

- TRANSPORTATION PLANNING & TRAFFIC ENGINEERING

September 14, 2016

Neil Patel Excel Hotel Group 10660 Scripps Ranch Boulevard, Suite 100, San Diego, California 92131

Subject: Parking Study for the proposed Springhill Residential Inn Project located on the southside of Wayne Mills Place in Santa Clarita, California.

D&A Ref. No: 160605

Dear Mr. Patel,

In accordance with your authorization Darnell & Associates, Inc. (D&A) has analyzed the parking demands of the Hotel A, Hotel B and Denny's Restaurant to determine the recommended parking for the proposed project.

The proposed Valencia Springhill Suites + Residence Inn and Holiday Inn Express hotels project is proposed to be developed on the site of the existing Hotel B (Best Western Hotel) site. Figure 1 is a vicinity map showing the location of the project site and the adjacent existing Hotel A (Holiday Inn Express) and Denny's Restaurant. Figures 2 and 3 depict the project site, underground parking and primary access to Wayne Mills Place. The report has been revised based on discussions with the City of Santa Clarita Planning staff.

PROJECT AREA

The construction of the proposed project proposes the construction of the following:

Springhill Suites/Residence Inn
 Holiday Inn Express
 182 Rooms
 108 Rooms
 Total: 290 Rooms

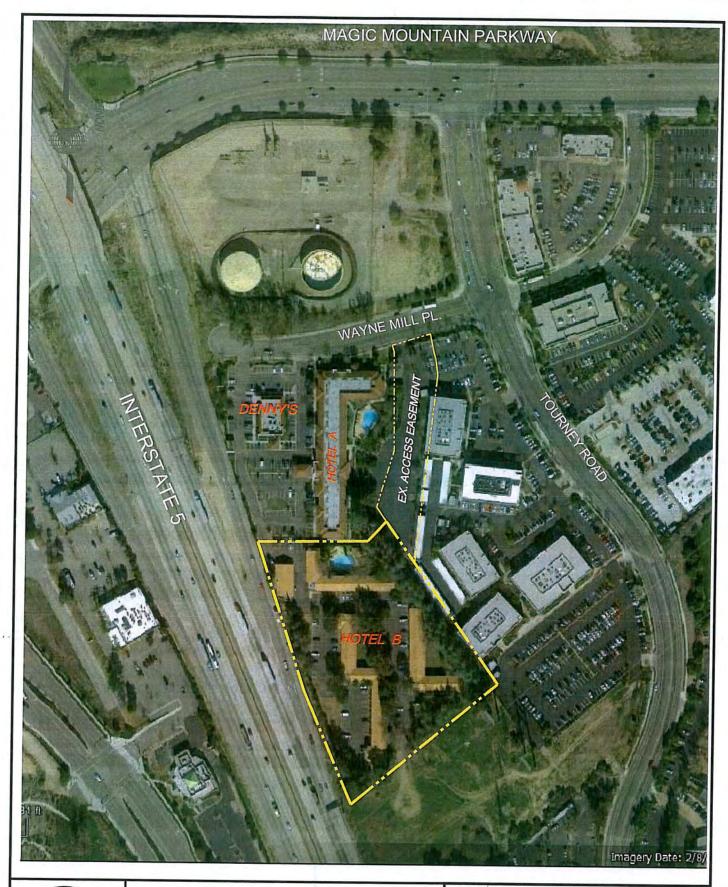
The project site is presently occupied by the 120 room Hotel B. Immediately to the north of the project site is the 118 room Hotel A and Denny's Restaurant. The existing Hotel A operations will be moved to the project site and the Hotel B operations will be removed from the project site and occupy the existing Hotel A facility. Figure 4 is a Google Map showing the Hotel B Facility on the project site and the adjacent Hotel A Facilities.

PARKING ANALYSIS

As previously stated the proposed development of the Springhill Suites/Residence Inn Hotel and the Holiday Inn Express Building proposes construction of 274 parking spaces consisting of 203 at grade parking spaces and 71 in the garage under the Springhill Suites/Residence Inn Building.

Based on the City of Santa Clarita Parking requirements the project is required to provide one (1) parking spaces per room resulting in 290 parking spaces (1 space per room times 290 rooms = 290 parking spaces). Therefore the project provides 16 spaces less than the City requirements.

To determine the adequacy of the proposed 274 parking spaces D&A conducted parking demand surveys of the existing Hotel A and Hotel B and the Denny's Restaurant parking for 12 days from Friday June 24, 2016 through July 5, 3016.

