	grass		pools) within valley and foothill grassland. The remaining populations of this species occur mostly in the southeastern San Joaquin Valley (Fresno, Merced, and Madera counties). Historically, the species also occurred in Stanislaus County. It flowers from April to September.	Therefore, suitable habitat for this taxon does not occur within the Plan Area and it has no potential to occur within the Plan Area.
<i>Phacelia ciliata</i> var. <i>opaca</i>	Merced phacelia	none/none/CNPS list 1B.2	This species occurs in valley and foothill grassland (typically on clay soils, sometimes on alkaline soils). It blooms from February to May and is known from fewer than 10 extant occurrences in Merced County.	No Potential. No individuals of this taxon have been recorded within the Plan Area. In addition, the taxon has typically been found on clay soils (often on hills) in relatively undisturbed valley and foothill grassland. Therefore, suitable habitat for this taxon does not occur within the Plan Area and it has no potential to occur within the Plan Area.
<i>Puccinellia simplex</i>	California alkali grass	none/none/CNPS list 1B.2	This annual herb occurs in alkaline, vernal mesic; sinks, flats, and lake margins in chenopod scrub, meadows and seeps, valley and foothill grassland, and vernal pools. It has been recorded in Alameda,	No Potential. No suitable habitat for this species (i.e., alkaline, vernal mesic; sinks, flats, and lake margins) is located within the Plan Area. Therefore, suitable habitat for this species does not occur within the Plan

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			Butte, Contra Costa, Colusa, Fresno, Glenn, Kings, Kern, Lake, Los Angeles, Madera, Merced, Napa, San Bernardino, Santa Clara, Santa Cruz, San Luis Obispo, Solano, Stanislaus, Tulare, and Yolo counties. Blooming occurs during March to May.	Area and it has no potential to occur within the Plan Area.
<i>Sagittaria sanfordii</i>	Sanford's arrowhead	none/none/CNPS list 1B.2	This perennial species occurs in shallow, standing, fresh water and slow-moving waterways (e.g., marshes, ponds, vernal pools, lakes, reservoirs, sloughs, ditches, unlined canals, streams, and rivers) at elevations below 2000 feet. It blooms from late May to August.	No Potential. No individuals of this species have been recorded within the Plan Area. The species has been found in slow-moving waterways such as ditches and unlined canals, but the Plan Area has only a small number of fragmented, isolated water features. Therefore, it is not expected to occur within the Plan Area.
<i>Tuctoria greenei</i>	Greene's tuctoria	FE/CR/CNPS list 1B.1	This grass occurs in the dry bottoms of vernal pools in valley and foothill grassland. It is known to occur in Butte, Glenn, Merced, Shasta, and Tehama counties. Historically, it also occurred in Fresno, Madera, Stanislaus, San Joaquin, and Tulare counties. It	No Potential. No vernal pools are located within the Plan Area. Therefore, suitable habitat for this taxon does not occur within the Plan Area and it has no potential to occur within the Plan Area.

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Genus/Species	Common Name	Status Federal/CA/Other	Habitats and Seasonal Distribution in California	Likelihood of Occurrence within Planning Area
			flowers from May through July.	
INVERTEBRATES				
<i>Branchinecta conservatio</i>	Conservancy fairy shrimp	FE/none/none	Occurs in very large turbid vernal pools and playa pools underlain by clay substrates such as the Mehrten Formation. There are relatively few occurrences of this species, but it is known from Tehama, Glenn, Solano, Stanislaus, and Merced counties.	No Potential. No vernal pools or other similar seasonal wetlands are located within the Plan Area. Therefore, suitable habitat for this species does not occur within the Plan Area and it has no potential to occur within the Plan Area.
<i>Branchinecta lynchii</i>	Vernal pool fairy shrimp	FT/none/none	Occurs primarily in vernal pools (sandstone depression, grass swale, earth slump, or basalt-flow depression pools) in grassland and oak savannah of the Central Valley. However, the species also occurs at a few locations in the central Coast Ranges from Monterey County south to Santa Barbara County and in the South Coast Mountains in Riverside County.	No Potential. No vernal pools or other similar seasonal wetlands are located within the Plan Area. Therefore, suitable habitat for this species does not occur within the Plan Area and it has no potential to occur within the Plan Area.
<i>Branchinecta</i>	Midvalley fairy	none/SA/none	This species occurs in small vernal	No Potential. No vernal pools or other

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<i>mesovallensis</i>	shrimp		pools and intermound pools within valley and foothill grassland (i.e., the smallest and most ephemeral vernal pools). It has been recorded from the central portion of the Central Valley from Sacramento and Solano counties south to Madera and Fresno counties.	similar seasonal wetlands are located within the Plan Area. Therefore, suitable habitat for this species does not occur within the Plan Area and it has no potential to occur within the Plan Area.
<i>Lepidurus packardi</i>	Vernal pool tadpole shrimp	FE/none/none	Inhabits clear to turbid vernal pools and swales, stock ponds, and other seasonal wetlands in the Sacramento Valley and northern San Joaquin Valley (from Shasta County south to Merced and Tulare counties). It has also been recorded in three pools at the San Francisco Bay National Wildlife Refuge in Alameda County.	No Potential. No vernal pools or other similar seasonal wetlands are located within the Plan Area. Therefore, suitable habitat for this species does not occur within the Plan Area and it has no potential to occur within the Plan Area.
<i>Linderiella occidentalis</i>	California fairy shrimp	none/SA/none	Occurs primarily in vernal pools and other seasonal wetlands in grassland and oak savannah of the Central Valley. However, the species has also been recorded at scattered locations in the Coast Ranges from Mendocino County south to Ventura County.	No Potential. No vernal pools or other similar seasonal wetlands are located within the Plan Area. Therefore, suitable habitat for this species does not occur within the Plan Area and it has no potential to occur within the Plan Area.

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Genus/Species	Common Name	Status Federal/CA/Other	Habitats and Seasonal Distribution in California	Likelihood of Occurrence within Planning Area
<i>Desmocerus californicus dimorphus</i>	Valley elderberry longhorn beetle	FT/none/none	The subspecies occurs at scattered locations in the Central Valley and adjacent foothills of the Sierra Nevada and Coast Ranges. The subspecies is entirely dependent upon its host plant (i.e., elderberry spp.) and is only found where this shrub occurs (typically in riparian vegetation associations, but occasionally in single, isolated shrubs or stands of the plant).	Low Potential. The only natural drainage with riparian habitat in the vicinity of the Plan Area is associated with Mariposa Creek, located over ½ mile north of the Plan Area. However, there are several small, fragmented waterways in the Plan Area that support adjacent vegetation. Suitable habitat for the species' host plant could therefore occur within the Plan Area. Though there are no nearby known occurrences of the beetle, it cannot be completely discounted and has some potential, albeit low, to occur within the Plan Area.
<i>Lytta moesta</i>	Moestan blister beetle	none/SA/none	The range of this species is not well known, but occurrences have been documented in Fresno, Kern, Madera, Santa Cruz, Stanislaus, and Tulare counties. The CDFW reports that very little is known about the life history and behavior of this species. However, it has been collected from March to September and has typically been found in association with its host	Low Potential. Given that ground-nesting solitary bees (i.e., beetle's host species) are widely distributed in California and little is known about this species' life history and behavior, it cannot be discounted as occurring on the project site. Therefore, it is considered to have some potential, albeit low, to occur in grasslands within the plan area..

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Genus/Species	Common Name	Status Federal/CA/Other	Habitats and Seasonal Distribution in California	Likelihood of Occurrence within Planning Area
			species (i.e., the species' larvae feed on the pollen stores that ground-nesting solitary bees have provided for their own larvae).	
AMPHIBIANS				
<i>Ambystoma californiense</i>	California tiger salamander	FT/ST/none	Found in annual grassland, oak savannah, and coastal sage scrub adjacent to vernal pools, stock ponds, and ponded reaches of ephemeral streams (aquatic breeding sites). The species is distributed in the Central Valley from Glenn County to Kings County, but also occurs in Sonoma County and Alameda and Contra Costa counties south through the interior valleys of the Coast Ranges.	No Potential. Suitable aquatic breeding habitat for this species does not occur within the Plan Area. Furthermore, the available upland habitat within the Plan Area is fragmented, small in size, and shows a history of having been disked. Consequently, the species has no potential to occur within the Plan Area.
<i>Spea hammondi</i>	Western spadefoot	none/CSC/none	Found in dry habitats (e.g., annual grassland, oak savannah and woodland, and coastal sage scrub) adjacent to vernal pools, stock ponds, and overflow channels of	No Potential. Suitable aquatic breeding habitat for this species does not occur within the Plan Area. Furthermore, the available upland habitat within the Plan Area is

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Genus/Species	Common Name	Status Federal/CA/Other	Habitats and Seasonal Distribution in California	Likelihood of Occurrence within Planning Area
			low-gradient drainages within the Central Valley and coastal California from Monterey County to San Diego County.	fragmented, small in size, and shows a history of having been disked. Consequently, the species has no potential to occur within the Plan Area.
REPTILES				
<i>Emys marmorata</i>	Western pond turtle	none/CSC/none	The species historically occurred throughout most of the Pacific-slope drainages in California (below approximately 4,000 feet). The species now occurs at scattered locations throughout its former range (primarily in the central Sierra Nevada foothills, Central Valley, San Francisco Bay area, and north-central coast and Coast Ranges. It occurs in and adjacent to ponds, reservoirs, or other slow-moving perennial aquatic habitats (e.g., sloughs, streams, and rivers).	Low Potential. The Plan Area provides slow-moving perennial aquatic habitat in several small, fragmented features (e.g., canal). Therefore, the species is considered to have some potential, albeit low, to occur within the Plan Area.
BIRDS				
<i>Buteo swainsoni</i>	Swainson's	none/ST/none	Occurs in California as a breeding resident in the Central Valley	Moderate Potential. The species has been recorded nesting along Deadman,

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Genus/Species	Common Name	Status Federal/CA/Other	Habitats and Seasonal Distribution in California	Likelihood of Occurrence within Planning Area
	hawk (nesting)		(primarily in the southern Sacramento and northern San Joaquin valleys), Klamath Basin, and Modoc Plateau. However, nesting pairs are also occasionally found in the Mojave Desert, Lanfair Valley (San Bernardino County), Antelope Valley (Los Angeles County), and eastern San Luis Obispo County. In the Central Valley the species typically nests in riparian woodland or forest stands, or oak savannah. Nest territories are located adjacent to suitable foraging habitat (e.g., grassland, suitable grain and row crop fields, alfalfa, and pastures).	Owens, and Bear Creeks as well as other locations near the Plan Area (CNDDDB 2016). Therefore, the species has a moderate potential to nest in or within 10 miles of the Plan Area and utilize suitable foraging habitats that occur within the area (e.g., certain row crops, fallow fields, and pasture).
<i>Buteo regalis</i>	Ferruginous hawk (wintering)	none/none/BCC	The species is a winter resident of the Modoc Plateau, Central Valley, and Coast Ranges. It forages in large, open tracts of grasslands, sparse scrubland, and deserts.	No Potential. There is no suitable wintering habitat for the species (i.e., large, open, undisturbed tracts of grassland or oak savanna) associated with the Plan Area. Furthermore, all of the nearest records of the species from the immediate vicinity of the Plan Area

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Genus/Species	Common Name	Status Federal/CA/Other	Habitats and Seasonal Distribution in California	Likelihood of Occurrence within Planning Area
				(from the eBird data base) are from rangeland to the east and north of the Plan Area. Therefore, the species is considered to have no potential to winter in the Plan Area.
<i>Circus cyaneus</i>	Northern harrier (nesting)	none/CSC/none	This species is found as a resident and wintering species throughout the lower elevation portions of California in annual grasslands, oak savannah, and valley and coastal marshes. Nesting in the Central Valley typically occurs in emergent wetlands; tall, dense grasslands; or grain fields.	Low Potential. This species is considered to have some potential, albeit low, to occur as a nesting species in weedy fields, hay crops, or grain fields in the Plan Area. This assessment is further supported by no known occurrences during the nesting season than east of Le Grand along White Rock Road (from the eBird data base).
<i>Haliaeetus leucocephalus</i>	Bald eagle	none/SE/BCC	The species winters throughout much of California at lakes, reservoirs, rivers, and some rangelands and coastal wetlands. Nesting occurs mainly in mountain and foothill forests and woodlands near reservoirs, lakes, and rivers. Most current nest territories are in northern California, but the species also nests in scattered locations in the central and southern Sierra	No Potential. There is no suitable habitat for the species (i.e., large, open, undisturbed tracts of grassland or oak savanna or waters with potential prey species [e.g., waterfowl or fish]) associated with the Plan Area. Furthermore, all of the nearest records of the species from the immediate vicinity of the Plan Area (from the eBird data base) are from rangeland to the east of the Plan Area. Therefore, the

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			Nevada mountains and foothills, in several locations in the central Coast Ranges, inland southern California, and on Santa Catalina Island. In most of California, the nesting season lasts from January through July or August.	species is considered to have no potential to winter in the Plan Area.
<i>Falco columbarius</i>	Merlin (wintering)	none/SA/none	This species winters in California from September to May. It occurs in a variety of low elevation, relative flat habitats that include wooded areas, coastlines, open grasslands, savannah, and the periphery of lakes. It is less often found in open desert. It typically requires dense stands of trees for cover and roosting. It is most often found where there are substantial populations of small birds (the primary prey item).	No Potential. There is no suitable wintering habitat for the species (i.e., large, open, undisturbed tracts of grassland or oak savanna) associated with the Plan Area. Furthermore, all of the nearest records of the species from the immediate vicinity of the Plan Area (from the eBird data base) are from rangeland to the north and east of the Plan Area. Therefore, the species is considered to have no potential to winter in the Plan Area.
<i>Athene cunicularia</i>	Burrowing owl (burrow sites)	none/CSC/none	The species is found throughout the Central Valley, in the San Francisco Bay Area, at scattered locations along the coast, and in portions of the desert regions. It is a year-round resident in annual and	Moderate Potential. Suitable habitat for this species occurs throughout the Plan Area (particularly where there are colonies of California ground squirrels and low, open habitat for foraging, roosting, and predator detection). In

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			perennial grasslands or other vegetation communities that support sparse or non-existent tree or shrub canopies.	addition, the species has been recorded at multiple locations in the general vicinity of the Plan Area (CNDDB 2016). Therefore, it is considered to have a moderate potential to occur within the Plan Area (particularly given its tolerance for human disturbance).
<i>Lanius ludovicianus</i>	Loggerhead shrike (nesting)	none/CSC/none	Found as a resident and wintering species throughout the lower elevation portions of California in grasslands, saltbush scrub, chaparral, oak savannah, and other open woodland types (generally where there are trees with dense cover for nesting).	Moderate Potential. This species is considered to have a moderate potential to occur as a nesting species in dense trees or shrubs located adjacent to fallow agricultural lands, vacant lots, or some types of field crops that occur in the Plan Area.
<i>Agelaius tricolor</i>	Tricolored blackbird (nesting colony)	none/CSC/none	Found as a resident species in annual grassland, oak savannah, and freshwater marsh within the Central Valley and coastal California from Sonoma County to San Diego County. Nesting typically occurs in emergent freshwater marsh, but may also occur in dense stands of willow, blackberry, thistle, nettles, or	No Potential. Suitable nesting habitat for this species does not occur within the Plan Area. Therefore, it is considered to have no potential to nest within the Plan Area.

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Genus/Species	Common Name	Status Federal/CA/Other	Habitats and Seasonal Distribution in California	Likelihood of Occurrence within Planning Area
			grasses. Grasslands or rangeland providing an abundant source of food (e.g., grasshoppers or butterfly larvae) often are within at least three miles of nest colonies.	
MAMMALS				
<i>Vulpes macrotis mutica</i>	San Joaquin kit fox	FE/ST/none	The species is found in the San Joaquin Valley from Contra Costa County south to Kern County. It is also found in the dry interior valleys of the Coast Ranges (e.g., Salinas and Santa Clara valleys). It occurs in open, sparsely vegetated areas of low relief (typically in native or non-native grassland or alkali sink scrub).	Low Potential. There is suitable habitat for the taxon within the Plan Area (i.e., open, weedy fields). However, the taxon is known only as an occasional vagrant to the northeastern San Joaquin Valley. Furthermore, the available habitat within the Plan Area is fragmented, small in size, shows a history of having been disked, and occurs in a matrix of land use that is largely active agriculture. Nonetheless, the taxon can occur on the periphery of urban areas and is therefore considered to have some potential, albeit low, to occur within the Plan Area.
<i>Perognathus</i>	San Joaquin	none/SA/none	This taxon typically occurs on fine-	No Potential. There is no suitable

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<i>inornatus inornatus</i>	pocket mouse		textured sandy soils on ridge tops and hillsides supporting grasslands or blue oak savannah. The species <i>P. inornatus</i> is distributed within the Central Valley from Yolo and Sutter counties to the southern-most portions of the San Joaquin Valley and within and near the dry interior valleys of the Coast Range (e.g., Salinas and Cuyama valleys, and Carrizo Plain).	habitat for the taxon on and adjacent to the Plan Area (i.e., fine-textured sandy soils on ridge tops and hillsides supporting grasslands or blue oak savannah). In addition, all known occurrences from the vicinity of the Plan Area are associated with rangeland. Therefore, the taxon is considered to have no potential to occur within the Plan Area.
<i>Dipodomys heermanni dixonii</i>	Merced kangaroo rat	none/SA/none	The taxon occurs in valley and foothill grassland and oak savannah (typically on sandy soils in areas denuded of vegetation) in eastern Merced County, southeastern Stanislaus County, and southwestern Mariposa County.	No Potential. There is no suitable habitat for the taxon on and adjacent to the Plan Area (i.e., sandy areas largely denuded of vegetation). In addition, all known occurrences from the vicinity of the Plan Area are associated with rangeland. Therefore, the taxon is considered to have no potential to occur within the Plan Area.
<i>Taxidea taxus</i>	American badger	none/CSC/none	This species is found as a resident species at scattered localities throughout California (except in the coastal redwood region). Generally	No Potential. Though there is suitable habitat for the species within the Plan Area (i.e., open, weedy fields), the available habitat within the Plan Area is

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Genus/Species	Common Name	Status Federal/CA/Other	Habitats and Seasonal Distribution in California	Likelihood of Occurrence within Planning Area
			occurs in extensive, open habitats in the vicinity of abundant rodent populations.	fragmented, small in size, shows a history of having been disked, and occurs in a matrix of land use that is largely active agriculture. Therefore, the species is considered to have no potential to occur within the Plan Area.
<i>Antrozous pallidus</i>	Pallid bat	none/CSC/none	The species is found as a resident in all desert, grassland, shrub, woodland, and forest habitats from sea level to approximately 6,000 feet. Day roosts are typically found in buildings, bridges, rocky outcrops, mines, caves, and trees. Night roosts are generally provided by bridges, mines, and caves.	Low Potential. No roosts for the species have been recorded within the Plan Area. However, suitable day or night roosts (particularly in buildings and bridges) may occur within the Plan Area. Therefore, the species has some potential, albeit low, to occur within the Plan Area.
<i>Lasiurus blossevillii</i>	Western red bat	none/CSC/none	The species occurs at scattered locations throughout the lowland portions of California west of the Sierra Nevada crest and desert regions (typically in riparian forest or orchards). It is less abundant at low and middle elevations in coniferous forest. Roosting sites are found in trees or shrubs from 2	Low Potential. No roosts for the species have been recorded within the Plan Area. However, suitable day or night roosts (particularly in large, densely-foliaged trees) may occur within the Plan Area. Therefore, the species has some potential, albeit low, to occur within the Plan Area.

**TABLE D-1
SPECIAL-STATUS SPECIES RECORDED OR POTENTIALLY OCCURRING
WITHIN THE VICINITY OF THE LE GRAND PLANNING AREA, MERCED COUNTY**

Genus/Species	Common Name	Status Federal/CA/Other	Habitats and Seasonal Distribution in California	Likelihood of Occurrence within Planning Area
			to 40 feet above ground (typically in large cottonwoods, sycamores, walnuts, and willows).	
<i>Lasiurus cinereus</i>	Hoary bat	none/SA/none	The species occurs in a wide variety of habitats throughout California from sea level to the high mountains. It is typically found in small numbers roosting in the dense foliage of medium to large trees near water in forest or woodland habitats.	Low Potential. A single individual of this species was collected in Planada in 1918 (CNDDDB 2016). In addition, suitable day or night roosts (particularly in large, densely-foliaged trees) may occur within the Plan Area. Therefore, the species has some potential, albeit low, to occur within the Plan Area.
<i>Myotis yumanensis</i>	Yuma myotis	none/SA/none	Found in a variety of habitats with nearby sources of water over which the species forages. Day roosts are found in caves, mines, buildings, or crevices. Night roosts are typically associated with bridges, buildings, and other man-made structures.	Low Potential. No roosts for the species have been recorded within the Plan Area. However, suitable day or night roosts (particularly in buildings) may occur within the Plan Area. Therefore, the species has some potential, albeit low, to occur within the Plan Area.

**TABLE D-1
SPECIAL-STATUS SPECIES RECORDED OR POTENTIALLY OCCURRING
WITHIN THE VICINITY OF THE LE GRAND PLANNING AREA, MERCED COUNTY**

Genus/Species	Common Name	Status Federal/CA/Other	Habitats and Seasonal Distribution in California	Likelihood of Occurrence within Planning Area
FEDERAL				
	FE	Federally listed as Endangered		
	FT	Federally listed as Threatened		
	FPE	Federally proposed as Endangered		
	FPT	Federally proposed as Threatened		
	FC	Federal Candidate Species (former Category 1 candidates)		
	BCC	U.S. Fish and Wildlife Service designated "Birds of Conservation Concern" 2008		
STATE				
	SE	State listed as Endangered		
	ST	State listed as Threatened		
	SR	State listed as Rare		
	CFP	California Department of Fish and Wildlife designated "Fully Protected"		
	CSC	California Department of Fish and Wildlife designated "Species of Special Concern"		
	SA	California Department of Fish and Wildlife designated "Special Animal"		
OTHER				
	CNPS List 1A	Plants presumed extinct in California		
	CNPS List 1B	Plants that are rare, threatened, or endangered in California and elsewhere		
	CNPS List 2	Plants that are rare, threatened, or endangered in California, but are more common elsewhere		
	CNPS List 3	Plants about which we need more information – a review list		
	CNPS List 4	Plants of limited distribution – a watch list		
	CNPS Threat Rank 0.1	Seriously threatened in California (high degree/immediacy of threat)		
	CNPS Threat Rank 0.2	Fairly threatened in California (moderate degree/immediacy of threat)		

TABLE D-1 SPECIAL-STATUS SPECIES RECORDED OR POTENTIALLY OCCURRING WITHIN THE VICINITY OF THE LE GRAND PLANNING AREA, MERCED COUNTY				
Genus/Species	Common Name	Status Federal/CA/Other	Habitats and Seasonal Distribution in California	Likelihood of Occurrence within Planning Area
CNPS Threat Rank 0.3 Not very threatened in California (low degree/immediacy of threats or no current threats known)				

Appendix E

Greenhouse Gas Calculations

GHG Appendix Assumptions and Calculations

Le Grand Community Plan Update

Existing Assumptions

CalEEMod Inputs (Non-Default information only)

Project Location		CO intensity	2008 ¹	2015 ^{2,3}	2016 ²	2020 ³	2030 ³
County	Merced	% renewable	641	448.7	429.47	403.83	320.5
Air District	SJVAPCD		0%	30.00%	33.00%	37.00%	50.00%
Climate Zone	3		¹ CalEEMod - http://www.aqmd.gov/docs/default-source/caleemod/05_appendix-d2016-3-2.pdf?sfvrsn=4				
Operational Year	2016		² http://www.pgecorp.com/corp_responsibility/reports/2016/en02_climate_change.jsp				
Utility Provider	PG&E		³ http://www.cpuc.ca.gov/renewables/				

Land Use	Sq Ft	KSF	Units/Stude		CalEEMod Land Use Type		
			nts	Acers			
Residential							
	VLD/LDR		437	125.45	Single Family Residential		
	MDR						
	HDR - Residential		60	4.91	Apartment Mid Rise		
Retail							
	GC						
	MU-Retail	31,590	31.5898	2.64	Strip Mall		
Commercial							
	Industiral	135,701	135.7010	11.68	Industrial Park		
	MU-Office	35,465	35.4653	6.73	General Office		
Educational							
	Elementary School		401	8	Elementary School		
	Highschool		465	15	Highschool		
Institutional							
	Office Park	31,424	31.4240	3	Office Park		
	Park	480	0.4800	4	Park	234,660	234.6600
	Service Population	322	employees				
Service Population (# Employees)	1,468	Residents	SFR	(assumes 3.36 people per residence)			
	202	Residents	AMR	(assumes 3.36 people per residence)			
	1,992	Total					

Note: The square footage used in the Air Quality and GHG modeling is the gross square footaage to accurately account for the amount of emissions generated by the operation of the existing and project land uses.

Le Grand Community Plan Update Existing Assumptions

Transportation:

Trip Generation

Same as Project Growth

	Weekday	Saturday	Sunday	
Single Family Residential	9.52	9.91	8.62	per DU
Apartment Mid Rise	7.03	6.76	6.20	per DU
Strip Mall	28.20	26.75	13.00	per DU
Industrial Park	6.97	1.00	0.46	per KSF
General Office	10.96	2.44	1.04	per KSF
Elementary School	1.37	0.00	0.00	per student
Highschool	0.48	0.17	0.07	per student
Park	1.89	22.75	16.74	per acre
Office Park	10.96	2.44	1.04	per ksf

*Based on Traffic Study Information as provided.

- 1 Trips adjusted based on an approximately 34 percent reduction due to Pass-by trips for strip mall (retail) uses.
- 2 Single Family Residence VMT per trip adjusted to equal Transportation Study Annual VMT. Adjustments are as follows: H-W= 11.51; H-S = 8; H-O =8.201

Entrained Road Dust

(Merced County)	Freeway	Major	Collector	Local	Total	Composit
Travel Fractions	0.244	0.527	0.125	0.104	1	
Silt Loading	0.02	0.032	0.032	0.32		0.059024

*CARB 2014. *Miscellaneous Process Methodology 7.9 Entrained Road Travel, Paved Road Dust. Revised April 2014*

The default CalEEMod fleet mix for Merced County has heavy duty trucks at 15.08 percent of the total fleet. This is due to the rural nature of the county and the amount of agriculture that occurs. The proposed project is a mix of residential, commercial, industrial and retail uses which would not see that level of intensity of heavy duty trucks. Based on the project specific traffic study, the heavy duty vehicle travel from the project is 3.22 percent. Therefore, the fleet mix for the project was adjusted to reduce heavy duty vehicle trips to 3.22 percent as shown below.

Project Specific Fleet mix

LDA	0.6196	HHD	0.0322
LDT1	0.0304	OBUS	0.0026
LDT2	0.1834	UBUS	0.0016
MDV	0.0932	MCY	0.0061
LHD1	0.0094	SBUS	0.0014
LHD2	0.0035	MH	0.0004
MHD	0.0161		

Le Grand Community Plan Update

Existing Assumptions

Energy Use

<i>Electric</i>	<i>2016</i>	<i>2013</i>	<i>2008</i>	<i>2016</i>	<i>2013</i>	<i>2008</i>
		Title-24			Lighting	
Single Family Residential	995.93	1274.7904	1593.488	1608.84	1689.282	1858.2102
Apartment Mid Rise	700.71	896.9088	1121.136	741.44	778.512	856.3632
Strip Mall	2.14	2.247	2.80875	3.71	3.8955	4.28505
Industrial Park	2.62	2.751	3.43875	2.92	3.066	3.3726
General Office	2.62	2.751	3.43875	2.92	3.066	3.3726
Elementary School	2.14	2.247	2.80875	2.99	3.1395	3.45345
Highschool	2.14	2.247	2.80875	2.99	3.1395	3.45345
Park	0	0	0	0	0	0
Office Park	3.58	3.759	4.69875	3.59	3.7695	4.14645

<i>Natural Gas</i>	<i>2016</i>	<i>2013</i>	<i>2008</i>				
		Title-24			Elec	Light	NG
Single Family Residential	22422.24	28700.4672	35875.584	Residential			
Apartment Mid Rise	8454.86	10822.2208	13527.776	2016 to 2013	28%	5%	28%
Strip Mall	8.62	9.051	11.31375	2013 to 2008	25%	10%	25%
Industrial Park	12.77	13.4085	16.760625	Non Residential			
General Office	12.77	13.4085	16.760625	2016 to 2013	5%	5%	5%
Elementary School	23.19	24.3495	30.436875	2013 to 2008	25%	10%	25%
Highschool	23.19	24.3495	30.436875				
Park	0	0	0				
Office Park	21.96	23.058	28.8225				

*2013 Title 24 is more the current requirement and is 25% more restrictive than the 2008 Title 24. 2016 Title 24 (which will be in effect by the time the project is built) is conservatively estimated to be 5% more restrictive than 2013 Title 24 requirements for Electric and Natural Gas and 5% for lighting. These requirements are more restrictive than the ASHRE requirements. Additional reduction based on CO2e reductions assumed for 2016 compared to those assumed for 2013.

Lighting has a 10 percent reduction from 2008 based on 2013 Title 24. Additional 5% reduction assumed for increase to 2016 Title 24 requirements.

Le Grand Community Plan Update

Existing Assumptions

Energy Use

Electric

Default Values Used

Natural Gas

Default Values Used

Water Use

		Default	% total	Project
CalEEMod Default	Indoor	81,011,164	0.660619461	65104047.9
	Outdoor	41,617,927	0.339380539	33445952.1
	Total	122,629,091		98,550,000

	Indoor			Outdoor		
	Default	% total	Project	Default	% total	Project
Single Family Residential	28,472,309.20	0.35	22,881,569.61	17,949,934.06	0.43	14,425,337.36
Apartment Mid Rise	3,909,241.54	0.05	3,141,634.27	2,464,521.84	0.06	1,980,595.52
Strip Mall	2,339,950.95	0.03	1,880,485.01	1,434,163.49	0.03	1,152,555.33
Industrial Park	31,380,625.00	0.39	25,218,817.00	0.00	0.00	0.00
General Office	6,304,216.04	0.08	5,066,338.57	3,863,874.35	0.09	3,105,175.25
Elementary School	972,120.24	0.01	781,237.55	2,449,737.76	0.06	1,968,714.40
Highschool	2,048,306.40	0.03	1,646,106.93	5,267,076.60	0.13	4,232,848.80
Park	0	0.00	0.00	4,765,925.40	0.11	3,830,102.19
Office Park	5584394.36	0.07	4,487,858.97	3,422,693.32	0.08	2,750,623.24
Total	81,011,163.73			41,617,926.82		

Removal of Septic

Septic	Aerobic	Lagoons
10.33	87.46	2.21
	0.98	0.02
	10.08	0.25
0.00	97.54	2.46

* Multifamily indoor water use reduced by 35%

*Multifamily outdoor water use reduced by 25%

Title 24 2013 20% indoor for Non-Residential

Le Grand Community Plan Update
Existing Assumptions

Solid Waste Generation:

	Tons/year		
	per unit	#units	Existing
Single Family Residential	0.96	437.00	419.55
Apartment Mid Rise	0.43	60.00	25.74
Strip Mall	0.98	31.59	30.93
Industrial Park	1.16	135.70	156.93
General Office	0.87	35.47	30.76
Elementary School	0.17	401.00	68.25
Highschool	0.17	465.00	79.16
Park	0.09	4.00	0.34
Office Park	5.35	31.42	168.27
Total			811.32

Le Grand Community Plan Update
GHG CalEEMod Results Compiled - SJVAPCD Threshold
2016 Existing Emissions

Unmitigated Operational

	CO ₂	CH ₄	CH ₄ (CO ₂ e)	N ₂ O	N ₂ O (CO ₂ e)	CO ₂ e
MT/year Annual Unmitigated						
Proposed Project						
Area	609	1.82E+00	46	3.95E-03	1	656
Energy	2,885	1.26E-01	3	4.63E-02	14	2,902
Mobile	9,432	0.6351	16	0	0	9,448
Waste	199	11.76	294	0	0	493
Water	140	0.8304	21	6.39E-02	19	180
Total Project						13,679
Service Population						1,992
Annual emissions per service population						6.87

Le Grand Community Plan Update

Project Construction Assumptions

CalEEMod Inputs (Non-Default information only)

Project Location	
County	Merced
Air District	SJVAPCD
Climate Zone	3
Operational Year	2019
Utility Provider	PG&E

Land Use	Sq Ft	KSF	(Units/Stude nts)	Acers	CalEEMod Land Use Type
Residential					
	VLD/LDR		39.90	11.45	Single Family Residential
	MDR				
	HDR - Residential		20.90	1.71	Apartment Mid Rise
Retail					
	GC				
	MU-Retail	6.43		0.54	Strip Mall
Commercial					
	Industiral	12.00		1.03	Industrial Parak
	MU-Office	1.20		0.23	General Office
Educational					
	Elementary School	0.00		0.00	Elementary School
	Highschool	0.00		0.00	Highschool
Institutional					
	Office Park	0.00		0.00	Office Park
	Park	0.00		0.00	Park
		20		14.96	

Note: As a conservative estimate of emissions, 10% of total square footage is assumed to be built in one year beginning in 2019. No new schools are being built therefore no construction of schools is accounted for. Construction is based on square footage or number of dwelling units developed and not land use type, therefore the landuse type developed is irrelevant in determining construction emissions.

Le Grand Community Plan Update Project Construction Assumptions

Construction Schedule

Phases (if applicable)	CalEEMod Default Days)	(# Project Revised (# Days)	Start (month/date/year)	Finish (month/date/year)
Demolition	20	15	1/1/2019	1/21/2019
Site Preparation	10	8	1/21/2019	1/30/2019
Grading/Excavation	30	22	2/1/2019	3/4/2019
Building Construction	300	215	3/5/2019	12/30/2019
Architectural Coatings	20	15	3/5/2019	3/25/2019
Paving	20	15	12/11/2019	12/31/2019
Construction days*	360	260		

*Project days are based on the default construction days for demolition, Site Prep, Grading/Excavation and building construction and then are scaled to equal one year of construction activities (260 days). Architectural coating and Paving are assumed to overlap with building construction activities and therefore are not used in determining the number of construction days per phase. Default days are kept for Architectural Coating activities and Paving Activities.

All remaining construction information uses Default settings, with the exception of Silt loading as discussed below.

Soils are anticipated to be balanced onsite

Silt loading is the same as used for operational purposes and based on Merced County specifics

Le Grand Community Plan Update **GHG CalEEMod Results Compiled - SJVAPCD Threshold**

Unmitigated Construction

	CO ₂	CH ₄	CH ₄ (CO ₂ e)	CO ₂ e
	MT/yr			
2019	435	0	3	437
Total Project:				8,749
Amortized Emissions:				292

***Notes:**

Total emissions are determined by multiplying 2019 emissions by 20 (the number of years anticipated to build out the project). While it is assumed that in 2019 10 percent of the project would be built, it is likely that less will occur and therefore the total construction would take longer than 10 years. These emissions are conservative because they assume the same level of equipment would operate every year for 20 years but it is likely that some years will see substantially less, while it is not likely that 10 percent of the development would occur in any one year. Additionally, as the construction continues into later years, the equipment used will become more efficient and has the potential to reduce GHG emissions.

Amortized emissions are determined by dividing total project emissions by 30 years, the anticipated lifetime of a project.

Le Grand Community Plan Update

Project Assumptions

CalEEMod Inputs (Non-Default information only)

Project Location		CO intensity	2008 ¹	2015 ^{2,3}	2016 ²	2020 ³	2030 ³
County	Merced	% renewable	641	448.7	429.47	403.83	320.5
Air District	SJVAPCD		0%	30.00%	33.00%	37.00%	50.00%
Climate Zone	3		¹ CalEEMod				
Operational Year	2020/2035		² http://www.pgecorp.com/corp_responsibility/reports/2016/en02_climate_change.jsp				
Utility Provider	PG&E		³ http://www.cpuc.ca.gov/renewables/				

		Units/Student			
Land Use	Sq Ft	KSF	s	Acers	CalEEMod Land Use Type
Residential					
	VLD/LDR	718,200	399	114.55	Single Family Residential
	MDR				
	HDR - Residential	209,000	209	17.09	Apartment Mid Rise
Retail					
	GC	64,251	64.2513	5.36	Strip Mall
	MU-Retail				
Commercial					
	Industiral	119,955	119.96	10.32	Industrial Parak
	MU-Office	11,956	11.96	2.27	General Office
Educational					
	Elementary School	0	441	9	Elementary School
	Highschool	0	685	22.03913043	Highschool
Institutional					
	Office Park	0	0	0	Office Park
	Park	0	0	0	Park
	Service Population	339	employees		
		1,340	Residents	SFR	(assumes 3.36 people per residence)
		702	Residents	AMR	(assumes 3.36 people per residence)
		2,381	Total		

Le Grand Community Plan Update Project Assumptions

Transportation:

Trip Generation

	Traffic Study		Project			
	trips	Adj. Trips ¹	Weekday	Saturday	Sunday	
Single Family Residential	3,798	3,798	9.52	9.91	8.62	per DU
Apartment Mid Rise	1,470	1,470	7.03	6.76	6.20	per DU
Strip Mall	2,746	1,812	28.20	26.75	13.00	per KSF
Industrial Parak	836	836	6.9693	1.0008	0.4638	per KSF
General Office	131	131	10.9571	2.4437	1.0431	per KSF
Elementary School	602	602	1.37	0.00	0.00	per student
Highschool	327	327	0.48	0.17	0.07	per student
		8,976				

*Based on Traffic Study Information as provided.

- 1 Retail trips adjusted based on an approximately 34 percent reduction due to Pass-by trips for strip mall (retail) uses.
- 2 Single Family Residence VMT per trip adjusted to equal Transportation Study Annual VMT. Adjustments are as follows: H-W= 11.51; H-S = 8; H-O =8.201

Total Daily VMT 60,480 for growth

22,075,200 Annual VMT for growth

Entrained Road Dust

(Merced County)	Freeway	Major	Collector	Local	Total	Composit
Travel Fractions	0.244	0.527	0.125	0.104	1	
Silt Loading	0.02	0.032	0.032	0.32		0.059024

*CARB 2014. *Miscellaneous Process Methodology 7.9 Entrained Road Travel, Paved Road Dust*. Revised April 2014

The default CalEEMod fleet mix for Merced County has heavy duty trucks at 15.08 percent of the total fleet. This is due to the rural nature of the county and the amount of agriculture that occurs. The proposed project is a mix of residential, commercial, industrial and retail uses which would not see that level of intensity of heavy duty trucks. Based on the project specific traffic study, the heavy duty vehicle travel from the project is 3.22 percent. Therefore, the fleet mix for the project was adjusted to reduce heavy duty vehicle trips to 3.22 percent as shown below.

Project Specific Fleet mix

LDA	0.6196	LHD2	0.0035	MCY	0.0061
LDT1	0.0304	MHD	0.0161	SBUS	0.0014
LDT2	0.1834	HHD	0.0322	MH	0.0004
MDV	0.0932	OBUS	0.0026		
LHD1	0.0094	UBUS	0.0016		

Le Grand Community Plan Update

Project Assumptions

Area Source

Hearth No woodburning stoves. Default number of fireplaces

Energy Use

Electric Default Values Used

Natural Gas Default Values Used

Water Use

		Default	% total	Project
CalEEMod Default	Indoor	78,415,740.15	0.663879543	70,271,650
	Outdoor	39,701,681.78	0.336120457	35,578,350
	Total	118,117,422		105,850,000

	Indoor				Outdoor			
	Default	% total	Project		Default	% total	Project	
Single Family Residential	25,996,456.22	0.33	23,296,520.07	23.30	16,389,070.23	0.41	14,686,936.57	14.69
Apartment Mid Rise	13,617,191.35	0.17	12,202,939.08	12.20	8,584,751.07	0.22	7,693,157.25	7.69
Strip Mall	4,759,159.51	0.06	4,264,883.42	4.26	2,916,904.21	0.07	2,613,960.80	2.61
Industrial Parak	27,740,750.00	0.35	24,859,655.24	24.86	0.00	0.00	0.00	0.00
General Office	2,125,695.63	0.03	1,904,925.44	1.90	1,302,845.71	0.03	1,167,534.95	1.17
Elementary School	1,069,089.84	0.01	958,056.46	0.96	2,749,088.16	0.07	2,463,573.76	2.46
Highschool	3107397.6	0.04	2,784,669.95	2.78	7759022.4	0.20	6,953,186.99	6.95
Total	78,415,740.15		70,271,649.68		39,701,681.78		35,578,350.32	
							105,850,000.00	

Removal of Septic

Septic	Aerobic	Lagoons
10.33	87.46	2.21
	0.98	0.02
	10.08	0.25
0.00	97.54	2.46

* Multifamily indoor water use reduced by 35%

*Multifamily outdoor water use reduced by 25%

Title 24 2013 20% indoor for Non-Residential

Le Grand Community Plan Update **Project Assumptions**

Solid Waste Generation:

	Tons/year			
	Default	% Default	Project	per unit
Single Family Residential	410.76	0.44	383.07	0.960075272
Apartment Mid Rise	96.14	0.10	89.66	0.428990689
Strip Mall	67.46	0.07	62.91	0.97916254
Industrial Parak	148.75	0.16	138.72	1.156454775
General Office	11.12	0.01	10.37	0.867397161
Elementary School	80.48	0.09	75.05	0.170192106
Highschool	125	0.13	116.61	0.170234833
Total	940		876.4	

Le Grand Community Plan Update
GHG CalEEMod Results Compiled - SJVAPCD Threshold
2020 Emissions

Unmitigated Operational

	CO ₂	CH ₄	CH ₄ (CO ₂ e)	N ₂ O	N ₂ O (CO ₂ e)	CO ₂ e
MT/year Annual Unmitigated						
Proposed Project						
Area	271	1.E-02	0	5.E-03	1	273
Energy	2,285	1.12E-01	3	3.74E-02	11	2,299
Mobile	9,069	0.5583	14	0	0	9,083
Waste	178	10.51	263	0	0	441
Water	111	0.7204	18	5.54E-02	17	146
Total Project						12,241
Amortized Construction						292
Total Project Annual						12,533
Service Population						2,381
Annual emissions per service population						5.26
2020 Efficiency Threshold						4.60
Exceed 2020 Efficiency Threshold?						No
Significant?						Yes

Mitigation Required: None

Project	12,533
Allowed	10,953
Percent Reduction:	12.61%

Le Grand Community Plan Update
GHG CalEEMod Results Compiled - SJVAPCD Threshold
2035 Emissions

Unmitigated Operational

	CO ₂	CH ₄	CH ₄ (CO ₂ e)	N ₂ O	N ₂ O (CO ₂ e)	CO ₂ e
MT/year Annual Unmitigated						
Proposed Project						
Area	271	1.23E-02	0	4.83E-03	1	273
Energy	2,018	1.12E-01	3	3.74E-02	11	2,032
Mobile	6,881	0.3866	10	0	0	6,891
Waste	178	10.51	263	0	0	441
Water	98	0.7204	18	5.54E-02	17	133
Total Project						9,769
Amortized Construction						292
Total Project Annual						10,061
Service Population						2,877
Annual emissions per service population						3.50
2030 Efficiency Threshold						3.00
Exceed 2030 Efficiency Threshold?						Yes

Mitigation Required: 4.5-1

Project	10,061
Allowed	8,631
Percent Reduction:	14.21%

GHG Appendix - Construction CalEEMod Output

- Existing Conditions - See Appendix C Air Quality
 - Construction - See Appendix C Air Quality
- Operational - For 2030 See Appendix C Air Quality
 - Operational - 2020

Le Grand Community Plan - 2020 Operational - Merced County, Annual

Le Grand Community Plan - 2020 Operational

Merced County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	11.96	1000sqft	2.27	11,960.00	0
Elementary School	441.00	Student	9.00	36,869.09	0
High School	685.00	Student	22.00	90,872.77	0
Industrial Park	119.96	1000sqft	10.32	119,960.00	0
Apartments Mid Rise	209.00	Dwelling Unit	17.09	209,000.00	702
Single Family Housing	399.00	Dwelling Unit	114.55	718,200.00	1340
Strip Mall	64.25	1000sqft	5.36	64,250.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	49
Climate Zone	3			Operational Year	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	403.83	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - No Construction

Vehicle Trips - See Assumptions

Road Dust - See Assumptions

Woodstoves - See Assumptions

Energy Use -

Water And Wastewater - See Assumptions

Solid Waste - See Assumptions

Mobile Land Use Mitigation -

Mobile Commute Mitigation - See Assumptions

Area Mitigation - See Assumptions

Energy Mitigation -

Fleet Mix - See Assumptions

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	150	10
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	150	10
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblAreaMitigation	UseLowVOCPaintParkingValue	150	10
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	150	10
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	150	10
tblFleetMix	HHD	0.15	0.03
tblFleetMix	HHD	0.15	0.03
tblFleetMix	HHD	0.15	0.03
tblFleetMix	HHD	0.15	0.03
tblFleetMix	HHD	0.15	0.03
tblFleetMix	HHD	0.15	0.03
tblFleetMix	HHD	0.15	0.03
tblFleetMix	LDA	0.48	0.62
tblFleetMix	LDA	0.48	0.62
tblFleetMix	LDA	0.48	0.62
tblFleetMix	LDA	0.48	0.62
tblFleetMix	LDA	0.48	0.62

[illegible]

tblFleetMix	MCY	6.4860e-003	6.1255e-003
tblFleetMix	MCY	6.4860e-003	6.1255e-003
tblFleetMix	MCY	6.4860e-003	6.1255e-003
tblFleetMix	MCY	6.4860e-003	6.1255e-003
tblFleetMix	MCY	6.4860e-003	6.1255e-003
tblFleetMix	MCY	6.4860e-003	6.1255e-003
tblFleetMix	MCY	6.4860e-003	6.1255e-003
tblFleetMix	MDV	0.12	0.09
tblFleetMix	MDV	0.12	0.09
tblFleetMix	MDV	0.12	0.09
tblFleetMix	MDV	0.12	0.09
tblFleetMix	MDV	0.12	0.09
tblFleetMix	MDV	0.12	0.09
tblFleetMix	MDV	0.12	0.09
tblFleetMix	MH	7.1400e-004	4.4941e-004
tblFleetMix	MH	7.1400e-004	4.4941e-004
tblFleetMix	MH	7.1400e-004	4.4941e-004
tblFleetMix	MH	7.1400e-004	4.4941e-004
tblFleetMix	MH	7.1400e-004	4.4941e-004
tblFleetMix	MH	7.1400e-004	4.4941e-004
tblFleetMix	MH	7.1400e-004	4.4941e-004
tblFleetMix	MHD	0.02	0.02
tblFleetMix	MHD	0.02	0.02
tblFleetMix	MHD	0.02	0.02
tblFleetMix	MHD	0.02	0.02
tblFleetMix	MHD	0.02	0.02
tblFleetMix	MHD	0.02	0.02
tblFleetMix	MHD	0.02	0.02
tblFleetMix	OBUS	2.3770e-003	2.6421e-003
tblFleetMix	OBUS	2.3770e-003	2.6421e-003

tblFleetMix	OBUS	2.3770e-003	2.6421e-003
tblFleetMix	OBUS	2.3770e-003	2.6421e-003
tblFleetMix	OBUS	2.3770e-003	2.6421e-003
tblFleetMix	OBUS	2.3770e-003	2.6421e-003
tblFleetMix	OBUS	2.3770e-003	2.6421e-003
tblFleetMix	SBUS	1.6160e-003	1.3655e-003
tblFleetMix	SBUS	1.6160e-003	1.3655e-003
tblFleetMix	SBUS	1.6160e-003	1.3655e-003
tblFleetMix	SBUS	1.6160e-003	1.3655e-003
tblFleetMix	SBUS	1.6160e-003	1.3655e-003
tblFleetMix	SBUS	1.6160e-003	1.3655e-003
tblFleetMix	SBUS	1.6160e-003	1.3655e-003
tblFleetMix	UBUS	2.3470e-003	1.6152e-003
tblFleetMix	UBUS	2.3470e-003	1.6152e-003
tblFleetMix	UBUS	2.3470e-003	1.6152e-003
tblFleetMix	UBUS	2.3470e-003	1.6152e-003
tblFleetMix	UBUS	2.3470e-003	1.6152e-003
tblFleetMix	UBUS	2.3470e-003	1.6152e-003
tblFleetMix	UBUS	2.3470e-003	1.6152e-003
tblLandUse	LotAcreage	0.27	2.27
tblLandUse	LotAcreage	0.85	9.00
tblLandUse	LotAcreage	2.09	22.00
tblLandUse	LotAcreage	2.75	10.32
tblLandUse	LotAcreage	5.50	17.09
tblLandUse	LotAcreage	129.55	114.55
tblLandUse	LotAcreage	1.47	5.36
tblLandUse	Population	598.00	702.00
tblLandUse	Population	1,141.00	1,340.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	403.83
tblRoadDust	RoadSiltLoading	0.1	0.059024

tblSolidWaste	SolidWasteGenerationRate	96.14	89.66
tblSolidWaste	SolidWasteGenerationRate	80.48	75.05
tblSolidWaste	SolidWasteGenerationRate	11.12	10.37
tblSolidWaste	SolidWasteGenerationRate	125.01	116.61
tblSolidWaste	SolidWasteGenerationRate	148.75	138.72
tblSolidWaste	SolidWasteGenerationRate	482.40	383.07
tblSolidWaste	SolidWasteGenerationRate	67.46	62.91
tblVehicleTrips	HO_TL	7.50	8.21
tblVehicleTrips	HS_TL	7.30	8.00
tblVehicleTrips	HW_TL	10.80	11.51
tblVehicleTrips	ST_TR	6.39	6.76
tblVehicleTrips	ST_TR	2.46	2.44
tblVehicleTrips	ST_TR	0.61	0.17
tblVehicleTrips	ST_TR	2.49	1.00
tblVehicleTrips	ST_TR	42.04	26.75
tblVehicleTrips	SU_TR	5.86	6.20
tblVehicleTrips	SU_TR	1.05	1.04
tblVehicleTrips	SU_TR	0.25	0.07
tblVehicleTrips	SU_TR	0.73	0.46
tblVehicleTrips	SU_TR	20.43	13.00
tblVehicleTrips	WD_TR	6.65	7.03
tblVehicleTrips	WD_TR	1.29	1.37
tblVehicleTrips	WD_TR	11.03	10.96
tblVehicleTrips	WD_TR	1.71	0.48
tblVehicleTrips	WD_TR	6.83	6.97
tblVehicleTrips	WD_TR	44.32	28.20
tblWater	AerobicPercent	87.46	97.54
tblWater	AerobicPercent	87.46	97.54
tblWater	AerobicPercent	87.46	97.54
tblWater	AerobicPercent	87.46	97.54

[illegible]

tblWoodstoves	NumberCatalytic	17.09	0.00
tblWoodstoves	NumberCatalytic	114.55	0.00
tblWoodstoves	NumberNoncatalytic	17.09	0.00
tblWoodstoves	NumberNoncatalytic	114.55	0.00

2.0 Emissions Summary

2.1 Overall Construction

- Construction Modeled Separately

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	6.1474	0.2799	4.6385	1.6900e-003		0.0433	0.0433		0.0433	0.0433	0.0000	270.7880	270.7880	0.0123	4.8300e-003	272.5346
Energy	0.1003	0.8733	0.4857	5.4700e-003		0.0693	0.0693		0.0693	0.0693	0.0000	2,285.2139	2,285.2139	0.1119	0.0374	2,299.1563
Mobile	3.0816	14.7155	34.8385	0.1050	5.5929	0.1103	5.7032	1.5586	0.1036	1.6622	0.0000	9,608.9522	9,608.9522	0.5583	0.0000	9,622.9092
Waste						0.0000	0.0000		0.0000	0.0000	177.8993	0.0000	177.8993	10.5135	0.0000	440.7379
Water						0.0000	0.0000		0.0000	0.0000	24.8622	92.4598	117.3220	0.7204	0.0554	151.8538
Total	9.3292	15.8687	39.9627	0.1121	5.5929	0.2229	5.8158	1.5586	0.2163	1.7748	202.7615	12,257.4139	12,460.1754	11.9164	0.0977	12,787.1918

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
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Category	tons/yr										MT/yr					
Area	5.0983	0.0525	4.5417	2.4000e-004		0.0250	0.0250		0.0250	0.0250	0.0000	7.3979	7.3979	7.2500e-003	0.0000	7.5793
Energy	0.0831	0.7236	0.4009	4.5300e-003		0.0574	0.0574		0.0574	0.0574	0.0000	2,067.7271	2,067.7271	0.1052	0.0336	2,080.3638
Mobile	2.7496	12.2804	26.8520	0.0760	3.9066	0.0806	3.9872	1.0887	0.0757	1.1644	0.0000	6,961.2364	6,961.2364	0.4746	0.0000	6,973.1011
Waste						0.0000	0.0000		0.0000	0.0000	177.8993	0.0000	177.8993	10.5135	0.0000	440.7379
Water						0.0000	0.0000		0.0000	0.0000	24.8622	92.4598	117.3220	0.7204	0.0554	151.8538
Total	7.9311	13.0565	31.7946	0.0808	3.9066	0.1630	4.0695	1.0887	0.1581	1.2467	202.7615	9,128.8213	9,331.5827	11.8210	0.0890	9,653.6358

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	14.99	17.72	20.44	27.95	30.15	26.89	30.03	30.15	26.90	29.76	0.00	25.52	25.11	0.80	8.86	24.51

3.0 Construction Detail

- Construction Modeled Separately

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

- Increase Diversity
- Implement Trip Reduction Program
- Employee Vanpool/Shuttle

	ROG	NOx	CO	SO2	Fugitive 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	2.7496	12.2804	26.8520	0.0760	3.9066	0.0806	3.9872	1.0887	0.0757	1.1644	0.0000	6,961.2364	6,961.2364	0.4746	0.0000	6,973.1011
Unmitigated	3.0816	14.7155	34.8385	0.1050	5.5929	0.1103	5.7032	1.5586	0.1036	1.6622	0.0000	9,608.9522	9,608.9522	0.5583	0.0000	9,622.9092

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,469.27	1,412.84	1295.80	4,183,895	2,923,213
Elementary School	604.17	0.00	0.00	951,541	663,941
General Office Building	131.08	29.18	12.44	237,961	166,111
High School	328.80	116.45	47.95	676,383	471,946
Industrial Park	836.12	119.96	55.18	1,631,432	1,138,599
Single Family Housing	3,798.48	3,954.09	3439.38	11,841,650	8,273,735
Strip Mall	1,811.85	1,718.69	835.25	2,554,956	1,783,562
Total	8,979.77	7,351.21	5,686.00	22,077,818	15,421,108

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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	46.90	17.40	35.70	86	11	3
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
High School	9.50	7.30	7.30	77.80	17.20	5.00	75	19	6
Industrial Park	9.50	7.30	7.30	59.00	28.00	13.00	79	19	2
Single Family Housing	11.51	8.00	8.21	46.90	17.40	35.70	86	11	3
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.619633	0.030402	0.183386	0.093166	0.009367	0.003535	0.016106	0.032208	0.002642	0.001615	0.006125	0.001365	0.000449
Elementary School	0.619633	0.030402	0.183386	0.093166	0.009367	0.003535	0.016106	0.032208	0.002642	0.001615	0.006125	0.001365	0.000449
General Office Building	0.619633	0.030402	0.183386	0.093166	0.009367	0.003535	0.016106	0.032208	0.002642	0.001615	0.006125	0.001365	0.000449
High School	0.619633	0.030402	0.183386	0.093166	0.009367	0.003535	0.016106	0.032208	0.002642	0.001615	0.006125	0.001365	0.000449
Industrial Park	0.619633	0.030402	0.183386	0.093166	0.009367	0.003535	0.016106	0.032208	0.002642	0.001615	0.006125	0.001365	0.000449

Single Family Housing	0.619633	0.030402	0.183386	0.093166	0.009367	0.003535	0.016106	0.032208	0.002642	0.001615	0.006125	0.001365	0.000449
Strip Mall	0.619633	0.030402	0.183386	0.093166	0.009367	0.003535	0.016106	0.032208	0.002642	0.001615	0.006125	0.001365	0.000449

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,245.3435	1,245.3435	0.0894	0.0185	1,253.0932
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,292.9804	1,292.9804	0.0929	0.0192	1,301.0265
NaturalGas Mitigated	0.0831	0.7236	0.4009	4.5300e-003		0.0574	0.0574		0.0574	0.0574	0.0000	822.3836	822.3836	0.0158	0.0151	827.2707
NaturalGas Unmitigated	0.1003	0.8733	0.4857	5.4700e-003		0.0693	0.0693		0.0693	0.0693	0.0000	992.2335	992.2335	0.0190	0.0182	998.1298

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	2.54517e+006	0.0137	0.1173	0.0499	7.5000e-004		9.4800e-003	9.4800e-003		9.4800e-003	9.4800e-003	0.0000	135.8201	135.8201	2.6000e-003	2.4900e-003	136.6272

Elementary School	925783	4.9900e-003	0.0454	0.0381	2.7000e-004		3.4500e-003	3.4500e-003		3.4500e-003	3.4500e-003	0.0000	49.4033	49.4033	9.5000e-004	9.1000e-004	49.6969
General Office Building	156078	8.4000e-004	7.6500e-003	6.4300e-003	5.0000e-005		5.8000e-004	5.8000e-004		5.8000e-004	5.8000e-004	0.0000	8.3289	8.3289	1.6000e-004	1.5000e-004	8.3784
High School	2.28182e+006	0.0123	0.1119	0.0940	6.7000e-004		8.5000e-003	8.5000e-003		8.5000e-003	8.5000e-003	0.0000	121.7664	121.7664	2.3300e-003	2.2300e-003	122.4900
Industrial Park	1.56548e+006	8.4400e-003	0.0767	0.0645	4.6000e-004		5.8300e-003	5.8300e-003		5.8300e-003	5.8300e-003	0.0000	83.5399	83.5399	1.6000e-003	1.5300e-003	84.0363
Single Family Housing	1.0432e+007	0.0563	0.4807	0.2046	3.0700e-003		0.0389	0.0389		0.0389	0.0389	0.0000	556.6886	556.6886	0.0107	0.0102	559.9967
Strip Mall	687475	3.7100e-003	0.0337	0.0283	2.0000e-004		2.5600e-003	2.5600e-003		2.5600e-003	2.5600e-003	0.0000	36.6863	36.6863	7.0000e-004	6.7000e-004	36.9043
Total		0.1003	0.8733	0.4857	5.4700e-003		0.0693	0.0693		0.0693	0.0693	0.0000	992.2335	992.2335	0.0190	0.0182	998.1298

Mitigated

	Natural Gas 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	2.19176e+006	0.0118	0.1010	0.0430	6.4000e-004		8.1700e-003	8.1700e-003		8.1700e-003	8.1700e-003	0.0000	116.9606	116.9606	2.2400e-003	2.1400e-003	117.6557
Elementary School	754784	4.0700e-003	0.0370	0.0311	2.2000e-004		2.8100e-003	2.8100e-003		2.8100e-003	2.8100e-003	0.0000	40.2782	40.2782	7.7000e-004	7.4000e-004	40.5175
General Office Building	125532	6.8000e-004	6.1500e-003	5.1700e-003	4.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	6.6989	6.6989	1.3000e-004	1.2000e-004	6.7387
High School	1.86035e+006	0.0100	0.0912	0.0766	5.5000e-004		6.9300e-003	6.9300e-003		6.9300e-003	6.9300e-003	0.0000	99.2752	99.2752	1.9000e-003	1.8200e-003	99.8652
Industrial Park	1.2591e+006	6.7900e-003	0.0617	0.0519	3.7000e-004		4.6900e-003	4.6900e-003		4.6900e-003	4.6900e-003	0.0000	67.1904	67.1904	1.2900e-003	1.2300e-003	67.5897
Single Family Housing	8.64266e+006	0.0466	0.3982	0.1695	2.5400e-003		0.0322	0.0322		0.0322	0.0322	0.0000	461.2050	461.2050	8.8400e-003	8.4600e-003	463.9458
Strip Mall	576708	3.1100e-003	0.0283	0.0238	1.7000e-004		2.1500e-003	2.1500e-003		2.1500e-003	2.1500e-003	0.0000	30.7753	30.7753	5.9000e-004	5.6000e-004	30.9582
Total		0.0831	0.7236	0.4009	4.5300e-003		0.0574	0.0574		0.0574	0.0574	0.0000	822.3836	822.3836	0.0158	0.0151	827.2707

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	939716	172.1318	0.0124	2.5600e-003	173.2029
Elementary School	258821	47.4093	3.4000e-003	7.0000e-004	47.7044
General Office Building	109075	19.9798	1.4300e-003	3.0000e-004	20.1041
High School	637927	116.8517	8.3900e-003	1.7400e-003	117.5789
Industrial Park	1.09404e+006	200.3990	0.0144	2.9800e-003	201.6461
Single Family Housing	3.49554e+006	640.2919	0.0460	9.5100e-003	644.2764
Strip Mall	523637	95.9169	6.8900e-003	1.4300e-003	96.5138
Total		1,292.9804	0.0928	0.0192	1,301.0266

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	910427	166.7667	0.0120	2.4800e-003	167.8044
Elementary School	243041	44.5189	3.2000e-003	6.6000e-004	44.7959
General Office Building	102808	18.8318	1.3500e-003	2.8000e-004	18.9490
High School	599033	109.7275	7.8800e-003	1.6300e-003	110.4103
Industrial Park	1.03118e+006	188.8849	0.0136	2.8100e-003	190.0603

Single Family Housing	3.41606e+006	625.7341	0.0449	9.3000e-003	629.6280
Strip Mall	496139	90.8798	6.5300e-003	1.3500e-003	91.4453
Total		1,245.3435	0.0894	0.0185	1,253.0932

6.0 Area Detail

6.1 Mitigation Measures Area

- Use Low VOC Paint - Residential Interior
- Use Low VOC Paint - Residential Exterior
- Use Low VOC Paint - Non-Residential Interior
- Use Low VOC Paint - Non-Residential Exterior
- No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive 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	5.0983	0.0525	4.5417	2.4000e-004		0.0250	0.0250		0.0250	0.0250	0.0000	7.3979	7.3979	7.2500e-003	0.0000	7.5793
Unmitigated	6.1474	0.2799	4.6385	1.6900e-003		0.0433	0.0433		0.0433	0.0433	0.0000	270.7880	270.7880	0.0123	4.8300e-003	272.5346

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	1.0955					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.8862					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0266	0.2274	0.0968	1.4500e-003		0.0184	0.0184		0.0184	0.0184	0.0000	263.3901	263.3901	5.0500e-003	4.8300e-003	264.9553
Landscaping	0.1391	0.0525	4.5417	2.4000e-004		0.0250	0.0250		0.0250	0.0250	0.0000	7.3979	7.3979	7.2500e-003	0.0000	7.5793
Total	6.1474	0.2799	4.6385	1.6900e-003		0.0433	0.0433		0.0433	0.0433	0.0000	270.7880	270.7880	0.0123	4.8300e-003	272.5346

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	0.0730					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.8862					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1391	0.0525	4.5417	2.4000e-004		0.0250	0.0250		0.0250	0.0250	0.0000	7.3979	7.3979	7.2500e-003	0.0000	7.5793
Total	5.0983	0.0525	4.5417	2.4000e-004		0.0250	0.0250		0.0250	0.0250	0.0000	7.3979	7.3979	7.2500e-003	0.0000	7.5793

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	117.3220	0.7204	0.0554	151.8538
Unmitigated	117.3220	0.7204	0.0554	151.8538

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	12.2029 / 7.69316	21.3446	0.1252	9.6400e-003	27.3472
Elementary School	0.958056 / 2.46357	2.8680	9.9100e-003	7.7000e-004	3.3467
General Office Building	1.90493 / 1.16753	3.3106	0.0195	1.5000e-003	4.2475
High School	2.78467 / 6.95319	8.2030	0.0288	2.2500e-003	9.5935
Industrial Park	24.8597 / 0	33.4352	0.2543	0.0195	45.6011
Single Family Housing	23.2965 / 14.6869	40.7488	0.2390	0.0184	52.2083
Strip Mall	4.26488 / 2.61396	7.4119	0.0437	3.3700e-003	9.5095
Total		117.3220	0.7204	0.0554	151.8538

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	12.2029 / 7.69316	21.3446	0.1252	9.6400e-003	27.3472
Elementary School	0.958056 / 2.46357	2.8680	9.9100e-003	7.7000e-004	3.3467
General Office Building	1.90493 / 1.16753	3.3106	0.0195	1.5000e-003	4.2475
High School	2.78467 / 6.95319	8.2030	0.0288	2.2500e-003	9.5935
Industrial Park	24.8597 / 0	33.4352	0.2543	0.0195	45.6011
Single Family Housing	23.2965 / 14.6869	40.7488	0.2390	0.0184	52.2083
Strip Mall	4.26488 / 2.61396	7.4119	0.0437	3.3700e-003	9.5095
Total		117.3220	0.7204	0.0554	151.8538

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	177.8993	10.5135	0.0000	440.7379
Unmitigated	177.8993	10.5135	0.0000	440.7379

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	89.66	18.2002	1.0756	0.0000	45.0902
Elementary School	75.05	15.2345	0.9003	0.0000	37.7428
General Office Building	10.37	2.1050	0.1244	0.0000	5.2151
High School	116.61	23.6708	1.3989	0.0000	58.6434
Industrial Park	138.72	28.1589	1.6641	0.0000	69.7625
Single Family Housing	383.07	77.7598	4.5955	0.0000	192.6465
Strip Mall	62.91	12.7702	0.7547	0.0000	31.6375
Total		177.8993	10.5135	0.0000	440.7379

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	89.66	18.2002	1.0756	0.0000	45.0902
Elementary School	75.05	15.2345	0.9003	0.0000	37.7428
General Office Building	10.37	2.1050	0.1244	0.0000	5.2151
High School	116.61	23.6708	1.3989	0.0000	58.6434

Industrial Park	138.72	28.1589	1.6641	0.0000	69.7625
Single Family Housing	383.07	77.7598	4.5955	0.0000	192.6465
Strip Mall	62.91	12.7702	0.7547	0.0000	31.6375
Total		177.8993	10.5135	0.0000	440.7379

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

Appendix F

Noise

Appendix G

Transportation

Environmental Noise & Vibration Assessment

Le Grand Community Plan EIR

Merced County, California

BAC Job # 2011-017

Prepared For:

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Prepared By:

Bollard Acoustical Consultants, Inc.



Paul Bollard, President

September 21, 2018



Introduction

Le Grand is an unincorporated community located in Merced County, approximately 12 miles east of the City of Merced and 8 miles north of the City of Chowchilla. The closest highway is California State Route 99 (SR 99), approximately 6 miles to the west of Le Grand. The community is primarily accessed from via Le Grand Road and Santa Fe Avenue. The Burlington Northern Santa Fe (BNSF) railroad runs along the northeast corner of the Plan Area, parallel to Santa Fe Avenue. Figure 1 shows the Le Grand Community Plan Area. Figure 2 shows the proposed Community Plan Land Use Designations.

The following section discusses the existing noise and vibration environment in the project vicinity, and identifies potential impacts and mitigation measures related to development within the Le Grand Community Plan (project) area in Merced County, California. Specifically, this section analyzes potential noise and vibration impacts due to and upon development of mixed uses within the Project Area relative to applicable noise criteria and to the existing ambient noise environment.

Environmental Setting

Noise Fundamentals

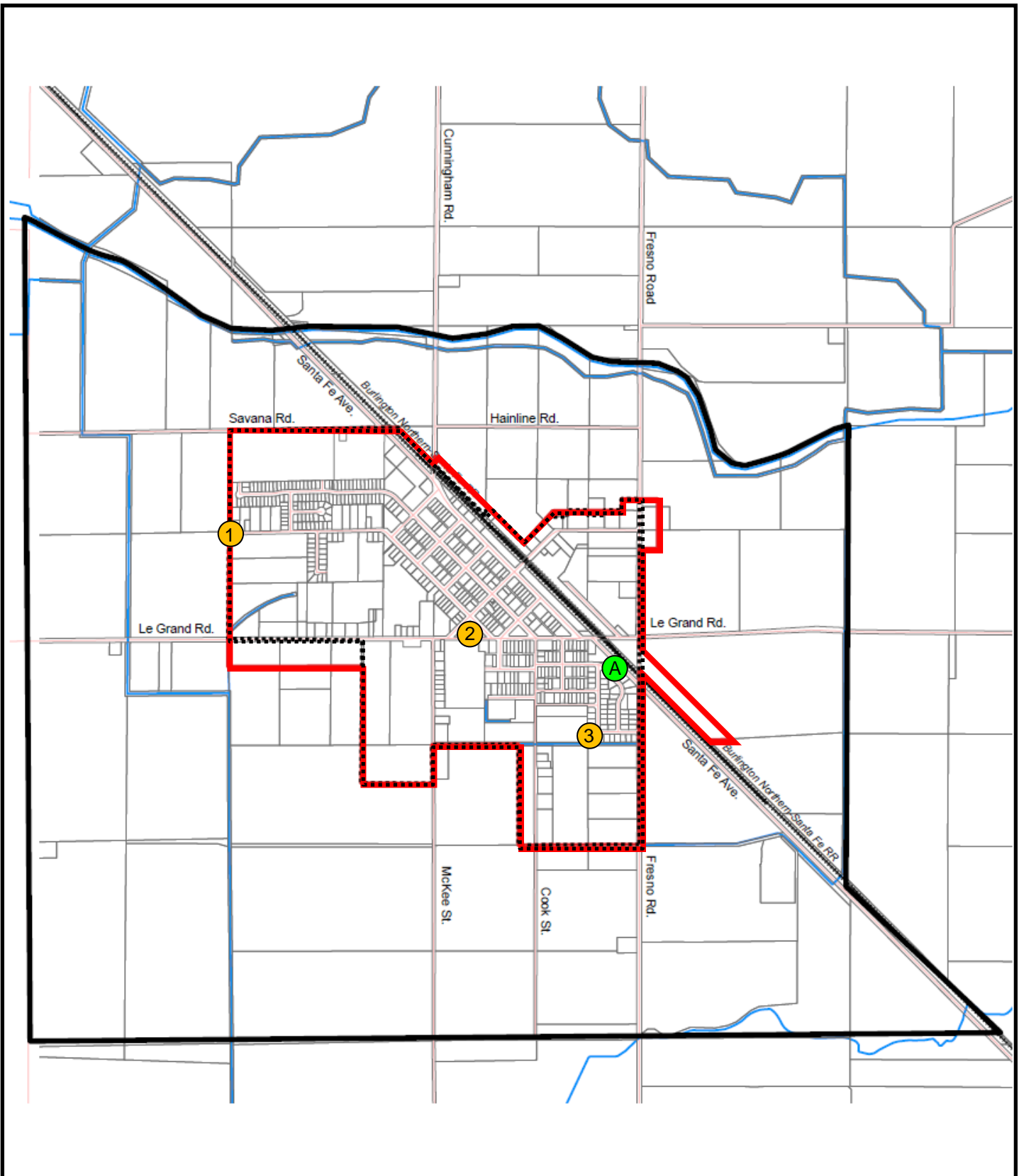
The Decibel

Noise is simply described as unwanted sound. Sound is defined as any pressure variation in air that the human ear can detect. If the pressure variations occur frequently enough (at least 20 times per second), 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, called Hertz (Hz).

Discussing sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel (dB) scale was devised. The decibel scale uses the hearing threshold (20 micropascals of pressure), as a point of reference, defined as 0 dB. Other sound pressures are compared to the reference pressure and the logarithm is taken to keep the numbers in a practical range. The dB scale allows a million-fold increase in pressure to be expressed as 120 dB.

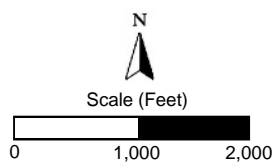
A-Weighting

To better relate overall sound levels and loudness to human perception, frequency-dependent weighting networks were developed. There is a strong correlation between the way humans perceive sound and A-weighted sound levels. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment for community exposures. All sound levels expressed in this section are A-weighted sound levels, unless noted otherwise. Definitions of acoustical terminology are provided in Appendix A.



Legend

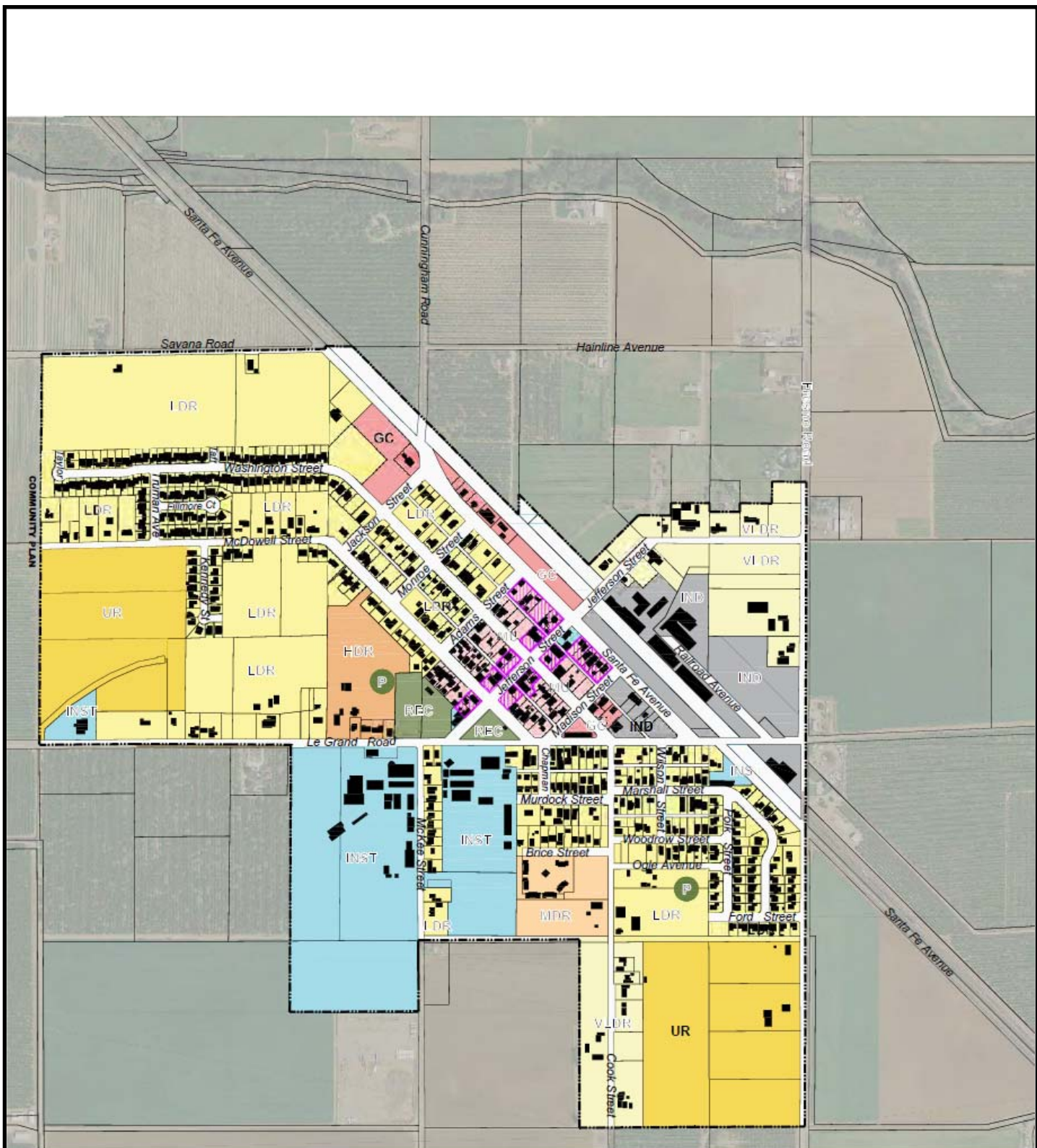
- Le Grand Community Plan Area Boundary (Existing)
- - - Le Grand Community Plan Area Boundary (Proposed)
- 1 Short-Term Noise Level Measurement Locations
- A Long-Term Noise Level Measurement Location



Le Grand Community Plan Merced County, California Community Plan Area

Figure 1





Legend

VLDR	Very Low Density Residential	MU	Mixed Use	REC	Recreational
LDR	Low Density Residential	MUV	Mixed Use Vertical	INST	Institutional/ Public Facilities
MDR	Medium Density Residential	GC	General Commercial	UR	Urban Reserve
HDR	High Density Residential	IND	Industrial	P	Potential Neighborhood Park

Le Grand Community Plan Merced County, California

Proposed Land Use Designations

Figure 2

Community Noise

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 noise environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (L_{eq}), over a given time period (usually one hour). The L_{eq} is the foundation of the day-night average noise descriptor, and shows very good correlation with community response to noise for the average person.

The L_{dn} is based upon the average noise level over a 24 hour day, with a +10 dB weighting 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. Where short-term noise sources are an issue, noise impacts may be assessed in terms of maximum noise levels, hourly averages, or other statistical descriptors.

Perception of Loudness

The perceived loudness of sounds and corresponding reactions to noise are dependent upon many factors, including sound pressure level, duration of intrusive sound, frequency of occurrence, time of occurrence, and frequency content. As mentioned above; however, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by weighing the frequency response of a sound level meter by means of the standardized A-weighting network. Figure 3 shows examples of noise levels for several common noise sources and environments.

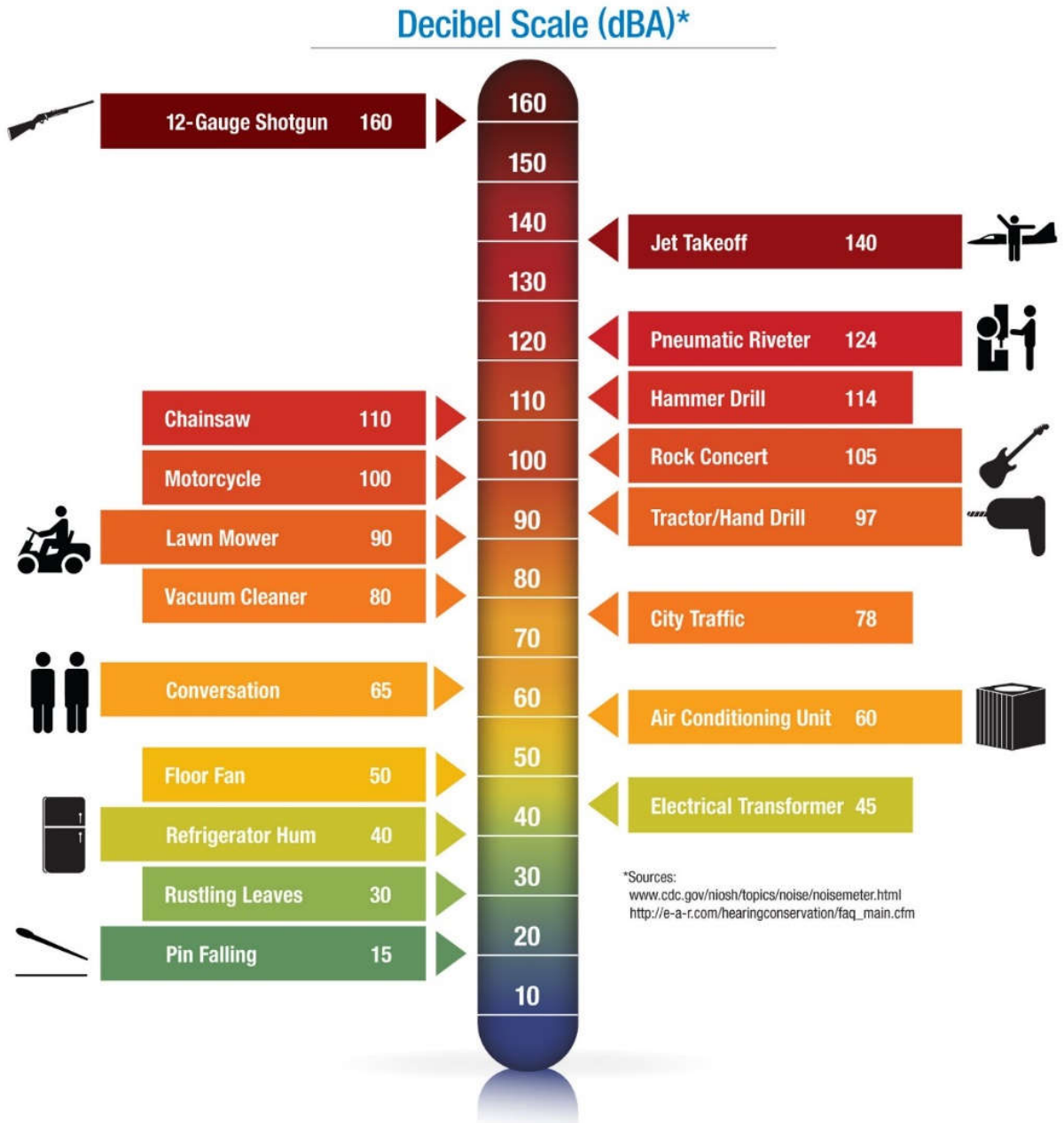
Sound Propagation

It is commonly understood that sound decreases with distance. But the propagation of sound is dependent on considerably more variables than distance alone. Those variables include the type of noise source (point, moving point, or line sources), the directionality of the noise source, the frequency content of the source (low frequency sound is absorbed in the atmosphere at a slower rate than high-frequency sound and therefore “carries” farther), atmospheric conditions (wind, temperature, humidity, gradients), ground type (dirt, grass fields, concrete, etc.), shielding (structures, noise barriers, topography), and vegetation.

Vibration Fundamentals

According to the Federal Transit Administration Noise and Vibration Impact Assessment Guidelines (FTA-VA-90-06), ground-borne vibration can be a serious concern for nearby neighbors of a transit system route or maintenance facility, causing buildings to shake and rumbling sounds to be heard. In contrast to airborne noise, ground-borne vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Some common sources of ground-borne vibration are trains, buses on rough roads, and construction activities such as blasting, pile-driving and operating heavy earth-moving equipment.

Figure 3
Typical A-Weighted Sound Levels of Common Noise Sources



The effects of ground-borne vibration include detectable movement of the building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. In extreme cases, the vibration can cause damage to buildings. Building damage is not a factor for normal transportation projects, with the occasional exception of blasting and pile-driving during construction. Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by only a small margin. A vibration level that causes annoyance will be well below the damage threshold for normal buildings.

Train wheels rolling on rails create vibration energy that is transmitted through the track support system into the ground, creating vibration waves that propagate through the various soil and rock strata to the foundations of nearby buildings. The vibration propagates from the foundation throughout the remainder of the building structure. The maximum vibration amplitudes of the floors and walls of a building often will be at the resonance frequencies of various components of the building.

The vibration of floors and walls may cause perceptible vibration, rattling of items such as windows or dishes on shelves, or a rumble noise. The rumble is the noise radiated from the motion of the room surfaces. In essence, the room surfaces act like a giant loudspeaker causing what is called ground-borne noise.

Ground-borne vibration is almost never annoying to people who are outdoors. Although the motion of the ground may be perceived, without the effects associated with the shaking of a building, the motion does not provoke the same adverse human reaction. In addition, the rumble noise that usually accompanies the building vibration is perceptible only inside buildings. Vibration can be described in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities (inches/second).

Existing Noise and Vibration Environment in the Plan Area

The community of Le Grand is relatively small, with existing land uses consisting primarily of low density residential uses surrounded by rural agricultural operations. There are three schools - Le Grand Union High School, Granada High School (a small continuation school) and Le Grand Elementary School (all located on East Le Grand Road). The community also contains limited business commercial uses, which primarily consist of local retail business and government-related services. Finally, the community also contains light industrial uses, which are primarily related to agricultural product storage and processing. The existing ambient noise environment in the Plan Area is primarily defined by local traffic and by railroad operations on the Burlington Northern Santa Fe (BNSF) railroad tracks.

To quantify existing noise and vibration levels within the Plan Area, noise surveys were conducted, existing literature was consulted, and accepted modeling algorithms were utilized. The following sections describe the existing noise and vibration environment within the Le Grand Community Plan Area.

General Ambient Noise Level Survey

To quantify the existing ambient noise environment in the Plan Area, short-term ambient noise surveys were conducted at three locations on May 13, 2011. In addition, long-term (continuous) noise monitoring was conducted on May 12, 2011 at one location near the railroad tracks to document railroad activity noise in the community. The locations of the short and long-term noise measurement sites are shown on Figure 1.

Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meters were used for the ambient noise level measurement surveys. The meters were calibrated before and after use with an LDL Model CA200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4). The results of the long-term noise measurements are shown numerically and graphically in Appendices B and C, and are summarized in Table 1. Photographs of the noise measurement sites are provided in Appendix D.

The noise level meters were programmed to record the maximum and average noise level at each site during the survey. The maximum value, denoted L_{max} , represents the highest noise level measured. The average value, denoted L_{eq} , represents the energy average of all of the noise received by the sound level meter microphone during the monitoring period.

Table 1 Ambient Noise Monitoring Results Le Grand Community Plan EIR – May 2011				
Site ¹	Location ²	Measured Sound Level, dBA		
		Average (L_{eq})	Maximum (L_{max})	Day/Night (L_{dn})
1	West end of McDowell Street	47	68	--
2	Park opposite Le Grand Elementary School	59	73	--
3	West of Polk/Ford Streets intersection	47	69	--
A	Marshall Street: 24-hour location	70 D / 67 N	97 D / 93 N	79
Notes: ¹ Sites 1-3 were monitored on a short-term basis (15-minute samples), whereas Site A was monitored continuously for a 24-hour period. ² Noise measurement locations are shown on Figure 1. ³ Detailed long-term noise measurement results are shown in Appendices B & C. Source: Bollard Acoustical Consultants, Inc., 2011				

The ambient noise survey results indicate that the measured daytime ambient noise levels within the Plan Area vary depending on proximity to roadways and the railroad tracks. Specifically, noise levels at Site A, which had exposure to both railroad noise and Santa Fe Avenue noise, registered very high ambient noise levels, whereas sites more removed from those sources (Sites 1-3) registered lower ambient noise levels. The ambient conditions in the Le Grand area are consistent

with those typically found in smaller towns which contain major traffic or railroad corridors. A separate assessment of specific existing traffic and railroad noise levels follows.

Existing Traffic Noise Environment

Traffic Noise Prediction Methodology

To predict existing and future traffic noise levels, the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. The Model was used in conjunction with the Calveno reference noise emission curves, and accounts for vehicle volume and speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the project site, and is generally considered to be accurate within 1.5 dB if the input variables are properly accounted for. The FHWA Model was developed to predict hourly L_{eq} values for free-flowing traffic conditions. To calculate L_{dn} , average daily traffic (ADT) volume data is manipulated based on the assumed day/night distribution of traffic on the project roadways.

Existing Traffic Noise Environment in the Plan Area

The FHWA Model was used with traffic data provided by the project transportation consultant, KD Anderson and Associates, to predict existing traffic noise levels in the project vicinity. Table 2 shows the predicted existing traffic noise levels at a reference distance of 100 feet from the roadway centerlines, as well as the distances to the unshielded L_{dn} contours. The FHWA Model Inputs for baseline conditions are provided in Appendix E.

Table 2 Existing Traffic Noise Levels and Distances to Traffic Noise Contours Le Grand Community Plan EIR – Merced County, CA					
Roadway	Segment	L_{dn} , dB ¹	Distance to L_{dn} Contour, feet		
			70	65	60
Santa Fe Avenue	North of Savana Road	59	18	39	84
Savana Road	West of Santa Fe Avenue	44	2	4	8
Cunningham Road	North of Santa Fe Avenue	53	7	15	33
Fresno Road	North of Le Grand Road	43	2	4	8
Santa Fe Avenue	South of Jackson Street	53	7	15	33
Washington Street	North of Jefferson Street	47	3	6	13
Jefferson Street	West of Santa Fe Avenue	51	6	12	26
McDowell Street	North of Jefferson Street	47	3	7	14
Le Grand Road	West of Santa Fe Avenue	50	5	10	21
Le Grand Road	East of Fresno Road	50	5	10	22
Minturn Road	South of Le Grand Road	57	13	28	60
Santa Fe Avenue	South of Fresno Road	56	11	24	52
Notes:					
¹ L_{dn} is computed at a standardized distance of 100 feet from the roadway centerline.					
Source: FHWA-RD-77-108 with inputs prepared by KD Anderson & Associates					

Existing Railroad Noise Environment

The Burlington Northern Santa Fe railroad tracks bisect the Le Grand Community Plan Area, as shown on Figure 1. Observations of railroad activity at the project site indicate that railroad warning horns are used as trains approach the at-grade crossings in the Plan Area.

To quantify railroad noise exposure at the project site, BAC conducted continuous noise level measurements at the location denoted Site A on Figure 1. The purposes of the noise level measurements were to determine the approximate number of daily railroad operations on these tracks, to quantify typical sound exposure levels (SEL) for railroad passages, and to calculate railroad noise levels in terms of day/night average levels (L_{dn}).