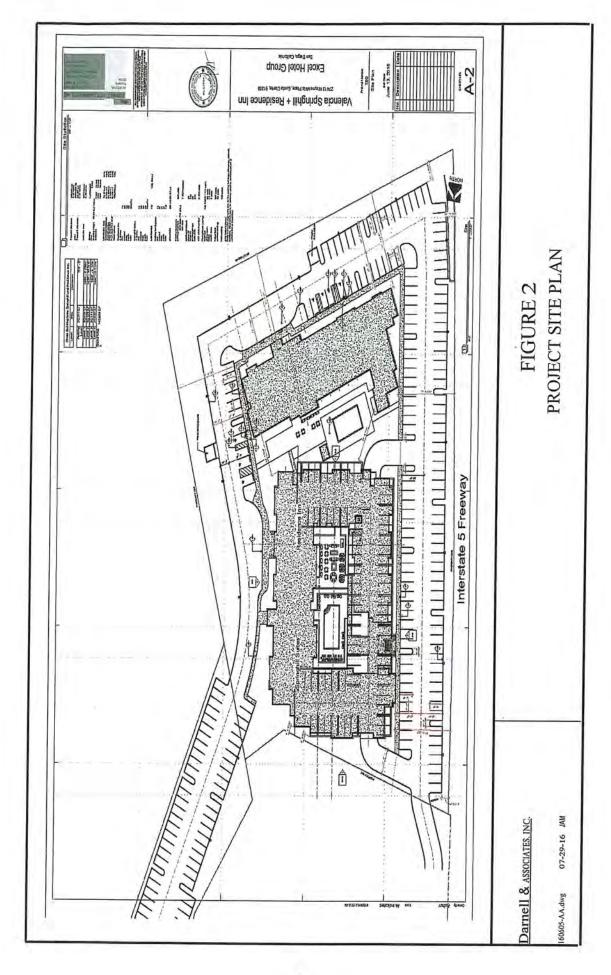


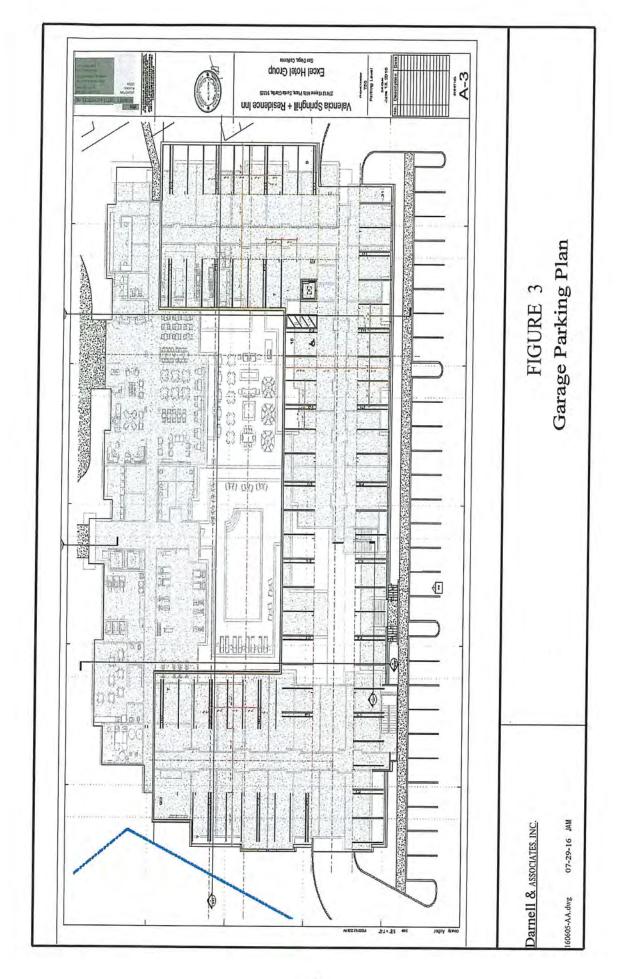


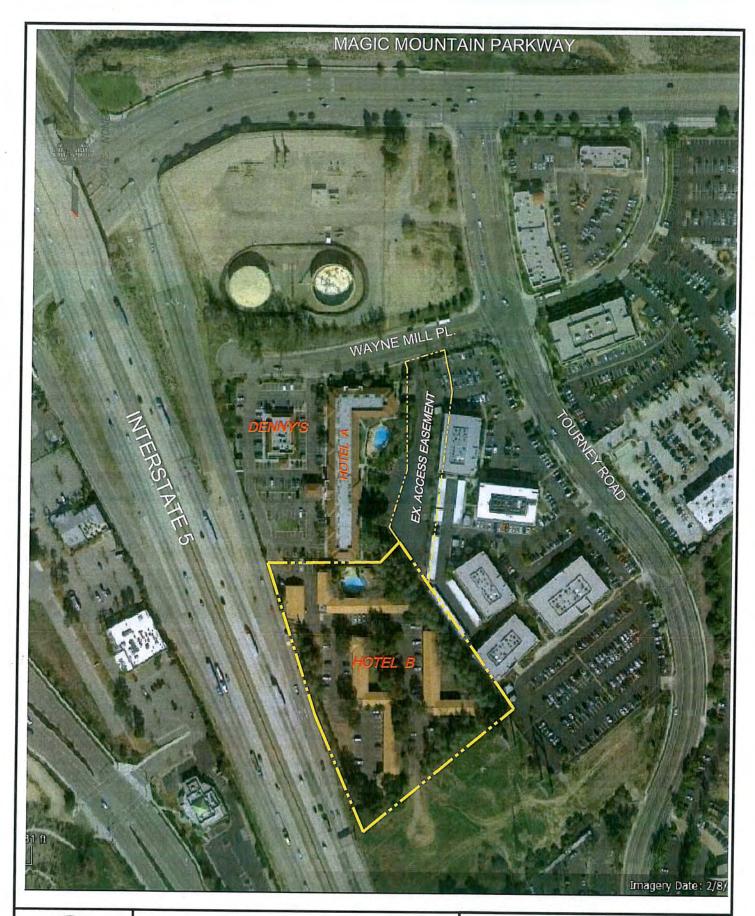
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FIGURE 1 VICINITY MAP









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FIGURE 4 EXISTING DEVELOPMENT CONDITIONS Neil Patel Excel Hotel Group September 14, 2016 Page 6

A copy of the field survey sheets are presented in Appendix A. Parking demands were collected at the following times:

- 12-1 PM
- 5-6 PM
- 6-7 PM
- 12-1 AM
- 7-8 AM
- 8-9 AM
- 11 AM 12 PM

The parking areas were broken into three (3) survey areas. Figure 5 and 6 show the survey parking spaces for the Denny's Restaurant and Hotel A and Figure 7 shows the parking survey spaces for Hotel B. The parking areas for the Denny's Restaurant and Hotel A provide 144 parking spaces and the best western provides 167 parking spaces. In addition to the parking surveys D&A obtained room occupancy for each of the two (2) existing hotels for the survey dates.

Table 1 provides summary of the available rooms, occupied rooms and occupancy percentage for each hotel. The Hotel A had one (1) date with 100% occupancy on Saturday June 25, 2016 and the Hotel B had two (2) dates on Friday June 25, 2016 and Saturday June 26, 2016 with 100% occupancy. Table 2 provides a summary of the available 265 parking spaces.

The parking surveys conducted from Friday June 25, 2016 through July 5, 2016 were then broken down into weekday (Monday through Thursday) and weekend (Friday, Saturday and Sunday) parking demands. Table 3 presents the weekday parking demands and Table 4 presents the weekend parking demands. Also presented on Tables 3 and 4 are the calculation of the peak parking demand ratio for each day. Review of Table 3 shows the worst case parking demand was Wednesday June 29, 2016 for the weekday surveys with a parking demand ratio of 0.925 parking spaces per occupied room. For review of Table 4 shows the peak demand for the weekends occurred on Friday June 24, 2016 with a parking demand ratio of 0.865 parking spaces per room. The resulting peak hour demands are shown on Table 5 each day surveyed.

Utilizing the peak parking demand ratio of 0.925 spaces per room the required parking is 268 spaces. Table 6 provides the calculations for the project. Review of Table 6 shows the peak parking demand ratio with the requirement for 268 parking spaces compared to the proposed 274 parking spaces will result in an excess of 6 parking spaces being provided.

The final test on the available parking for the Denny's Restaurant and the existing Hotel A facility was tested using the Urban Land Institute (ULI) 2nd Edition Shared Parking Report and the following City of Santa Clarita Approved Parking requirements for restaurant and hotel uses:

 Denny's Restaurant - 27 Spaces
 Hotel A - <u>118 Spaces</u> Total: 145 Spaces

Table 7 was then prepared to show the parking demand by hours based on the ULI hourly rates. Review of Table 7 shows the hourly demands will not exceed the available 144 parking spaces. Further review of Table 7 shows there will be an excess of 12 to 47 spaces each hour.

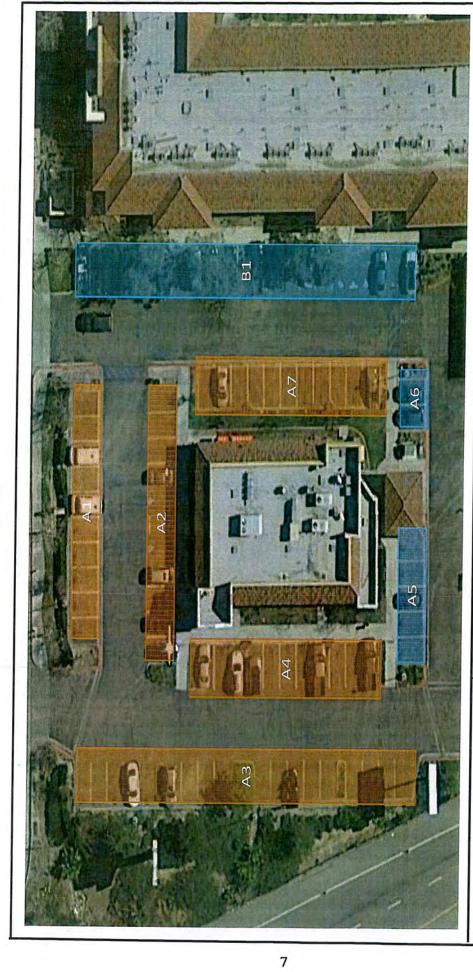
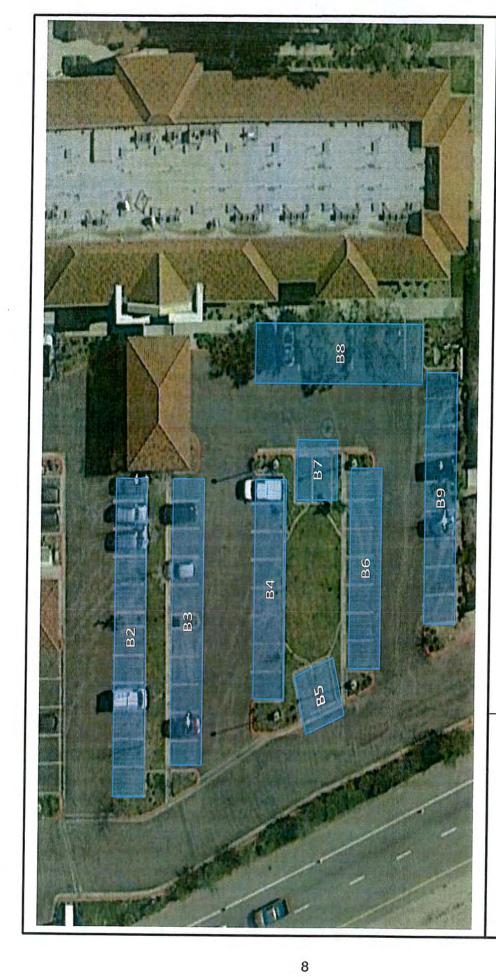