The results of the railroad noise measurements are shown in Table 3. Table 3 also shows the computed L_{dn} for the 24-hour period monitored. A detailed analysis of the single-event data indicated that there was an average of approximately 37 trains per day on these railroad tracks during the noise monitoring period. In addition, the railroad operations were essentially randomly distributed throughout the day and nighttime hours (68% day / 32% night). The approximate distances to the 60 and 65 dB L_{dn} railroad noise contours were computed from the measurement results and those distances are shown in Table 3.

Table 3 Burlington Northern Santa Fe Railroad Noise Measurement Results Le Grand Community Plan EIR – Merced County, CA					
Date	# Trains Per Day	Mean SEL @ 125 ft., dBA	Computed L_{dn} @ 100 ft., dBA	Distance to Existing L_{dn} Contours, feet	
				60 dB	65 dB
May 12, 2011	37	107	80	2,303	1,069
Notes: ¹ The noise level measurement site is shown on Figure 1 (Site A). The site was approximately 125 feet from the center of railroad tracks. ² The number of apparent railroad operations was estimated from an analysis of single-event noise level data collected over the monitoring period. Events were considered to be railroad operations if they met criteria for event duration, maximum level, and SEL. Source: Bollard Acoustical Consultants, Inc. (2011)					

Existing Agricultural Environment

There are active agricultural uses adjacent to the Plan Area, and agricultural operations will continue to occur on adjacent properties into the foreseeable future. As a result, agricultural-related equipment and processes contribute to the existing ambient noise environment in the Plan Area. Due to the wide array of equipment types and conditions under which that equipment is used in the agriculture industry, noise generated by agricultural processes varies substantially.

Maximum noise levels generated by farm-related tractors typically range from 77 to 85 dB at a distance of 50 feet from the tractor, depending on the horsepower of the tractor and the operating conditions.

Due to the seasonal nature of the agricultural industry, there are often extended periods of time when no noise is generated on properties which are actively being farmed, followed by short-term periods of intensive mechanical equipment usage and corresponding noise generation. Due to this high degree of variability of agricultural activities, it is not feasible to reliably quantify the noise generation of agricultural uses in terms of noise standards commonly utilized to assess impacts of other noise sources. However, these uses generate short-term periods of elevated noise during all hours of the day and night and possess the potential to generate adverse public reaction during intensive farm-related activities.

Industrial and Other Noise Sources

Approximately 22 acres of industrial-designated land uses are provided within the Community Plan Area. The majority of the industrial land is located along the railroad tracks between Le Grand Road and Jefferson Street. Relative to the adjacent railroad operations, noise generated by these uses is considered inconsequential at the nearest existing noise-sensitive land uses.

Approximately 8 acres of general commercial land uses are provided within the Community Plan Area. The existing commercial uses include a restaurant, laundromat, historic railroad depot, and auto repair business. Activities that have the potential to generate noise above a background level (such as auto repair) are encouraged to locate along the Santa Fe Avenue corridor away from residential uses.

Existing Ambient Vibration Environment

The only substantive source of vibration identified within the Community Plan Area is the BNSF railroad. The nearest existing sensitive land uses (residences) are located approximately 100 feet from those railroad tracks. At that distance, railroad vibration levels were subjectively evaluated as being imperceptible to very faint by BAC staff.

Regulatory Setting

Federal

There are no federal noise regulations pertaining to the proposed Community Plan.

State

The State regulates noise levels for multifamily residential development in areas experience noise levels over 60 dBA L_{dn} . The State Building Code (Title 24) requires that acoustical studies be conducted prior to construction at residential building locations where the exterior noise levels exceed 60 dBA L_{dn} . The studies must include measures that would limit the noise levels in any habitable room to 45 dBA L_{dn} .

Local**Merced County General Plan**

The Health and Safety Element of the 2030 Merced County General Plan Noise Element provides acceptable noise environment guidelines for a variety of land use types. The following noise level standards have been developed in order to quantify noise impacts in the County. Table 4 (GP Table HS-1), shows the noise level standards for noise-sensitive areas affected by traffic, railroad, or airport noise sources in the County. Table 5 (GP Table HS-2), shows the interior and exterior noise level standards for noise-sensitive areas affected by existing non-transportation noise sources in the County.

Table 4 (General Plan Table HS-1) Noise Standards for New Uses Affected by Traffic, Railroad, and Airport Noise			
New Land Use	Sensitive¹ Outdoor Area - L_{dn}	Sensitive Interior² Area - L_{dn}	Notes
All Residential	65	45	3
Transient Lodging	65	45	3,4
Hospitals & Nursing Homes	65	45	3,4,5
Theaters & Auditoriums	----	35	4
Churches, Meeting Halls, Schools, Libraries, etc.	65	40	4
	65	40	4
Office Buildings	65	45	4
Commercial Buildings	----	50	4
Playgrounds, Parks, etc.	70	----	
Industry	65	50	4
Notes: ¹ Sensitive Outdoor Areas include primary outdoor activity areas associated with any given land use at which noise-sensitivity exists and the location at which the County's exterior noise level standards are applied. ² Sensitive Interior Areas includes any interior area associated with any given land use at which noise-sensitivity exists and the location at which the County's interior noise level standards are applied. Examples of sensitive interior spaces include, but are not limited to, all habitable rooms of residential and transient lodging facilities, hospital rooms, classrooms, library interiors, offices, worship spaces, theaters. Interior noise level standards are applied within noise-sensitive areas of the various land uses with windows and doors in the closed positions. ³ Railroad warning horn usage shall not be included in the computation of L _{dn} . ⁴ Only the interior noise level standard shall apply if there are no sensitive exterior spaces proposed for these uses. ⁵ Since hospitals are often noise-generating uses, the exterior noise level standards are applicable only to clearly identified areas designated for outdoor relaxation by either hospital staff or patients.			

Table 5
(General Plan Table HS-2)
Non-Transportation Noise Standards
Median (L₅₀)/Maximum (L_{max})¹

Outdoor Area ²			Interior ³	Notes
Receiving Land Use	Daytime	Nighttime	Day or Night	
All Residential	55 / 75	50 / 70	35 / 55	
Transient Lodging	55 / 75	---	35 / 55	4
Hospitals & Nursing Homes	55 / 75	---	35 / 55	5,6
Theaters & Auditoriums	---	---	30 / 50	6
Churches, Meeting Halls, Schools, Libraries, etc.	55 / 75	---	35 / 60	6
Office Buildings	60 / 75	---	45 / 65	6
Commercial Buildings	---	---	45 / 65	6
Playgrounds, Parks, etc.	65 / 75	---	---	6
Industry	60 / 80	---	50 / 70	6
Notes: ¹ These standards shall be reduced by 5 dB for sounds consisting primarily of speech or music, and for recurring impulsive sounds. If the existing ambient noise level exceeds the standards in this table, then the noise level standards shall be increased at 5 dB increments to encompass the ambient. ² Sensitive Outdoor Areas include primary outdoor activity areas associated with any given land use at which noise-sensitivity exists and the location at which the County's exterior noise level standards are applied. ³ Sensitive Interior Areas includes any interior area associated with any given land use at which noise-sensitivity exists and the location at which the County's interior noise level standards are applied. Examples of sensitive interior spaces include, but are not limited to, all habitable rooms of residential and transient lodging facilities, hospital rooms, classrooms, library interiors, offices, worship spaces, theaters. Interior noise level standards are applied within noise-sensitive areas of the various land uses with windows and doors in the closed positions. ⁴ Outdoor activity areas of transient lodging facilities are not commonly used during nighttime hours. ⁵ Since hospitals are often noise-generating uses, the exterior noise level standards are applicable only to clearly identified areas designated for outdoor relaxation by either hospital staff or patients. ⁶ The outdoor activity areas of these uses (if any), are not typically used during nighttime hours. ⁷ Where median (L ₅₀) noise level data is not available for a particular noise source, average (Leq) values may be substituted for the standards of this table provided the noise source in question operates for at least 30 minutes of an hour. If the source operates for at least 30 minutes. If the source operates less than 30 minutes the maximum noise level standards shown shall apply.				

GOAL HS-7 Protect residents, employees, and visitors from the harmful and annoying effects of exposure to excessive noise.

Policy HS-7.1: Noise Standards for New Land Uses (RDR)

Require new development projects to meet the standards shown in Tables HS-1 & HS-2, at the property line of the proposed use, through either project design or other noise mitigation techniques.

Policy HS-7.2: Acoustical and Groundborne Vibration Analysis Requirements (RDR)

Require development project applicants to prepare an acoustical analysis as part of the environmental review process when noise-sensitive land uses are proposed in areas exposed to existing or projected exterior noise levels exceeding the levels shown in Table HS-1 & HS-2. Require an analysis of groundborne vibration for proposed residential and other sensitive projects (including but not limited to hospitals and schools) located within 1,000 feet of a rail line with at least 30 operations per day or an existing industrial groundborne vibration source. The acoustical and groundborne vibration analysis shall:

- a) Be the responsibility of the applicant;
- b) Be prepared by qualified persons experienced in the fields of environmental noise and groundborne vibration assessment and architectural acoustics;
- c) Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions;
- d) Estimate projected future (20 year) noise levels relative to the standards shown in Table HS-1 & HS-2 at the property line of the proposed use, and, as applicable, estimate project future groundborne vibration levels using a maximum vibration standard of 70 VdB;
- e) Recommend appropriate mitigation to achieve compliance with the adopted policies and standards in this element, including setbacks from groundborne vibration sources causing adverse levels of vibration; and
- f) Estimate interior and exterior noise, and groundborne vibration exposure after the prescribe mitigation measures have been implemented at the property line.

Policy HS-7.3: Existing Rural Sources (RDR)

Discourage new noise sensitive land uses in rural areas with authorized existing noise generating land uses.

Policy HS-7.4: New Noise or Groundborne Vibration Generating Uses (RDR)

Require new commercial and industrial uses to minimize encroachment on incompatible noise or groundborne vibration sensitive land uses. Also consider the potential for encroachment by residential and other noise or groundborne vibration sensitive land uses on adjacent lands that could significantly impact the viability of the commercial or industrial areas.

Policy HS-7.5: Noise Generating Activities (RDR)

Limit noise generating activities, such as construction, to hours of normal business operation.

Policy HS-7.6: Multi-Family Residential Noise Analysis (RDR)

Require noise analyses be prepared for proposed multi-family, town homes, mixed-use, condominiums, or other residential projects where floor ceiling assemblies or party walls shall be common to different owners/occupants to assure compliance with the State of California Noise Insulation Standards.

Policy HS-7.7: Noise or Vibration Impacted Residential Area Monitoring (RDR)

Consider any existing residential area “noise or vibration impacted” if the exposure to exterior noise exceeds the standards shown in Table HS-2 or if groundborne vibration levels exceed 70VdB. Identify and evaluate potential noise or groundborne vibration impacted areas and identify possible means to correct the identified noise/land use incompatibilities.

Policy HS-7.8: Project Design (RDR)

Require land use projects to comply with adopted noise and vibration standards through proper site and building design, such as building orientation, setbacks, natural barriers (e.g., earthen berms, vegetation), and building construction practices. Only consider the use of soundwalls after all design-related noise mitigation measures have been evaluated or integrated into the project or found infeasible.

Policy HS-7.9: Transportation Project Construction/Improvements (RDR)

Require transportation project proponents to prepare all acoustical analysis for all roadway and railway construction projects in accordance with Policy HS-7.2; additionally, rail projects shall require the preparation of a groundborne vibration analysis in accordance with Policy HS-7.2. Consider noise mitigation measures to reduce traffic and/or rail noise levels to comply with Table HS-1 standards if pre-project noise levels already exceed the noise standards of Table HS-1 and the increase is significant.

The County defines a significant increase as follows:

<u>Pre-Project Noise Environment (L_{dn})</u>	<u>Significant Increase</u>
Less than 60 dB	5+ dB
60 – 65 dB	3+ dB
Greater than 65 dB	1.5+ dB

Policy HS-7.10: Aircraft Noise (RDR)

Prohibit new noise-sensitive development within the projected future 60 dB L_{dn} noise contours of any public or private airports.

Policy HS-7.11: Train Whistle Noise (IGC)

Support improvements to at-grade crossings in urban areas in order to eliminate the need for train whistle blasts near or within communities.

Policy HS-7.12: New Project Noise Mitigation Requirements (RDR)

Require new projects to include appropriate noise mitigation measures to reduce noise levels in compliance with the Table HS-2 standards within sensitive areas. If a project includes the creation of new non-transportation noise sources, require the noise generation of those sources to be mitigated so they do not exceed the interior and exterior noise level standards of Table HS-2 at existing noise-sensitive areas in the project vicinity. However, if a noise-generating use is proposed adjacent to lands zoned for residential uses, then the noise generating use shall be responsible for mitigating its noise generation to a state of compliance with the standards shown in Table HS-2 at the property line of the generating use in anticipation of the future residential development.

Policy HS-7.13: Noise Exemptions (RDR)

Support the exemption of the following noise sources from the standards in this element:

- a) Emergency warning devices and equipment operated in conjunction with emergency situations, such as sirens and generators which are activated during power outages. The routine testing of such warning devices and equipment shall also be exempt provided such testing occurs during daytime hours.
- b) Activities at schools, parks, or playgrounds, provided such activities occur during daytime hours.
- c) Activities associated with County-permitted temporary events and festivals.

Policy HS-7.14: Transportation Noise Mitigation Program (MPSP/SO)

Adopt a countywide transportation noise mitigation program to reduce transportation noise levels at existing sensitive land uses.

Policy HS-7.15: New Project Groundborne Vibration Mitigation Requirements (RDR)

For residential projects within 1,000 feet of a rail line with at least 30 operations per day, or an existing industrial or commercial groundborne vibration source, require new residential projects to include appropriate groundborne vibration mitigation measures to reduce groundborne vibration levels to less than 70 VdB within structures. However, if a groundborne vibration-generating use is proposed adjacent to lands zoned for residential uses, then the groundborne vibration-generating use shall be responsible for mitigating its groundborne vibration generation to a state of compliance with the 70 VdB standard at the property line of the generating use in anticipation of the future residential development.

The proposed project would comply with Policies HS-7.1, -7.2, 7.4 through -7.8, -7.9, -7.12, -7.14 and -7.15, because the Community Plan requires compliance with the County standards, as demonstrated by noise studies required for new residential development near noise sources. In addition, the standards shown in Table 1 and 2 were used to evaluate potential impacts, and mitigation required where needed to insure the standards are met (see Impacts and Mitigation Measures, below). Construction noise is also evaluated below, and mitigation provided that will ensure compliance with Policy HS-7. The plan area is not rural or located near an airport, so

Policies HS-7.5 and -7.10 would not apply. Policy HS-7.11 encourages improvements at rail crossings to eliminate the need for train whistles. The noise impact analysis assumes existing conditions for the railroad; if improvements eliminated the need for train whistles, it would improve existing conditions. For these reasons, the proposed project is considered consistent with County noise policies.

Le Grand Community Plan

Chapter 7 (Noise) of the Le Grand Community Plan provides goals and policies to mitigate existing and future noise pollution, and discusses the specific noise-related issues that impact the Community Plan Area.

GOAL N-1 Reducing Noise – Reduce excessive noise that affects noise-sensitive land uses.

Policy N-1: Commercial Site Design

Site design techniques shall be utilized to reduce the effects of noise from existing commercial operations and for new commercial uses so that the existing community is protected from excessive noise.

Policy N-2: Residential Development

New residential development within $\frac{1}{4}$ mile of Le Grand High School shall provide noise attenuation measures to ensure that noise from high school activities will not be disruptive or exceed County standards, based on a noise study.

Merced County Code

Section 18.41 (Performance Standards) of the Merced County Code exempts construction activities from noise limits, while limiting construction activities to the daytime hours between 7:00 a.m. and 6:00 p.m. (Section 18.41.07.C.1.a). In addition, all construction equipment must be properly muffled and maintained to minimize noise levels (Section 18.41.07.C.1.a). This ordinance also limits operational noise from mechanical equipment, buzzers, bells, loudspeakers, and other noise generating devices. Noise levels from properties adjacent to residential development are not allowed to exceed 65 dBA L_{dn} or 75 dBA L_{max} at the property line (Section 18.41.A). Noise adjacent to non-residential land uses is not to exceed 70 dBA L_{dn} or 80 dBA L_{max} (Section 18.41.B).

In addition, the County Code has a Right-to-Farm ordinance that requires that new residents be notified that noise and other inconveniences or discomforts associated with agricultural activities could occur on occasion in the agricultural area (Section 17.08.080).

Impacts and Mitigation Measures

Standards of Significance

The California Environmental Quality Act checklist for noise and vibration indicates a project would result in significant noise or vibration impacts if the following were to result from the project:

- a) Exposure of persons to or generation of noise levels in excess of standards established in the local General Plan, Noise Ordinance, or applicable standards of other agencies. *For this project, the noise standards contained within the Merced County General Plan (as provided above in Tables 4 and 5) and Noise Ordinance are utilized to assess noise impacts.*
- b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels. *Pursuant GP Policy HS 7.15, excessive groundborne vibration is defined as levels exceeding 70 VdB.*
- c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. *The Merced County General Plan Policy HS-7.9 defines is 1.5 to 5 dB, depending on pre-project noise exposure, as being significant.*
- d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project; *The Merced County General Plan Policy HS-7.9 defines is 1.5 to 5 dB, depending on pre-project noise exposure, as being significant.*
- e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project to excessive noise levels. *Because the Community Plan Area is not located in an area which is impacted by aircraft noise from a public airport, criteria (e) is not applicable to this project.*
- f) For a project within the vicinity of a private airstrip, where the project would expose people residing or working in the project area to excessive noise levels. *Because this project is not located in the vicinity of a private airstrip, criteria (f) would not apply to this project.*

Method of Analysis

Traffic Noise Impact Assessment Methodology

In order to assess noise impacts due to project-related traffic increases on the local roadway network resulting from development within the Community Plan Area, traffic noise levels are predicted at a representative distance for both existing and future, project and no-project conditions. Noise impacts are identified at existing noise-sensitive areas if the noise level

increases which result from the project exceed the 1.5 to 5 dB significance threshold, as identified in the Merced County General Plan (Policy HS-7.9).

Traffic data were provided by KD Anderson & Associates, Inc., which prepared the traffic analysis for the project. To describe existing and projected noise levels due to traffic, the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. The FHWA model is based upon the Calvenno reference noise 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. The FHWA model was developed to predict hourly L_{eq} values for free-flowing traffic conditions. To predict traffic noise levels in terms of L_{dn} , it is necessary to adjust the input volume to account for the day/night distribution of traffic.

Tables 6 and 9 (see Impacts 1 and 7) show the predicted increases in traffic noise levels on the local roadway network for existing and future (cumulative) conditions that would result from the project. These tables are provided in terms of L_{dn} at a standard distance of 100 feet from the centerlines of the project-area roadways. The data from Tables 6 and 9 were used to determine the project-related increase in noise which is anticipated to result from the increase in traffic volumes on the local roadways.

To assess traffic noise impacts at new proposed noise-sensitive land uses, the noise contour distances shown in Table 7 for cumulative plus project conditions are used, because they represent the ultimate foreseeable condition for future residences.

Railroad Noise Impact Evaluation Methodology

Railroad noise impacts were evaluated by comparing calculated railroad noise contours in Table 3 with the applicable Merced County General Plan noise criteria. Specifically, where residential uses are proposed within the 65 dB L_{dn} railroad noise contour distance shown in Table 3, noise impacts were identified.

Construction Noise Impact Evaluation Methodology

During the construction phases of the project, noise from construction activities would add to the noise environment in the immediate project vicinity. Activities involved in construction would generate maximum noise levels, as indicated in Table 8, ranging from 70 to 95 dB at a distance of 50 feet. Pile driving activities would generate even higher noise levels.

Project Specific Impacts and Mitigation Measures

Impact 1: The proposed Community Plan would increase traffic noise in the existing community.

Applicable Regulations: General Plan Policy HS-7.1

Significance: Significant

Mitigation Included in the Proposed Community Plan: None

Significance after Mitigation in the Proposed Community Plan: Significant

Additional Mitigation: None available

Residual Significance: Significant

The proposed Community Plan would increase traffic on the existing roadway network, exposing existing sensitive receptors to higher noise levels than occur at present. Development within the Plan Area would generate increased traffic on the local roadway network. As shown in Table 6, the project-related change in traffic noise levels is predicted to range from 0 dB to an increase of 6.6 dB relative to existing conditions.

Pursuant to GP Policy HS-7.9, a substantial increase in traffic noise levels is defined as 1.5 to 5 dB, depending on the pre-project noise environment. Analysis of the Table 6 data indicate that the traffic noise level increases resulting from the proposed Community Plan are predicted to be significant on one roadway segment – Fresno Road, north of Le Grand Road (increase from 43.4 to 50.0 dB, or 6.6 dB).

Where existing residences are affected by project-related traffic noise level increases, it is generally infeasible to develop mitigation measures that could reduce the impact, because conventional traffic noise attenuation measures, such as setbacks and the construction of solid noise barriers, cannot be used. Because the residences are already constructed, additional setbacks between the residences and the roadways cannot be provided without moving either the residence or the roadway, and clearly both are infeasible on a community-wide basis. Noise barriers are often a viable alternative for new residences, but not for existing residences where driveway openings and other obstacles would either prevent their construction or render them ineffective.

Noise-reducing asphalt has been shown to provide an approximate 4 dB reduction in traffic noise relative to conventional asphalt pavement. However, this measure would be infeasible due to the cost associated with its installation. Therefore, this impact is considered significant and unavoidable.

Table 6 Existing and Existing Plus Project Traffic Noise Levels at 100' of Centerline					
Roadway	Segment	Day/Night Average Level, dB (L _{dn})			
		Existing	Existing + Project	Change	Substantial Increase?
Santa Fe Avenue	North of Savana Road	58.9	61.3	2.4	No
Savana Road	West of Santa Fe Avenue	43.9	43.9	0.0	No
Cunningham Road	North of Santa Fe Avenue	52.7	53.4	0.7	No

Table 6 Existing and Existing Plus Project Traffic Noise Levels at 100' of Centerline					
Roadway	Segment	Day/Night Average Level, dB (L _{dn})			
		Existing	Existing + Project	Change	Substantial Increase?
Fresno Road	North of Le Grand Road	43.4	50.0	6.6	Yes
Santa Fe Avenue	South of Jackson Street	52.8	54.1	1.3	No
Washington Street	North of Jefferson Street	46.5	49.5	3.0	No
Jefferson Street	West of Santa Fe Avenue	51.3	53.7	2.4	No
McDowell Street	North of Jefferson Street	47.3	50.4	3.1	No
Le Grand Road	West of Santa Fe Avenue	49.8	52.3	2.5	No
Le Grand Road	East of Fresno Road	50.2	50.6	0.4	No
Minturn Road	South of Le Grand Road	56.7	58.2	1.5	No
Santa Fe Avenue	South of Fresno Road	55.8	56.3	0.5	No
Source: FHWA-RD-77-108 with inputs prepared by KD Anderson & Associates, 2016					

Impact 2: Future residences and other noise sensitive land uses would be exposed to traffic noise.

Applicable Regulations: State Building Code Title 24

Significance: Significant

Mitigation included in the proposed Community Plan: None

Significance after Mitigation in the proposed Community Plan: Significant

Additional Mitigation: Mitigation Measure 1

Prior to approval of a residential building permit for projects located in areas estimated to experience noise levels above 65 dB L_{dn} due to traffic or railroad operations, an acoustical study shall be submitted demonstrating that interior noise levels will not exceed 45 dBA L_{dn}. Noise barriers, site planning, improvement to building facades and/or other effective measures may be used to achieve the required noise levels.

Residual Significance: Less than Significant

The distances to the 65 dB L_{dn} contours for Plan Area roadways are provided in Table 7, with the distance to the 65 dB L_{dn} railroad noise contour shown in Table 3. Any proposed residential uses located within the 65 dB L_{dn} contours shown in Tables 3 or 7, or any other proposed noise-sensitive land uses located within the critical noise contours for that use, could be exposed to noise levels that exceed County standards.

After analysis of the Proposed Land Use Designations map (Figure 2), it was determined that all sensitive areas proposed within the Community Plan Area were outside of the 65 dB L_{dn} traffic noise contours. In many cases, such as Santa Fe Avenue south of Jackson Street, the 65 dB L_{dn} contour would be located within the road right-of-way, so noise levels at adjacent uses would meet County standards. However, the sensitive areas that could be exposed to noise levels above 65 dB L_{dn} from train noise include:

- Very Low Density Residential (VLDR) parcels at the northeastern boundary of the proposed Plan Area;
- Low Density Residential (LDR) parcels in the north, south and central areas of the proposed Plan Area;
- Mixed-Use (MU) parcels centrally located within the proposed Plan Area;
- Mixed-Use Vertical (MUV) parcels centrally located within the proposed Plan Area;
- Institutional/Public Facilities parcels in the central and southeastern areas of the proposed Plan Area;
- General Commercial (GC) parcels in the central and north areas of the proposed Plan Area; and
- Urban Reserve (UR) parcels at the southeastern boundary of the proposed Plan Area.

It should be noted that industrially zoned parcels proposed within the Plan Area were also found to be located within the 65 dB L_{dn} railroad noise contours, but are typically not considered to be noise-sensitive.

Noise reduction measures could include setbacks, berms, landscaping, and/or soundwalls. For example, commercial parcels could place parking and landscaping closest to the road. These measures would be adequate to ensure that exterior noise levels meet County standards. However, in some cases, interior noise levels may exceed the County standard of 45 dB L_{dn} . Standard construction typically reduces interior noise by at least 15 dB, which may not be adequate if the exterior noise levels exceed 60 dB L_{dn} . In addition, soundwalls or other barriers might not reduce noise levels at second stories as effectively as at ground floors. Mitigation Measure 1 would ensure that interior noise levels would meet County standards. Because new development would meet County standards, the impact would be less than significant with mitigation.

Table 7 Distances to Cumulative Plus Project Noise Contours				
Roadway	Segment	Distance from Centerline to Noise Contour, feet		
		70 dB	65 dB	60 dB
Santa Fe Avenue	North of Savana Road	28	61	131
Savana Road	West of Santa Fe Avenue	2	4	9
Cunningham Road	North of Santa Fe Avenue	8	17	37

Table 7
Distances to Cumulative Plus Project Noise Contours

Roadway	Segment	Distance from Centerline to Noise Contour, feet		
		70 dB	65 dB	60 dB
Fresno Road	North of Le Grand Road	5	10	22
Santa Fe Avenue	South of Jackson Street	10	21	44
Washington Street	North of Jefferson Street	4	9	20
Jefferson Street	West of Santa Fe Avenue	9	19	41
McDowell Street	North of Jefferson Street	5	11	23
Le Grand Road	West of Santa Fe Avenue	7	15	31
Le Grand Road	East of Fresno Road	5	11	24
Minturn Road	South of Le Grand Road	17	36	78
Santa Fe Avenue	South of Fresno Road	13	27	58
Source: FHWA-RD-77-108 with inputs prepared by KD Anderson & Associates, 2016				

Impact 3: The proposed Community Plan would generate construction noise near noise-sensitive areas.

Applicable Regulations: Zoning Ordinance, Section 18.41.07.C.1.a

Significance: Significant

Mitigation included in the proposed Community Plan: None

Significance after Mitigation in the proposed Community Plan: Significant

Additional Mitigation: Mitigation Measure 2

(a) The following specific noise control measures shall be implemented as appropriate for construction projects occurring within the Plan Area near existing noise-sensitive receptors:

- All noise-producing project equipment and vehicles using internal-combustion engines shall be equipped with mufflers, air-inlet silencers where appropriate, and any other shrouds, shields, or other noise-reducing features in good operating condition that meet or exceed original factory specifications. Mobile or fixed "package" equipment (e.g., arc welders, air compressors) shall be equipped with shrouds and noise-control features that are readily available for that type of equipment.*
- All mobile or fixed noise-producing equipment used on the project site that are regulated for noise output by a federal, state, or local agency shall comply with such regulations while in the course of project activity.*

- *Electrically-powered equipment shall be used instead of pneumatic or internal-combustion-powered equipment, where feasible.*
- *Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable from noise-sensitive receptors.*
- *The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only.*
- *No project-related public address or music system shall be audible at any adjacent receptor.*

Residential Significance: Less than Significant

Activities associated with construction within the Plan Area would result in elevated noise levels in the immediate area of the construction. Activities involved in construction will typically generate maximum noise levels ranging from 70 to 95 dB L_{max} at a distance of 50 feet, as indicated in Table 8. Construction activities are temporary in nature and typically occur during normal daytime working hours. However, when construction occurs in areas proximate to sensitive uses, such as schools and residences, the noise can be disruptive to daily activities.

The County Zoning Ordinance limits construction hours to 7 a.m. to 6 p.m., and requires that all construction equipment be properly muffled and maintained (Zoning Ordinance Section 18.41.070). People are less likely to be disturbed by construction noise during the day, and mufflers would reduce equipment noise. Mitigation Measure 2 requires additional methods for minimizing construction noise, and would reduce the construction noise impact within the Plan Area to a less-than-significant level.

The proposed project would also require the installation and/or expansion of water and wastewater infrastructure. Most of this infrastructure, particularly conveyance lines, will be constructed within the Plan Area. However, an additional well could be required outside of the Plan Area. In addition, while the Wastewater Treatment Plant (WWTP) has adequate treatment capacity, there would be a need for additional fields for disposal of treated effluent prior to buildout of the proposed Community Plan. Because any expansion would occur within the WWTP boundaries or, for the disposal fields, in proximity to the WWTP, it is expected that mitigation measures identified in a WWTP Improvement Project EIR would be equally effective at reducing construction noise levels associated with plant expansion to a less-than-significant level.

Table 8
Typical Construction Equipment Noise

Equipment Description	Maximum Noise Level at 50 feet, dBA
Auger drill rig	85
Backhoe	80
Bar bender	80
Chain saw	85
Compactor (ground)	80
Compressor (air)	80
Concrete batch plant	83
Concrete mixer truck	85
Concrete pump truck	82
Concrete saw	90
Crane (mobile or stationary)	85
Dozer	85
Dump truck	84
Excavator	85
Flat bed truck	84
Front end loader	80
Generator (25 kilovolt-amperes [kVA] or less)	70
Generator (more than 25 kVA)	82
Grader	85
Hydra break ram	90
Impact pile driver (diesel or drop)	95
Jackhammer	85
Mounted impact hammer (hoe ram)	90
Paver	85
Pickup truck	55
Pneumatic tools	85
Pumps	77
Rock drill	85
Scraper	85
Soil mix drill rig	80
Tractor	84
Vacuum street sweeper	80
Vibratory concrete mixer	80
Vibratory pile driver	95
Source: Federal Highway Administration 2006.	

Impact 4: New residential development within the Plan Area could be exposed to vibration from the Burlington Northern Santa Fe (BNSF) railroad.

Applicable Regulations: General Plan Policy HS-7.15

Significance: Less than Significant

Mitigation included in the proposed Community Plan: None

Significance after Mitigation in the proposed Community Plan: Less than Significant

Additional Mitigation: None required.

Residual Significance: Less than Significant

The BNSF railroad transects the Plan Area, and more than 40 trains per day travel on the tracks. Trains can generate vibration levels that create disturbances and, at higher levels, damage buildings. During noise monitoring, the vibration levels experienced from train passes were noted (at approximately 125 feet from the tracks) and were subjectively found to be imperceptible to very faint. Therefore, it is not expected that vibration from the tracks would be noticeable in most of the Plan Area. The proposed project provides for residential development in proximity to the tracks (as close as approximately 100 feet). Merced County General Plan Policy HS-7.15 requires that residential projects within 1,000 feet of a rail line with at least 30 operations per day include appropriate measures to reduce groundborne vibration levels to less than 70 VdB within structures. Residential projects within the Plan Area would be required to provide documentation that vibration levels would not exceed 70 VdB at project residences, and to include appropriate attenuation measures where needed. Compliance with this policy would ensure that residences are not subjected to substantial vibration, so this impact would be less than significant.

Impact 5: The proposed Community Plan would result in uses that could generate excessive non-vehicular noise.

Applicable Regulations: General Plan Policy HS-7.1 and Table HS-2; Zoning Ordinance Section 18.41.07

Significance: Significant

Mitigation included in the proposed Community Plan: Policies N-1 & N-2

Significance after Mitigation in the proposed Community Plan: Less than Significant

Additional Mitigation: Mitigation Measure 3

New businesses that have outdoor noise sources (e.g., loading docks, HVAC systems) adjacent to residential areas shall demonstrate that the residential outdoor areas will be protected from noise by one or a combination of the following and/or equally effective measures:

- a) *Mechanical equipment associated with the commercial uses shall be shielded from view of adjacent residential uses by building parapets or located within mechanical equipment rooms;*

and/or

- b) *Commercial loading docks located within 300 feet of existing or proposed residences shall be positioned in areas shielded from view of those residences by intervening commercial buildings;*
and/or
- c) *Solid noise barriers shall be constructed at the boundary of the commercial uses of sufficient height to intercept line of sight between heavy trucks and the affected area of the residential use;*
and/or
- d) *Truck deliveries shall be limited to daytime hours (7 a.m. – 10 p.m.)*
and/or
- e) *Signs shall be posted prohibiting idling of delivery trucks to 10 minutes or less.*

Residual Significance: Less than Significant

The proposed project does not allow for heavy industry. The Industrial (IND) land use designation allows for light industrial and manufacturing land uses that are directly associated with local commercial agriculture (primarily related to storage and processing of products). The General Commercial (GC) land use designation allows for retail, service, office, and entertainment uses. These uses can have external operations and/or equipment that produces relatively high noise levels, such as commercial loading docks, delivery trucks, and HVAC systems. For the most part, these uses would not be near residential uses, and are encouraged to locate along the Santa Fe corridor away from such uses. However, vacant parcels designated for General Commercial and Industrial uses have been identified adjacent to residential areas within the proposed Plan Area. Because noise associated with these types of uses can be a potential source of annoyance at noise-sensitive areas, this impact is considered significant.

Mitigation Measure 3 would protect residences from excessive noise levels by requiring that new businesses take steps to limit noise levels, construct barriers between the source of noise and residences, and/or other effective measures. These businesses would also be required to demonstrate that noise levels at the property line would not exceed the standards shown in General Plan Table 5 (GP Table HS-2), Section 18.41.70 of the Zoning Ordinance. Compliance with these measures, and implementation of the commercial site design techniques identified in Policy N-1 of the Community Plan, would ensure that residences and other sensitive users would not be exposed to excessive noise from commercial and industrial operations, so the impact would be less than significant with mitigation.

Schools can also be a source of noise, particularly during games and outdoor activities. The school sites within the Plan Area are surrounded primarily by existing residential development. The proposed project would increase the number of students at these schools, which could increase noise. Although the project does not propose new Institutional (school) uses within the Plan Area, maintenance and/or expansion of the existing facilities is possible. The types of noise at these schools would be related to outdoor play and daytime sports activities; such noise would occur intermittently during the daytime, when it would not be considered a nuisance. In addition,

daytime playground and outdoor school activities are exempt from County General Plan noise policies (Policy HS-7.13). Finally, Policy N-2 of the Community Plan requires that new residential development within ¼ mile of Le Grand High School shall provide noise attenuation measures to ensure that noise from school activities would not be disruptive or exceed County standards, based on a noise study. For these reasons, noise associated with schools would be considered less than significant.

Impact 6: Noise-sensitive uses could be exposed to noise from agricultural operations.

Applicable Regulations: Right-to-Farm Ordinance; Confined Animal Ordinance; General Plan Policy AG-3.9

Significance: Less than Significant

Mitigation included in the proposed Community Plan: None

Significance after Mitigation in the proposed Community Plan: Less than Significant

Additional Mitigation: None required.

Residual Significance: Less than Significant

Agricultural operations can also generate noise, and the Plan Area is surrounded by orchards and agricultural fields. The proposed project designates residential land uses adjacent to active agricultural operations in several locations. The Merced County Confined Animal Ordinance states that new single-family residences, not a part of an existing animal confinement facility, are prohibited within 1,000 feet of an existing facility. There are currently no such facilities located within 1,000 of the Plan Area boundaries, and General Plan Policy AG-3.9 prohibits new facilities within one-half mile of an urban community boundary. As a result, no confined animal facilities could be constructed within 1,000 feet of the Plan Area in the future. This measure would ensure that noise associated with agricultural operations would not be significant by maintaining separation between agricultural activities and land uses that might be sensitive to noise generated by agricultural activities. Further, the Merced County Right-to-Farm ordinance specifically states that residents moving into areas where there are existing agricultural activities, “should be prepared to accept inconvenience or discomfort from normal, necessary agricultural operations,” which would ensure that future residents acknowledge and find acceptable the potential agricultural noise. For these reasons, this impact would be less than significant.

Cumulative Impacts and Mitigation Measures

The only noise levels likely to be affected by cumulative development outside of the Plan Area would be related to traffic. The land surrounding the proposed Plan Area is expected to remain in agriculture, and there would be no residential, commercial, or industrial development outside of and in proximity to the Plan Area. Therefore, the non-traffic noise environment would not change over time, and there would not be a cumulative impact different from the project-specific

impacts discussed above. Cumulative noise impacts associated with locating new development in proximity to roadways are addressed in Impact 2.

Impact 7: The proposed Community Plan would contribute to cumulative increases in traffic noise levels on local roadways.

Applicable Regulations: None

Significance: Significant

Mitigation included in the proposed Community Plan: None

Significance after Mitigation in the proposed Community Plan: None

Additional Mitigation: None available

Residual Significance: Significant

Future development within the Plan Area would generate increased traffic on the local roadway network. As noted in Table 9, the project-related change in traffic noise levels is predicted to range from 0 dB to an increase of 6.5 dB over levels that would exist without the proposed project.

Pursuant to GP Policy HS-7.9, a substantial increase in traffic noise levels is defined as 1.5 to 5 dB, depending on the pre-project noise environment. Analysis of the Table 9 data indicates that the traffic noise level increases resulting from the proposed project are predicted to be significant on one roadway segment – Fresno Road, north of Le Grand Road (increase from 43.5 to 50.0 dB, or 6.5 dB).

Because there are existing residential uses along the roadway segment, the proposed Community Plan's contribution to cumulative traffic noise levels is deemed considerable. As discussed in Impact 1, conventional measures for reducing traffic noise are not typically feasible in areas that are already developed. Therefore, this impact is considered significant and unavoidable.

Table 9 Cumulative and Cumulative Plus Project Traffic Noise Levels at 100' of Centerline					
Roadway	Segment	Day/Night Average Level, dB (L _{dn})			
		Cumulative	Cumulative + Project	Change	Substantial Increase?
Santa Fe Avenue	North of Savana Road	59.7	61.7	2.0	No
Savana Road	West of Santa Fe Avenue	44.1	44.1	0.0	No
Cunningham Road	North of Santa Fe Avenue	52.9	53.6	0.7	No
Fresno Road	North of Le Grand Road	43.5	50.0	6.5	Yes
Santa Fe Avenue	South of Jackson Street	53.5	54.7	1.2	No
Washington Street	North of Jefferson Street	46.7	49.6	2.9	No
Jefferson Street	West of Santa Fe Avenue	52.2	54.3	2.1	No
McDowell Street	North of Jefferson Street	47.5	50.5	3.0	No
Le Grand Road	West of Santa Fe Avenue	50.0	52.4	2.4	No
Le Grand Road	East of Fresno Road	50.4	50.7	0.3	No
Minturn Road	South of Le Grand Road	56.9	58.3	1.4	No
Santa Fe Avenue	South of Fresno Road	56.0	56.5	0.5	No
Source: FHWA-RD-77-108 with inputs prepared by KD Anderson & Associates, 2016					

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.
L_{dn}	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
L_{eq}	Equivalent or energy-averaged sound level.
L_{max}	The highest root-mean-square (RMS) sound level measured over a given period of time.
Loudness	A subjective term for the sensation of the magnitude of sound.
Masking	The amount (or the process) by which the threshold of audibility is for one sound is raised by the presence of another (masking) sound.
Noise	Unwanted sound.
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.
RT₆₀	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	A rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy of the event into a 1-s time period.
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.



Appendix B
Ambient Noise Monitoring Results - Site A
Le Grand Community Plan EIR
Thursday, May 12, 2011

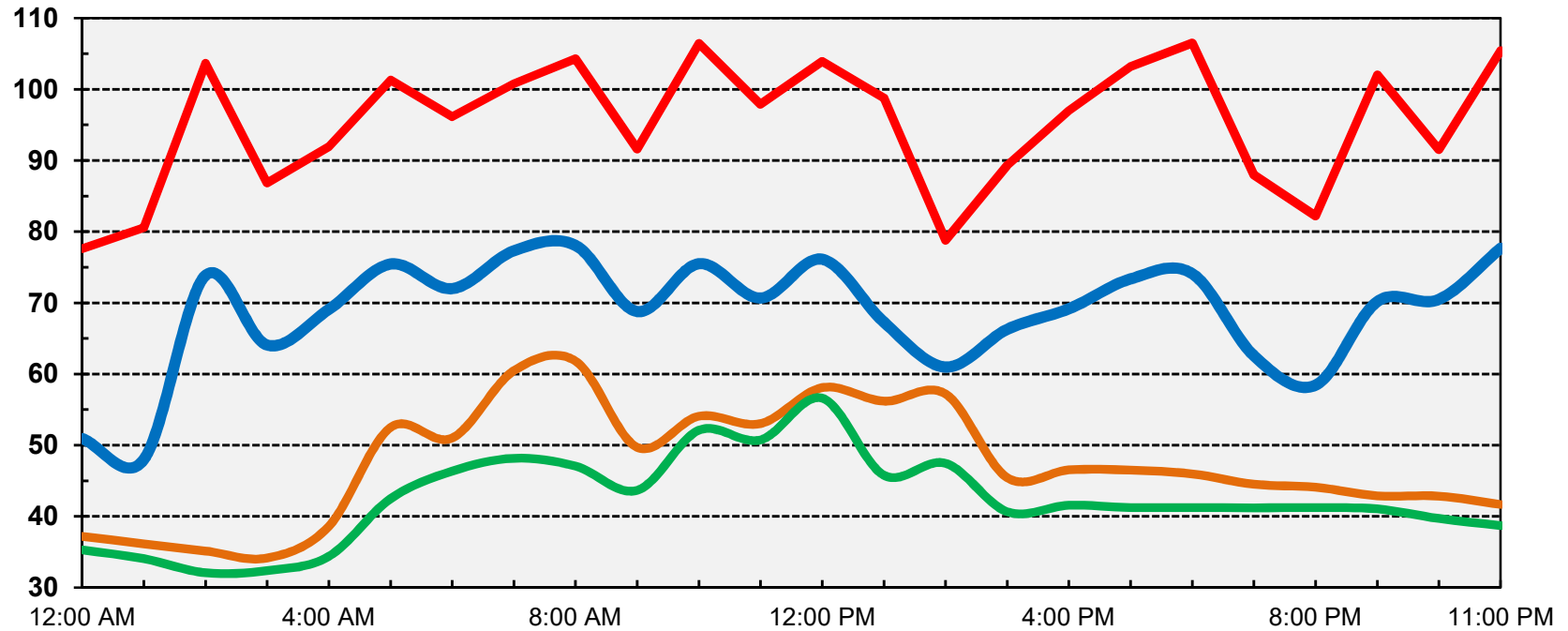
Hour	Leq	Lmax	L50	L90
0:00	51	78	37	35
1:00	48	81	36	34
2:00	74	104	35	32
3:00	64	87	34	32
4:00	69	92	39	34
5:00	75	101	53	42
6:00	72	96	51	46
7:00	77	101	60	48
8:00	78	104	62	47
9:00	69	92	50	44
10:00	76	106	54	52
11:00	71	98	53	51
12:00	76	104	58	57
13:00	67	99	56	46
14:00	61	79	57	47
15:00	66	89	45	41
16:00	69	97	47	42
17:00	73	103	47	41
18:00	74	107	46	41
19:00	63	88	45	41
20:00	58	82	44	41
21:00	70	102	43	41
22:00	70	92	43	40
23:00	78	105	42	39

Statistical Summary						
Daytime (7 a.m. - 10 p.m.)				Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	78	58	73	78	48	72
Lmax (Maximum)	107	79	97	105	78	93
L50 (Median)	62	43	51	53	34	41
L90 (Background)	57	41	45	46	32	37

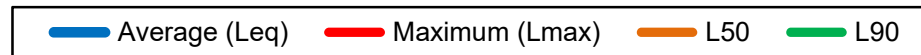
Computed Ldn, dB	79
% Daytime Energy	65%
% Nighttime Energy	35%

Appendix C
Ambient Noise Monitoring Results - Site A
Le Grand Community Plan EIR
Thursday, May 12, 2011

Sound Level, dBA



Hour of Day



Ldn: 79 dB



Notes:

Upper Left: Short-term noise level measurement location (Site 1) facing west.
 Upper Right: Short-term noise measurement location (Site 1) facing south.
 Lower Left: Short-term noise measurement location (Site 1) facing east.
 Lower Right: Short-term noise measurement location (Site 1) facing north.

Le Grand Community Plan

Merced County, California

Noise Measurement Site Photos

Appendix D-1





Notes:

Upper Left: Short-term noise level measurement location (Site 2) facing west.
 Upper Right: Short-term noise measurement location (Site 2) facing south.
 Lower Left: Short-term noise measurement location (Site 2) facing east.
 Lower Right: Short-term noise measurement location (Site 2) facing north.

Le Grand Community Plan

Merced County, California

Noise Measurement Site Photos

Appendix D-2





Notes:

Upper Left: Short-term noise level measurement location (Site 3) facing west.
 Upper Right: Short-term noise measurement location (Site 3) facing south.
 Lower Left: Short-term noise measurement location (Site 3) facing east.
 Lower Right: Short-term noise measurement location (Site 3) facing north.

Le Grand Community Plan

Merced County, California

Noise Measurement Site Photos

Appendix D-3





Notes:

Left and Right: Long-term noise level measurement location (Site A), in backyard of house on Marshall Street.

Le Grand Community Plan

Merced County, California

Noise Measurement Site Photos

Appendix D-4



Appendix E-1**FHWA-RD-77-108 Highway Traffic Noise Prediction Model****Data Input Sheet**

Project #: Le Grand Community Plan EIR

Description: Existing

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Santa Fe Ave	North of Savana Rd	2,090	80		20	2	1	55	100	
2	Savana Rd	West of Santa Fe Ave	200	80		20	2	1	35	100	
3	Cunningham Rd	North of Santa Fe Ave	840	80		20	2	1	45	100	
4	Fresno Rd	North of Le Grand Rd	130	80		20	2	1	40	100	
5	Santa Fe Ave	South of Jackson St	2,840	80		20	2	1	25	100	
6	Washington St	North of Jefferson St	670	80		20	2	1	25	100	
7	Jefferson St	West of Santa Fe Ave	2,015	80		20	2	1	25	100	
8	McDowell St	North of Jefferson St	810	80		20	2	1	25	100	
9	Le Grand Rd	West of Santa Fe Ave	1,430	80		20	2	1	25	100	
10	Le Grand Rd	East of Fresno Rd	470	80		20	2	1	45	100	
11	Minturn Rd	South of Le Grand Rd	2,080	80		20	2	1	45	100	
12	Santa Fe Ave	South of Fresno Rd	1,030	80		20	2	1	55	100	

Appendix E-2**FHWA-RD-77-108 Highway Traffic Noise Prediction Model****Data Input Sheet**

Project #: Le Grand Community Plan EIR

Description: Existing Plus Project

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Santa Fe Ave	North of Savana Rd	3,630	80		20	2	1	55	100	
2	Savana Rd	West of Santa Fe Ave	200	80		20	2	1	35	100	
3	Cunningham Rd	North of Santa Fe Ave	985	80		20	2	1	45	100	
4	Fresno Rd	North of Le Grand Rd	595	80		20	2	1	40	100	
5	Santa Fe Ave	South of Jackson St	3,865	80		20	2	1	25	100	
6	Washington St	North of Jefferson St	1,340	80		20	2	1	25	100	
7	Jefferson St	West of Santa Fe Ave	3,505	80		20	2	1	25	100	
8	McDowell St	North of Jefferson St	1,650	80		20	2	1	25	100	
9	Le Grand Rd	West of Santa Fe Ave	2,560	80		20	2	1	25	100	
10	Le Grand Rd	East of Fresno Rd	510	80		20	2	1	45	100	
11	Minturn Rd	South of Le Grand Rd	2,960	80		20	2	1	45	100	
12	Santa Fe Ave	South of Fresno Rd	1,160	80		20	2	1	55	100	

Appendix E-3**FHWA-RD-77-108 Highway Traffic Noise Prediction Model****Data Input Sheet**

Project #: Le Grand Community Plan EIR

Description: Cumulative (2035)

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Santa Fe Ave	North of Savana Rd	2,510	80		20	2	1	55	100	
2	Savana Rd	West of Santa Fe Ave	210	80		20	2	1	35	100	
3	Cunningham Rd	North of Santa Fe Ave	880	80		20	2	1	45	100	
4	Fresno Rd	North of Le Grand Rd	135	80		20	2	1	40	100	
5	Santa Fe Ave	South of Jackson St	3,370	80		20	2	1	25	100	
6	Washington St	North of Jefferson St	700	80		20	2	1	25	100	
7	Jefferson St	West of Santa Fe Ave	2,505	80		20	2	1	25	100	
8	McDowell St	North of Jefferson St	850	80		20	2	1	25	100	
9	Le Grand Rd	West of Santa Fe Ave	1,500	80		20	2	1	25	100	
10	Le Grand Rd	East of Fresno Rd	490	80		20	2	1	45	100	
11	Minturn Rd	South of Le Grand Rd	2,180	80		20	2	1	45	100	
12	Santa Fe Ave	South of Fresno Rd	1,080	80		20	2	1	55	100	

Appendix E-4**FHWA-RD-77-108 Highway Traffic Noise Prediction Model****Data Input Sheet**

Project #: Le Grand Community Plan EIR
Description: Cumulative (2035) Plus Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Santa Fe Ave	North of Savana Rd	4,050	80		20	2	1	55	100	
2	Savana Rd	West of Santa Fe Ave	210	80		20	2	1	35	100	
3	Cunningham Rd	North of Santa Fe Ave	1,025	80		20	2	1	45	100	
4	Fresno Rd	North of Le Grand Rd	600	80		20	2	1	40	100	
5	Santa Fe Ave	South of Jackson St	4,395	80		20	2	1	25	100	
6	Washington St	North of Jefferson St	1,370	80		20	2	1	25	100	
7	Jefferson St	West of Santa Fe Ave	3,995	80		20	2	1	25	100	
8	McDowell St	North of Jefferson St	1,690	80		20	2	1	25	100	
9	Le Grand Rd	West of Santa Fe Ave	2,630	80		20	2	1	25	100	
10	Le Grand Rd	East of Fresno Rd	530	80		20	2	1	45	100	
11	Minturn Rd	South of Le Grand Rd	3,060	80		20	2	1	45	100	
12	Santa Fe Ave	South of Fresno Rd	1,210	80		20	2	1	55	100	

Appendix G

Transportation

TRAFFIC IMPACT ANALYSIS
FOR THE
LE GRAND COMMUNITY PLAN AREA
Merced County, CA

Prepared For:

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3490-08

Le Grand CP.rpt

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Transportation Engineers

TRAFFIC IMPACT ANALYSIS FOR THE LE GRAND COMMUNITY PLAN AREA

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September 6, 2018

KDA

TRAFFIC IMPACT ANALYSIS FOR LE GRAND COMMUNITY PLAN AREA

INTRODUCTION

Study Methodology

The methodology used to prepare this traffic impact study follows an approach that is recognized by members of the traffic engineering profession and is consistent with CEQA guidelines, Merced County requirements and Caltrans traffic study guidelines for development traffic studies.

The first phase of the study included the collection of current background traffic data and the analysis of that data to determine existing vehicular operating conditions. Current Levels of Service occurring during a.m. and p.m. peak traffic hours have been identified for intersections and 24 hr volumes have been noted for roadway segments in Le Grand. Existing facilities serving other transportation modes, such as pedestrians, bicycles and transit have also been described.

The second phase of the analysis describes the characteristics of the new development that would occur in Le Grand over the next twenty years if the proposed community plan is implemented. The volume of traffic associated with new development was estimated on a daily and peak hour basis based on nationally accepted trip generation rates published by the Institute of Transportation Engineers (ITE) to the land use inventory within the plan area.

The third phase of the study determined the local and regional distribution of new trips generated by the proposed land uses within the community plan. This three step process first identified the interaction between residential and non-residential uses within Le Grand to calculate the “internal” match. These trips would remain within the community, although both local and regional streets may be used for travel within the community. The second step of the process identified the regional distribution of new external trips into and out of the community plan area. The distribution of new trips was based current travel patterns, review of Merced County Association of Governments (MCAG) regional model forecasts and the general location of regional employment centers, area schools and shopping. The third step assigned these new trips to the street network based on a comparison of travel times along alternative routes.

The fourth study phase involved the addition of new Le Grand generated traffic onto both current traffic volumes (i.e., Existing Plus Project conditions) and onto future background traffic volumes (i.e., Year 2035 conditions) and the evaluation of resulting traffic conditions. Year 2035 background conditions were identified assuming continuing growth in regional traffic on Santa Fe Avenue and Le Grand Road. The new trips generated by development in Le Grand were superimposed onto the background condition to create the "Year 2035 Plus Community

Plan" for comparison with "Year 2035 No Project" traffic volumes. Resulting Levels of Service were identified and the need for improvements was determined based on adopted significance criteria.

Impacts to alternative transportation modes were evaluated by identifying the changes in travel patterns that may occur in response to new Le Grand growth, determining which facilities will be affected by these new demands and identifying those gaps in the circulation system which may represent potential safety impacts.

EXISTING SETTING

Transportation Study Area

The materials which follow describe traffic conditions at intersections in Le Grand based on the quality of traffic flow occurring during weekday peak a.m. and p.m. commute hours (i.e., 7:00 to 9:00 a.m. and 4:00 to 6:00 p.m.), as well as the Level of Service on area roads based on daily traffic volumes. Figure 1 locates the community.

Study Area Streets. The characteristics of the streets serving the Le Grand area are described in the text that follows. The current Merced County General Plan and Community Plan differentiate between streets based on their physical characteristics and function. The Le Grand area circulation system is comprised of Major Collector, Minor Collector and Local streets. The text which follows describes the key streets addressed by this impact analysis.

Santa Fe Avenue. Santa Fe Avenue is designated a Major Collector in the Merced County General Plan north of Le Grand and a Minor Collector south of Le Grand. The road is a Major Collector within the Le Grand Community Plan area north of Le Grand Road and a Minor Collector to the south. Santa Fe Avenue runs parallel to the BN&SF railroad through Merced County from the Stanislaus County line to Madera County and is an important element of the local circulation systems in the communities they traverse. Santa Fe Avenue lies on the west side of the BN&SF railroad. Within Le Grand Santa Fe Avenue is a two-lane road with no auxiliary turn lanes. Intermittent sidewalks, curb and gutter exist in some locations where development has occurred.

Le Grand Road. Le Grand Road is an east-west road that extends east from an interchange on SR 99 for about seven miles to Le Grand and continues beyond the community to its terminus near the Mariposa County boundary. Le Grand Road is classified a Major Collector in the Merced County General Plan west of Le Grand and a Minor Collector the east. The Community Plan designated Le Grand Road as a Major Collector west of Santa Fe Avenue and a Minor Collector to the east. Within the community Le Grand Road is a two-lane facility without auxiliary lanes. Sidewalk, curb and gutter exist in limited locations, primarily adjoining the community's school along the south side of Le Grand Road. Le Grand Road crosses the BNSF railroad at a controlled crossing at the southern end of Le Grands commercial area.

Jefferson Street. Jefferson Street connects Le Grand Road and Santa Fe Avenue through the center of Le Grand. Jefferson Street is designated a Major Collector west of Santa Fe Avenue and is a Minor Collector street to the east. Jefferson Street is a two-lane facility without auxiliary turn lanes. Sidewalk and curb are generally available in the area west of Santa Fe Avenue. The eastern portion of Jefferson Street crosses the BN&SF railroad at a controlled crossing.

McDowell Street. McDowell Street is designated an Urban Local road in the Le Grand Community Plan. McDowell Street extends northerly from an intersection on Le Grand Road through the west side of the community before turning to the west and to the eastern boundary of the developed Le Grand area. McDowell Street is a two-lane facility without auxiliary lanes.

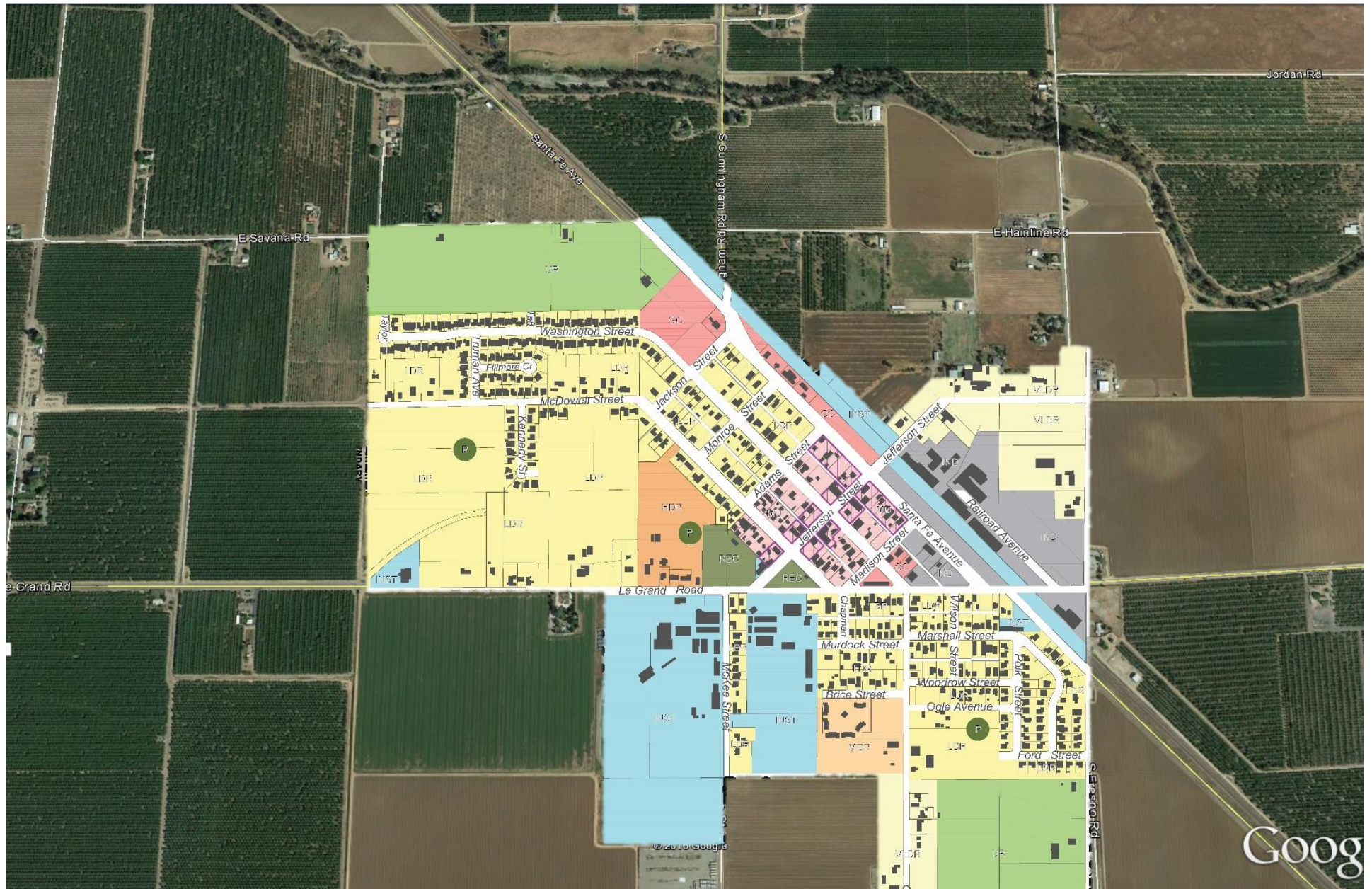
Sidewalks are generally present in the southern end of McDowell Street and where development has occurred along the western end. Traffic calming features (i.e., undulations) have been installed at three mid-block locations on McDowell Street.

Washington Street. Washington Street is a north-south Urban Local road that lies between and parallel to Santa Fe Avenue and McDowell Street from Le Grand Road to its existing terminus at the western end of the community. Washington Street is a two-lane facility without auxiliary lanes. Intermittent sidewalks exist in the southern portion of Washington Street and have been installed with recent development on the western end. Traffic calming features (i.e., undulations) have been installed at mid-block locations north of Jefferson Street and north of Jackson Street.

Cunningham Road. Cunningham Road is designated a Minor Collector in the Merced County General Plan. This two-lane road extends north from Santa Fe Avenue and continues north to an intersection on SR 140 east of Planada. Cunningham Road crosses the BN&SF railroad at a controlled crossing roughly 80 feet from Santa Fe Avenue.

Jackson Street. Jackson Street is an Urban Local street that connects McDowell Street and Santa Fe Avenue at the northern end of the core area of Le Grand. Jackson Street is a two-lane roadway with no auxiliary lanes, and sidewalk has been installed on the north side of the street west of Washington Street.

Fresno Road. Fresno Road is a local north-south road that extends from Santa Fe Avenue south towards Buchanan Hollow Road and north from Le Grand Road parallel to Cunningham Road to Childs Avenue.



VICINITY MAP

Study Intersections. Potential study locations were identified in consultation with Merced County staff, and seven existing intersections were identified for peak hour traffic volume traffic counts and Levels of Service analysis based on their current importance within the area circulation system or based on the proximity to future development. The study locations are noted below and presented in Figure 2 later in this report.

Santa Fe Avenue / Savana Road intersection. This intersection on Santa Fe Avenue is controlled by a stop sign on the eastbound Savana Road approach. There are no auxiliary left turn lanes. There are no marked crosswalks at this intersection, although it is legal to cross from any corner.

Santa Fe Avenue / Jackson Street intersection. This intersection is controlled by a stop sign on the eastbound Jackson Street approach. There are no left turn lanes at the intersection. There are no marked crosswalks, but a street light exists on the southwest corner.

Santa Fe Avenue / Jefferson Street intersection. This intersection is controlled by an all-way stop. Each approach is a single lane. There are no handicap ramps, and crosswalks are marked on the western and northern legs of the intersection. A street light exists on the southwest corner.

Santa Fe Avenue / Le Grand Road (west). This “tee” intersection is controlled by a stop sign on the southbound Santa Fe Avenue approach. There are no auxiliary turn lanes, but the intersection’s broad corners accommodate truck turns. There are no crosswalks or street lights at the intersection.

Santa Fe Avenue / Le Grand Road (east). The two Santa Fe Avenue intersections on Le Grand Road are offset roughly 180 feet. This “tee” intersection is controlled by a stop sign on the northbound Santa Fe Avenue approach. Each approach is a single lane. The BN&SF crossing on Le Grand Road is roughly 60 feet from the intersection. There are no crosswalks striped across the intersection, but a street light exists on the southwest corner.

Santa Fe Avenue / Fresno Road. This “tee” intersection is controlled by a stop sign on the Fresno Road approach. Each approach is a single lane. There are no marked crosswalks or handicap ramps. A street light exists on the southwest corner.

Le Grand Road / Jefferson Street Intersection. This all-way stop controlled intersection is on the west side of Le Grand adjoining Le Grand Elementary School. Each approach has a single travel lane, and the southern leg is an exit from the school site. Crosswalks exist on the legs of the intersection and handicap ramps are in place on the northern corners. The intersection’s skewed alignment results in a relatively long pedestrian crossing distance on Jefferson Street. Street lights are present on the northern corners.

Alternative Transportation Modes

Transit. Generally, transit options in Merced County include an intercity fixed-route bus, Dial-a-Ride countywide public bus service and various private charter services. The fixed-route bus

service, "The Bus", is operated by the Merced Regional Transit System, and Route P (Planada Commuter) serves the Planada – Le Grand area. Route P originates at the downtown Merced Transportation Center on 16th Street and follows SR 140 to Planada. Designated stops are at the Felix Torres Housing center north of Planada, El Galio Market, and Library/Golden Valley Health Center. The route then continues to Le Grand via Santa Fe Avenue. In Le Grand the route circles the community via Jackson Street and Washington Street to a stop at Le Grand Community Park before reversing course and returning to Merced. Route P arrives in Le Grand six times on weekdays and three times on Saturdays and Sundays. The current route map and schedule are included in the Appendix to this report.

The *MCAG FY 2016-2017 Unmet Transit Needs Analysis and Recommendations Report* provides information regarding current transit utilization on the Planada- Le Grand route. However, no information specific to Le Grand is available.

On the weekdays, on average, one to four passengers per day are being picked up or dropped off at bus stops in Planada. Only at the bus stop at the El Gallito Bakery, is there slightly higher ridership with an average of five to nine passengers per day. On the weekends, there is on average, fewer than one passenger per day being picked up or dropped off in Planada. Low transit ridership in the Planada area does not warrant increasing the frequency of buses in Planada. (See Appendix Sections n, o – Merced County Transit Ridership Maps – Planada Weekday/Weekend 2015-2016)

Pedestrian Facilities. Sidewalks exist in various locations throughout Le Grand, as sidewalks have been provided as the community has developed over the years. Sidewalks are generally present in the community core, in the newer residential areas and near schools. In older areas there are often no sidewalks, and portions of collector roadways have few sidewalks with many gaps and undeveloped adjacent parcels.

Community Plan Figure 5.15, which is included in the Appendix, identifies the location of existing and “priority” future sidewalks. Le Grand Road, Santa Fe Avenue and Fresno Road are noted as priority locations based on greater risk to pedestrians and residents facing the street. Sidewalks are also prioritized along Washington Street, McDowell Street, McKee Street and Cook Street. Potential sidewalk locations having lower pedestrian and vehicle volumes are anticipated on Le Grand Road west of McKee Street, Jefferson Street east of Santa Fe Avenue and on local streets.

Bicycle Facilities. Facilities dedicated to bicyclists exist in the Le Grand area and are planned for the future.

Bicycle facilities fall within three categories:

Class I (Mixed Use Bike Trail or Bike Path) - A completely separated facility designated for the use of bicycles. The facility is separated from any street or highway by a physical space, berm, fence, or other barrier.

Class II (Bike Lane) - A lane within a street or roadway designed for the one-way use of bicycles. It is an on-street facility with signs, striped lane markings, and pavement legends.

Class III (Bike Route) - Any on-street right-of-way recommended for bicycle travel where automobiles and bicycle share the facility.

Today the only designated Bikeway is a Class III bike route along Santa Fe Avenue.

The Merced County Association of Governments (MCAG) has updated the Merced County Regional Bicycle Plan. The Plan, adopted by the County in June 2003 and updated in 2008, provides a comprehensive long-range view for the development of an exclusive regional bikeway system that provides connectivity throughout the Merced region. In the vicinity of Le Grand, Santa Fe Avenue has been identified as a component of a Regional Bike Plan, with Class II bike lanes planned on Santa Fe Avenue from Le Grand Road to the Merced County line.

The Community Plan update also proposes Class II bike lanes along Le Grand Road and Jefferson Street.

Rail Facilities

The Burlington Northern-Santa Fe (BNSF) Railroad tracks extend through Le Grand from northwest to the southeast. The Burlington Northern – Santa Fe rail line provides both freight and passenger (Amtrak) rail services. At-grade crossings exist on Cunningham Road, Jefferson Street and Le Grand Road. These crossings are actively controlled with crossing arms, but the roads lack pedestrian facilities near the crossings.

Existing industrial facilities paralleling the BNSF rail line are served by railroad spurs. No access to passenger rail service is provided in the Community. The nearest Amtrak passenger station is located in the City of Merced.

Level of Service Methodology

The quality of traffic flow in Le Grand and the impact of implementing the Community Plan has been quantitatively evaluated based on intersection and roadway segment Level of Service. *Level of Service* is a qualitative measure of traffic operating conditions using letter grades “A” through “F”, corresponding to progressively worsening operating conditions.

Intersection Analysis Methodology. Levels of Service were calculated for this study using the methodology contained in the Transportation Research Board’s *Highway Capacity Manual 2010 (HCM 2010)*. At signalized intersections and intersections controlled by stop signs on all approaches, the overall LOS for intersections is based on the average length of delays for all motorists at the intersections. Table 1 presents the ranges of average vehicle delay associated with each Level of Service for signalized intersections.

<p style="text-align: center;">TABLE 1 LEVEL OF SERVICE DEFINITIONS</p>			
Level of Service	Signalized Intersection	Unsignalized Intersection	Roadway (Daily)
"A"	Uncongested operations, all queues clear in a single-signal cycle. Delay ≤ 10.0 sec	Little or no delay. Delay ≤ 10.0 sec/veh	Completely free flow.
"B"	Uncongested operations, all queues clear in a single cycle. Delay > 10.0 sec and ≤ 20.0 sec	Short traffic delays. Delay > 10 sec/veh and ≤ 15 sec/veh	Free flow, presence of other vehicles noticeable.
"C"	Light congestion, occasional backups on critical approaches. Delay > 20.0 sec and ≤ 35.0 sec	Average traffic delays. Delay > 15 sec/veh and ≤ 25 sec/veh	Ability to maneuver and select operating speed affected.
"D"	Significant congestions of critical approaches but intersection functional. Cars required to wait through more than one cycle during short peaks. No long queues formed. Delay > 35.0 sec and ≤ 55.0 sec	Long traffic delays. Delay > 25 sec/veh and ≤ 35 sec/veh	Unstable flow, speeds and ability to maneuver restricted.
"E"	Severe congestion with some long standing queues on critical approaches. Blockage of intersection may occur if traffic signal does not provide for protected turning movements. Traffic queue may block nearby intersection(s) upstream of critical approach (es). Delay > 55.0 sec and ≤ 80.0 sec	Very long traffic delays, failure, extreme congestion. Delay > 35 sec/veh and ≤ 50 sec/veh	At or near capacity, flow quite unstable.
"F"	Total breakdown, stop-and-go operation. Delay > 80.0 sec	Intersection blocked by external causes. Delay > 50 sec/veh	Forced flow, breakdown.
Sources: 2010 <u>Highway Capacity Manual</u> , Transportation Research Board (TRB) Special Report 209.			

Different methodology is employed for assessing Level of Service at un-signalized intersections where some approaches are not controlled. At stop-sign-controlled un-signalized intersections (side street stop or one-way stop T intersections), the average delay and LOS can be determined for each individual movement that must yield the right of way. Impact analysis is based on the length of the average delay for the movements where motorists experience the longest delay, which is typically a left turn made from the stop-sign-controlled approach to the intersection. It should be noted that overall intersection average LOS at un-signalized intersections is better, often much better, than LOS on the worst single movement.

Roadway Segment Analysis Methodology. The Level of Service on study area roadway segments can be determined based on daily traffic volumes using applicable thresholds adopted by local agencies. The Merced County General Plan Update EIR provides information for County Roads and state highways. Table 2 identifies the applicable standards for the roads evaluated in this analysis.

The Suburban Arterial standard is applicable to Major Collectors in the community. The suburban collector standard is applicable to the community's Minor Collector streets.

<p align="center">TABLE 2 ROADWAY SEGMENT LEVEL OF SERVICE THRESHOLDS</p>									
Road	Area	Facility	Flow	Median	Maximum Daily Volume at Level of Service				
					A	B	C	D	E
Collector	Suburban	2-lanes	n.a.	undivided	-	-	1,900	7,600	10,100
Arterial	Suburban	2-lanes	interrupted	undivided	-	2,200	11,000	13,900	14,900
<p>Source: Merced County General Plan Collector designation is applicable to all CP Collector street classifications General Plan has no Local street designation and Collector streets thresholds were used for Local streets</p>									

Standards / Measures of Significance

Merced County General Plan. The Circulation Element of the Merced County General Plan outlines goals and policies that coordinate the transportation and circulation system with planned land uses. The General Plan has the following level of service policy relevant to this study:

Policy CIR-1.5: County Level of Service Standards (RDR)

Implement a Countywide roadway system that achieves the following level-of-service (LOS) standards during peak traffic periods:

- a) For roadways located within rural areas: LOS "C" or better.*
- b) For roadways located outside Urban Communities that serve as connectors between Urban Communities: LOS of "D" or better.*
- c) For roadways located within Urban Communities: LOS of "D" or better.*

Based on this guidance the minimum standard on all study area intersections and roadways in Le Grand is LOS D.

Policy CIR-1.6: Level of Service "E" Exception (RDR)

Allow a level of service "E" or worse only on a minor component of the circulation system (such as a left turn movement from a local roadway) if the major component of the circulation system (such as a through movement on a collector or arterial roadway) would be significantly compromised in the process of improving the level of service of the minor component.

Policy CIR-1.22: Complete Streets (RDR)

Require new urban streets within Urban Communities to be designed and constructed to not only accommodate automobile, truck, and bus traffic, but to also serve all users, including pedestrians, bicyclists, and transit passengers of all ages and abilities. This includes:

- *Creating multi-modal street connections in order to establish a comprehensive, integrated, and connected transportation network;*
- *Minimizing curb cuts along non-local streets;*
- *Consider planting street trees adjacent to curbs and between the street and sidewalk to provide a buffer between the pedestrian and the automobile, where appropriate;*
- *Constructing sidewalks on both sides of streets, where feasible;*
- *Coordinating with other agencies and cities to ensure connections are made between jurisdictions; and,*
- *Incorporating traffic calming devices such as roundabouts, bulb-outs at intersections, and traffic tables.*

Policy CIR-1.23: At-Grade Railroad Crossing Guidelines (RDR/IGC/JP)

Work with California Public Utilities Commission (CPUC) and the affected railroads to monitor the effects of development, and implement necessary and applicable design improvements at railroad crossings.

Le Grand Community Plan. Community Plan Section 5.8 Circulation Goals and Policies deals with the community's circulation system. This information is incorporated by reference.

Significance Criteria for Transit. There are no adopted criteria for determining the significance of impact to transit facilities. For this analysis it has been assumed that significant impact would occur if development of the project:

- resulted in transit demand in excess of current or anticipated system capacity
- resulted in safety impacts at existing or anticipated transit stops
- interfered with the ability of transit providers to deliver service to the community.

Significance Criteria for Bikeways. There are no adopted criteria for evaluating the "capacity" of bikeways. A significant bikeway impact would occur if the project:

- hindered or eliminated an existing designated bikeway, or
- interfered with implementation of a proposed bikeway, or
- resulted in unsafe conditions for bicyclists, including unsafe bicycle/pedestrian or bicycle/motor vehicle conflicts.

Significance Criteria for Pedestrian Circulation. A significant pedestrian circulation impact would occur if the project:

- resulted in unsafe conditions for pedestrians, including unsafe pedestrian/bicycle or pedestrian/motor vehicle conflicts, or
- interfered with the implementation of an adopted plan for pedestrian facilities.

Significance Criteria for Railroads. A significant impact would occur if the project resulted in traffic volumes across a railroad in excess of the capacity of the roadway or if the operation of an adjoining intersection would likely result in queuing that extended to a crossing.

Existing Levels of Service

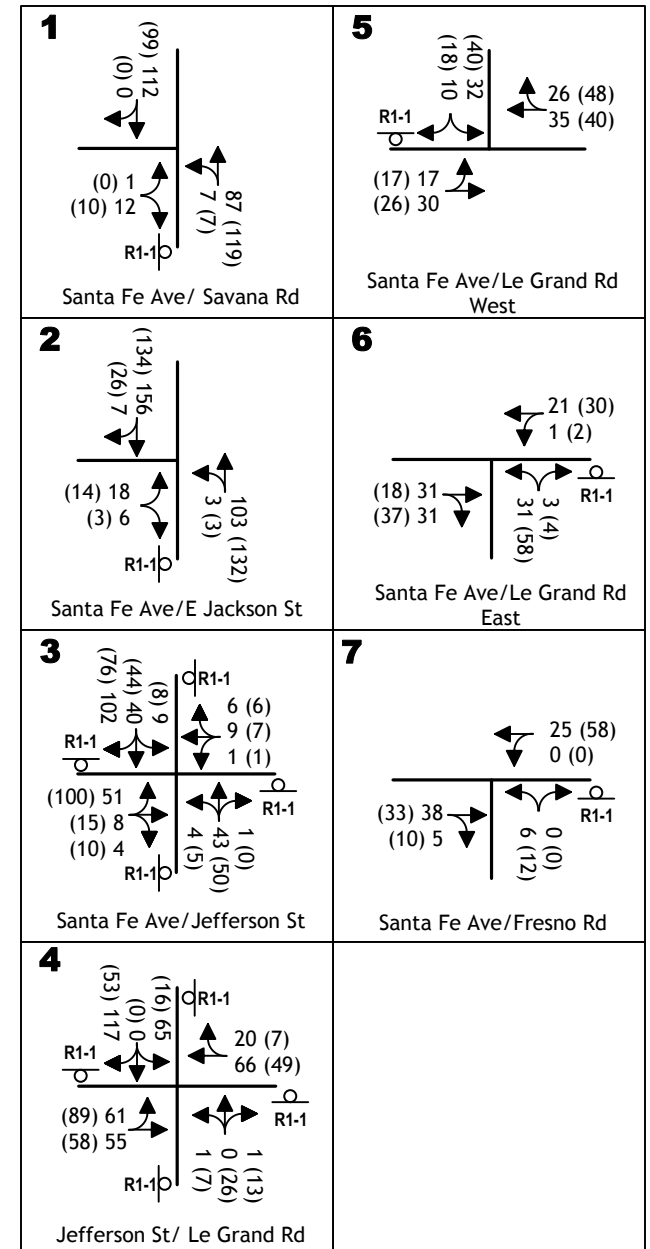
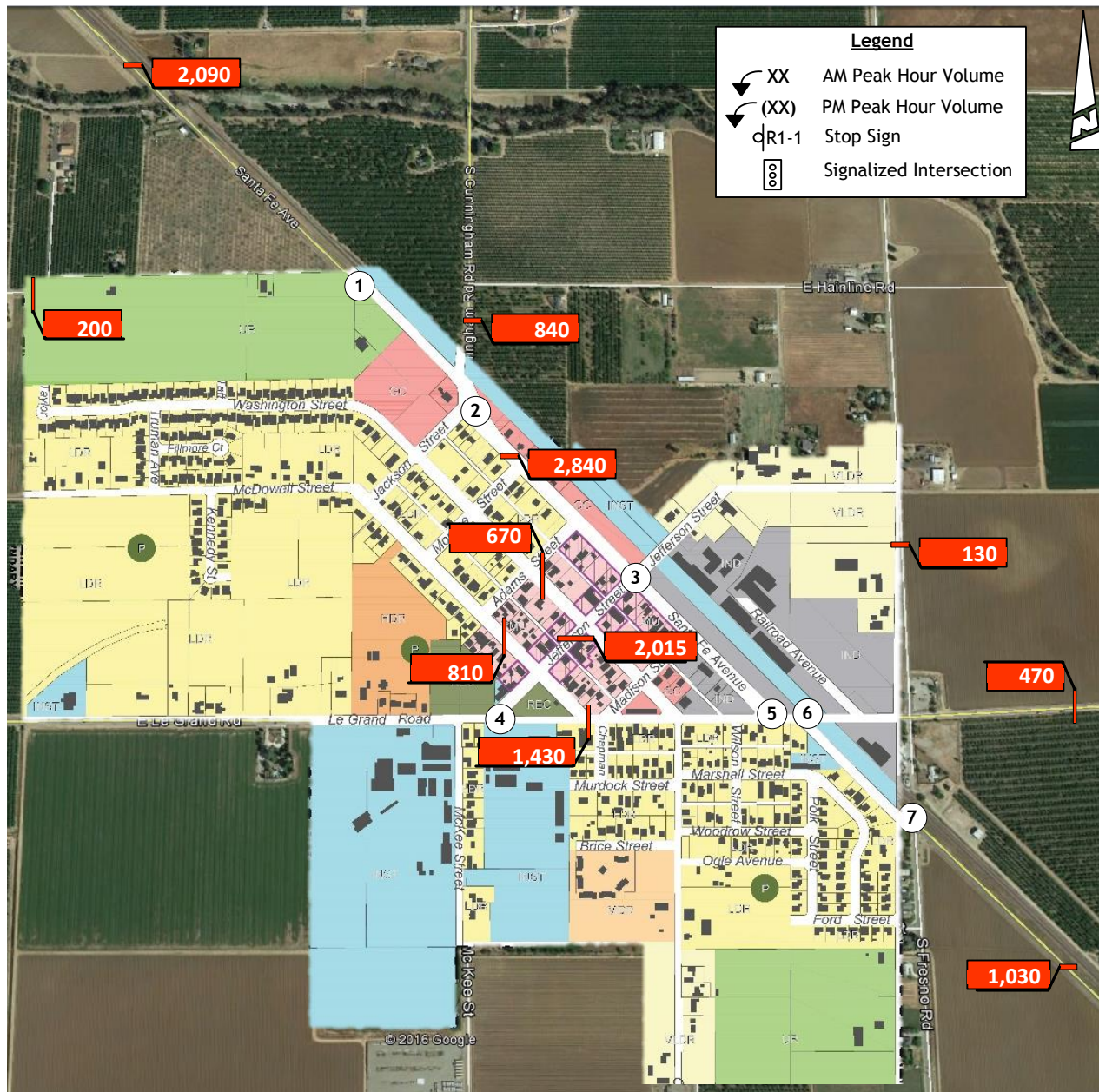
Traffic Volumes. To determine existing traffic volumes and obtain more information about traffic conditions in the study area, traffic counts were taken during the morning and evening peak traffic periods at the study intersections. Daily traffic volume counts were also conducted on study area roadways. With one exception, these counts were made in September 2011 when the Community Plan process began. The Santa Fe Avenue / Jackson Street intersection was counted in November 2016. Merced County staff reviewed the traffic volumes in comparison with available recent data and concluded that the 2011 counts still represent current conditions in the Le Grand area. Figure 2 identifies the a.m. and p.m. peak hour traffic volumes used for this analysis as well as the 24 hr traffic volumes used to evaluate roadway segments.

Intersection Level of Service. Existing Levels of Service at each intersection are shown on Table 3. As shown, because existing traffic volumes are relatively low on all Le Grand area streets, the Levels of Service at all intersections meet Merced County's minimum standards.

The quality of current traffic flows through unsignalized intersections can also be determined based on Caltrans traffic signal warrants. For this analysis Caltrans Warrant No. 11 (peak hour traffic in rural areas) was used to determine whether existing traffic volumes may justify signalization. Review of recent traffic counts indicates that current traffic volumes do not reach the level that satisfy the "rural" (i.e., speed>40) warrant levels during the a.m. peak hour or p.m. peak hour.

**TABLE 3
EXISTING INTERSECTION LEVEL OF SERVICE**

Intersection	Control	Existing Conditions				Signal Warranted?
		AM Peak Hour		PM Peak Hour		
		Avg Delay (sec/veh)	LOS	Avg Delay (sec/veh)	LOS	
1. Santa Fe Ave / Savanah Road Northbound left turn Eastbound left+right turn	EB Stop	7.5 9.1	A A	7.5 8.9	A A	No
2. Santa Fe Ave / Jackson Street Northbound left turn Eastbound left+right turn	EB Stop	7.7 10.8	A B	7.6 10.5	A B	No
3. Santa Fe Ave / Jefferson Street	All-Way Stop	7.8	A	8.2	A	No
4. Le Grand Road / Jefferson Street	All-Way Stop	9.2	A	8.1	A	No
5. Santa Fe Ave / Le Grand Rd (west) Eastbound left turn Southbound left+thru+right turn	SB Stop	7.4 9.6	A A	7.5 9.5	A A	No
6. Santa Fe Ave / Le Grand Rd (east) Westbound left turn Northbound left+right turn	NB Stop	7.4 9.5	A A	7.3 9.3	A A	No
7. Santa Fe Ave / Fresno Road Westbound left turn Northbound left+right turn	NB Stop	- 9.0	- A	- 9.2	A A	No



Roadway Segment Levels of Service. Table 4 identifies the current daily traffic volumes on study area roads, as well as the corresponding Level of Service. As noted, all study roadways carry volumes that satisfy the Merced County minimum standard (i.e., LOS D or better).

TABLE 4 EXISTING DAILY TRAFFIC VOLUMES AND LEVEL OF SERVICE ON LE GRAND AREA ROADS				
Road	Location	Class	Existing	
			Average Daily Traffic (ADT)	Level of Service (LOS)
Santa Fe Avenue	North of Savana Road	Major Collector	2,090	C
Savana Road	West of Santa Fe Ave	Local	200	C
Cunningham Road	North of Santa Fe Ave	Minor Collector	840	C
Fresno Road	North of Le Grand Road	Local	130	C
Santa Fe Avenue	South of Jackson Street	Major Collector	2,840	C
Washington Street	North of Jefferson	Local	670	C
Jefferson Street	West of Santa Fe Ave	Major Collector	2,015	C
McDowell Street	North of Jefferson Street	Local	810	C
Le Grand Road	West of Santa Fe Ave	Major Collector	1,430	B
Le Grand Road	East of Fresno Road	Minor Collector	470	C
Minturn Road	South of Le Grand Road	Minor Collector	2,080	C
Santa Fe Avenue	South of Fresno Road	Minor Collector	1,030	C

IMPACTS OF IMPLEMENTING THE LE GRAND COMMUNITY PLAN

For the purpose of this traffic impact study, the project is defined as the development of the future land uses and circulation system that are anticipated to be developed under the Le Grand Community Plan.

Planned Circulation System

The Circulation Diagram for the Le Grand Community Plan suggests local circulation system improvements that are consistent with previous longrange planning for the community, but does not include new major routes or road realignments.

Future Land Use

The amount of traffic on Le Grand's local and collector streets is dependent on the amount of new traffic accompanying planned development, as well as regional through traffic increases on the routes that serve both Le Grand and other communities. The nature and quantity of new land use anticipated in Le Grand over the life of the Community Plan was quantified by the lead consultant. A total of 620 new single and multi-family residences are anticipated, and the plan accommodates retail commercial, Mixed Use and Industrial uses as well. Note that there have been slight adjustments to the anticipated number of units and non-residential square footage since the traffic analysis was prepared. For example, the Community Plan now calls for up to 628 new residential units. However, these changes are minor, and would not alter the conclusions of the traffic analysis.

Characteristics of Development

Trip Generation. Estimating the number of vehicle trips associated by new development and assigning those trips to the area street system is required to determine the amount of vehicular traffic that will be added to the Le Grand area street system. The first step in this process is identification of applicable trip generation rates for the land uses assumed under the Le Grand Community Plan.

For this analysis, peak hour generation rates were derived from information presented in the Institute of Transportation Engineers publication Trip Generation (9th Edition). However, the plan describes non-residential land uses in general terms, and various types of businesses could be created within these land use categories. Thus, it was also necessary to develop composite trip generation rates for the broad land use categories that reflect the characteristics of various permitted uses. Table 5 presents the trip generation rates utilized in this study.

Table 6 presents the number of trips that could be generated by the new individual uses when the Le Grand Community Plan develops. As shown, a total of 9,910 gross daily trips are anticipated, with 891 "gross" trips during the a.m. peak hour with 1,000 "gross" trips being generated during the p.m. peak hour.

**TABLE 5
TRIP GENERATION RATES**

Use	Description	unit	Trips per Unit						
			Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
LDR	Single Family Detached (210)	Dwelling	9.52	25%	75%	0.75	63%	37%	1.00
MDR									
MU-res	Apartments (220)	Dwelling	6.65	20%	80%	0.51	65%	35%	0.62
GC	Shopping Center (820)	ksf	42.70	62%	38%	0.96	48%	52%	3.71
NC									
MU-Retail									
I	Industrial (110)	Ksf	6.97	88%	12%	0.92	12%	88%	0.97
MU-office	Office (710)	Ksf	11.03	88%	12%	1.56	17%	83%	1.49
INST	Elementary School (520)	Student	1.29	55%	45%	0.45	49%	51%	0.15
INST	Middle / Jr. High School	Student	1.62	55%	45%	0.54	49%	51%	0.16
INST	High School	Student	1.71	68%	32%	0.43	47%	53%	0.13

**TABLE 6
LE GRAND GROWTH TRIP GENERATION FORECASTS**

Use	Description	unit	Trips per Unit						
			Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
VLDR	Single Family Detached (210)	399 du's	3,798	75	224	299	251	148	399
LDR									
MDR									
HDR	Apartments (220)	221 du's	1,470	23	90	113	89	48	137
	Residential Subtotal	620 du's	5,268	98	314	412	340	196	536
GC	Shopping Center (820) 25%	60.3 ksf	2,575	36	22	58	107	117	224
MU-Retail		4.0 ksf	171	3	1	4	7	8	15
	Total Retail		2,746	39	23	62	114	125	239
	Pass-by (Average rate for Shopping Centers)	34%	934	13	8	21	39	43	82
	Net New		1,812	26	15	41	75	82	157
I	Industrial (110)	120.0 ksf	836	97	13	110	14	102	116
	Automobiles	(75%)	(627)						
	Heavy Trucks	(25%)	(209)						
MU -office	Office (710) 75%	11.9 ksf	131	16	3	19	3	15	18
INST	Elementary School	287 students	370	71	58	129	21	22	43
INST	Middle / Jr. High School	143 students	232	42	35	77	11	12	23
INST	High School*	191 students	327	56	26	82	12	13	25
	Non Res Subtotal		4,642	321	158	479	175	289	464
	Gross Total		9,910	419	472	891	515	485	1,000
	Less Retail Pass-by		934	13	8	21	39	43	82
	Net New Trips		8,976	406	464	870	476	442	918
	New Heavy Truck Trips**		289						

(*) does not include new trips generated in Planada which will be assigned to the study area under cumulative conditions

(**) Heavy truck trips are 1% of all non-industrial traffic plus truck trips associated with Industrial uses (80+209 = 289 or 3.3% of all new project trips.