FIGURE 5

Denny's Resturant/ Hotel A Parking Study Area

Darnell & ASSOCIATES, INC.

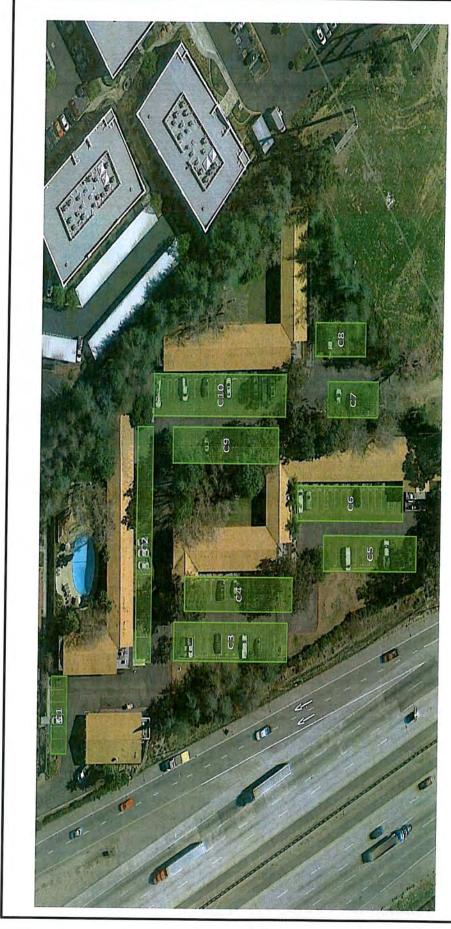
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Denny's Rearurant and Hotel A Parking Study Area FIGURE 6

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Hotel B Parking Study Area FIGURE 7

Darnell & ASSOCIATES, INC.

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of Occupied Percent (%) Rooms 100% Total Area A + Area B + Area C %68 95% 84% 95% %06 95% 78% 80% 20% 71% Occupied Rooms Total 238 226 214 211 214 200 219 186 170 190 120 Rooms Total 238 238 238 238 238 238 238 238 238 238 Table 1 - Summary of Room Occupancy for the Hotel A and the Hotel B Percent (%) of Occupied Rooms 100% 100% %96 94% %06 88% %86 %66 47% 74% %68 Hotel B (Area C) Wayne Mills Place, Santa Clarita California Occupied Rooms 120 115 108 120 113 114 106 119 117 107 56 89 Rooms Total 120 120 120 120 120 120 120 120 120 120 120 120 of Occupied Percent (%) Rooms 100% %08 81% %56 95% %06 %08 62% %19 54% 85% %69 Hotel A (Area A + Area B) Occupied Rooms 118 106 94 112 112 100 96 94 73 64 81 Rooms Total 118 118 118 118 118 118 118 118 118 118 118 118 Wednesday, June 29, 2016 Thursday, June 30, 2016 Saturday, June 25, 2016 Tuesday, June 28, 2016 Monday, June 27, 2016 Saturday, July 02, 2016 Sunday, June 26, 2016 Monday, July 04, 2016 Tuesday, July 05, 2016 Sunday, July 03, 2016 Day of Week Friday, June 24, 2016 Friday, July 01, 2016

Table 2
Summary of Existing Parking Supply for the
Denny's Restaurant, Hotel A and the Hotel B,
Wayne Mills Place, Santa Clarita, California

Facility	Available Parking Spaces
Denny's Restaurant/	:
Hotel A	144 Parking Spaces
Hotel B	121 Parking Spaces
Total:	265 Parking Spaces

				Table 3 - M	eekday Parl	king Deman	Table 3 - Weekday Parking Demands Summary	Dates					
		Mor	Monday, June 27, 2016	7, 2016	Tues	Tuesday, June 28, 2016	8, 2016	Wed	Wednesday, June 29, 2016	9.2016	Thur	Thursday Imp 40 2015	2016
	Location	Occupled Parking	Excess	Occupied	Occupied	Excose	Occumied	Occupied	Fucus	Committee	Occupied	'or all or 'dans	0100
		Spaces	Parking	Rooms	Spaces	Parking	Rooms	Spaces	Parking	Rooms	Spaces	Parking	Occupied
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	49 12-1 PM	25	24		17	32		14	35		9	43	
	49 5-6 PM	13	H :		16	33		DO.	41		22	27	
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	49 8-9 AM	16	33		15	30		30	74		15	18	
	49 11 AM-12 PM	24	25		11	38		6	40		15	57	
	Peak Demand	25			24			47			90	5	
Area B	Total Capacity Time										00		
	95 12-1 PM	35	9		35	09		33	53		24	7.7	
	95 S-6 PM	9	35		53	42		45	20		45	4 05	
	95 6-7 PM	48	47		29	33		11	18		9	32	
Chack In at 12 Moon	95 12-1 AM	64	31	94	59	36	118	88	7	96	91	4	73
Check out at 10: 00 AM	95 7-8 AM		95		99	29		82	13		98	o	
	95-8-9 AM		52		55	40		70	25		64	31	
	SOUTH AW-12 PM		36		24	7.1		21	74		28	29	
	Peak Demand	20			99			88			91		
	144 12-1 PM	60	84		52	92		46	86		1,1	44.3	
	144 S-6 PM	78	99		69	75		53	16		13	77	
	144 6-7 PM	63	81		84	99		112	32		88	25	
Area A plue Area D.	144 12-1 AM	92	89	94	70	74	118	135	o	96	120	200	7.5
Wiss A plus Aled D.	144 7-8 AM	0	144		90	54		129	15	2	117	3 6	(3
	144 8-9 AM	98	58		74	70		100	9		35	17	
	144 11 AM-12 PM	83	61		35	109		30	114		000	201	
	Peak Demand	98			06			135			120	707	
								200			153		
Area C	Total Capacity Time												
	121 12-1 PM	45	76		59	92		30	91		31	OB	
	121 5-6 PM	47	74		76	45		40	81		29	54	
Hotel B:	121 6-7 PM	43	78		98	35	P	51	70		99	55	į
Check in at 12 Noon	121 7-8 AM	70	42	170	66	22	120	112	ō	115	108	13	117
Check out at 10: 00 AM	121 8-9 AM	63	200		60 05	25		20 5	38		94	27	
	121 11 AM-12 PM	36	85		33	88		31	00		6/	42	
	Peak Demand	117			99			113				31	
7	Table Control							717			108		
Total Demand	iotal Capacity Time												
	216 12-1 PM	80	136		64	152		62	154		52	164	
	216 S-6 PM	107	109		129	87		85	131		112	104	
	216 6-7 PM	91	125		148	68		128	88		129	87	
	415 12-1 AW	181	35	214	158*	28	238	200*	16	211	199*	17	190
Area 8+ Area C	216 7-8 AM	79	137		155	61		165	51		180	36	
	216 8-9 AM	133	83		114	102		142	74		143	73	
	216 11 AM-12 PM	95	121		25	159		52	164		52	164	
	Peak Demand	181			158			200			199		
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		Parking/	Room Ratio	0.87 spa	ces/room		76 space	Stroom		89 enaroc/	moon	0 0	,				Ì	TOO		7	10	

Wa	ne Mills Plac	for the Hotel A and the Hotel B Wayne Mills Place, Santa Clarita California	Clarita California Hotel A and Hotel B	8	
Day of Week	Occupied Rooms	Peak Parking Demand	Parking Spaces	Excess	Parking Spaces per room
Friday, June 24, 2016	214	187	216	29	0.865
Saturday, June 25, 2016	238	172	216	44	0.796
Sunday, June 26, 2016	211	193	216	23	0.894
Monday, June 27, 2016	225	187	216	29	0.865
Tuesday, June 28, 2016	226	165	216	51	0.764
Wednesday, June 29, 2016	214	200	216	16	0.926
Thursday, June 30, 2016	200	199	216	17	0.921
Friday, July 01, 2016	190	184	216	32	0.851
Saturday, July 02, 2016	219	171	216	45	0.792
Sunday, July 03, 2016	186	183	216	33	0.847
Monday, July 04, 2016	120	167	216	49	0.773

Facility Roo	Rooms 182	Rooms Parking Rate	Rec
nesidelice IIII	707	0.925/per room	168 Parking Spaces
Valencia Holiday Inn Express 10	108	0.925/per room	100 Parking Spaces
Total Required Parking 29	290	0.925/per room	268 Parking Spaces
		Proposed Parking:	
		Excess Parking:	6 Parking Spaces

Time Percentage (6:00 AM) Shared Parking (Area A) Hotel A (Area B) Required Parking Percentage Pharking Percentage Pharking Percentage Pharking Packes Parking Packes Packes Spaces 27 (a) 118 Spaces Spaces Spaces Spaces Spaces Spaces Spaces Spaces Spaces Spaces Spaces Spaces Spaces Spaces Spaces Spaces Spaces Spaces Spaces Spaces Spaces Spaces Spaces				Table 7- Shared	Table 7- Shared Parking for Denny's/ Hotel A	ıy's/ Hotel A		
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Neil Patel Excel Hotel Group September 14, 2016 Page 17

SUMMARY

- The survey of existing parking demands at the Hotel A and Hotel B facilities found peak parking demand of 0.925 parking spaces per room.
- Application of the 0.925 spaces per room to the proposed 290 room Valencia Springhill Suites/Residence Inn and Holiday Inn Express hotels results in the need for 268 parking spaces.
- The proposed 274 parking spaces results in an excess of six (6) parking spaces for the project.

Please call if you have any questions.

Sincerely,

DARNELL & ASSOCIATES, INC.