Note: There have been slight adjustments to the anticipated number of units and non-residential square footage since the traffic analysis was prepared. For example, the Community Plan now calls for up to 628 new residential units. However, these changes are minor, and would not alter the conclusions of the traffic analysis

Trip Distribution. Trips generated by residential and non-residential trips are inter-related. A portion of the trips “produced” by new residences will be one end of a new trip that is “attracted” to new non-residential use. In order to avoid “double counting” new trips, it is necessary to identify the relationship between land uses in order that the “internal” trips that will remain within Le Grand are not counted twice. Similarly, as share of the trips generated by retail uses are often attracted from the stream of traffic passing the site, and these “pass-by” trips do not represent new trips on the community’s street system.

As shown in Table 7, 34% of the retail trips were considered pass-by trips during the a.m. and p.m. peak hours, respectively. These pass-by trips were attracted from traffic passing the site on the adjacent street system. Accounting for pass-by traffic build out of the proposed Le Grand Community Plan is anticipated to generate a total of 8,976 “new” daily trips, 870 “new” trips during the a.m. peak hour and a total of 918 “new” trips during the p.m. peak hour.

The share of these trips that will be attracted to other new uses, will have ends at existing locations in Le Grand or will be “exported” to other area of Merced County was determined in consultation with Merced County staff based on review of MCAG regional travel demand forecasting model data and their knowledge of the southern Merced County area. Table 7 summarizes the distribution assumptions made for this analysis.

TABLE 7 LE GRAND DEVELOPMENT TRIP DISTRIBUTION			
Direction	Route	Percent of Total	
		Residential	Non-residential
Northwest	Santa Fe Avenue to Planada	22%	18%
North	Cunningham Rd / Fresno Rd	2%	4%
East	Le Grand Road	<1%	<1%
Southeast	Santa Fe Avenue	<1%	3%
South	Minturn Road to SR 99	13%	9%
West	Le Grand Road to SR 99	22%	25%
Internal		40%	61%

Trip Assignment. The trips associated with development of the future land uses in Le Grand were assigned to the local area street system manually using the TRAFFIX assignment model. The peak hour trips generated by new development were distributed onto the adjacent street system on both a local and regional basis. Residentially generated trips were distributed to non-residential destinations in proportion to the relative size of the destination. The assignment accounted for the effects of schools. During the morning hours the number of trips to and from Le Grand’s schools comprises a significant portion of the residential trip generation.

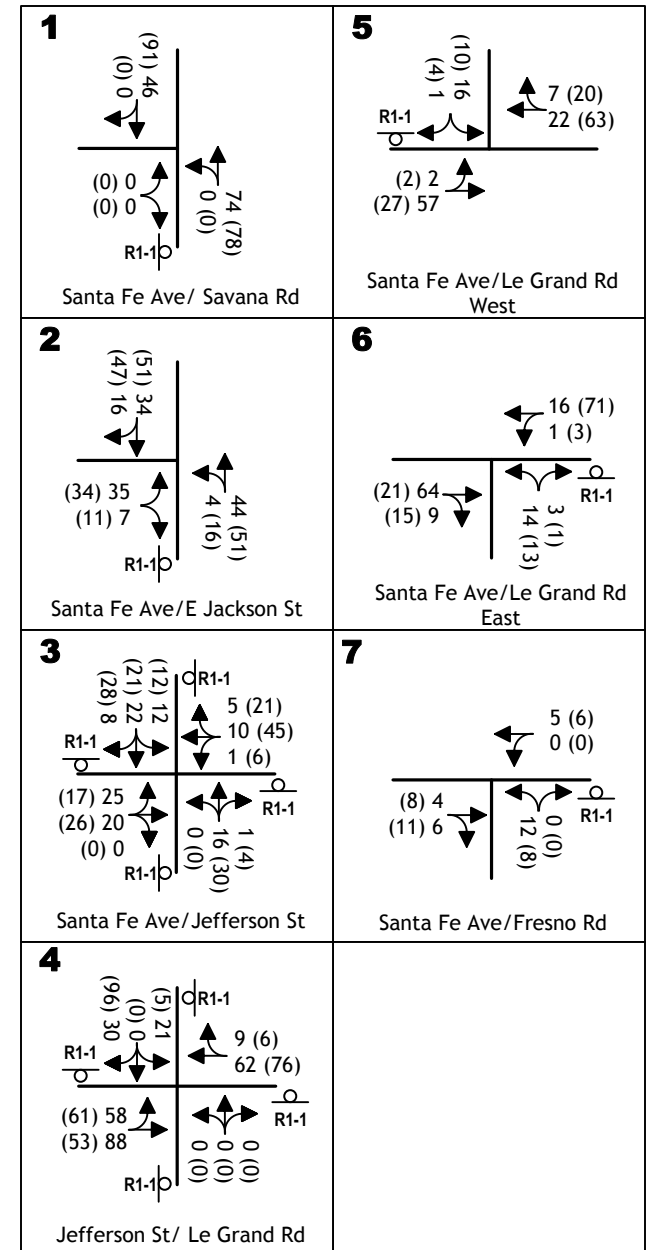
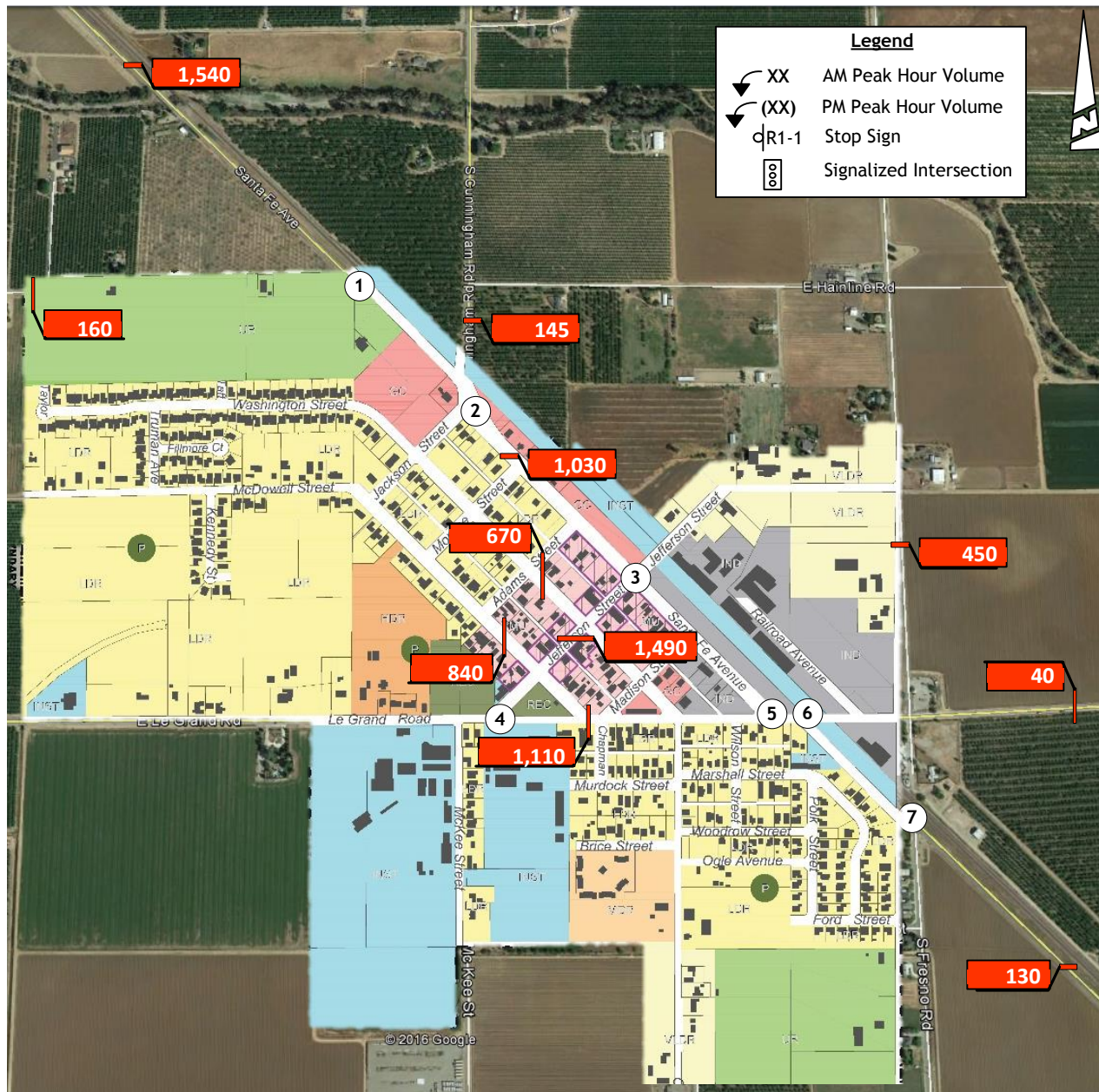
The TRAFFIX assignment accounted for the relative time between origins and destinations considering both existing and planned travel patterns. The TRAFFIX model was used to generate peak hour forecasts utilizing the expected distribution. Figure 3 presents the trips associated with development in Le Grand.

Existing Plus Project Traffic Impacts

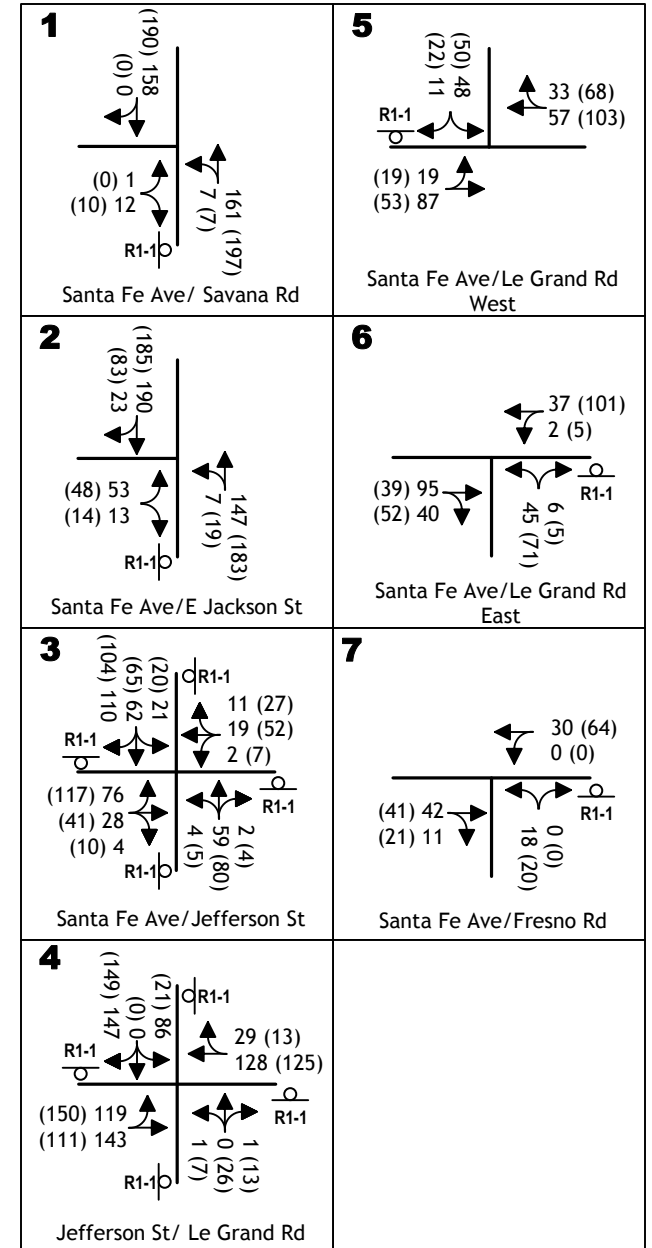
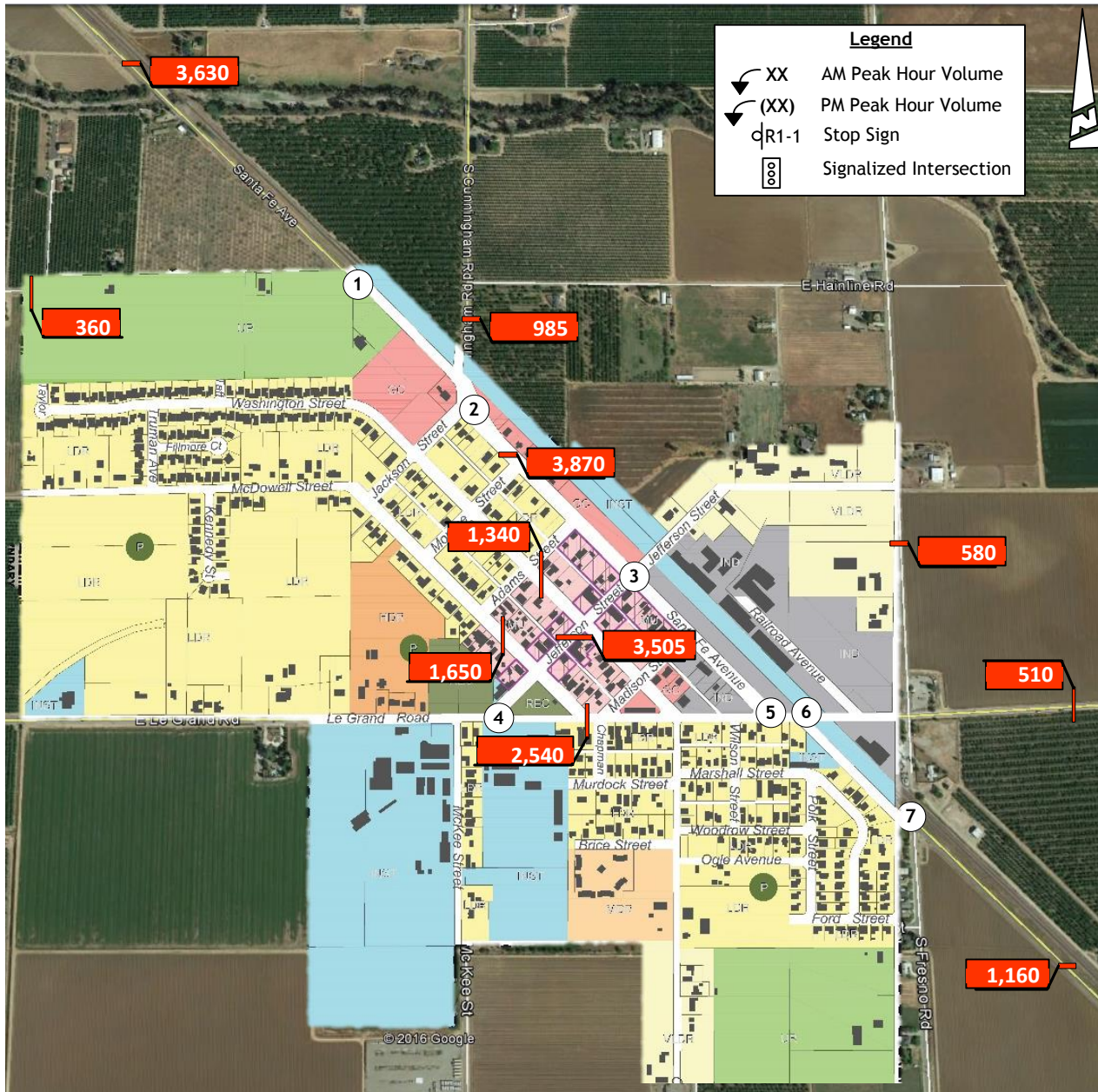
Traffic Volumes. Figure 4 presents sum of current daily, a.m. and p.m. peak hour traffic and the trips associated with Le Grand development to create “Existing Plus Project” traffic volumes at study area intersections and on roadway segments. These volumes have been used to identify peak hour Levels of Service at study intersections and to evaluate roadway segment Levels of Service.

Intersection Levels of Service. Table 8 summarizes the peak hour Levels of Service projected for study intersections under “Existing Plus Project” conditions with implementation of the proposed Le Grand Community Plan. As noted, all intersections are projected to continue to operate with Levels of Service that satisfy the minimum LOS D standard. Peak hour traffic signal warrants are not satisfied.

Roadway Segment Level of Service. Table 9 identifies the volume of daily traffic added to area streets by the proposed project and notes the resulting Level of Service. As shown, all segments would operate at LOS D or better with the proposed project, so the impact would be less than significant.



ALL LE GRAND GROWTH ALONE
TRAFFIC VOLUMES AND LANE CONFIGURATIONS



EXISTING PLUS LE GRAND PLAN BUILD OUT TRAFFIC VOLUMES AND LANE CONFIGURATIONS

KD Anderson & Associates, Inc.
Transportation Engineers

3490-04 RA 7/27/2018

figure 4

**TABLE 8
EXISTING PLUS LE GRAND DEVELOPMENT INTERSECTION LEVEL OF SERVICE**

Intersection	Control	Existing Conditions								Signal Warranted?
		AM Peak Hour				PM Peak Hour				
		Existing		Existing Plus Project		Existing		Existing Plus Project		
		Avg Delay (sec/veh)	LOS	Avg Delay (sec/veh)	LOS	Avg Delay (sec/veh)	LOS	Avg Delay (sec/veh)	LOS	
1. Santa Fe Ave / Savana Road NB left turn EB left+right turn	EB Stop	7.5 9.1	A A	7.6 9.5	A A	7.5 8.9	A A	7.7 9.5	A A	No
2. Santa Fe Ave / Jackson Street NB left turn EB left+right turn	EB Stop	7.7 10.8	A B	7.8 12.8	A B	7.6 10.5	A B	8.0 12.9	A B	No
3. Santa Fe Ave / Jefferson Street	All-Way Stop	7.8	A	8.6	A	8.2	A	9.4	A	No
4. Le Grand Road / Jefferson Street	All-Way Stop	9.2	A	13.4	B	8.1	A	9.9	A	No
5. Santa Fe Ave / Le Grand Rd (west) EB left turn SB left+thru+right turn	SB Stop	7.4 9.6	A A	7.5 10.7	A B	7.5 9.5	A A	7.7 10.5	A B	No
6. Santa Fe Ave / Le Grand Road (east) WB left turn NB left+right turn	NB Stop	7.4 9.5	A A	7.6 10.2	A B	7.3 9.3	A A	7.4 10.3	A B	No
7. Santa Fe Ave / Fresno Road WB left turn NB left+right turn	NB Stop	- 9.0	- A	- 9.1	- A	- 9.2	- A	- 9.5	- A	No

**TABLE 9
EXISTING PLUS LE GRAND DEVELOPMENT
DAILY TRAFFIC VOLUMES ON LE GRAND ROAD**

Road	Location	Existing		Existing Plus All Le Grand		
		ADT	LOS	ADT		LOS
				Project	Total	
Santa Fe Avenue	North of Savana Road	2,090	C	1,540	3,630	C
Savana Road	West of Santa Fe Avenue	200	C	0	200	C
Cunningham Road	North of Santa Fe	840	C	145	985	C
Fresno Road	North of Le Grand Road	130	C	465	595	C
Santa Fe Avenue	South of Jackson Street	2,840	C	1,025	3,865	C
Washington Street	North of Jefferson	670	C	670	1,340	C
Jefferson Street	West of Santa Fe Avenue	2,015	C	1,490	3,505	C
McDowell Street	North of Jefferson Street	810	C	840	1,650	C
Le Grand Road	West of Santa Fe Avenue	1,430	B	1,130	2,560	C
Le Grand Road	East of Fresno Road	470	C	40	510	C
Minturn Road	South of Le Grand Road	2,080	C	880	2,960	C
Santa Fe Avenue	South of Fresno Road	1,030	C	130	1,160	C

Impacts to Alternative Transportation Modes

Development in Le Grand has the potential to impact alternative transportation modes as noted in the text which follows.

Transit Impacts. Development under the Le Grand Community Plan will increase the population of the community and increase the number of employment opportunities in the community. It is likely than an incremental increase in the demand for transit services will occur. However, based on current transit ridership information, it is unlikely that growth in Le Grand will result in the demand for ridership in excess of the current system capacity. Le Grand Community Plan Goal C-6 and Policies C-11 and C-12 promote support for enhanced transit options, and Figure 5.17 suggest that transit stops could be developed along current The Bus routes. Because development in Le Grand will occur incrementally over time it will be important for new development to coordinate with Merced County Transit to identify appropriate locations for public transit improvements. It is unlikely that development in the community will result in safety impacts at existing or anticipated transit stops, nor will development in Le Grand interfere with the ability of transit providers to deliver service to the community. Thus the impacts of implementing the Le Grand Community Plan on transit are less than significant.

Bikeway Circulation Impacts. Development under the plan would not hinder or eliminate an existing designated bikeway. The plan identifies the need for bike lanes on major collector streets. Because Policies C-1, C-8, C-9 and C-10 work to establish a pedestrian and bicycle friendly environment that includes both on- and off-street pedestrian and bicycle facilities to encourage non-vehicular travel in the community, development under the Community Plan would not interfere with implementation of a proposed bikeway.

Development under the Le Grand Community Plan is likely to result in increased number of bicycle riders in the community, either as a part local commute activity, as shopping trips to new retail opportunities or as part of travel between area residences and school. Because the volume of traffic on Le Grand streets will increase, the probability of conflict between automobiles and bicyclists will also increase on those streets where facilities for bicycles are unavailable. Ultimately, the Community Plan calls for Class II bike lanes on Jefferson Street, Santa Fe Avenue and Le Grand Road which would reduce the possibility of conflicts on these major streets. Fronting development may install bike lanes in some locations, but funding for improvements in areas where development is not anticipated is not included in a guaranteed funding mechanism. While Merced County's normal approach to funding pedestrian and bicycle facilities is based on success in acquiring State / Federal grants, because funding is not assured, safety conflicts may still occur. ***This is a significant impact.***

The following mitigation is applicable.

Mitigation T-1. Merced County shall create bicycle facilities on Major Collector streets. With this mitigation, the plans impact on bicycle circulation is less than significant.

Pedestrian Circulation Impacts. Development under the plan does not hinder or eliminate an existing pedestrian facility. Because Policies C-1 and C-7 work to establish a pedestrian and bicycle friendly environment that includes both on- and off-street pedestrian and bicycle facilities to encourage non-vehicular travel in the community, development under the Community Plan does not interfere with implementation of a proposed pedestrian facility.

Development under the Le Grand Community Plan will result in additional pedestrians walking along the community's streets. Because traffic volumes will increase but current pedestrian facilities are intermittent, without improvements safety conflict between motor vehicles and pedestrians are likely at locations near activity centers, such as community schools and new retail areas along Santa Fe Avenue. Ultimately, the Community Plan calls for sidewalks on Le Grand's streets and prioritizes sidewalks on those streets. Locations noted in the plan include those where the possibility of conflicts is the greatest, primarily Le Grand Road near schools, and Santa Fe Avenue, Jackson Street and Washington Street near future commercial areas. However, because funding for these improvements is not yet included in a Bridge & Thoroughfare Plan, safety conflicts may still occur. *This is a significant impact.*

The following mitigation is applicable.

Mitigation T-2. Merced County shall complete the installation of sidewalks on key streets, including the following:

- *Install sidewalks at the following locations:*
 - *West side of Santa Fe Avenue along the commercial frontage*
 - *North side of Jackson from Washington Street to Santa Fe Avenue*
 - *East side of Washington north of Jackson Street*
 - *West side of Santa Fe Avenue from Jackson Street to Monroe Street*
- *Rehabilitation of crosswalks at Santa Fe Avenue / Jefferson Street intersection*
- *Improved pedestrian route across Jefferson Street railroad crossing*
- *Install pedestrian crossing on Le Grand Road near the schools*

With this mitigation, the plans impact on pedestrian circulation is less than significant.

Railroad Impacts. Le Grand's three existing railroad crossings are in relatively close proximity to intersections that will carry increased traffic in the future as the area develops, and conflicts between the operation of intersections and adjoining crossings could occur. However, the traffic volume increases projected to accompany build out the community plan are relatively low, and each location is equipped with crossing guard arms. As noted in the discussion of pedestrian impacts, the Jefferson Street crossing could see increased foot traffic as development east of the railroad proceeds, and an improved pedestrian route is needed. This issue is addressed by mitigation T-2, and additional mitigation is not required.

CUMULATIVE IMPACTS

The impacts of implementing the proposed Le Grand Community Plan have also been assessed within the context of conditions occurring in the Year 2035 with the effects of regional growth.

Regional Traffic Growth

Historic Growth Trends. Because Santa Fe Avenue and Le Grand Road are regional facilities, through traffic growth on those roads is the primary “non-Le Grand” component in cumulative analysis. However, little information is available regarding historic growth trends on these roads highways, and because trips associated with Le Grand are the main contributor to the traffic volume on these roads, historical records may not be an indicator of traffic volume increase that are not related to Le Grand.

The California Department of Transportation (Caltrans) is generally the most regular source of traffic count data. While their annual traffic volume reports do not provide information for County roads, data is available for another regional facility in this area (i.e., SR 140). Table 10 presents Average Annual Daily Traffic volumes reported by Caltrans for locations on SR 140 east and west of Planada. As shown, the volume on SR 140 has been relatively unchanged over the last 20 years and has in fact dropped since 1994.

TABLE 10 HISTORIC TRAFFIC VOLUME GROWTH TRENDS ON SR 140						
Location	Average Annual Daily Volume – Year					Annual Growth Rate
	1994	1999	2004	2009	2014	
West of Planada	7,800	7,700	8,200	7,300	7,100	None
Mariposa County line	4,500	4,100	4,400	4,300	3,900	None

Planada Area Growth. An important consideration in forecasting future traffic volumes is the relationship between future residential development in Planada and Le Grand High School. Because Planada students are expected to continue to attend Le Grand High School into the foreseeable future, additional trips by school busses, parents and students will occur on Santa Fe Avenue, Jefferson Street and Le Grand Road.

The number of trips added is dependent on the number of new residences and the share of students who are expected to be bussed. The Planada Community Plan Update indicates that 1,342 new dwelling units could be accommodated in the community, and that these residences could result in 489 more high school students. Roughly 60% of Planada’s high school students are bussed to Le Grand H.S. today. Assuming that this ratio remains in the future and that average automobile occupancy for students in automobiles is 1.5 students per vehicle, then roughly 130 vehicles would travel to Le Grand in the morning. Half would typically return to

Planada and the other half would continue on as a trip to parent employment or as a parked student vehicle. Thus, traffic related to future Planada students could represent 390 daily trips between the communities.

MCAG Year 2035 Traffic Model. To provide an alternative forecast an approach was taken that employed the MCAG regional traffic model. For this analysis Le Grand area land use was isolated in the Year 2035 and Year 2010 traffic models. In each case the model's "select link" function was employed to identify the traffic on study area roads that was unrelated to the community of Le Grand. The difference in this increment between Year 2010 and Year 2035 was assumed to be the growth increment that could be added to the Existing volumes to create the Year 2035 No Project scenario, while the increment can be added to Existing Plus Project volumes to create Year 2035 plus Le Grand development conditions.

Because the approach using the MCAG model yielded a growth increment, it represented a more conservative approach than use of the historic growth trends that implied zero background growth. The forecasts which follow are based on use of the MCAG growth increment.

Year 2035 Traffic Volume Forecasts

Daily Traffic Volumes. Table 11 identifies Year 2035 traffic volumes on study area roads with and without the growth indicated in Le Grand under the Community Plan. As indicated the Levels of Service on all roads remain with the LOS D threshold employed by Merced County. Thus the project's cumulative impacts are not significant based on roadway segment Level of Service.

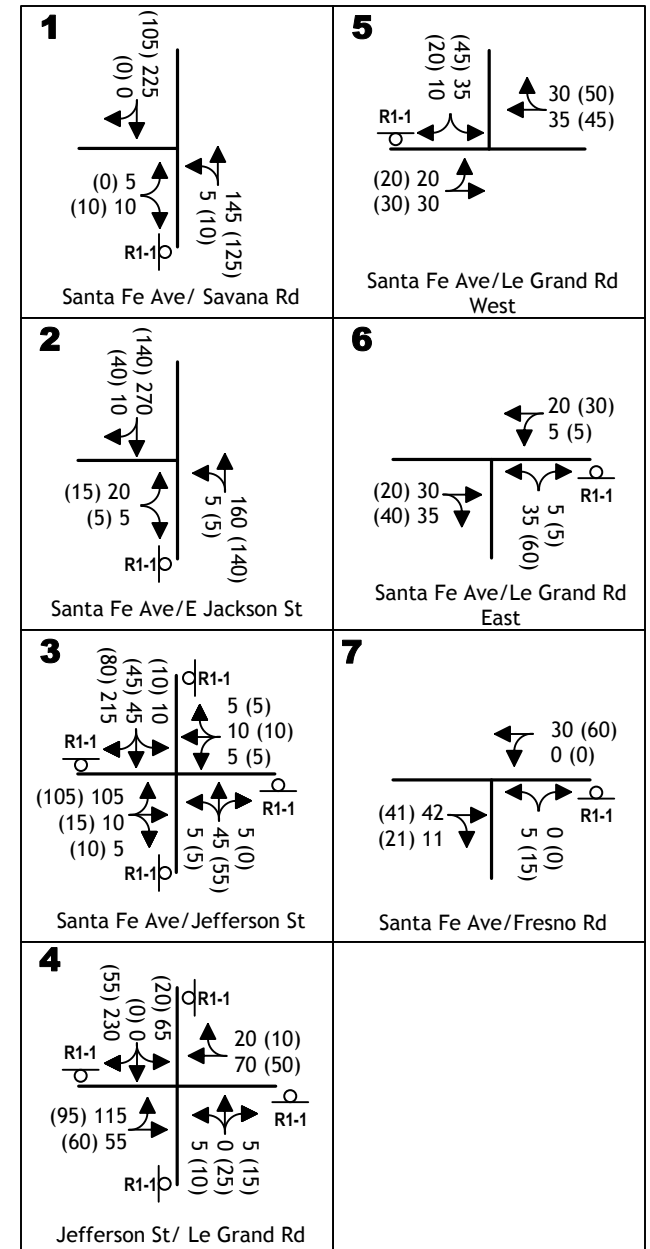
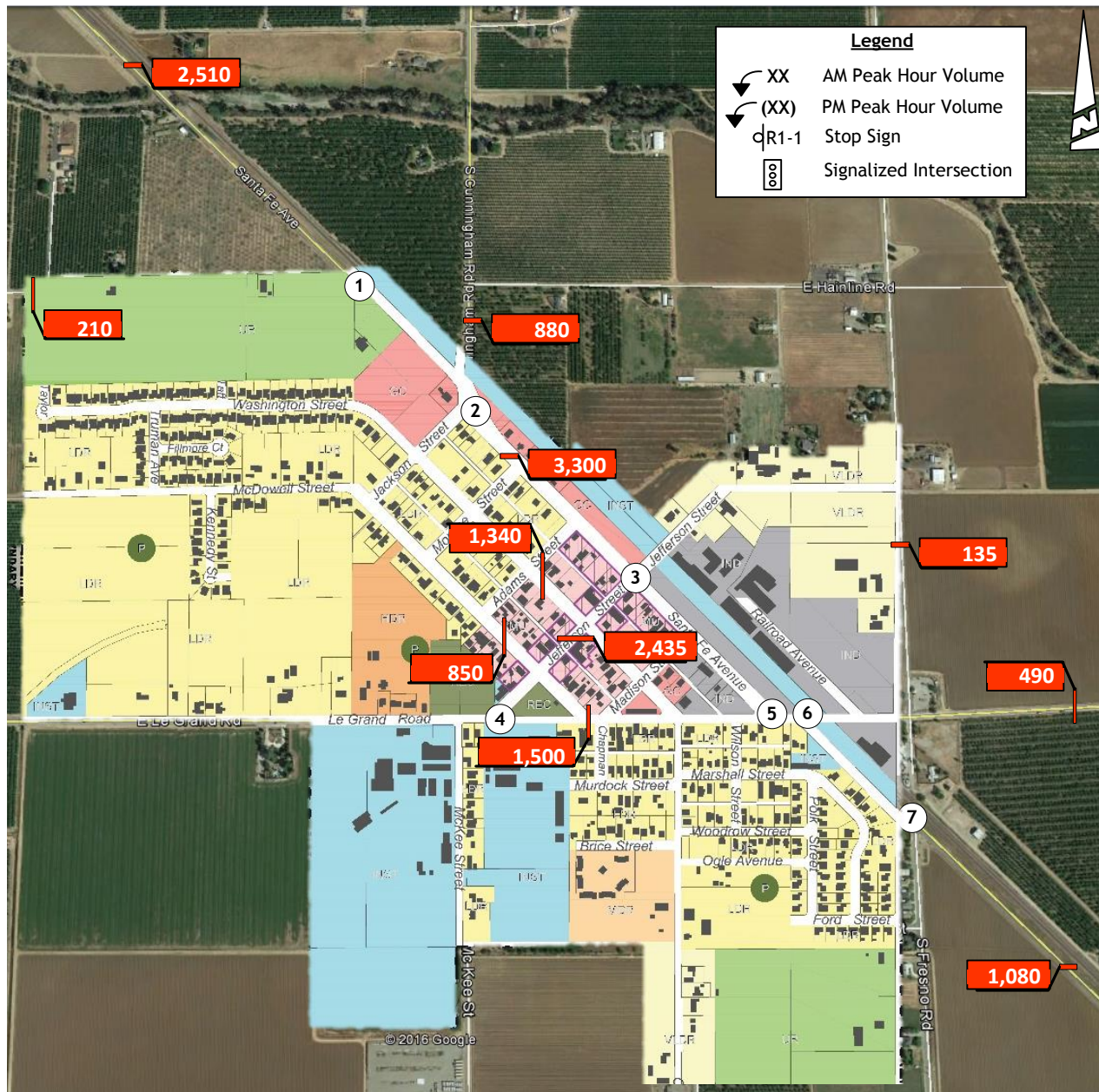
**TABLE 11
YEAR 2035 PLUS LE GRAND DEVELOPMENT
DAILY TRAFFIC VOLUMES ON LE GRAND ROAD**

Road	Location	Existing		Year 2035 No Project				Year 2035 Plus Le Grand Development		
		ADT	LOS	Average Daily Traffic			LOS	Average Daily Traffic		LOS
				Planada HS Students	Regional Growth	Total		Project	Total	
Santa Fe Ave	North of Savana Rd	2,090	B	320	100	2,510	C	1,540	4,050	C
Savana Rd	West of Santa Fe Ave	200	C	0	10	210	C	0	210	C
Cunningham Rd	North of Santa Fe	840	C	0	40	880	C	145	1,025	C
Fresno Rd	North of Le Grand Rd	130	C	0	5	135	C	465	600	C
Santa Fe Ave	South of Jackson St	2,840	C	390	140	3,370	C	1,025	4,395	C
Washington St	North of Jefferson	670	C	0	30	700	C	670	1,370	C
Jefferson St	West of Santa Fe Ave	2,015	C	390	100	2,505	C	1,490	3,995	C
McDowell St	North of Jefferson St	810	C	0	40	850	C	840	1,690	C
Le Grand Rd	West of Santa Fe Ave	1,430	B	0	70	1,500	B	1,130	2,630	C
Le Grand Rd	East of Fresno Rd	470	C	0	20	490	C	40	530	C
Minturn Rd	South of Le Grand Rd	2,080	C	0	100	2,180	C	880	3,060	C
Santa Fe Ave	South of Fresno Rd	1,030	C	0	50	1,080	C	130	1,210	C

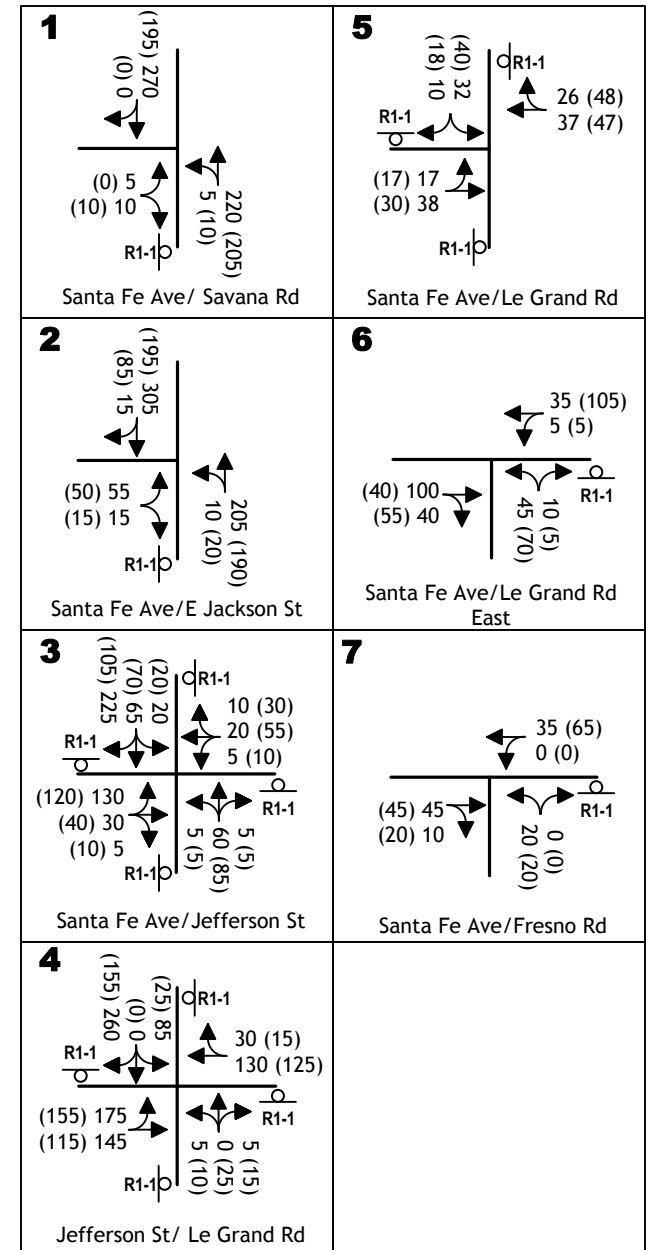
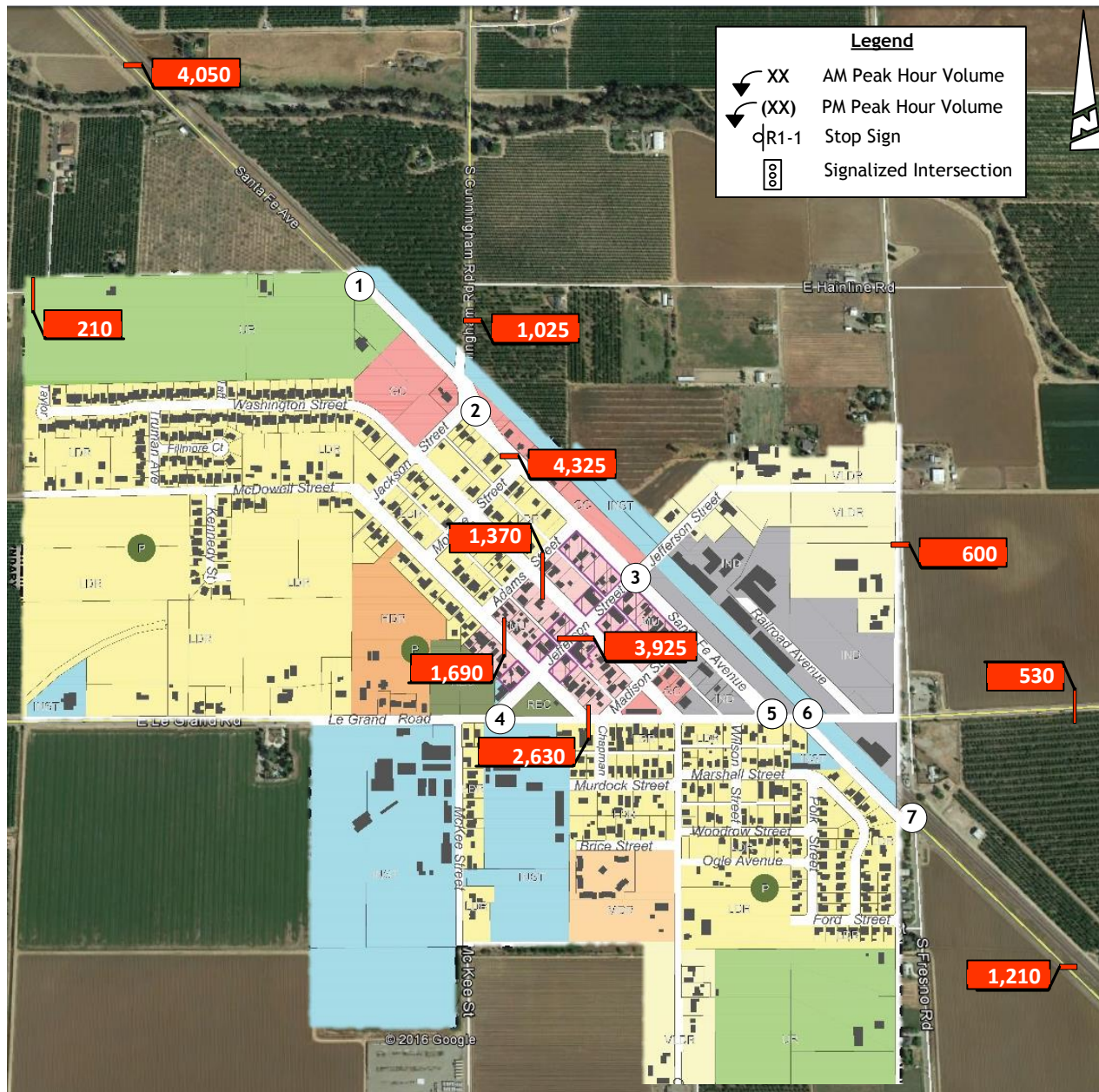
Peak Hour Intersection Levels of Service

Traffic Volumes. Figure 5 presents Year 2035 a.m. and p.m. peak hour traffic volumes at study intersections assuming that no development proceeds in Le Grand, while Figure 6 presents peak hour traffic volumes assuming that the Community Plan is implemented and development proceeds. Year 2035 No Project volumes were created by interpolating peak hour traffic volume increased from the directional daily background growth increment. Year 2035 Plus Project volumes were created by superimposing Le Grand generated trips onto the No Project condition.

Intersection Levels of Service. Table 12 summarizes the peak hour Levels of Service projected for study intersections under Year 2035 conditions with and without implementation of the Le Grand Community Plan. As indicated, because through traffic growth is limited future traffic conditions with the addition of Le Grand growth does not result in Levels of Service in excess of adopted minimum standards. Thus the cumulative impacts of Le Grand development under the Community Plan is not significant.



YEAR 2035 WITH NO LE GRAND DEVELOPMENT
TRAFFIC VOLUMES AND LANE CONFIGURATIONS



YEAR 2035 WITH LE GRAND DEVELOPMENT
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

**TABLE 12
YEAR 2035 PLUS HDR REZONE CUMULATIVE INTERSECTION LEVEL OF SERVICE**

Intersection	Control	Year 2035 Conditions								Signal Warranted?
		AM Peak Hour				PM Peak Hour				
		No Project		Plus Project		No Project		Plus Project		
		Avg Delay (sec/veh)	LOS	Avg Delay (sec/veh)	LOS	Avg Delay (sec/veh)	LOS	Avg Delay (sec/veh)	LOS	
1. Santa Fe Ave / Savana Road NB left turn EB left+right turn	EB Stop	7.8 10.5	A B	8.0 11.3	A B	7.5 9.0	A A	7.7 9.6	A A	No
2. Santa Fe Ave / Jackson Street NB left turn EB left+right turn	EB Stop	8.1 13.3	A B	8.3 17.0	A C	7.7 10.6	A B	8.0 13.2	A B	No
3. Santa Fe Ave / Jefferson Street	All-Way Stop	9.2	A	10.4	B	8.3	A	9.6	A	No
4. Le Grand Rd / Jefferson Street	All-Way Stop	11.6	B	22.3	C	8.2	A	10.1	B	
5. Santa Fe Ave / Le Grand Rd (west) EB left turn SB left+thru+right turn	SB Stop	7.4 9.7	A A	7.5 10.9	A B	7.5 9.7	A A	7.7 10.6	A B	No
6. Santa Fe Ave / Le Grand Rd (east) WB left turn NB left+right turn	NB Stop	7.4 9.4	A A	7.6 10.3	A B	7.4 9.4	A A	7.4 10.3	A B	No
7. Santa Fe Ave / Fresno Road WB left turn NB left+right turn	NB Stop	- 9.0	- A	- 9.2	- A	- 9.3	- A	- 9.5	- A	No

IMPACT / MITIGATION SUMMARY

The following mitigation measures have been identified.

Existing Plus Project Conditions

Discussion. Intersections and roadway segments in Le Grand will experience increased traffic as the community plan is built out. However, the circulation system has the capacity to accommodate growth with Level of Service that continue to satisfy Merced County's minimum standards without improvements. This impact is less than significant.

Impact T-1: Development under the Le Grand Planada Community Plan could result in conflicts between automobiles and bicyclists on those major streets where dedicated facilities for bicycles are unavailable. This is a significant impact.

Discussion. Ultimately, the Community Plan calls for Class II bike lanes on Jefferson Street, Santa Fe Avenue and Le Grand Road which would reduce the possibility of conflicts on this major streets. Fronting development may install bike lanes in some locations, but funding for improvements in areas where development is not anticipated in not included in a guaranteed funding mechanism. While Merced County's normal approach to funding pedestrian and bicycle facilities is based on success in acquiring State / Federal grants, because funding is not assured, safety conflicts may still occur. **This is a significant impact.**

The following mitigation is applicable.

Mitigation T-1. Merced County shall create bicycle facilities on Major Collector streets. With this mitigation, the plans impact on bicycle circulation is less than significant

Impact T-2. Development under the Le Grand Community Plan could result in conflicts between motor vehicles and pedestrians on major streets where pedestrian facilities are unavailable. This is a significant impact.

Discussion. Ultimately, the Community Plan calls for sidewalks on Le Grand's streets and prioritizes sidewalks on those streets. Locations noted in the plan include those where the possibility of conflicts is the greatest, primarily Le Grand Road near schools, and Santa Fe Avenue, Jackson Street and Washington Street near future commercial areas. However, because funding for these improvements is not yet included in a Bridge & Thoroughfare Plan, safety conflicts may still occur. **This is a significant impact.**

The following mitigation is applicable.

Mitigation T-2. Merced County shall complete the installation of sidewalks on key streets, including the following:

:

- *Install sidewalks at the following locations:*
 - *West side of Santa Fe Avenue along the commercial frontage*
 - *North side of Jackson from Washington Street to Santa Fe Avenue*
 - *East side of Washington north of Jackson Street*
 - *West side of Santa Fe Avenue from Jackson Street to Monroe Street*
- *Rehabilitation of crosswalks at Santa Fe Avenue / Jefferson Street intersection*
- *Improved pedestrian route across Jefferson Street railroad crossing*
- *Install pedestrian crossing on Le Grand Road near the schools*

With this mitigation, the plans impact on pedestrian circulation is less than significant.

Cumulative Impacts

Discussion. Because through traffic growth is limited future traffic conditions with the addition of Le Grand growth do not result in Levels of Service in excess of adopted minimum standards. Thus the cumulative impact of Le Grand development under the Community Plan is not significant, and additional mitigation is not required.

APPENDIX

All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-001 Winton-Olive

Site Code : 00000000

Start Date : 8/24/2011

Page No : 1

Groups Printed- Unshifted

	Winton Way Southbound				Olive Avenue Westbound				Winton Way Northbound				Olive Avenue 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
07:00	1	6	0	7	0	3	0	3	4	3	1	8	0	2	1	3	21
07:15	1	8	3	12	4	8	1	13	4	11	1	16	2	1	3	6	47
07:30	0	15	0	15	7	3	0	10	4	10	6	20	2	6	6	14	59
07:45	1	10	3	14	3	3	0	6	2	18	2	22	0	5	1	6	48
Total	3	39	6	48	14	17	1	32	14	42	10	66	4	14	11	29	175
08:00	0	11	0	11	3	3	0	6	5	16	2	23	1	3	2	6	46
08:15	0	8	0	8	0	2	0	2	1	8	5	14	0	4	3	7	31
08:30	0	7	0	7	4	6	0	10	2	6	4	12	0	3	1	4	33
08:45	0	6	0	6	5	2	0	7	3	8	4	15	1	0	3	4	32
Total	0	32	0	32	12	13	0	25	11	38	15	64	2	10	9	21	142
16:00	1	15	0	16	6	4	0	10	4	16	7	27	0	1	2	3	56
16:15	1	9	0	10	4	2	0	6	3	8	5	16	0	5	3	8	40
16:30	1	11	0	12	3	4	0	7	3	9	4	16	1	7	6	14	49
16:45	0	12	0	12	11	1	0	12	5	17	3	25	0	2	4	6	55
Total	3	47	0	50	24	11	0	35	15	50	19	84	1	15	15	31	200
17:00	1	9	1	11	5	4	1	10	2	9	3	14	1	5	3	9	44
17:15	1	12	0	13	7	1	1	9	3	12	9	24	1	0	4	5	51
17:30	0	8	3	11	3	4	1	8	5	8	5	18	1	3	9	13	50
17:45	3	12	0	15	9	2	0	11	4	11	7	22	1	8	7	16	64
Total	5	41	4	50	24	11	3	38	14	40	24	78	4	16	23	43	209
Grand Total	11	159	10	180	74	52	4	130	54	170	68	292	11	55	58	124	726
Apprch %	6.1	88.3	5.6		56.9	40	3.1		18.5	58.2	23.3		8.9	44.4	46.8		
Total %	1.5	21.9	1.4	24.8	10.2	7.2	0.6	17.9	7.4	23.4	9.4	40.2	1.5	7.6	8	17.1	

All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-001 Winton-Olive

Site Code : 00000000

Start Date : 8/24/2011

Page No : 2

	Winton Way Southbound				Olive Avenue Westbound				Winton Way Northbound				Olive Avenue 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	1	8	3	12	4	8	1	13	4	11	1	16	2	1	3	6	47
07:30	0	15	0	15	7	3	0	10	4	10	6	20	2	6	6	14	59
07:45	1	10	3	14	3	3	0	6	2	18	2	22	0	5	1	6	48
08:00	0	11	0	11	3	3	0	6	5	16	2	23	1	3	2	6	46
Total Volume	2	44	6	52	17	17	1	35	15	55	11	81	5	15	12	32	200
% App. Total	3.8	84.6	11.5		48.6	48.6	2.9		18.5	67.9	13.6		15.6	46.9	37.5		
PHF	.500	.733	.500	.867	.607	.531	.250	.673	.750	.764	.458	.880	.625	.625	.500	.571	.847

All Traffic Data

(916) 771-8700

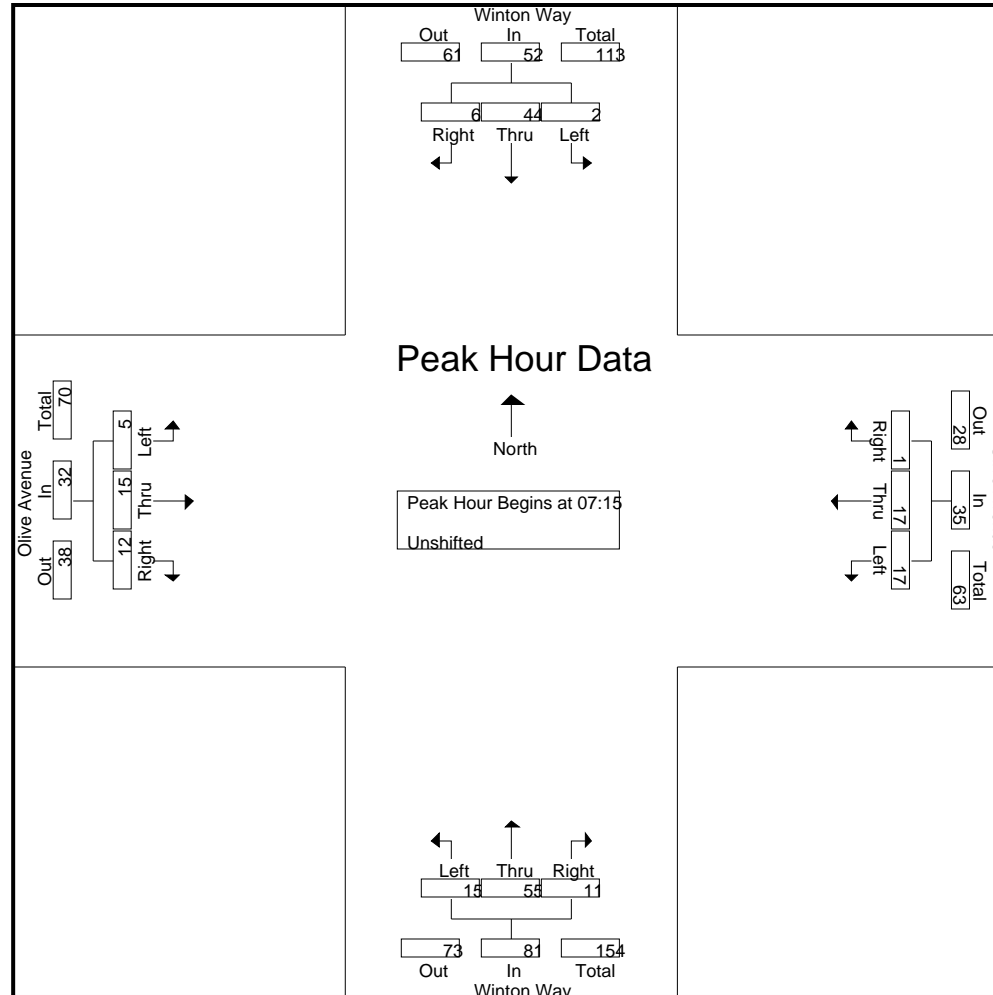
WINTON

File Name : 11-7342-001 Winton-Olive

Site Code : 00000000

Start Date : 8/24/2011

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All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-001 Winton-Olive

Site Code : 00000000

Start Date : 8/24/2011

Page No : 4

	Winton Way Southbound				Olive Avenue Westbound				Winton Way Northbound				Olive Avenue 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	1	9	1	11	5	4	1	10	2	9	3	14	1	5	3	9	44
17:15	1	12	0	13	7	1	1	9	3	12	9	24	1	0	4	5	51
17:30	0	8	3	11	3	4	1	8	5	8	5	18	1	3	9	13	50
17:45	3	12	0	15	9	2	0	11	4	11	7	22	1	8	7	16	64
Total Volume	5	41	4	50	24	11	3	38	14	40	24	78	4	16	23	43	209
% App. Total	10	82	8		63.2	28.9	7.9		17.9	51.3	30.8		9.3	37.2	53.5		
PHF	.417	.854	.333	.833	.667	.688	.750	.864	.700	.833	.667	.813	1.000	.500	.639	.672	.816

All Traffic Data

(916) 771-8700

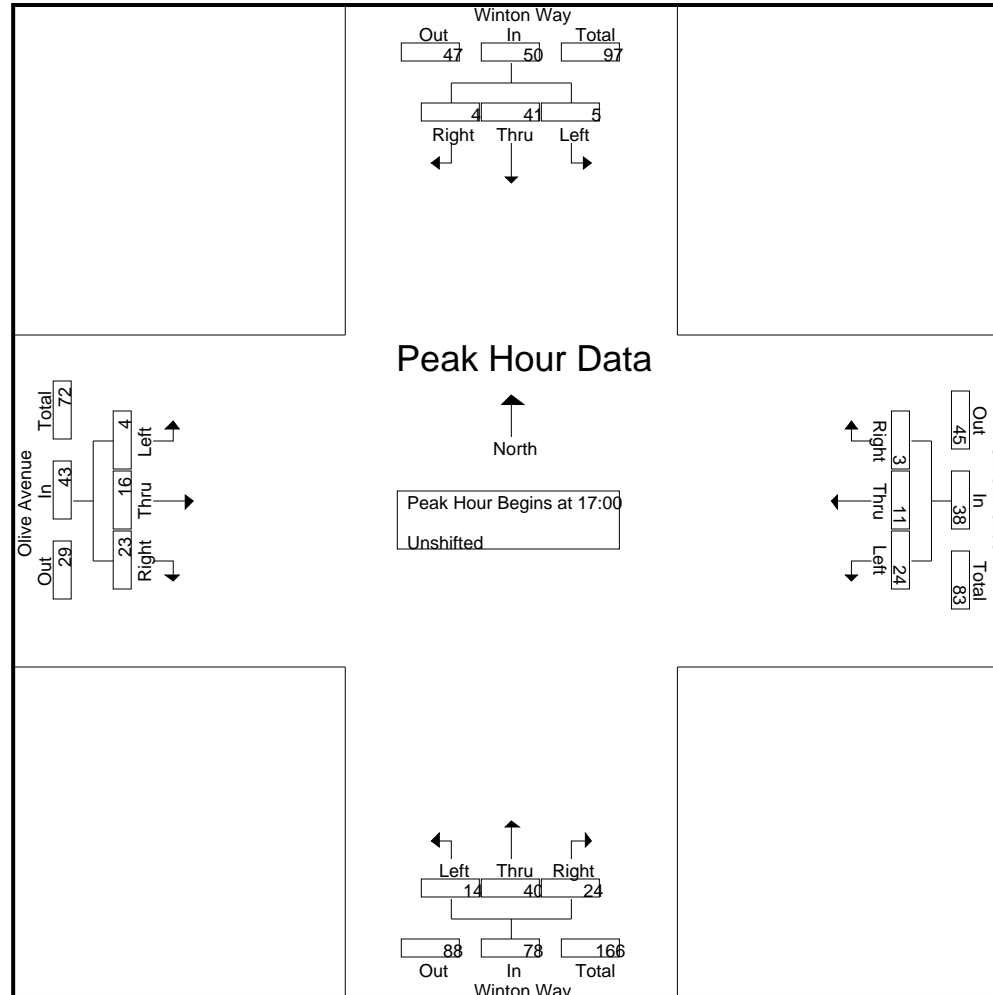
WINTON

File Name : 11-7342-001 Winton-Olive

Site Code : 00000000

Start Date : 8/24/2011

Page No : 5



All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-002 Winton-Walnut

Site Code : 00000000

Start Date : 8/24/2011

Page No : 1

Groups Printed- Unshifted

	Winton Way Southbound				Walnut Avenue Westbound				Winton Way Northbound				Walnut Avenue 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
07:00	1	12	2	15	3	11	0	14	1	10	2	13	4	5	2	11	53
07:15	6	22	13	41	9	23	3	35	3	16	1	20	9	15	2	26	122
07:30	5	36	23	64	20	40	2	62	9	25	4	38	13	20	14	47	211
07:45	7	40	10	57	11	29	5	45	6	32	5	43	15	21	6	42	187
Total	19	110	48	177	43	103	10	156	19	83	12	114	41	61	24	126	573
08:00	2	29	6	37	8	7	8	23	2	28	6	36	10	7	8	25	121
08:15	2	26	4	32	3	4	6	13	4	20	1	25	3	9	3	15	85
08:30	1	19	4	24	2	7	2	11	3	17	1	21	3	3	1	7	63
08:45	0	17	14	31	1	13	4	18	4	13	3	20	4	4	5	13	82
Total	5	91	28	124	14	31	20	65	13	78	11	102	20	23	17	60	351
16:00	0	29	12	41	8	7	2	17	7	35	12	54	11	10	8	29	141
16:15	4	38	6	48	12	19	7	38	4	35	7	46	8	18	10	36	168
16:30	4	28	4	36	11	9	3	23	3	26	0	29	12	16	5	33	121
16:45	3	44	11	58	13	8	2	23	6	35	7	48	7	16	2	25	154
Total	11	139	33	183	44	43	14	101	20	131	26	177	38	60	25	123	584
17:00	7	22	7	36	4	10	7	21	3	38	7	48	10	13	4	27	132
17:15	1	29	6	36	6	11	5	22	4	33	8	45	12	10	6	28	131
17:30	4	40	13	57	5	11	2	18	6	32	6	44	10	14	3	27	146
17:45	1	50	22	73	10	16	4	30	3	38	9	50	18	8	2	28	181
Total	13	141	48	202	25	48	18	91	16	141	30	187	50	45	15	110	590
Grand Total	48	481	157	686	126	225	62	413	68	433	79	580	149	189	81	419	2098
Apprch %	7	70.1	22.9		30.5	54.5	15		11.7	74.7	13.6		35.6	45.1	19.3		
Total %	2.3	22.9	7.5	32.7	6	10.7	3	19.7	3.2	20.6	3.8	27.6	7.1	9	3.9	20	

All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-002 Winton-Walnut

Site Code : 00000000

Start Date : 8/24/2011

Page No : 2

	Winton Way Southbound				Walnut Avenue Westbound				Winton Way Northbound				Walnut Avenue 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	6	22	13	41	9	23	3	35	3	16	1	20	9	15	2	26	122
07:30	5	36	23	64	20	40	2	62	9	25	4	38	13	20	14	47	211
07:45	7	40	10	57	11	29	5	45	6	32	5	43	15	21	6	42	187
08:00	2	29	6	37	8	7	8	23	2	28	6	36	10	7	8	25	121
Total Volume	20	127	52	199	48	99	18	165	20	101	16	137	47	63	30	140	641
% App. Total	10.1	63.8	26.1		29.1	60	10.9		14.6	73.7	11.7		33.6	45	21.4		
PHF	.714	.794	.565	.777	.600	.619	.563	.665	.556	.789	.667	.797	.783	.750	.536	.745	.759

All Traffic Data

(916) 771-8700

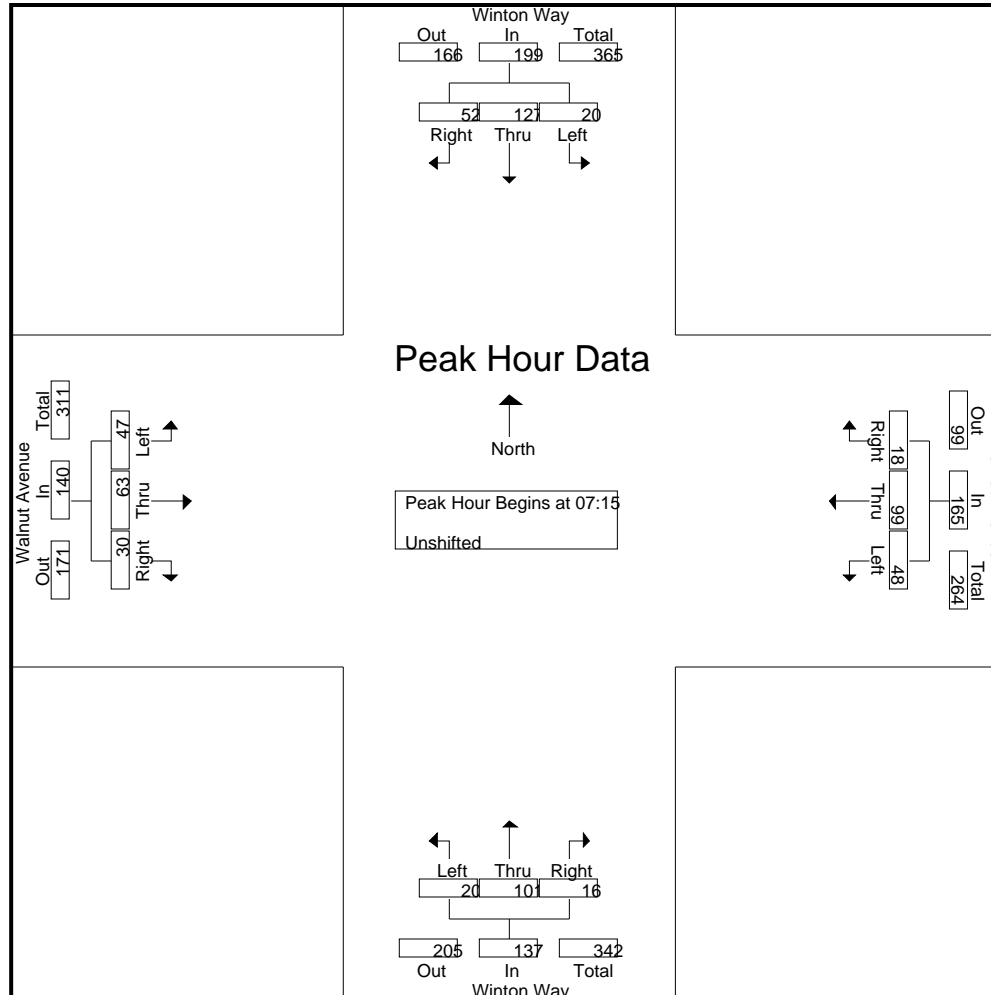
WINTON

File Name : 11-7342-002 Winton-Walnut

Site Code : 00000000

Start Date : 8/24/2011

Page No : 3



All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-002 Winton-Walnut

Site Code : 00000000

Start Date : 8/24/2011

Page No : 4

	Winton Way Southbound				Walnut Avenue Westbound				Winton Way Northbound				Walnut Avenue 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	7	22	7	36	4	10	7	21	3	38	7	48	10	13	4	27	132
17:15	1	29	6	36	6	11	5	22	4	33	8	45	12	10	6	28	131
17:30	4	40	13	57	5	11	2	18	6	32	6	44	10	14	3	27	146
17:45	1	50	22	73	10	16	4	30	3	38	9	50	18	8	2	28	181
Total Volume	13	141	48	202	25	48	18	91	16	141	30	187	50	45	15	110	590
% App. Total	6.4	69.8	23.8		27.5	52.7	19.8		8.6	75.4	16		45.5	40.9	13.6		
PHF	.464	.705	.545	.692	.625	.750	.643	.758	.667	.928	.833	.935	.694	.804	.625	.982	.815

All Traffic Data

(916) 771-8700

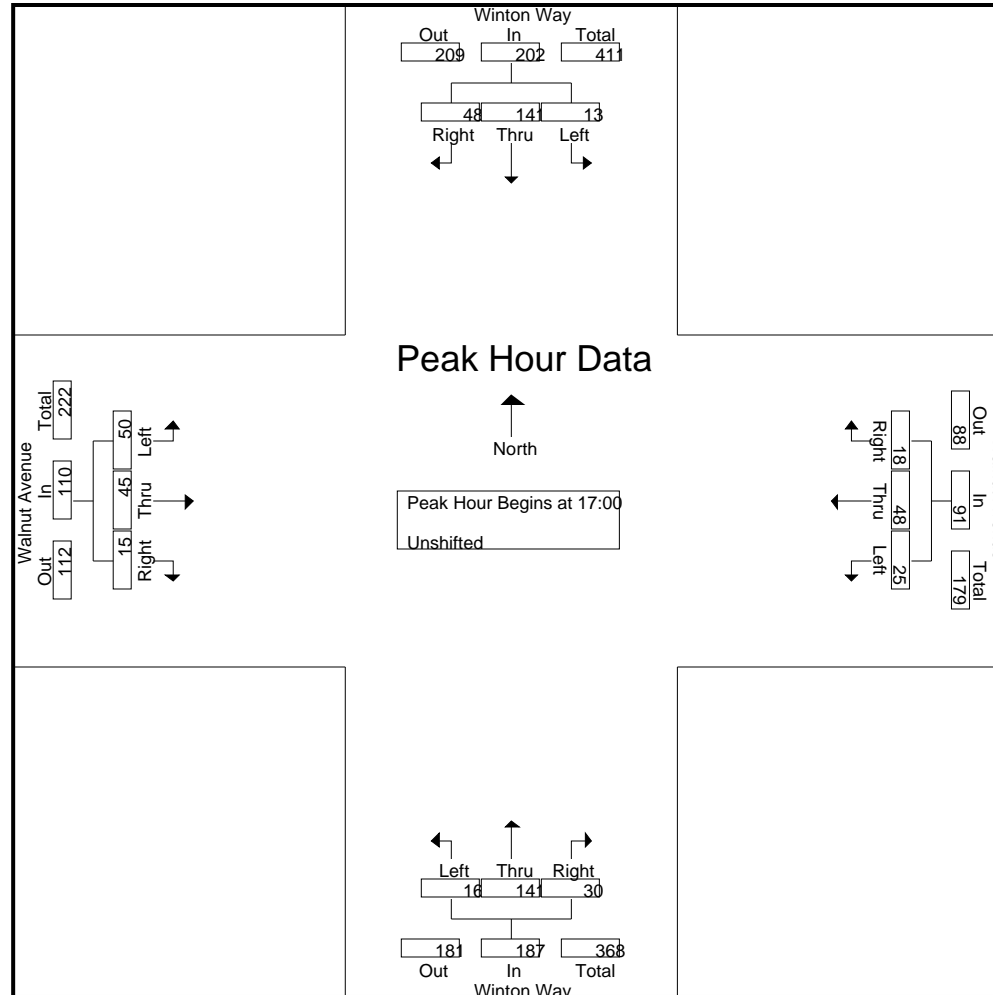
WINTON

File Name : 11-7342-002 Winton-Walnut

Site Code : 00000000

Start Date : 8/24/2011

Page No : 5



All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-003 Winton-Santa Fe

Site Code : 00000000

Start Date : 8/24/2011

Page No : 1

Groups Printed- Unshifted

	Winton Way Southbound				Santa Fe Drive Westbound				Winton Way Northbound				Santa Fe Drive 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
07:00	3	13	0	16	16	28	2	46	9	14	14	37	0	37	13	50	149
07:15	6	27	0	33	26	38	4	68	19	18	29	66	0	47	18	65	232
07:30	10	47	2	59	37	42	6	85	23	29	41	93	0	60	27	87	324
07:45	11	41	2	54	35	29	7	71	17	41	43	101	1	44	30	75	301
Total	30	128	4	162	114	137	19	270	68	102	127	297	1	188	88	277	1006
08:00	8	32	2	42	17	31	4	52	23	33	32	88	0	32	27	59	241
08:15	9	21	2	32	19	34	6	59	15	22	18	55	1	45	22	68	214
08:30	7	19	1	27	14	31	1	46	18	26	22	66	0	43	13	56	195
08:45	4	15	1	20	16	22	4	42	13	16	23	52	2	39	21	62	176
Total	28	87	6	121	66	118	15	199	69	97	95	261	3	159	83	245	826
16:00	10	26	1	37	35	61	8	104	25	39	31	95	0	41	28	69	305
16:15	10	52	2	64	26	55	6	87	38	40	29	107	0	43	31	74	332
16:30	4	39	1	44	26	51	6	83	18	35	27	80	0	40	26	66	273
16:45	8	49	1	58	27	54	4	85	27	44	33	104	0	54	41	95	342
Total	32	166	5	203	114	221	24	359	108	158	120	386	0	178	126	304	1252
17:00	7	32	1	40	26	48	9	83	34	40	27	101	1	40	27	68	292
17:15	5	27	3	35	37	48	12	97	27	32	30	89	2	50	29	81	302
17:30	10	31	3	44	34	50	6	90	31	39	28	98	0	45	20	65	297
17:45	8	52	3	63	45	32	6	83	24	42	26	92	0	37	28	65	303
Total	30	142	10	182	142	178	33	353	116	153	111	380	3	172	104	279	1194
Grand Total	120	523	25	668	436	654	91	1181	361	510	453	1324	7	697	401	1105	4278
Apprch %	18	78.3	3.7		36.9	55.4	7.7		27.3	38.5	34.2		0.6	63.1	36.3		
Total %	2.8	12.2	0.6	15.6	10.2	15.3	2.1	27.6	8.4	11.9	10.6	30.9	0.2	16.3	9.4	25.8	

All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-003 Winton-Santa Fe

Site Code : 00000000

Start Date : 8/24/2011

Page No : 2

	Winton Way Southbound				Santa Fe Drive Westbound				Winton Way Northbound				Santa Fe Drive 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	6	27	0	33	26	38	4	68	19	18	29	66	0	47	18	65	232
07:30	10	47	2	59	37	42	6	85	23	29	41	93	0	60	27	87	324
07:45	11	41	2	54	35	29	7	71	17	41	43	101	1	44	30	75	301
08:00	8	32	2	42	17	31	4	52	23	33	32	88	0	32	27	59	241
Total Volume	35	147	6	188	115	140	21	276	82	121	145	348	1	183	102	286	1098
% App. Total	18.6	78.2	3.2		41.7	50.7	7.6		23.6	34.8	41.7		0.3	64	35.7		
PHF	.795	.782	.750	.797	.777	.833	.750	.812	.891	.738	.843	.861	.250	.763	.850	.822	.847

All Traffic Data

(916) 771-8700

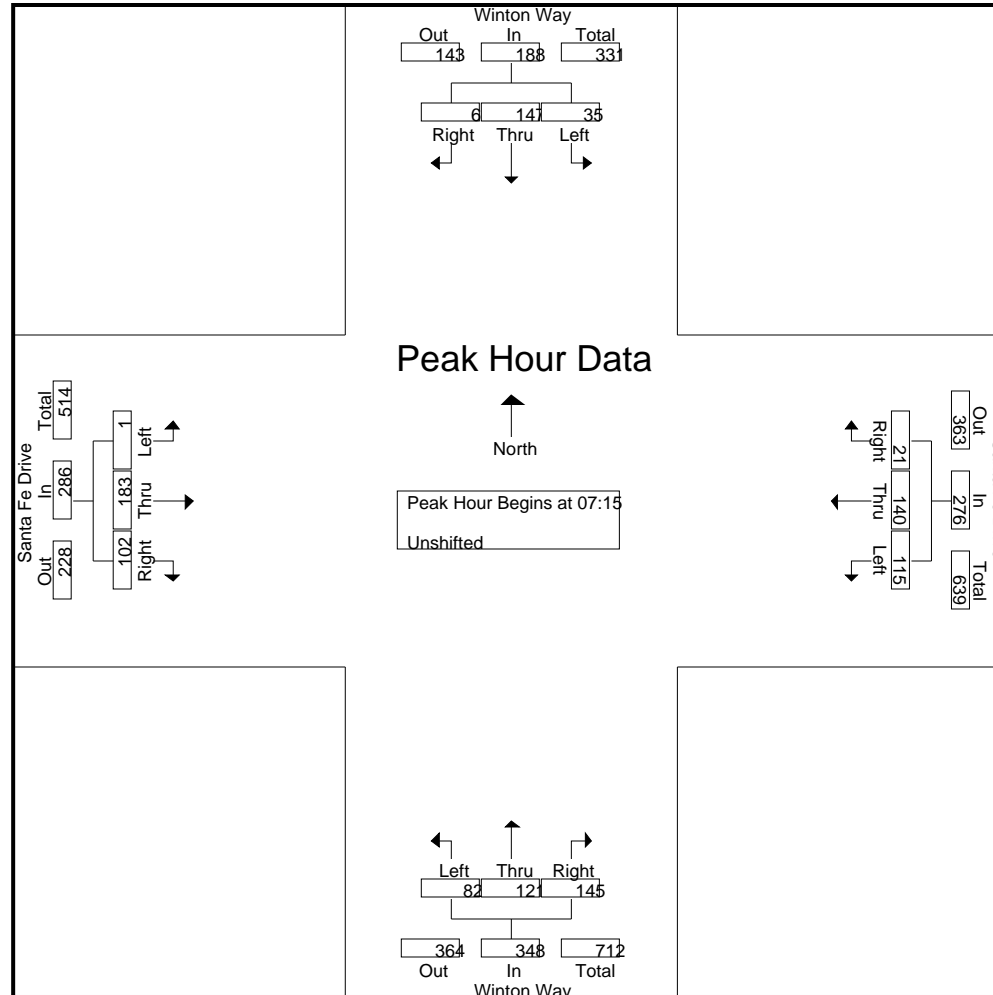
WINTON

File Name : 11-7342-003 Winton-Santa Fe

Site Code : 00000000

Start Date : 8/24/2011

Page No : 3



All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-003 Winton-Santa Fe

Site Code : 00000000

Start Date : 8/24/2011

Page No : 4

	Winton Way Southbound				Santa Fe Drive Westbound				Winton Way Northbound				Santa Fe Drive 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 16:00																	
16:00	10	26	1	37	35	61	8	104	25	39	31	95	0	41	28	69	305
16:15	10	52	2	64	26	55	6	87	38	40	29	107	0	43	31	74	332
16:30	4	39	1	44	26	51	6	83	18	35	27	80	0	40	26	66	273
16:45	8	49	1	58	27	54	4	85	27	44	33	104	0	54	41	95	342
Total Volume	32	166	5	203	114	221	24	359	108	158	120	386	0	178	126	304	1252
% App. Total	15.8	81.8	2.5		31.8	61.6	6.7		28	40.9	31.1		0	58.6	41.4		
PHF	.800	.798	.625	.793	.814	.906	.750	.863	.711	.898	.909	.902	.000	.824	.768	.800	.915

All Traffic Data

(916) 771-8700

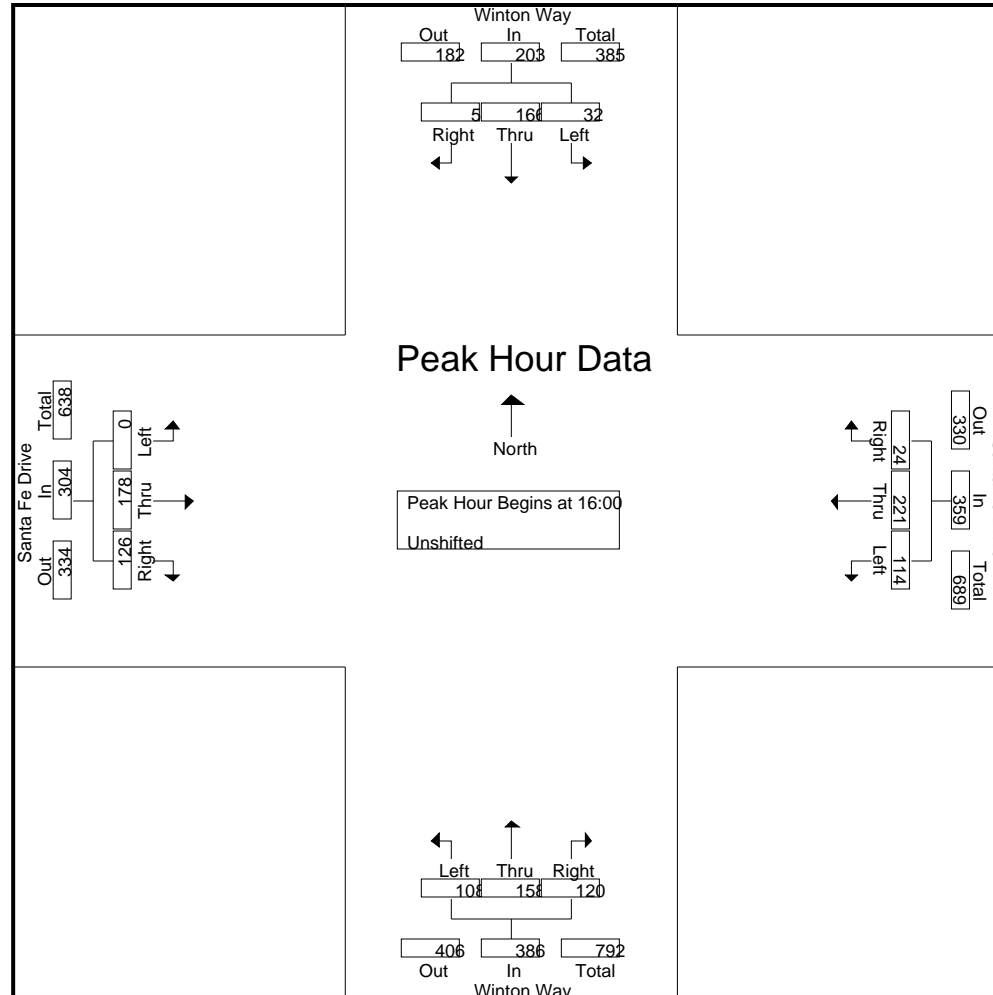
WINTON

File Name : 11-7342-003 Winton-Santa Fe

Site Code : 00000000

Start Date : 8/24/2011

Page No : 5



All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-004 Winton-Almond

Site Code : 00000000

Start Date : 8/24/2011

Page No : 1

Groups Printed- Unshifted

	Winton Way Southbound				Driveway Westbound				Winton Way Northbound				Almond Avenue 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
07:00	0	42	4	46	0	0	0	0	11	37	0	48	4	0	11	15	109
07:15	0	63	11	74	0	0	0	0	12	51	0	63	8	0	20	28	165
07:30	0	94	19	113	1	0	0	1	25	85	0	110	17	0	29	46	270
07:45	0	93	11	104	1	0	2	3	17	97	0	114	16	0	32	48	269
Total	0	292	45	337	2	0	2	4	65	270	0	335	45	0	92	137	813
08:00	0	68	3	71	4	0	5	9	8	90	0	98	6	0	14	20	198
08:15	0	53	7	60	1	1	2	4	5	43	0	48	6	0	7	13	125
08:30	0	38	1	39	0	0	3	3	1	48	0	49	6	0	5	11	102
08:45	0	50	2	52	3	0	1	4	5	52	0	57	4	0	5	9	122
Total	0	209	13	222	8	1	11	20	19	233	0	252	22	0	31	53	547
16:00	0	84	8	92	4	2	5	11	8	97	0	105	7	0	16	23	231
16:15	0	86	6	92	9	1	4	14	1	101	0	102	8	0	7	15	223
16:30	0	70	5	75	3	1	2	6	5	74	0	79	11	0	14	25	185
16:45	0	94	9	103	3	0	5	8	3	93	0	96	7	0	11	18	225
Total	0	334	28	362	19	4	16	39	17	365	0	382	33	0	48	81	864
17:00	0	89	8	97	1	1	5	7	9	84	0	93	6	0	16	22	219
17:15	0	72	11	83	2	0	0	2	6	91	0	97	4	0	9	13	195
17:30	0	69	16	85	3	0	1	4	14	96	0	110	7	0	17	24	223
17:45	0	72	36	108	1	1	1	3	17	96	0	113	5	0	14	19	243
Total	0	302	71	373	7	2	7	16	46	367	0	413	22	0	56	78	880
Grand Total	0	1137	157	1294	36	7	36	79	147	1235	0	1382	122	0	227	349	3104
Apprch %	0	87.9	12.1		45.6	8.9	45.6		10.6	89.4	0		35	0	65		
Total %	0	36.6	5.1	41.7	1.2	0.2	1.2	2.5	4.7	39.8	0	44.5	3.9	0	7.3	11.2	

All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-004 Winton-Almond

Site Code : 00000000

Start Date : 8/24/2011

Page No : 2

	Winton Way Southbound				Driveway Westbound				Winton Way Northbound				Almond Avenue 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	63	11	74	0	0	0	0	12	51	0	63	8	0	20	28	165
07:30	0	94	19	113	1	0	0	1	25	85	0	110	17	0	29	46	270
07:45	0	93	11	104	1	0	2	3	17	97	0	114	16	0	32	48	269
08:00	0	68	3	71	4	0	5	9	8	90	0	98	6	0	14	20	198
Total Volume	0	318	44	362	6	0	7	13	62	323	0	385	47	0	95	142	902
% App. Total	0	87.8	12.2		46.2	0	53.8		16.1	83.9	0		33.1	0	66.9		
PHF	.000	.846	.579	.801	.375	.000	.350	.361	.620	.832	.000	.844	.691	.000	.742	.740	.835

All Traffic Data

(916) 771-8700

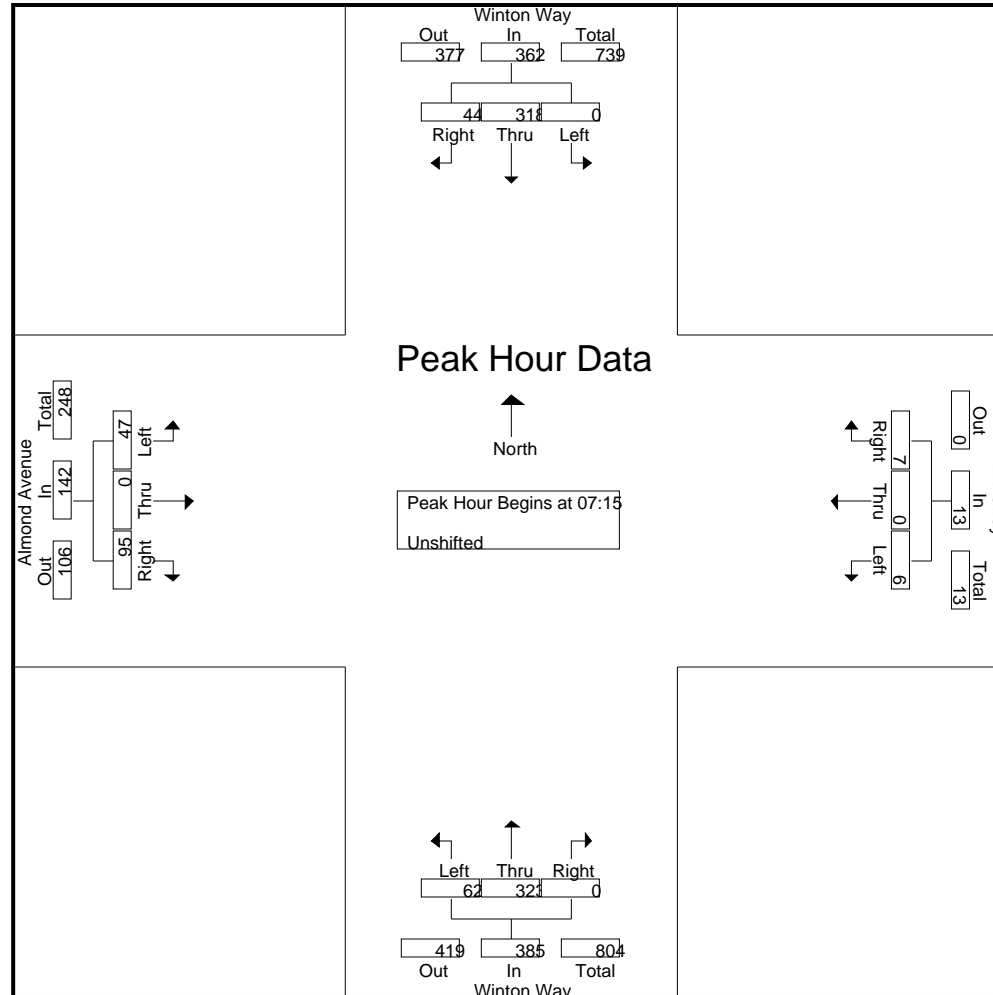
WINTON

File Name : 11-7342-004 Winton-Almond

Site Code : 00000000

Start Date : 8/24/2011

Page No : 3



All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-004 Winton-Almond

Site Code : 00000000

Start Date : 8/24/2011

Page No : 4

	Winton Way Southbound				Driveway Westbound				Winton Way Northbound				Almond Avenue 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	0	89	8	97	1	1	5	7	9	84	0	93	6	0	16	22	219
17:15	0	72	11	83	2	0	0	2	6	91	0	97	4	0	9	13	195
17:30	0	69	16	85	3	0	1	4	14	96	0	110	7	0	17	24	223
17:45	0	72	36	108	1	1	1	3	17	96	0	113	5	0	14	19	243
Total Volume	0	302	71	373	7	2	7	16	46	367	0	413	22	0	56	78	880
% App. Total	0	81	19		43.8	12.5	43.8		11.1	88.9	0		28.2	0	71.8		
PHF	.000	.848	.493	.863	.583	.500	.350	.571	.676	.956	.000	.914	.786	.000	.824	.813	.905