Bill E. Darnell, P.E. RCE: 22338

BED/Jam 160605- Valencia Springhill Parking Study doc/09-16 SE DARNE GENERAL SESSION OF CALIFORNIE

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WAYNE MILLS PLACE PROJECT

AIR QUALITY IMPACT ANALYSIS

PREPARED BY



NOVEMBER 2016

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1.0 Introduction

This report evaluates air quality impacts associated with the proposed Wayne Mills Place Project in accordance with methodologies recommended by the California Air Resources Board (CARB) and the South Coast Air Quality Management District (SCAQMD). Analyzed in this report are the project's consistency with applicable plans, policies, and regulations, as well as the introduction of new sources of air pollutants. Where quantification was required, emissions were modeled using the California Emissions Estimator Model (CalEEMod). Technical data is included as Appendix A, *Criteria Air Pollutant Modeling Outputs*.

1.1 PROJECT LOCATION

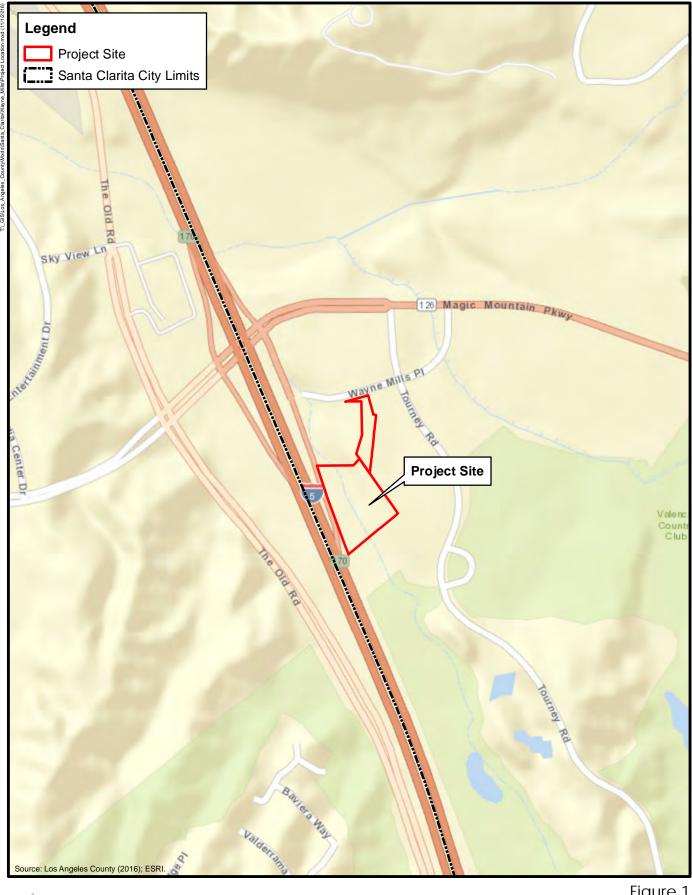
The project site is located at 27413 Wayne Mills Place in Santa Clarita, California, in Los Angeles County. The site is on the south side of Wayne Mills Place, east of Interstate 5 (I-5) and west of Tourney Road. Nearby communities include Castaic to the north, Acton to the east, and San Fernando to the south. Refer to Figure 1-1, *Project Location*.

Surrounding land uses include I-5 directly to the west, restaurants to the north, a business park to the east, and the Valencia Country Club golf course to the south and east. Six Flags Magic Mountain theme park is on the opposite side of I-5 from the project site.

1.2 PROJECT DESCRIPTION

The project would demolish an existing 120-room Best Western hotel and construct two new hotel buildings in its place, one Holiday Inn Express with 108 rooms and one Springhill Suites/Residence Inn with 182 rooms, on a 4.3-acre site. There would be a total of 192 automobile parking spots with access from an existing driveway located on Wayne Mills Place. Refer to Figure 1-2, *Site Plan*.

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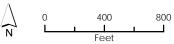
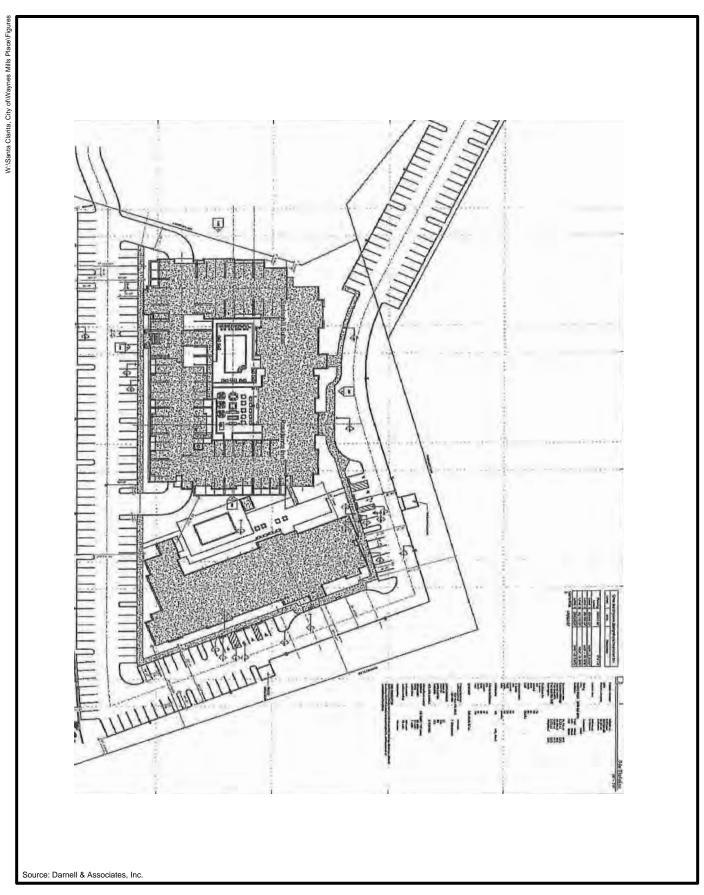