All Traffic Data

(916) 771-8700

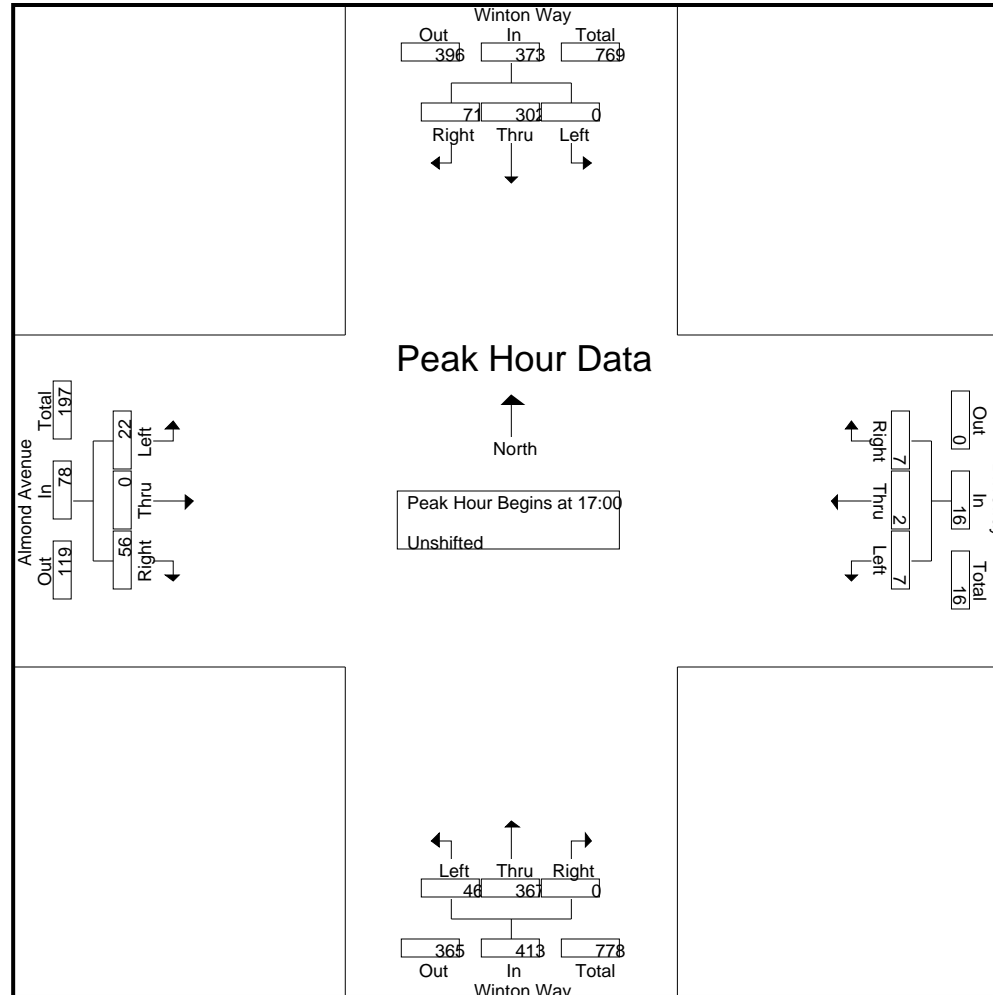
WINTON

File Name : 11-7342-004 Winton-Almond

Site Code : 00000000

Start Date : 8/24/2011

Page No : 5



All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-005 Winton-Gertrude

Site Code : 00000000

Start Date : 8/24/2011

Page No : 1

Groups Printed- Unshifted

	Winton Way Southbound				Gertrude Avenue Westbound				Winton Way Northbound				Gertrude Avenue 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
07:00	5	48	1	54	3	2	9	14	9	34	1	44	0	1	14	15	127
07:15	4	75	7	86	2	5	5	12	16	54	1	71	5	3	28	36	205
07:30	8	106	6	120	3	9	8	20	28	85	6	119	0	6	34	40	299
07:45	5	113	2	120	4	5	16	25	22	95	3	120	2	7	40	49	314
Total	22	342	16	380	12	21	38	71	75	268	11	354	7	17	116	140	945
08:00	5	74	2	81	3	2	7	12	9	91	3	103	0	1	15	16	212
08:15	5	61	0	66	1	8	8	17	9	40	1	50	0	6	8	14	147
08:30	3	43	1	47	1	3	8	12	4	43	2	49	0	4	7	11	119
08:45	2	53	2	57	5	7	7	19	11	45	1	57	1	4	14	19	152
Total	15	231	5	251	10	20	30	60	33	219	7	259	1	15	44	60	630
16:00	4	84	1	89	2	4	16	22	11	81	3	95	1	4	22	27	233
16:15	7	90	2	99	2	7	9	18	11	102	4	117	2	3	19	24	258
16:30	9	72	2	83	1	5	13	19	8	57	5	70	1	2	18	21	193
16:45	9	87	1	97	1	1	10	12	15	84	3	102	0	3	20	23	234
Total	29	333	6	368	6	17	48	71	45	324	15	384	4	12	79	95	918
17:00	9	91	3	103	3	4	9	16	16	84	1	101	0	5	25	30	250
17:15	3	79	2	84	1	13	12	26	20	92	1	113	0	1	14	15	238
17:30	9	71	1	81	4	8	9	21	23	98	3	124	3	2	17	22	248
17:45	8	73	1	82	3	8	8	19	16	97	2	115	1	3	11	15	231
Total	29	314	7	350	11	33	38	82	75	371	7	453	4	11	67	82	967
Grand Total	95	1220	34	1349	39	91	154	284	228	1182	40	1450	16	55	306	377	3460
Apprch %	7	90.4	2.5		13.7	32	54.2		15.7	81.5	2.8		4.2	14.6	81.2		
Total %	2.7	35.3	1	39	1.1	2.6	4.5	8.2	6.6	34.2	1.2	41.9	0.5	1.6	8.8	10.9	

All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-005 Winton-Gertrude

Site Code : 00000000

Start Date : 8/24/2011

Page No : 2

	Winton Way Southbound				Gertrude Avenue Westbound				Winton Way Northbound				Gertrude Avenue 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	4	75	7	86	2	5	5	12	16	54	1	71	5	3	28	36	205
07:30	8	106	6	120	3	9	8	20	28	85	6	119	0	6	34	40	299
07:45	5	113	2	120	4	5	16	25	22	95	3	120	2	7	40	49	314
08:00	5	74	2	81	3	2	7	12	9	91	3	103	0	1	15	16	212
Total Volume	22	368	17	407	12	21	36	69	75	325	13	413	7	17	117	141	1030
% App. Total	5.4	90.4	4.2		17.4	30.4	52.2		18.2	78.7	3.1		5	12.1	83		
PHF	.688	.814	.607	.848	.750	.583	.563	.690	.670	.855	.542	.860	.350	.607	.731	.719	.820

All Traffic Data

(916) 771-8700

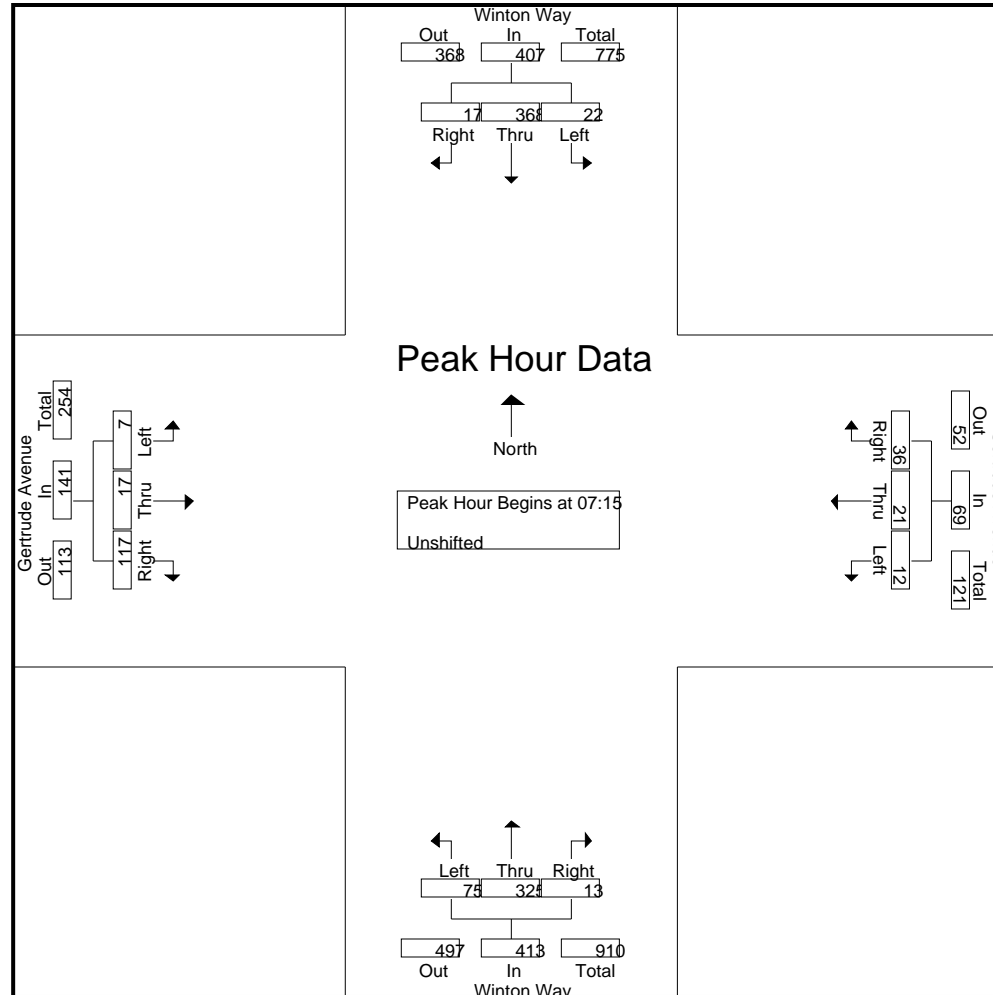
WINTON

File Name : 11-7342-005 Winton-Gertrude

Site Code : 00000000

Start Date : 8/24/2011

Page No : 3



All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-005 Winton-Gertrude

Site Code : 00000000

Start Date : 8/24/2011

Page No : 4

	Winton Way Southbound				Gertrude Avenue Westbound				Winton Way Northbound				Gertrude Avenue 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 16:45																	
16:45	9	87	1	97	1	1	10	12	15	84	3	102	0	3	20	23	234
17:00	9	91	3	103	3	4	9	16	16	84	1	101	0	5	25	30	250
17:15	3	79	2	84	1	13	12	26	20	92	1	113	0	1	14	15	238
17:30	9	71	1	81	4	8	9	21	23	98	3	124	3	2	17	22	248
Total Volume	30	328	7	365	9	26	40	75	74	358	8	440	3	11	76	90	970
% App. Total	8.2	89.9	1.9		12	34.7	53.3		16.8	81.4	1.8		3.3	12.2	84.4		
PHF	.833	.901	.583	.886	.563	.500	.833	.721	.804	.913	.667	.887	.250	.550	.760	.750	.970

All Traffic Data

(916) 771-8700

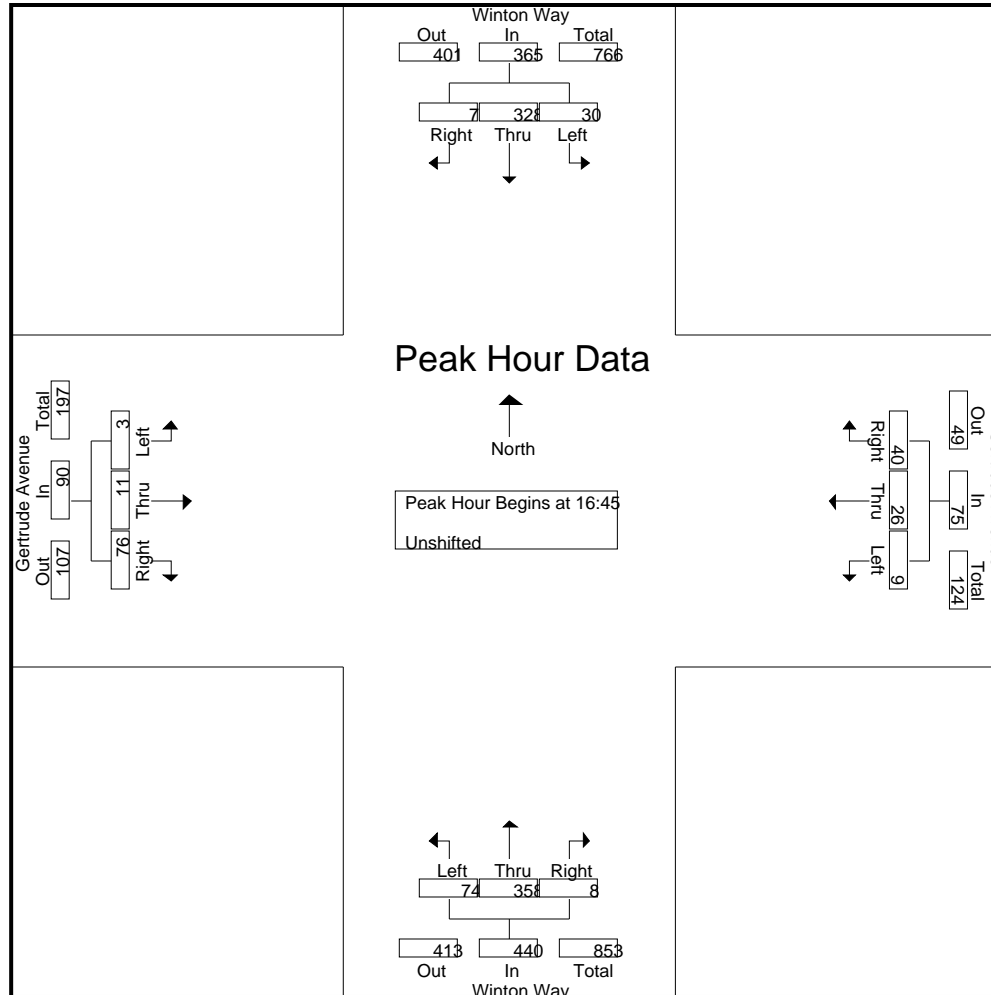
WINTON

File Name : 11-7342-005 Winton-Gertrude

Site Code : 00000000

Start Date : 8/24/2011

Page No : 5



All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-006 Winton-Myrtle

Site Code : 00000000

Start Date : 8/24/2011

Page No : 1

Groups Printed- Unshifted

	Winton Way Southbound				Myrtle Avenue Westbound				Winton Way Northbound				Myrtle Avenue 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
07:00	2	9	1	12	3	2	2	7	1	7	5	13	1	1	6	8	40
07:15	1	18	1	20	11	9	4	24	4	15	6	25	2	4	11	17	86
07:30	2	34	1	37	16	5	1	22	8	20	9	37	4	8	6	18	114
07:45	0	26	0	26	13	4	1	18	9	26	11	46	2	4	19	25	115
Total	5	87	3	95	43	20	8	71	22	68	31	121	9	17	42	68	355
08:00	0	16	0	16	9	2	0	11	9	25	13	47	1	4	8	13	87
08:15	1	16	1	18	7	1	0	8	9	14	4	27	0	2	10	12	65
08:30	0	9	1	10	12	2	0	14	5	15	4	24	1	1	6	8	56
08:45	0	16	4	20	7	1	0	8	2	13	3	18	1	0	7	8	54
Total	1	57	6	64	35	6	0	41	25	67	24	116	3	7	31	41	262
16:00	0	26	1	27	12	1	1	14	7	30	15	52	0	3	13	16	109
16:15	0	25	2	27	7	4	0	11	14	20	12	46	1	6	14	21	105
16:30	2	20	1	23	10	8	1	19	11	19	11	41	2	3	12	17	100
16:45	2	30	6	38	14	3	2	19	5	22	22	49	2	8	14	24	130
Total	4	101	10	115	43	16	4	63	37	91	60	188	5	20	53	78	444
17:00	0	14	2	16	4	4	0	8	19	17	7	43	0	7	12	19	86
17:15	0	21	4	25	7	5	2	14	16	29	9	54	2	0	10	12	105
17:30	0	27	0	27	14	3	1	18	12	23	14	49	2	5	17	24	118
17:45	1	26	1	28	20	4	1	25	18	21	18	57	3	4	19	26	136
Total	1	88	7	96	45	16	4	65	65	90	48	203	7	16	58	81	445
Grand Total	11	333	26	370	166	58	16	240	149	316	163	628	24	60	184	268	1506
Apprch %	3	90	7		69.2	24.2	6.7		23.7	50.3	26		9	22.4	68.7		
Total %	0.7	22.1	1.7	24.6	11	3.9	1.1	15.9	9.9	21	10.8	41.7	1.6	4	12.2	17.8	

All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-006 Winton-Myrtle

Site Code : 00000000

Start Date : 8/24/2011

Page No : 2

	Winton Way Southbound				Myrtle Avenue Westbound				Winton Way Northbound				Myrtle Avenue 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	1	18	1	20	11	9	4	24	4	15	6	25	2	4	11	17	86
07:30	2	34	1	37	16	5	1	22	8	20	9	37	4	8	6	18	114
07:45	0	26	0	26	13	4	1	18	9	26	11	46	2	4	19	25	115
08:00	0	16	0	16	9	2	0	11	9	25	13	47	1	4	8	13	87
Total Volume	3	94	2	99	49	20	6	75	30	86	39	155	9	20	44	73	402
% App. Total	3	94.9	2		65.3	26.7	8		19.4	55.5	25.2		12.3	27.4	60.3		
PHF	.375	.691	.500	.669	.766	.556	.375	.781	.833	.827	.750	.824	.563	.625	.579	.730	.874

All Traffic Data

(916) 771-8700

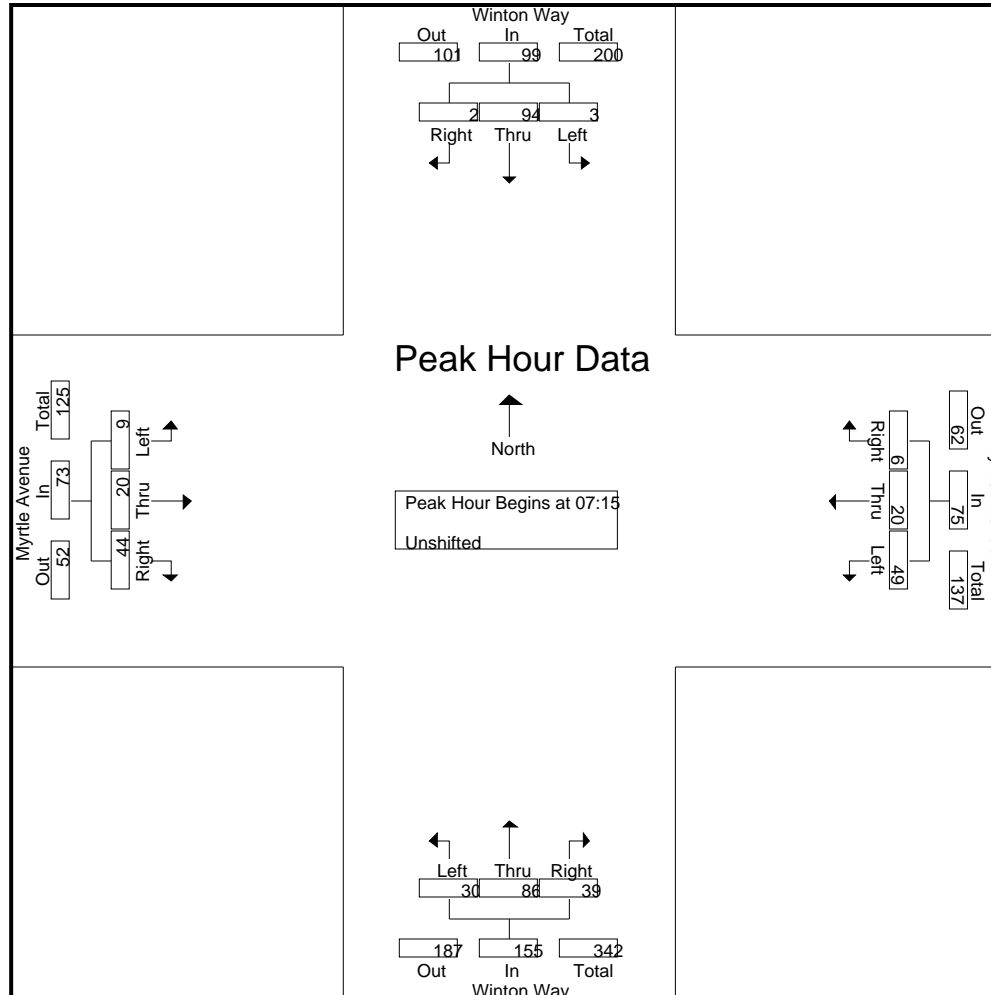
WINTON

File Name : 11-7342-006 Winton-Myrtle

Site Code : 00000000

Start Date : 8/24/2011

Page No : 3



All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-006 Winton-Myrtle

Site Code : 00000000

Start Date : 8/24/2011

Page No : 4

	Winton Way Southbound				Myrtle Avenue Westbound				Winton Way Northbound				Myrtle Avenue 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	0	14	2	16	4	4	0	8	19	17	7	43	0	7	12	19	86
17:15	0	21	4	25	7	5	2	14	16	29	9	54	2	0	10	12	105
17:30	0	27	0	27	14	3	1	18	12	23	14	49	2	5	17	24	118
17:45	1	26	1	28	20	4	1	25	18	21	18	57	3	4	19	26	136
Total Volume	1	88	7	96	45	16	4	65	65	90	48	203	7	16	58	81	445
% App. Total	1	91.7	7.3		69.2	24.6	6.2		32	44.3	23.6		8.6	19.8	71.6		
PHF	.250	.815	.438	.857	.563	.800	.500	.650	.855	.776	.667	.890	.583	.571	.763	.779	.818

All Traffic Data

(916) 771-8700

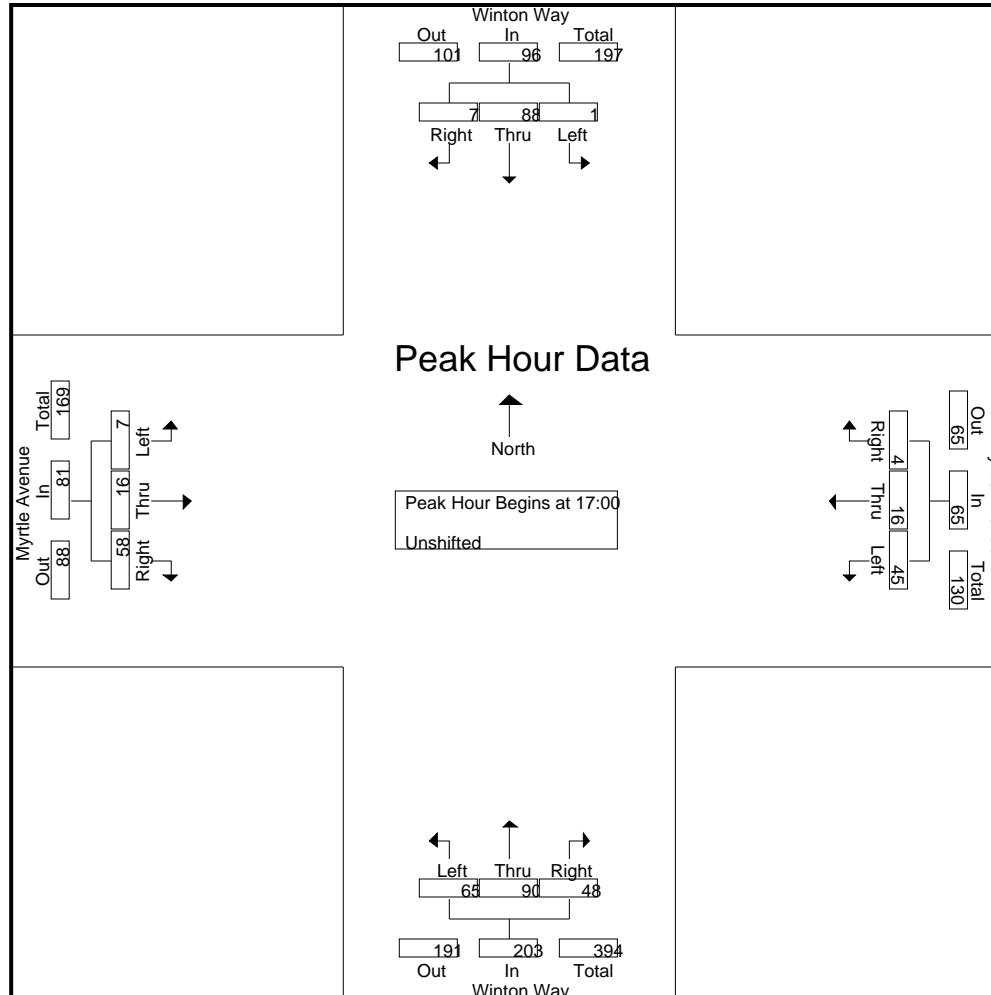
WINTON

File Name : 11-7342-006 Winton-Myrtle

Site Code : 00000000

Start Date : 8/24/2011

Page No : 5



All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-007 Santa Fe-North Olive

Site Code : 00000000

Start Date : 8/23/2011

Page No : 1

Groups Printed- Unshifted

	Santa Fe Drive Southbound				Private Driveway Westbound				Santa Fe Drive Northbound				North Olive Avenue 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
07:00	0	44	2	46	0	0	0	0	2	41	0	43	3	0	3	6	95
07:15	0	40	1	41	0	0	0	0	5	39	0	44	5	0	8	13	98
07:30	0	30	4	34	2	0	0	2	12	41	1	54	6	1	7	14	104
07:45	0	25	1	26	0	0	0	0	6	35	0	41	5	0	13	18	85
Total	0	139	8	147	2	0	0	2	25	156	1	182	19	1	31	51	382
08:00	0	29	2	31	0	0	0	0	6	32	0	38	3	0	5	8	77
08:15	0	23	3	26	0	0	0	0	4	31	0	35	4	0	10	14	75
08:30	0	20	2	22	0	0	0	0	4	31	0	35	3	0	8	11	68
08:45	0	30	1	31	0	0	0	0	11	22	0	33	0	0	2	2	66
Total	0	102	8	110	0	0	0	0	25	116	0	141	10	0	25	35	286
16:00	1	52	4	57	1	0	0	1	11	28	1	40	1	0	5	6	104
16:15	0	44	4	48	0	1	0	1	7	45	1	53	0	0	7	7	109
16:30	0	44	4	48	0	0	0	0	11	30	0	41	5	0	8	13	102
16:45	0	50	6	56	0	0	0	0	9	37	0	46	0	0	10	10	112
Total	1	190	18	209	1	1	0	2	38	140	2	180	6	0	30	36	427
17:00	0	57	4	61	3	0	0	3	9	33	0	42	0	0	13	13	119
17:15	0	53	3	56	0	0	0	0	9	50	2	61	3	0	4	7	124
17:30	0	45	2	47	0	0	0	0	3	33	1	37	2	0	9	11	95
17:45	1	39	2	42	0	1	0	1	8	24	0	32	0	0	9	9	84
Total	1	194	11	206	3	1	0	4	29	140	3	172	5	0	35	40	422
Grand Total	2	625	45	672	6	2	0	8	117	552	6	675	40	1	121	162	1517
Apprch %	0.3	93	6.7		75	25	0		17.3	81.8	0.9		24.7	0.6	74.7		
Total %	0.1	41.2	3	44.3	0.4	0.1	0	0.5	7.7	36.4	0.4	44.5	2.6	0.1	8	10.7	

All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-007 Santa Fe-North Olive

Site Code : 00000000

Start Date : 8/23/2011

Page No : 2

	Santa Fe Drive Southbound				Private Driveway Westbound				Santa Fe Drive Northbound				North Olive Avenue 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 07:00																	
07:00	0	44	2	46	0	0	0	0	2	41	0	43	3	0	3	6	95
07:15	0	40	1	41	0	0	0	0	5	39	0	44	5	0	8	13	98
07:30	0	30	4	34	2	0	0	2	12	41	1	54	6	1	7	14	104
07:45	0	25	1	26	0	0	0	0	6	35	0	41	5	0	13	18	85
Total Volume	0	139	8	147	2	0	0	2	25	156	1	182	19	1	31	51	382
% App. Total	0	94.6	5.4		100	0	0		13.7	85.7	0.5		37.3	2	60.8		
PHF	.000	.790	.500	.799	.250	.000	.000	.250	.521	.951	.250	.843	.792	.250	.596	.708	.918

All Traffic Data

(916) 771-8700

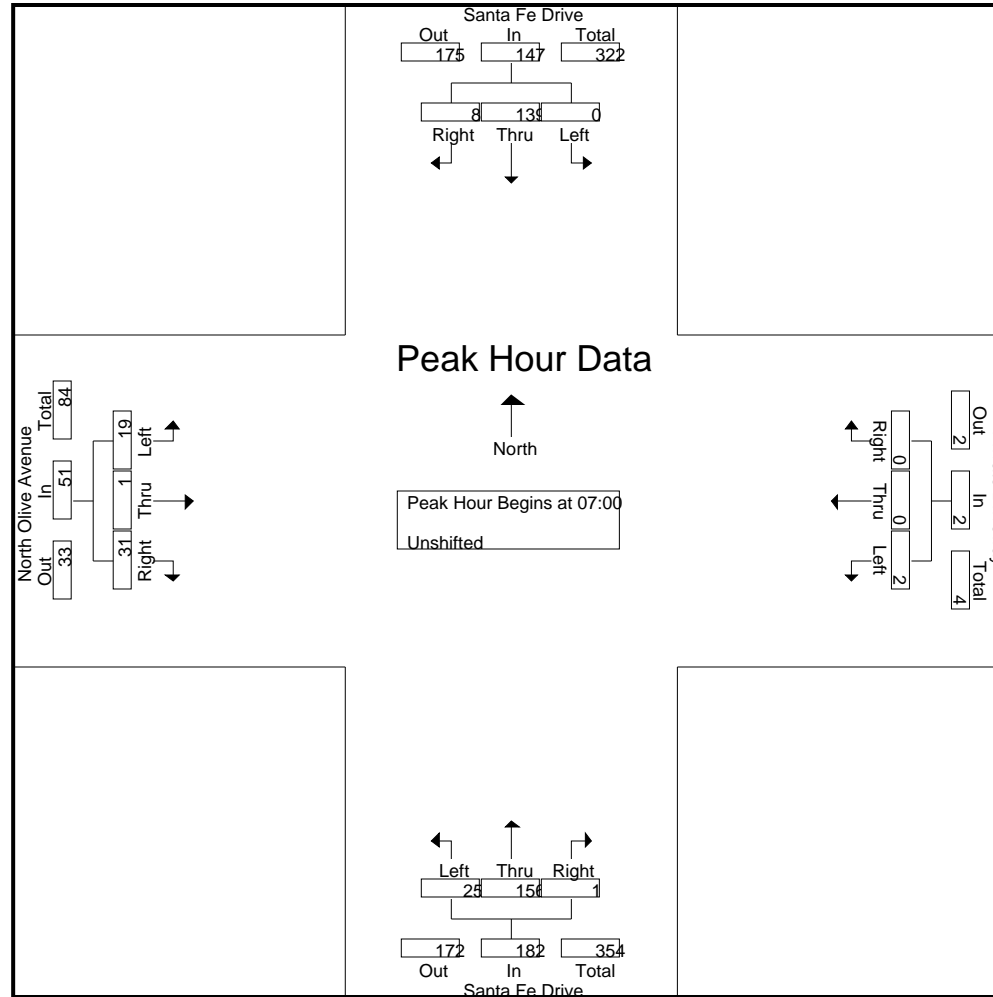
WINTON

File Name : 11-7342-007 Santa Fe-North Olive

Site Code : 00000000

Start Date : 8/23/2011

Page No : 3



All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-007 Santa Fe-North Olive

Site Code : 00000000

Start Date : 8/23/2011

Page No : 4

	Santa Fe Drive Southbound				Private Driveway Westbound				Santa Fe Drive Northbound				North Olive Avenue 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 16:30																	
16:30	0	44	4	48	0	0	0	0	11	30	0	41	5	0	8	13	102
16:45	0	50	6	56	0	0	0	0	9	37	0	46	0	0	10	10	112
17:00	0	57	4	61	3	0	0	3	9	33	0	42	0	0	13	13	119
17:15	0	53	3	56	0	0	0	0	9	50	2	61	3	0	4	7	124
Total Volume	0	204	17	221	3	0	0	3	38	150	2	190	8	0	35	43	457
% App. Total	0	92.3	7.7		100	0	0		20	78.9	1.1		18.6	0	81.4		
PHF	.000	.895	.708	.906	.250	.000	.000	.250	.864	.750	.250	.779	.400	.000	.673	.827	.921

All Traffic Data

(916) 771-8700

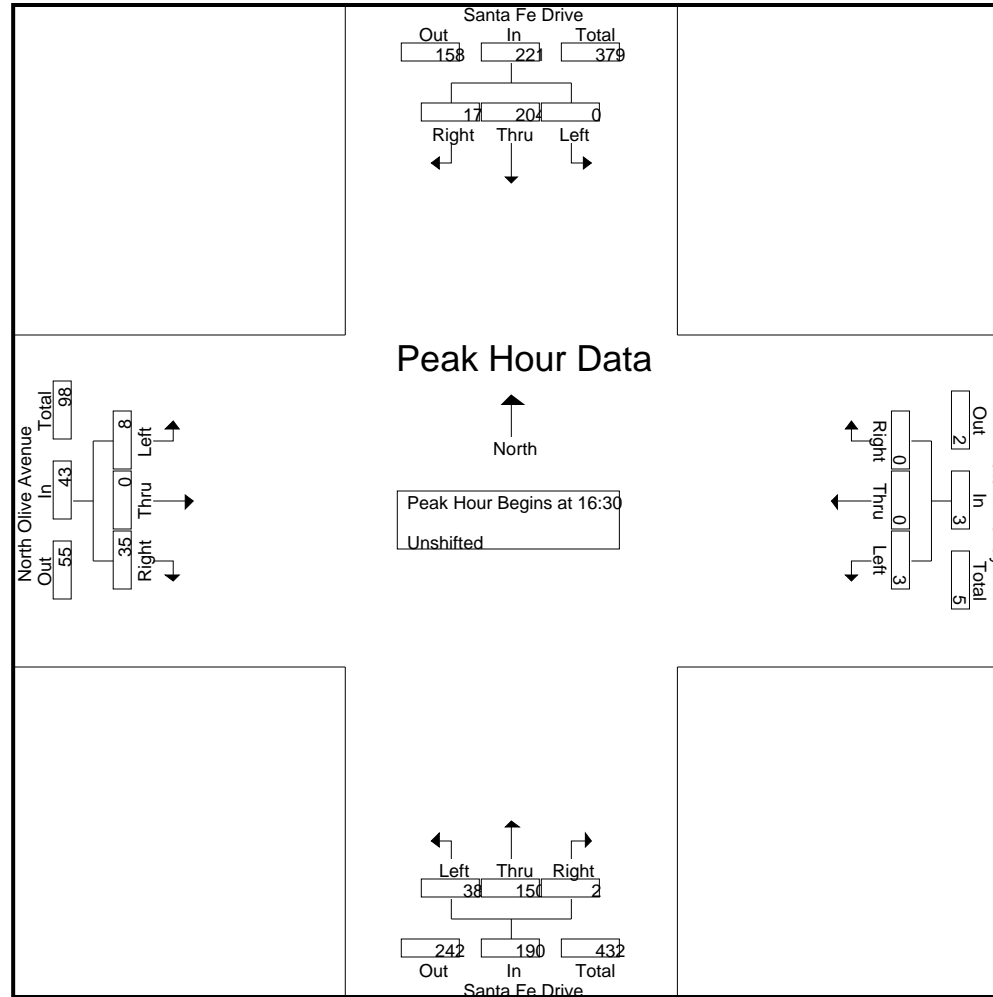
WINTON

File Name : 11-7342-007 Santa Fe-North Olive

Site Code : 00000000

Start Date : 8/23/2011

Page No : 5



All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-008 Santa Fe-West Olive

Site Code : 00000000

Start Date : 8/23/2011

Page No : 1

Groups Printed- Unshifted

	Santa Fe Drive Southbound				West Olive Avenue Westbound				Santa Fe Drive 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
07:00	6	45	0	51	0	0	6	6	0	37	1	38	0	0	0	0	95
07:15	4	43	0	47	1	0	7	8	0	36	1	37	0	0	0	0	92
07:30	9	29	0	38	1	0	11	12	0	44	0	44	0	0	0	0	94
07:45	10	29	0	39	0	0	7	7	0	35	0	35	0	0	0	0	81
Total	29	146	0	175	2	0	31	33	0	152	2	154	0	0	0	0	362
08:00	4	30	0	34	0	0	5	5	0	33	0	33	0	0	0	0	72
08:15	8	25	0	33	0	0	4	4	0	31	0	31	0	0	0	0	68
08:30	3	25	0	28	0	0	3	3	0	33	1	34	0	0	0	0	65
08:45	1	31	0	32	0	0	8	8	0	25	1	26	0	0	0	0	66
Total	16	111	0	127	0	0	20	20	0	122	2	124	0	0	0	0	271
16:00	3	54	0	57	0	0	9	9	0	33	0	33	0	0	0	0	99
16:15	8	43	0	51	0	0	5	5	0	46	0	46	0	0	0	0	102
16:30	6	45	0	51	0	0	6	6	0	36	0	36	0	0	0	0	93
16:45	11	50	0	61	0	0	6	6	0	38	0	38	0	0	0	0	105
Total	28	192	0	220	0	0	26	26	0	153	0	153	0	0	0	0	399
17:00	10	62	0	72	0	0	5	5	0	39	0	39	0	0	0	0	116
17:15	6	52	0	58	0	0	6	6	0	55	0	55	0	0	0	0	119
17:30	14	40	0	54	1	0	2	3	0	36	0	36	0	0	0	0	93
17:45	7	43	0	50	0	0	7	7	0	28	0	28	0	0	0	0	85
Total	37	197	0	234	1	0	20	21	0	158	0	158	0	0	0	0	413
Grand Total	110	646	0	756	3	0	97	100	0	585	4	589	0	0	0	0	1445
Apprch %	14.6	85.4	0		3	0	97		0	99.3	0.7		0	0	0		
Total %	7.6	44.7	0	52.3	0.2	0	6.7	6.9	0	40.5	0.3	40.8	0	0	0	0	

All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-008 Santa Fe-West Olive

Site Code : 00000000

Start Date : 8/23/2011

Page No : 2

	Santa Fe Drive Southbound				West Olive Avenue Westbound				Santa Fe Drive 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 07:00																	
07:00	6	45	0	51	0	0	6	6	0	37	1	38	0	0	0	0	95
07:15	4	43	0	47	1	0	7	8	0	36	1	37	0	0	0	0	92
07:30	9	29	0	38	1	0	11	12	0	44	0	44	0	0	0	0	94
07:45	10	29	0	39	0	0	7	7	0	35	0	35	0	0	0	0	81
Total Volume	29	146	0	175	2	0	31	33	0	152	2	154	0	0	0	0	362
% App. Total	16.6	83.4	0		6.1	0	93.9		0	98.7	1.3		0	0	0		
PHF	.725	.811	.000	.858	.500	.000	.705	.688	.000	.864	.500	.875	.000	.000	.000	.000	.953

All Traffic Data

(916) 771-8700

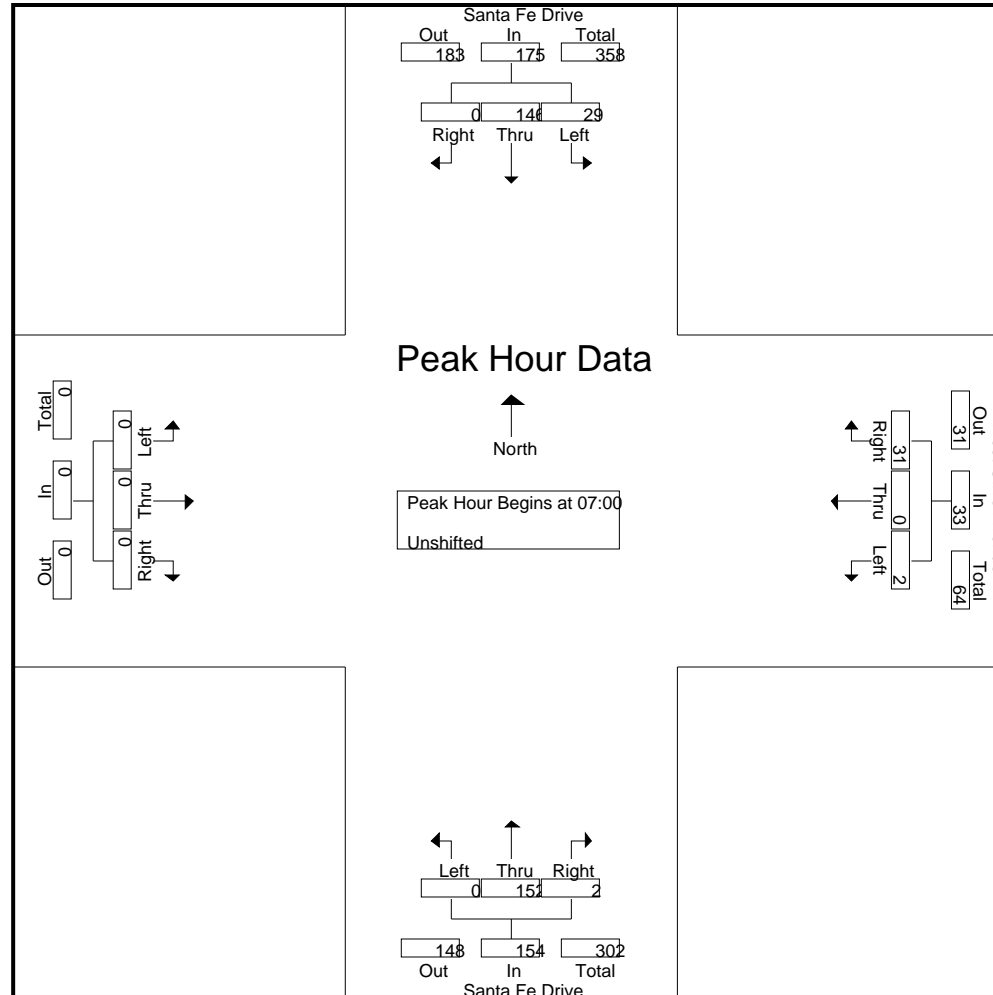
WINTON

File Name : 11-7342-008 Santa Fe-West Olive

Site Code : 00000000

Start Date : 8/23/2011

Page No : 3



All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-008 Santa Fe-West Olive

Site Code : 00000000

Start Date : 8/23/2011

Page No : 4

	Santa Fe Drive Southbound				West Olive Avenue Westbound				Santa Fe Drive 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 16:30																	
16:30	6	45	0	51	0	0	6	6	0	36	0	36	0	0	0	0	93
16:45	11	50	0	61	0	0	6	6	0	38	0	38	0	0	0	0	105
17:00	10	62	0	72	0	0	5	5	0	39	0	39	0	0	0	0	116
17:15	6	52	0	58	0	0	6	6	0	55	0	55	0	0	0	0	119
Total Volume	33	209	0	242	0	0	23	23	0	168	0	168	0	0	0	0	433
% App. Total	13.6	86.4	0		0	0	100		0	100	0		0	0	0		
PHF	.750	.843	.000	.840	.000	.000	.958	.958	.000	.764	.000	.764	.000	.000	.000	.000	.910

All Traffic Data

(916) 771-8700

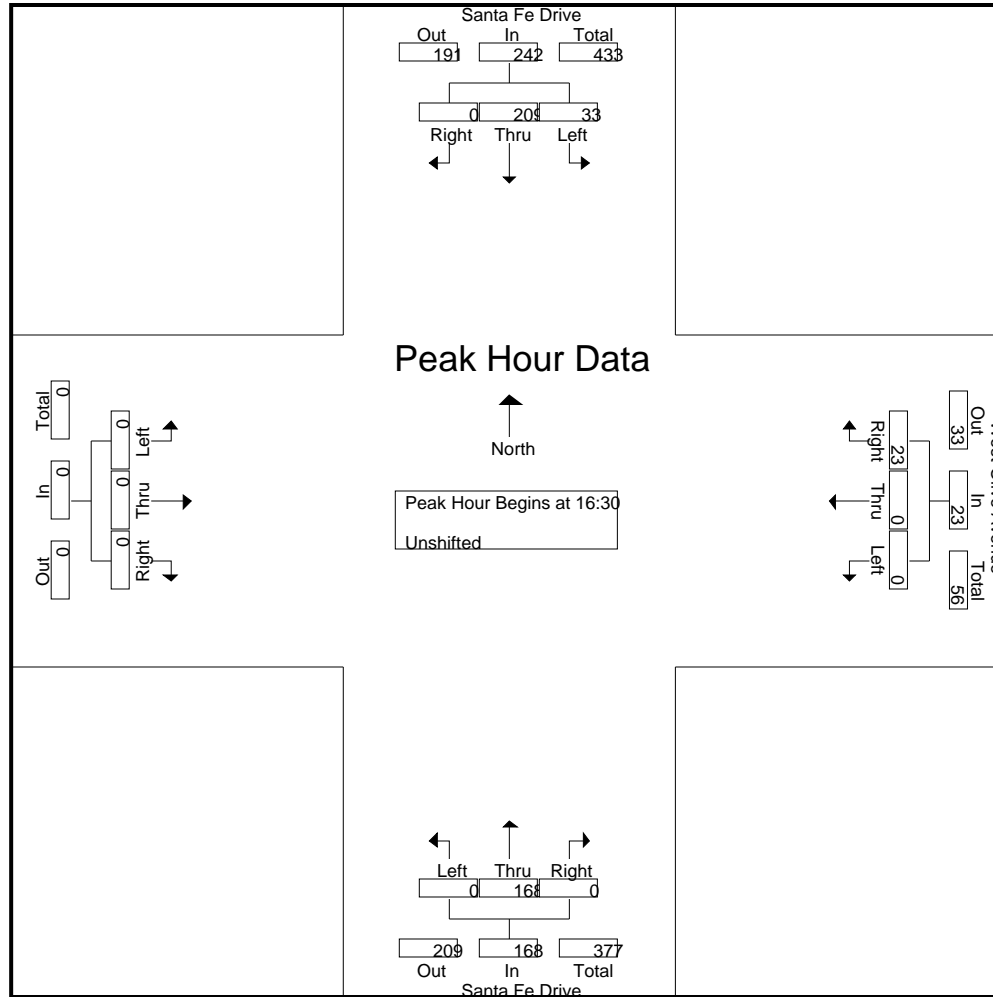
WINTON

File Name : 11-7342-008 Santa Fe-West Olive

Site Code : 00000000

Start Date : 8/23/2011

Page No : 5



All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-009 Santa Fe-Jones Road

Site Code : 00000000

Start Date : 8/23/2011

Page No : 1

Groups Printed- Unshifted

	Jones Road Avenue Southbound				Santa Fe Drive Westbound				Northbound				Santa Fe Drive 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
07:00	16	0	8	24	0	32	7	39	0	0	0	0	3	49	0	52	115
07:15	23	0	1	24	0	36	5	41	0	0	0	0	0	51	0	51	116
07:30	26	0	6	32	0	42	17	59	0	0	0	0	0	30	0	30	121
07:45	16	0	7	23	0	26	27	53	0	0	0	0	0	26	0	26	102
Total	81	0	22	103	0	136	56	192	0	0	0	0	3	156	0	159	454
08:00	8	0	2	10	0	31	13	44	0	0	0	0	2	29	0	31	85
08:15	9	0	2	11	0	28	7	35	0	0	0	0	1	24	0	25	71
08:30	7	0	5	12	0	30	5	35	0	0	0	0	0	28	0	28	75
08:45	11	0	6	17	0	19	7	26	0	0	0	0	0	30	0	30	73
Total	35	0	15	50	0	108	32	140	0	0	0	0	3	111	0	114	304
16:00	9	0	5	14	0	31	13	44	0	0	0	0	5	49	0	54	112
16:15	11	0	1	12	0	42	16	58	0	0	0	0	3	39	0	42	112
16:30	12	0	4	16	0	33	17	50	0	0	0	0	3	36	0	39	105
16:45	9	0	2	11	0	36	22	58	0	0	0	0	7	49	0	56	125
Total	41	0	12	53	0	142	68	210	0	0	0	0	18	173	0	191	454
17:00	11	0	4	15	0	36	11	47	0	0	0	0	3	59	0	62	124
17:15	10	0	2	12	0	54	13	67	0	0	0	0	4	49	0	53	132
17:30	16	0	3	19	0	33	15	48	0	0	0	0	2	39	0	41	108
17:45	13	0	1	14	0	28	9	37	0	0	0	0	5	36	0	41	92
Total	50	0	10	60	0	151	48	199	0	0	0	0	14	183	0	197	456
Grand Total	207	0	59	266	0	537	204	741	0	0	0	0	38	623	0	661	1668
Apprch %	77.8	0	22.2		0	72.5	27.5		0	0	0		5.7	94.3	0		
Total %	12.4	0	3.5	15.9	0	32.2	12.2	44.4	0	0	0	0	2.3	37.4	0	39.6	

All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-009 Santa Fe-Jones Road

Site Code : 00000000

Start Date : 8/23/2011

Page No : 2

	Jones Road Avenue Southbound				Santa Fe Drive Westbound				Northbound				Santa Fe Drive 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 07:00																	
07:00	16	0	8	24	0	32	7	39	0	0	0	0	3	49	0	52	115
07:15	23	0	1	24	0	36	5	41	0	0	0	0	0	51	0	51	116
07:30	26	0	6	32	0	42	17	59	0	0	0	0	0	30	0	30	121
07:45	16	0	7	23	0	26	27	53	0	0	0	0	0	26	0	26	102
Total Volume	81	0	22	103	0	136	56	192	0	0	0	0	3	156	0	159	454
% App. Total	78.6	0	21.4		0	70.8	29.2		0	0	0		1.9	98.1	0		
PHF	.779	.000	.688	.805	.000	.810	.519	.814	.000	.000	.000	.000	.250	.765	.000	.764	.938

All Traffic Data

(916) 771-8700

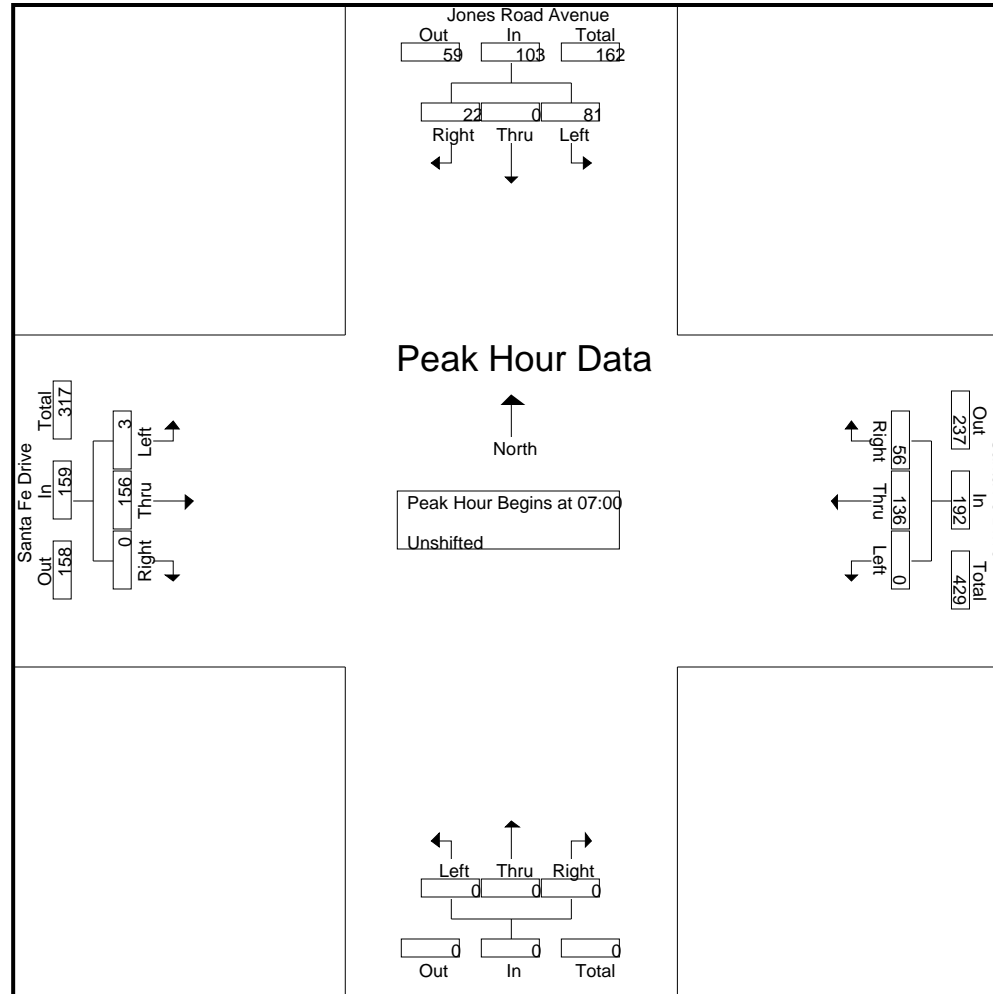
WINTON

File Name : 11-7342-009 Santa Fe-Jones Road

Site Code : 00000000

Start Date : 8/23/2011

Page No : 3



All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-009 Santa Fe-Jones Road

Site Code : 00000000

Start Date : 8/23/2011

Page No : 4

	Jones Road Avenue Southbound				Santa Fe Drive Westbound				Northbound				Santa Fe Drive 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 16:45																	
16:45	9	0	2	11	0	36	22	58	0	0	0	0	7	49	0	56	125
17:00	11	0	4	15	0	36	11	47	0	0	0	0	3	59	0	62	124
17:15	10	0	2	12	0	54	13	67	0	0	0	0	4	49	0	53	132
17:30	16	0	3	19	0	33	15	48	0	0	0	0	2	39	0	41	108
Total Volume	46	0	11	57	0	159	61	220	0	0	0	0	16	196	0	212	489
% App. Total	80.7	0	19.3		0	72.3	27.7		0	0	0		7.5	92.5	0		
PHF	.719	.000	.688	.750	.000	.736	.693	.821	.000	.000	.000	.000	.571	.831	.000	.855	.926

All Traffic Data

(916) 771-8700

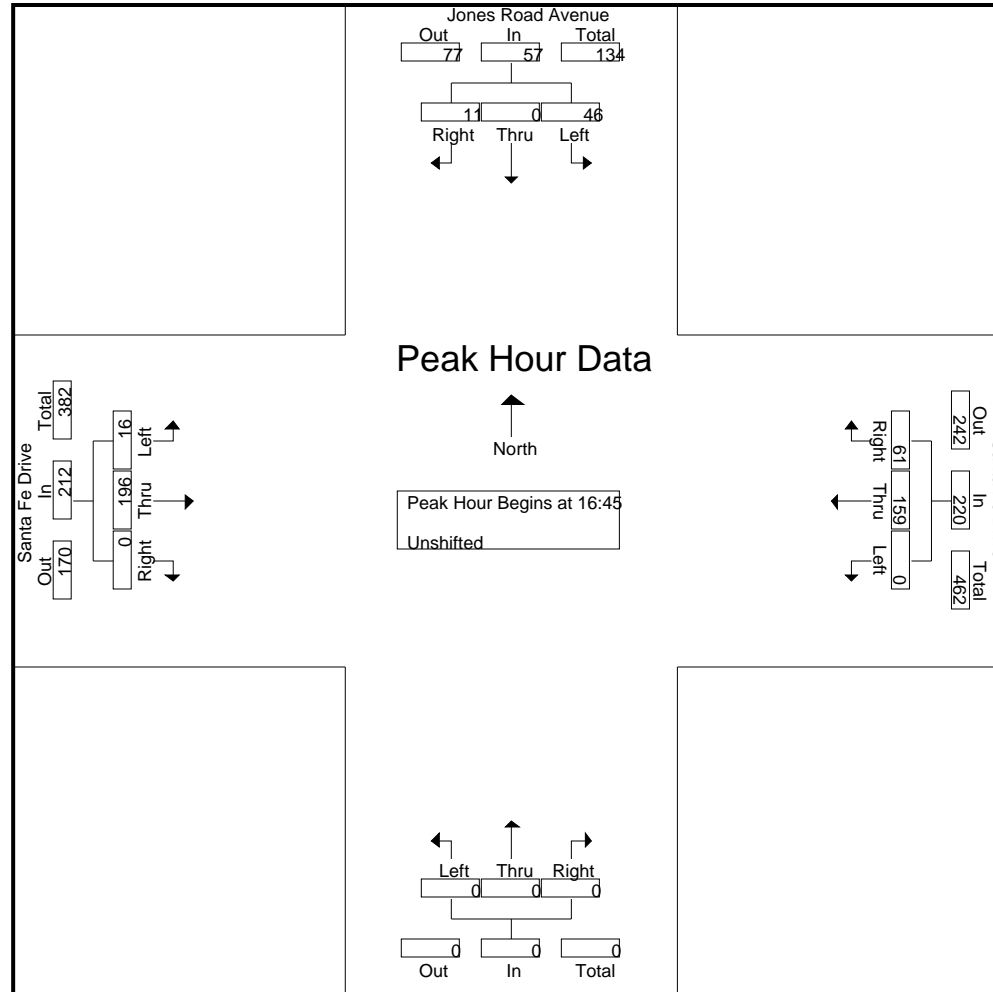
WINTON

File Name : 11-7342-009 Santa Fe-Jones Road

Site Code : 00000000

Start Date : 8/23/2011

Page No : 5



All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-010 Santa Fe-Walnut

Site Code : 00000000

Start Date : 8/23/2011

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Groups Printed- Unshifted

	Santa Fe Drive Southbound				Walnut Avenue Westbound				Santa Fe Drive Northbound				Walnut Avenue 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
07:00	4	59	8	71	3	29	10	42	12	27	9	48	8	30	30	68	229
07:15	4	60	10	74	3	27	7	37	13	25	9	47	6	32	29	67	225
07:30	4	37	12	53	4	46	6	56	20	40	8	68	5	49	33	87	264
07:45	11	31	4	46	7	33	15	55	20	38	2	60	9	44	28	81	242
Total	23	187	34	244	17	135	38	190	65	130	28	223	28	155	120	303	960
08:00	4	32	1	37	2	12	6	20	21	38	4	63	3	9	23	35	155
08:15	3	29	2	34	2	12	4	18	16	35	1	52	4	7	25	36	140
08:30	2	33	3	38	2	20	3	25	17	32	2	51	1	8	33	42	156
08:45	3	38	2	43	1	11	2	14	15	30	1	46	2	5	10	17	120
Total	12	132	8	152	7	55	15	77	69	135	8	212	10	29	91	130	571
16:00	3	51	6	60	4	22	2	28	31	39	5	75	4	25	24	53	216
16:15	3	51	7	61	4	22	2	28	30	41	5	76	5	25	24	54	219
16:30	10	35	7	52	2	23	6	31	36	46	6	88	3	22	29	54	225
16:45	5	53	5	63	2	15	7	24	30	52	5	87	3	21	24	48	222
Total	21	190	25	236	12	82	17	111	127	178	21	326	15	93	101	209	882
17:00	13	57	6	76	1	16	4	21	35	50	3	88	6	26	27	59	244
17:15	5	59	5	69	1	6	9	16	33	69	3	105	3	33	17	53	243
17:30	2	46	12	60	3	22	2	27	34	49	4	87	5	36	22	63	237
17:45	3	44	7	54	1	14	1	16	26	36	5	67	3	21	25	49	186
Total	23	206	30	259	6	58	16	80	128	204	15	347	17	116	91	224	910
Grand Total	79	715	97	891	42	330	86	458	389	647	72	1108	70	393	403	866	3323
Apprch %	8.9	80.2	10.9		9.2	72.1	18.8		35.1	58.4	6.5		8.1	45.4	46.5		
Total %	2.4	21.5	2.9	26.8	1.3	9.9	2.6	13.8	11.7	19.5	2.2	33.3	2.1	11.8	12.1	26.1	

All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-010 Santa Fe-Walnut

Site Code : 00000000

Start Date : 8/23/2011

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	Santa Fe Drive Southbound				Walnut Avenue Westbound				Santa Fe Drive Northbound				Walnut Avenue 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 07:00																	
07:00	4	59	8	71	3	29	10	42	12	27	9	48	8	30	30	68	229
07:15	4	60	10	74	3	27	7	37	13	25	9	47	6	32	29	67	225
07:30	4	37	12	53	4	46	6	56	20	40	8	68	5	49	33	87	264
07:45	11	31	4	46	7	33	15	55	20	38	2	60	9	44	28	81	242
Total Volume	23	187	34	244	17	135	38	190	65	130	28	223	28	155	120	303	960
% App. Total	9.4	76.6	13.9		8.9	71.1	20		29.1	58.3	12.6		9.2	51.2	39.6		
PHF	.523	.779	.708	.824	.607	.734	.633	.848	.813	.813	.778	.820	.778	.791	.909	.871	.909

All Traffic Data

(916) 771-8700

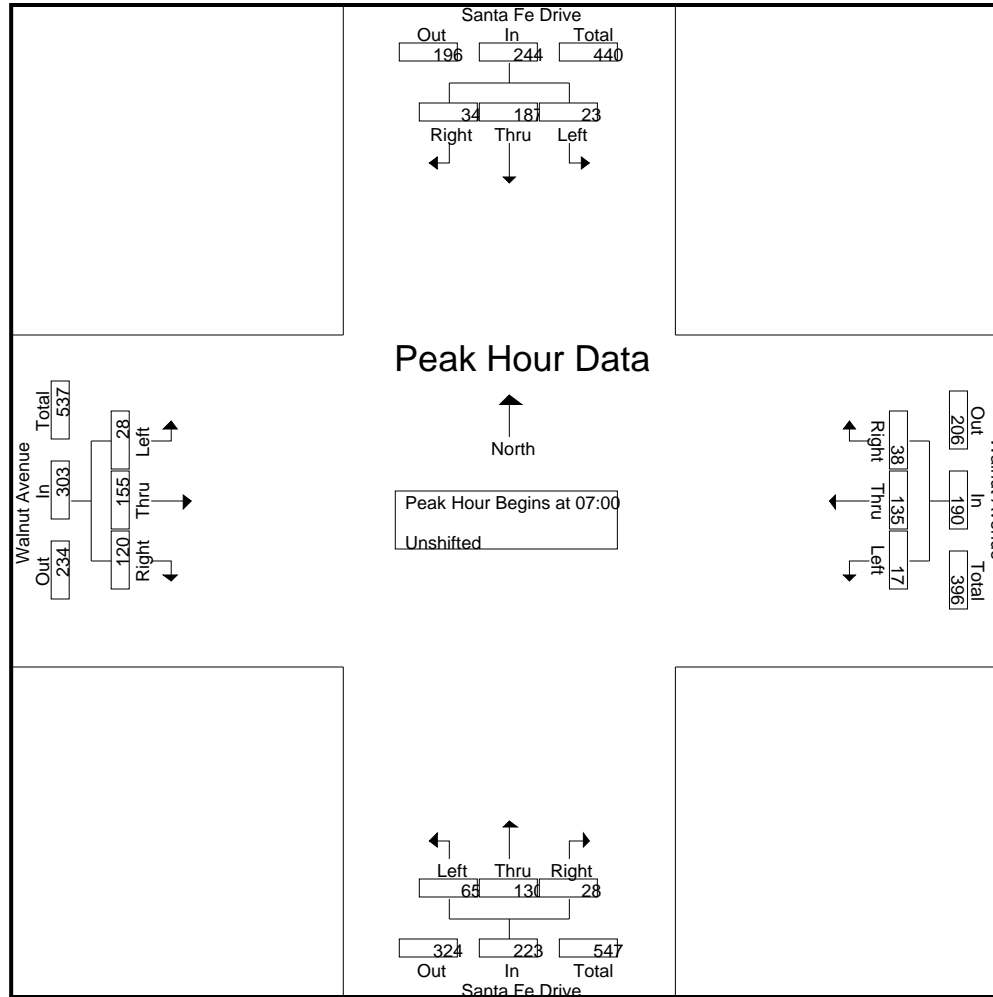
WINTON

File Name : 11-7342-010 Santa Fe-Walnut

Site Code : 00000000

Start Date : 8/23/2011

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All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-010 Santa Fe-Walnut

Site Code : 00000000

Start Date : 8/23/2011

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	Santa Fe Drive Southbound				Walnut Avenue Westbound				Santa Fe Drive Northbound				Walnut Avenue 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 16:45																	
16:45	5	53	5	63	2	15	7	24	30	52	5	87	3	21	24	48	222
17:00	13	57	6	76	1	16	4	21	35	50	3	88	6	26	27	59	244
17:15	5	59	5	69	1	6	9	16	33	69	3	105	3	33	17	53	243
17:30	2	46	12	60	3	22	2	27	34	49	4	87	5	36	22	63	237
Total Volume	25	215	28	268	7	59	22	88	132	220	15	367	17	116	90	223	946
% App. Total	9.3	80.2	10.4		8	67	25		36	59.9	4.1		7.6	52	40.4		
PHF	.481	.911	.583	.882	.583	.670	.611	.815	.943	.797	.750	.874	.708	.806	.833	.885	.969

All Traffic Data

(916) 771-8700

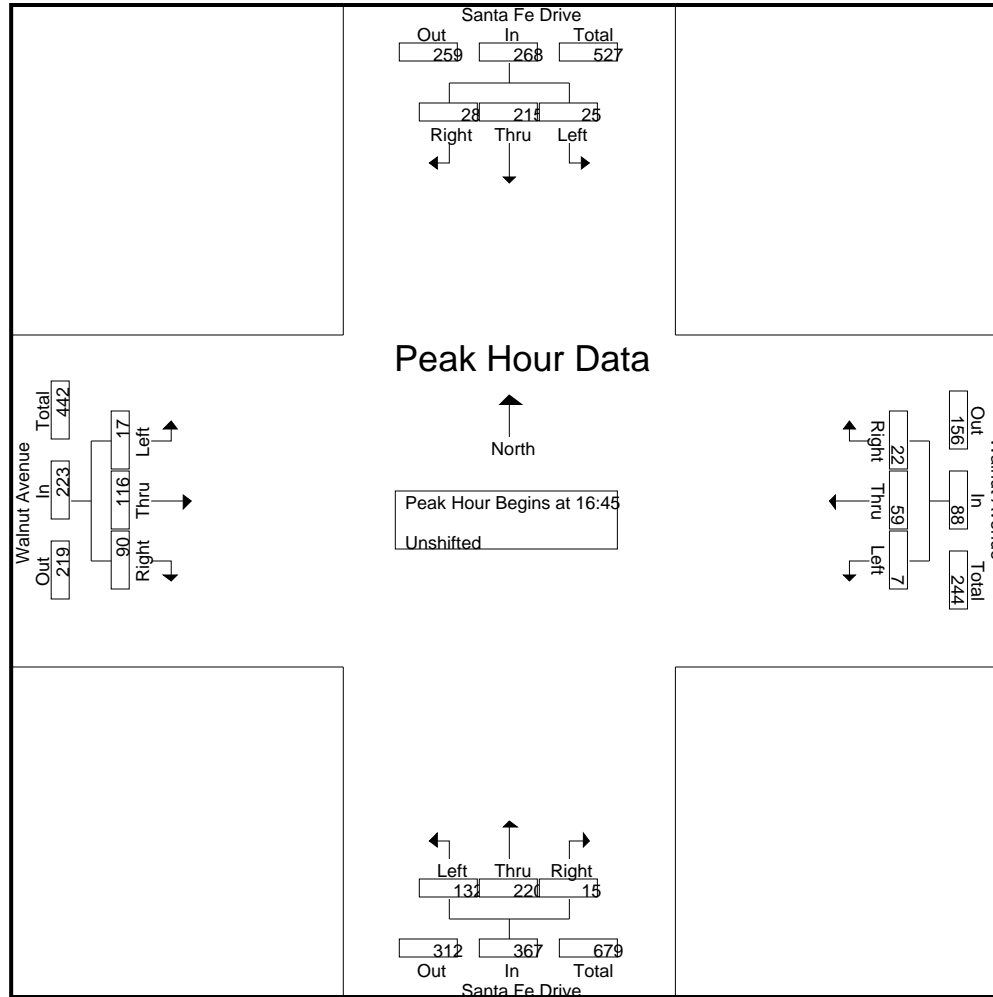
WINTON

File Name : 11-7342-010 Santa Fe-Walnut

Site Code : 00000000

Start Date : 8/23/2011

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All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-011 Santa Fe-California

Site Code : 00000000

Start Date : 8/23/2011

Page No : 1

Groups Printed- Unshifted

	California Street Southbound				Santa Fe Drive Westbound				Northbound				Santa Fe Drive 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
07:00	13	0	8	21	0	35	2	37	0	0	0	0	6	49	0	55	113
07:15	14	0	17	31	0	53	2	55	0	0	0	0	9	94	0	103	189
07:30	13	0	30	43	0	61	5	66	0	0	0	0	15	117	0	132	241
07:45	12	0	12	24	0	51	7	58	0	0	0	0	18	76	0	94	176
Total	52	0	67	119	0	200	16	216	0	0	0	0	48	336	0	384	719
08:00	12	0	4	16	0	49	6	55	0	0	0	0	7	67	0	74	145
08:15	19	0	10	29	0	43	11	54	0	0	0	0	5	62	0	67	150
08:30	8	0	8	16	0	40	6	46	0	0	0	0	4	65	0	69	131
08:45	9	0	12	21	0	38	4	42	0	0	0	0	5	49	0	54	117
Total	48	0	34	82	0	170	27	197	0	0	0	0	21	243	0	264	543
16:00	10	0	10	20	0	66	17	83	0	0	0	0	13	62	0	75	178
16:15	13	0	7	20	0	70	15	85	0	0	0	0	10	67	0	77	182
16:30	13	0	13	26	0	77	13	90	0	0	0	0	16	71	0	87	203
16:45	9	0	12	21	0	86	18	104	0	0	0	0	14	68	0	82	207
Total	45	0	42	87	0	299	63	362	0	0	0	0	53	268	0	321	770
17:00	12	0	5	17	0	82	17	99	0	0	0	0	11	67	0	78	194
17:15	17	0	8	25	0	91	19	110	0	0	0	0	10	71	0	81	216
17:30	16	0	13	29	0	78	12	90	0	0	0	0	22	83	0	105	224
17:45	8	0	19	27	0	86	14	100	0	0	0	0	11	63	0	74	201
Total	53	0	45	98	0	337	62	399	0	0	0	0	54	284	0	338	835
Grand Total	198	0	188	386	0	1006	168	1174	0	0	0	0	176	1131	0	1307	2867
Apprch %	51.3	0	48.7		0	85.7	14.3		0	0	0		13.5	86.5	0		
Total %	6.9	0	6.6	13.5	0	35.1	5.9	40.9	0	0	0	0	6.1	39.4	0	45.6	

All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-011 Santa Fe-California

Site Code : 00000000

Start Date : 8/23/2011

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	California Street Southbound				Santa Fe Drive Westbound				Northbound				Santa Fe Drive 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	14	0	17	31	0	53	2	55	0	0	0	0	9	94	0	103	189
07:30	13	0	30	43	0	61	5	66	0	0	0	0	15	117	0	132	241
07:45	12	0	12	24	0	51	7	58	0	0	0	0	18	76	0	94	176
08:00	12	0	4	16	0	49	6	55	0	0	0	0	7	67	0	74	145
Total Volume	51	0	63	114	0	214	20	234	0	0	0	0	49	354	0	403	751
% App. Total	44.7	0	55.3		0	91.5	8.5		0	0	0		12.2	87.8	0		
PHF	.911	.000	.525	.663	.000	.877	.714	.886	.000	.000	.000	.000	.681	.756	.000	.763	.779

All Traffic Data

(916) 771-8700

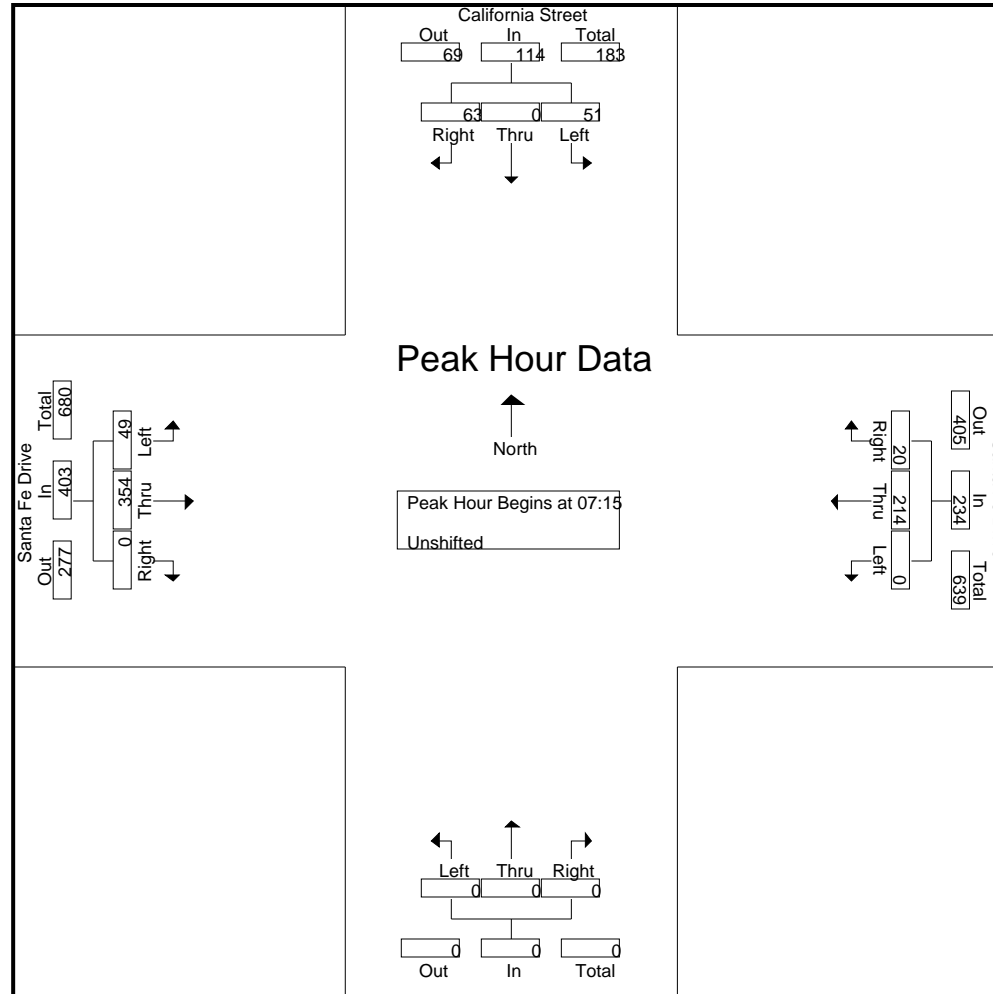
WINTON

File Name : 11-7342-011 Santa Fe-California

Site Code : 00000000

Start Date : 8/23/2011

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All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-011 Santa Fe-California

Site Code : 00000000

Start Date : 8/23/2011

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	California Street Southbound				Santa Fe Drive Westbound				Northbound				Santa Fe Drive 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 16:45																	
16:45	9	0	12	21	0	86	18	104	0	0	0	0	14	68	0	82	207
17:00	12	0	5	17	0	82	17	99	0	0	0	0	11	67	0	78	194
17:15	17	0	8	25	0	91	19	110	0	0	0	0	10	71	0	81	216
17:30	16	0	13	29	0	78	12	90	0	0	0	0	22	83	0	105	224
Total Volume	54	0	38	92	0	337	66	403	0	0	0	0	57	289	0	346	841
% App. Total	58.7	0	41.3		0	83.6	16.4		0	0	0		16.5	83.5	0		
PHF	.794	.000	.731	.793	.000	.926	.868	.916	.000	.000	.000	.000	.648	.870	.000	.824	.939

All Traffic Data

(916) 771-8700

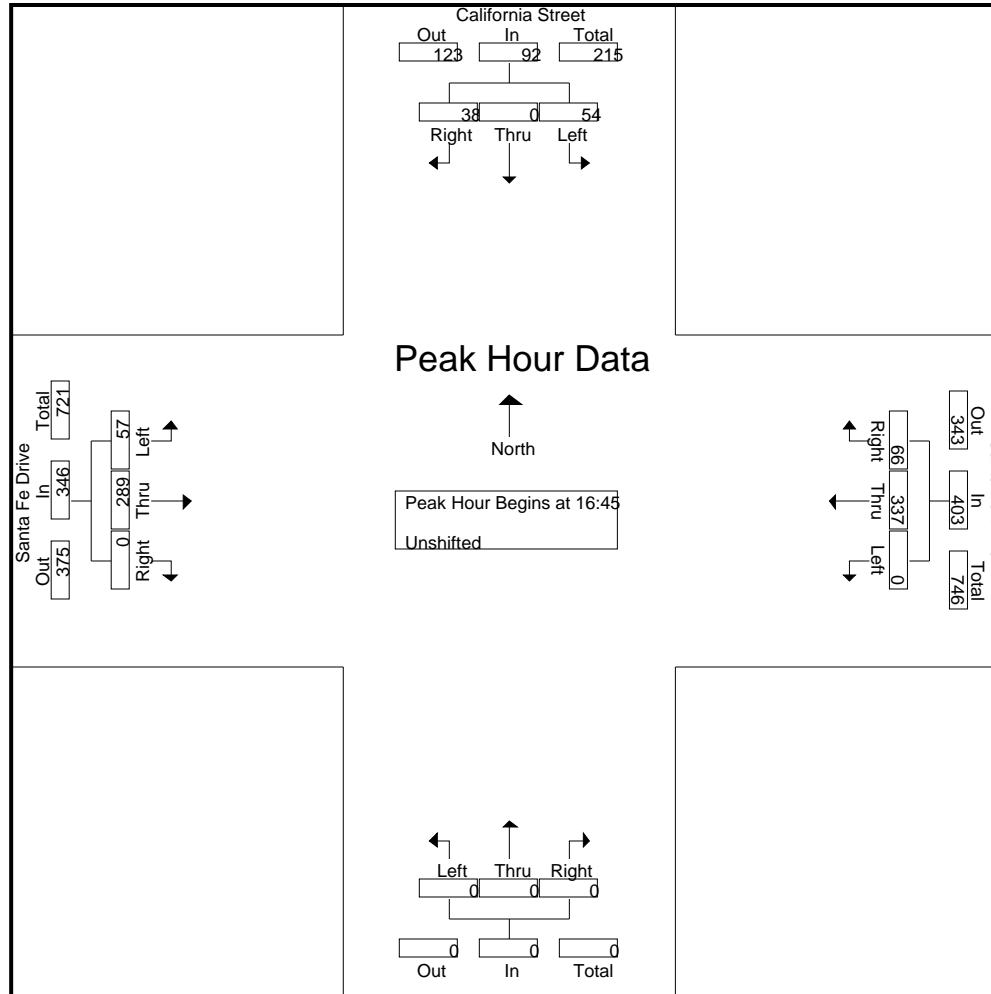
WINTON

File Name : 11-7342-011 Santa Fe-California

Site Code : 00000000

Start Date : 8/23/2011

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All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-012 Santa Fe-Chestnut

Site Code : 00000000

Start Date : 8/23/2011

Page No : 1

Groups Printed- Unshifted

	Chestnut Lane Southbound				Santa Fe Drive Westbound				Northbound				Santa Fe Drive 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
07:00	3	0	1	4	0	37	7	44	0	0	0	0	2	56	0	58	106
07:15	9	0	5	14	0	51	6	57	0	0	0	0	4	102	0	106	177
07:30	11	0	5	16	0	60	12	72	0	0	0	0	6	128	0	134	222
07:45	18	0	4	22	0	51	8	59	0	0	0	0	8	69	0	77	158
Total	41	0	15	56	0	199	33	232	0	0	0	0	20	355	0	375	663
08:00	11	0	4	15	0	51	7	58	0	0	0	0	4	79	0	83	156
08:15	12	0	5	17	0	51	4	55	0	0	0	0	2	80	0	82	154
08:30	5	0	3	8	0	41	7	48	0	0	0	0	0	75	0	75	131
08:45	9	0	2	11	0	41	4	45	0	0	0	0	1	52	0	53	109
Total	37	0	14	51	0	184	22	206	0	0	0	0	7	286	0	293	550
16:00	9	0	3	12	0	82	5	87	0	0	0	0	0	75	0	75	174
16:15	4	0	1	5	0	83	8	91	0	0	0	0	3	77	0	80	176
16:30	7	0	3	10	0	91	4	95	0	0	0	0	2	81	0	83	188
16:45	5	0	0	5	0	104	5	109	0	0	0	0	4	73	0	77	191
Total	25	0	7	32	0	360	22	382	0	0	0	0	9	306	0	315	729
17:00	6	0	3	9	0	96	3	99	0	0	0	0	4	79	0	83	191
17:15	6	0	1	7	0	105	14	119	0	0	0	0	0	89	0	89	215
17:30	4	0	1	5	0	94	10	104	0	0	0	0	3	98	0	101	210
17:45	2	0	2	4	0	98	16	114	0	0	0	0	5	63	0	68	186
Total	18	0	7	25	0	393	43	436	0	0	0	0	12	329	0	341	802
Grand Total	121	0	43	164	0	1136	120	1256	0	0	0	0	48	1276	0	1324	2744
Apprch %	73.8	0	26.2		0	90.4	9.6		0	0	0		3.6	96.4	0		
Total %	4.4	0	1.6	6	0	41.4	4.4	45.8	0	0	0	0	1.7	46.5	0	48.3	

All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-012 Santa Fe-Chestnut

Site Code : 00000000

Start Date : 8/23/2011

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	Chestnut Lane Southbound				Santa Fe Drive Westbound				Northbound				Santa Fe Drive 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	9	0	5	14	0	51	6	57	0	0	0	0	4	102	0	106	177
07:30	11	0	5	16	0	60	12	72	0	0	0	0	6	128	0	134	222
07:45	18	0	4	22	0	51	8	59	0	0	0	0	8	69	0	77	158
08:00	11	0	4	15	0	51	7	58	0	0	0	0	4	79	0	83	156
Total Volume	49	0	18	67	0	213	33	246	0	0	0	0	22	378	0	400	713
% App. Total	73.1	0	26.9		0	86.6	13.4		0	0	0		5.5	94.5	0		
PHF	.681	.000	.900	.761	.000	.888	.688	.854	.000	.000	.000	.000	.688	.738	.000	.746	.803

All Traffic Data

(916) 771-8700

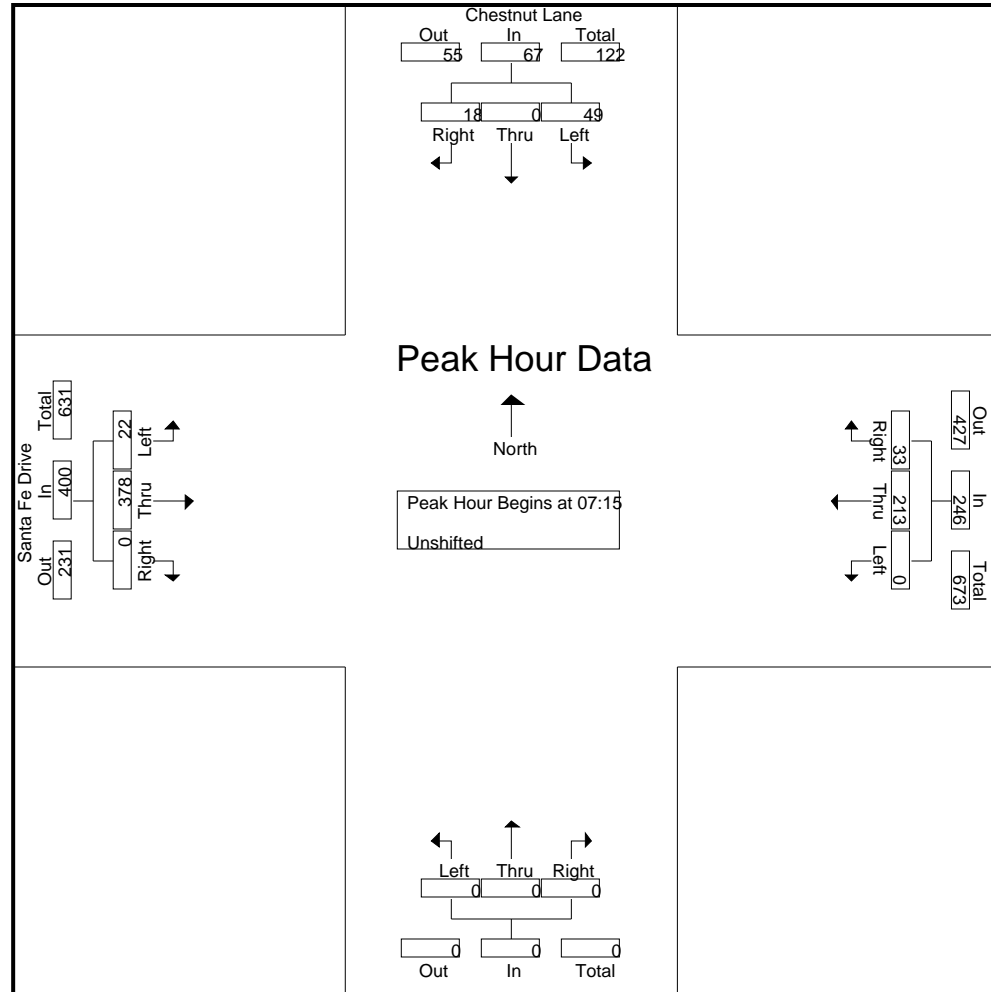
WINTON

File Name : 11-7342-012 Santa Fe-Chestnut

Site Code : 00000000

Start Date : 8/23/2011

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All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-012 Santa Fe-Chestnut

Site Code : 00000000

Start Date : 8/23/2011

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	Chestnut Lane Southbound				Santa Fe Drive Westbound				Northbound				Santa Fe Drive 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 16:45																	
16:45	5	0	0	5	0	104	5	109	0	0	0	0	4	73	0	77	191
17:00	6	0	3	9	0	96	3	99	0	0	0	0	4	79	0	83	191
17:15	6	0	1	7	0	105	14	119	0	0	0	0	0	89	0	89	215
17:30	4	0	1	5	0	94	10	104	0	0	0	0	3	98	0	101	210
Total Volume	21	0	5	26	0	399	32	431	0	0	0	0	11	339	0	350	807
% App. Total	80.8	0	19.2		0	92.6	7.4		0	0	0		3.1	96.9	0		
PHF	.875	.000	.417	.722	.000	.950	.571	.905	.000	.000	.000	.000	.688	.865	.000	.866	.938

All Traffic Data

(916) 771-8700

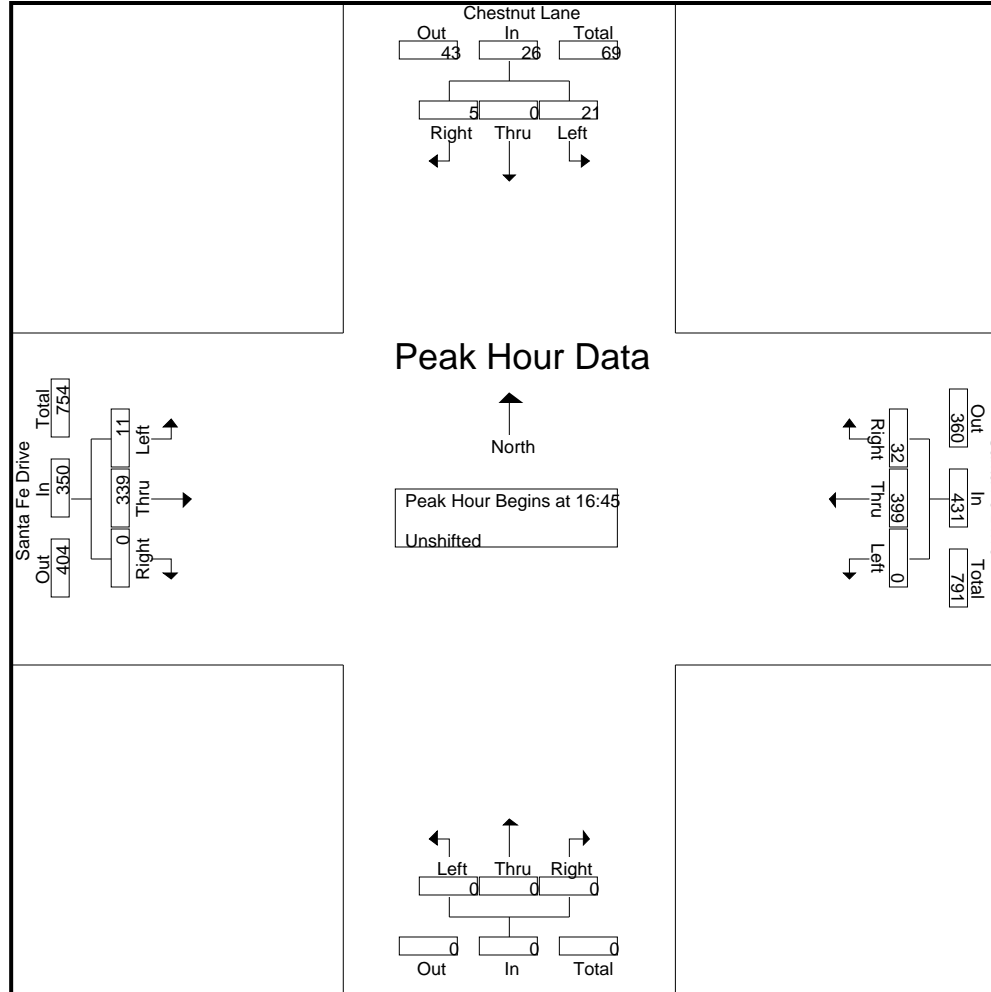
WINTON

File Name : 11-7342-012 Santa Fe-Chestnut

Site Code : 00000000

Start Date : 8/23/2011

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All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-013 Santa Fe-Shaffer