Figure 1 Project Location











2.0 AIR QUALITY

This report describes the existing air quality—related setting in the project region, summarizes applicable air quality regulations, and analyzes potential short- and long-term impacts that could result from implementation of the proposed Wayne Mills Place Project.

2.1 EXISTING SETTING

South Coast Air Basin

CARB divides the state into 15 air basins that share similar meteorological and topographical features. The project site is in the western portion of the South Coast Air Basin (Basin). The Basin is a 6,600-square-mile area bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto mountains to the north and east. The Basin includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties, in addition to the San Gorgonio Pass area in Riverside County. The Basin's terrain and geographical location (i.e., a coastal plain with connecting broad valleys and low hills) determine its distinctive climate.

The general region lies in the semi-permanent high-pressure zone of the eastern Pacific. The climate is mild and tempered by cool sea breezes. The usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds. The extent and severity of the air pollution problem in the Basin is a function of the area's natural physical characteristics (weather and topography), as well as man-made influences (development patterns and lifestyle). Factors such as wind, sunlight, temperature, humidity, rainfall, and topography all affect the accumulation and/or dispersion of pollutants throughout the Basin.

Air Pollutants of Concern

The air pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state laws. These regulated air pollutants are known as "criteria air pollutants" and are categorized into primary and secondary pollutants. Primary air pollutants are those that are emitted directly from sources. Carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxide (NO_X), sulfur dioxide (SO₂), coarse particulate matter (PM₁₀), fine particulate matter (PM_{2.5}), lead, and fugitive dust are primary air pollutants. Of these, CO, SO₂, PM₁₀, and PM_{2.5} are criteria pollutants. ROG and NO_X are criteria pollutant precursors and go on to form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere (for example, ozone (O₃) is formed by a chemical reaction between ROG and NO_X in the presence of sunlight). O₃ and nitrogen dioxide (NO₂) are the principal secondary pollutants.

Sources and health effects commonly associated with criteria pollutants are summarized in Table 2-1, Criteria Air Pollutants Summary of Common Sources and Effects.

TABLE 2-1: CRITERIA AIR POLLUTANTS SUMMARY OF COMMON SOURCES AND EFFECTS

Pollutant	Major Man-Made Sources	Human Health & Welfare Effects
Carbon Monoxide (CO)	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, affecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
Nitrogen Dioxide (NO₂)	A reddish-brown gas formed during fuel combustion for motor vehicles and industrial sources. Sources include motor vehicles, electric utilities, and other sources that burn fuel.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone and acid rain. Contributes to global warming and nutrient overloading which deteriorates water quality. Causes brown discoloration of the atmosphere.
Ozone (O ₃)	Formed by a chemical reaction between volatile organic compounds (VOC) and nitrous oxides (NOx) in the presence of sunlight. VOCs are also commonly referred to as reactive organic gases (ROGs). Common sources of these precursor pollutants include motor vehicle exhaust, industrial emissions, gasoline storage and transport, solvents, paints, and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing, and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield. Damages rubber, some textiles, and dyes.
Particulate Matter (PM ₁₀ and PM _{2.5})	Produced by power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles, and others.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).
Sulfur Dioxide (SO ₂)	A colorless, nonflammable gas formed when fuel containing sulfur is burned; when gasoline is extracted from oil; or when metal is extracted from ore. Examples are petroleum refineries, cement manufacturing, metal processing facilities, locomotives, and ships.	Respiratory irritant. Aggravates lung and heart problems. In the presence of moisture and oxygen, sulfur dioxide converts to sulfuric acid which can damage marble, iron and steel. Damages crops and natural vegetation. Impairs visibility. Precursor to acid rain.

Source: CAPCOA 2013

Ambient Air Quality

<u>Criteria Air Pollutant Monitoring Data</u>

Ambient air quality in Santa Clarita, and thus at the project site, can be inferred from ambient air quality measurements conducted at air quality monitoring stations. Existing levels of ambient air quality and historical trends in the region are documented by measurements made by the SCAQMD, the air pollution regulatory agency in the air basin that maintains air quality monitoring stations which process ambient air quality measurements.

Ozone, PM₁₀, and PM_{2.5} are the primary pollutants affecting the SCAQMD. The nearest air quality monitoring site to the project site that monitors ambient concentrations of ozone and airborne particulates is the Santa Clarita-Placerita Monitoring Station (22224 Placerita Canyon, Santa Clarita, CA 91321), approximately 4 miles southeast of the project site. Table 2-2, *Ambient Air*

Quality Monitoring Data, summarizes the published data since 2013 for each year that the monitoring data is provided.