Site Code : 00000000

Start Date : 8/23/2011

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Groups Printed- Unshifted

	Shaffer Road Southbound				Santa Fe Drive Westbound				Shaffer Road Northbound				Santa Fe Drive 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
07:00	17	22	0	39	20	34	5	59	12	17	32	61	1	39	15	55	214
07:15	16	15	0	31	27	52	8	87	8	17	69	94	0	87	16	103	315
07:30	39	16	0	55	28	48	14	90	23	22	90	135	0	117	17	134	414
07:45	23	12	0	35	22	43	11	76	15	20	92	127	0	79	24	103	341
Total	95	65	0	160	97	177	38	312	58	76	283	417	1	322	72	395	1284
08:00	9	12	0	21	16	37	11	64	18	14	35	67	1	69	16	86	238
08:15	8	8	2	18	22	35	7	64	16	11	23	50	0	74	23	97	229
08:30	8	13	0	21	10	27	6	43	16	14	27	57	0	59	15	74	195
08:45	11	18	0	29	16	34	4	54	14	8	27	49	0	50	18	68	200
Total	36	51	2	89	64	133	28	225	64	47	112	223	1	252	72	325	862
16:00	17	26	3	46	37	69	12	118	19	20	21	60	0	61	21	82	306
16:15	12	29	1	42	40	71	7	118	19	24	23	66	1	55	18	74	300
16:30	6	30	0	36	40	79	13	132	24	25	18	67	1	70	27	98	333
16:45	19	35	1	55	51	94	18	163	11	19	29	59	0	55	26	81	358
Total	54	120	5	179	168	313	50	531	73	88	91	252	2	241	92	335	1297
17:00	14	21	1	36	46	68	10	124	34	24	25	83	2	47	30	79	322
17:15	11	25	0	36	44	74	13	131	33	12	23	68	0	60	30	90	325
17:30	18	16	1	35	45	86	14	145	18	22	19	59	1	75	32	108	347
17:45	7	13	0	20	15	79	11	105	34	15	19	68	1	35	20	56	249
Total	50	75	2	127	150	307	48	505	119	73	86	278	4	217	112	333	1243
Grand Total	235	311	9	555	479	930	164	1573	314	284	572	1170	8	1032	348	1388	4686
Apprch %	42.3	56	1.6		30.5	59.1	10.4		26.8	24.3	48.9		0.6	74.4	25.1		
Total %	5	6.6	0.2	11.8	10.2	19.8	3.5	33.6	6.7	6.1	12.2	25	0.2	22	7.4	29.6	

All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-013 Santa Fe-Shaffer

Site Code : 00000000

Start Date : 8/23/2011

Page No : 2

	Shaffer Road Southbound				Santa Fe Drive Westbound				Shaffer Road Northbound				Santa Fe Drive 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	16	15	0	31	27	52	8	87	8	17	69	94	0	87	16	103	315
07:30	39	16	0	55	28	48	14	90	23	22	90	135	0	117	17	134	414
07:45	23	12	0	35	22	43	11	76	15	20	92	127	0	79	24	103	341
08:00	9	12	0	21	16	37	11	64	18	14	35	67	1	69	16	86	238
Total Volume	87	55	0	142	93	180	44	317	64	73	286	423	1	352	73	426	1308
% App. Total	61.3	38.7	0		29.3	56.8	13.9		15.1	17.3	67.6		0.2	82.6	17.1		
PHF	.558	.859	.000	.645	.830	.865	.786	.881	.696	.830	.777	.783	.250	.752	.760	.795	.790

All Traffic Data

(916) 771-8700

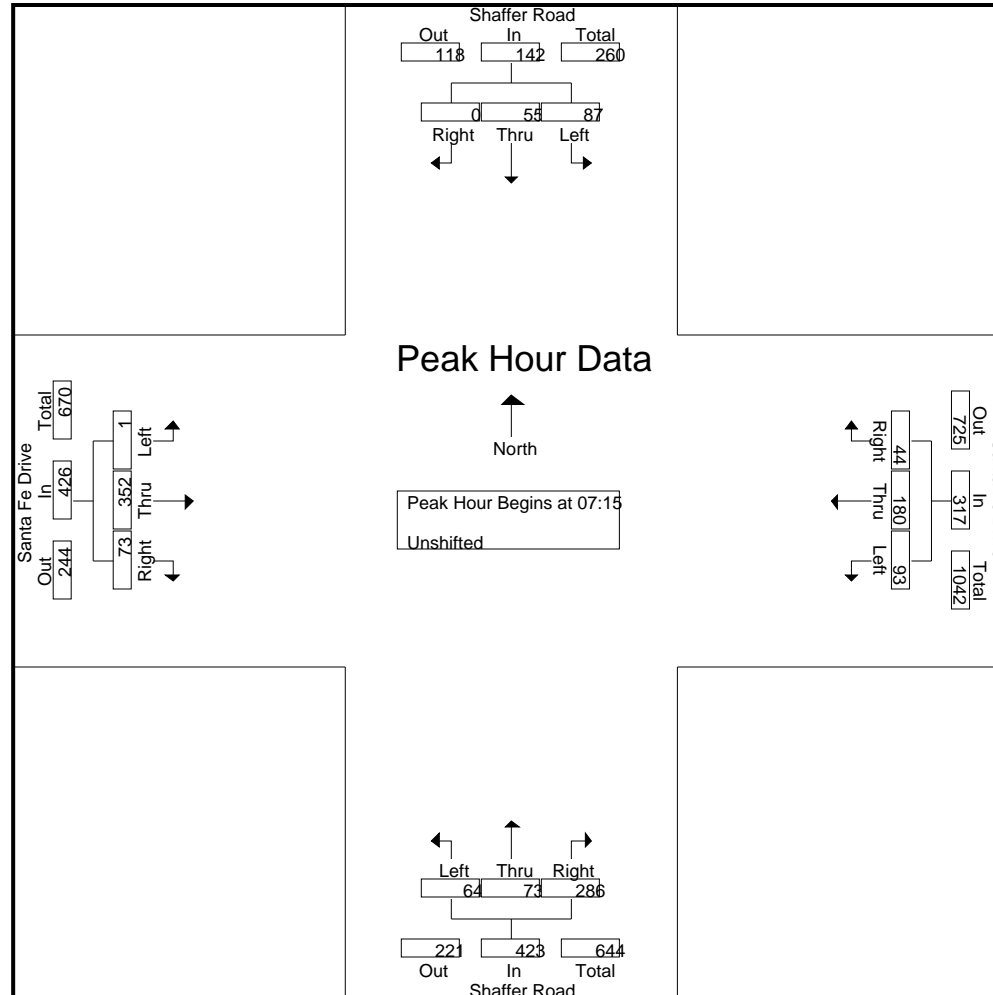
WINTON

File Name : 11-7342-013 Santa Fe-Shaffer

Site Code : 00000000

Start Date : 8/23/2011

Page No : 3



All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-013 Santa Fe-Shaffer

Site Code : 00000000

Start Date : 8/23/2011

Page No : 4

	Shaffer Road Southbound				Santa Fe Drive Westbound				Shaffer Road Northbound				Santa Fe Drive 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 16:45																	
16:45	19	35	1	55	51	94	18	163	11	19	29	59	0	55	26	81	358
17:00	14	21	1	36	46	68	10	124	34	24	25	83	2	47	30	79	322
17:15	11	25	0	36	44	74	13	131	33	12	23	68	0	60	30	90	325
17:30	18	16	1	35	45	86	14	145	18	22	19	59	1	75	32	108	347
Total Volume	62	97	3	162	186	322	55	563	96	77	96	269	3	237	118	358	1352
% App. Total	38.3	59.9	1.9		33	57.2	9.8		35.7	28.6	35.7		0.8	66.2	33		
PHF	.816	.693	.750	.736	.912	.856	.764	.863	.706	.802	.828	.810	.375	.790	.922	.829	.944

All Traffic Data

(916) 771-8700

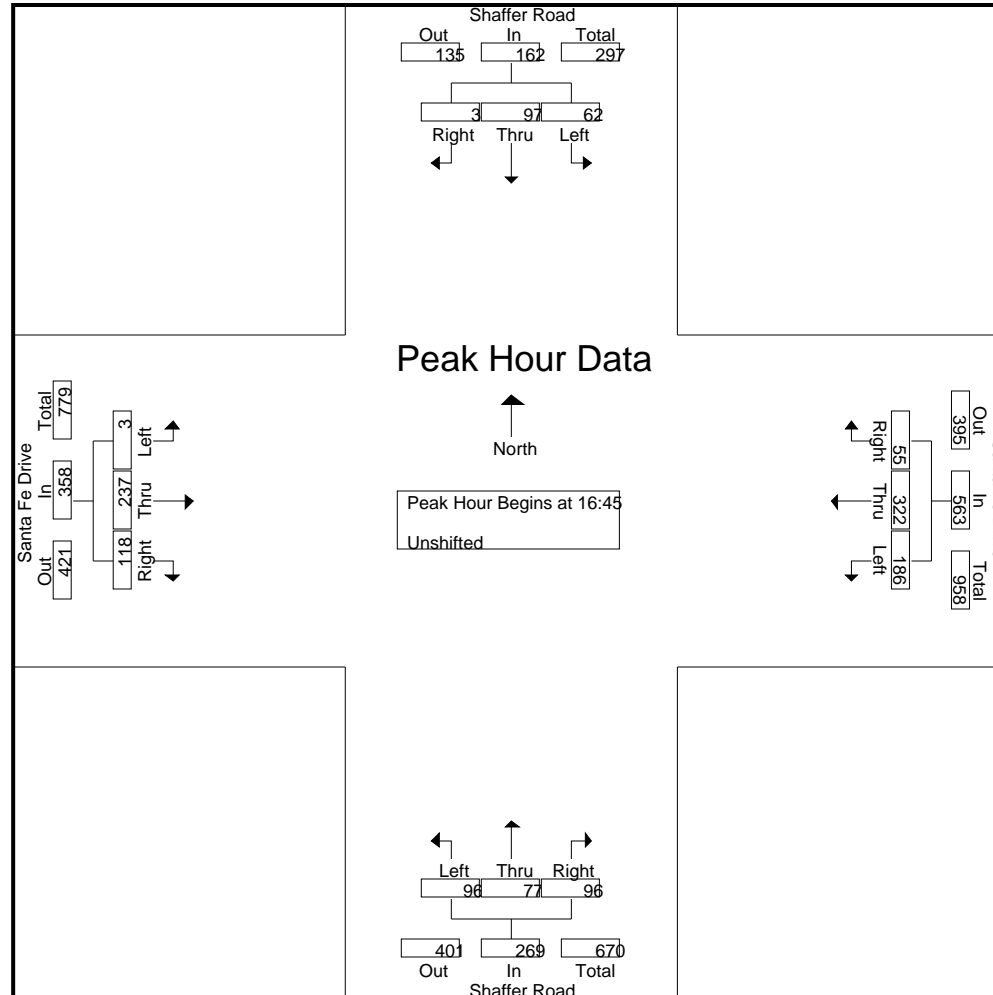
WINTON

File Name : 11-7342-013 Santa Fe-Shaffer

Site Code : 00000000

Start Date : 8/23/2011

Page No : 5



All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-014 Winton-Camilla

Site Code : 00000000

Start Date : 8/24/2011

Page No : 1

Groups Printed- Unshifted

	Winton Way Southbound				Camilla Avenue Westbound				Winton Way 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
07:00	4	58	0	62	16	0	7	23	0	34	19	53	0	0	0	0	138
07:15	6	101	0	107	34	0	6	40	0	72	30	102	0	0	0	0	249
07:30	7	136	0	143	23	0	7	30	0	111	22	133	0	0	0	0	306
07:45	8	152	0	160	33	0	11	44	0	111	24	135	0	0	0	0	339
Total	25	447	0	472	106	0	31	137	0	328	95	423	0	0	0	0	1032
08:00	5	90	0	95	15	0	7	22	0	91	25	116	0	0	0	0	233
08:15	6	61	0	67	7	0	5	12	0	49	12	61	0	0	0	0	140
08:30	8	45	0	53	4	0	5	9	0	45	19	64	0	0	0	0	126
08:45	5	68	0	73	5	0	8	13	0	49	12	61	0	0	0	0	147
Total	24	264	0	288	31	0	25	56	0	234	68	302	0	0	0	0	646
16:00	10	95	0	105	15	0	2	17	0	89	22	111	0	0	0	0	233
16:15	9	102	0	111	18	0	8	26	0	108	16	124	0	0	0	0	261
16:30	13	81	0	94	23	0	3	26	0	67	17	84	0	0	0	0	204
16:45	9	99	0	108	22	0	7	29	0	100	17	117	0	0	0	0	254
Total	41	377	0	418	78	0	20	98	0	364	72	436	0	0	0	0	952
17:00	9	108	0	117	16	0	2	18	0	93	17	110	0	0	0	0	245
17:15	9	86	0	95	23	0	11	34	0	97	22	119	0	0	0	0	248
17:30	9	82	0	91	16	0	4	20	0	122	30	152	0	0	0	0	263
17:45	5	82	0	87	17	0	4	21	0	112	14	126	0	0	0	0	234
Total	32	358	0	390	72	0	21	93	0	424	83	507	0	0	0	0	990
Grand Total	122	1446	0	1568	287	0	97	384	0	1350	318	1668	0	0	0	0	3620
Apprch %	7.8	92.2	0		74.7	0	25.3		0	80.9	19.1		0	0	0		
Total %	3.4	39.9	0	43.3	7.9	0	2.7	10.6	0	37.3	8.8	46.1	0	0	0	0	

All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-014 Winton-Camilla

Site Code : 00000000

Start Date : 8/24/2011

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	Winton Way Southbound				Camilla Avenue Westbound				Winton Way 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	6	101	0	107	34	0	6	40	0	72	30	102	0	0	0	0	249
07:30	7	136	0	143	23	0	7	30	0	111	22	133	0	0	0	0	306
07:45	8	152	0	160	33	0	11	44	0	111	24	135	0	0	0	0	339
08:00	5	90	0	95	15	0	7	22	0	91	25	116	0	0	0	0	233
Total Volume	26	479	0	505	105	0	31	136	0	385	101	486	0	0	0	0	1127
% App. Total	5.1	94.9	0		77.2	0	22.8		0	79.2	20.8		0	0	0		
PHF	.813	.788	.000	.789	.772	.000	.705	.773	.000	.867	.842	.900	.000	.000	.000	.000	.831

All Traffic Data

(916) 771-8700

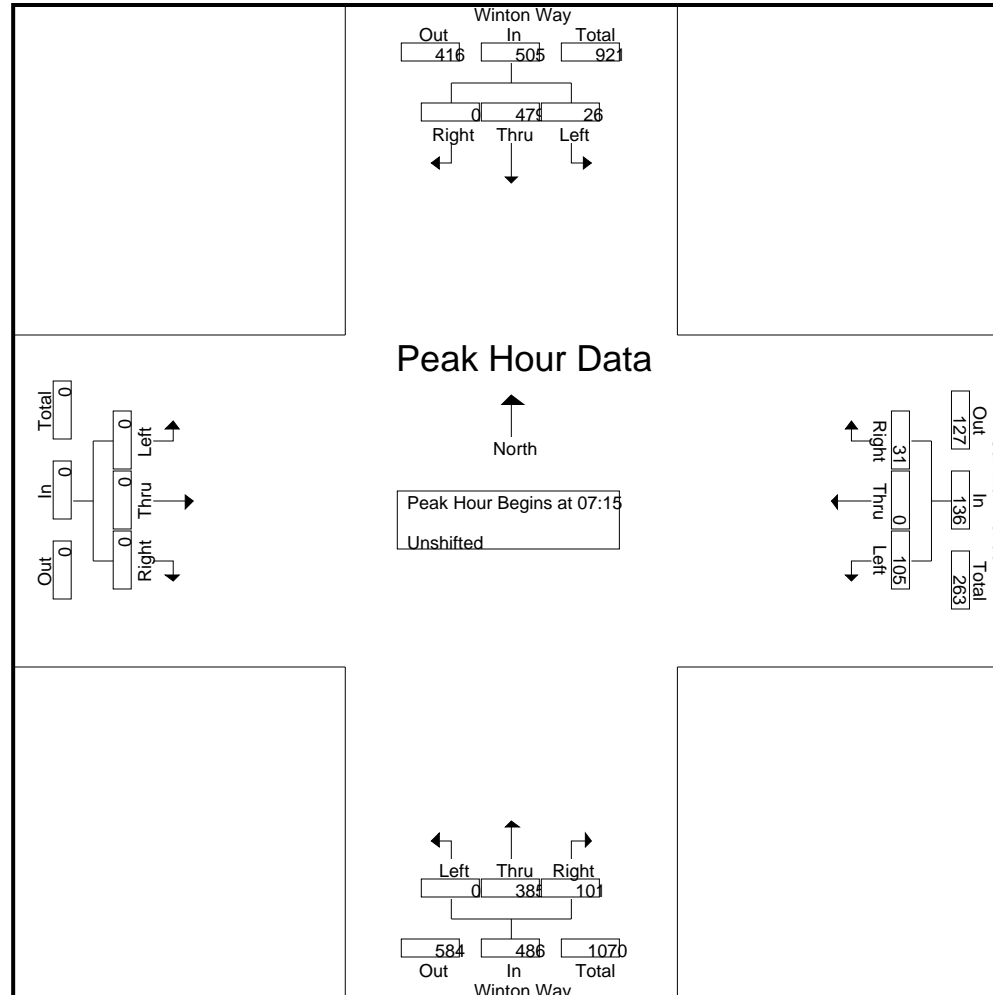
WINTON

File Name : 11-7342-014 Winton-Camilla

Site Code : 00000000

Start Date : 8/24/2011

Page No : 3



All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-014 Winton-Camilla

Site Code : 00000000

Start Date : 8/24/2011

Page No : 4

	Winton Way Southbound				Camilla Avenue Westbound				Winton Way 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 16:45																	
16:45	9	99	0	108	22	0	7	29	0	100	17	117	0	0	0	0	254
17:00	9	108	0	117	16	0	2	18	0	93	17	110	0	0	0	0	245
17:15	9	86	0	95	23	0	11	34	0	97	22	119	0	0	0	0	248
17:30	9	82	0	91	16	0	4	20	0	122	30	152	0	0	0	0	263
Total Volume	36	375	0	411	77	0	24	101	0	412	86	498	0	0	0	0	1010
% App. Total	8.8	91.2	0		76.2	0	23.8		0	82.7	17.3		0	0	0		
PHF	1.000	.868	.000	.878	.837	.000	.545	.743	.000	.844	.717	.819	.000	.000	.000	.000	.960

All Traffic Data

(916) 771-8700

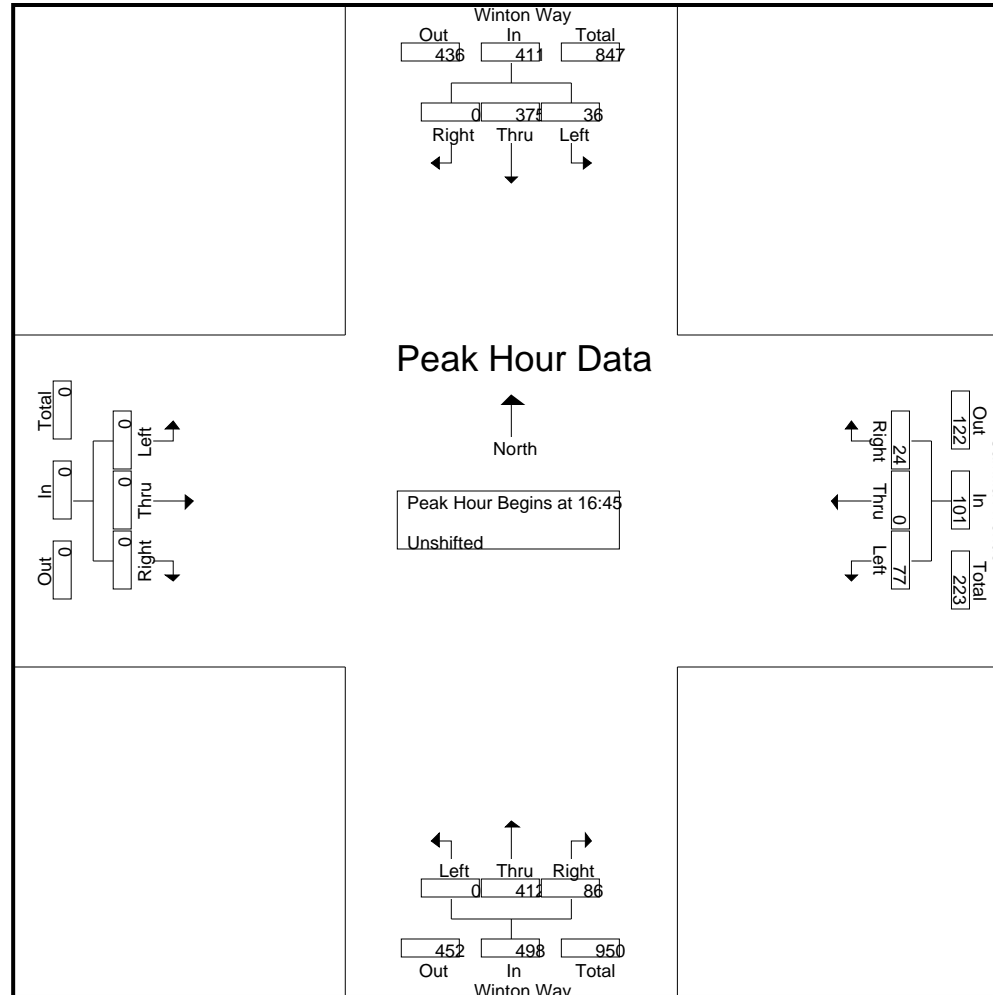
WINTON

File Name : 11-7342-014 Winton-Camilla

Site Code : 00000000

Start Date : 8/24/2011

Page No : 5



All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-015 Shaffer-Olive

Site Code : 00000000

Start Date : 8/23/2011

Page No : 1

Groups Printed- Unshifted

	Shaffer Road Southbound				Olive Avenue Westbound				Shaffer Road Northbound				Olive Avenue 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
07:00	0	24	2	26	0	0	0	0	0	16	1	17	1	0	5	6	49
07:15	0	32	0	32	0	0	0	0	4	19	0	23	1	0	5	6	61
07:30	0	38	1	39	1	0	0	1	4	29	0	33	4	0	5	9	82
07:45	0	18	1	19	0	0	0	0	3	23	1	27	3	0	9	12	58
Total	0	112	4	116	1	0	0	1	11	87	2	100	9	0	24	33	250
08:00	0	11	1	12	0	0	0	0	3	27	0	30	3	1	5	9	51
08:15	0	11	0	11	0	0	0	0	2	16	0	18	0	0	2	2	31
08:30	0	22	1	23	0	1	0	1	0	13	0	13	1	0	2	3	40
08:45	0	25	3	28	0	0	0	0	3	11	0	14	2	0	1	3	45
Total	0	69	5	74	0	1	0	1	8	67	0	75	6	1	10	17	167
16:00	0	41	8	49	1	0	0	1	2	28	2	32	1	0	5	6	88
16:15	0	39	11	50	0	0	0	0	2	21	0	23	3	1	3	7	80
16:30	1	32	5	38	1	1	0	2	9	24	1	34	4	0	2	6	80
16:45	0	56	4	60	0	1	0	1	6	30	0	36	3	1	5	9	106
Total	1	168	28	197	2	2	0	4	19	103	3	125	11	2	15	28	354
17:00	0	36	7	43	1	0	0	1	8	18	0	26	4	0	4	8	78
17:15	0	23	3	26	0	0	0	0	6	20	0	26	2	0	8	10	62
17:30	0	27	7	34	1	0	0	1	5	21	0	26	1	0	6	7	68
17:45	0	22	3	25	0	1	0	1	9	17	0	26	1	0	5	6	58
Total	0	108	20	128	2	1	0	3	28	76	0	104	8	0	23	31	266
Grand Total	1	457	57	515	5	4	0	9	66	333	5	404	34	3	72	109	1037
Apprch %	0.2	88.7	11.1		55.6	44.4	0		16.3	82.4	1.2		31.2	2.8	66.1		
Total %	0.1	44.1	5.5	49.7	0.5	0.4	0	0.9	6.4	32.1	0.5	39	3.3	0.3	6.9	10.5	

All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-015 Shaffer-Olive

Site Code : 00000000

Start Date : 8/23/2011

Page No : 2

	Shaffer Road Southbound				Olive Avenue Westbound				Shaffer Road Northbound				Olive Avenue 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	32	0	32	0	0	0	0	4	19	0	23	1	0	5	6	61
07:30	0	38	1	39	1	0	0	1	4	29	0	33	4	0	5	9	82
07:45	0	18	1	19	0	0	0	0	3	23	1	27	3	0	9	12	58
08:00	0	11	1	12	0	0	0	0	3	27	0	30	3	1	5	9	51
Total Volume	0	99	3	102	1	0	0	1	14	98	1	113	11	1	24	36	252
% App. Total	0	97.1	2.9		100	0	0		12.4	86.7	0.9		30.6	2.8	66.7		
PHF	.000	.651	.750	.654	.250	.000	.000	.250	.875	.845	.250	.856	.688	.250	.667	.750	.768

All Traffic Data

(916) 771-8700

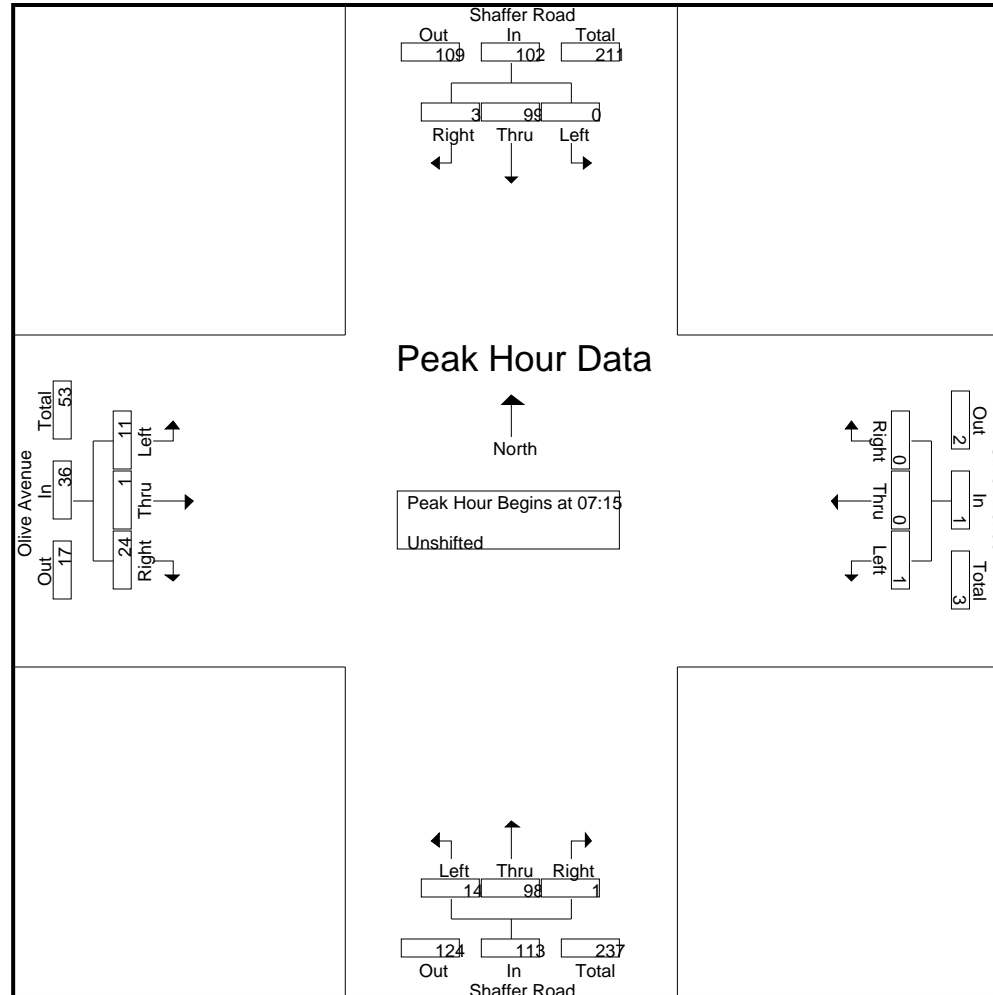
WINTON

File Name : 11-7342-015 Shaffer-Olive

Site Code : 00000000

Start Date : 8/23/2011

Page No : 3



All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-015 Shaffer-Olive

Site Code : 00000000

Start Date : 8/23/2011

Page No : 4

	Shaffer Road Southbound				Olive Avenue Westbound				Shaffer Road Northbound				Olive Avenue 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 16:00																	
16:00	0	41	8	49	1	0	0	1	2	28	2	32	1	0	5	6	88
16:15	0	39	11	50	0	0	0	0	2	21	0	23	3	1	3	7	80
16:30	1	32	5	38	1	1	0	2	9	24	1	34	4	0	2	6	80
16:45	0	56	4	60	0	1	0	1	6	30	0	36	3	1	5	9	106
Total Volume	1	168	28	197	2	2	0	4	19	103	3	125	11	2	15	28	354
% App. Total	0.5	85.3	14.2		50	50	0		15.2	82.4	2.4		39.3	7.1	53.6		
PHF	.250	.750	.636	.821	.500	.500	.000	.500	.528	.858	.375	.868	.688	.500	.750	.778	.835

All Traffic Data

(916) 771-8700

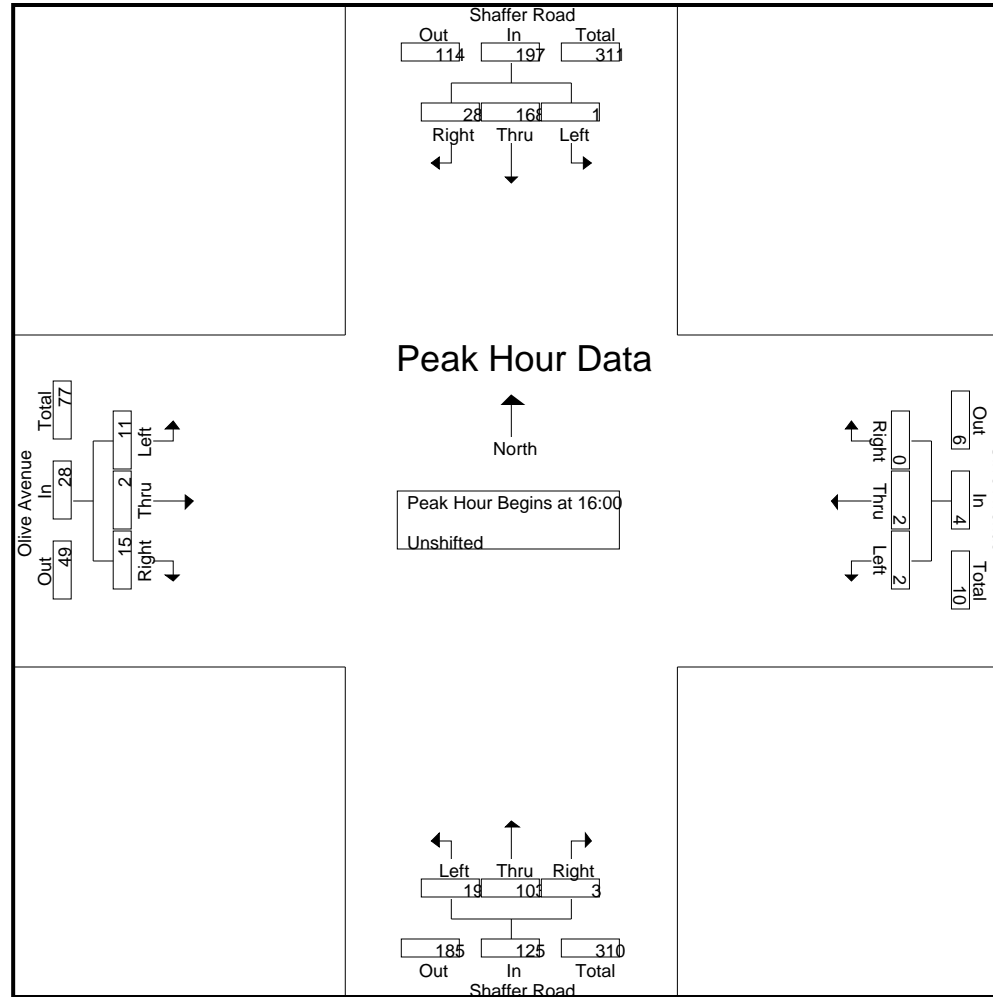
WINTON

File Name : 11-7342-015 Shaffer-Olive

Site Code : 00000000

Start Date : 8/23/2011

Page No : 5



All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-016 Walnut-Cypress

Site Code : 00000000

Start Date : 8/23/2011

Page No : 1

Groups Printed- Unshifted

	Private Driveway Southbound				Cypress Avenue Westbound				Walnut Avneue Northbound				Cypress Avenue 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
07:00	0	0	0	0	23	24	0	47	14	0	29	43	0	34	12	46	136
07:15	0	0	0	0	25	25	0	50	16	0	31	47	0	38	18	56	153
07:30	1	0	0	1	39	42	0	81	16	0	37	53	0	48	19	67	202
07:45	0	0	0	0	23	35	0	58	20	0	41	61	0	42	17	59	178
Total	1	0	0	1	110	126	0	236	66	0	138	204	0	162	66	228	669
08:00	0	0	0	0	12	25	0	37	12	0	9	21	0	23	7	30	88
08:15	0	0	0	0	5	24	0	29	9	0	9	18	0	27	6	33	80
08:30	0	0	0	0	5	35	0	40	14	0	4	18	0	36	8	44	102
08:45	0	0	0	0	3	20	0	23	11	0	5	16	0	14	5	19	58
Total	0	0	0	0	25	104	0	129	46	0	27	73	0	100	26	126	328
16:00	0	0	0	0	21	39	0	60	15	0	20	35	0	33	14	47	142
16:15	0	0	0	0	7	36	0	43	16	1	12	29	0	39	11	50	122
16:30	0	0	2	2	18	43	0	61	16	0	11	27	0	42	17	59	149
16:45	0	1	0	1	14	35	0	49	14	1	14	29	0	36	9	45	124
Total	0	1	2	3	60	153	0	213	61	2	57	120	0	150	51	201	537
17:00	0	0	0	0	12	47	0	59	13	0	23	36	0	36	8	44	139
17:15	0	0	0	0	8	33	0	41	15	0	8	23	1	45	12	58	122
17:30	0	1	0	1	22	42	0	64	13	1	19	33	0	39	19	58	156
17:45	0	0	0	0	15	40	0	55	12	0	14	26	0	34	26	60	141
Total	0	1	0	1	57	162	0	219	53	1	64	118	1	154	65	220	558
Grand Total	1	2	2	5	252	545	0	797	226	3	286	515	1	566	208	775	2092
Apprch %	20	40	40		31.6	68.4	0		43.9	0.6	55.5		0.1	73	26.8		
Total %	0	0.1	0.1	0.2	12	26.1	0	38.1	10.8	0.1	13.7	24.6	0	27.1	9.9	37	

All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-016 Walnut-Cypress

Site Code : 00000000

Start Date : 8/23/2011

Page No : 2

	Private Driveway Southbound				Cypress Avenue Westbound				Walnut Avenue Northbound				Cypress Avenue 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 07:00																	
07:00	0	0	0	0	23	24	0	47	14	0	29	43	0	34	12	46	136
07:15	0	0	0	0	25	25	0	50	16	0	31	47	0	38	18	56	153
07:30	1	0	0	1	39	42	0	81	16	0	37	53	0	48	19	67	202
07:45	0	0	0	0	23	35	0	58	20	0	41	61	0	42	17	59	178
Total Volume	1	0	0	1	110	126	0	236	66	0	138	204	0	162	66	228	669
% App. Total	100	0	0		46.6	53.4	0		32.4	0	67.6		0	71.1	28.9		
PHF	.250	.000	.000	.250	.705	.750	.000	.728	.825	.000	.841	.836	.000	.844	.868	.851	.828

All Traffic Data

(916) 771-8700

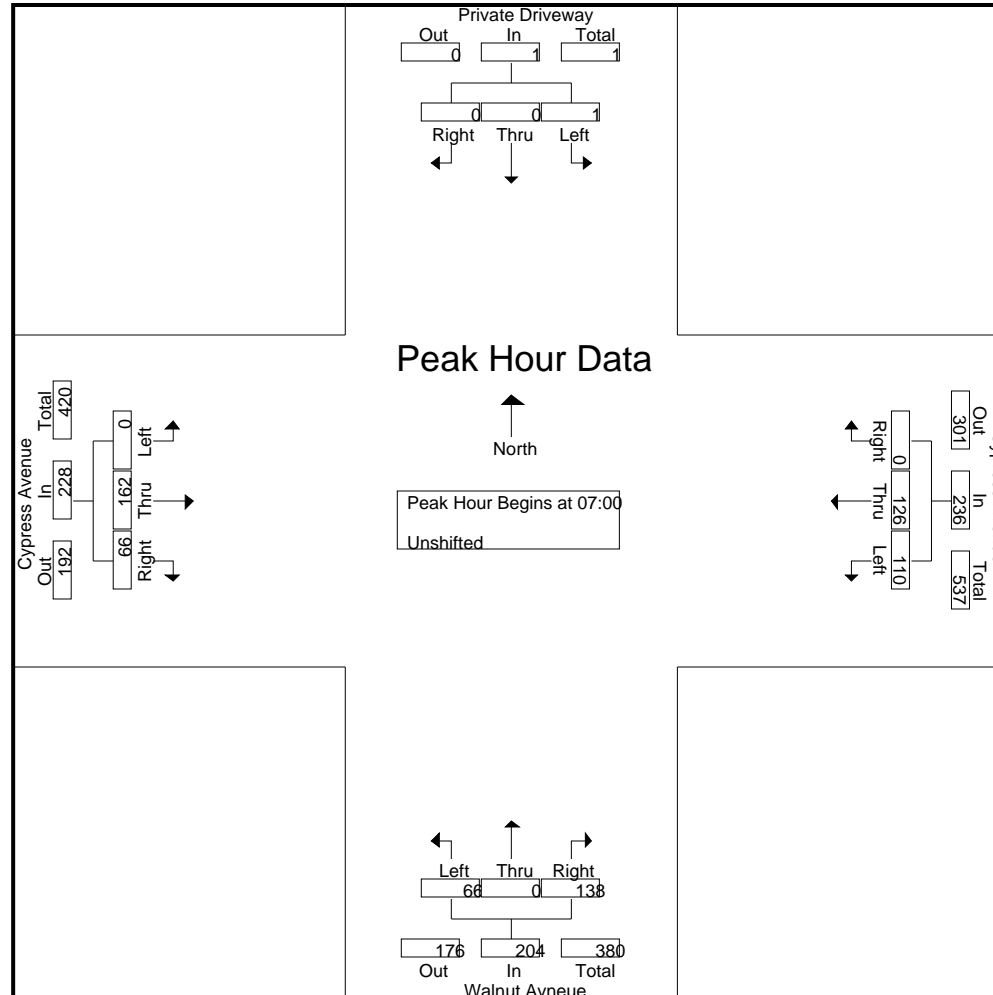
WINTON

File Name : 11-7342-016 Walnut-Cypress

Site Code : 00000000

Start Date : 8/23/2011

Page No : 3



All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-016 Walnut-Cypress

Site Code : 00000000

Start Date : 8/23/2011

Page No : 4

	Private Driveway Southbound				Cypress Avenue Westbound				Walnut Avenue Northbound				Cypress Avenue 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	0	0	0	0	12	47	0	59	13	0	23	36	0	36	8	44	139
17:15	0	0	0	0	8	33	0	41	15	0	8	23	1	45	12	58	122
17:30	0	1	0	1	22	42	0	64	13	1	19	33	0	39	19	58	156
17:45	0	0	0	0	15	40	0	55	12	0	14	26	0	34	26	60	141
Total Volume	0	1	0	1	57	162	0	219	53	1	64	118	1	154	65	220	558
% App. Total	0	100	0		26	74	0		44.9	0.8	54.2		0.5	70	29.5		
PHF	.000	.250	.000	.250	.648	.862	.000	.855	.883	.250	.696	.819	.250	.856	.625	.917	.894

All Traffic Data

(916) 771-8700

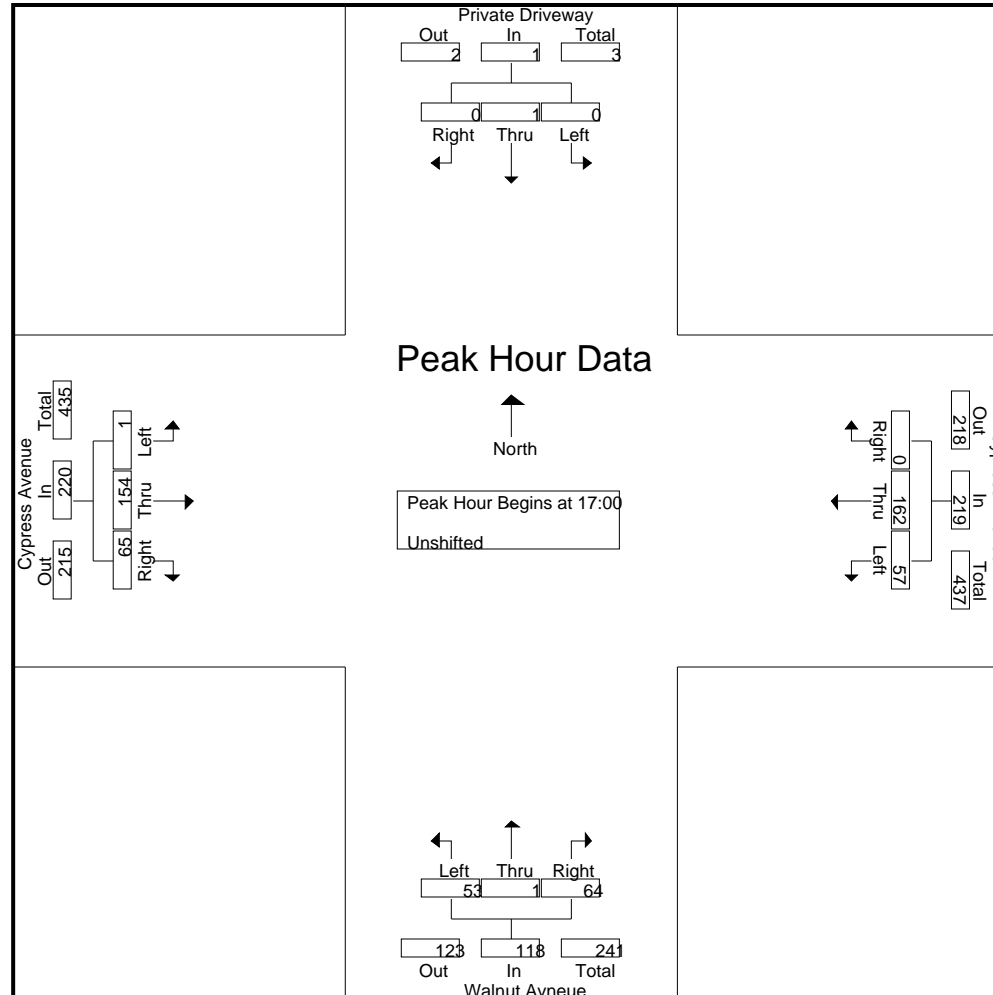
WINTON

File Name : 11-7342-016 Walnut-Cypress

Site Code : 00000000

Start Date : 8/23/2011

Page No : 5



All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-017 Walnut-California

Site Code : 00000000

Start Date : 8/24/2011

Page No : 1

Groups Printed- Unshifted

	Walnut Avneue Southbound				California Street Westbound				Walnut Avneue Northbound				California Street 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
07:00	4	3	2	9	0	6	3	9	2	13	3	18	0	4	1	5	41
07:15	4	2	11	17	4	21	0	25	28	12	6	46	2	18	11	31	119
07:30	12	6	12	30	7	30	4	41	61	16	6	83	7	36	20	63	217
07:45	6	2	10	18	9	19	6	34	31	12	3	46	7	29	31	67	165
Total	26	13	35	74	20	76	13	109	122	53	18	193	16	87	63	166	542
08:00	7	5	0	12	3	10	4	17	1	15	6	22	1	13	11	25	76
08:15	3	4	0	7	4	4	7	15	2	12	3	17	1	2	2	5	44
08:30	6	4	0	10	2	1	3	6	2	6	3	11	0	1	1	2	29
08:45	9	5	0	14	1	1	2	4	0	8	3	11	0	5	1	6	35
Total	25	18	0	43	10	16	16	42	5	41	15	61	2	21	15	38	184
16:00	2	6	1	9	7	8	8	23	2	13	3	18	4	11	1	16	66
16:15	13	8	3	24	13	5	10	28	3	14	11	28	2	11	5	18	98
16:30	10	13	0	23	6	5	12	23	1	12	5	18	1	6	3	10	74
16:45	4	9	1	14	10	4	11	25	2	8	5	15	3	9	3	15	69
Total	29	36	5	70	36	22	41	99	8	47	24	79	10	37	12	59	307
17:00	13	15	0	28	6	9	8	23	2	10	6	18	1	2	1	4	73
17:15	7	16	0	23	8	6	7	21	1	16	4	21	2	10	1	13	78
17:30	9	12	0	21	7	4	7	18	3	11	2	16	0	8	3	11	66
17:45	4	15	0	19	4	7	8	19	1	15	10	26	0	8	2	10	74
Total	33	58	0	91	25	26	30	81	7	52	22	81	3	28	7	38	291
Grand Total	113	125	40	278	91	140	100	331	142	193	79	414	31	173	97	301	1324
Apprch %	40.6	45	14.4		27.5	42.3	30.2		34.3	46.6	19.1		10.3	57.5	32.2		
Total %	8.5	9.4	3	21	6.9	10.6	7.6	25	10.7	14.6	6	31.3	2.3	13.1	7.3	22.7	

All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-017 Walnut-California

Site Code : 00000000

Start Date : 8/24/2011

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	Walnut Avneue Southbound				California Street Westbound				Walnut Avneue Northbound				California Street 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	4	2	11	17	4	21	0	25	28	12	6	46	2	18	11	31	119
07:30	12	6	12	30	7	30	4	41	61	16	6	83	7	36	20	63	217
07:45	6	2	10	18	9	19	6	34	31	12	3	46	7	29	31	67	165
08:00	7	5	0	12	3	10	4	17	1	15	6	22	1	13	11	25	76
Total Volume	29	15	33	77	23	80	14	117	121	55	21	197	17	96	73	186	577
% App. Total	37.7	19.5	42.9		19.7	68.4	12		61.4	27.9	10.7		9.1	51.6	39.2		
PHF	.604	.625	.688	.642	.639	.667	.583	.713	.496	.859	.875	.593	.607	.667	.589	.694	.665

All Traffic Data

(916) 771-8700

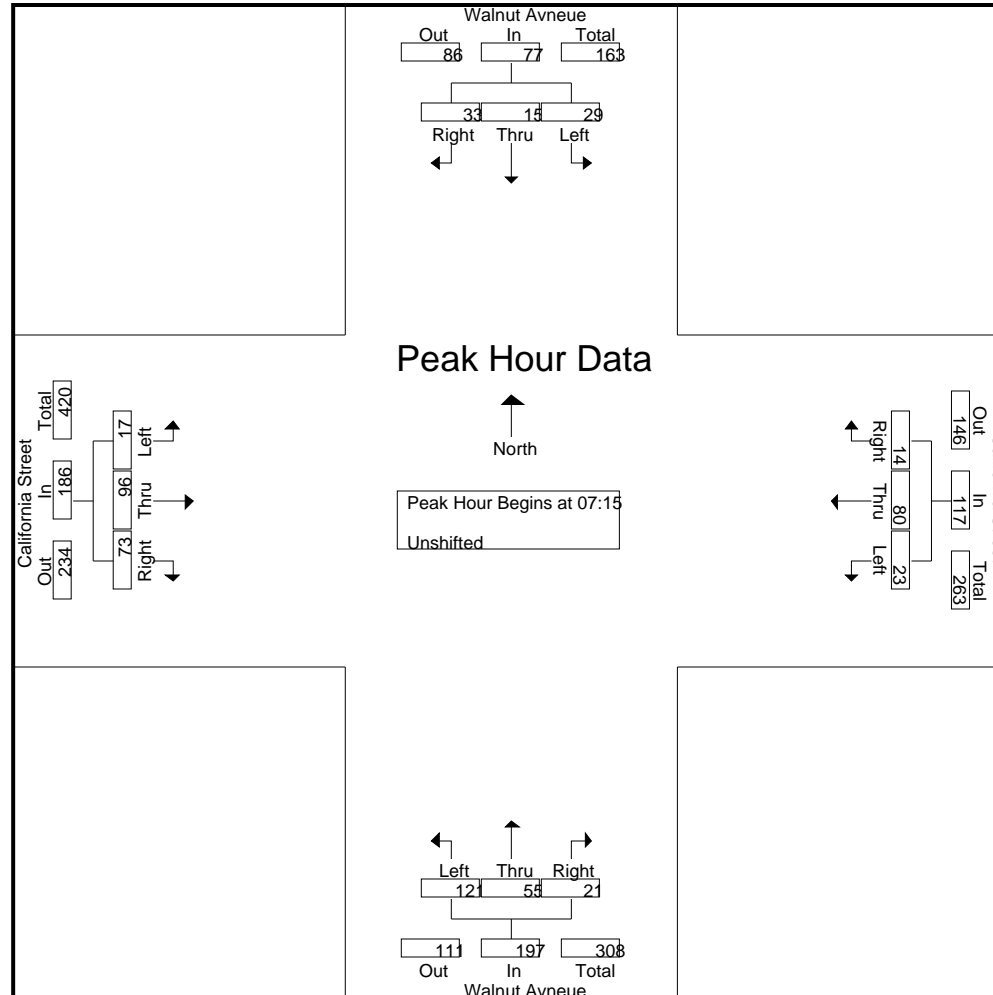
WINTON

File Name : 11-7342-017 Walnut-California

Site Code : 00000000

Start Date : 8/24/2011

Page No : 3



All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-017 Walnut-California

Site Code : 00000000

Start Date : 8/24/2011

Page No : 4

	Walnut Avneue Southbound				California Street Westbound				Walnut Avneue Northbound				California Street 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 16:15																	
16:15	13	8	3	24	13	5	10	28	3	14	11	28	2	11	5	18	98
16:30	10	13	0	23	6	5	12	23	1	12	5	18	1	6	3	10	74
16:45	4	9	1	14	10	4	11	25	2	8	5	15	3	9	3	15	69
17:00	13	15	0	28	6	9	8	23	2	10	6	18	1	2	1	4	73
Total Volume	40	45	4	89	35	23	41	99	8	44	27	79	7	28	12	47	314
% App. Total	44.9	50.6	4.5		35.4	23.2	41.4		10.1	55.7	34.2		14.9	59.6	25.5		
PHF	.769	.750	.333	.795	.673	.639	.854	.884	.667	.786	.614	.705	.583	.636	.600	.653	.801

All Traffic Data

(916) 771-8700

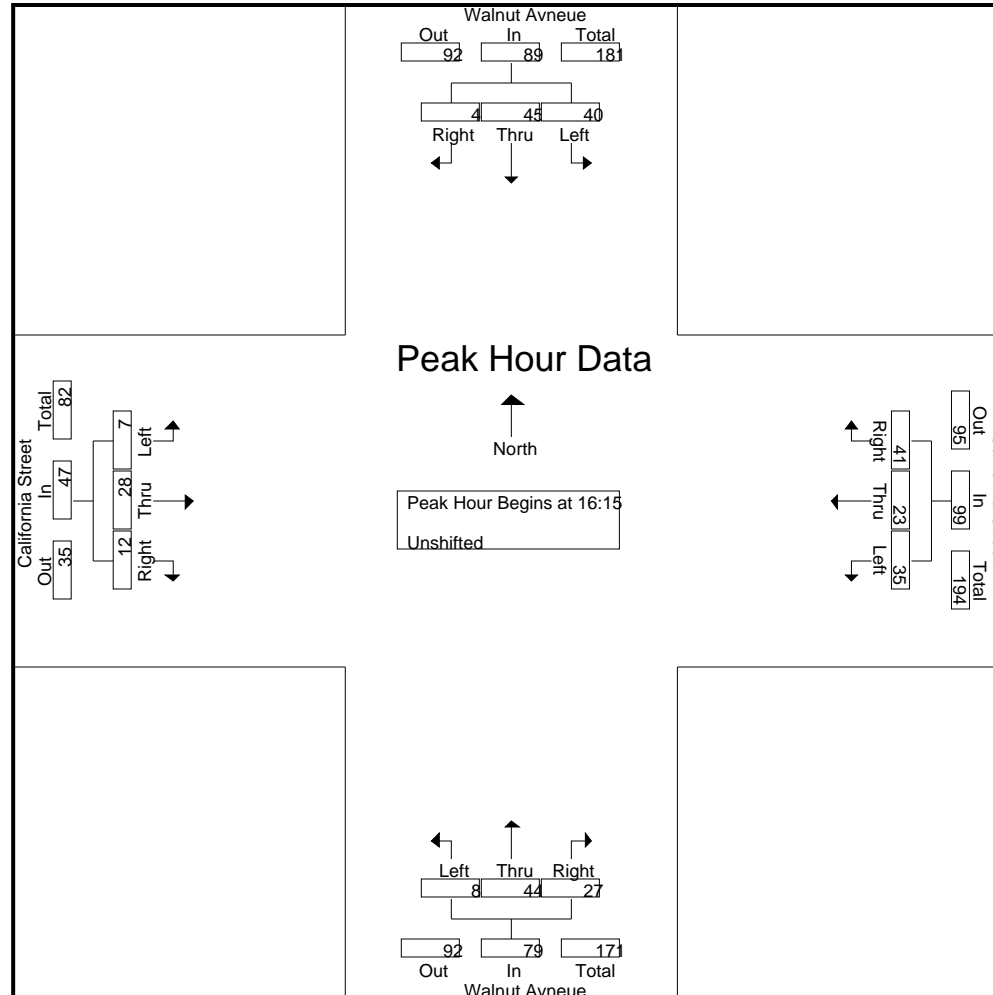
WINTON

File Name : 11-7342-017 Walnut-California

Site Code : 00000000

Start Date : 8/24/2011

Page No : 5



All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-018 Walnut-Shaffer

Site Code : 00000000

Start Date : 8/23/2011

Page No : 1

Groups Printed- Unshifted

	Walnut Avneue Southbound				Shaffer Road Westbound				Walnut Avneue Northbound				Shaffer 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
07:00	0	27	2	29	0	0	0	0	1	15	0	16	3	0	2	5	50
07:15	0	31	5	36	0	0	0	0	3	22	1	26	0	0	6	6	68
07:30	0	41	4	45	1	1	0	2	7	31	0	38	2	1	10	13	98
07:45	0	24	4	28	0	0	0	0	1	26	0	27	4	1	6	11	66
Total	0	123	15	138	1	1	0	2	12	94	1	107	9	2	24	35	282
08:00	0	14	0	14	0	1	0	1	2	27	0	29	1	0	3	4	48
08:15	0	15	0	15	0	0	0	0	4	19	0	23	1	0	4	5	43
08:30	1	20	2	23	0	0	0	0	6	12	0	18	0	0	3	3	44
08:45	0	25	3	28	1	0	1	2	0	13	0	13	0	1	2	3	46
Total	1	74	5	80	1	1	1	3	12	71	0	83	2	1	12	15	181
16:00	0	38	7	45	0	0	0	0	3	30	0	33	3	0	4	7	85
16:15	0	34	8	42	0	0	0	0	4	26	1	31	1	0	4	5	78
16:30	0	32	4	36	0	0	0	0	6	30	0	36	1	1	1	3	75
16:45	0	54	9	63	0	2	0	2	5	35	1	41	1	0	3	4	110
Total	0	158	28	186	0	2	0	2	18	121	2	141	6	1	12	19	348
17:00	0	33	8	41	0	0	0	0	4	26	0	30	5	0	4	9	80
17:15	0	28	5	33	2	0	0	2	5	17	2	24	1	0	6	7	66
17:30	0	31	5	36	0	0	0	0	10	29	0	39	4	0	5	9	84
17:45	0	18	6	24	0	0	0	0	1	22	0	23	1	0	3	4	51
Total	0	110	24	134	2	0	0	2	20	94	2	116	11	0	18	29	281
Grand Total	1	465	72	538	4	4	1	9	62	380	5	447	28	4	66	98	1092
Apprch %	0.2	86.4	13.4		44.4	44.4	11.1		13.9	85	1.1		28.6	4.1	67.3		
Total %	0.1	42.6	6.6	49.3	0.4	0.4	0.1	0.8	5.7	34.8	0.5	40.9	2.6	0.4	6	9	

All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-018 Walnut-Shaffer

Site Code : 00000000

Start Date : 8/23/2011

Page No : 2

	Walnut Avneue Southbound				Shaffer Road Westbound				Walnut Avneue Northbound				Shaffer 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 07:00																	
07:00	0	27	2	29	0	0	0	0	1	15	0	16	3	0	2	5	50
07:15	0	31	5	36	0	0	0	0	3	22	1	26	0	0	6	6	68
07:30	0	41	4	45	1	1	0	2	7	31	0	38	2	1	10	13	98
07:45	0	24	4	28	0	0	0	0	1	26	0	27	4	1	6	11	66
Total Volume	0	123	15	138	1	1	0	2	12	94	1	107	9	2	24	35	282
% App. Total	0	89.1	10.9		50	50	0		11.2	87.9	0.9		25.7	5.7	68.6		
PHF	.000	.750	.750	.767	.250	.250	.000	.250	.429	.758	.250	.704	.563	.500	.600	.673	.719

All Traffic Data

(916) 771-8700

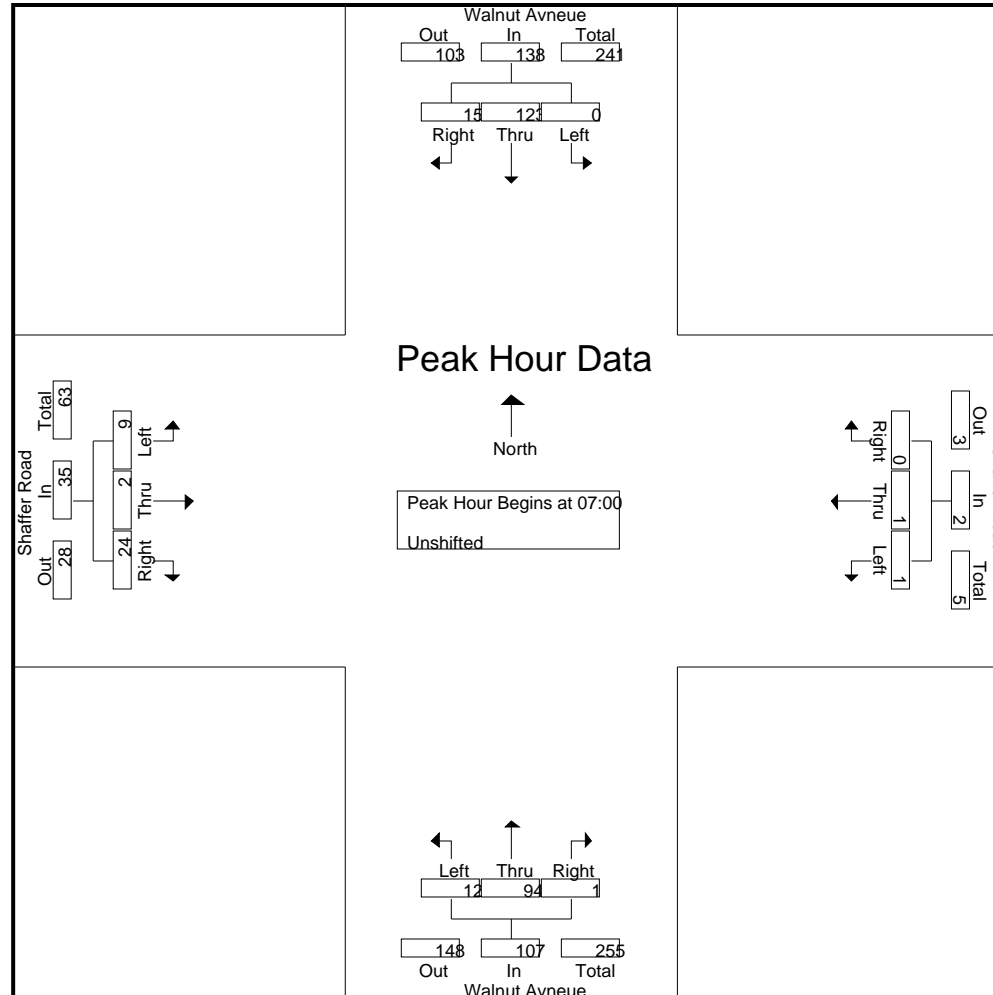
WINTON

File Name : 11-7342-018 Walnut-Shaffer

Site Code : 00000000

Start Date : 8/23/2011

Page No : 3



All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-018 Walnut-Shaffer

Site Code : 00000000

Start Date : 8/23/2011

Page No : 4

	Walnut Avneue Southbound				Shaffer Road Westbound				Walnut Avneue Northbound				Shaffer 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 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:00																	
16:00	0	38	7	45	0	0	0	0	3	30	0	33	3	0	4	7	85
16:15	0	34	8	42	0	0	0	0	4	26	1	31	1	0	4	5	78
16:30	0	32	4	36	0	0	0	0	6	30	0	36	1	1	1	3	75
16:45	0	54	9	63	0	2	0	2	5	35	1	41	1	0	3	4	110
Total Volume	0	158	28	186	0	2	0	2	18	121	2	141	6	1	12	19	348
% App. Total	0	84.9	15.1		0	100	0		12.8	85.8	1.4		31.6	5.3	63.2		
PHF	.000	.731	.778	.738	.000	.250	.000	.250	.750	.864	.500	.860	.500	.250	.750	.679	.791

All Traffic Data

(916) 771-8700

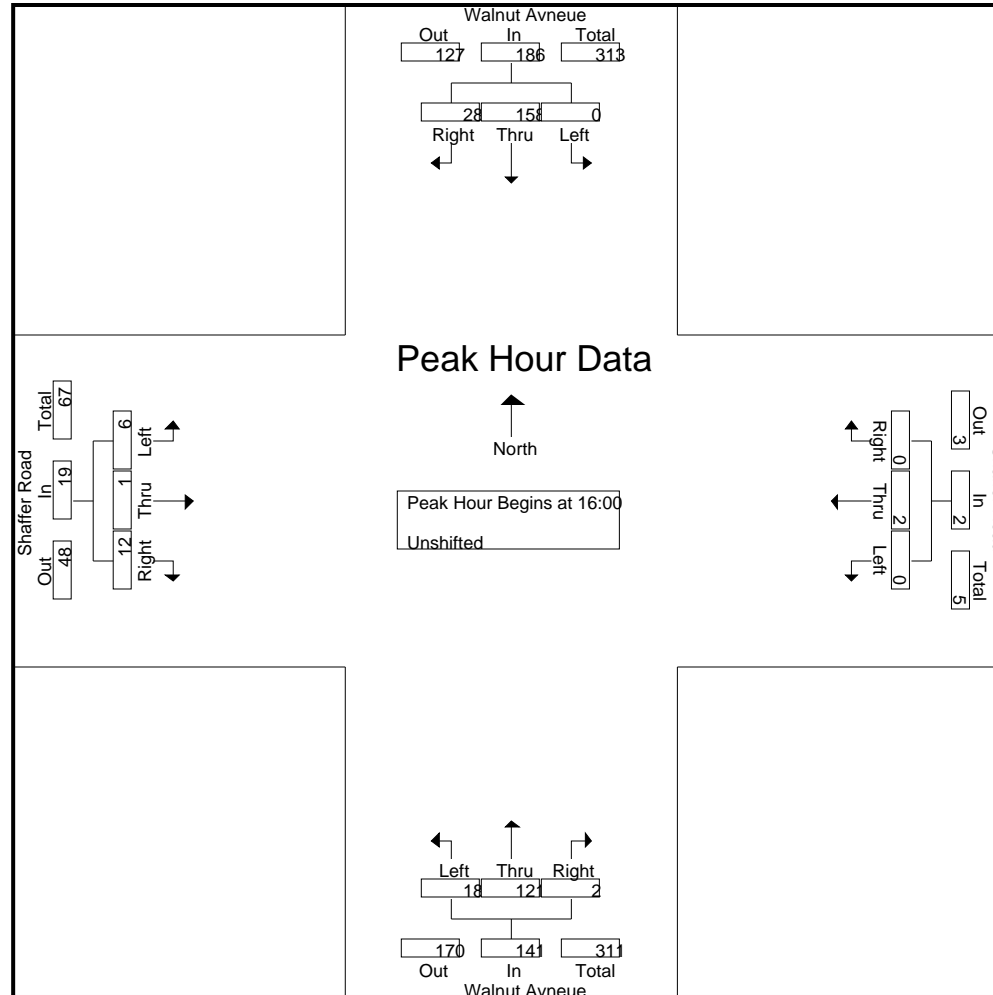
WINTON

File Name : 11-7342-018 Walnut-Shaffer

Site Code : 00000000

Start Date : 8/23/2011

Page No : 5



All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-019 Almond-Cypress

Site Code : 00000000

Start Date : 8/24/2011

Page No : 1

Groups Printed- Unshifted

	Almond Avenue Southbound				Cypress Avenue Westbound				Almond Avenue Northbound				Cypress Avenue 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
07:00	3	21	4	28	3	8	4	15	6	8	7	21	1	5	4	10	74
07:15	8	36	1	45	9	7	4	20	4	22	17	43	0	8	9	17	125
07:30	18	70	12	100	22	7	13	42	6	49	27	82	3	14	19	36	260
07:45	17	32	5	54	22	15	8	45	7	32	27	66	5	12	7	24	189
Total	46	159	22	227	56	37	29	122	23	111	78	212	9	39	39	87	648
08:00	0	12	2	14	5	6	16	27	2	14	2	18	5	6	4	15	74
08:15	4	7	2	13	2	5	2	9	9	11	2	22	1	5	5	11	55
08:30	4	5	1	10	1	1	1	3	3	4	2	9	0	6	2	8	30
08:45	2	10	1	13	0	4	1	5	3	4	0	7	1	3	3	7	32
Total	10	34	6	50	8	16	20	44	17	33	6	56	7	20	14	41	191
16:00	4	19	0	23	2	8	2	12	2	14	4	20	5	9	6	20	75
16:15	0	11	2	13	0	2	2	4	0	11	1	12	8	7	8	23	52
16:30	3	11	4	18	1	4	2	7	5	7	2	14	9	20	5	34	73
16:45	2	14	3	19	1	7	1	9	3	8	1	12	7	6	5	18	58
Total	9	55	9	73	4	21	7	32	10	40	8	58	29	42	24	95	258
17:00	4	18	0	22	4	9	2	15	4	13	0	17	9	8	5	22	76
17:15	5	21	5	31	3	7	1	11	5	12	3	20	9	8	1	18	80
17:30	7	27	1	35	9	7	0	16	3	16	7	26	9	11	8	28	105
17:45	11	59	1	71	20	5	7	32	4	17	4	25	3	12	1	16	144
Total	27	125	7	159	36	28	10	74	16	58	14	88	30	39	15	84	405
Grand Total	92	373	44	509	104	102	66	272	66	242	106	414	75	140	92	307	1502
Apprch %	18.1	73.3	8.6		38.2	37.5	24.3		15.9	58.5	25.6		24.4	45.6	30		
Total %	6.1	24.8	2.9	33.9	6.9	6.8	4.4	18.1	4.4	16.1	7.1	27.6	5	9.3	6.1	20.4	

All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-019 Almond-Cypress

Site Code : 00000000

Start Date : 8/24/2011

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	Almond Avenue Southbound				Cypress Avenue Westbound				Almond Avenue Northbound				Cypress Avenue 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 07:00																	
07:00	3	21	4	28	3	8	4	15	6	8	7	21	1	5	4	10	74
07:15	8	36	1	45	9	7	4	20	4	22	17	43	0	8	9	17	125
07:30	18	70	12	100	22	7	13	42	6	49	27	82	3	14	19	36	260
07:45	17	32	5	54	22	15	8	45	7	32	27	66	5	12	7	24	189
Total Volume	46	159	22	227	56	37	29	122	23	111	78	212	9	39	39	87	648
% App. Total	20.3	70	9.7		45.9	30.3	23.8		10.8	52.4	36.8		10.3	44.8	44.8		
PHF	.639	.568	.458	.568	.636	.617	.558	.678	.821	.566	.722	.646	.450	.696	.513	.604	.623

All Traffic Data

(916) 771-8700

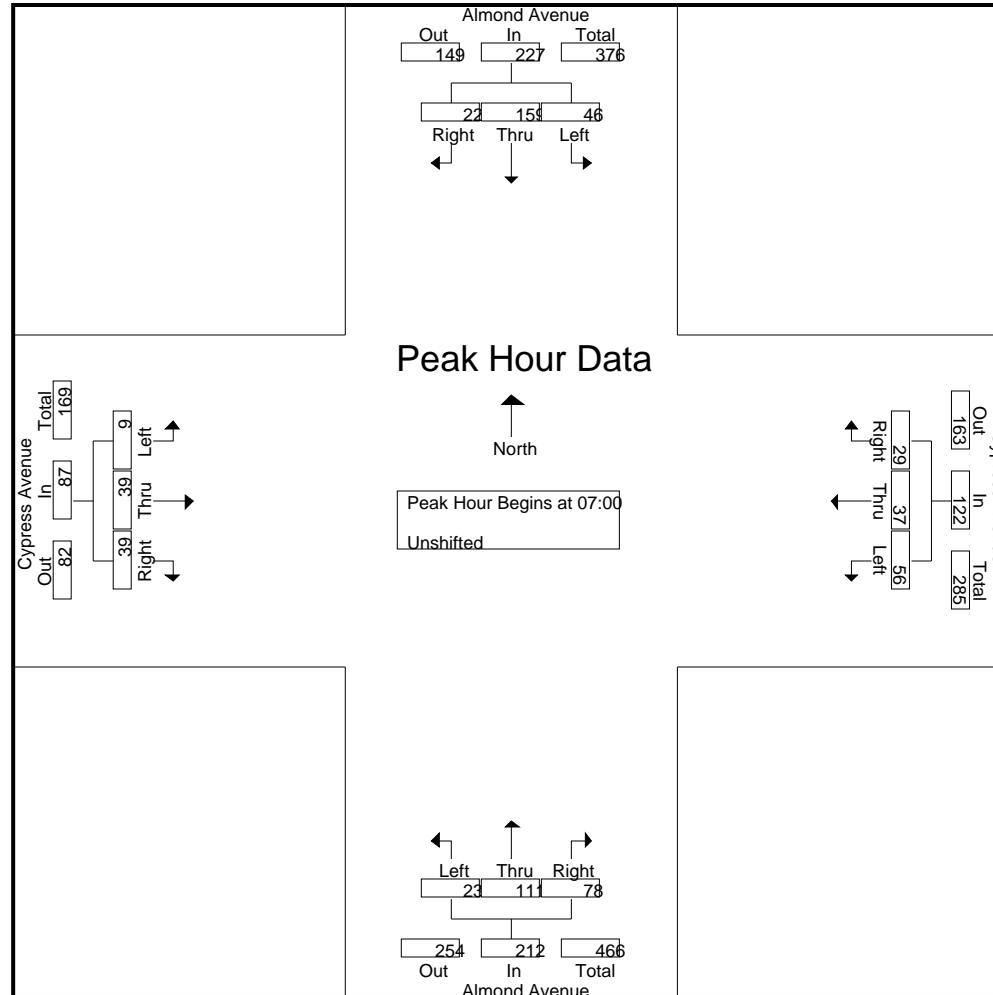
WINTON

File Name : 11-7342-019 Almond-Cypress

Site Code : 00000000

Start Date : 8/24/2011

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All Traffic Data

(916) 771-8700

WINTON

File Name : 11-7342-019 Almond-Cypress

Site Code : 00000000

Start Date : 8/24/2011

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	Almond Avenue Southbound				Cypress Avenue Westbound				Almond Avenue Northbound				Cypress Avenue 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	4	18	0	22	4	9	2	15	4	13	0	17	9	8	5	22	76
17:15	5	21	5	31	3	7	1	11	5	12	3	20	9	8	1	18	80
17:30	7	27	1	35	9	7	0	16	3	16	7	26	9	11	8	28	105
17:45	11	59	1	71	20	5	7	32	4	17	4	25	3	12	1	16	144
Total Volume	27	125	7	159	36	28	10	74	16	58	14	88	30	39	15	84	405
% App. Total	17	78.6	4.4		48.6	37.8	13.5		18.2	65.9	15.9		35.7	46.4	17.9		
PHF	.614	.530	.350	.560	.450	.778	.357	.578	.800	.853	.500	.846	.833	.813	.469	.750	.703

All Traffic Data

(916) 771-8700

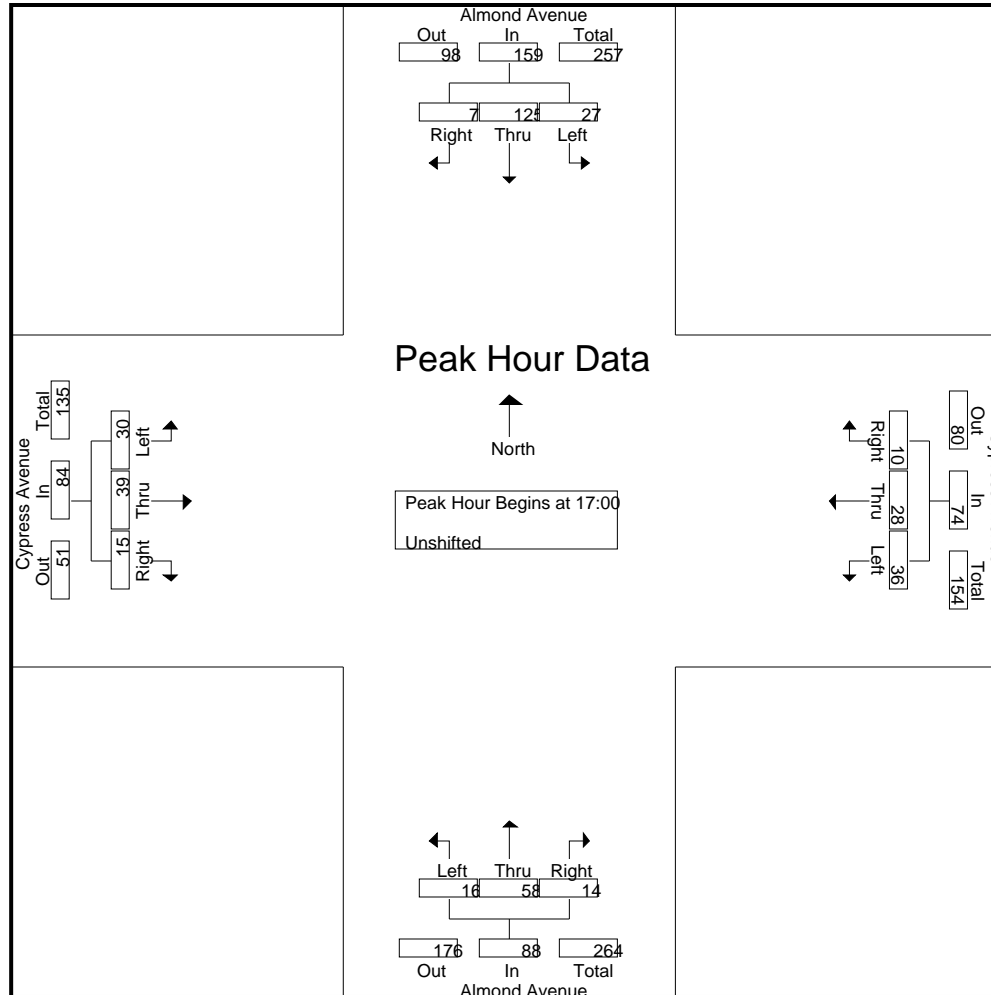
WINTON

File Name : 11-7342-019 Almond-Cypress

Site Code : 00000000

Start Date : 8/24/2011

Page No : 5



All Traffic Data

(916) 771-8700

LE GRAND

File Name : 11-7342-020 Sante Fe-Savana

Site Code : 00000000

Start Date : 8/23/2011

Page No : 1

Groups Printed- Unshifted

	SANTA FE AVENUE Southbound				Westbound				SANTA FE AVENUE Northbound				SAVANA 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
07:00	0	13	0	13	0	0	0	0	1	11	0	12	0	0	1	1	26
07:15	0	25	0	25	0	0	0	0	1	25	0	26	0	0	3	3	54
07:30	0	38	0	38	0	0	0	0	2	25	0	27	1	0	3	4	69
07:45	0	33	0	33	0	0	0	0	3	19	0	22	0	0	4	4	59
Total	0	109	0	109	0	0	0	0	7	80	0	87	1	0	11	12	208
08:00	0	16	0	16	0	0	0	0	1	18	0	19	0	0	2	2	37
08:15	0	5	0	5	0	0	0	0	2	15	0	17	0	0	0	0	22
08:30	0	8	0	8	0	0	0	0	1	19	0	20	0	0	1	1	29
08:45	0	11	0	11	0	0	0	0	1	10	0	11	0	0	0	0	22
Total	0	40	0	40	0	0	0	0	5	62	0	67	0	0	3	3	110
16:00	0	12	0	12	0	0	0	0	5	25	0	30	1	0	6	7	49
16:15	0	25	0	25	0	0	0	0	2	21	0	23	0	0	0	0	48
16:30	0	23	2	25	0	0	0	0	1	28	0	29	1	0	4	5	59
16:45	0	28	0	28	0	0	0	0	0	28	0	28	0	0	4	4	60
Total	0	88	2	90	0	0	0	0	8	102	0	110	2	0	14	16	216
17:00	0	24	0	24	0	0	0	0	1	34	0	35	0	0	2	2	61
17:15	0	16	0	16	0	0	0	0	3	23	0	26	0	0	1	1	43
17:30	0	23	0	23	0	0	0	0	1	32	0	33	0	0	4	4	60
17:45	0	36	0	36	0	0	0	0	2	30	0	32	0	0	3	3	71
Total	0	99	0	99	0	0	0	0	7	119	0	126	0	0	10	10	235
Grand Total	0	336	2	338	0	0	0	0	27	363	0	390	3	0	38	41	769
Apprch %	0	99.4	0.6		0	0	0		6.9	93.1	0		7.3	0	92.7		
Total %	0	43.7	0.3	44	0	0	0	0	3.5	47.2	0	50.7	0.4	0	4.9	5.3	

All Traffic Data

(916) 771-8700

LE GRAND

File Name : 11-7342-020 Sante Fe-Savana

Site Code : 00000000

Start Date : 8/23/2011

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	SANTA FE AVENUE Southbound				Westbound				SANTA FE AVENUE Northbound				SAVANA 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 07:15																	
07:15	0	25	0	25	0	0	0	0	1	25	0	26	0	0	3	3	54
07:30	0	38	0	38	0	0	0	0	2	25	0	27	1	0	3	4	69
07:45	0	33	0	33	0	0	0	0	3	19	0	22	0	0	4	4	59
08:00	0	16	0	16	0	0	0	0	1	18	0	19	0	0	2	2	37
Total Volume	0	112	0	112	0	0	0	0	7	87	0	94	1	0	12	13	219
% App. Total	0	100	0		0	0	0		7.4	92.6	0		7.7	0	92.3		
PHF	.000	.737	.000	.737	.000	.000	.000	.000	.583	.870	.000	.870	.250	.000	.750	.813	.793

All Traffic Data

(916) 771-8700

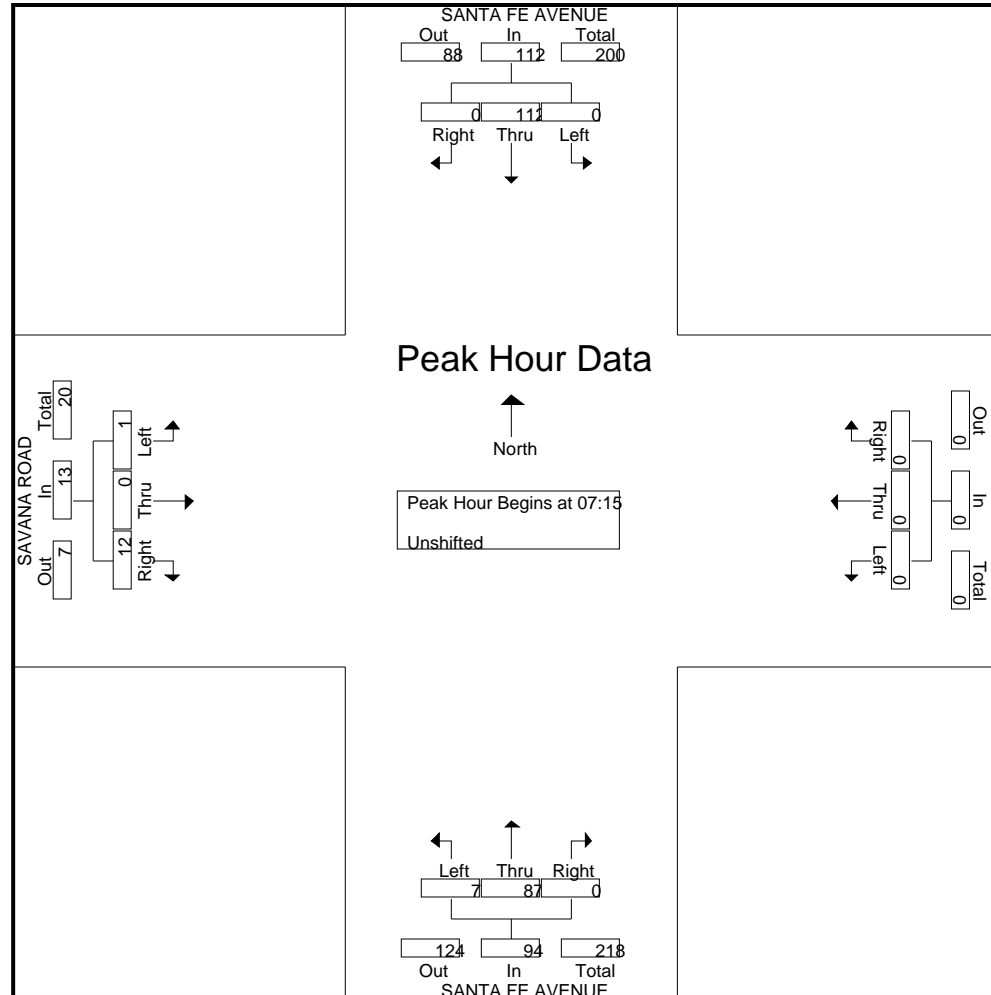
LE GRAND

File Name : 11-7342-020 Sante Fe-Savana

Site Code : 00000000

Start Date : 8/23/2011

Page No : 3



All Traffic Data

(916) 771-8700

LE GRAND

File Name : 11-7342-020 Sante Fe-Savana

Site Code : 00000000

Start Date : 8/23/2011

Page No : 4

	SANTA FE AVENUE Southbound				Westbound				SANTA FE AVENUE Northbound				SAVANA 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 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	0	24	0	24	0	0	0	0	1	34	0	35	0	0	2	2	61
17:15	0	16	0	16	0	0	0	0	3	23	0	26	0	0	1	1	43
17:30	0	23	0	23	0	0	0	0	1	32	0	33	0	0	4	4	60
17:45	0	36	0	36	0	0	0	0	2	30	0	32	0	0	3	3	71
Total Volume	0	99	0	99	0	0	0	0	7	119	0	126	0	0	10	10	235
% App. Total	0	100	0		0	0	0		5.6	94.4	0		0	0	100		
PHF	.000	.688	.000	.688	.000	.000	.000	.000	.583	.875	.000	.900	.000	.000	.625	.625	.827

All Traffic Data

(916) 771-8700

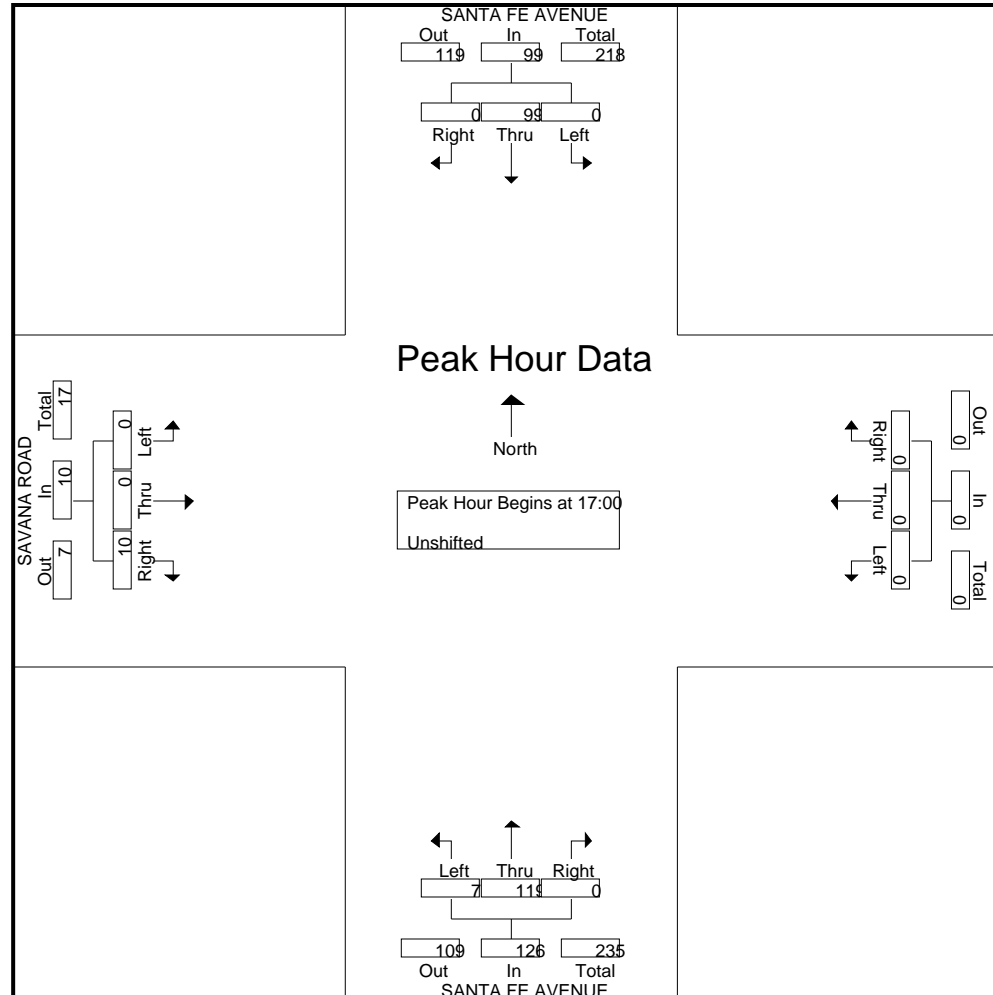
LE GRAND

File Name : 11-7342-020 Sante Fe-Savana

Site Code : 00000000

Start Date : 8/23/2011

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All Traffic Data

(916) 771-8700

LE GRAND

File Name : 11-7342-021 Cunningham-Santa Fe

Site Code : 00000000

Start Date : 8/23/2011

Page No : 1

Groups Printed- Unshifted

	CUNNINGHAM ROAD Southbound				SANTA FE AVENUE Westbound				Northbound				SANTA FE AVENUE 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
07:00	2	0	1	3	0	11	4	15	0	0	0	0	0	14	0	14	32
07:15	8	0	1	9	0	26	2	28	0	0	0	0	0	28	0	28	65
07:30	11	0	2	13	0	25	4	29	0	0	0	0	0	41	0	41	83
07:45	7	0	0	7	0	22	4	26	0	0	0	0	0	36	0	36	69
Total	28	0	4	32	0	84	14	98	0	0	0	0	0	119	0	119	249
08:00	5	0	1	6	0	17	5	22	0	0	0	0	0	18	0	18	46
08:15	7	0	0	7	0	18	3	21	0	0	0	0	0	6	0	6	34
08:30	10	0	0	10	0	19	6	25	0	0	0	0	0	9	0	9	44
08:45	10	0	2	12	0	10	5	15	0	0	0	0	0	11	0	11	38
Total	32	0	3	35	0	64	19	83	0	0	0	0	0	44	0	44	162
16:00	2	0	0	2	0	31	6	37	0	0	0	0	0	17	0	17	56
16:15	4	0	1	5	0	23	7	30	0	0	0	0	0	24	0	24	59
16:30	11	0	2	13	0	27	7	34	0	0	0	0	0	29	0	29	76
16:45	4	0	0	4	0	28	4	32	0	0	0	0	0	32	0	32	68
Total	21	0	3	24	0	109	24	133	0	0	0	0	0	102	0	102	259
17:00	6	0	2	8	0	34	7	41	0	0	0	0	2	25	0	27	76
17:15	1	0	1	2	0	23	12	35	0	0	0	0	1	16	0	17	54
17:30	6	0	0	6	0	32	6	38	0	0	0	0	0	28	0	28	72
17:45	9	0	1	10	0	30	11	41	0	0	0	0	0	39	0	39	90
Total	22	0	4	26	0	119	36	155	0	0	0	0	3	108	0	111	292
Grand Total	103	0	14	117	0	376	93	469	0	0	0	0	3	373	0	376	962
Apprch %	88	0	12		0	80.2	19.8		0	0	0		0.8	99.2	0		
Total %	10.7	0	1.5	12.2	0	39.1	9.7	48.8	0	0	0	0	0.3	38.8	0	39.1	

All Traffic Data

(916) 771-8700

LE GRAND

File Name : 11-7342-021 Cunningham-Santa Fe

Site Code : 00000000

Start Date : 8/23/2011

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	CUNNINGHAM ROAD Southbound				SANTA FE AVENUE Westbound				Northbound				SANTA FE AVENUE 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	8	0	1	9	0	26	2	28	0	0	0	0	0	28	0	28	65
07:30	11	0	2	13	0	25	4	29	0	0	0	0	0	41	0	41	83
07:45	7	0	0	7	0	22	4	26	0	0	0	0	0	36	0	36	69
08:00	5	0	1	6	0	17	5	22	0	0	0	0	0	18	0	18	46
Total Volume	31	0	4	35	0	90	15	105	0	0	0	0	0	123	0	123	263
% App. Total	88.6	0	11.4		0	85.7	14.3		0	0	0		0	100	0		
PHF	.705	.000	.500	.673	.000	.865	.750	.905	.000	.000	.000	.000	.000	.750	.000	.750	.792

All Traffic Data

(916) 771-8700

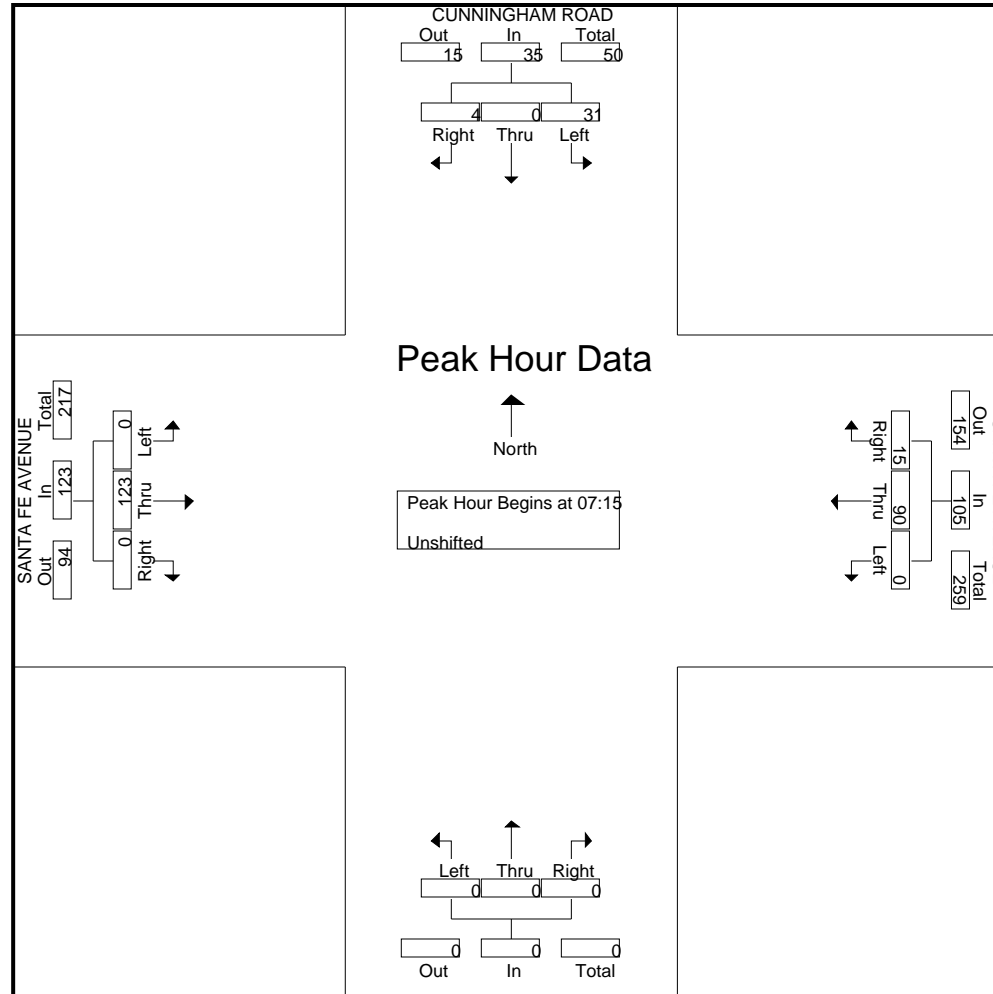
LE GRAND

File Name : 11-7342-021 Cunningham-Santa Fe

Site Code : 00000000

Start Date : 8/23/2011

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All Traffic Data

(916) 771-8700

LE GRAND

File Name : 11-7342-021 Cunningham-Santa Fe

Site Code : 00000000

Start Date : 8/23/2011

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	CUNNINGHAM ROAD Southbound				SANTA FE AVENUE Westbound				Northbound				SANTA FE AVENUE 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	6	0	2	8	0	34	7	41	0	0	0	0	2	25	0	27	76
17:15	1	0	1	2	0	23	12	35	0	0	0	0	1	16	0	17	54
17:30	6	0	0	6	0	32	6	38	0	0	0	0	0	28	0	28	72
17:45	9	0	1	10	0	30	11	41	0	0	0	0	0	39	0	39	90
Total Volume	22	0	4	26	0	119	36	155	0	0	0	0	3	108	0	111	292
% App. Total	84.6	0	15.4		0	76.8	23.2		0	0	0		2.7	97.3	0		
PHF	.611	.000	.500	.650	.000	.875	.750	.945	.000	.000	.000	.000	.375	.692	.000	.712	.811

All Traffic Data

(916) 771-8700

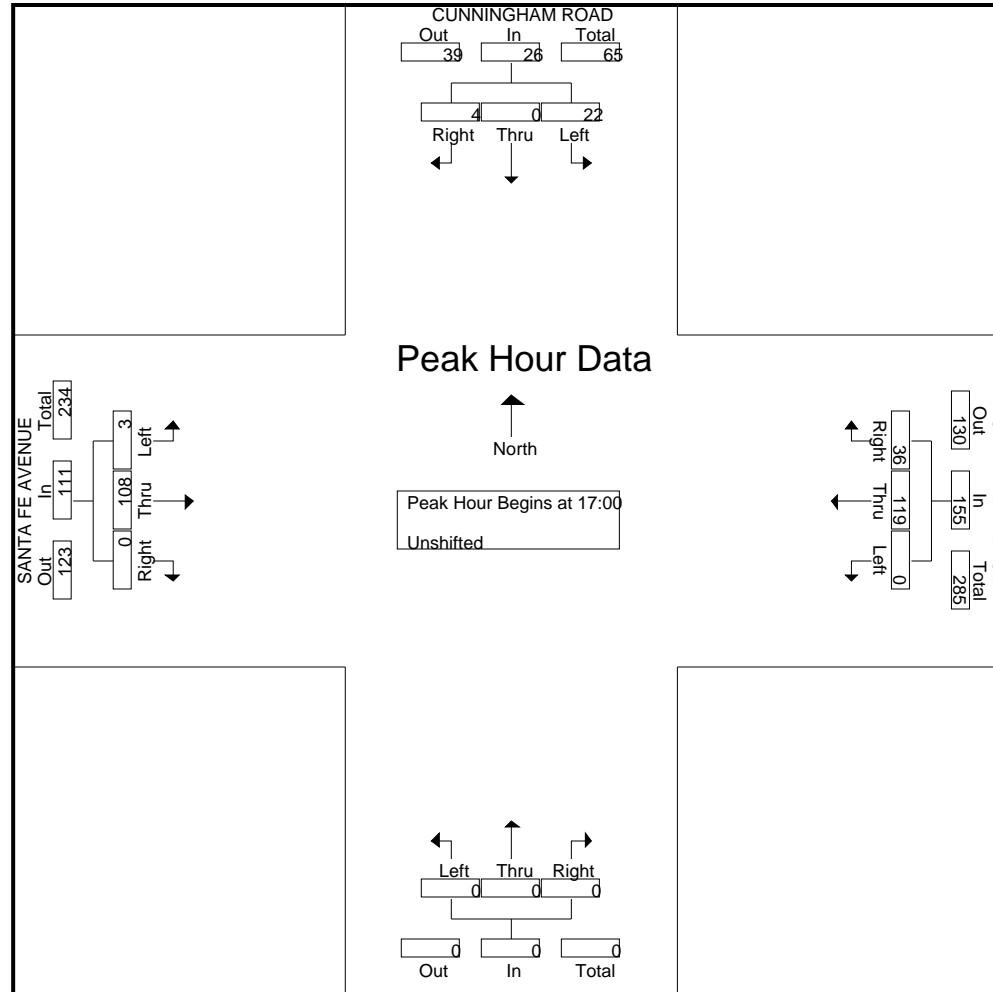
LE GRAND

File Name : 11-7342-021 Cunningham-Santa Fe

Site Code : 00000000

Start Date : 8/23/2011

Page No : 5



All Traffic Data

(916) 771-8700

LE GRAND

File Name : 11-7342-022 Sante Fe-Jefferson

Site Code : 00000000

Start Date : 8/23/2011

Page No : 1

Groups Printed- Unshifted

	SANTA FE AVENUE Southbound				JEFFERSON STREET Westbound				SANTA FE AVENUE Northbound				JEFFERSON STREET 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
07:00	4	7	11	22	0	0	1	1	1	7	0	8	4	1	1	6	37
07:15	6	13	19	38	0	5	2	7	2	8	0	10	12	2	0	14	69
07:30	1	12	33	46	0	1	4	5	1	17	1	19	13	3	0	16	86
07:45	2	11	35	48	1	3	0	4	1	12	0	13	13	2	2	17	82
Total	13	43	98	154	1	9	7	17	5	44	1	50	42	8	3	53	274
08:00	0	4	15	19	0	0	0	0	0	6	0	6	13	1	2	16	41
08:15	2	2	7	11	0	4	0	4	0	8	0	8	9	3	4	16	39
08:30	0	6	8	14	0	1	1	2	1	12	0	13	5	1	1	7	36
08:45	0	7	6	13	0	1	2	3	0	4	1	5	9	3	2	14	35
Total	2	19	36	57	0	6	3	9	1	30	1	32	36	8	9	53	151
16:00	1	8	16	25	2	2	0	4	2	20	0	22	14	4	2	20	71
16:15	3	7	11	21	1	0	1	2	2	18	0	20	13	3	0	16	59
16:30	3	9	18	30	0	2	2	4	2	17	1	20	14	2	3	19	73
16:45	6	9	14	29	1	7	1	9	1	11	0	12	19	2	3	24	74
Total	13	33	59	105	4	11	4	19	7	66	1	74	60	11	8	79	277
17:00	3	8	15	26	0	1	2	3	2	16	0	18	19	4	3	26	73
17:15	3	11	11	25	1	3	1	5	1	17	0	18	28	5	2	35	83
17:30	2	12	16	30	0	1	3	4	2	8	0	10	22	2	2	26	70
17:45	0	13	34	47	0	2	0	2	0	9	0	9	31	4	3	38	96
Total	8	44	76	128	1	7	6	14	5	50	0	55	100	15	10	125	322
Grand Total	36	139	269	444	6	33	20	59	18	190	3	211	238	42	30	310	1024
Apprch %	8.1	31.3	60.6		10.2	55.9	33.9		8.5	90	1.4		76.8	13.5	9.7		
Total %	3.5	13.6	26.3	43.4	0.6	3.2	2	5.8	1.8	18.6	0.3	20.6	23.2	4.1	2.9	30.3	

All Traffic Data

(916) 771-8700

LE GRAND

File Name : 11-7342-022 Sante Fe-Jefferson

Site Code : 00000000

Start Date : 8/23/2011

Page No : 2

	SANTA FE AVENUE Southbound				JEFFERSON STREET Westbound				SANTA FE AVENUE Northbound				JEFFERSON STREET 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	6	13	19	38	0	5	2	7	2	8	0	10	12	2	0	14	69
07:30	1	12	33	46	0	1	4	5	1	17	1	19	13	3	0	16	86
07:45	2	11	35	48	1	3	0	4	1	12	0	13	13	2	2	17	82
08:00	0	4	15	19	0	0	0	0	0	6	0	6	13	1	2	16	41
Total Volume	9	40	102	151	1	9	6	16	4	43	1	48	51	8	4	63	278
% App. Total	6	26.5	67.5		6.2	56.2	37.5		8.3	89.6	2.1		81	12.7	6.3		
PHF	.375	.769	.729	.786	.250	.450	.375	.571	.500	.632	.250	.632	.981	.667	.500	.926	.808

All Traffic Data

(916) 771-8700

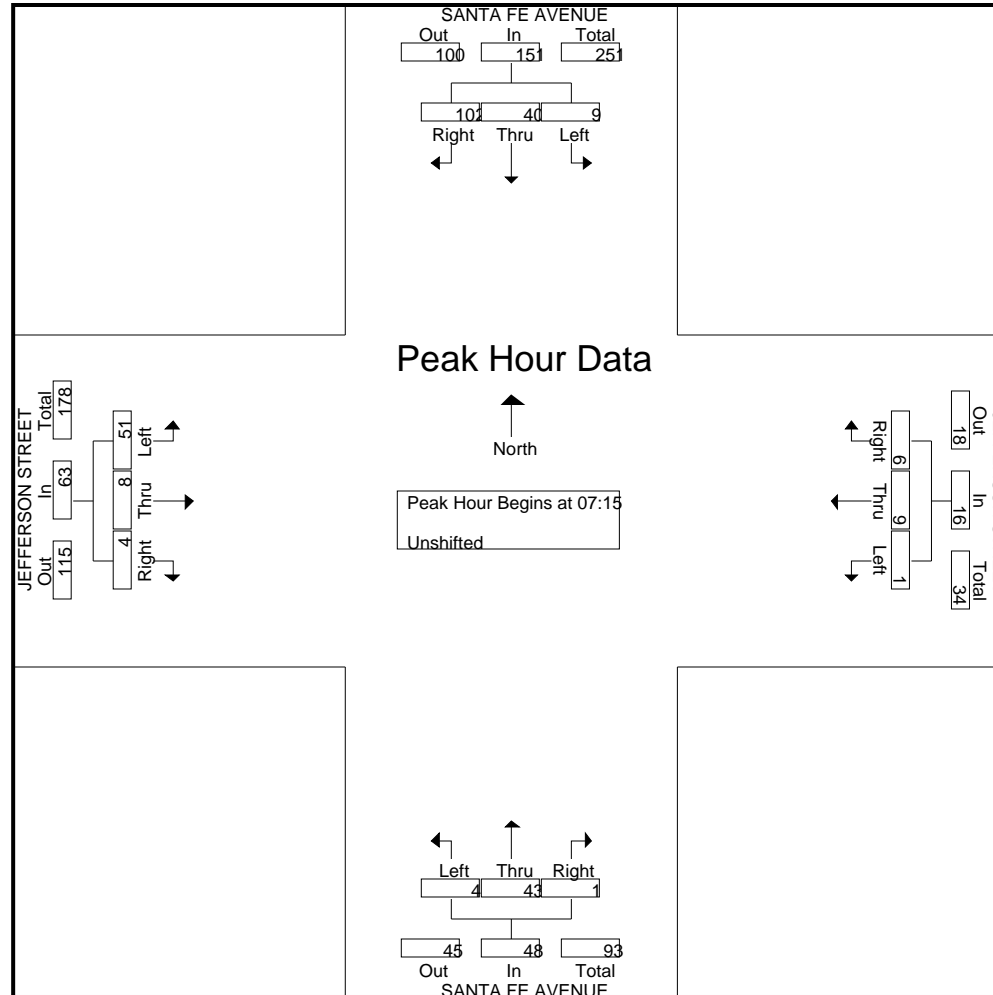
LE GRAND

File Name : 11-7342-022 Sante Fe-Jefferson

Site Code : 00000000

Start Date : 8/23/2011

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All Traffic Data

(916) 771-8700

LE GRAND

File Name : 11-7342-022 Sante Fe-Jefferson

Site Code : 00000000

Start Date : 8/23/2011

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	SANTA FE AVENUE Southbound				JEFFERSON STREET Westbound				SANTA FE AVENUE Northbound				JEFFERSON STREET 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	3	8	15	26	0	1	2	3	2	16	0	18	19	4	3	26	73
17:15	3	11	11	25	1	3	1	5	1	17	0	18	28	5	2	35	83
17:30	2	12	16	30	0	1	3	4	2	8	0	10	22	2	2	26	70
17:45	0	13	34	47	0	2	0	2	0	9	0	9	31	4	3	38	96
Total Volume	8	44	76	128	1	7	6	14	5	50	0	55	100	15	10	125	322
% App. Total	6.2	34.4	59.4		7.1	50	42.9		9.1	90.9	0		80	12	8		
PHF	.667	.846	.559	.681	.250	.583	.500	.700	.625	.735	.000	.764	.806	.750	.833	.822	.839

All Traffic Data

(916) 771-8700

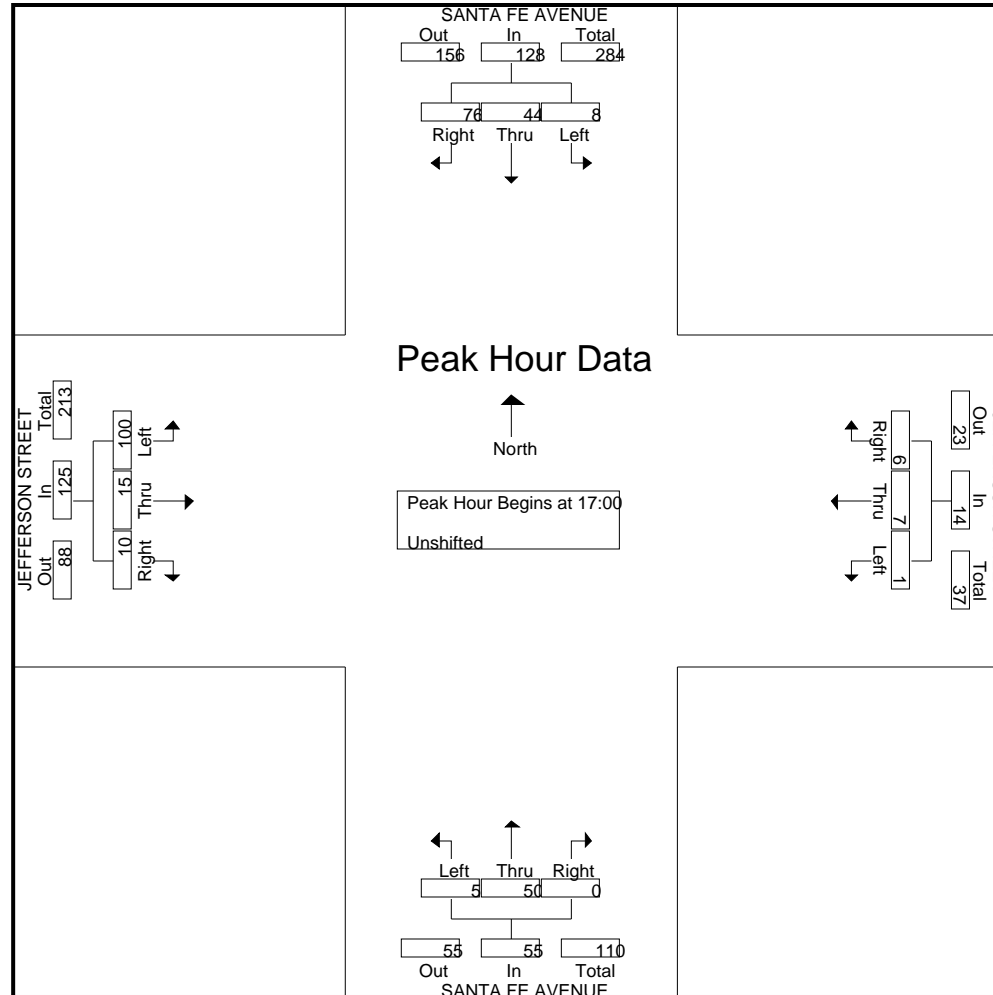
LE GRAND

File Name : 11-7342-022 Sante Fe-Jefferson

Site Code : 00000000

Start Date : 8/23/2011

Page No : 5



All Traffic Data

(916) 771-8700

LE GRAND

File Name : 11-7342-023 Santa Fe-Le Grand

Site Code : 00000000

Start Date : 8/23/2011

Page No : 1

Groups Printed- Unshifted

	SANTE FE AVENUE Southbound				LE GRAND ROAD Westbound				SANTE FE AVENUE Northbound				LE GRAND 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
07:00	4	3	1	8	0	3	2	5	5	4	1	10	1	1	4	6	29
07:15	3	7	1	11	0	4	0	4	3	4	0	7	5	7	1	13	35
07:30	3	3	3	9	1	2	2	5	5	5	2	12	6	3	3	12	38
07:45	3	6	5	14	9	5	3	17	4	1	0	5	5	7	4	16	52
Total	13	19	10	42	10	14	7	31	17	14	3	34	17	18	12	47	154
08:00	0	3	3	6	0	5	1	6	1	2	0	3	5	3	2	10	25
08:15	0	4	0	4	0	10	3	13	3	4	1	8	4	7	3	14	39
08:30	1	4	4	9	0	5	2	7	2	3	3	8	5	1	2	8	32
08:45	3	4	2	9	0	4	0	4	1	4	0	5	1	2	2	5	23
Total	4	15	9	28	0	24	6	30	7	13	4	24	15	13	9	37	119
16:00	2	4	2	8	3	3	3	9	1	14	0	15	6	4	2	12	44
16:15	0	6	4	10	0	4	0	4	5	11	1	17	4	4	1	9	40
16:30	3	10	3	16	0	5	2	7	9	10	0	19	6	1	5	12	54
16:45	2	4	5	11	0	6	1	7	3	8	1	12	2	1	3	6	36
Total	7	24	14	45	3	18	6	27	18	43	2	63	18	10	11	39	174
17:00	2	5	4	11	2	5	4	11	2	10	2	14	3	7	5	15	51
17:15	0	3	6	9	0	5	2	7	5	11	1	17	6	2	2	10	43
17:30	1	4	4	9	0	1	2	3	2	5	0	7	3	2	2	7	26
17:45	3	5	3	11	1	2	1	4	4	2	0	6	6	4	5	15	36
Total	6	17	17	40	3	13	9	25	13	28	3	44	18	15	14	47	156
Grand Total	30	75	50	155	16	69	28	113	55	98	12	165	68	56	46	170	603
Apprch %	19.4	48.4	32.3		14.2	61.1	24.8		33.3	59.4	7.3		40	32.9	27.1		
Total %	5	12.4	8.3	25.7	2.7	11.4	4.6	18.7	9.1	16.3	2	27.4	11.3	9.3	7.6	28.2	

All Traffic Data

(916) 771-8700

LE GRAND

File Name : 11-7342-023 Santa Fe-Le Grand

Site Code : 00000000

Start Date : 8/23/2011

Page No : 2

	SANTE FE AVENUE Southbound				LE GRAND ROAD Westbound				SANTE FE AVENUE Northbound				LE GRAND 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 07:00																	
07:00	4	3	1	8	0	3	2	5	5	4	1	10	1	1	4	6	29
07:15	3	7	1	11	0	4	0	4	3	4	0	7	5	7	1	13	35
07:30	3	3	3	9	1	2	2	5	5	5	2	12	6	3	3	12	38
07:45	3	6	5	14	9	5	3	17	4	1	0	5	5	7	4	16	52
Total Volume	13	19	10	42	10	14	7	31	17	14	3	34	17	18	12	47	154
% App. Total	31	45.2	23.8		32.3	45.2	22.6		50	41.2	8.8		36.2	38.3	25.5		
PHF	.813	.679	.500	.750	.278	.700	.583	.456	.850	.700	.375	.708	.708	.643	.750	.734	.740

All Traffic Data

(916) 771-8700

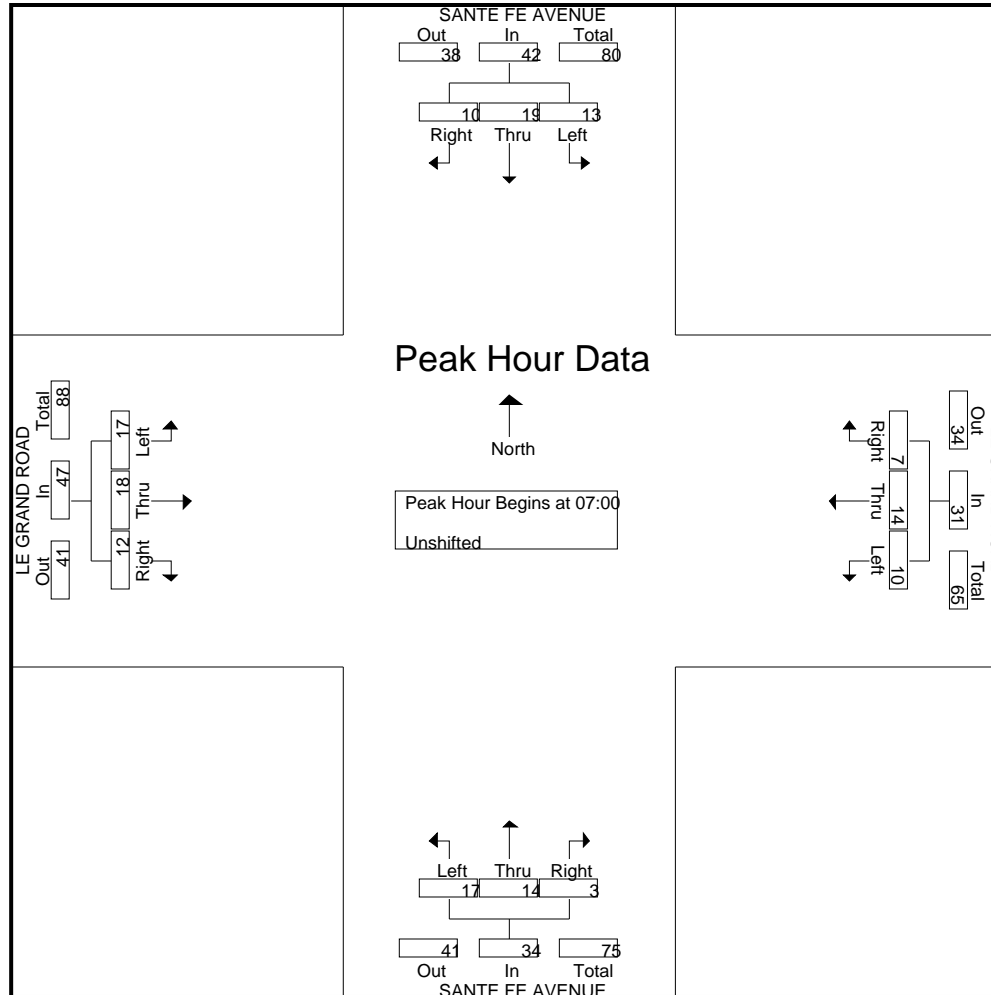
LE GRAND

File Name : 11-7342-023 Santa Fe-Le Grand

Site Code : 00000000

Start Date : 8/23/2011

Page No : 3



All Traffic Data

(916) 771-8700

LE GRAND

File Name : 11-7342-023 Santa Fe-Le Grand

Site Code : 00000000

Start Date : 8/23/2011

Page No : 4

	SANTE FE AVENUE Southbound				LE GRAND ROAD Westbound				SANTE FE AVENUE Northbound				LE GRAND 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 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:30																	
16:30	3	10	3	16	0	5	2	7	9	10	0	19	6	1	5	12	54
16:45	2	4	5	11	0	6	1	7	3	8	1	12	2	1	3	6	36
17:00	2	5	4	11	2	5	4	11	2	10	2	14	3	7	5	15	51
17:15	0	3	6	9	0	5	2	7	5	11	1	17	6	2	2	10	43
Total Volume	7	22	18	47	2	21	9	32	19	39	4	62	17	11	15	43	184
% App. Total	14.9	46.8	38.3		6.2	65.6	28.1		30.6	62.9	6.5		39.5	25.6	34.9		
PHF	.583	.550	.750	.734	.250	.875	.563	.727	.528	.886	.500	.816	.708	.393	.750	.717	.852

All Traffic Data

(916) 771-8700

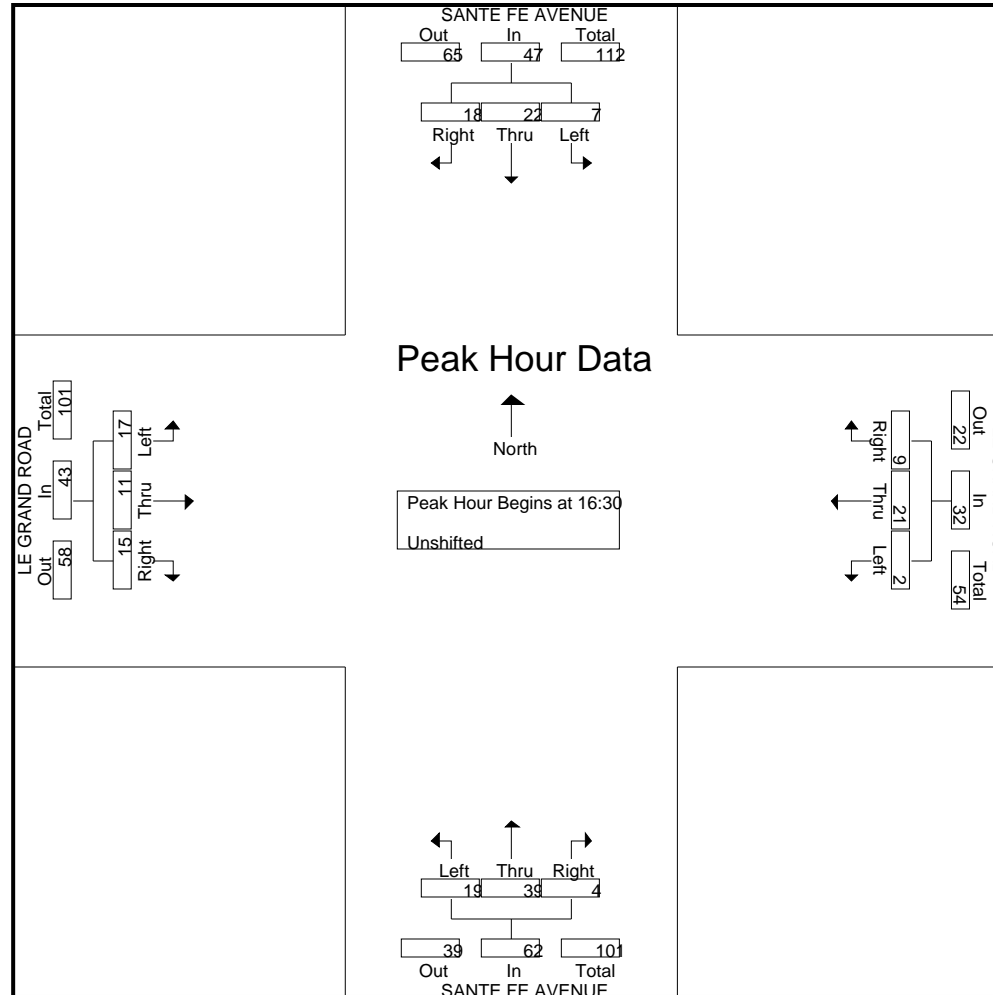
LE GRAND

File Name : 11-7342-023 Santa Fe-Le Grand

Site Code : 00000000

Start Date : 8/23/2011

Page No : 5



All Traffic Data

(916) 771-8700

LE GRAND

File Name : 11-7342-024 Fresno-Santa Fe

Site Code : 00000000

Start Date : 8/23/2011

Page No : 1

Groups Printed- Unshifted

	Southbound				SANTA FE AVENUE Westbound				FRESNO ROAD Northbound				SANTA FE AVENUE 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
07:00	0	0	0	0	0	7	0	7	1	0	0	1	0	7	0	7	15
07:15	0	0	0	0	0	6	0	6	0	0	0	0	0	7	2	9	15
07:30	0	0	0	0	0	8	0	8	4	0	0	4	0	5	2	7	19
07:45	0	0	0	0	0	4	0	4	1	0	0	1	0	19	1	20	25
Total	0	0	0	0	0	25	0	25	6	0	0	6	0	38	5	43	74
08:00	0	0	0	0	0	3	0	3	0	0	0	0	0	4	1	5	8
08:15	0	0	0	0	1	8	0	9	1	0	1	2	0	3	3	6	17
08:30	0	0	0	0	0	4	0	4	3	0	0	3	0	6	1	7	14
08:45	0	0	0	0	0	4	0	4	1	0	0	1	0	5	1	6	11
Total	0	0	0	0	1	19	0	20	5	0	1	6	0	18	6	24	50
16:00	0	0	0	0	0	17	0	17	1	0	0	1	0	9	2	11	29
16:15	0	0	0	0	0	16	0	16	3	0	1	4	0	5	2	7	27
16:30	0	0	0	0	0	16	0	16	5	0	0	5	0	12	5	17	38
16:45	0	0	0	0	0	9	0	9	3	0	0	3	0	7	1	8	20
Total	0	0	0	0	0	58	0	58	12	0	1	13	0	33	10	43	114
17:00	0	0	0	0	0	14	0	14	1	0	0	1	0	6	5	11	26
17:15	0	0	0	0	0	14	0	14	2	0	0	2	0	5	0	5	21
17:30	0	0	0	0	1	5	0	6	2	0	0	2	0	4	2	6	14
17:45	0	0	0	0	0	5	0	5	1	0	0	1	0	8	3	11	17
Total	0	0	0	0	1	38	0	39	6	0	0	6	0	23	10	33	78
Grand Total	0	0	0	0	2	140	0	142	29	0	2	31	0	112	31	143	316
Apprch %	0	0	0		1.4	98.6	0		93.5	0	6.5		0	78.3	21.7		
Total %	0	0	0		0.6	44.3	0	44.9	9.2	0	0.6	9.8	0	35.4	9.8	45.3	

All Traffic Data

(916) 771-8700

LE GRAND

File Name : 11-7342-024 Fresno-Santa Fe

Site Code : 00000000

Start Date : 8/23/2011

Page No : 2

	Southbound				SANTA FE AVENUE Westbound				FRESNO ROAD Northbound				SANTA FE AVENUE 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 07:00																	
07:00	0	0	0	0	0	7	0	7	1	0	0	1	0	7	0	7	15
07:15	0	0	0	0	0	6	0	6	0	0	0	0	0	7	2	9	15
07:30	0	0	0	0	0	8	0	8	4	0	0	4	0	5	2	7	19
07:45	0	0	0	0	0	4	0	4	1	0	0	1	0	19	1	20	25
Total Volume	0	0	0	0	0	25	0	25	6	0	0	6	0	38	5	43	74
% App. Total	0	0	0		0	100	0		100	0	0		0	88.4	11.6		
PHF	.000	.000	.000	.000	.000	.781	.000	.781	.375	.000	.000	.375	.000	.500	.625	.538	.740

All Traffic Data

(916) 771-8700

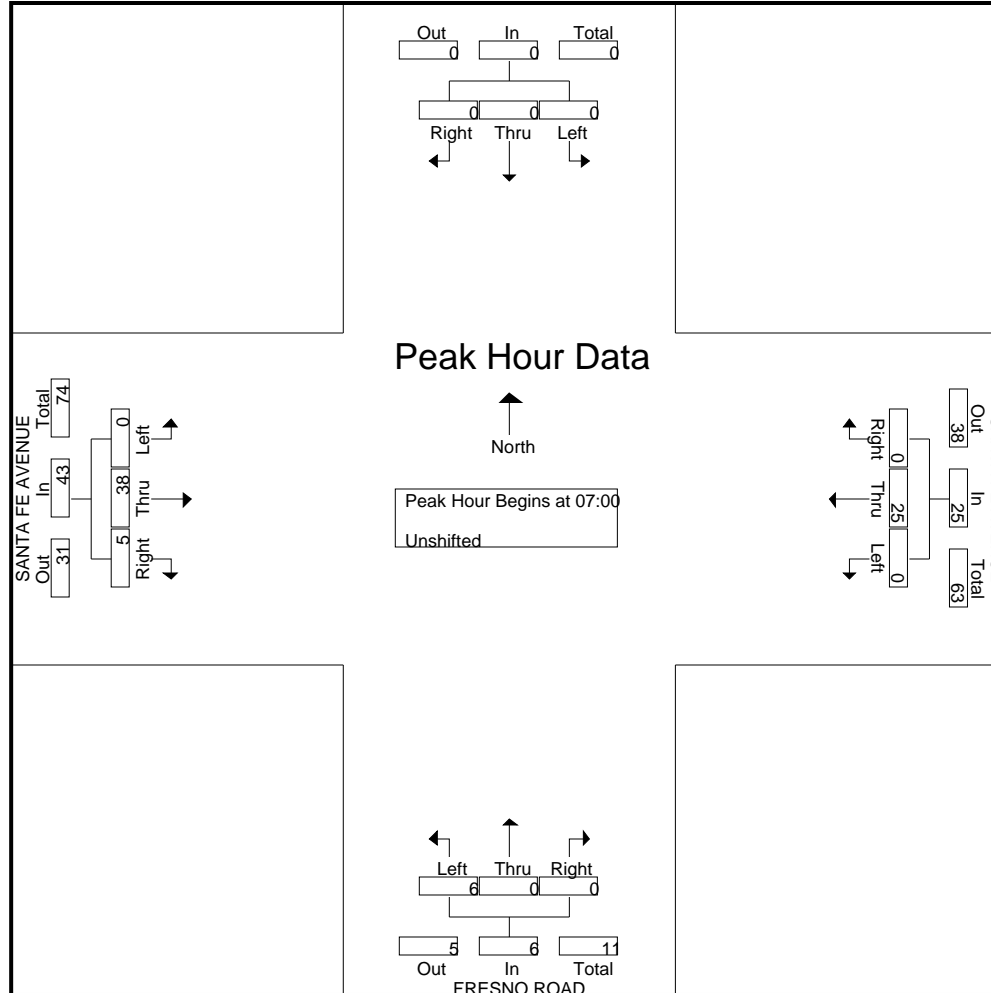
LE GRAND

File Name : 11-7342-024 Fresno-Santa Fe

Site Code : 00000000

Start Date : 8/23/2011

Page No : 3



All Traffic Data

(916) 771-8700

LE GRAND

File Name : 11-7342-024 Fresno-Santa Fe

Site Code : 00000000

Start Date : 8/23/2011

Page No : 4

	Southbound				SANTA FE AVENUE Westbound				FRESNO ROAD Northbound				SANTA FE AVENUE 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 16:00																	
16:00	0	0	0	0	0	17	0	17	1	0	0	1	0	9	2	11	29
16:15	0	0	0	0	0	16	0	16	3	0	1	4	0	5	2	7	27
16:30	0	0	0	0	0	16	0	16	5	0	0	5	0	12	5	17	38
16:45	0	0	0	0	0	9	0	9	3	0	0	3	0	7	1	8	20
Total Volume	0	0	0	0	0	58	0	58	12	0	1	13	0	33	10	43	114
% App. Total	0	0	0		0	100	0		92.3	0	7.7		0	76.7	23.3		
PHF	.000	.000	.000	.000	.000	.853	.000	.853	.600	.000	.250	.650	.000	.688	.500	.632	.750

All Traffic Data

(916) 771-8700

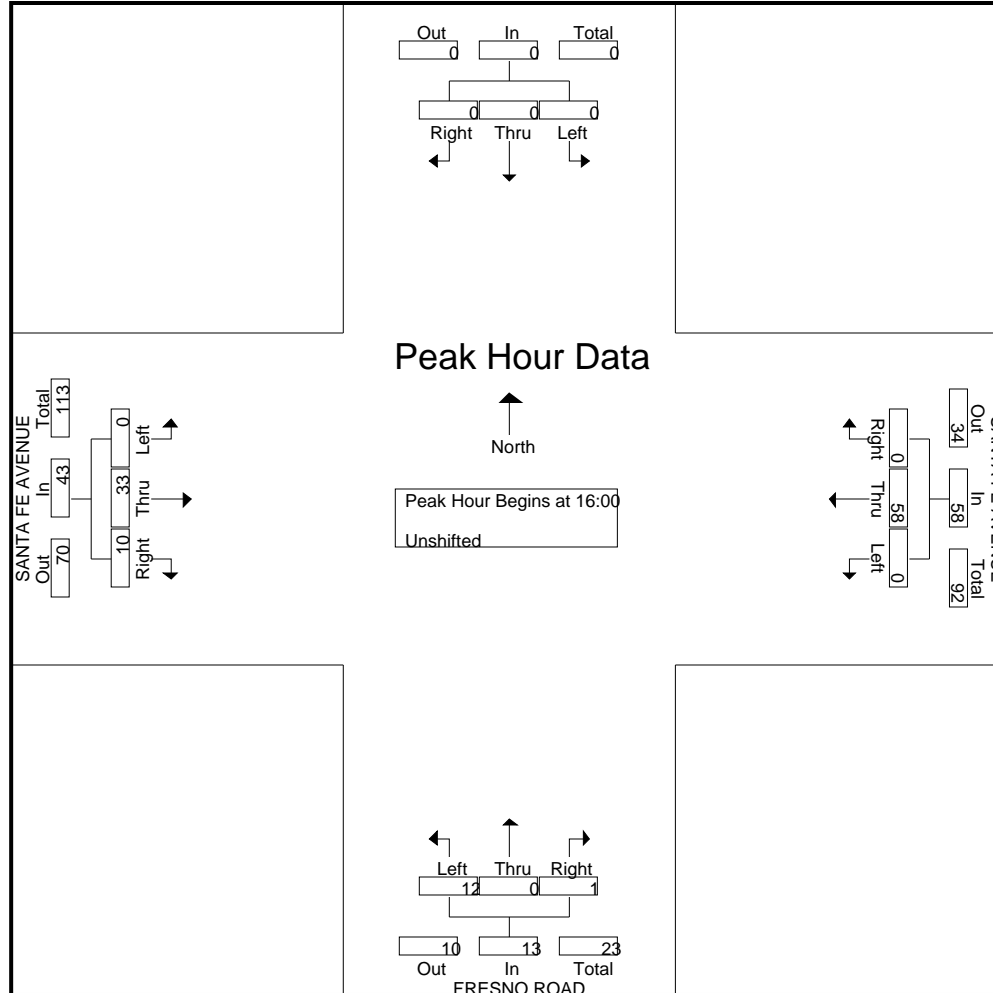
LE GRAND

File Name : 11-7342-024 Fresno-Santa Fe

Site Code : 00000000

Start Date : 8/23/2011

Page No : 5



All Traffic Data

(916) 771-8700

LE GRAND

File Name : 11-7342-025 Jefferson-Le Grand

Site Code : 00000000

Start Date : 8/23/2011

Page No : 1

Groups Printed- Unshifted

	JEFFERSON STREET Southbound				LE GRAND ROAD Westbound				JEFFERSON STREET Northbound				LE GRAND 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
07:00	0	0	9	9	0	6	2	8	1	0	0	1	6	6	0	12	30
07:15	8	0	17	25	0	8	1	9	0	0	0	0	11	11	0	22	56
07:30	23	0	40	63	0	18	2	20	0	0	0	0	16	22	0	38	121
07:45	28	0	37	65	0	22	9	31	1	0	0	1	22	17	0	39	136
Total	59	0	103	162	0	54	14	68	2	0	0	2	55	56	0	111	343
08:00	6	0	23	29	0	18	8	26	0	0	1	1	12	5	0	17	73
08:15	2	0	5	7	0	12	0	12	0	0	0	0	7	9	0	16	35
08:30	0	0	10	10	0	9	1	10	0	0	1	1	4	5	0	9	30
08:45	0	0	12	12	0	6	0	6	0	1	0	1	9	5	0	14	33
Total	8	0	50	58	0	45	9	54	0	1	2	3	32	24	0	56	171
16:00	0	0	10	10	0	9	2	11	0	1	0	1	19	14	0	33	55
16:15	1	0	13	14	0	9	1	10	0	2	2	4	18	12	0	30	58
16:30	7	0	13	20	0	15	0	15	1	5	3	9	22	16	0	38	82
16:45	6	0	17	23	0	12	1	13	2	6	2	10	17	11	0	28	74
Total	14	0	53	67	0	45	4	49	3	14	7	24	76	53	0	129	269
17:00	2	0	13	15	0	10	1	11	2	6	3	11	22	16	0	38	75
17:15	1	0	10	11	0	12	5	17	2	9	5	16	28	15	0	43	87
17:30	3	0	12	15	0	9	3	12	1	2	2	5	28	17	0	45	77
17:45	3	0	17	20	0	7	1	8	0	2	1	3	31	14	0	45	76
Total	9	0	52	61	0	38	10	48	5	19	11	35	109	62	0	171	315
Grand Total	90	0	258	348	0	182	37	219	10	34	20	64	272	195	0	467	1098
Apprch %	25.9	0	74.1		0	83.1	16.9		15.6	53.1	31.2		58.2	41.8	0		
Total %	8.2	0	23.5	31.7	0	16.6	3.4	19.9	0.9	3.1	1.8	5.8	24.8	17.8	0	42.5	

All Traffic Data

(916) 771-8700

LE GRAND

File Name : 11-7342-025 Jefferson-Le Grand

Site Code : 00000000

Start Date : 8/23/2011

Page No : 2

	JEFFERSON STREET Southbound				LE GRAND ROAD Westbound				JEFFERSON STREET Northbound				LE GRAND 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 07:15																	
07:15	8	0	17	25	0	8	1	9	0	0	0	0	11	11	0	22	56
07:30	23	0	40	63	0	18	2	20	0	0	0	0	16	22	0	38	121
07:45	28	0	37	65	0	22	9	31	1	0	0	1	22	17	0	39	136
08:00	6	0	23	29	0	18	8	26	0	0	1	1	12	5	0	17	73
Total Volume	65	0	117	182	0	66	20	86	1	0	1	2	61	55	0	116	386
% App. Total	35.7	0	64.3		0	76.7	23.3		50	0	50		52.6	47.4	0		
PHF	.580	.000	.731	.700	.000	.750	.556	.694	.250	.000	.250	.500	.693	.625	.000	.744	.710

All Traffic Data

(916) 771-8700

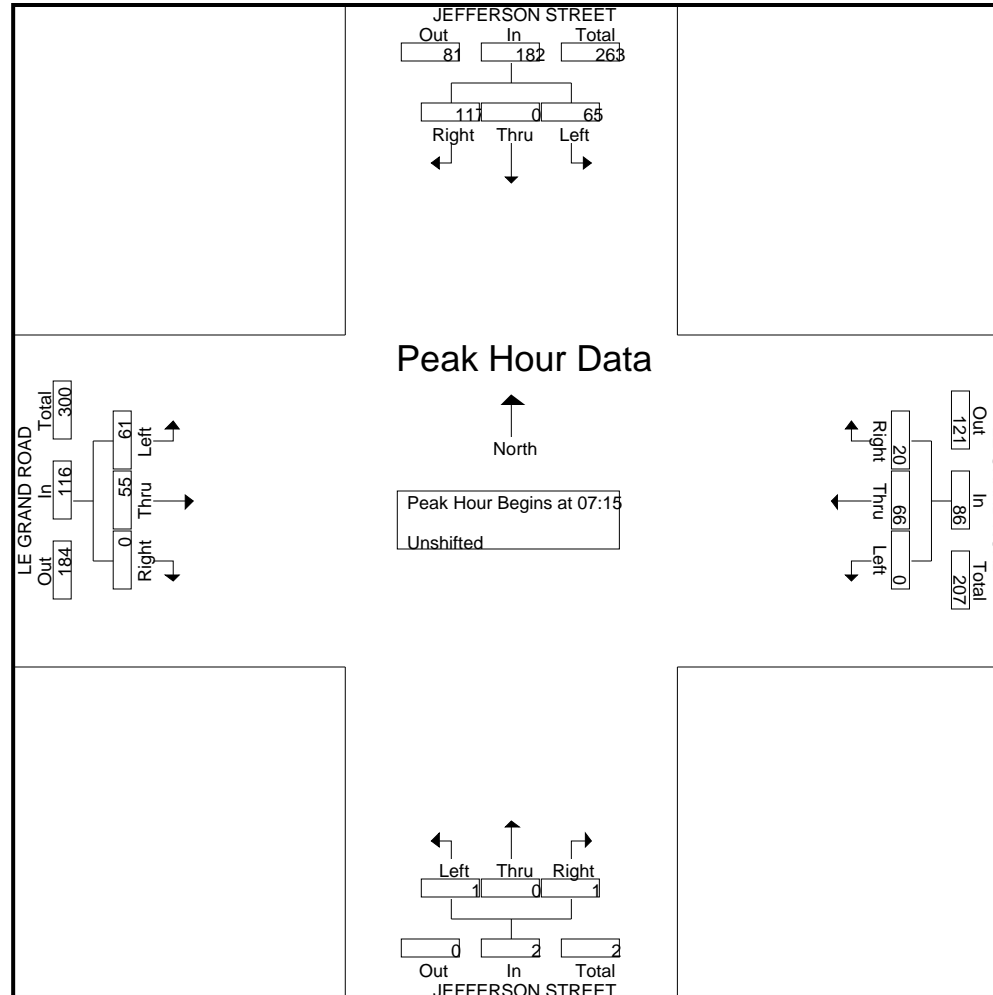
LE GRAND

File Name : 11-7342-025 Jefferson-Le Grand

Site Code : 00000000

Start Date : 8/23/2011

Page No : 3



All Traffic Data

(916) 771-8700

LE GRAND

File Name : 11-7342-025 Jefferson-Le Grand

Site Code : 00000000

Start Date : 8/23/2011

Page No : 4

	JEFFERSON STREET Southbound				LE GRAND ROAD Westbound				JEFFERSON STREET Northbound				LE GRAND 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 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:30																	
16:30	7	0	13	20	0	15	0	15	1	5	3	9	22	16	0	38	82
16:45	6	0	17	23	0	12	1	13	2	6	2	10	17	11	0	28	74
17:00	2	0	13	15	0	10	1	11	2	6	3	11	22	16	0	38	75
17:15	1	0	10	11	0	12	5	17	2	9	5	16	28	15	0	43	87
Total Volume	16	0	53	69	0	49	7	56	7	26	13	46	89	58	0	147	318
% App. Total	23.2	0	76.8		0	87.5	12.5		15.2	56.5	28.3		60.5	39.5	0		
PHF	.571	.000	.779	.750	.000	.817	.350	.824	.875	.722	.650	.719	.795	.906	.000	.855	.914

All Traffic Data

(916) 771-8700

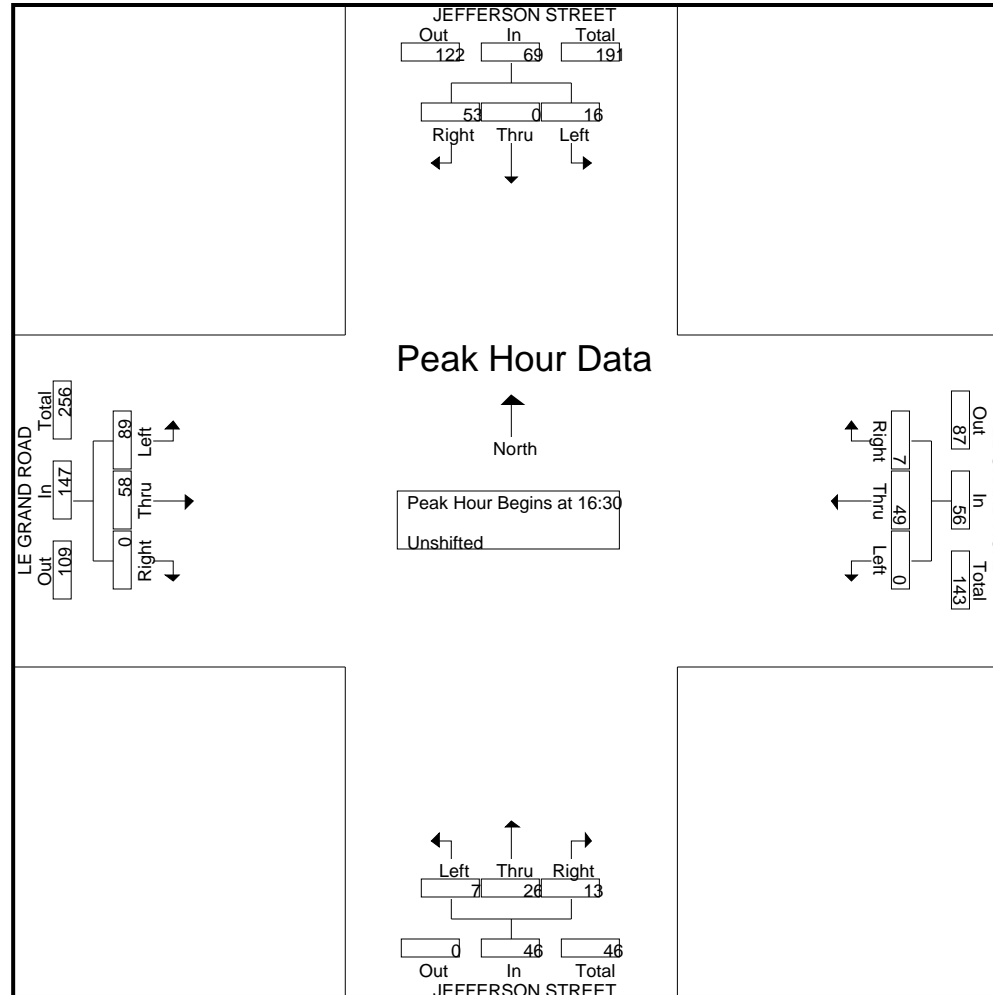
LE GRAND

File Name : 11-7342-025 Jefferson-Le Grand

Site Code : 00000000

Start Date : 8/23/2011

Page No : 5



Prepared by NDS/ATD

Volumes for: Wednesday, August 24, 2011

City: Winton

Project #: 11-7341-001

Location: North Winton Way between Fruitland Avenue and Gertrude Avenue.

Start Time	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	12	86			17	79				
12:15	15	86			10	103				
12:30	8	95			10	78				
12:45	6	97	41	364	6	71	43	331	84	695
1:00	8	97			5	83				
1:15	9	90			4	88				
1:30	6	69			2	76				
1:45	2	93	25	349	4	94	15	341	40	690
2:00	3	100			1	112				
2:15	4	82			3	71				
2:30	9	97			4	92				
2:45	4	113	20	392	1	156	9	431	29	823
3:00	0	184			2	150				
3:15	3	139			3	123				
3:30	3	125			7	117				
3:45	4	96	10	544	6	98	18	488	28	1032
4:00	6	99			5	113				
4:15	1	103			7	116				
4:30	12	117			15	115				
4:45	17	92	36	411	14	105	41	449	77	860
5:00	11	118			20	123				
5:15	20	113			23	116				
5:30	27	139			28	113				
5:45	29	138	87	508	42	99	113	451	200	959
6:00	31	129			40	98				
6:15	28	113			30	98				
6:30	27	95			21	103				
6:45	33	96	119	433	42	93	133	392	252	825
7:00	45	101			61	93				
7:15	56	111			77	109				
7:30	106	104			130	80				
7:45	123	91	330	407	162	82	430	364	760	771
8:00	135	86			186	78				
8:15	109	81			104	84				
8:30	72	85			72	79				
8:45	60	76	376	328	48	56	410	297	786	625
9:00	68	57			75	51				
9:15	59	50			53	53				
9:30	60	66			67	42	0			
9:45	72	43	259	216	65	42	260	188	519	404
10:00	74	29			77	40				
10:15	61	31			92	28				
10:30	78	41			77	19				
10:45	78	17	291	118	75	17	321	104	612	222
11:00	70	16			72	18				
11:15	69	22			77	16				
11:30	64	20			90	11				
11:45	90	7	293	65	97	9	336	54	629	119
Total	1887	4135	1887	4135	2129	3890	2129	3890	4016	8025
Combined Total	6022		6022		6019		6019		12041	
AM Peak	7:30 AM				7:30 AM					
Vol.	473				582					
P.H.F.	0.876				0.782					
PM Peak		2:45 PM				2:45 PM				
Vol.		561				546				
P.H.F.		0.781				0.875				
Percentage	31.3%	68.7%			35.4%	64.6%				

Prepared by NDS/ATD

Volumes for: Tuesday, August 30, 2011

City: Winton

Project #: 11-7341-002

Location: North Winton Way between Gertrude Avenue and Santa Fe Drive .

Start Time	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	11	85			12	85				
12:15	8	72			6	79				
12:30	9	79			10	61				
12:45	7	81	35	317	3	90	31	315	66	632
1:00	6	91			4	87				
1:15	7	82			3	69				
1:30	6	54			3	73				
1:45	6	77	25	304	6	83	16	312	41	616
2:00	2	89			5	60				
2:15	3	77			3	83				
2:30	8	72			0	129				
2:45	1	97	14	335	4	106	12	378	26	713
3:00	0	154			3	82				
3:15	4	115			7	79				
3:30	3	108			5	72				
3:45	2	101	9	478	5	108	20	341	29	819
4:00	3	78			8	108				
4:15	3	90			14	75				
4:30	7	114			12	82				
4:45	11	71	24	353	9	92	43	357	67	710
5:00	9	91			17	94				
5:15	11	94			25	101				
5:30	19	104			36	117				
5:45	19	108	58	397	41	124	119	436	177	833
6:00	24	104			19	119				
6:15	17	85			39	106				
6:30	19	90			59	94				
6:45	30	76	90	355	45	85	162	404	252	759
7:00	32	92			70	75				
7:15	42	93			105	73				
7:30	64	90			157	87				
7:45	93	71	231	346	128	73	460	308	691	654
8:00	109	71			79	87				
8:15	99	89			60	75				
8:30	48	79			64	60				
8:45	51	66	307	305	75	59	278	281	585	586
9:00	54	53			75	37				
9:15	55	58			48	39				
9:30	57	59			47	38	0			
9:45	60	37	226	207	55	40	225	154	451	361
10:00	63	26			65	29				
10:15	63	30			67	25				
10:30	66	35			71	12				
10:45	58	20	250	111	65	14	268	80	518	191
11:00	62	17			63	13				
11:15	58	20			70	14				
11:30	68	21			77	16				
11:45	74	8	262	66	73	17	283	60	545	126
Total	1531	3574	1531	3574	1917	3426	1917	3426	3448	7000
Combined Total	5105		5105		5343		5343		10448	
AM Peak	7:30 AM				7:15 AM					
Vol.	365				469					
P.H.F.	0.837				0.747					
PM Peak		3:00 PM				5:30 PM				
Vol.		478				466				
P.H.F.		0.787				0.940				
Percentage	30.0%	70.0%			35.9%	64.1%				

Prepared by NDS/ATD

Volumes for: Wednesday, August 24, 2011

City: Winton

Project #: 11-7341-003

Location: North Winton Way between Santa Fe Drive and Olive Avenue

Start Time	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	8	39			2	41				
12:15	3	35			2	34				
12:30	1	31			0	33				
12:45	3	44	15	149	3	39	7	147	22	296
1:00	0	39			1	27				
1:15	4	46			3	41				
1:30	1	29			2	37				
1:45	1	44	6	158	1	40	7	145	13	303
2:00	2	41			3	40				
2:15	4	33			2	33				
2:30	2	43			2	47				
2:45	4	38	12	155	1	58	8	178	20	333
3:00	4	57			1	47				
3:15	3	55			1	74				
3:30	1	49			1	46				
3:45	0	38	8	199	3	52	6	219	14	418
4:00	1	44			1	40				
4:15	0	51			2	43				
4:30	5	46			3	64				
4:45	6	45	12	186	6	47	12	194	24	380
5:00	3	51			14	54				
5:15	8	53			8	40				
5:30	14	48			11	35				
5:45	17	51	42	203	18	48	51	177	93	380
6:00	12	43			12	63				
6:15	13	57			15	50				
6:30	10	45			12	41				
6:45	15	43	50	188	19	42	58	196	108	384
7:00	20	42			26	49				
7:15	16	38			16	40				
7:30	20	42			34	32				
7:45	39	42	95	164	66	43	142	164	237	328
8:00	48	44			54	30				
8:15	40	46			43	40				
8:30	23	43			32	35				
8:45	27	33	138	166	27	26	156	131	294	297
9:00	20	26			24	26				
9:15	27	26			38	21				
9:30	24	27			22	15	0			
9:45	28	15	99	94	24	17	108	79	207	173
10:00	38	15			27	8				
10:15	29	15			35	8				
10:30	23	15			30	6				
10:45	32	8	122	53	37	4	129	26	251	79
11:00	27	7			27	9				
11:15	29	13			33	6				
11:30	34	5			33	5				
11:45	35	2	125	27	38	4	131	24	256	51
Total	724	1742	724	1742	815	1680	815	1680	1539	3422
Combined Total	2466		2466		2495		2495		4961	
AM Peak	7:45 AM				7:30 AM					
Vol.	150				197					
P.H.F.	0.781				0.746					
PM Peak		5:00 PM				2:30 PM				
Vol.		203				226				
P.H.F.		0.943				0.764				
Percentage	29.4%	70.6%			32.7%	67.3%				

Prepared by NDS/ATD

Volumes for: Wednesday, August 24, 2011

City: Winton

Project #: 11-7341-004

Location: Santa Fe Drive between Eucalyptus Avenue and Olive Avenue.

Start Time	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	3	20			7	35				
12:15	1	19			5	19				
12:30	0	30			1	33				
12:45	3	36	7	105	4	33	17	120	24	225
1:00	4	23			6	36				
1:15	3	35			5	36				
1:30	1	35			3	38				
1:45	1	36	9	129	3	24	17	134	26	263
2:00	2	33			1	26				
2:15	1	23			2	40				
2:30	0	30			0	37				
2:45	5	24	8	110	0	51	3	154	11	264
3:00	1	27			7	58				
3:15	2	26			0	24				
3:30	4	26			0	34				
3:45	2	35	9	114	1	45	8	161	17	275
4:00	3	42			0	56				
4:15	3	33			6	34				
4:30	8	39			5	38				
4:45	13	25	27	139	5	64	16	192	43	331
5:00	10	28			7	60				
5:15	21	30			7	46				
5:30	39	31			7	51				
5:45	94	39	164	128	4	40	25	197	189	325
6:00	60	33			10	38				
6:15	31	29			10	31				
6:30	30	29			13	28				
6:45	36	18	157	109	21	25	54	122	211	231
7:00	41	13			18	13				
7:15	38	18			28	28				
7:30	57	27			35	26				
7:45	36	22	172	80	26	17	107	84	279	164
8:00	22	16			29	19				
8:15	31	20			29	19				
8:30	29	18			29	17				
8:45	30	11	112	65	33	16	120	71	232	136
9:00	20	12			22	15				
9:15	18	17			18	23				
9:30	24	23			19	12	0			
9:45	27	11	89	63	30	18	89	68	178	131
10:00	21	8			26	8				
10:15	21	12			26	7				
10:30	25	8			21	10				
10:45	15	3	82	31	27	11	100	36	182	67
11:00	25	5			30	8				
11:15	21	3			29	11				
11:30	22	6			24	7				
11:45	20	3	88	17	18	18	101	44	189	61
Total	924	1090	924	1090	657	1383	657	1383	1581	2473
Combined Total	2014		2014		2040		2040		4054	
AM Peak	5:30 AM				8:00 AM					
Vol.	224				120					
P.H.F.	0.596				0.909					
PM Peak		3:45 PM				4:45 PM				
Vol.		149				221				
P.H.F.		0.851				0.863				
Percentage	45.9%	54.1%			32.2%	67.8%				

Prepared by NDS/ATD

Volumes for: Tuesday, August 30, 2011

City: Winton

Project #: 11-7341-005

Location: Santa Fe Drive between Olive Avenue and Walnut Avenue.

Start Time	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	1	41			8	29				
12:15	1	24			3	15				
12:30	1	39			1	31				
12:45	1	29	4	133	5	35	17	110	21	243
1:00	2	35			5	35				
1:15	4	17			4	35				
1:30	2	28			4	24				
1:45	0	29	8	109	3	34	16	128	24	237
2:00	0	30			1	22				
2:15	2	33			1	33				
2:30	3	33			0	40				
2:45	3	35	8	131	0	42	2	137	10	268
3:00	2	24			5	63				
3:15	4	37			0	36				
3:30	1	44			0	32				
3:45	4	43	11	148	1	32	6	163	17	311
4:00	6	41			1	56				
4:15	8	36			7	37				
4:30	14	25			8	33				
4:45	10	31	38	133	5	52	21	178	59	311
5:00	12	38			6	57				
5:15	31	41			4	43				
5:30	74	43			7	46				
5:45	63	28	180	150	4	38	21	184	201	334
6:00	34	24			11	26				
6:15	25	21			11	28				
6:30	36	32			16	29				
6:45	30	18	125	95	13	30	51	113	176	208
7:00	43	22			19	13				
7:15	23	19			30	22				
7:30	47	25			35	26				
7:45	32	25	145	91	23	11	107	72	252	163
8:00	37	22			32	17				
8:15	28	31			28	22				
8:30	38	25			29	17				
8:45	24	21	127	99	31	10	120	66	247	165
9:00	33	18			21	17				
9:15	24	20			21	20				
9:30	27	16			22	12	0			
9:45	26	8	110	62	35	13	99	62	209	124
10:00	23	9			32	8				
10:15	32	12			29	8				
10:30	29	9			27	5				
10:45	26	6	110	36	27	14	115	35	225	71
11:00	28	4			31	10				
11:15	25	1			24	10				
11:30	20	2			24	7				
11:45	22	1	95	8	17	14	96	41	191	49
Total	961	1195	961	1195	671	1289	671	1289	1632	2484
Combined Total	2156		2156		1960		1960		4116	
AM Peak	5:15 AM				9:45 AM					
Vol.	202				123					
P.H.F.	0.682				0.879					
PM Peak		3:15 PM				4:45 PM				
Vol.		165				198				
P.H.F.		0.949				0.868				
Percentage	44.6%	55.4%			34.2%	65.8%				

Prepared by NDS/ATD

Volumes for: Wednesday, August 24, 2011

City: Winton

Project #: 11-7341-006

Location: Santa Fe Drive between Walnut Avenue and Winton Way.

Start Time	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	11	54			8	52				
12:15	5	53			5	40				
12:30	7	57			3	56				
12:45	7	68	30	232	6	69	22	217	52	449
1:00	3	57			7	53				
1:15	2	63			8	60				
1:30	3	78			6	62				
1:45	1	64	9	262	6	57	27	232	36	494
2:00	5	57			1	48				
2:15	2	72			5	54				
2:30	3	61			0	61				
2:45	4	66	14	256	5	75	11	238	25	494
3:00	3	62			4	87				
3:15	4	62			0	62				
3:30	1	64			0	65				
3:45	5	75	13	263	5	55	9	269	22	532
4:00	6	84			4	87				
4:15	4	77			6	69				
4:30	13	86			11	71				
4:45	12	91	35	338	6	66	27	293	62	631
5:00	16	71			10	91				
5:15	21	82			12	68				
5:30	35	76			18	78				
5:45	64	75	136	304	21	78	61	315	197	619
6:00	43	80			13	64				
6:15	35	61			20	62				
6:30	41	71			32	51				
6:45	45	59	164	271	38	66	103	243	267	514
7:00	33	45			56	54				
7:15	53	37			64	39				
7:30	39	55			73	43				
7:45	60	60	185	197	66	29	259	165	444	362
8:00	62	56			71	28				
8:15	38	46			56	36				
8:30	51	39			62	25				
8:45	47	52	198	193	60	29	249	118	447	311
9:00	45	43			52	25				
9:15	40	36			35	30				
9:30	39	44			55	25	0			
9:45	39	43	163	166	57	26	199	106	362	272
10:00	36	25			61	10				
10:15	47	22			62	18				
10:30	40	28			60	12				
10:45	46	21	169	96	50	19	233	59	402	155
11:00	44	19			61	13				
11:15	49	10			60	13				
11:30	54	10			48	11				
11:45	50	11	197	50	43	13	212	50	409	100
Total	1313	2628	1313	2628	1412	2305	1412	2305	2725	4933
Combined Total	3941		3941		3717		3717		7658	
AM Peak	7:15 AM				7:15 AM					
Vol.	214				274					
P.H.F.	0.863				0.938					
PM Peak		4:00 PM				5:00 PM				
Vol.		338				315				
P.H.F.		0.968				0.865				
Percentage	33.3%	66.7%			38.0%	62.0%				

Prepared by NDS/ATD

Volumes for: Tuesday, August 30, 2011

City: Winton

Project #: 11-7341-007

Location: Santa Fe Drive between Winton Way and Shaffer Road.

Start Time	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	12	59			21	65				
12:15	9	81			8	81				
12:30	8	79			5	77				
12:45	4	78	33	297	6	71	40	294	73	591
1:00	7	90			10	54				
1:15	3	87			5	64				
1:30	2	65			8	62				
1:45	3	76	15	318	5	73	28	253	43	571
2:00	5	78			1	74				
2:15	9	88			5	56				
2:30	3	76			2	92				
2:45	5	69	22	311	3	111	11	333	33	644
3:00	1	87			0	63				
3:15	4	75			0	93				
3:30	1	88			3	84				
3:45	8	91	14	341	4	101	7	341	21	682
4:00	1	105			3	83				
4:15	3	108			8	75				
4:30	13	87			9	98				
4:45	13	86	30	386	14	78	34	334	64	720
5:00	15	82			9	88				
5:15	25	111			15	82				
5:30	36	110			33	82				
5:45	40	87	116	390	23	68	80	320	196	710
6:00	23	60			20	58				
6:15	34	89			28	79				
6:30	30	72			59	63				
6:45	34	53	121	274	44	69	151	269	272	543
7:00	38	63			56	51				
7:15	62	62			84	48				
7:30	55	63			107	65				
7:45	64	73	219	261	104	49	351	213	570	474
8:00	61	56			67	77				
8:15	53	60			68	68				
8:30	52	66			85	36				
8:45	39	37	205	219	57	35	277	216	482	435
9:00	43	50			46	33				
9:15	44	58			62	42				
9:30	49	32			50	28	0			
9:45	56	38	192	178	45	30	203	133	395	311
10:00	44	47			70	15				
10:15	44	34			60	29				
10:30	50	30			55	20				
10:45	52	19	190	130	55	15	240	79	430	209
11:00	61	16			68	17				
11:15	72	15			66	16				
11:30	56	11			67	18				
11:45	90	13	279	55	65	13	266	64	545	119
Total	1436	3160	1436	3160	1688	2849	1688	2849	3124	6009
Combined Total	4596		4596		4537		4537		9133	
AM Peak	11:45 AM				7:15 AM					
Vol.	309				362					
P.H.F.	0.858				0.846					
PM Peak		3:30 PM				3:15 PM				
Vol.		392				361				
P.H.F.		0.926				0.894				
Percentage	31.2%	68.8%			37.2%	62.8%				

Prepared by NDS/ATD

Volumes for: Wednesday, August 24, 2011

City: Winton

Project #: 11-7341-008

Location: Olive Avenue between Vine Avenue and Santa Fe Drive.

Start Time	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	1	4			1	5				
12:15	2	2			4	6				
12:30	2	4			2	3				
12:45	2	10	7	20	0	10	7	24	14	44
1:00	1	8			0	9				
1:15	0	9			0	10				
1:30	0	9			1	10				
1:45	2	8	3	34	1	6	2	35	5	69
2:00	1	8			1	11				
2:15	0	5			0	6				
2:30	3	11			2	9				
2:45	2	13	6	37	0	16	3	42	9	79
3:00	2	12			0	7				
3:15	1	10			0	10				
3:30	0	13			2	10				
3:45	3	8	6	43	0	12	2	39	8	82
4:00	0	14			1	15				
4:15	2	12			0	10				
4:30	2	7			2	19				
4:45	2	16	6	49	3	13	6	57	12	106
5:00	5	4			1	11				
5:15	4	8			4	8				
5:30	13	11			6	8				
5:45	12	15	34	38	7	16	18	43	52	81
6:00	18	14			7	13				
6:15	6	10			6	11				
6:30	8	7			6	12				
6:45	12	14	44	45	13	8	32	44	76	89
7:00	9	4			7	4				
7:15	11	9			4	12				
7:30	8	16			7	8				
7:45	14	5	42	34	15	9	33	33	75	67
8:00	15	4			9	6				
8:15	17	8			14	9				
8:30	5	9			6	9				
8:45	8	6	45	27	6	4	35	28	80	55
9:00	5	9			13	8				
9:15	8	4			4	14				
9:30	7	8			9	4				
9:45	11	5	31	26	7	6	33	32	64	58
10:00	7	2			2	11				
10:15	14	3			6	1				
10:30	5	0			5	5				
10:45	10	6	36	11	14	3	27	20	63	31
11:00	6	3			6	4				
11:15	5	3			5	2				
11:30	7	3			17	3				
11:45	9	1	27	10	5	4	33	13	60	23
Total	287	374	287	374	231	410	231	410	518	784
Combined Total	661		661		641		641		1302	
AM Peak	7:30 AM				7:30 AM					
Vol.	54				45					
P.H.F.	0.794				0.750					
PM Peak		5:30 PM				4:00 PM				
Vol.		50				57				
P.H.F.		0.833				0.750				
Percentage	43.4%	56.6%			36.0%	64.0%				

Prepared by NDS/ATD

Volumes for: Wednesday, August 24, 2011

City: Winton

Project #: 11-7341-009

Location: Olive Avenue between Santa Fe Drive and Winton Way.

Start Time	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	3	2			0	1				
12:15	4	8			1	3				
12:30	1	2			0	3				
12:45	2	7	10	19	0	8	1	15	11	34
1:00	1	3			1	5				
1:15	0	4			2	3				
1:30	2	5			0	4				
1:45	0	2	3	14	1	2	4	14	7	28
2:00	0	4			0	5				
2:15	2	4			0	3				
2:30	1	7			1	3				
2:45	1	4	4	19	0	3	1	14	5	33
3:00	0	3			0	3				
3:15	0	4			1	12				
3:30	0	5			1	5				
3:45	1	13	1	25	0	4	2	24	3	49
4:00	1	8			0	5				
4:15	1	6			0	6				
4:30	0	5			4	7				
4:45	0	15	2	34	3	4	7	22	9	56
5:00	0	3			1	3				
5:15	6	7			6	2				
5:30	1	11			6	2				
5:45	3	11	10	32	13	8	26	15	36	47
6:00	4	17			9	3				
6:15	4	5			8	3				
6:30	3	9			4	2				
6:45	5	9	16	40	6	6	27	14	43	54
7:00	3	5			9	3				
7:15	4	6			8	5				
7:30	4	14			11	7				
7:45	6	4	17	29	4	6	32	21	49	50
8:00	7	7			9	2				
8:15	11	2			11	1				
8:30	4	8			5	3				
8:45	4	6	26	23	11	1	36	7	62	30
9:00	4	6			8	2				
9:15	5	2			1	5				
9:30	1	2			5	0				
9:45	2	5	12	15	3	3	17	10	29	25
10:00	3	2			7	2				
10:15	4	4			5	1				
10:30	5	2			6	1				
10:45	4	1	16	9	6	1	24	5	40	14
11:00	5	0			4	2				
11:15	2	2			2	1				
11:30	8	3			6	0				
11:45	8	0	23	5	4	1	16	4	39	9
Total	140	264	140	264	193	165	193	165	333	429
Combined Total	404		404		358		358		762	
AM Peak	7:30 AM				5:30 AM					
Vol.	28				36					
P.H.F.	0.636				0.692					
PM Peak		5:15 PM				3:15 PM				
Vol.		46				26				
P.H.F.		0.676				0.542				
Percentage	34.7%	65.3%			53.9%	46.1%				

Prepared by NDS/ATD

Volumes for: Wednesday, August 24, 2011

City: Winton

Project #: 11-7341-010

Location: Walnut Avenue between Vine Avenue and Santa Fe Drive.

Start Time	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	10	30			12	39				
12:15	7	29			19	34				
12:30	8	40			8	42				
12:45	6	33	31	132	3	34	42	149	73	281
1:00	10	26			3	37				
1:15	8	34			3	37				
1:30	4	39			4	37				
1:45	12	41	34	140	4	37	14	148	48	288
2:00	7	34			4	45				
2:15	2	41			3	39				
2:30	3	45			2	44				
2:45	3	31	15	151	5	45	14	173	29	324
3:00	2	51			1	41				
3:15	0	58			5	41				
3:30	1	50			6	59				
3:45	0	46	3	205	10	42	22	183	25	388
4:00	0	64			2	33				
4:15	2	45			3	43				
4:30	6	51			12	48				
4:45	5	54	13	214	14	41	31	165	44	379
5:00	10	50			16	61				
5:15	12	40			22	33				
5:30	20	51			37	55				
5:45	14	53	56	194	50	48	125	197	181	391
6:00	14	60			32	32				
6:15	23	47			31	43				
6:30	17	45			27	45				
6:45	25	49	79	201	27	37	117	157	196	358
7:00	21	42			24	37				
7:15	31	36			23	45				
7:30	40	37			29	30				
7:45	61	39	153	154	50	47	126	159	279	313
8:00	40	26			49	46				
8:15	34	22			29	35				
8:30	34	43			31	27				
8:45	19	22	127	113	36	27	145	135	272	248
9:00	37	24			40	28				
9:15	20	20			23	28				
9:30	24	24			30	42				
9:45	28	31	109	99	21	12	114	110	223	209
10:00	44	11			25	21				
10:15	40	14			31	21				
10:30	25	11			21	26				
10:45	25	19	134	55	20	23	97	91	231	146
11:00	28	10			26	10				
11:15	29	16			26	11				
11:30	23	14			24	10				
11:45	27	6	107	46	35	11	111	42	218	88
Total	861	1704	861	1704	958	1709	958	1709	1819	3413
Combined Total	2565		2565		2667		2667		5232	
AM Peak	7:30 AM				7:45 AM					
Vol.	175				159					
P.H.F.	0.717				0.795					
PM Peak		3:15 PM				5:00 PM				
Vol.		218				197				
P.H.F.		0.852				0.807				
Percentage	33.6%	66.4%			35.9%	64.1%				

Prepared by NDS/ATD

Volumes for: Wednesday, August 24, 2011

City: Winton

Project #: 11-7341-011

Location: Walnut Avenue between Santa Fe Drive and Winton Way.

Start Time	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	7	23			6	20				
12:15	1	23			3	22				
12:30	7	27			4	26				
12:45	9	26	24	99	3	19	16	87	40	186
1:00	2	12			2	16				
1:15	7	30			4	21				
1:30	8	23			1	11				
1:45	3	21	20	86	0	27	7	75	27	161
2:00	1	16			0	19				
2:15	2	35			2	39				
2:30	0	16			1	53				
2:45	4	76	7	143	1	37	4	148	11	291
3:00	1	40			2	23				
3:15	1	42			2	29				
3:30	1	46			2	18				
3:45	1	32	4	160	0	17	6	87	10	247
4:00	4	46			3	31				
4:15	3	34			2	26				
4:30	4	29			6	22				
4:45	5	32	16	141	9	23	20	102	36	243
5:00	5	28			16	19				
5:15	5	27			14	15				
5:30	14	20			28	27				
5:45	9	25	33	100	52	26	110	87	143	187
6:00	5	28			16	50				
6:15	4	19			14	33				
6:30	12	26			17	40				
6:45	11	46	32	119	21	28	68	151	100	270
7:00	13	45			10	24				
7:15	11	38			21	22				
7:30	33	31			44	12				
7:45	53	28	110	142	96	17	171	75	281	217
8:00	47	23			62	13				
8:15	28	19			13	16				
8:30	15	27			10	11				
8:45	7	20	97	89	16	7	101	47	198	136
9:00	13	13			28	16				
9:15	16	13			11	18				
9:30	12	19			14	20				
9:45	13	17	54	62	17	11	70	65	124	127
10:00	17	9			13	10				
10:15	16	9			13	6				
10:30	16	7			7	13				
10:45	21	13	70	38	14	8	47	37	117	75
11:00	16	7			16	6				
11:15	23	5			16	5				
11:30	27	5			25	7				
11:45	28	4	94	21	20	3	77	21	171	42
Total	561	1200	561	1200	697	982	697	982	1258	2182
Combined Total	1761		1761		1679		1679		3440	
AM Peak	7:30 AM				7:15 AM					
Vol.	161				223					
P.H.F.	0.759				0.581					
PM Peak		2:45 PM				2:15 PM				
Vol.		204				152				
P.H.F.		0.671				0.717				
Percentage	31.9%	68.1%			41.5%	58.5%				

Prepared by NDS/ATD

Volumes for: Wednesday, August 24, 2011

City: Winton

Project #: 11-7341-012

Location: Walnut Avenue between Winton Way and California Avenue.

Start Time	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	7	12			7	16				
12:15	1	20			5	18				
12:30	8	26			0	13				
12:45	1	29	17	87	1	18	13	65	30	152
1:00	4	17			4	17				
1:15	5	20			2	20				
1:30	4	17			1	17				
1:45	4	18	17	72	1	16	8	70	25	142
2:00	1	26			0	18				
2:15	2	22			1	23				
2:30	0	29			1	20				
2:45	1	42	4	119	2	34	4	95	8	214
3:00	1	35			0	35				
3:15	2	34			1	32				
3:30	2	21			1	22				
3:45	0	37	5	127	1	23	3	112	8	239
4:00	1	33			0	26				
4:15	3	25			3	21				
4:30	3	29			1	35				
4:45	4	25	11	112	6	23	10	105	21	217
5:00	4	32			7	23				
5:15	12	32			8	26				
5:30	8	24			25	24				
5:45	13	21	37	109	17	21	57	94	94	203
6:00	6	23			16	33				
6:15	10	14			9	19				
6:30	18	21			11	27				
6:45	13	34	47	92	11	30	47	109	94	201
7:00	9	34			12	23				
7:15	8	36			12	24				
7:30	25	35			33	14				
7:45	34	29	76	134	55	17	112	78	188	212
8:00	38	33			41	19				
8:15	18	22			22	22				
8:30	18	40			9	17				
8:45	5	16	79	111	9	17	81	75	160	186
9:00	7	15			18	16				
9:15	13	16			11	25				
9:30	12	23			16	15				
9:45	12	17	44	71	12	13	57	69	101	140
10:00	11	15			15	7				
10:15	11	10			13	10				
10:30	17	7			17	14				
10:45	18	5	57	37	12	3	57	34	114	71
11:00	16	9			14	7				
11:15	10	6			14	7				
11:30	24	3			16	2				
11:45	17	3	67	21	19	4	63	20	130	41
Total	461	1092	461	1092	512	926	512	926	973	2018
Combined Total	1553		1553		1438		1438		2991	
AM Peak	7:30 AM				7:30 AM					
Vol.	115				151					
P.H.F.	0.757				0.686					
PM Peak		2:30 PM				2:45 PM				
Vol.		140				123				
P.H.F.		0.833				0.879				
Percentage	29.7%	70.3%			35.6%	64.4%				

Prepared by NDS/ATD

Volumes for: Tuesday, August 30, 2011

City: Winton

Project #: 11-7341-013

Location: Almond Avenue between Cypress Avenue and Winton Way.

Start Time	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	3	23			1	16				
12:15	4	32			2	14				
12:30	1	13			0	6				
12:45	3	20	11	88	0	9	3	45	14	133
1:00	4	21			1	10				
1:15	3	13			0	9				
1:30	2	21			0	14				
1:45	0	19	9	74	1	12	2	45	11	119
2:00	2	30			2	16				
2:15	1	13			0	26				
2:30	1	10			0	35				
2:45	1	61	5	114	1	38	3	115	8	229
3:00	1	15			1	25				
3:15	0	13			1	11				
3:30	0	24			2	23				
3:45	1	10	2	62	1	4	5	63	7	125
4:00	1	29			1	17				
4:15	2	16			0	9				
4:30	6	8			3	16				
4:45	4	27	13	80	0	19	4	61	17	141
5:00	5	15			8	14				
5:15	11	13			12	36				
5:30	19	13			8	36				
5:45	9	19	44	60	9	26	37	112	81	172
6:00	12	20			10	22				
6:15	7	18			8	10				
6:30	11	29			8	8				
6:45	12	38	42	105	4	12	30	52	72	157
7:00	12	30			16	6				
7:15	26	20			31	13				
7:30	44	13			42	12				
7:45	85	23	167	86	30	23	119	54	286	140
8:00	72	14			6	14				
8:15	25	41			4	7				
8:30	23	15			13	4				
8:45	13	5	133	75	14	4	37	29	170	104
9:00	12	1			1	6				
9:15	10	3			5	3				
9:30	7	3			9	5				
9:45	10	5	39	12	8	6	23	20	62	32
10:00	14	1			10	7				
10:15	14	3			10	6				
10:30	11	6			11	0				
10:45	15	4	54	14	8	0	39	13	93	27
11:00	27	4			12	1				
11:15	18	3			6	1				
11:30	13	0			16	3				
11:45	16	1	74	8	37	1	71	6	145	14
Total	593	778	593	778	373	615	373	615	966	1393
Combined Total	1371		1371		988		988		2359	
AM Peak	7:15 AM				7:00 AM					
Vol.	227				119					
P.H.F.	0.668				0.708					
PM Peak		6:30 PM				2:15 PM				
Vol.		117				124				
P.H.F.		0.770				0.816				
Percentage	43.3%	56.7%			37.8%	62.2%				

Prepared by NDS/ATD

Volumes for: Wednesday, August 24, 2011

City: Winton

Project #: 11-7341-014

Location: Gertrude Avenue between Cypress Avenue and Winton Way.

Start Time	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	3	8			2	13				
12:15	2	19			3	22				
12:30	1	19			1	16				
12:45	1	15	7	61	1	19	7	70	14	131
1:00	1	19			2	16				
1:15	0	11			0	17				
1:30	0	10			0	14				
1:45	1	15	2	55	0	12	2	59	4	114
2:00	1	18			0	18				
2:15	1	15			0	10				
2:30	2	10			0	28				
2:45	2	22	6	65	1	20	1	76	7	141
3:00	0	16			1	42				
3:15	3	44			1	30				
3:30	1	32			0	20				
3:45	2	16	6	108	0	21	2	113	8	221
4:00	3	14			0	12				
4:15	0	28			0	16				
4:30	2	24			1	20				
4:45	5	20	10	86	3	15	4	63	14	149
5:00	4	23			1	15				
5:15	10	30			3	23				
5:30	5	17			2	35				
5:45	12	19	31	89	3	31	9	104	40	193
6:00	7	15			6	26				
6:15	6	21			6	33				
6:30	2	24			7	21				
6:45	8	25	23	85	6	29	25	109	48	194
7:00	9	28			12	38				
7:15	17	44			14	21				
7:30	34	19			25	25				
7:45	49	20	109	111	42	18	93	102	202	213
8:00	43	20			28	19				
8:15	15	10			13	10				
8:30	16	21			16	19				
8:45	11	11	85	62	8	14	65	62	150	124
9:00	21	19			21	15				
9:15	14	19			17	10				
9:30	27	16			17	14				
9:45	11	12	73	66	10	10	65	49	138	115
10:00	26	12			7	5				
10:15	17	4			8	12				
10:30	10	5			6	16				
10:45	8	7	61	28	14	5	35	38	96	66
11:00	11	5			10	4				
11:15	14	3			13	3				
11:30	14	4			9	2				
11:45	13	0	52	12	11	0	43	9	95	21
Total	465	828	465	828	351	854	351	854	816	1682
Combined Total	1293		1293		1205		1205		2498	
AM Peak	7:15 AM				7:15 AM					
Vol.	143				109					
P.H.F.	0.730				0.649					
PM Peak		6:30 PM				5:30 PM				
Vol.		121				125				
P.H.F.		0.688				0.893				
Percentage	36.0%	64.0%			29.1%	70.9%				

Prepared by NDS/ATD

Volumes for: Wednesday, August 24, 2011

City: Winton

Project #: 11-7341-015

Location: California Street between Santa Fe Drive and Walnut Avenue.

Start Time	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	4	16			3	10				
12:15	3	14			2	8				
12:30	2	14			2	15				
12:45	2	14	11	58	0	13	7	46	18	104
1:00	1	11			4	19				
1:15	2	14			0	8				
1:30	0	12			2	9				
1:45	2	11	5	48	4	11	10	47	15	95
2:00	1	22			1	11				
2:15	0	12			0	12				
2:30	1	22			1	9				
2:45	3	36	5	92	1	32	3	64	8	156
3:00	2	19			1	9				
3:15	0	18			0	13				
3:30	3	16			0	15				
3:45	1	27	6	80	1	20	2	57	8	137
4:00	4	25			0	20				
4:15	2	12			0	18				
4:30	1	23			5	23				
4:45	5	23	12	83	3	22	8	83	20	166
5:00	2	16			6	14				
5:15	7	25			4	17				
5:30	10	26			6	23				
5:45	8	26	27	93	5	15	21	69	48	162
6:00	9	20			10	20				
6:15	3	17			6	21				
6:30	8	24			4	18				
6:45	5	14	25	75	12	22	32	81	57	156
7:00	4	18			13	21				
7:15	6	17			17	18				
7:30	13	28			16	14				
7:45	24	17	47	80	22	15	68	68	115	148
8:00	11	18			17	20				
8:15	12	15			19	11				
8:30	9	20			23	20				
8:45	10	20	42	73	10	19	69	70	111	143
9:00	12	17			9	12				
9:15	12	16			11	13				
9:30	5	14			12	21	0			
9:45	12	7	41	54	9	14	41	60	82	114
10:00	9	12			20	7				
10:15	4	10			15	10				
10:30	18	11			14	7				
10:45	16	5	47	38	5	5	54	29	101	67
11:00	9	4			7	7				
11:15	9	3			14	2				
11:30	9	7			7	4				
11:45	12	3	39	17	13	3	41	16	80	33
Total	307	791	307	791	356	690	356	690	663	1481
Combined Total	1098		1098		1046		1046		2144	
AM Peak	7:30 AM				7:45 AM					
Vol.	60				81					
P.H.F.	0.625				0.880					
PM Peak		5:15 PM				4:00 PM				
Vol.		97				83				
P.H.F.		0.990				0.902				
Percentage	28.0%	72.0%			34.0%	66.0%				

Prepared by NDS/ATD

Volumes for: Wednesday, August 24, 2011

City: Winton

Project #: 11-7341-016

Location: Shaffer Road between Walnut Avenue and Santa Fe Drive .

Start Time	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	4	25			4	37				
12:15	5	22			1	21				
12:30	3	19			3	25				
12:45	1	25	13	91	2	26	10	109	23	200
1:00	2	21			14	32				
1:15	3	27			2	28				
1:30	1	26			0	23				
1:45	2	25	8	99	1	28	17	111	25	210
2:00	3	26			2	24				
2:15	4	20			3	23				
2:30	2	33			3	31				
2:45	2	26	11	105	1	40	9	118	20	223
3:00	1	19			2	34				
3:15	3	33			1	30				
3:30	4	26			2	37				
3:45	9	40	17	118	3	40	8	141	25	259
4:00	2	38			1	53				
4:15	5	23			3	39				
4:30	15	21			4	44				
4:45	29	37	51	119	3	47	11	183	62	302
5:00	16	29			4	47				
5:15	34	32			8	43				
5:30	45	31			3	37				
5:45	57	28	152	120	7	27	22	154	174	274
6:00	39	24			14	30				
6:15	34	31			3	29				
6:30	26	24			19	22				
6:45	25	29	124	108	22	19	58	100	182	208
7:00	10	18			31	21				
7:15	21	26			34	17				
7:30	30	15			33	29				
7:45	35	25	96	84	49	19	147	86	243	170
8:00	27	24			29	19				
8:15	31	19			29	19				
8:30	22	16			23	13				
8:45	23	27	103	86	21	13	102	64	205	150
9:00	19	21			28	11				
9:15	17	16			19	13				
9:30	13	22			17	9	0			
9:45	21	18	70	77	18	7	82	40	152	117
10:00	12	8			28	4				
10:15	15	8			19	7				
10:30	18	6			21	6				
10:45	15	6	60	28	22	5	90	22	150	50
11:00	18	12			29	4				
11:15	28	11			21	4				
11:30	21	6			32	4				
11:45	8	11	75	40	33	4	115	16	190	56
Total	780	1075	780	1075	671	1144	671	1144	1451	2219
Combined Total	1855		1855		1815		1815		3670	
AM Peak	5:15 AM				7:00 AM					
Vol.	175				147					
P.H.F.	0.768				0.750					
PM Peak		3:15 PM				4:00 PM				
Vol.		137				183				
P.H.F.		0.869				0.863				
Percentage	42.0%	58.0%			37.0%	63.0%				

Prepared by NDS/ATD

Volumes for: Wednesday, August 24, 2011

City: Winton

Project #: 11-7341-017

Location: Shaffer Road from Santa Fe Drive and Gertrude Avenue.

Start Time	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	12	64			14	80				
12:15	11	51			4	63				
12:30	6	65			10	81				
12:45	1	74	30	254	5	68	33	292	63	546
1:00	4	73			13	94				
1:15	4	60			7	69				
1:30	8	48			4	55				
1:45	2	54	18	235	6	59	30	277	48	512
2:00	6	52			5	60				
2:15	6	61			2	64				
2:30	4	79			3	78				
2:45	6	44	22	236	1	85	11	287	33	523
3:00	3	62			2	68				
3:15	4	77			1	69				
3:30	3	56			6	61				
3:45	14	76	24	271	5	93	14	291	38	562
4:00	3	59			4	89				
4:15	2	61			6	92				
4:30	13	61			7	86				
4:45	28	63	46	244	5	106	22	373	68	617
5:00	21	61			7	96				
5:15	30	66			17	103				
5:30	45	73			11	99				
5:45	63	69	159	269	12	59	47	357	206	626
6:00	43	58			24	64				
6:15	35	62			10	56				
6:30	30	54			20	80				
6:45	43	45	151	219	35	68	89	268	240	487
7:00	54	34			27	60				
7:15	53	48			52	74				
7:30	109	55			72	54				
7:45	119	54	335	191	65	55	216	243	551	434
8:00	96	59			64	44				
8:15	67	49			49	46				
8:30	64	37			49	41				
8:45	73	56	300	201	48	48	210	179	510	380
9:00	47	39			51	35				
9:15	48	37			41	33				
9:30	41	35			47	47	0			
9:45	44	30	180	141	33	24	172	139	352	280
10:00	38	34			67	17				
10:15	40	22			49	26				
10:30	36	20			51	28				
10:45	37	21	151	97	48	12	215	83	366	180
11:00	40	9			54	20				
11:15	54	13			64	12				
11:30	43	9			69	10				
11:45	57	11	194	42	94	10	281	52	475	94
Total	1610	2400	1610	2400	1340	2841	1340	2841	2950	5241
Combined Total	4010		4010		4181		4181		8191	
AM Peak	7:30 AM				11:45 AM					
Vol.	391				318					
P.H.F.	0.821				0.846					
PM Peak		12:30 PM				4:45 PM				
Vol.		272				404				
P.H.F.		0.963				0.953				
Percentage	40.1%	59.9%			32.0%	68.0%				

Prepared by NDS/ATD

Volumes for: Wednesday, August 24, 2011

City: Winton

Project #: 11-7341-018

Location: Chestnut Lane between Walnut Avenue and Santa Fe Drive .

Start Time	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	2	9			0	6				
12:15	1	5			1	8				
12:30	1	12			1	7				
12:45	3	14	7	40	0	14	2	35	9	75
1:00	1	6			1	4				
1:15	0	10			0	9				
1:30	0	7			0	4				
1:45	0	11	1	34	1	4	2	21	3	55
2:00	1	8			0	5				
2:15	2	13			0	3				
2:30	0	16			0	5				
2:45	0	15	3	52	0	26	0	39	3	91
3:00	0	18			0	16				
3:15	0	8			0	10				
3:30	0	7			0	18				
3:45	0	7	0	40	1	13	1	57	1	97
4:00	0	3			4	16				
4:15	1	4			0	9				
4:30	1	12			2	7				
4:45	1	8	3	27	1	10	7	42	10	69
5:00	1	11			4	8				
5:15	0	7			5	6				
5:30	2	13			1	8				
5:45	1	9	4	40	3	6	13	28	17	68
6:00	0	8			4	7				
6:15	1	12			5	5				
6:30	1	9			2	3				
6:45	0	6	2	35	9	6	20	21	22	56
7:00	4	5			4	5				
7:15	5	4			4	9				
7:30	12	9			15	6				
7:45	24	2	45	20	22	7	45	27	90	47
8:00	12	6			21	4				
8:15	8	14			10	5				
8:30	5	7			6	6				
8:45	6	8	31	35	9	6	46	21	77	56
9:00	9	9			5	2				
9:15	1	2			5	4				
9:30	3	7			7	3	0			
9:45	4	3	17	21	3	3	20	12	37	33
10:00	4	6			5	2				
10:15	3	5			11	1				
10:30	3	0			13	8				
10:45	3	1	13	12	9	0	38	11	51	23
11:00	10	0			3	3				
11:15	10	1			11	1				
11:30	1	3			8	0				
11:45	9	1	30	5	15	2	37	6	67	11
Total	156	361	156	361	231	320	231	320	387	681
Combined Total	517		517		551		551		1068	
AM Peak	7:30 AM				7:30 AM					
Vol.	56				68					
P.H.F.	0.583				0.773					
PM Peak		2:15 PM				2:45 PM				
Vol.		62				70				
P.H.F.		0.922				0.673				
Percentage	30.2%	69.8%			41.9%	58.1%				

Prepared by NDS/ATD

Volumes for: Wednesday, August 24, 2011

City: Winton

Project #: 11-7341-019

Location: Camilla Drive between Winton Way and Shaffer Road .

Start Time	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	0	11			1	10				
12:15	5	23			0	26				
12:30	3	18			2	14				
12:45	0	25	8	77	1	21	4	71	12	148
1:00	1	20			2	18				
1:15	3	22			1	18				
1:30	1	20			0	20				
1:45	0	23	5	85	1	19	4	75	9	160
2:00	1	18			0	9				
2:15	2	11			0	13				
2:30	1	21			1	27				
2:45	3	20	7	70	0	27	1	76	8	146
3:00	0	26			0	24				
3:15	0	29			0	17				
3:30	0	35			2	21				
3:45	4	16	4	106	2	13	4	75	8	181
4:00	0	19			1	18				
4:15	0	32			0	22				
4:30	2	25			2	21				
4:45	3	29	5	105	0	24	3	85	8	190
5:00	3	25			5	29				
5:15	7	26			2	18				
5:30	9	30			0	34				
5:45	12	40	31	121	5	19	12	100	43	221
6:00	9	18			12	22				
6:15	8	27			8	20				
6:30	12	17			4	17				
6:45	11	9	40	71	12	18	36	77	76	148
7:00	15	17			20	22				
7:15	22	17			23	10				
7:30	36	21			38	18				
7:45	29	18	102	73	33	17	114	67	216	140
8:00	33	20			42	18				
8:15	31	16			20	13				
8:30	18	15			12	10				
8:45	28	14	110	65	9	8	83	49	193	114
9:00	20	14			14	1				
9:15	11	7			13	5				
9:30	17	11			17	11				
9:45	15	6	63	38	14	7	58	24	121	62
10:00	18	3			15	2				
10:15	11	6			9	6				
10:30	14	3			15	2				
10:45	15	2	58	14	8	0	47	10	105	24
11:00	16	0			13	3				
11:15	18	8			13	6				
11:30	16	3			19	2				
11:45	18	0	68	11	12	1	57	12	125	23
Total	501	836	501	836	423	721	423	721	924	1557
Combined Total	1337		1337		1144		1144		2481	
AM Peak	7:30 AM				7:15 AM					
Vol.	129				136					
P.H.F.	0.896				0.810					
PM Peak		5:00 PM				4:45 PM				
Vol.		121				105				
P.H.F.		0.756				0.772				
Percentage	37.5%	62.5%			37.0%	63.0%				

Prepared by NDS/ATD

Volumes for: Wednesday, August 24, 2011

City: Winton

Project #: 11-7341-020

Location: Vine Avenue between Olive Avenue and Walnut Avenue.

Start Time	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	1	4			1	6				
12:15	2	2			3	5				
12:30	2	1			2	2				
12:45	1	8	6	15	0	5	6	18	12	33
1:00	2	4			0	9				
1:15	0	6			0	6				
1:30	0	8			0	8				
1:45	1	3	3	21	0	3	0	26	3	47
2:00	0	5			1	7				
2:15	0	1			0	12				
2:30	2	13			2	8				
2:45	2	7	4	26	0	13	3	40	7	66
3:00	1	12			0	5				
3:15	1	7			0	7				
3:30	0	7			1	5				
3:45	2	4	4	30	0	9	1	26	5	56
4:00	0	8			0	10				
4:15	1	10			1	6				
4:30	1	4			2	14				
4:45	1	12	3	34	2	12	5	42	8	76
5:00	3	4			1	8				
5:15	2	5			3	7				
5:30	7	6			2	7				
5:45	13	7	25	22	5	11	11	33	36	55
6:00	14	9			4	13				
6:15	9	4			4	9				
6:30	4	4			2	7				
6:45	13	6	40	23	8	8	18	37	58	60
7:00	9	4			5	3				
7:15	9	6			2	9				
7:30	6	12			6	7				
7:45	12	5	36	27	12	5	25	24	61	51
8:00	7	2			5	6				
8:15	17	3			9	6				
8:30	6	8			7	4				
8:45	7	5	37	18	5	3	26	19	63	37
9:00	2	6			7	5				
9:15	3	2			2	7				
9:30	7	3			2	3	0			
9:45	1	7	13	18	9	2	20	17	33	35
10:00	7	1			4	6				
10:15	10	1			2	1				
10:30	3	1			3	5				
10:45	4	3	24	6	14	1	23	13	47	19
11:00	6	1			4	4				
11:15	1	4			5	3				
11:30	10	2			7	2				
11:45	4	1	21	8	3	4	19	13	40	21
Total	216	248	216	248	157	308	157	308	373	556
Combined Total	464		464		465		465		929	
AM Peak	5:30 AM				7:45 AM					
Vol.	43				33					
P.H.F.	0.768				0.688					
PM Peak		2:30 PM				4:00 PM				
Vol.		39				42				
P.H.F.		0.846				0.750				
Percentage	46.6%	53.4%			33.8%	66.2%				

Prepared by NDS/ATD

Volumes for: Wednesday, August 24, 2011

City: Le Grand

Project #: 11-7341-021

Location: Santa Fe Avenue between Burchell Avenue and Savana Road.

Start Time	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	1	10			1	14				
12:15	2	7			1	17				
12:30	2	13			1	20				
12:45	0	8	5	38	2	20	5	71	10	109
1:00	0	17			2	24				
1:15	0	10			2	11				
1:30	0	14			1	17				
1:45	0	8	0	49	1	15	6	67	6	116
2:00	1	15			0	10				
2:15	0	14			0	11				
2:30	4	11			5	15				
2:45	0	14	5	54	0	18	5	54	10	108
3:00	1	20			0	11				
3:15	0	26			0	21				
3:30	0	25			0	12				
3:45	0	19	1	90	0	18	0	62	1	152
4:00	0	21			0	14				
4:15	0	24			0	22				
4:30	1	27			0	27				
4:45	0	30	1	102	2	23	2	86	3	188
5:00	1	30			0	23				
5:15	8	22			0	21				
5:30	5	23			6	17				
5:45	6	40	20	115	23	28	29	89	49	204
6:00	7	21			27	22				
6:15	7	13			14	16				
6:30	6	20			6	12				
6:45	10	20	30	74	7	10	54	60	84	134
7:00	18	13			11	16				
7:15	8	6			11	11				
7:30	13	8			9	8				
7:45	26	8	65	35	27	8	58	43	123	78
8:00	27	10			44	16				
8:15	15	8			31	15				
8:30	12	6			23	17				
8:45	19	16	73	40	6	21	104	69	177	109
9:00	12	4			10	15				
9:15	11	8			13	11				
9:30	9	5			4	8	0			
9:45	13	6	45	23	12	10	39	44	84	67
10:00	17	3			5	6				
10:15	6	2			15	5				
10:30	19	3			12	6				
10:45	21	2	63	10	7	10	39	27	102	37
11:00	9	4			12	3				
11:15	8	22			17	2				
11:30	12	10			11	1				
11:45	11	6	40	42	11	1	51	7	91	49
Total	348	672	348	672	392	679	392	679	740	1351
Combined Total	1020		1020		1071		1071		2091	
AM Peak	7:30 AM				7:45 AM					
Vol.	81				125					
P.H.F.	0.750				0.710					
PM Peak		5:00 PM				4:15 PM				
Vol.		115				95				
P.H.F.		0.817				0.880				
Percentage	34.1%	65.9%			36.6%	63.4%				

Prepared by NDS/ATD

Volumes for: Wednesday, August 24, 2011

City: Le Grand

Project #: 11-7341-022

Location: Santa Fe Avenue between Savana Road and Le Grand Road.

Start Time	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	2	10			1	20				
12:15	3	20			1	23				
12:30	3	22			2	29				
12:45	0	15	8	67	0	36	4	108	12	175
1:00	0	19			3	18				
1:15	1	19			1	18				
1:30	1	23			1	16				
1:45	1	17	3	78	0	18	5	70	8	148
2:00	0	13			0	24				
2:15	0	27			5	22				
2:30	2	19			0	25				
2:45	0	23	2	82	1	20	6	91	8	173
3:00	3	26			1	23				
3:15	0	41			1	19				
3:30	0	34			1	22				
3:45	1	28	4	129	0	22	3	86	7	215
4:00	0	27			1	20				
4:15	0	41			0	24				
4:30	1	33			3	34				
4:45	2	33	3	134	0	32	4	110	7	244
5:00	0	37			2	29				
5:15	7	38			6	20				
5:30	2	26			27	27				
5:45	13	49	22	150	37	43	72	119	94	269
6:00	13	28			17	29				
6:15	12	16			15	15				
6:30	12	29			14	12				
6:45	17	23	54	96	14	18	60	74	114	170
7:00	17	13			11	16				
7:15	9	10			22	7				
7:30	11	8			32	9				
7:45	29	13	66	44	64	16	129	48	195	92
8:00	40	13			46	15				
8:15	21	11			30	15				
8:30	19	15			9	27				
8:45	20	14	100	53	16	13	101	70	201	123
9:00	15	11			17	11				
9:15	11	9			9	8				
9:30	17	9			12	8	0			
9:45	15	8	58	37	14	7	52	34	110	71
10:00	16	6			18	4				
10:15	9	4			16	6				
10:30	26	6			12	7				
10:45	30	6	81	22	16	6	62	23	143	45
11:00	15	3			21	1				
11:15	19	35			17	2				
11:30	18	12			17	2				
11:45	14	8	66	58	27	3	82	8	148	66
Total	467	950	467	950	580	841	580	841	1047	1791
Combined Total	1417		1417		1421		1421		2838	
AM Peak	7:45 AM				7:30 AM					
Vol.	109				172					
P.H.F.	0.681				0.672					
PM Peak		5:00 PM				4:15 PM				
Vol.		150				119				
P.H.F.		0.836				0.875				
Percentage	33.0%	67.0%			40.8%	59.2%				

Prepared by NDS/ATD

Volumes for: Wednesday, August 24, 2011

City: Le Grand

Project #: 11-7341-023

Location: Santa Fe Avenue between Le Grand Road and Ipsen Avenue.

Start Time	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	0	4			0	7				
12:15	4	4			0	5				
12:30	1	11			0	5				
12:45	0	2	5	21	0	4	0	21	5	42
1:00	1	13			2	5				
1:15	1	4			0	18				
1:30	0	7			0	4				
1:45	0	5	2	29	0	3	2	30	4	59
2:00	0	5			0	5				
2:15	0	12			0	9				
2:30	0	8			0	5				
2:45	1	4	1	29	0	10	0	29	1	58
3:00	0	9			0	3				
3:15	0	6			0	10				
3:30	0	17			1	8				
3:45	0	14	0	46	0	11	1	32	1	78
4:00	1	17			0	8				
4:15	0	17			0	3				
4:30	2	14			0	13				
4:45	2	11	5	59	1	9	1	33	6	92
5:00	1	18			0	12				
5:15	3	9			2	7				
5:30	2	14			18	11				
5:45	7	15	13	56	39	15	59	45	72	101
6:00	6	4			17	8				
6:15	3	6			4	9				
6:30	4	9			7	7				
6:45	7	16	20	35	5	8	33	32	53	67
7:00	11	3			7	4				
7:15	4	4			8	2				
7:30	8	8			2	4				
7:45	12	7	35	22	13	2	30	12	65	34
8:00	9	8			10	5				
8:15	5	7			10	3				
8:30	9	2			7	5				
8:45	3	2	26	19	6	6	33	19	59	38
9:00	6	3			7	4				
9:15	3	3			4	2				
9:30	7	3			3	3	0			
9:45	11	3	27	12	2	3	16	12	43	24
10:00	6	1			7	1				
10:15	4	1			5	1				
10:30	13	4			2	2				
10:45	8	5	31	11	6	1	20	5	51	16
11:00	8	1			8	3				
11:15	3	2			3	2				
11:30	5	3			2	3				
11:45	2	0	18	6	12	0	25	8	43	14
Total	183	345	183	345	220	278	220	278	403	623
Combined Total	528		528		498		498		1026	
AM Peak	7:00 AM				5:30 AM					
Vol.	35				78					
P.H.F.	0.729				0.500					
PM Peak		3:30 PM				5:00 PM				
Vol.		65				45				
P.H.F.		0.956				0.750				
Percentage	34.7%	65.3%			44.2%	55.8%				

Prepared by NDS/ATD

Volumes for: Wednesday, August 24, 2011

City: Le Grand

Project #: 11-7341-024

Location: Le Grand Road between McKee Street and Santa Fe Avenue.

Start Time	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	0	11			2	12				
12:15	2	9			2	13				
12:30	0	13			1	13				
12:45	0	14	2	47	0	10	5	48	7	95
1:00	1	9			0	16				
1:15	0	11			0	12				
1:30	0	12			1	14				
1:45	0	1	1	33	0	7	1	49	2	82
2:00	0	12			3	13				
2:15	0	10			0	18				
2:30	0	13			0	9				
2:45	0	20	0	55	1	15	4	55	4	110
3:00	0	12			0	10				
3:15	0	16			0	15				
3:30	0	14			0	11				
3:45	0	19	0	61	3	16	3	52	3	113
4:00	0	11			2	12				
4:15	0	24			3	17				
4:30	0	17			4	15				
4:45	2	13	2	65	2	17	11	61	13	126
5:00	1	14			5	20				
5:15	0	12			2	12				
5:30	4	22			2	17				
5:45	10	10	15	58	5	11	14	60	29	118
6:00	13	9			5	6				
6:15	4	11			7	1				
6:30	10	7			7	5				
6:45	10	10	37	37	12	18	31	30	68	67
7:00	3	7			9	5				
7:15	4	13			6	10				
7:30	6	7			8	10				
7:45	15	7	28	34	32	4	55	29	83	63
8:00	15	2			19	12				
8:15	13	8			18	12				
8:30	6	5			19	6				
8:45	8	4	42	19	16	4	72	34	114	53
9:00	9	6			7	4				
9:15	5	3			6	1				
9:30	5	1			8	3				
9:45	6	4	25	14	14	1	35	9	60	23
10:00	5	5			18	2				
10:15	7	2			4	3				
10:30	9	4			7	2				
10:45	15	3	36	14	11	3	40	10	76	24
11:00	8	5			11	3				
11:15	11	5			9	0				
11:30	7	3			11	0				
11:45	11	1	37	14	11	0	42	3	79	17
Total	225	451	225	451	313	440	313	440	538	891
Combined Total	676		676		753		753		1429	
AM Peak	7:30 AM				7:45 AM					
Vol.	49				88					
P.H.F.	0.817				0.688					
PM Peak		3:45 PM				4:15 PM				
Vol.		71				69				
P.H.F.		0.740				0.863				
Percentage	33.3%	66.7%			41.6%	58.4%				

Prepared by NDS/ATD

Volumes for: Wednesday, August 24, 2011

City: Le Grand

Project #: 11-7341-025

Location: Le Grand Road between Santa Fe Street and Ipsen Avenue.

Start Time	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	0	4			0	5				
12:15	1	2			0	13				
12:30	0	7			0	2				
12:45	0	5	1	18	0	2	0	22	1	40
1:00	0	1			0	4				
1:15	0	3			0	9				
1:30	0	5			0	2				
1:45	0	4	0	13	0	2	0	17	0	30
2:00	0	5			0	7				
2:15	0	5			0	10				
2:30	0	3			0	6				
2:45	0	3	0	16	0	3	0	26	0	42
3:00	0	4			0	7				
3:15	0	4			0	1				
3:30	0	4			0	0				
3:45	0	5	0	17	0	2	0	10	0	27
4:00	0	3			0	0				
4:15	0	5			0	9				
4:30	0	4			1	6				
4:45	1	8	1	20	0	3	1	18	2	38
5:00	0	5			2	3				
5:15	0	2			0	4				
5:30	3	2			2	2				
5:45	4	5	7	14	1	1	5	10	12	24
6:00	4	4			0	1				
6:15	1	3			5	1				
6:30	5	2			2	2				
6:45	3	1	13	10	4	6	11	10	24	20
7:00	2	3			5	1				
7:15	3	3			1	1				
7:30	1	2			2	1				
7:45	5	2	11	10	3	0	11	3	22	13
8:00	5	0			4	1				
8:15	5	1			5	4				
8:30	0	3			6	2				
8:45	1	4	11	8	6	0	21	7	32	15
9:00	1	2			2	2				
9:15	2	2			4	1				
9:30	3	2			1	1				
9:45	2	2	8	8	4	2	11	6	19	14
10:00	7	1			7	2				
10:15	7	4			1	1				
10:30	5	0			2	0				
10:45	2	0	21	5	6	2	16	5	37	10
11:00	3	2			9	3				
11:15	7	0			6	1				
11:30	5	0			5	0				
11:45	4	0	19	2	3	0	23	4	42	6
Total	92	141	92	141	99	138	99	138	191	279
Combined Total	233		233		237		237		470	
AM Peak	9:45 AM				10:45 AM					
Vol.	21				26					
P.H.F.	0.750				0.722					
PM Peak		4:15 PM				2:00 PM				
Vol.		22				26				
P.H.F.		0.688				0.650				
Percentage	39.5%	60.5%			41.8%	58.2%				

Prepared by NDS/ATD

Volumes for: Wednesday, August 24, 2011

City: Le Grand

Project #: 11-7341-026

Location: Cunningham Road between Santa Fe Avenue and Hainline Avenue.

Start Time	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	0	3			0	6				
12:15	0	9			0	6				
12:30	1	10			0	7				
12:45	0	5	1	27	0	7	0	26	1	53
1:00	0	6			0	6				
1:15	1	11			0	7				
1:30	1	15			0	7				
1:45	1	9	3	41	0	9	0	29	3	70
2:00	0	3			0	14				
2:15	0	7			0	1				
2:30	0	6			0	10				
2:45	0	8	0	24	1	8	1	33	1	57
3:00	0	5			1	6				
3:15	0	9			1	7				
3:30	0	6			1	5				
3:45	0	7	0	27	0	7	3	25	3	52
4:00	1	5			1	5				
4:15	0	18			0	4				
4:30	0	6			0	8				
4:45	1	4	2	33	0	7	1	24	3	57
5:00	0	9			1	6				
5:15	3	8			1	4				
5:30	1	5			6	6				
5:45	4	9	8	31	5	9	13	25	21	56
6:00	11	9			5	10				
6:15	2	5			4	5				
6:30	7	10			4	7				
6:45	6	4	26	28	3	7	16	29	42	57
7:00	7	3			5	5				
7:15	2	3			8	3				
7:30	3	2			6	4				
7:45	5	5	17	13	20	5	39	17	56	30
8:00	9	8			8	4				
8:15	6	3			9	6				
8:30	4	4			5	12				
8:45	4	1	23	16	7	4	29	26	52	42
9:00	7	6			4	2				
9:15	2	1			3	0				
9:30	7	3			3	1	0			
9:45	5	2	21	12	9	2	19	5	40	17
10:00	2	1			8	1				
10:15	5	2			5	0				
10:30	3	3			5	1				
10:45	9	1	19	7	6	0	24	2	43	9
11:00	5	1			9	0				
11:15	10	5			7	2				
11:30	8	2			9	0				
11:45	5	0	28	8	10	0	35	2	63	10
Total	148	267	148	267	180	243	180	243	328	510
Combined Total	415		415		423		423		838	
AM Peak	10:45 AM				7:30 AM					
Vol.	32				43					
P.H.F.	0.800				0.538					
PM Peak		1:00 PM				1:15 PM				
Vol.		41				37				
P.H.F.		0.783				0.661				
Percentage	35.7%	64.3%			42.6%	57.4%				

Prepared by NDS/ATD

Volumes for: Wednesday, August 24, 2011

City: Le Grand

Project #: 11-7341-027

Location: Jefferson Street between Le Grand Road and Santa Fe Avenue .

Start Time	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	0	8			5	11				
12:15	0	23			0	18				
12:30	0	19			1	12				
12:45	0	22	0	72	0	24	6	65	6	137
1:00	0	13			1	12				
1:15	1	18			0	11				
1:30	0	20			0	9				
1:45	1	12	2	63	0	19	1	51	3	114
2:00	0	13			0	21				
2:15	0	17			5	12				
2:30	2	20			0	18				
2:45	0	19	2	69	1	23	6	74	8	143
3:00	0	14			1	29				
3:15	0	36			1	13				
3:30	0	22			0	16				
3:45	2	25	2	97	0	13	2	71	4	168
4:00	0	18			0	18				
4:15	0	27			0	17				
4:30	1	20			5	13				
4:45	3	27	4	92	2	9	7	57	11	149
5:00	1	24			1	15				
5:15	5	32			1	17				
5:30	1	26			6	15				
5:45	7	38	14	120	7	12	15	59	29	179
6:00	14	26			14	19				
6:15	5	13			12	11				
6:30	9	18			7	8				
6:45	11	14	39	71	11	11	44	49	83	120
7:00	9	14			4	12				
7:15	3	11			13	9				
7:30	6	12			24	9				
7:45	20	12	38	49	48	13	89	43	127	92
8:00	33	15			43	11				
8:15	19	11			20	14				
8:30	9	12			11	10				
8:45	10	11	71	49	7	12	81	47	152	96
9:00	8	7			11	9				
9:15	15	5			5	5				
9:30	16	14			9	7				
9:45	13	4	52	30	11	6	36	27	88	57
10:00	10	1			14	2				
10:15	12	2			11	4				
10:30	11	2			10	3				
10:45	16	4	49	9	12	3	47	12	96	21
11:00	15	3			17	1				
11:15	14	2			10	23				
11:30	9	0			9	3				
11:45	7	2	45	7	11	6	47	33	92	40
Total	318	728	318	728	381	588	381	588	699	1316
Combined Total	1046		1046		969		969		2015	
AM Peak	7:45 AM				7:30 AM					
Vol.	81				135					
P.H.F.	0.614				0.703					
PM Peak		5:15 PM				2:30 PM				
Vol.		122				83				
P.H.F.		0.803				0.716				
Percentage	30.4%	69.6%			39.3%	60.7%				

Prepared by NDS/ATD

Volumes for: Wednesday, August 24, 2011

City: Le Grand

Project #: 11-7341-028

Location: Washington Street between Adams Street and Jefferson Street.

Start Time	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	1	3			0	1				
12:15	1	10			0	5				
12:30	0	3			0	5				
12:45	0	2	2	18	0	4	0	15	2	33
1:00	0	2			0	3				
1:15	0	8			1	5				
1:30	0	6			0	3				
1:45	1	2	1	18	0	4	1	15	2	33
2:00	0	3			0	2				
2:15	1	2			1	8				
2:30	0	4			0	10				
2:45	0	25	1	34	0	6	1	26	2	60
3:00	0	2			0	4				
3:15	0	12			0	1				
3:30	0	8			0	5				
3:45	2	8	2	30	1	5	1	15	3	45
4:00	0	5			0	2				
4:15	0	6			0	4				
4:30	0	7			0	5				
4:45	1	8	1	26	0	7	0	18	1	44
5:00	1	6			4	6				
5:15	0	8			0	4				
5:30	0	8			1	5				
5:45	2	12	3	34	3	4	8	19	11	53
6:00	0	6			8	3				
6:15	1	8			4	2				
6:30	2	2			2	3				
6:45	1	5	4	21	3	5	17	13	21	34
7:00	1	11			1	3				
7:15	1	5			0	5				
7:30	3	7			6	4				
7:45	7	5	12	28	15	2	22	14	34	42
8:00	16	3			26	0				
8:15	13	3			7	7				
8:30	3	7			2	2				
8:45	3	4	35	17	6	3	41	12	76	29
9:00	1	7			6	1				
9:15	3	4			2	2				
9:30	3	2			2	3	0			
9:45	1	3	8	16	5	1	15	7	23	23
10:00	6	3			2	0				
10:15	4	1			4	0				
10:30	3	2			2	0				
10:45	3	2	16	8	5	1	13	1	29	9
11:00	4	0			3	2				
11:15	4	9			4	3				
11:30	3	2			9	0				
11:45	6	4	17	15	3	1	19	6	36	21
Total	102	265	102	265	138	161	138	161	240	426
Combined Total	367		367		299		299		666	
AM Peak	7:30 AM				7:30 AM					
Vol.	39				54					
P.H.F.	0.609				0.519					
PM Peak		2:45 PM				2:15 PM				
Vol.		47				28				
P.H.F.		0.510				0.700				
Percentage	27.8%	72.2%			46.2%	53.8%				

Prepared by NDS/ATD

Volumes for: Wednesday, August 24, 2011

City: Le Grand

Project #: 11-7342-029

Location: Fresno Road between Hainline Avenue and Le Grand Road

Start Time	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	0	1			0	2				
12:15	0	1			0	0				
12:30	0	1			0	3				
12:45	0	1	0	4	0	2	0	7	0	11
1:00	1	1			0	1				
1:15	0	2			0	1				
1:30	0	3			0	1				
1:45	0	0	1	6	0	1	0	4	1	10
2:00	0	2			0	1				
2:15	0	1			0	3				
2:30	0	0			0	1				
2:45	1	0	1	3	0	2	0	7	1	10
3:00	0	0			0	0				
3:15	0	1			0	1				
3:30	0	1			0	0				
3:45	0	3	0	5	0	2	0	3	0	8
4:00	0	1			0	3				
4:15	0	1			0	1				
4:30	0	0			0	4				
4:45	0	0	0	2	0	4	0	12	0	14
5:00	0	0			0	1				
5:15	0	2			0	0				
5:30	1	0			0	2				
5:45	1	0	2	2	0	1	0	4	2	6
6:00	0	1			0	1				
6:15	3	0			1	0				
6:30	0	1			1	0				
6:45	1	0	4	2	1	0	3	1	7	3
7:00	0	0			1	0				
7:15	1	0			0	4				
7:30	0	1			0	0				
7:45	0	0	1	1	0	1	1	5	2	6
8:00	0	0			2	2				
8:15	2	1			2	0				
8:30	2	0			2	2				
8:45	0	0	4	1	1	2	7	6	11	7
9:00	0	1			1	0				
9:15	1	0			4	1				
9:30	0	0			0	1	0			
9:45	0	1	1	2	0	0	5	2	6	4
10:00	0	0			0	0				
10:15	0	0			1	0				
10:30	0	0			2	1				
10:45	0	0	0	0	0	0	3	1	3	1
11:00	6	0			3	2				
11:15	1	0			0	1				
11:30	2	0			0	1				
11:45	0	0	9	0	3	0	6	4	15	4
Total	23	28	23	28	25	56	25	56	48	84
Combined Total	51		51		81		81		132	
AM Peak	10:45 AM				8:30 AM					
Vol.	9				8					
P.H.F.	0.375				0.500					
PM Peak		12:45 PM				4:00 PM				
Vol.		7				12				
P.H.F.		0.750				0.750				
Percentage	45.1%	54.9%			30.9%	69.1%				

Prepared by NDS/ATD

Volumes for: Wednesday, August 24, 2011

City: Le Grand

Project #: 11-7341-030

Location: McDowell Street between Adams Street and Jefferson Street.

Start Time	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	1	3			0	5				
12:15	0	2			0	6				
12:30	1	10			0	4				
12:45	1	8	3	23	1	5	1	20	4	43
1:00	0	5			1	2				
1:15	2	6			0	4				
1:30	0	2			0	4				
1:45	0	8	2	21	0	3	1	13	3	34
2:00	1	3			1	7				
2:15	0	8			0	11				
2:30	0	5			0	21				
2:45	0	17	1	33	0	8	1	47	2	80
3:00	0	5			0	8				
3:15	0	10			0	9				
3:30	1	6			1	6				
3:45	0	9	1	30	0	6	1	29	2	59
4:00	0	7			1	9				
4:15	0	8			0	2				
4:30	0	5			3	10				
4:45	2	9	2	29	4	7	8	28	10	57
5:00	0	13			1	7				
5:15	0	7			2	3				
5:30	0	10			3	12				
5:45	3	8	3	38	8	9	14	31	17	69
6:00	2	10			8	3				
6:15	0	4			6	1				
6:30	1	5			7	7				
6:45	1	7	4	26	7	8	28	19	32	45
7:00	2	5			3	6				
7:15	0	8			5	8				
7:30	3	2			8	7				
7:45	8	5	13	20	23	6	39	27	52	47
8:00	12	3			19	4				
8:15	12	4			6	6				
8:30	3	8			8	8				
8:45	5	4	32	19	5	2	38	20	70	39
9:00	8	3			4	3				
9:15	3	4			9	2				
9:30	3	3			2	2	0			
9:45	0	6	14	16	1	4	16	11	30	27
10:00	5	0			3	3				
10:15	5	1			5	1				
10:30	4	1			2	2				
10:45	4	1	18	3	4	2	14	8	32	11
11:00	2	0			4	0				
11:15	7	5			5	2				
11:30	2	0			3	2				
11:45	6	1	17	6	5	0	17	4	34	10
Total	110	264	110	264	178	257	178	257	288	521
Combined Total	374		374		435		435		809	
AM Peak	7:30 AM				7:30 AM					
Vol.	35				56					
P.H.F.	0.729				0.609					
PM Peak		4:45 PM				2:15 PM				
Vol.		39				48				
P.H.F.		0.692				0.571				
Percentage	29.4%	70.6%			40.9%	59.1%				

Prepared by NDS/ATD

Volumes for: Wednesday, August 24, 2011

City: Le Grand




Project #: 11-7341-031

Location: Minturn Road between Le Grand Road and Buchanan Hollow Road .

Start Time	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	0	28			0	10				
12:15	1	14			0	13				
12:30	7	17			0	16				
12:45	1	14	9	73	1	23	1	62	10	135
1:00	0	13			0	9				
1:15	6	14			0	15				
1:30	1	17			1	11				
1:45	1	15	8	59	0	16	1	51	9	110
2:00	1	26			0	17				
2:15	0	20			6	19				
2:30	4	22			0	15				
2:45	2	17	7	85	0	24	6	75	13	160
3:00	0	20			2	11				
3:15	1	26			0	22				
3:30	1	25			1	36				
3:45	1	30	3	101	0	17	3	86	6	187
4:00	7	35			0	19				
4:15	0	30			3	14				
4:30	6	17			2	12				
4:45	6	23	19	105	5	13	10	58	29	163
5:00	6	24			8	13				
5:15	2	28			2	15				
5:30	4	17			14	13				
5:45	7	11	19	80	23	18	47	59	66	139
6:00	9	13			26	11				
6:15	11	29			18	14				
6:30	16	11			11	4				
6:45	15	10	51	63	19	8	74	37	125	100
7:00	9	12			23	11				
7:15	8	12			26	6				
7:30	11	7			13	7				
7:45	17	8	45	39	22	6	84	30	129	69
8:00	22	7			22	14				
8:15	20	7			21	6				
8:30	10	5			17	5				
8:45	15	9	67	28	23	4	83	29	150	57
9:00	24	9			16	3				
9:15	10	4			6	1				
9:30	13	5			11	2	0			
9:45	14	4	61	22	13	2	46	8	107	30
10:00	17	0			19	0				
10:15	17	4			16	0				
10:30	20	2			15	6				
10:45	15	2	69	8	10	2	60	8	129	16
11:00	9	6			9	0				
11:15	10	5			22	5				
11:30	19	4			15	0				
11:45	16	0	54	15	20	1	66	6	120	21
Total	412	678	412	678	481	509	481	509	893	1187
Combined Total	1090		1090		990		990		2080	
AM Peak	11:30 AM				7:00 AM					
Vol.	77				84					
P.H.F.	0.688				0.808					
PM Peak		3:30 PM				3:15 PM				
Vol.		120				94				
P.H.F.		0.893				0.653				
Percentage	37.8%	62.2%			48.6%	51.4%				

Intersection

Int Delay, s/veh 0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	12	7	87	112	0
Future Vol, veh/h	1	12	7	87	112	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	10	10	2
Mvmt Flow	1	15	9	109	140	0




Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	267	140	140
Stage 1	140	-	-
Stage 2	127	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	722	908	1443
Stage 1	887	-	-
Stage 2	899	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	717	908	1443
Mov Cap-2 Maneuver	717	-	-
Stage 1	881	-	-
Stage 2	899	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.1	0.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1443	-	890	-	-
HCM Lane V/C Ratio	0.006	-	0.018	-	-
HCM Control Delay (s)	7.5	0	9.1	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection

Int Delay, s/veh 1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	18	6	3	103	156	7
Future Vol, veh/h	18	6	3	103	156	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	2	2	2	10	10	2
Mvmt Flow	26	9	4	147	223	10

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	383	228	233
Stage 1	228	-	-
Stage 2	155	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	620	811	1335
Stage 1	810	-	-
Stage 2	873	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	618	811	1335
Mov Cap-2 Maneuver	618	-	-
Stage 1	808	-	-
Stage 2	873	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.8	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1335	-	657	-	-
HCM Lane V/C Ratio	0.003	-	0.052	-	-
HCM Control Delay (s)	7.7	0	10.8	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	51	8	4	1	9	6	4	43	1	9	40	102
Future Vol, veh/h	51	8	4	1	9	6	4	43	1	9	40	102
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles, %	2	2	2	2	2	2	2	10	2	2	10	2
Mvmt Flow	64	10	5	1	11	8	5	54	1	11	50	128
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0





Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.1	7.4	7.7	7.8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	81%	6%	6%
Vol Thru, %	90%	13%	56%	26%
Vol Right, %	2%	6%	38%	68%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	48	63	16	151
LT Vol	4	51	1	9
Through Vol	43	8	9	40
RT Vol	1	4	6	102
Lane Flow Rate	60	79	20	189
Geometry Grp	1	1	1	1
Degree of Util (X)	0.071	0.098	0.024	0.197
Departure Headway (Hd)	4.256	4.502	4.33	3.758
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	828	784	832	940
Service Time	2.351	2.597	2.33	1.84
HCM Lane V/C Ratio	0.072	0.101	0.024	0.201
HCM Control Delay	7.7	8.1	7.4	7.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.3	0.1	0.7

Intersection

Intersection Delay, s/veh 9.2

Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	61	55	0	0	66	20	1	0	1	65	0	117
Future Vol, veh/h	61	55	0	0	66	20	1	0	1	65	0	117
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Heavy Vehicles, %	10	10	2	2	10	2	2	2	2	2	2	10
Mvmt Flow	86	77	0	0	93	28	1	0	1	92	0	165
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.3	8.7	7.8	9.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	50%	53%	0%	36%
Vol Thru, %	0%	47%	77%	0%
Vol Right, %	50%	0%	23%	64%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	2	116	86	182
LT Vol	1	61	0	65
Through Vol	0	55	66	0
RT Vol	1	0	20	117
Lane Flow Rate	3	163	121	256
Geometry Grp	1	1	1	1
Degree of Util (X)	0.004	0.222	0.159	0.307
Departure Headway (Hd)	4.728	4.901	4.715	4.318
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	754	732	759	833
Service Time	2.772	2.94	2.755	2.344
HCM Lane V/C Ratio	0.004	0.223	0.159	0.307
HCM Control Delay	7.8	9.3	8.7	9.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.8	0.6	1.3

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	17	30	0	0	31	21	0	0	0	32	0	10
Future Vol, veh/h	17	30	0	0	31	21	0	0	0	32	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	2	10	2	2	10	10	2	2	2	10	2	2
Mvmt Flow	24	43	0	0	44	30	0	0	0	46	0	14




Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	74	0	0	43	0	0	150	150	59
Stage 1	-	-	-	-	-	-	59	59	-
Stage 2	-	-	-	-	-	-	91	91	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.5	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.5	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.5	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.59	4.018	3.318
Pot Cap-1 Maneuver	1526	-	-	1566	-	-	823	742	1007
Stage 1	-	-	-	-	-	-	944	846	-
Stage 2	-	-	-	-	-	-	913	820	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1526	-	-	1566	-	-	810	0	1007
Mov Cap-2 Maneuver	-	-	-	-	-	-	810	0	-
Stage 1	-	-	-	-	-	-	929	0	-
Stage 2	-	-	-	-	-	-	913	0	-

Approach	EB	WB	SB
HCM Control Delay, s	2.7	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1526	-	-	1566	-	-	850
HCM Lane V/C Ratio	0.016	-	-	-	-	-	0.071
HCM Control Delay (s)	7.4	0	-	0	-	-	9.6
HCM Lane LOS	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	0	-	-	0.2

Intersection




Int Delay, s/veh 3.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	31	31	10	21	31	3
Future Vol, veh/h	31	31	10	21	31	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	10	10	2	10	10	2
Mvmt Flow	44	44	14	30	44	4

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	88
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1508
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1508
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-




Approach	EB	WB	NB
HCM Control Delay, s	0	2.4	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	856	-	-	1508	-
HCM Lane V/C Ratio	0.057	-	-	0.009	-
HCM Control Delay (s)	9.5	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	0	0	25	38	5
Future Vol, veh/h	6	0	0	25	38	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	74	74	74	74	74	74
Heavy Vehicles, %	2	2	2	10	10	2
Mvmt Flow	8	0	0	34	51	7
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	89	55	58	0	-	0
Stage 1	55	-	-	-	-	-
Stage 2	34	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	912	1012	1546	-	-	-
Stage 1	968	-	-	-	-	-
Stage 2	988	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	912	1012	1546	-	-	-
Mov Cap-2 Maneuver	912	-	-	-	-	-
Stage 1	968	-	-	-	-	-
Stage 2	988	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1546	-	912	-	-	
HCM Lane V/C Ratio	-	-	0.009	-	-	
HCM Control Delay (s)	0	-	9	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

Intersection

Int Delay, s/veh 1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	31	4	90	15	0	123
Future Vol, veh/h	31	4	90	15	0	123
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	10	2	2	10
Mvmt Flow	39	5	113	19	0	154




Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	277	123	0
Stage 1	123	-	-
Stage 2	154	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	713	928	-
Stage 1	902	-	-
Stage 2	874	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	713	928	-
Mov Cap-2 Maneuver	713	-	-
Stage 1	902	-	-
Stage 2	874	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.2	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	732	1453
HCM Lane V/C Ratio	-	-	0.06	-
HCM Control Delay (s)	-	-	10.2	0
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0

Intersection

Int Delay, s/veh 0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	10	7	197	190	0
Future Vol, veh/h	0	10	7	197	190	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	10	10	2
Mvmt Flow	0	12	9	240	232	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	490	232	232
Stage 1	232	-	-
Stage 2	258	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	537	807	1336
Stage 1	807	-	-
Stage 2	785	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	533	807	1336
Mov Cap-2 Maneuver	533	-	-
Stage 1	801	-	-
Stage 2	785	-	-




Approach	EB	NB	SB
HCM Control Delay, s	9.5	0.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1336	-	807	-	-
HCM Lane V/C Ratio	0.006	-	0.015	-	-
HCM Control Delay (s)	7.7	0	9.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

HCM 2010 TWSC
2: Santa Fe Avenue & Jackson Street

EXISTING PM PEAK HOUR PLUS CPU

09/06/2018

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	48	14	19	183	185	83
Future Vol, veh/h	48	14	19	183	185	83
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	10	10	2
Mvmt Flow	59	17	23	223	226	101
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	546	277	327	0	-	0
Stage 1	277	-	-	-	-	-
Stage 2	269	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	499	762	1233	-	-	-
Stage 1	770	-	-	-	-	-
Stage 2	776	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	489	762	1233	-	-	-
Mov Cap-2 Maneuver	489	-	-	-	-	-
Stage 1	754	-	-	-	-	-
Stage 2	776	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	12.9	0.8		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1233	-	532	-	-	
HCM Lane V/C Ratio	0.019	-	0.142	-	-	
HCM Control Delay (s)	8	0	12.9	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-	

Intersection

Intersection Delay, s/veh	9.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	117	41	10	7	52	27	5	80	4	20	65	104
Future Vol, veh/h	117	41	10	7	52	27	5	80	4	20	65	104
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	2	2	2	2	2	2	2	10	2	2	10	2
Mvmt Flow	143	50	12	9	63	33	6	98	5	24	79	127
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10	8.7	8.9	9.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	70%	8%	11%
Vol Thru, %	90%	24%	60%	34%
Vol Right, %	4%	6%	31%	55%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	89	168	86	189
LT Vol	5	117	7	20
Through Vol	80	41	52	65
RT Vol	4	10	27	104
Lane Flow Rate	109	205	105	230
Geometry Grp	1	1	1	1
Degree of Util (X)	0.15	0.282	0.141	0.29
Departure Headway (Hd)	4.961	4.958	4.823	4.528
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	717	719	737	788
Service Time	3.026	3.022	2.894	2.582
HCM Lane V/C Ratio	0.152	0.285	0.142	0.292
HCM Control Delay	8.9	10	8.7	9.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	1.2	0.5	1.2

Intersection

Intersection Delay, s/veh 9.9

Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	150	111	0	0	125	13	7	26	13	21	0	149
Future Vol, veh/h	150	111	0	0	125	13	7	26	13	21	0	149
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	10	10	2	2	10	2	2	2	2	2	2	10
Mvmt Flow	163	121	0	0	136	14	8	28	14	23	0	162
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.1	9.3	8.6	9
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	15%	57%	0%	12%
Vol Thru, %	57%	43%	91%	0%
Vol Right, %	28%	0%	9%	88%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	46	261	138	170
LT Vol	7	150	0	21
Through Vol	26	111	125	0
RT Vol	13	0	13	149
Lane Flow Rate	50	284	150	185
Geometry Grp	1	1	1	1
Degree of Util (X)	0.071	0.387	0.205	0.234
Departure Headway (Hd)	5.099	4.916	4.915	4.56
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	697	729	725	783
Service Time	3.172	2.975	2.981	2.616
HCM Lane V/C Ratio	0.072	0.39	0.207	0.236
HCM Control Delay	8.6	11.1	9.3	9
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.2	1.8	0.8	0.9

Intersection

Int Delay, s/veh 2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	19	53	0	0	103	68	0	0	0	50	0	22
Future Vol, veh/h	19	53	0	0	103	68	0	0	0	50	0	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	10	2	2	10	10	2	2	2	10	2	2
Mvmt Flow	22	62	0	0	121	80	0	0	0	59	0	26




Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	201	0	0	62	0	0	267	267	161
Stage 1	-	-	-	-	-	-	161	161	-
Stage 2	-	-	-	-	-	-	106	106	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.5	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.5	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.5	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.59	4.018	3.318
Pot Cap-1 Maneuver	1371	-	-	1541	-	-	705	639	884
Stage 1	-	-	-	-	-	-	849	765	-
Stage 2	-	-	-	-	-	-	899	807	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1371	-	-	1541	-	-	693	0	884
Mov Cap-2 Maneuver	-	-	-	-	-	-	693	0	-
Stage 1	-	-	-	-	-	-	835	0	-
Stage 2	-	-	-	-	-	-	899	0	-

Approach	EB	WB	SB
HCM Control Delay, s	2	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1371	-	-	1541	-	-	742
HCM Lane V/C Ratio	0.016	-	-	-	-	-	0.114
HCM Control Delay (s)	7.7	0	-	0	-	-	10.5
HCM Lane LOS	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	0	-	-	0.4

Intersection

Int Delay, s/veh 3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	39	52	5	101	71	5
Future Vol, veh/h	39	52	5	101	71	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	10	10	2	10	10	2
Mvmt Flow	46	61	6	119	84	6




Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	107
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1484
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1484
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	772	-	-	1484	-
HCM Lane V/C Ratio	0.116	-	-	0.004	-
HCM Control Delay (s)	10.3	-	-	7.4	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0	-

Intersection

Int Delay, s/veh 1.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	0	0	64	41	21
Future Vol, veh/h	20	0	0	64	41	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	74	74	74	74	74	74
Heavy Vehicles, %	2	2	2	10	10	2
Mvmt Flow	27	0	0	86	55	28




Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	155	69	83
Stage 1	69	-	-
Stage 2	86	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	836	994	1514
Stage 1	954	-	-
Stage 2	937	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	836	994	1514
Mov Cap-2 Maneuver	836	-	-
Stage 1	954	-	-
Stage 2	937	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.5	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1514	-	836	-	-
HCM Lane V/C Ratio	-	-	0.032	-	-
HCM Control Delay (s)	0	-	9.5	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection

Int Delay, s/veh 0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	4	197	44	3	199
Future Vol, veh/h	30	4	197	44	3	199
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	2	10	2	2	10
Mvmt Flow	37	5	240	54	4	243




Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	518	267	0
Stage 1	267	-	-
Stage 2	251	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	518	772	-
Stage 1	778	-	-
Stage 2	791	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	516	772	-
Mov Cap-2 Maneuver	516	-	-
Stage 1	775	-	-
Stage 2	791	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.3	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	537	1268
HCM Lane V/C Ratio	-	-	0.077	0.003
HCM Control Delay (s)	-	-	12.3	7.8
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0

Intersection

Int Delay, s/veh 0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	12	7	161	158	0
Future Vol, veh/h	1	12	7	161	158	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	10	10	2
Mvmt Flow	1	15	9	201	198	0




Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	417	198	198
Stage 1	198	-	-
Stage 2	219	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	592	843	1375
Stage 1	835	-	-
Stage 2	817	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	588	843	1375
Mov Cap-2 Maneuver	588	-	-
Stage 1	829	-	-
Stage 2	817	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.5	0.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1375	-	816	-	-
HCM Lane V/C Ratio	0.006	-	0.02	-	-
HCM Control Delay (s)	7.6	0	9.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection

Int Delay, s/veh 2.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	53	13	7	147	190	7
Future Vol, veh/h	53	13	7	147	190	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	2	2	2	10	10	2
Mvmt Flow	76	19	10	210	271	10

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	506	276	281
Stage 1	276	-	-
Stage 2	230	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	526	763	1282
Stage 1	771	-	-
Stage 2	808	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	521	763	1282
Mov Cap-2 Maneuver	521	-	-
Stage 1	764	-	-
Stage 2	808	-	-





Approach	EB	NB	SB
HCM Control Delay, s	12.8	0.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1282	-	556	-	-
HCM Lane V/C Ratio	0.008	-	0.17	-	-
HCM Control Delay (s)	7.8	0	12.8	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.6	-	-

Intersection

Intersection Delay, s/veh 8.6

Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	76	28	4	2	19	11	4	59	2	21	62	110
Future Vol, veh/h	76	28	4	2	19	11	4	59	2	21	62	110
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles, %	2	2	2	2	2	2	2	10	2	2	10	2
Mvmt Flow	95	35	5	3	24	14	5	74	3	26	78	138
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0





Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.9	7.9	8.2	8.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	70%	6%	11%
Vol Thru, %	91%	26%	59%	32%
Vol Right, %	3%	4%	34%	57%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	65	108	32	193
LT Vol	4	76	2	21
Through Vol	59	28	19	62
RT Vol	2	4	11	110
Lane Flow Rate	81	135	40	241
Geometry Grp	1	1	1	1
Degree of Util (X)	0.104	0.18	0.051	0.277
Departure Headway (Hd)	4.61	4.804	4.617	4.137
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	778	747	775	869
Service Time	2.635	2.833	2.651	2.157
HCM Lane V/C Ratio	0.104	0.181	0.052	0.277
HCM Control Delay	8.2	8.9	7.9	8.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.7	0.2	1.1

Intersection

Intersection Delay, s/veh 13.4

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	119	143	0	0	128	29	1	0	1	86	0	147
Future Vol, veh/h	119	143	0	0	128	29	1	0	1	86	0	147
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Heavy Vehicles, %	10	10	2	2	10	2	2	2	2	2	2	10
Mvmt Flow	168	201	0	0	180	41	1	0	1	121	0	207
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	15.1	11.2	9	12.9
HCM LOS	C	B	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	50%	45%	0%	37%
Vol Thru, %	0%	55%	82%	0%
Vol Right, %	50%	0%	18%	63%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	2	262	157	233
LT Vol	1	119	0	86
Through Vol	0	143	128	0
RT Vol	1	0	29	147
Lane Flow Rate	3	369	221	328
Geometry Grp	1	1	1	1
Degree of Util (X)	0.005	0.556	0.334	0.475
Departure Headway (Hd)	5.954	5.423	5.444	5.213
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	599	664	661	692
Service Time	4.011	3.452	3.48	3.248
HCM Lane V/C Ratio	0.005	0.556	0.334	0.474
HCM Control Delay	9	15.1	11.2	12.9
HCM Lane LOS	A	C	B	B
HCM 95th-tile Q	0	3.4	1.5	2.6

Intersection

Int Delay, s/veh 3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	19	87	0	0	57	33	0	0	0	48	0	11
Future Vol, veh/h	19	87	0	0	57	33	0	0	0	48	0	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	2	10	2	2	10	10	2	2	2	10	2	2
Mvmt Flow	27	124	0	0	81	47	0	0	0	69	0	16




Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	128	0	0	124	0	0	283	283	105
Stage 1	-	-	-	-	-	-	105	105	-
Stage 2	-	-	-	-	-	-	178	178	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.5	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.5	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.5	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.59	4.018	3.318
Pot Cap-1 Maneuver	1458	-	-	1463	-	-	690	626	949
Stage 1	-	-	-	-	-	-	900	808	-
Stage 2	-	-	-	-	-	-	834	752	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1458	-	-	1463	-	-	676	0	949
Mov Cap-2 Maneuver	-	-	-	-	-	-	676	0	-
Stage 1	-	-	-	-	-	-	882	0	-
Stage 2	-	-	-	-	-	-	834	0	-

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	10.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1458	-	-	1463	-	-	714
HCM Lane V/C Ratio	0.019	-	-	-	-	-	0.118
HCM Control Delay (s)	7.5	0	-	0	-	-	10.7
HCM Lane LOS	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	0	-	-	0.4

Intersection

Int Delay, s/veh 2.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	95	40	2	37	45	6
Future Vol, veh/h	95	40	2	37	45	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	10	10	2	10	10	2
Mvmt Flow	136	57	3	53	64	9




Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	193
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1380
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1380
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	10.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	760	-	-	1380	-
HCM Lane V/C Ratio	0.096	-	-	0.002	-
HCM Control Delay (s)	10.2	-	-	7.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection

Int Delay, s/veh 1.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	18	0	0	30	42	11
Future Vol, veh/h	18	0	0	30	42	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	74	74	74	74	74	74
Heavy Vehicles, %	2	2	2	10	10	2
Mvmt Flow	24	0	0	41	57	15




Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	106	65	72
Stage 1	65	-	-
Stage 2	41	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	892	999	1528
Stage 1	958	-	-
Stage 2	981	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	892	999	1528
Mov Cap-2 Maneuver	892	-	-
Stage 1	958	-	-
Stage 2	981	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.1	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1528	-	892	-	-
HCM Lane V/C Ratio	-	-	0.027	-	-
HCM Control Delay (s)	0	-	9.1	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection

Int Delay, s/veh 1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	35	4	164	20	0	169
Future Vol, veh/h	35	4	164	20	0	169
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	10	2	2	10
Mvmt Flow	44	5	205	25	0	211




Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	429	218	0
Stage 1	218	-	-
Stage 2	211	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	583	822	-
Stage 1	818	-	-
Stage 2	824	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	583	822	-
Mov Cap-2 Maneuver	583	-	-
Stage 1	818	-	-
Stage 2	824	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	601	1338
HCM Lane V/C Ratio	-	-	0.081	-
HCM Control Delay (s)	-	-	11.5	0
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.3	0

Intersection




Int Delay, s/veh 0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	10	7	197	190	0
Future Vol, veh/h	0	10	7	197	190	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	10	10	2
Mvmt Flow	0	12	9	240	232	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	490	232	232
Stage 1	232	-	-
Stage 2	258	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	537	807	1336
Stage 1	807	-	-
Stage 2	785	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	533	807	1336
Mov Cap-2 Maneuver	533	-	-
Stage 1	801	-	-
Stage 2	785	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.5	0.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1336	-	807	-	-
HCM Lane V/C Ratio	0.006	-	0.015	-	-
HCM Control Delay (s)	7.7	0	9.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	48	14	19	183	185	83
Future Vol, veh/h	48	14	19	183	185	83
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	10	10	2
Mvmt Flow	59	17	23	223	226	101
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	546	277	327	0	-	0
Stage 1	277	-	-	-	-	-
Stage 2	269	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	499	762	1233	-	-	-
Stage 1	770	-	-	-	-	-
Stage 2	776	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	489	762	1233	-	-	-
Mov Cap-2 Maneuver	489	-	-	-	-	-
Stage 1	754	-	-	-	-	-
Stage 2	776	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	12.9	0.8		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1233	-	532	-	-	
HCM Lane V/C Ratio	0.019	-	0.142	-	-	
HCM Control Delay (s)	8	0	12.9	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-	

Intersection

Intersection Delay, s/veh	9.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	117	41	10	7	52	27	5	80	4	20	65	104
Future Vol, veh/h	117	41	10	7	52	27	5	80	4	20	65	104
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	2	2	2	2	2	2	2	10	2	2	10	2
Mvmt Flow	143	50	12	9	63	33	6	98	5	24	79	127
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10	8.7	8.9	9.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	70%	8%	11%
Vol Thru, %	90%	24%	60%	34%
Vol Right, %	4%	6%	31%	55%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	89	168	86	189
LT Vol	5	117	7	20
Through Vol	80	41	52	65
RT Vol	4	10	27	104
Lane Flow Rate	109	205	105	230
Geometry Grp	1	1	1	1
Degree of Util (X)	0.15	0.282	0.141	0.29
Departure Headway (Hd)	4.961	4.958	4.823	4.528
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	717	719	737	788
Service Time	3.026	3.022	2.894	2.582
HCM Lane V/C Ratio	0.152	0.285	0.142	0.292
HCM Control Delay	8.9	10	8.7	9.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	1.2	0.5	1.2

Intersection

Intersection Delay, s/veh 9.9

Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	150	111	0	0	125	13	7	26	13	21	0	149
Future Vol, veh/h	150	111	0	0	125	13	7	26	13	21	0	149
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	10	10	2	2	10	2	2	2	2	2	2	10
Mvmt Flow	163	121	0	0	136	14	8	28	14	23	0	162
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.1	9.3	8.6	9
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	15%	57%	0%	12%
Vol Thru, %	57%	43%	91%	0%
Vol Right, %	28%	0%	9%	88%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	46	261	138	170
LT Vol	7	150	0	21
Through Vol	26	111	125	0
RT Vol	13	0	13	149
Lane Flow Rate	50	284	150	185
Geometry Grp	1	1	1	1
Degree of Util (X)	0.071	0.387	0.205	0.234
Departure Headway (Hd)	5.099	4.916	4.915	4.56
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	697	729	725	783
Service Time	3.172	2.975	2.981	2.616
HCM Lane V/C Ratio	0.072	0.39	0.207	0.236
HCM Control Delay	8.6	11.1	9.3	9
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.2	1.8	0.8	0.9

Intersection

Int Delay, s/veh 2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	19	53	0	0	103	68	0	0	0	50	0	22
Future Vol, veh/h	19	53	0	0	103	68	0	0	0	50	0	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	10	2	2	10	10	2	2	2	10	2	2
Mvmt Flow	22	62	0	0	121	80	0	0	0	59	0	26




Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	201	0	0	62	0	0	267	267	161
Stage 1	-	-	-	-	-	-	161	161	-
Stage 2	-	-	-	-	-	-	106	106	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.5	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.5	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.5	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.59	4.018	3.318
Pot Cap-1 Maneuver	1371	-	-	1541	-	-	705	639	884
Stage 1	-	-	-	-	-	-	849	765	-
Stage 2	-	-	-	-	-	-	899	807	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1371	-	-	1541	-	-	693	0	884
Mov Cap-2 Maneuver	-	-	-	-	-	-	693	0	-
Stage 1	-	-	-	-	-	-	835	0	-
Stage 2	-	-	-	-	-	-	899	0	-

Approach	EB	WB	SB
HCM Control Delay, s	2	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1371	-	-	1541	-	-	742
HCM Lane V/C Ratio	0.016	-	-	-	-	-	0.114
HCM Control Delay (s)	7.7	0	-	0	-	-	10.5
HCM Lane LOS	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	0	-	-	0.4

Intersection

Int Delay, s/veh 3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	39	52	5	101	71	5
Future Vol, veh/h	39	52	5	101	71	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	10	10	2	10	10	2
Mvmt Flow	46	61	6	119	84	6




Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	107
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1484
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1484
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	772	-	-	1484	-
HCM Lane V/C Ratio	0.116	-	-	0.004	-
HCM Control Delay (s)	10.3	-	-	7.4	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0	-

Intersection

Int Delay, s/veh 1.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	0	0	64	41	21
Future Vol, veh/h	20	0	0	64	41	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	74	74	74	74	74	74
Heavy Vehicles, %	2	2	2	10	10	2
Mvmt Flow	27	0	0	86	55	28




Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	155	69	83
Stage 1	69	-	-
Stage 2	86	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	836	994	1514
Stage 1	954	-	-
Stage 2	937	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	836	994	1514
Mov Cap-2 Maneuver	836	-	-
Stage 1	954	-	-
Stage 2	937	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.5	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1514	-	836	-	-
HCM Lane V/C Ratio	-	-	0.032	-	-
HCM Control Delay (s)	0	-	9.5	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection

Int Delay, s/veh 0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	4	197	44	3	199
Future Vol, veh/h	30	4	197	44	3	199
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	2	10	2	2	10
Mvmt Flow	37	5	240	54	4	243




Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	518	267	0
Stage 1	267	-	-
Stage 2	251	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	518	772	-
Stage 1	778	-	-
Stage 2	791	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	516	772	-
Mov Cap-2 Maneuver	516	-	-
Stage 1	775	-	-
Stage 2	791	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.3	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	537	1268
HCM Lane V/C Ratio	-	-	0.077	0.003
HCM Control Delay (s)	-	-	12.3	7.8
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0

Intersection




Int Delay, s/veh 0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	10	5	145	225	0
Future Vol, veh/h	5	10	5	145	225	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	10	10	2
Mvmt Flow	6	13	6	181	281	0





Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	474	281	281
Stage 1	281	-	-
Stage 2	193	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	549	758	1282
Stage 1	767	-	-
Stage 2	840	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	546	758	1282
Mov Cap-2 Maneuver	546	-	-
Stage 1	763	-	-
Stage 2	840	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.5	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1282	-	671	-	-
HCM Lane V/C Ratio	0.005	-	0.028	-	-
HCM Control Delay (s)	7.8	0	10.5	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	5	5	160	270	10
Future Vol, veh/h	20	5	5	160	270	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	2	2	2	10	10	2
Mvmt Flow	29	7	7	229	386	14
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	636	393	400	0	-	0
Stage 1	393	-	-	-	-	-
Stage 2	243	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	442	656	1159	-	-	-
Stage 1	682	-	-	-	-	-
Stage 2	797	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	439	656	1159	-	-	-
Mov Cap-2 Maneuver	439	-	-	-	-	-
Stage 1	677	-	-	-	-	-
Stage 2	797	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	13.3	0.2		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1159	-	470	-	-	
HCM Lane V/C Ratio	0.006	-	0.076	-	-	
HCM Control Delay (s)	8.1	0	13.3	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.2	-	-	

Intersection	
Intersection Delay, s/veh	9.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	105	10	5	5	10	5	5	45	5	10	45	215
Future Vol, veh/h	105	10	5	5	10	5	5	45	5	10	45	215
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles, %	2	2	2	2	2	2	2	10	2	2	10	2
Mvmt Flow	131	13	6	6	13	6	6	56	6	13	56	269
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0





Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.3	8.1	8.2	9.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	88%	25%	4%
Vol Thru, %	82%	8%	50%	17%
Vol Right, %	9%	4%	25%	80%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	55	120	20	270
LT Vol	5	105	5	10
Through Vol	45	10	10	45
RT Vol	5	5	5	215
Lane Flow Rate	69	150	25	338
Geometry Grp	1	1	1	1
Degree of Util (X)	0.089	0.207	0.034	0.374
Departure Headway (Hd)	4.684	4.966	4.892	3.992
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	764	722	729	901
Service Time	2.718	3.006	2.939	2.013
HCM Lane V/C Ratio	0.09	0.208	0.034	0.375
HCM Control Delay	8.2	9.3	8.1	9.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.8	0.1	1.7

Intersection

Intersection Delay, s/veh 11.6

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	115	55	0	0	70	20	5	0	5	65	0	230
Future Vol, veh/h	115	55	0	0	70	20	5	0	5	65	0	230
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Heavy Vehicles, %	10	10	2	2	10	2	2	2	2	2	2	10
Mvmt Flow	162	77	0	0	99	28	7	0	7	92	0	324
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.5	9.6	8.5	12.4
HCM LOS	B	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	50%	68%	0%	22%
Vol Thru, %	0%	32%	78%	0%
Vol Right, %	50%	0%	22%	78%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	10	170	90	295
LT Vol	5	115	0	65
Through Vol	0	55	70	0
RT Vol	5	0	20	230
Lane Flow Rate	14	239	127	415
Geometry Grp	1	1	1	1
Degree of Util (X)	0.021	0.363	0.189	0.518
Departure Headway (Hd)	5.333	5.462	5.368	4.484
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	672	663	672	794
Service Time	3.356	3.462	3.378	2.565
HCM Lane V/C Ratio	0.021	0.36	0.189	0.523
HCM Control Delay	8.5	11.5	9.6	12.4
HCM Lane LOS	A	B	A	B
HCM 95th-tile Q	0.1	1.7	0.7	3

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	20	30	0	0	35	30	0	0	0	35	0	10
Future Vol, veh/h	20	30	0	0	35	30	0	0	0	35	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	2	10	2	2	10	10	2	2	2	10	2	2
Mvmt Flow	29	43	0	0	50	43	0	0	0	50	0	14




Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	93	0	0	43	0	0	173	173	72
Stage 1	-	-	-	-	-	-	72	72	-
Stage 2	-	-	-	-	-	-	101	101	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.5	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.5	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.5	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.59	4.018	3.318
Pot Cap-1 Maneuver	1501	-	-	1566	-	-	799	720	990
Stage 1	-	-	-	-	-	-	931	835	-
Stage 2	-	-	-	-	-	-	903	811	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1501	-	-	1566	-	-	783	0	990
Mov Cap-2 Maneuver	-	-	-	-	-	-	783	0	-
Stage 1	-	-	-	-	-	-	912	0	-
Stage 2	-	-	-	-	-	-	903	0	-

Approach	EB	WB	SB
HCM Control Delay, s	3	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1501	-	-	1566	-	-	821
HCM Lane V/C Ratio	0.019	-	-	-	-	-	0.078
HCM Control Delay (s)	7.4	0	-	0	-	-	9.8
HCM Lane LOS	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-	-	0.3

Intersection

Int Delay, s/veh 3.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	30	35	5	20	35	5
Future Vol, veh/h	30	35	5	20	35	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	10	10	2	10	10	2
Mvmt Flow	43	50	7	29	50	7




Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	93
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1501
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1501
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.5	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	878	-	-	1501	-
HCM Lane V/C Ratio	0.065	-	-	0.005	-
HCM Control Delay (s)	9.4	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection




Int Delay, s/veh 0.6




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	0	0	30	40	5
Future Vol, veh/h	5	0	0	30	40	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	74	74	74	74	74	74
Heavy Vehicles, %	2	2	2	10	10	2
Mvmt Flow	7	0	0	41	54	7

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	99	58	61
Stage 1	58	-	-
Stage 2	41	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	900	1008	1542
Stage 1	965	-	-
Stage 2	981	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	900	1008	1542
Mov Cap-2 Maneuver	900	-	-
Stage 1	965	-	-
Stage 2	981	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1542	-	900	-	-
HCM Lane V/C Ratio	-	-	0.008	-	-
HCM Control Delay (s)	0	-	9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	10	10	125	105	0
Future Vol, veh/h	0	10	10	125	105	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	10	10	2
Mvmt Flow	0	12	12	152	128	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	304	128	128	0	-	0
Stage 1	128	-	-	-	-	-
Stage 2	176	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	688	922	1458	-	-	-
Stage 1	898	-	-	-	-	-
Stage 2	855	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	682	922	1458	-	-	-
Mov Cap-2 Maneuver	682	-	-	-	-	-
Stage 1	890	-	-	-	-	-
Stage 2	855	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9	0.6		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1458	-	922	-	-	
HCM Lane V/C Ratio	0.008	-	0.013	-	-	
HCM Control Delay (s)	7.5	0	9	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	5	5	140	140	40
Future Vol, veh/h	15	5	5	140	140	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	10	10	2
Mvmt Flow	18	6	6	171	171	49





Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	379	196	220
Stage 1	196	-	-
Stage 2	183	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	623	845	1349
Stage 1	837	-	-
Stage 2	848	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	620	845	1349
Mov Cap-2 Maneuver	620	-	-
Stage 1	833	-	-
Stage 2	848	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.6	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1349	-	664	-	-
HCM Lane V/C Ratio	0.005	-	0.037	-	-
HCM Control Delay (s)	7.7	0	10.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection

Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	105	15	10	5	10	5	5	55	0	10	45	80
Future Vol, veh/h	105	15	10	5	10	5	5	55	0	10	45	80
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	2	2	2	2	2	2	2	10	2	2	10	2
Mvmt Flow	128	18	12	6	12	6	6	67	0	12	55	98
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.8	7.7	8	8.1
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	81%	25%	7%
Vol Thru, %	92%	12%	50%	33%
Vol Right, %	0%	8%	25%	59%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	60	130	20	135
LT Vol	5	105	5	10
Through Vol	55	15	10	45
RT Vol	0	10	5	80
Lane Flow Rate	73	159	24	165
Geometry Grp	1	1	1	1
Degree of Util (X)	0.093	0.202	0.031	0.188
Departure Headway (Hd)	4.561	4.597	4.542	4.116
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	787	782	788	874
Service Time	2.58	2.619	2.569	2.132
HCM Lane V/C Ratio	0.093	0.203	0.03	0.189
HCM Control Delay	8	8.8	7.7	8.1
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.8	0.1	0.7

Intersection

Intersection Delay, s/veh 8.2

Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	95	60	0	0	50	10	10	25	15	20	0	55
Future Vol, veh/h	95	60	0	0	50	10	10	25	15	20	0	55
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	10	10	2	2	10	2	2	2	2	2	2	10
Mvmt Flow	103	65	0	0	54	11	11	27	16	22	0	60
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.8	7.9	7.8	7.6
HCM LOS	A	A	A	A




Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	20%	61%	0%	27%
Vol Thru, %	50%	39%	83%	0%
Vol Right, %	30%	0%	17%	73%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	50	155	60	75
LT Vol	10	95	0	20
Through Vol	25	60	50	0
RT Vol	15	0	10	55
Lane Flow Rate	54	168	65	82
Geometry Grp	1	1	1	1
Degree of Util (X)	0.067	0.214	0.081	0.094
Departure Headway (Hd)	4.436	4.578	4.458	4.163
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	810	788	805	863
Service Time	2.451	2.578	2.476	2.177
HCM Lane V/C Ratio	0.067	0.213	0.081	0.095
HCM Control Delay	7.8	8.8	7.9	7.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.8	0.3	0.3




Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	20	30	0	0	45	50	0	0	0	45	0	20
Future Vol, veh/h	20	30	0	0	45	50	0	0	0	45	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	10	2	2	10	10	2	2	2	10	2	2
Mvmt Flow	24	35	0	0	53	59	0	0	0	53	0	24

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	112	0	0	35	0	0	166	166	83
Stage 1	-	-	-	-	-	-	83	83	-
Stage 2	-	-	-	-	-	-	83	83	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.5	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.5	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.5	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.59	4.018	3.318
Pot Cap-1 Maneuver	1478	-	-	1576	-	-	806	727	976
Stage 1	-	-	-	-	-	-	920	826	-
Stage 2	-	-	-	-	-	-	920	826	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1478	-	-	1576	-	-	792	0	976
Mov Cap-2 Maneuver	-	-	-	-	-	-	792	0	-
Stage 1	-	-	-	-	-	-	904	0	-
Stage 2	-	-	-	-	-	-	920	0	-

Approach	EB	WB	SB
HCM Control Delay, s	3	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1478	-	-	1576	-	-	841
HCM Lane V/C Ratio	0.016	-	-	-	-	-	0.091
HCM Control Delay (s)	7.5	0	-	0	-	-	9.7
HCM Lane LOS	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	0	-	-	0.3

Intersection						
Int Delay, s/veh	4.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	20	40	5	30	60	5
Future Vol, veh/h	20	40	5	30	60	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	10	10	2	10	10	2
Mvmt Flow	24	47	6	35	71	6
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	71	0	95	48
Stage 1	-	-	-	-	48	-
Stage 2	-	-	-	-	47	-
Critical Hdwy	-	-	4.12	-	6.5	6.22
Critical Hdwy Stg 1	-	-	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	5.5	-
Follow-up Hdwy	-	-	2.218	-	3.59	3.318
Pot Cap-1 Maneuver	-	-	1529	-	885	1021
Stage 1	-	-	-	-	954	-
Stage 2	-	-	-	-	955	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1529	-	881	1021
Mov Cap-2 Maneuver	-	-	-	-	881	-
Stage 1	-	-	-	-	950	-
Stage 2	-	-	-	-	955	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		1.1		9.4	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	890	-	-	1529	-	
HCM Lane V/C Ratio	0.086	-	-	0.004	-	
HCM Control Delay (s)	9.4	-	-	7.4	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0.3	-	-	0	-	

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	0	0	60	35	10
Future Vol, veh/h	15	0	0	60	35	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	74	74	74	74	74	74
Heavy Vehicles, %	2	2	2	10	10	2
Mvmt Flow	20	0	0	81	47	14




Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	135	54	61
Stage 1	54	-	-
Stage 2	81	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	859	1013	1542
Stage 1	969	-	-
Stage 2	942	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	859	1013	1542
Mov Cap-2 Maneuver	859	-	-
Stage 1	969	-	-
Stage 2	942	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1542	-	859	-	-
HCM Lane V/C Ratio	-	-	0.024	-	-
HCM Control Delay (s)	0	-	9.3	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection

Int Delay, s/veh 0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	10	5	220	270	0
Future Vol, veh/h	5	10	5	220	270	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	10	10	2
Mvmt Flow	6	13	6	275	338	0




Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	625	338	338
Stage 1	338	-	-
Stage 2	287	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	449	704	1221
Stage 1	722	-	-
Stage 2	762	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	446	704	1221
Mov Cap-2 Maneuver	446	-	-
Stage 1	718	-	-
Stage 2	762	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.3	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1221	-	590	-	-
HCM Lane V/C Ratio	0.005	-	0.032	-	-
HCM Control Delay (s)	8	0	11.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection

Int Delay, s/veh 2.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	55	15	10	205	305	15
Future Vol, veh/h	55	15	10	205	305	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	2	2	2	10	10	2
Mvmt Flow	79	21	14	293	436	21

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	768	447	457
Stage 1	447	-	-
Stage 2	321	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	370	612	1104
Stage 1	644	-	-
Stage 2	735	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	364	612	1104
Mov Cap-2 Maneuver	364	-	-
Stage 1	634	-	-
Stage 2	735	-	-





Approach	EB	NB	SB
HCM Control Delay, s	17	0.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1104	-	399	-	-
HCM Lane V/C Ratio	0.013	-	0.251	-	-
HCM Control Delay (s)	8.3	0	17	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	1	-	-

Intersection

Intersection Delay, s/veh 10.4

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	130	30	5	5	20	10	5	60	5	20	65	225
Future Vol, veh/h	130	30	5	5	20	10	5	60	5	20	65	225
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles, %	2	2	2	2	2	2	2	10	2	2	10	2
Mvmt Flow	163	38	6	6	25	13	6	75	6	25	81	281
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0





Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.4	8.6	8.8	10.9
HCM LOS	B	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	79%	14%	6%
Vol Thru, %	86%	18%	57%	21%
Vol Right, %	7%	3%	29%	73%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	70	165	35	310
LT Vol	5	130	5	20
Through Vol	60	30	20	65
RT Vol	5	5	10	225
Lane Flow Rate	88	206	44	388
Geometry Grp	1	1	1	1
Degree of Util (X)	0.121	0.296	0.062	0.46
Departure Headway (Hd)	4.991	5.174	5.139	4.276
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	713	689	690	841
Service Time	3.057	3.246	3.227	2.319
HCM Lane V/C Ratio	0.123	0.299	0.064	0.461
HCM Control Delay	8.8	10.4	8.6	10.9
HCM Lane LOS	A	B	A	B
HCM 95th-tile Q	0.4	1.2	0.2	2.4

Intersection

Intersection Delay, s/veh 22.3

Intersection LOS C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	175	145	0	0	130	30	5	0	5	85	0	260
Future Vol, veh/h	175	145	0	0	130	30	5	0	5	85	0	260
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Heavy Vehicles, %	10	10	2	2	10	2	2	2	2	2	2	10
Mvmt Flow	246	204	0	0	183	42	7	0	7	120	0	366
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	26	13.5	10.2	23.3
HCM LOS	D	B	B	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	50%	55%	0%	25%
Vol Thru, %	0%	45%	81%	0%
Vol Right, %	50%	0%	19%	75%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	10	320	160	345
LT Vol	5	175	0	85
Through Vol	0	145	130	0
RT Vol	5	0	30	260
Lane Flow Rate	14	451	225	486
Geometry Grp	1	1	1	1
Degree of Util (X)	0.027	0.76	0.399	0.747
Departure Headway (Hd)	6.992	6.074	6.367	5.537
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	514	590	568	646
Service Time	5.008	4.163	4.367	3.63
HCM Lane V/C Ratio	0.027	0.764	0.396	0.752
HCM Control Delay	10.2	26	13.5	23.3
HCM Lane LOS	B	D	B	C
HCM 95th-tile Q	0.1	6.8	1.9	6.7

Intersection

Int Delay, s/veh 3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	20	90	0	0	60	35	0	0	0	50	0	10
Future Vol, veh/h	20	90	0	0	60	35	0	0	0	50	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	2	10	2	2	10	10	2	2	2	10	2	2
Mvmt Flow	29	129	0	0	86	50	0	0	0	71	0	14




Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	136	0	0	129	0	0	298	298	111
Stage 1	-	-	-	-	-	-	111	111	-
Stage 2	-	-	-	-	-	-	187	187	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.5	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.5	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.5	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.59	4.018	3.318
Pot Cap-1 Maneuver	1448	-	-	1457	-	-	677	614	942
Stage 1	-	-	-	-	-	-	894	804	-
Stage 2	-	-	-	-	-	-	826	745	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1448	-	-	1457	-	-	662	0	942
Mov Cap-2 Maneuver	-	-	-	-	-	-	662	0	-
Stage 1	-	-	-	-	-	-	874	0	-
Stage 2	-	-	-	-	-	-	826	0	-

Approach	EB	WB	SB
HCM Control Delay, s	1.4	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1448	-	-	1457	-	-	697
HCM Lane V/C Ratio	0.02	-	-	-	-	-	0.123
HCM Control Delay (s)	7.5	0	-	0	-	-	10.9
HCM Lane LOS	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	0	-	-	0.4

Intersection

Int Delay, s/veh 2.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	100	40	5	35	45	10
Future Vol, veh/h	100	40	5	35	45	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	10	10	2	10	10	2
Mvmt Flow	143	57	7	50	64	14




Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	200
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1372
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1372
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	753	-	-	1372	-
HCM Lane V/C Ratio	0.104	-	-	0.005	-
HCM Control Delay (s)	10.3	-	-	7.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection

Int Delay, s/veh 1.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	0	0	35	45	10
Future Vol, veh/h	20	0	0	35	45	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	74	74	74	74	74	74
Heavy Vehicles, %	2	2	2	10	10	2
Mvmt Flow	27	0	0	47	61	14




Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	115	68	75
Stage 1	68	-	-
Stage 2	47	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	881	995	1524
Stage 1	955	-	-
Stage 2	975	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	881	995	1524
Mov Cap-2 Maneuver	881	-	-
Stage 1	955	-	-
Stage 2	975	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.2	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1524	-	881	-	-
HCM Lane V/C Ratio	-	-	0.031	-	-
HCM Control Delay (s)	0	-	9.2	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection




Int Delay, s/veh 0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	10	10	205	195	0
Future Vol, veh/h	0	10	10	205	195	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	10	10	2
Mvmt Flow	0	12	12	250	238	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	512	238	238	0	-	0
Stage 1	238	-	-	-	-	-
Stage 2	274	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	522	801	1329	-	-	-
Stage 1	802	-	-	-	-	-
Stage 2	772	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	517	801	1329	-	-	-
Mov Cap-2 Maneuver	517	-	-	-	-	-
Stage 1	794	-	-	-	-	-
Stage 2	772	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	0.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1329	-	801	-	-
HCM Lane V/C Ratio	0.009	-	0.015	-	-
HCM Control Delay (s)	7.7	0	9.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	50	15	20	190	195	85
Future Vol, veh/h	50	15	20	190	195	85
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	10	10	2
Mvmt Flow	61	18	24	232	238	104





Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	570	290	342	0	-	0
Stage 1	290	-	-	-	-	-
Stage 2	280	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	483	749	1217	-	-	-
Stage 1	759	-	-	-	-	-
Stage 2	767	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	472	749	1217	-	-	-
Mov Cap-2 Maneuver	472	-	-	-	-	-
Stage 1	742	-	-	-	-	-
Stage 2	767	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.2	0.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1217	-	516	-	-
HCM Lane V/C Ratio	0.02	-	0.154	-	-
HCM Control Delay (s)	8	0	13.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

Intersection

Intersection Delay, s/veh	9.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	120	40	10	10	55	30	5	85	5	20	70	105
Future Vol, veh/h	120	40	10	10	55	30	5	85	5	20	70	105
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	2	2	2	2	2	2	2	10	2	2	10	2
Mvmt Flow	146	49	12	12	67	37	6	104	6	24	85	128
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0





Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.1	8.9	9.1	9.7
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	71%	11%	10%
Vol Thru, %	89%	24%	58%	36%
Vol Right, %	5%	6%	32%	54%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	95	170	95	195
LT Vol	5	120	10	20
Through Vol	85	40	55	70
RT Vol	5	10	30	105
Lane Flow Rate	116	207	116	238
Geometry Grp	1	1	1	1
Degree of Util (X)	0.161	0.289	0.157	0.303
Departure Headway (Hd)	5.005	5.016	4.874	4.581
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	710	711	729	778
Service Time	3.08	3.087	2.953	2.644
HCM Lane V/C Ratio	0.163	0.291	0.159	0.306
HCM Control Delay	9.1	10.1	8.9	9.7
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.6	1.2	0.6	1.3

Intersection

Intersection Delay, s/veh10.1

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	155	115	0	0	125	15	10	25	15	25	0	155
Future Vol, veh/h	155	115	0	0	125	15	10	25	15	25	0	155
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	10	10	2	2	10	2	2	2	2	2	2	10
Mvmt Flow	168	125	0	0	136	16	11	27	16	27	0	168
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.4	9.4	8.7	9.2
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	20%	57%	0%	14%
Vol Thru, %	50%	43%	89%	0%
Vol Right, %	30%	0%	11%	86%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	50	270	140	180
LT Vol	10	155	0	25
Through Vol	25	115	125	0
RT Vol	15	0	15	155
Lane Flow Rate	54	293	152	196
Geometry Grp	1	1	1	1
Degree of Util (X)	0.078	0.405	0.21	0.251
Departure Headway (Hd)	5.155	4.962	4.967	4.616
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	689	722	717	773
Service Time	3.236	3.027	3.041	2.679
HCM Lane V/C Ratio	0.078	0.406	0.212	0.254
HCM Control Delay	8.7	11.4	9.4	9.2
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.3	2	0.8	1

Intersection

Int Delay, s/veh 3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	20	55	0	0	105	70	0	0	0	55	0	25
Future Vol, veh/h	20	55	0	0	105	70	0	0	0	55	0	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	10	2	2	10	10	2	2	2	10	2	2
Mvmt Flow	24	65	0	0	124	82	0	0	0	65	0	29




Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	206	0	0	65	0	0	278	278	165
Stage 1	-	-	-	-	-	-	165	165	-
Stage 2	-	-	-	-	-	-	113	113	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.5	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.5	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.5	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.59	4.018	3.318
Pot Cap-1 Maneuver	1365	-	-	1537	-	-	695	630	879
Stage 1	-	-	-	-	-	-	845	762	-
Stage 2	-	-	-	-	-	-	892	802	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1365	-	-	1537	-	-	682	0	879
Mov Cap-2 Maneuver	-	-	-	-	-	-	682	0	-
Stage 1	-	-	-	-	-	-	830	0	-
Stage 2	-	-	-	-	-	-	892	0	-

Approach	EB	WB	SB
HCM Control Delay, s	2	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1365	-	-	1537	-	-	733
HCM Lane V/C Ratio	0.017	-	-	-	-	-	0.128
HCM Control Delay (s)	7.7	0	-	0	-	-	10.6
HCM Lane LOS	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	0	-	-	0.4

Intersection

Int Delay, s/veh 2.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	40	55	5	105	70	5
Future Vol, veh/h	40	55	5	105	70	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	10	10	2	10	10	2
Mvmt Flow	47	65	6	124	82	6




Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	112
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1478
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1478
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	764	-	-	1478	-
HCM Lane V/C Ratio	0.115	-	-	0.004	-
HCM Control Delay (s)	10.3	-	-	7.4	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0	-

Intersection

Int Delay, s/veh 1.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	0	0	65	40	20
Future Vol, veh/h	20	0	0	65	40	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	74	74	74	74	74	74
Heavy Vehicles, %	2	2	2	10	10	2
Mvmt Flow	27	0	0	88	54	27

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	156	68	81
Stage 1	68	-	-
Stage 2	88	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	835	995	1517
Stage 1	955	-	-
Stage 2	935	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	835	995	1517
Mov Cap-2 Maneuver	835	-	-
Stage 1	955	-	-
Stage 2	935	-	-

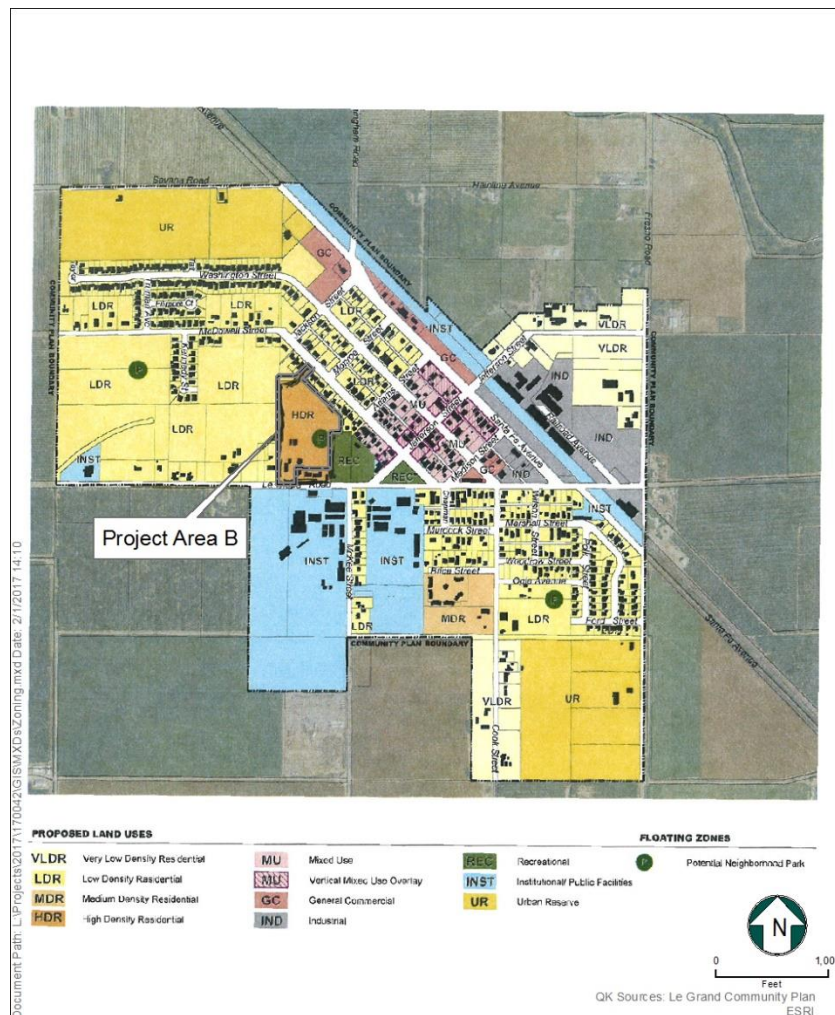
Approach	EB	NB	SB
HCM Control Delay, s	9.5	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1517	-	835	-	-
HCM Lane V/C Ratio	-	-	0.032	-	-
HCM Control Delay (s)	0	-	9.5	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Appendix H
Water Supply Assessment

WATER SUPPLY ASSESSMENT

COUNTY OF MERCED LE GRAND COMMUNITY PLAN



FEBRUARY 2017



WATER SUPPLY ASSESSMENT

LE GRAND COMMUNITY PLAN

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February 2017

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WATER SUPPLY ASSESSMENT

SECTION 1 - INTRODUCTION

1.1 - General

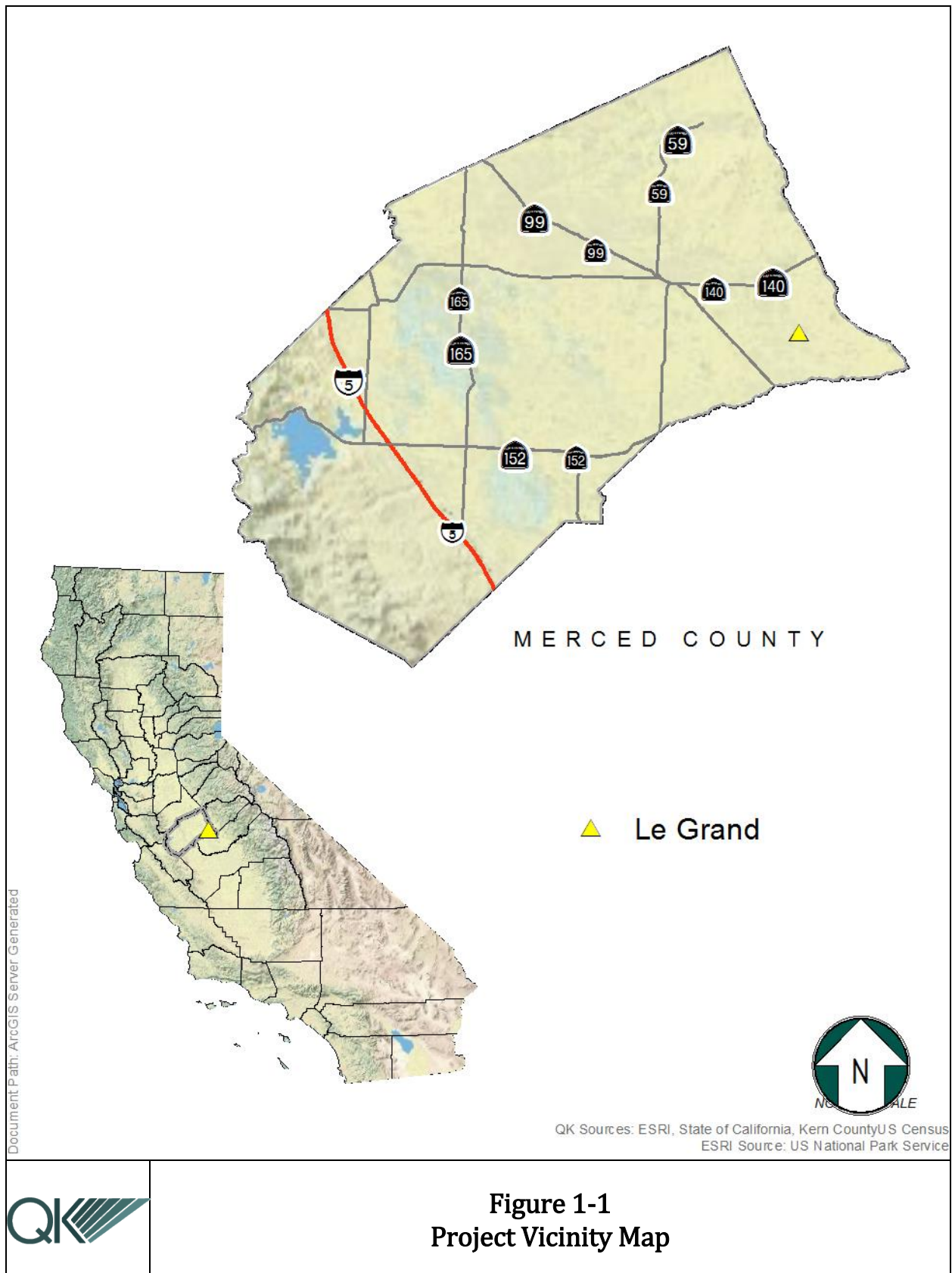
Senate Bill 610 (Chapter 643, Statutes of 2001) and Senate Bill 221 (Chapter 642, Statutes of 2001) amended state law, effective January 1, 2002, improves the link between information on water supply availability and certain land use decisions made by cities and counties. SB 610 and SB 221 are companion measures that seek to promote more collaborative planning between local water suppliers and cities and counties. Both statutes require detailed information regarding water availability to be provided to city and county decision-makers prior to approval of specified large development projects. Both statutes also require this detailed information to be included in the administrative record that serves as the evidentiary basis for an approval action by the city or county on such projects. Both measures recognize local control and decision-making regarding the availability of water for projects and the approval of projects.

Under SB 610, water assessments must be furnished to local governments for inclusion in any environmental documentation for certain projects (as defined in Water Code 10912[a]) subject to the California Environmental Quality Act (CEQA). Under SB 221, approval by a city or county of certain developments requires an affirmative written verification of sufficient water supply. However, not every project that is subject to the requirements of SB 610 would also require the mandatory water verification of SB 221. Conversely, not every project that is subject to the requirements of SB 221 would also require the environmental document to contain an SB 610 water assessment.

1.2 - Project

A proposed Community Plan for Le Grand for which the reliability of the water supply and its sufficiency, and the environmental impacts and any essential mitigation measures for water, wastewater and storm drainage facilities required to serve Plan implementation, are analyzed.

The location of Le Grand is depicted on Figures 1-1 and 1-2. Proposed Community Plan boundaries are shown on Figure 1-3 and the Plan-proposed land uses are shown on Figure 1-4 and summarized in Tables 1-1 and 1-2.



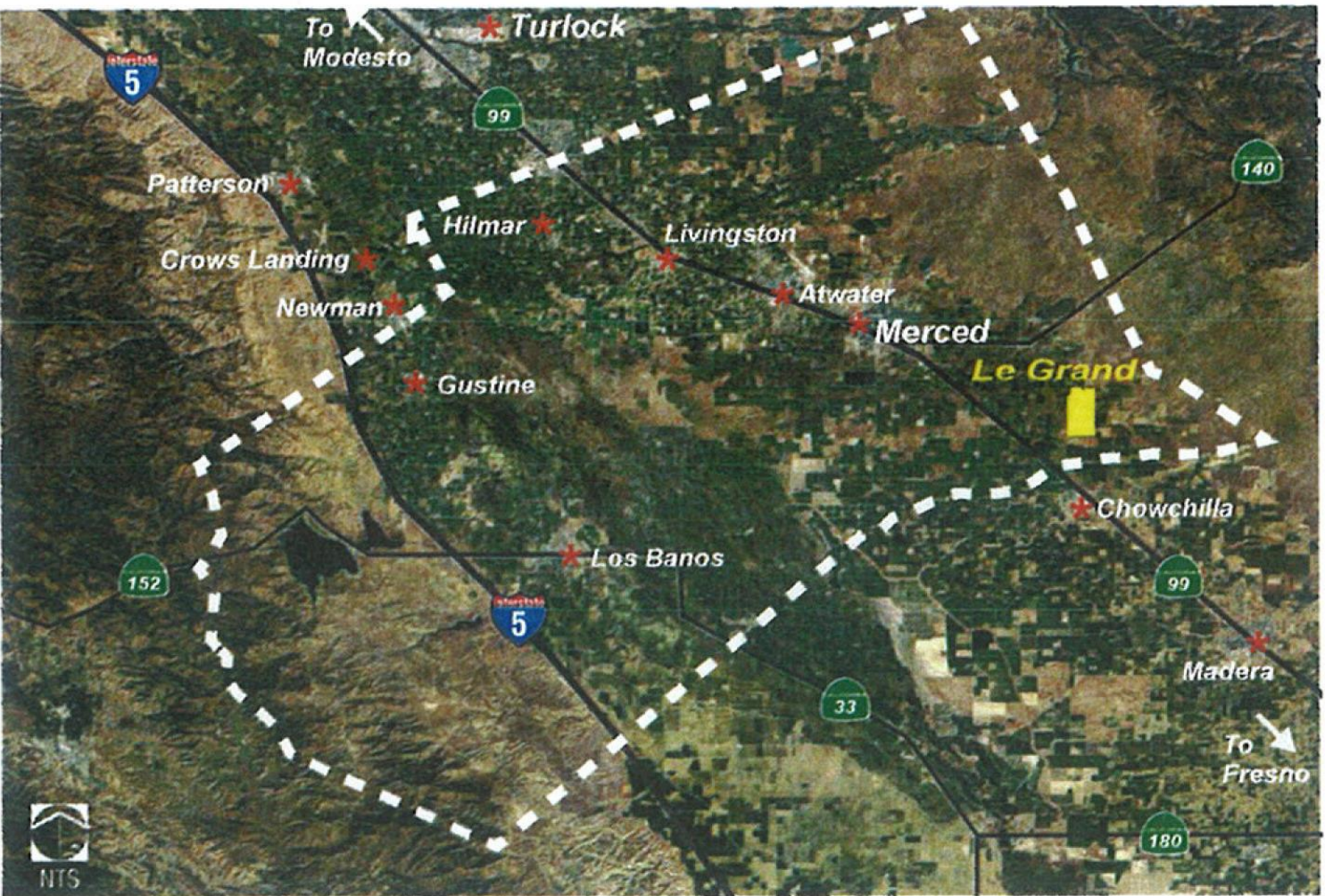
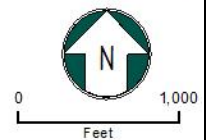


Figure 1-2
Regional Location Map



Le Grand
 Community Plan Area



ESRI Sources: Esri, HERE, DeLorme, Intermap, increment P Corp.,



Figure 1-3
Community Plan Area

**Table 1-1
Land Use Summary**

Land Use	Acres	Typical Units Per Acre	Existing Units	Potential Units	Unit Total ¹	Floor Area Ratio ²	Existing sf	Potential sf	sf Total
RESIDENTIAL									
Very Low Density Residential	32	1	16	19	33	-	16,090	-	-
Low Density Residential	143	5	381	353	716	-	15,334	-	-
Medium Density Residential	8	9	35	48	82	-	-	-	-
High Density Residential	10	25	6	223	229	-	-	-	-
COMMERCIAL									
Mixed-Use	12	7	49	8	37	0.6	47,287	29,207	63,228
General Commercial	8	-	-	-	-	0.5	19,768	68,422	80,034
INDUSTRIAL									
Industrial Park	22	-	-	-	-	1.0	135,701	128,175	255,656
Community Park	4 ³	-	-	-	-	-	480	-	480
INSTITUTIONAL									
Elementary School	17	-	-	-	-	-	-	-	-
High School	37	-	-	-	-	-	-	-	-
Other	14	-	-	-	-	-	31,424	-	30,058
URBAN RESERVE OTHER (Roads, Canals, Etc.)	63	-	5	-	5	-	-	-	-
TOTAL	430	-	492	646	1,102	-	234,660	224,438	429,456

¹ Total reflects removal of redundant units/sf (existing units/building sf that may be removed during development) so they are not counted twice.

² Taken from the Merced County General Plan (Table LU-2, *Land Use Standards*).

³ Additional park land to be provided concurrent with residential development.

**Table 1-2
Residential Density, Units, and Population**

Land Use	Acres	Minimum Units Per Acre	Typical Units Per acre	Maximum Units Per Acre	Existing Units	Potential New Units	Total Units	Existing Population	Potential New Population	Total Potential Population
Very Low Density Residential	32	1	1	4	16	19	33 ¹	54	65	112
Low Density Residential	143	4	5	8	381	353	716 ¹	1,280	1,185	2,404
Medium Density Residential	8	8	9	15	35	48	82 ¹	118	162	276
High Density Residential	10	15	25	33	6	223	229 ¹	20	750	770
Mixed-Use	12	4	7	33	49	8	37 ¹	165	26	124
Urban Reserve	63	-	-	-	5	0	5	17	0	17
Total	268	-	-	-	492	651	1,102¹	1,654	2,188	3,703²

¹Existing units on underutilized parcels that are counted as both “Existing Units” and as “Potential New Units” are subtracted from the total unit count.

²Existing persons on underutilized parcels that are counted as both “Existing Population” and as “Potential New Population” are subtracted from the total potential population. This accounts for 139 people.

The Plan proposes that the community continue to be served with water and wastewater facilities by the Le Grand Community Services District, and that storm drainage be the continuing responsibility of Merced County.

1.3 - Format

The “Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001” (Guidebook) and the sample format presented in the Guidebook were used as guides in preparing this water supply assessment. Pertinent sections of the law identifying requirements for water assessments precede sections of this report. The full text of Chapter 643, Statutes of 2001 (SB 610) is included in Appendix A.

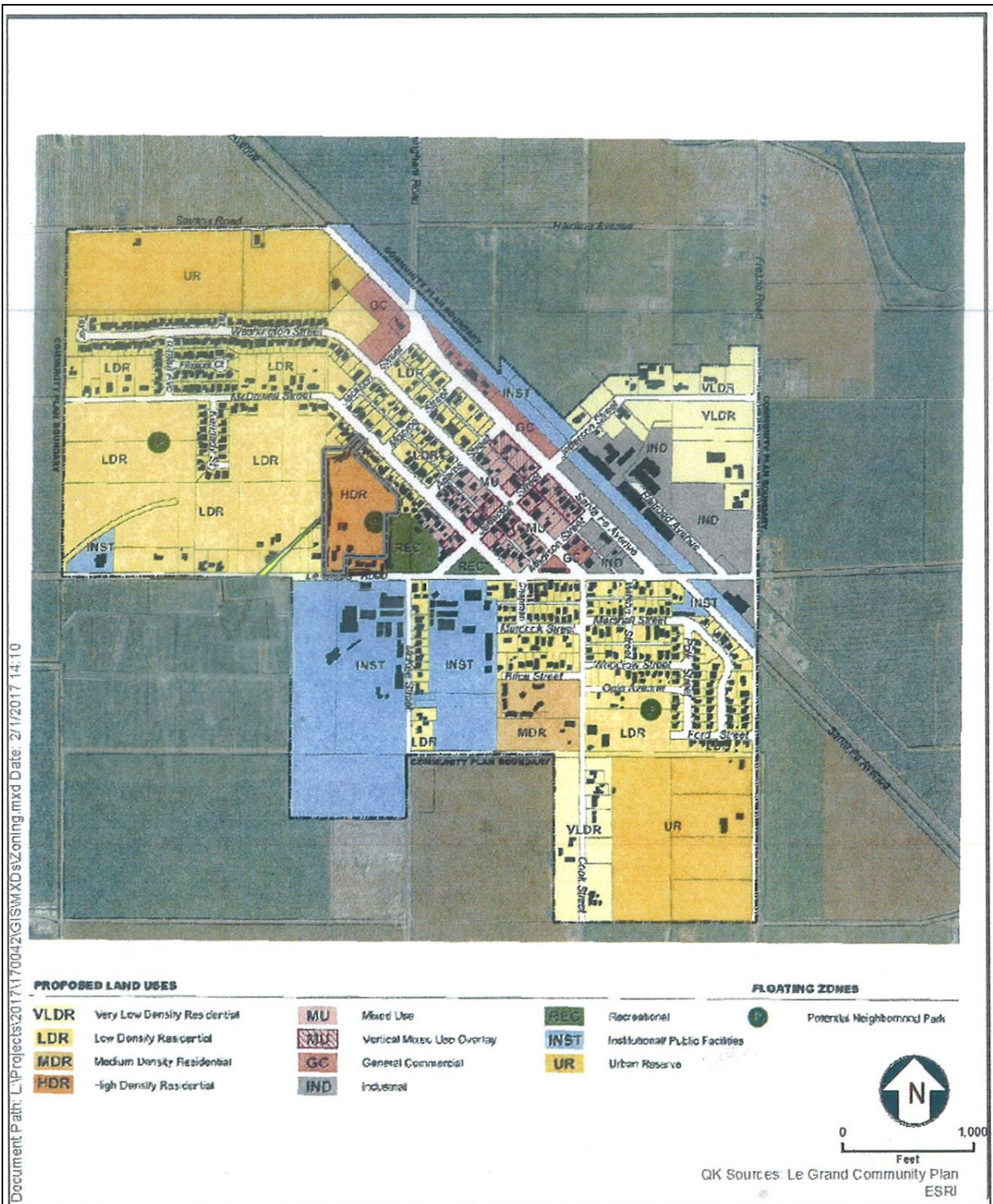
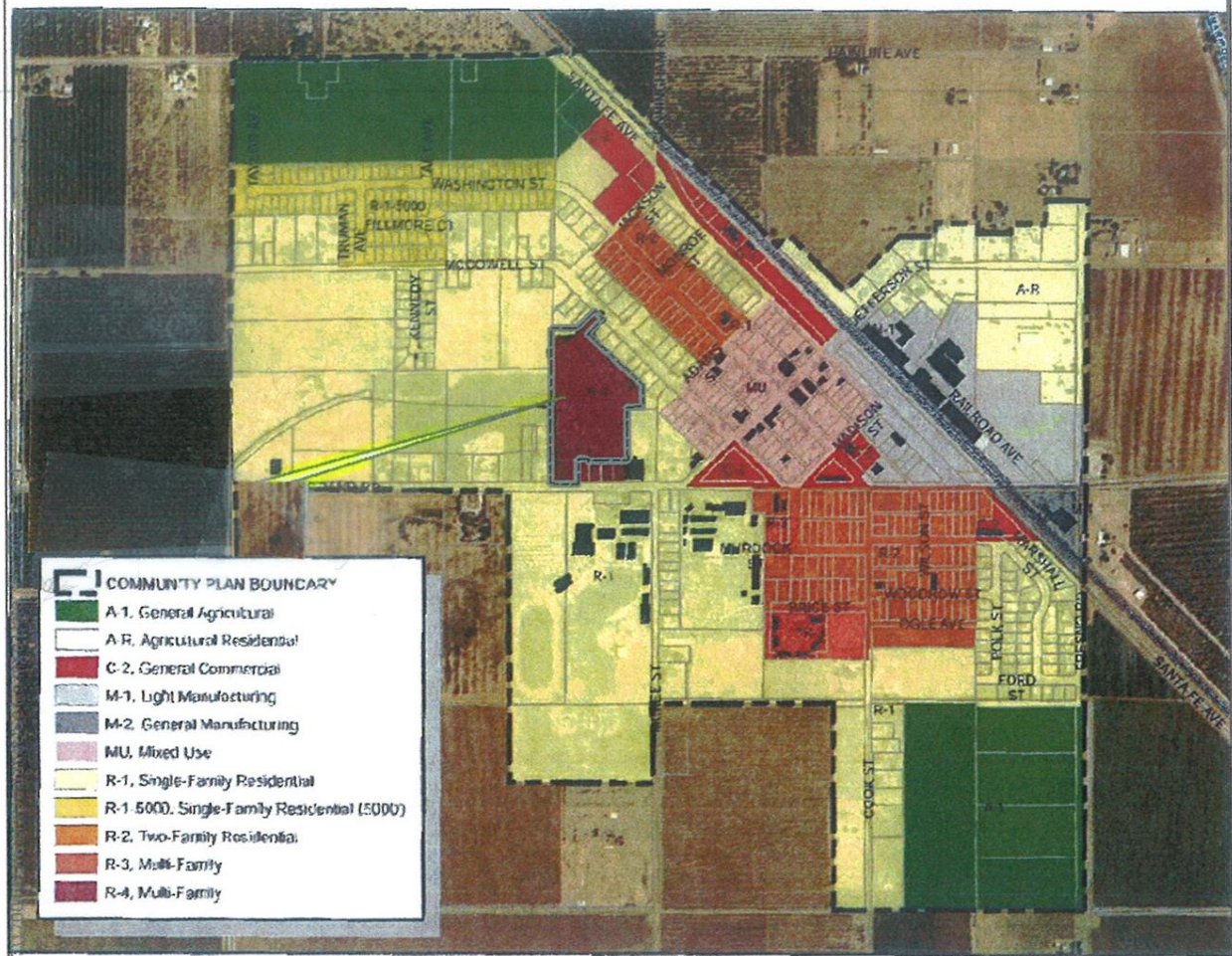


Figure 1-4
Proposed Land Uses



**Figure 1-5
Proposed Zoning**

SECTION 2 - WATER SUPPLY

Water Code Section 10910

- (d)(1) The assessment required by this section shall include an identification of any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and a description of the quantities of water received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts.*
- (2) An identification of existing water supply entitlements, water rights, or water service contracts held by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall be demonstrated by providing information related to all of the following:*
- (A) Written contracts or other proof of entitlement to an identified water supply.*
 - (B) Copies of a capital outlay program for financing the delivery of a water supply that has been adopted by the public water system.*
 - (C) Federal, state, and local permits for construction of necessary infrastructure associated with delivering the water supply.*
 - (D) Any necessary regulatory approvals that are required in order to be able to convey or deliver the water supply.*

The Le Grand Community Services District currently pumps and delivers groundwater to meet the demands of its service area. The Projects propose to utilize that water system. The District currently has no rights to or contracts for surface water, nor purchases any wholesale water from other agencies. The following sections describe the groundwater subbasin and water supply/water system reliability.

2.1 - Groundwater

Water Code Section 10910

- (f) If a water supply for a proposed project includes groundwater, the following additional information shall be included in the water assessment:*
- (1) A review of any information contained in the urban water management plan relevant to the identified water supply for the proposed project.*
 - (2) A description of any groundwater basin or basins from which the proposed project will be supplied. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the public water system,*

or the city or county if either is required to comply with this part pursuant to subdivision (b), has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has been projected that the basin will become overdrafted if present management conditions continue, in the most current bulletin of the department that characterizes the condition of the groundwater basin, and a detailed description by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), of the efforts being undertaken in the basin or basins to eliminate the long-term overdraft condition...

2.2 - Groundwater Subbasin

The DWR has divided the state into 10 hydrologic regions (see Figure 2-1) which have been further divided into basins and subbasins. As described in the 2003 update to Bulletin 118 “California’s Groundwater”, the Merced Groundwater Basin (MGWB) is a subbasin within the San Joaquin Valley Groundwater Basin of the San Joaquin River Hydrologic Region (Figure 2-1).

The MGWB is located in the San Joaquin Valley, which is surrounded by the Coast Range on the west, the San Emigdio and Tehachapi Mountains on the south, the Sierra Nevada on the east, and the Sacramento-San Joaquin Delta (Delta) and Sacramento Valley on the north. The northern portion of the San Joaquin Valley drains toward the Delta via the San Joaquin River and its tributaries, including the Fresno, Merced, Tuolumne, and Stanislaus Rivers. The southern portion of the valley is internally drained by the Kings, Kaweah, Tule and Kern Rivers that flow into the Tulare drainage basin including the beds of the former Tulare, Buena Vista, and Kern Lakes (DWR, 2003).

The MGWB lies on the eastern side of the San Joaquin Valley, entirely within Merced County, and is generally described as the eastern half of Merced County. For the purposes of this assessment, the northern border of MGWB includes lands south of the Merced River between the San Joaquin River on the west and the crystalline basement rock of the Sierra Nevada foothills on the east. The MGWB boundary on the south and west is the Chowchilla River and the Madera-Merced County line, thence northwest to the San Joaquin River.

Studies undertaken by associations of local water agencies, led by the Merced Irrigation District, have utilized an area only 54 square miles larger than the State, Bulletin 118, MGWB description as more accurately describing the subbasin from a hydrologic standpoint, terming it the Merced Region. The information provided, and referenced, in this Assessment will be based on that subbasin definition. The terms MGWB and Merced Region will, accordingly, be used interchangeably in the Assessment (see Figure 2-2).



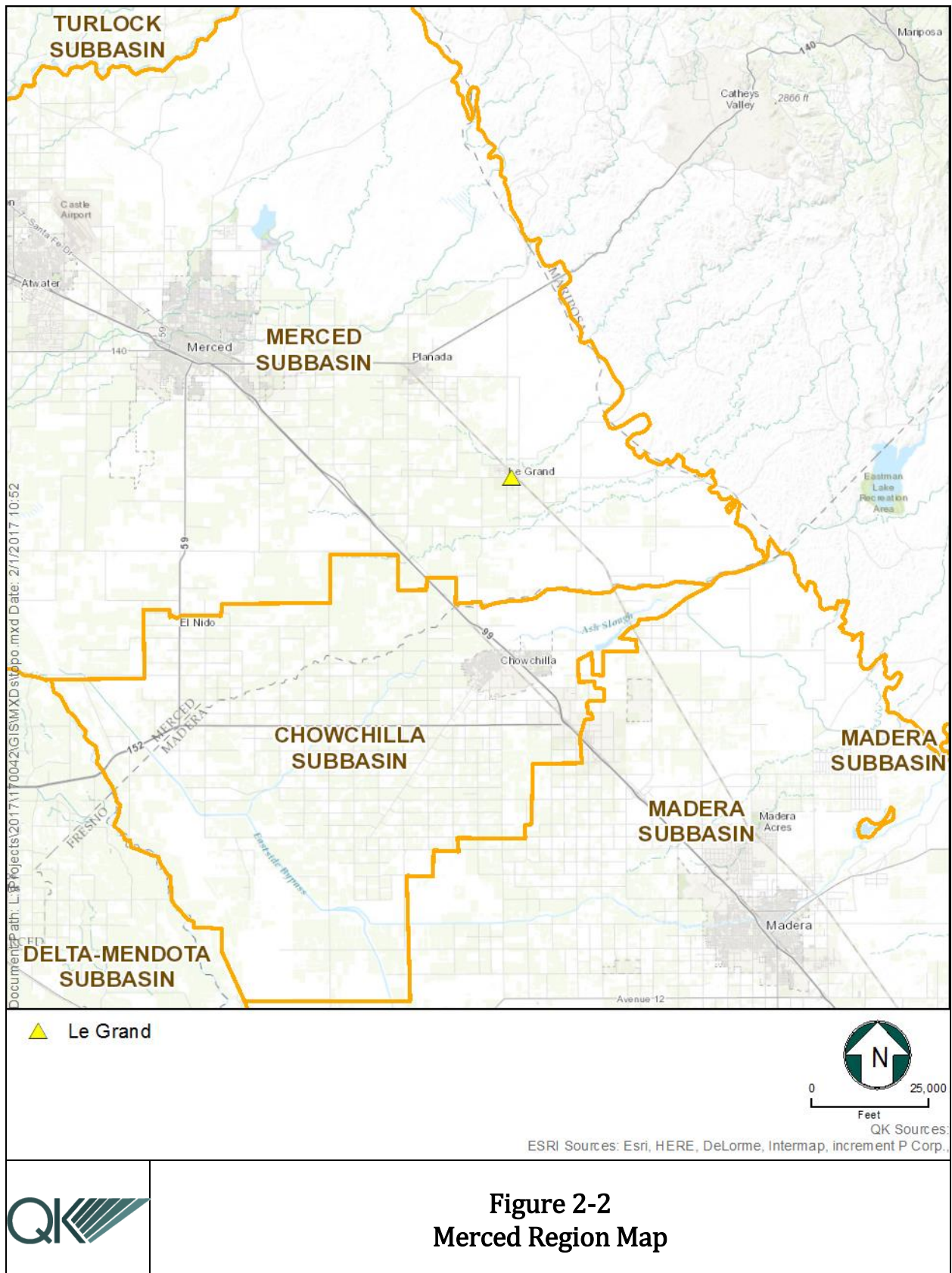


Figure 2-2
Merced Region Map

The Region's geohydrologic characteristics are briefly described as:

There are three groundwater aquifers in the Merced Subbasin: an unconfined aquifer, a confined aquifer, and an aquifer in consolidated rocks. The unconfined water body occurs in the unconsolidated deposits above and east of the Corcoran Clay, which underlies the western half of the subbasin at depths ranging from about 50 to 200 feet, except in the western and southern parts of the area where clay lenses occur and semi-confined conditions exist. The confined aquifer occurs in the unconsolidated deposits below the Corcoran Clay and extends downward to the base of fresh water. The aquifer system in consolidated rocks occurs under both unconfined and confined conditions.

The community of Le Grand is located near the southeasterly border of the subbasin. There is no aquitard under the community and its well system. Groundwater depths are approximately 170 to 200 feet below ground surface. They dropped approximately 60 to 80 feet during the past four years, but have since recovered.

DWR Bulletin 118 cited an estimate of specific yield for the Merced Subbasin, which was developed by the Department of Water Resources (DWR) in 1995. The estimate was based on specific yields determined on a regional basis, which were used to obtain a weighted specific yield conforming to the subbasin boundary. The estimated specific yield for the subbasin was 9.0 percent. The estimated storage capacity was 21,100,000 acre-feet to a depth of 300 feet and 47,600,000 acre-feet to the base of fresh groundwater. These same calculations gave an estimate of 15,700,000 acre-feet of groundwater to a depth of 300 feet as of 1995.

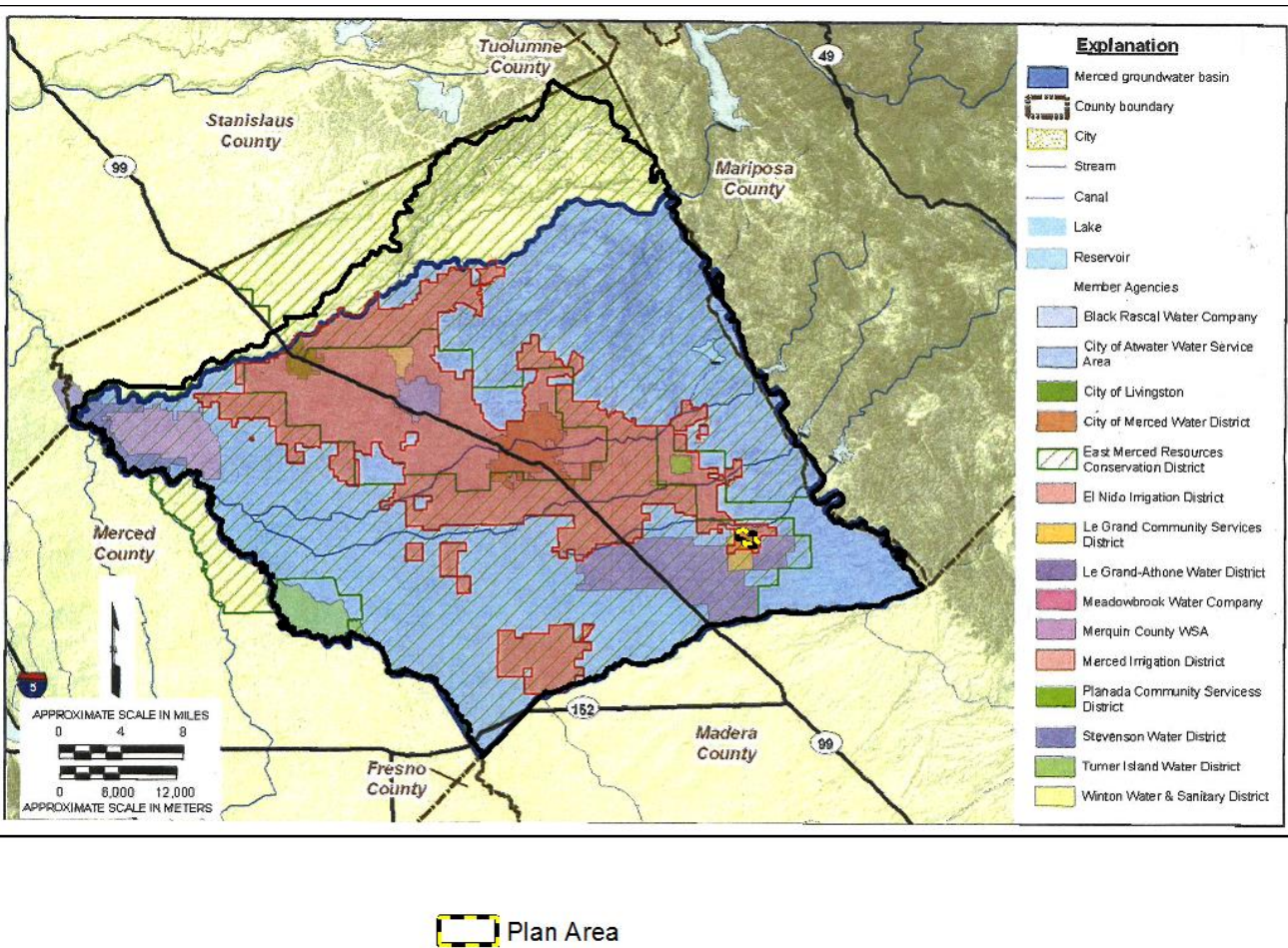
2.3 - Groundwater Usage

The water purveyors in the Merced Region are depicted on Figure 2-3. The Merced Integrated Regional Water Management Plan projected that in 2015 municipalities and urban districts would pump (all are groundwater-dependent) about 107,000 acre feet per year; that agricultural districts would pump in the order of 40,000 acre feet per year. These estimates assumed normal precipitation years and surface water usage for agricultural irrigation. They also preceded reduced community growth rates and the reductions of per capita per day usage by urban areas which resulted from State drought-related urban water usage requirements.

Such forecast pumping rates do not reflect actual drought-related pumpage rates (municipality/urban water use reductions, significant agricultural water pumpage increases due to surface water source shortage). They may more accurately reflect long term groundwater usage trends as indicators of subbasin water use demands. They are reported here for that purpose only. Estimated pumpage rates reported for 2012 in Merced County's General Plan Background report were 54,000 acre feet of urban demand and 492,000 acre feet of agricultural pumpage. These rates reflect drought-related reduced urban water use and greatly increased agricultural pumpage because of the drought-affected lack of availability of surface water.



Figure 2-3
Water Purveyors, Merced Region



QK Sources: Merced Groundwater Management Plan 2008, Geomatrix

Agriculture is the dominant land use in Merced County, estimated to account for more than 90 percent of all land use. Based on the Merced Groundwater Basin Management Plan, the majority of water used within the Merced Subbasin has historically been and continues to be used for agricultural purposes (Figures 2-3 and 2-4).

Agricultural water supplies serving the Region can be grouped into three broad classes.

1. Merced Irrigation District/Stevinson Water District: The largest irrigated area is served by MID with a generally reliable surface water supply available from the Merced River that is adequate to meet customer demands in most years. The MID service area covers about 164,000 acres, of which approximately 140,000 acres are irrigated agricultural land. Some groundwater is pumped within the MID service area by both private landowners and by MID. This category also includes Stevenson Water District, which has a more reliable surface water source than MID.
2. Other organized agricultural water suppliers: Approximately 72,600 irrigated acres are served by other agricultural water suppliers that rarely, if ever, have adequate surface water supplies to meet agricultural demands. These areas rely on a blend of surface water and groundwater with groundwater being the primary source. The ratio of surface to groundwater supply availability varies widely between these agencies.
3. No organized agricultural water suppliers: Irrigated areas outside of the service areas of MID and other agricultural water suppliers rely solely on groundwater supplies for irrigation, with the exception of limited surface water purchases made in some years, subject to availability.

2.4 - Basin Overdraft

Portions of the San Joaquin River Hydrologic Region have been in a state of overdraft for many years. The California Water Plan Update – Bulletin 160-98 estimated that annual average groundwater overdraft in the Region to be 239,000 AF at a 1995 level of development. According to the 2008 Merced Area GWMP, the Merced Subbasin groundwater levels have declined on average approximately 14 feet since 1980, with most of the decline occurring between 1980 and 1996, classifying the Subbasin as in a state of mild long-term groundwater level decline. According to the DWR, from years 2000 through 2010, water levels in the Le Grand area of the subbasin, however remained essentially the same during that period. The 2013 IRWMP characterized the Merced Subbasin as being generally in overdraft.

In August 2015, the Department of Water Resources defined the Subbasin as being in a state of critical overdraft.

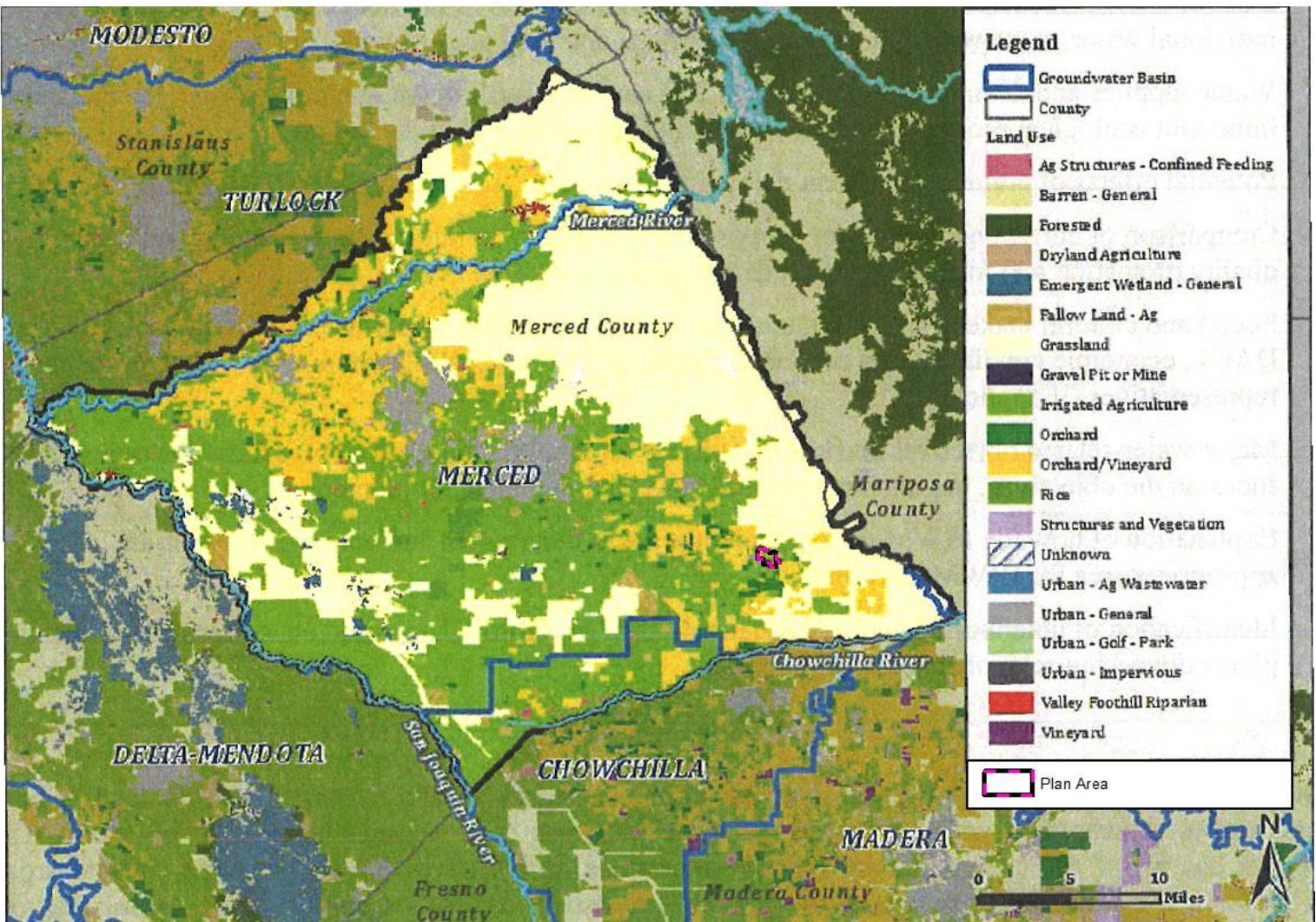


Figure 2-4
Merced Region Land Use Map

2.5 - Regional Groundwater Management

The Merced Region has a significant history of groundwater management.

The Groundwater Management Act, California Water Code (CWC) Section 10753, et. seq., originally enacted as Assembly Bill (AB) 3030, was passed by the State legislature during the 1992 session and became law on January 1, 1993.

The Merced Irrigation District (MID) and the City of Merced prepared a final draft Groundwater Management Plan (GWMP) in 1997 to comply with the legislative requirements of AB 3030. In December 1997, water purveyors within the MGWB signed a Memorandum of Understanding (MOU) creating an association identified as the Merced Area Groundwater Pool Interests (MAGPI) (Appendix B). MAGPI adopted the GWMP in December 1997. The 1997 GWMP served as the initial framework for management of groundwater resources within the MGWB.

In 2002, State Senate Bills (SB) 1938 (Groundwater Management Planning Act of 2002) and SB 1672 (Integrated Regional Water Management Planning Act of 2002) were signed into law. These bills required various changes and additions to existing basin-wide groundwater management plans. In 2008, the 1997 GWMP was adopted and incorporated new components and updates of existing components to address the legislative requirements of SB 1938 and SB 1672. This update incorporated data collected since 1997 and reflected analyses performed subsequent to preparation of the 1997 GWMP.

In 2013 the water purveyors in the Region adopted, and are implementing, the Merced Integrated Regional Water Management Plan (MIRWMP) updating and expanding upon the GWMP.

In 2017, in implementation of the State's Sustainable Groundwater Management Act, the County of Merced, the Merced Irrigation District, and other agencies are cooperating in formation of State-required Sustainable Groundwater Management Agencies.

2.6 - Reliability of Groundwater Basin Supply

As a prelude to the analysis of water supply sufficiency for the implementation of the proposed Projects, which must consider both the sufficiency and reliability of the Basin groundwater resource and the adequacy of Le Grand's water delivery system, the Basin is evaluated as:

- Providing adequate groundwater storage resources

Approximations of the total storage capacity of the Merced Subbasin and the amount of water in storage as of 1995 were calculated using an estimated specific yield of 9.0 percent and water levels collected by DWR and cooperators. According to these calculations, the total storage capacity of this subbasin was estimated to be 21,100,000 af to a depth of 300 feet and 47,600,000 af to the base of fresh

groundwater. These same calculations gave an estimate of 15,700,000 af of groundwater to a depth of 300 feet stored in the subbasin as of 1995 (DWR 1995).

Although a current detailed budget is not available for this Subbasin, an estimate of groundwater demand has been calculated based on the 1990 normalized year and water budget spreadsheet to estimate overall applied water demands, agricultural groundwater pumpage, urban pumping demand and other extraction data.

Natural recharge into the Subbasin is estimated to be 47,000 af. Values for subsurface inflow have not been determined. There was approximately 243,000 af of applied water recharge into the Subbasin in 2012. Annual urban and agricultural extractions were at that juncture 54,000 af and 492,000 af, respectively. Other extractions equaled approximately 9,000 af.

Rather than attempting, for the purposes of this assessment, to prepare a detailed water budget, a worst-case assumption of decreased storage in the Subbasin premised upon the reported average water level decline from 2012 to 2015, the loss in stored groundwater would have been in the order of 700,000 acre feet in the subbasin above 300 depth $[(10'/225') \times 15,700,000]$, 4 ½%. This estimated loss occurred during severe drought years with reduced surface water availability and increased groundwater pumping. The Subbasin, despite its 2015 DWR designation as critically overdrafted currently recharges in normal rainfall/runoff years. With such recharge, and long-term average precipitation and surface water availability, there is no reasonable likelihood of the Subbasin not being able to provide adequate groundwater storage resources. It is evident from this analysis that the subbasin water resource, absent incalculable climatic change-related recharge, will remain a reliable source of groundwater supply.

- Possessing a consistent usage history of both surface water and groundwater resources which document effective usage of the groundwater resources

The Region's consistent history of planning and implementing groundwater and surface water usage within the framework of the 1997 Groundwater Management Plan and the 2013 Merced Integrated Regional Water Management Plan demonstrate the effective regional usage of available groundwater resources.

- Protected against groundwater resource deterioration by the Region's comprehensive water resource management programs.

The leadership of the Merced Irrigation District and the County of Merced in initiating and planning the proposed Region-wide, 525,000 acre Groundwater Management Agency to implement sustainable groundwater usage will protect the resource from diminishment below reliability.

SECTION 3 - WATER SYSTEM SUFFICIENCY

Water Code Section 10910

- (f) *If a water supply for a proposed project includes groundwater the following additional information shall be included in the water assessment...*
- (3) *A detailed description and analysis of the amount and location of groundwater pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), for the past five years from any groundwater basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonable available, including, but not limited to, historic use records.*
- (4) *A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), from any basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records...*

3.1 - Water Service Area

The community of Le Grand's water service area includes 370 developable acres located within the proposed Community Plan boundaries (see Figure 1-3 and Table 1-1). The proposed 2035 boundaries are basically unchanged from those of the current plan. The 2010 population of the community was 1,659, the buildout population is estimated to be 3,697. The 2015 population is estimated to be 1,776. (Approximately 60 acres of the Plan area is proposed to be designated as Urban Reserve and is not developable within the Community Plan's 2035 horizon.) Approximately 12 acres, other than the acreage within Urban Reserve, are reported to be farmed at present, as almond orchard. Water service for the community is provided by the Le Grand Community Services District and will be so provided for the Community Plan buildout.

3.2 - Current Service Area Water Demand⁴

The District currently serves 492 water connections. Its existing well production capacity is 1,700,000 gallons per day. Average daily water usage is approximately 270,000 gallons per day, varying from winter usage of 150,000 gallons per day to peak summer usage of 410,000 gallons per day during a three to four-month period when a food processing industry is in production. The per capita per day usage was 152. Annual District-supplied water usage, including industrial, is 295 acre feet (96 million gallons); approximately 35 acre feet of that usage is estimated to be industrial (11,500,000 gallons).

⁴ See Appendix B for calculations

Approximately 12 acres of almonds are currently farmed in the non-Urban Reserve portion of the⁵ Plan area. Water usage is estimated to be 4 acre feet per acre. This 48 acre feet per year is assumed to be replaced with urban development at Plan buildout. An estimated 30 acres per year of Elementary School and High School property is irrigable with school wells. The amount of irrigation water actually used per year is not known. These District Community Plan water use calculations do not consider school usage.

Although a nearly completed water meter installation currently in progress may reduce community usage about 15%, such reduction will not be considered in forecasting future usage.⁶

3.3 - Water System Operations and Facilities

The District's water system is, for a community of this size, adequately designed, staffed and operated. The two active wells, with capacities of 500 and 700 gallons per minute, are 400 and 630 feet in depth; a test well installation, preceding the construction of a third supply well, is in progress. The distribution system is 6" to 8" AC pipe, with limited short runs of older 3" to 4" steel pipe.

3.4 - Project Water Demands⁶

The Community Plan buildout, 2035, water demand is estimated not to exceed 203 million gallons per year, 627 acre feet per year, (3,703 buildout population/1,776, estimated 2015 population, non-industrial usage, plus continued industrial usage at the same demand level (35 acre feet, 11.5 million gallons). Le Grand water usage at Community Plan buildout is thus a ratio of approximately $203 / (492,000 + 54,000) = .037\%$ of Merced County General Plan – estimated 2012 water usage.

3.5 - Water Quality Characteristics

The District's water system is protected against bacterial contamination by a chlorination system.

The quality of the system water is satisfactory; there were no state primary or secondary drinking water non-compliance violations in 2015 (see Appendix C, Consumer Confidence Report).

3.6 - Reliability of Community Water System

In evaluation of the District water system's reliability, Sections 3.1 through 3.5 demonstrate its adequacy subject to engineering analysis (a water master plan is currently authorized as to whether an additional well or wells are necessary to meet peak hour demands at full Projects implementation). It will also evaluate whether any modifications in the distribution

⁵ None of the Plan-designated Urban Reserve area is assumed to be developed by 2035, the Plan horizon.

⁶ Impacts of Metering on Regional Water Use in California, Tenverakul and Lee, Journal of American Water Works Association, 2015 (Bakersfield, 21%; Chico, 13%; Visalia, 17%; Average, 17%)

system are required to satisfy Projects buildout water delivery volumes and pressures. The District will finance any required wells and distribution system modifications with development impact fees, State or federal grants, or rate adjustments.

(The SB 610 Normal Water Year, Single Dry Water Year, Multiple Dry Years supply reliability analysis is provided in Section 4.2 of this Assessment.)

SECTION 4 - WATER SUPPLY SUFFICIENCY

4.1 - Transfer, Exchange, New Water Supply

Water Code Section 10910

(f) If a water supply for a proposed project includes groundwater the following additional information shall be included in the assessment...

(3) An analysis of the sufficiency of the groundwater from the basin or basins from which the proposed project will be supplied to meet the projected water demand associated with the proposed project. A water assessment shall not be required to include the information required by this paragraph if the public water system determines, as part of the review required by paragraph (1), that the sufficiency of groundwater necessary to meet the initial and projected water demand associated with the Project was addressed in the description and analysis required by paragraph (40 of subdivision (b) of Section 10631...

Le Grand's water system is irrevocably based upon the usage of groundwater from the Subbasin.

The committed agricultural and urban development usage of available surface water and groundwater resources precludes transfer to the community of such resources from other sources. Le Grand possesses no surface water rights, and none are available to it even if surface water storage and treatment were economically feasible. The Merced Subbasin is not adjudicated so groundwater rights do not exist for transfer. The community's distance from other communities precludes cost-effective consolidation with such community's water supply resources.

In view of the infeasibility of any of these alternatives, water supply sufficiency for the Projects must be evaluated on the basis of the data and conclusions provided in Section 2, Water Supply Resources, and Section 3, Water System Sufficiency.

4.2 - Sufficiency Evaluation and Conclusion

Water Code Section 10910, Section 4.5

...(c)(3) If the projected water demand associated with the proposed project was not accounted for in the most recently adopted urban water management plan, or the public water system has no urban water management plan, the water supply assessment for the project shall include a discussion with regard to whether the public water system's total projected water supplies available during normal, single, dry, and multiple dry water years during a 20-year projection will meet the projected water demand associated with the proposed project, in addition to the public water system's existing and planned future uses, including agricultural and manufacturing uses.

The Subbasin water supply resource analysis in Section 2 of this Assessment demonstrates that the Basin resource poses no concerns regarding its adequacy.

The reliability of the community water system to utilize this resource as projected, over a 20-year period of Projects implementation and for normal-dry-year and multiple-dry year demands is determined in Section 3 of this Assessment to be sufficient.

In compliance with the direction of SB 610, with a groundwater resource as the sole source of District water supply, and the demonstrated adequacy of the multiple-well existing and proposed District water system the evaluated reliability of the Projects water supply over their proposed water demand in the next 20 years as summarized on Table 4-1.

Table 4-1⁷
Supply Reliability*

Year(s)	Water Supply Source	Normal Water Year	Single Dry Water Year	Multiple Dry Water Year			
				1	2	3	4
2015	98	98	98	98	98	98	98
2020	125	125	125	125	125	125	125
2025	151	151	151	151	151	151	151
2030	177	177	177	177	177	177	177
2035	204	204	204	204	204	204	204

*Million gallons per year; assumes 20-year build-out of the Project; and based on uniform annual non-industrial growth increments plus 11.5 million gallons industrial usage

In confirmation of the adequacy of that analysis the District's water distribution system has historically proven reliable. Continued effective operations and maintenance of the system has been demonstrated. District engineering design standards are in place that meet or exceed American Water Works Standards, ensuring that system reliability does not diminish as it is expanded. Funds to maintain and expand both systems to meet the continued growth in water demand are collected through State and federal grants, water rates and development fees. The District's adequacy of both water supply and water distribution was demonstrated during the recent five-year drought period and during the recent record-single dry year in that period.

⁷ The water usage of the existing (2015) almond orchard is ignored in this Supply Reliability analysis since it will probably be, at some indeterminate date during Community Plan buildout, converted to urban development which is analyzed in the Table.

4.3 - Lead Agency Action

Water Code Section 10911, Section 5

(g)(1) Subject to paragraph (2), the governing body of each public water system shall submit the assessment to the city or county not later than 90 days from the date on which the request was received. The governing body of each public water system, or the city or county if either is required to comply with this act pursuant to subdivision (b), shall approve the assessment prepared pursuant to this section at a regular or special meeting.

The County of Merced, in concert with the approval of appropriate environmental impact analysis of the Projects, must adopt this Water Supply Assessment.

REFERENCES

- Administrative Draft, Granada Community Plan Update, Merced County Planning and Community Development Department; prepared by RRM Design, September 2016
- Merced Integrated Regional Water Management Plan; City of Merced, County of Merced, Merced Irrigation District, 2013
- City of Atwater Ferrari Development Project, SB610 Water Assessment; City of Atwater; AECOM, July 2015
- Merced Groundwater Basin, Groundwater Management Plan Update, Merced Groundwater Pool Interests; AMEC Geomatrix, Inc., July 2008
- California's Groundwater, Bulletin 118, Update 2003; Department of Water Resources

PERSONS/ORGANIZATIONS CONSULTED

- Garth Pecchenino, Principal Engineer (City Engineer, Le Grand)
QK, Inc.
- Joshua C. Cross, Senior Planner,
RRM Design Group

APPENDIX A

CHAPTER 643, STATUTES OF 2001 (SENATE BILL 610)

Chapter 643, Statutes of 2001 (Senate Bill 610)

An act to amend Section 21151.9 of the Public Resources Code, and to amend Sections 10631, 10656, 10910, 10911, 10912, and 10915 of, to repeal Section 10913 of, and to add and repeal Section 10657 of, the Water Code, relating to water. Approved by Governor October 9, 2001. Filed with Secretary of State October 9, 2001.

The people of the State of California do enact as follows:

SECTION 1. (a) The Legislature finds and declares all of the following:

(1) The length and severity of droughts in California cannot be predicted with any accuracy.

(2) There are various factors that affect the ability to ensure that adequate water supplies are available to meet all of California's water demands, now and in the future.

(3) Because of these factors, it is not possible to guarantee a permanent water supply for all water users in California in the amounts requested.

(4) Therefore, it is critical that California's water agencies carefully assess the reliability of their water supply and delivery systems.

(5) Furthermore, California's overall water delivery system has become less reliable over the last 20 years because demand for water has continued to grow while new supplies have not been developed in amounts sufficient to meet the increased demand.

(6) There are a variety of measures for developing new water supplies including water reclamation, water conservation, conjunctive use, water transfers, seawater desalination, and surface water and groundwater storage.

(7) With increasing frequency, California's water agencies are required to impose water rationing on their residential and business customers during this state's frequent and severe periods of drought.

(8) The identification and development of water supplies needed during multiple-year droughts is vital to California's business climate, as well as to the health of the agricultural industry, environment, rural communities, and residents who continue to face the possibility of severe water cutbacks during water shortage periods.

(9) A recent study indicates that the water supply and land use planning linkage, established by Part 2.10 (commencing with Section 10910) of Division 6 of the Water Code, has not been implemented in a manner that ensures the appropriate level of communication between water agencies and planning agencies, and this act is intended to remedy that deficiency in communication.

(b) It is the intent of the Legislature to strengthen the process pursuant to which local agencies determine the adequacy of existing and planned future water supplies to meet existing and planned future demands on those water supplies.

SEC. 2. Section 21151.9 of the Public Resources Code is amended to read:

21151.9. Whenever a city or county determines that a project, as defined in Section 10912 of the Water Code, is subject to this division, it shall comply with Part 2.10 (commencing with Section 10910) of Division 6 of the Water Code.

SEC. 3. Section 10631 of the Water Code is amended to read:

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:

(a) Describe the service area of the supplier, including current and projected population, climate, and other demographic factors affecting the supplier's water management planning. The projected population estimates shall be

based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available.

(b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments as described in subdivision (a). If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information shall be included in the plan:

(1) A copy of any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management.

(2) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition.

(3) A detailed description and analysis of the amount and location of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(4) A detailed description and analysis of the location, amount, and sufficiency of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(c) Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following:

- (1) An average water year.
- (2) A single dry water year.
- (3) Multiple dry water years.

For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to replace that source with alternative sources or water demand management measures, to the extent practicable.

(d) Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.

(e) (1) Quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, identifying the uses among water use sectors, including, but not necessarily limited to, all of the following uses:

- (A) Single-family residential.
- (B) Multifamily.
- (C) Commercial
- (D) Industrial.
- (E) Institutional and governmental.
- (F) Landscape.
- (G) Sales to other agencies.
- (H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.
- (I) Agricultural.

(2) The water use projections shall be in the same five-year increments as described in subdivision (a). (f) Provide a description of the supplier's water demand management measures. This description shall include all of the following:

(1) A description of each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following:

- (A) Water survey programs for single-family residential and multifamily residential customers.
- (B) Residential plumbing retrofit.
- (C) System water audits, leak detection, and repair.
- (D) Metering with commodity rates for all new connections and retrofit of existing connections.
- (E) Large landscape conservation programs and incentives.
- (F) High-efficiency washing machine rebate programs.
- (G) Public information programs.
- (H) School education programs.
- (I) Conservation programs for commercial, industrial, and institutional accounts.
- (J) Wholesale agency programs.
- (K) Conservation pricing.
- (L) Water conservation coordinator.
- (M) Water waste prohibition.
- (N) Residential ultra-low-flush toilet replacement programs.

(2) A schedule of implementation for all water demand management measures proposed or described in the plan.

(3) A description of the methods, if any, that the supplier will use to evaluate the effectiveness of water demand management measures implemented or described under the plan.

(4) An estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of such savings on the supplier's ability to further reduce demand.

(g) An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to water demand management measures, or combination of measures, that offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following:

(1) Take into account economic and non-economic factors, including environmental, social, health, customer impact, and technological factors.

(2) Include a cost-benefit analysis, identifying total benefits and total costs.

(3) Include a description of funding available to implement any planned water supply project that would provide water at a higher unit cost.

(4) Include a description of the water supplier's legal authority to implement the measure and efforts to work with other relevant agencies to ensure the implementation of the measure and to share the cost of implementation.

(h) Include a description of all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs, other than the demand management programs identified pursuant to paragraph (1) of subdivision (f), that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in average, single dry, and multiple dry water years. The description shall identify specific projects and include a description of the increase

in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.

(i) Urban water suppliers that are members of the California Urban Water Conservation Council and submit annual reports to that council in accordance with the "Memorandum of Understanding Regarding Urban Water Conservation in California," dated September 1991, may submit the annual reports identifying water demand management measures currently being implemented, or scheduled for implementation, to satisfy the requirements of subdivisions (f) and (g).

SEC. 3.5. Section 10631 of the Water Code is amended to read:

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:

(a) Describe the service area of the supplier, including current and projected population, climate, and other demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available.

(b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments as described in subdivision (a). If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information shall be included in the plan:

(1) A copy of any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management.

(2) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition.

(3) A detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(4) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(c) Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following:

(1) An average water year.

(2) A single dry water year.

(3) Multiple dry water years. For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.

(d) Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.

(e) (1) Quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, identifying the uses among water use sectors, including, but not necessarily limited to, all of the following uses:

- (A) Single-family residential.
- (B) Multifamily.
- (C) Commercial.
- (D) Industrial
- (E) Institutional and governmental.
- (F) Landscape.
- (G) Sales to other agencies.
- (H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.
- (I) Agricultural.

(2) The water use projections shall be in the same five-year increments as described in subdivision (a).

(f) Provide a description of the supplier's water demand management measures. This description shall include all of the following:

(1) A description of each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following:

- (A) Water survey programs for single-family residential and multifamily residential customers.
- (B) Residential plumbing retrofit.
- (C) System water audits, leak detection, and repair.
- (D) Metering with commodity rates for all new connections and retrofit of existing connections.
- (E) Large landscape conservation programs and incentives.
- (F) High-efficiency washing machine rebate programs.
- (G) Public information programs.
- (H) School education programs.
- (I) Conservation programs for commercial, industrial, and institutional accounts.
- (J) Wholesale agency programs.
- (K) Conservation pricing.
- (L) Water conservation coordinator.
- (M) Water waste prohibition.
- (N) Residential ultra-low-flush toilet replacement programs.

(2) A schedule of implementation for all water demand management measures proposed or described in the plan.

(3) A description of the methods, if any, that the supplier will use to evaluate the effectiveness of water demand management measures implemented or described under the plan.

(4) An estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the supplier's ability to further reduce demand.

(g) An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to water demand management measures, or combination of measures, that offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following:

(1) Take into account economic and noneconomic factors, including environmental, social, health, customer impact, and technological factors.

(2) Include a cost-benefit analysis, identifying total benefits and total costs.

(3) Include a description of funding available to implement any planned water supply project that would provide water at a higher unit cost.

(4) Include a description of the water supplier's legal authority to implement the measure and efforts to work with other relevant agencies to ensure the implementation of the measure and to share the cost of implementation.

(h) Include a description of all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs, other than the demand management programs identified pursuant to paragraph (1) of subdivision (f), that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in average, single dry, and multiple dry water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.

(i) Urban water suppliers that are members of the California Urban Water Conservation Council and submit annual reports to that council in accordance with the "Memorandum of Understanding Regarding Urban Water Conservation in California," dated September 1991, may submit the annual reports identifying water demand management measures currently being implemented, or scheduled for implementation, to satisfy the requirements of subdivisions (f) and (g).

SEC. 4. Section 10656 of the Water Code is amended to read:

10656. An urban water supplier that does not prepare, adopt, and submit its urban water management plan to the department in accordance with this part, is ineligible to receive funding pursuant to Division 24 (commencing with Section 78500) or Division 26 (commencing with Section 79000), or receive drought assistance from the state until the urban water management plan is submitted pursuant to this article.

SEC. 4.3. Section 10657 is added to the Water Code, to read:

10657. (a) The department shall take into consideration whether the urban water supplier has submitted an updated urban water management plan that is consistent with Section 10631, as amended by the act that adds this section, in determining whether the urban water supplier is eligible for funds made available pursuant to any program administered by the department.

(b) This section shall remain in effect only until January 1, 2006, and as of that date is repealed, unless a later enacted statute, that is enacted before January 1, 2006, deletes or extends that date.

SEC. 4.5. Section 10910 of the Water Code is amended to read:

10910. (a) Any city or county that determines that a project, as defined in Section 10912, is subject to the California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) under Section 21080 of the Public Resources Code shall comply with this part.

(b) The city or county, at the time that it determines whether an environmental impact report, a negative declaration, or a mitigated negative declaration is required for any project subject to the California Environmental Quality Act pursuant to Section 21080.1 of the Public Resources Code, shall identify any water system that is, or may become as a result of supplying water to the project identified pursuant to this subdivision, a public water system, as defined in Section 10912, that may supply water for the project. If the city or county is not able to identify any public water system that may supply water for the project, the city or county shall prepare the water assessment required by this part after consulting with any entity serving domestic water supplies whose service area includes the project site, the local agency formation commission, and any public water system adjacent to the project site.

(c) (1) The city or county, at the time it makes the determination required under Section 21080.1 of the Public Resources Code, shall request each public water system identified pursuant to subdivision (b) to determine whether the projected water demand associated with a proposed project was included as part of the most recently adopted urban water management plan adopted pursuant to Part 2.6 (commencing with Section 10610).

(2) If the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate the requested information from the urban water management plan in preparing the elements of the assessment required to comply with subdivisions (d), (e), (f), and (g).

(3) If the projected water demand associated with the proposed project was not accounted for in the most recently adopted urban water management plan, or the public water system has no urban water management plan, the water supply assessment for the project shall include a discussion with regard to whether the public water system's total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year projection will meet the projected water demand associated with the proposed project, in addition to the public water system's existing and planned future uses, including agricultural and manufacturing uses.

(4) If the city or county is required to comply with this part pursuant to subdivision (b), the water supply assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses.

(d) (1) The assessment required by this section shall include an identification of any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and a description of the quantities of water received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts.

(2) An identification of existing water supply entitlements, water rights, or water service contracts held by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall be demonstrated by providing information related to all of the following:

(A) Written contracts or other proof of entitlement to an identified water supply.

(B) Copies of a capital outlay program for financing the delivery of a water supply that has been adopted by the public water system.

(C) Federal, state, and local permits for construction of necessary infrastructure associated with delivering the water supply.

(D) Any necessary regulatory approvals that are required in order to be able to convey or deliver the water supply.

(e) If no water has been received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts, the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall also include in its water supply assessment pursuant to subdivision (c), an identification of the other public water systems or water service contract-holders that receive a water supply or have existing water supply entitlements, water rights, or water service contracts, to the same source of water as the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has identified as a source of water supply within its water supply assessments.

(f) If a water supply for a proposed project includes groundwater, the following additional information shall be included in the water supply assessment:

(1) A review of any information contained in the urban water management plan relevant to the identified water supply for the proposed project.

(2) A description of any groundwater basin or basins from which the proposed project will be supplied. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current bulletin of the department that characterizes the condition of the groundwater basin, and a detailed description by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), of the efforts being undertaken in the basin or basins to eliminate the long-term overdraft condition.

(3) A detailed description and analysis of the amount and location of groundwater pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), for the past five years from any groundwater basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(4) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), from any basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(5) An analysis of the sufficiency of the groundwater from the basin or basins from which the proposed project will be supplied to meet the projected water demand associated with the proposed project. A water supply assessment shall not be required to include the information required by this paragraph if the public water system determines, as part of the review required by paragraph (1), that the sufficiency of groundwater necessary to meet the initial and projected water demand associated with the project was addressed in the description and analysis required by paragraph (4) of subdivision (b) of Section 10631.

(g) (1) Subject to paragraph (2), the governing body of each public water system shall submit the assessment to the city or county not later than 90 days from the date on which the request was received. The governing body of each public water system, or the city or county if either is required to comply with this act pursuant to subdivision (b), shall approve the assessment prepared pursuant to this section at a regular or special meeting.

(2) Prior to the expiration of the 90-day period, if the public water system intends to request an extension of time to prepare and adopt the assessment, the public water system shall meet with the city or county to request an extension of time, which shall not exceed 30 days, to prepare and adopt the assessment.

(3) If the public water system fails to request an extension of time, or fails to submit the assessment notwithstanding the extension of time granted pursuant to paragraph (2), the city or county may seek a writ of mandamus to compel the governing body of the public water system to comply with the requirements of this part relating to the submission of the water supply assessment.

(h) Notwithstanding any other provision of this part, if a project has been the subject of a water supply assessment that complies with the requirements of this part, no additional water supply assessment shall be required for subsequent projects that were part of a larger project for which a water supply assessment was completed and that has complied with the requirements of this part and for which the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has concluded that its water supplies are sufficient to meet the projected water demand associated with the proposed project, in addition to the existing and planned future uses, including, but not limited to, agricultural and industrial uses, unless one or more of the following changes occurs:

(1) Changes in the project that result in a substantial increase in water demand for the project.

(2) Changes in the circumstances or conditions substantially affecting the ability of the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), to provide a sufficient supply of water for the project.

(3) Significant new information becomes available which was not known and could not have been known at the time when the assessment was prepared.

SEC. 5. Section 10911 of the Water Code is amended to read:

10911. (a) If, as a result of its assessment, the public water system concludes that its water supplies are, or will be, insufficient, the public water system shall provide to the city or county its plans for acquiring additional water supplies, setting forth the measures that are being undertaken to acquire and develop those water supplies. If the city or county, if either is required to comply with this part pursuant to subdivision (b), concludes as a result of its assessment, that water supplies are, or will be, insufficient, the city or county shall include in its water supply assessment its plans for acquiring additional water supplies, setting forth the measures that are being undertaken to acquire and develop those water supplies. Those plans may include, but are not limited to, information concerning all of the following:

(1) The estimated total costs, and the proposed method of financing the costs, associated with acquiring the additional water supplies.

(2) All federal, state, and local permits, approvals, or entitlements that are anticipated to be required in order to acquire and develop the additional water supplies.

(3) Based on the considerations set forth in paragraphs (1) and (2), the estimated timeframes within which the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), expects to be able to acquire additional water supplies.

(b) The city or county shall include the water supply assessment provided pursuant to Section 10910, and any information provided pursuant to subdivision (a), in any environmental document prepared for the project pursuant to Division 13 (commencing with Section 21000) of the Public Resources Code.

(c) The city or county may include in any environmental document an evaluation of any information included in that environmental document provided pursuant to subdivision (b). The city or county shall determine, based on the entire record, whether projected water supplies will be sufficient to satisfy the demands of the project, in addition to existing and planned future uses. If the city or county determines that water supplies will not be sufficient, the city or county shall include that determination in its findings for the project.

SEC. 6. Section 10912 of the Water Code is amended to read:

10912. For the purposes of this part, the following terms have the following meanings:

(a) "Project" means any of the following:

(1) A proposed residential development of more than 500 dwelling units.

(2) A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.

(3) A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.

(4) A proposed hotel or motel, or both, having more than 500 rooms.

(5) A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.

(6) A mixed-use project that includes one or more of the projects specified in this subdivision.

(7) A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

(b) If a public water system has fewer than 5,000 service connections, then “project” means any proposed residential, business, commercial, hotel or motel, or industrial development that would account for an increase of 10 percent or more in the number of the public water system’s existing service connections, or a mixed-use project that would demand an amount of water equivalent to, or greater than, the amount of water required by residential development that would represent an increase of 10 percent or more in the number of the public water system’s existing service connections.

(c) “Public water system” means a system for the provision of piped water to the public for human consumption that has 3000 or more service connections. A public water system includes all of the following:

(1) Any collection, treatment, storage, and distribution facility under control of the operator of the system which is used primarily in connection with the system.

(2) Any collection or pretreatment storage facility not under the control of the operator that is used primarily in connection with the system.

(3) Any person who treats water on behalf of one or more public water systems for the purpose of rendering it safe for human consumption.

SEC. 7. Section 10913 of the Water Code is repealed.

SEC. 8. Section 10915 of the Water Code is amended to read:

10915. The County of San Diego is deemed to comply with this part if the Office of Planning and Research determines that all of the following conditions have been met:

(a) Proposition C, as approved by the voters of the County of San Diego in November 1988, requires the development of a regional growth management plan and directs the establishment of a regional planning and growth management review board.

(b) The County of San Diego and the cities in the county, by agreement, designate the San Diego Association of Governments as that review board.

(c) A regional growth management strategy that provides for a comprehensive regional strategy and a coordinated economic development and growth management program has been developed pursuant to Proposition C.

(d) The regional growth management strategy includes a water element to coordinate planning for water that is consistent with the requirements of this part.

(e) The San Diego County Water Authority, by agreement with the San Diego Association of Governments in its capacity as the review board, uses the association’s most recent regional growth forecasts for planning purposes and to implement the water element of the strategy.

(f) The procedures established by the review board for the development and approval of the regional growth management strategy, including the water element and any certification process established to ensure that a project is consistent with that element, comply with the requirements of this part.

(g) The environmental documents for a project located in the County of San Diego include information that accomplishes the same purposes as a water supply assessment that is prepared pursuant to Section 10910.

SEC. 9.

Section 3.5 of this bill incorporates amendments to Section 10631 of the Water Code proposed by both this bill and AB 901. It shall only become operative if (1) both bills are enacted and become effective on or before January 1, 2002, (2) each bill amends Section 10631 of the Water Code, and (3) this bill is enacted after AB 901, in which case Section 3 of this bill shall not become operative.

SEC. 10.

No reimbursement is required by this act pursuant to Section 6 of Article XIII B of the California Constitution because a local agency or school district has the authority to levy service charges, fees, or assessments sufficient to pay for the program or level of service mandated by this act, within the meaning of Section 17556 of the Government Code.

APPENDIX B

CALCULATIONS OF WATER USAGE

Calculations of Water Usage

1. Population projections, baseline:

- Existing (2015) population
2010 population x 1.038%¹ increase; five years
 $1,659 \times 1.38\% (1.0138) = 11.33$ persons
- Persons per residential unit:
1,102 units², 3,703 buildout population
 $3,703/1,102 = 3.36$ persons per unit
- Ratio, buildout population to existing 2015 population: $3,703/1,1776 = 2.085$

2. Existing water usage³

- 8 million gallons per month, average
- 4.5 million gallons per month, “winter” (assumed 5 months)
- 12.3 million gallons per month “three to four months, summer, food processing”

3. Existing domestic water usage:

- 5 months x 150,000 gallons per day: 22,500,000 gallons
- 7 months @ 2.0⁴ x winter usage
 $210 \times 300,000 = 63,000,000$ gallons
Total = 85,500,000 gallons
- $85,500,000 \text{ gallons} / 1,133 = 210$ gallons per day
- Check:
 $3 \frac{1}{2} \text{ months @ } 12,300,000 \text{ gallons per month} - 3 \frac{1}{2} \text{ months @ } 300,000 \text{ gallons per day}$
 $= (12,300,000 \times 3.5) - (300,000 \times 3.5 \times 30) = (43,000,000) - (31,500,000)$
 $= 11,500,000$ gallons per year of industrial usage and $85,500,000 + 11,500,000$
 $= 97,000,000$

4. $96 \text{ million gallons} \times 3.07 = 294$ acre feet per year

¹ Proposed Community Plan, page 16

² Proposed Community Plan, page 23, Table 4-2

³ City Engineer

APPENDIX C

CONSUMER CONFIDENCE REPORT

WATER CONSERVATION REGULATIONS
OF THE LE GRAND COMMUNITY SERVICES DISTRICT

A. Prohibited Acts:

The following uses of water are not allowed at any time:

1. No person shall use water by means of an open hose or open faucet for irrigation purposes. Every hose used for irrigation purposes shall have attached thereto a spray nozzle or sprinkling device.
2. No person, owner, or manager responsible for the day-to-day operation of any premises shall permit flagrant water waste or excessive runoff of water at any time.
3. Every person, owner, or manager of property which receives water from the District is responsible for the maintenance of all plumbing and irrigation systems on the property, the installation of water-conserving plumbing attachments in any dwelling or other building on the property, and control of all leaks within seventy-two (72) hours of the leaking becoming known to them.

B. Water Shortage Level 1:

From Midnight, March 31st, until Midnight, October 31st of each year:

1. It is unlawful for any person to use water obtained from the District's water system for any of the following:
 - a. The washing of sidewalks, driveways, filling station aprons, porches or other outdoor surfaces, except when necessary to protect the public health and safety;
 - b. The washing of the exterior of dwellings, building, and structures, with the following exceptions:
 1. Window washing;
 2. Washing in conjunction with the painting of the exterior of a dwelling, building or structure;
 3. Washing a dwelling, building or structure may be allowed

once every twelve months.

All such exceptions are if and only if the hose used is fitted with an automatic shutoff device if left unattended.

- c. The washing of boats or motor vehicles with a hose that is not fitted with an automatic shut off device.
2. Landscape plants may be watered using District water only between the hours of 7:00 p.m. and 10 a.m. Any watering of landscape plants during any time other than those hours will be in violation of this regulation unless the water is by means of a drip irrigation system or other similar technology.

C. Water Shortage Level 2:

Should the Board of Directors of the District determine that there is a greater scarcity of water available to the District than normally, it may declare a Level 2 Water Shortage emergency. If and when it does so, the following regulations apply until the Board determines that the emergency no longer exists. All Level 1 restriction continue to apply during a Level 2 Water Shortage Emergency.

1. Landscapes, including residential, commercial, industrial, municipal, and other agencies or entities may be irrigated only in accordance with the following schedule:
 - a. If the address of the property to which water service is being provided ends with an even number, then landscaping may be irrigated only on Tuesday, Thursday and Saturday, between the hours of 12:01 AM and 9:00 AM and between the hours of 8:00 P.M. and midnight.
 - b. If the address of the property to which water service is being provided ends with an odd number, then landscaping may be irrigated only on Wednesday, Friday and Sunday, between the hours of 12:01 AM and 9:00 AM and between the hours of 8:00 PM and midnight.
 - b. Notwithstanding the foregoing, landscaping may be watered at any time using drip irrigation or comparable technology.
2. The washing of non-commercial sidewalks, driveways, porches or other outdoor surfaces is prohibited except in instances where the spill of a hazardous material or other substance which creates a public nuisance occurs and where it is not feasible to clean the affected areas in any other manner. The washing of non-

commercial, outdoor, hard surfaces utilizing a bucket containing a limited amount of water is allowed at any time.

3. The washing of commercial sidewalks, driveways filling stations, parking lots or other outdoor surfaces is discouraged.
4. The addition of water above the minimum level necessary to comply with health or operational requirements for pool, hot tub or jacuzzi circulation, public or private is prohibited.
5. Car washing is allowed only with the use of self-closing "trigger" spray nozzles.

D. Water Shortage Level 3:

Should the Board of Directors of the District determine that there is a greater scarcity of water available to the District than would warrant a Level 2 Water Shortage Emergency, it may declare a Level 3 Water Shortage emergency. If and when it does so, the following regulations apply until the Board determines that the emergency no longer exists. All Level 1 and Level 2 restrictions continue to apply during a Level 3 Water Shortage Emergency.

1. The washing of cars and other vehicles is allowed only by using a bucket;
2. No water will be added to any pool, hot tub or jacuzzi.
3. No washing of commercial sidewalks, driveways filling stations, parking lots or other outdoor surfaces is prohibited.
4. No restrictions are made as to commercial laundromats.
5. No restrictions are made as to commercial car washes employing the use of water recycling equipment.
6. No restrictions are imposed with regard to "gray", (reclaimed waste) water.

E. Water Shortage Level 4:

Should the Board of Directors of the District determine that there is a severe drought or that it is inadvisable to use the District's supply of treated water for whatever reason, in addition to the restrictions set forth in Level 1, Level 2 and Level 3, the District may impose specific restrictions and reductions which may include but are not limited to:

1. All water uses not required for public health and safety and fire protection are prohibited;
2. No lawn and/or landscaping watering or irrigation uses are allowed;
3. No recreational uses of water are allowed.

F. Implementation

A violation of these regulations will result, the first time, in a warning. The second violation may result in a fine of up to one hundred dollars, (\$100.00). More than two violations in any given dry season may result in the termination of water service. Water services will then be reinstituted only upon the payment of a fine of one hundred dollars, (\$100.00), in addition to whatever fees or charges would normally be imposed by the District for a termination service. If water service has to be terminated a second time in the same season, the fine shall be doubled. A season for these purposes is defined as May 31st to October 31st.

Appendix =
Energy Calculations

Assumptions and Calculation Summary

Note: For CalEEMod Output see the following

Existing Appendix C - Air Quality

Construction Appendix C - Air Quality

Operation 2020 Appendix E - Greenhouse Gas

Operation 2035 Appendix C - Air Quality

Le Grand Community Plan Update Fuel Conversion

Construction Fuel Consumption Summary

Phase	gallons	
	Diesel	Gas
Demolition	2,599	95
Site Preparation	1,357	61
Grading	6,084	185
Building Construction	27,968	3,345
Paving	1,525	95
Architectural Coating	189	44
Total (1 year)	39,723	3,824
Total (20 years)	794,450	76,473

Annual Operational Fuel Consumption

	gallons	
	Diesel	Gas
Existing	50,204.79	1,003,159.90
2020 Unmitigated	48,266.14	964,422.94
2030 Unmitigated	36,618.50	731,687.33

Assumptions

10.15 diesel KgCO₂/gallon¹
 8.91 gasoline KgCO₂/gallon¹
 1 MT = 1,000 kilograms

Construction diesel Used for trucks (haul and vendor) and off-road equipment
 gasoline worker vehicles
 *Mitigated and unmitigated emissions will be the same as vehicle use does not change.

Operation diesel Majority of trucks and buses
 gasoline remaining vehicle mix

LCFS & Pavley assumed for on-road vehicles after year 2011

1 U.S. Energy Information Administration Voluntary Report of Greenhouse Gases Program, located here: <http://www.eia.gov/oiaf/1605/coefficients.html>

Sources:

1 U.S. Energy Information Administration Voluntary Report of Greenhouse Gases Program, located here: <http://www.eia.gov/oiaf/1605/coefficients.html>

2 CalEEMod Runs:

Le Grand Community Plan - Construction; Dated 9/20/2018.
 Le Grand Community Plan - Existing; Dated 9/20/2018
 Le Grand Community Plan -2020 Operational; Dated 9/20/2018.
 Le Grand Community Plan -2035 Operational; Dated 9/19/2018.

Le Grand Community Plan Update
Fuel Conversion - Construction for one year

	Total CO ₂ MT/yr	Fuel Type	Factor KGCO ₂ /gal	Gallons	Total Diesel (gal)	Total Gas (gal)
<i>Demolition</i> (per year)						
Off-road	26	diesel	10.15	2,576.39		
Haul	0	diesel	10.15	22.83		
Vendor	0	diesel	10.15	0.00		
Worker	1	gasoline	8.91	94.60	2,599	95
<i>Site Preparation</i> (per year)						
Off-road	14	diesel	10.15	1,357.20		
Haul	0	diesel	10.15	0.00		
Vendor	0	diesel	10.15	0.00		
Worker	1	gasoline	8.91	60.55	1,357	61
<i>Grading</i> (per year)						
Off-road	62	diesel	10.15	6,084.34		
Haul	0	diesel	10.15	0.00		
Vendor	0	diesel	10.15	0.00		
Worker	2	gasoline	8.91	185.01	6,084	185
<i>Building Construction</i> (per year)						
Off-road	254	diesel	10.15	25,051.84		
Haul	0	diesel	10.15	0.00		
Vendor	30	diesel	10.15	2,915.91		
Worker	30	gasoline	8.91	3,344.71	27,968	3,345
<i>Paving</i> (per year)						
Off-road	15	diesel	10.15	1,524.92		
Haul	0	diesel	10.15	0.00		
Vendor	0	diesel	10.15	0.00		
Worker	1	gasoline	8.91	94.60	1,525	95
<i>Architectural Coating</i> (per year)						
Off-road	2	diesel	10.15	189.06		
Haul	0	diesel	10.15	0.00		
Vendor	0	diesel	10.15	0.00		
Worker	0	gasoline	8.91	44.15	189	44

Le Grand Community Plan Update

Fuel Conversion - Operational

Existing

Gasoline % Fleet mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MCY	MH	Total
0.619633	0.0304016	0.18338597	0.093165836	0.009367	0.003535	0.006125	0.000449	0.946063

Diesel % Fleet mix

MHD	HHD	OBUS	UBUS	SBUS	Total
0.016106	0.0322077	0.0026421	0.001615227	0.001365	0.053937

	Total CO ₂ MT/yr	Factor KGCO ₂ /gal	Gallons
<i>Unmitigated</i>			
Diesel	509.58	10.15	50,204.79
Gasoline	8,938.15	8.91	1,003,159.90
Total	9,447.73		

2020 Analysis

Gasoline % Fleet mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MCY	MH	Total
0.619633	0.0304016	0.18338597	0.093165836	0.009367	0.003535	0.006125	0.000449	0.946063

Diesel % Fleet mix

MHD	HHD	OBUS	UBUS	SBUS	Total
0.016106	0.0322077	0.0026421	0.001615227	0.001365	0.053937

	Total CO ₂ MT/yr	Factor KGCO ₂ /gal	Gallons
<i>Unmitigated</i>			
Diesel	489.90	10.15	48,266.14
Gasoline	8,593.01	8.91	964,422.94
Total	9,082.91		

2035 Analysis

Gasoline % Fleet mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MCY	MH	Total
0.619633	0.0304016	0.18338597	0.093165836	0.009367	0.003535	0.006125	0.000449	0.946063

Diesel % Fleet mix

MHD	HHD	OBUS	UBUS	SBUS	Total
0.016106	0.0322077	0.0026421	0.001615227	0.001365	0.053937

	Total CO ₂ MT/yr	Factor KGCO ₂ /gal	Gallons
<i>Unmitigated</i>			
Diesel	371.68	10.15	36,618.50
Gasoline	6,519.33	8.91	731,687.33
Total	6,891.01		

Le Grand Community Plan Update Energy Usage Summary

Existing

Energy	Electric	7,771,081	kWh/year	7.77	MWh/yr
	Natural Gas	25,691,793	kBTU/year	25.69	MBTU/yr

2020

Energy	Electric	7,058,756	kWh/year	7.06	MWh/yr
	Natural Gas	15,416,734	kBTU/year	15.42	MBTU/yr

2035

Energy	Electric	7,058,756	kWh/year	7.06	MWh/yr
	Natural Gas	15,416,734	kBTU/year	15.42	MBTU/yr

Sources:

CalEEMod Runs:

Le Grand Community Plan - Existing; Dated 9/21/2018

Le Grand Community Plan -2020 Operational; Dated 9/21/2018.

Le Grand Community Plan -2035 Operational; Dated 9/21/2018.