TABLE 2-2: AMBIENT AIR QUALITY MONITORING DATA

Pollutant Standards	2013¹	2014 ¹	2015¹
Ozone	•		
Maximum 1-hour concentration (ppm)	0.134	0.134	0.126
Maximum 8-hour concentration (ppm) (state/federal)	0.104 / 0.104	0.111 / 0.110	0.109 / 0.108
Number of days above state 1-hour standard	30	32	23
Number of days above state/federal 8-hour standard	58 / 40	65 / 45	55 / 37
Coarse Particulate Matter	•		
Maximum 24-hour concentration (μg/m³) (state/federal)	41.0 / 43.0	45.0 / 47.0	39.0 / 41.0
Number of days above state/federal standard	0/0	0/0	*/0
Fine Particulate Matter			
Maximum 24-hour concentration (μg/m³) (state/federal)	29.5 / *	28.9 / *	34.4 / *
Number of days above federal standard	*	*	*

Source: CARB 2015a

Notes: $\mu g/m^3 = micrograms$ per cubic meter; ppm = parts per million; * = No data is currently available to determine the value.

Toxic Air Contaminants

In addition to the criteria pollutants discussed above, toxic air contaminants (TACs) are another group of pollutants of concern. TACs are considered either carcinogenic or noncarcinogenic based on the nature of the health effects associated with exposure to the pollutant. For regulatory purposes, carcinogenic TACs are assumed to have no safe threshold below which health impacts would not occur, and cancer risk is expressed as excess cancer cases per one million exposed individuals. Noncarcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

There are many different types of TACs, with varying degrees of toxicity. Sources of TACs include industrial processes, such as petroleum refining and chrome-plating operations; commercial operations, such as gasoline stations and dry cleaners; and motor vehicle exhaust. Public exposure to TACs can result from emissions from normal operations, as well as from accidental releases of hazardous materials during upset conditions. The health effects associated with TACs are quite diverse and generally are assessed locally, rather than regionally. TACs can cause long-term health effects such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage, or short-term acute affects such as eye watering, respiratory irritation (a cough), runny nose, throat pain, and headaches.

^{1.} Measurements taken at the Santa Clarita-Placerita Monitoring Station.

Since the last update to the TAC list in December 1999, CARB has designated 244 compounds as toxic air contaminants (CARB 1999). Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to a relatively few compounds.

CARB identified diesel particulate matter (DPM) as a toxic air contaminant. Diesel particulate matter differs from other TACs in that it is not a single substance but rather a complex mixture of hundreds of substances. Diesel exhaust is a complex mixture of particles and gases produced when an engine burns diesel fuel. DPM is a concern because it causes lung cancer; many compounds found in diesel exhaust are carcinogenic. DPM includes the particle-phase constituents in diesel exhaust. The chemical composition and particle sizes of DPM vary between different engine types (heavy-duty, light-duty), engine operating conditions (idle, accelerate, decelerate), fuel formulations (high/low sulfur fuel), and the year of the engine (EPA 2002). Some short-term (acute) effects of diesel exhaust include eye, nose, throat, and lung irritation, and diesel exhaust can cause coughs, headaches, light-headedness, and nausea. DPM poses the greatest health risk among the TACs. Almost all diesel exhaust particle mass is 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung.

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardiorespiratory diseases.

Residential areas are considered to be sensitive receptors to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Children are considered more susceptible to health effects of air pollution due to their immature immune systems and developing organs (OEHHA 2007). As such, schools are also considered sensitive receptors, as children are present for extended durations and engage in regular outdoor activities. Other land uses considered sensitive receptors include playgrounds, childcare centers, long-term healthcare facilities, rehabilitation centers, convalescent centers, and retirement homes. The nearest sensitive receptors are the residences approximately 400 meters southwest of the project site, across I-5.

2.2 REGULATORY FRAMEWORK

Federal and State

Ambient Air Quality Standards

The proposed project has the ability to release gaseous emissions of criteria pollutants and dust into the ambient air; therefore, development activities under the proposed project fall under the ambient air quality standards promulgated at the local, state, and federal levels. The federal Clean Air Act of 1971 and the Clean Air Act Amendments (1977) established the national ambient air quality standards (NAAQS), which are promulgated by the US Environmental Protection

Agency (EPA). The State of California has also adopted its own California ambient air quality standards (CAAQS), which are promulgated by CARB. The project is in Los Angeles County, which is under the air quality regulatory jurisdiction of the South Coast Air Quality Management District, and is therefore subject to the rules and regulations adopted by the air district to achieve the NAAQS and CAAQS. Applicable federal, state, regional, and local laws, regulations, plans, and guidelines relevant to the California Environmental Quality Act (CEQA) review process are summarized below. As shown in Table 2-3, *Air Quality Standards*, these pollutants include O₃, CO, NO₂, SO₂, PM₁₀, PM_{2.5}, and lead. In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

TABLE 2-3: AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards	National Standards
0(0.)	8 Hour	0.070 ppm (137μg/m³)	0.070 ppm (137μg/m³)
Ozone (O ₃)	1 Hour	0.09 ppm (180 μg/m³)	_
Carlan Manavida (CO)	8 Hour	9.0 ppm (10 mg/m³)	9 ppm (10 mg/m³)
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m³)	35 ppm (40 mg/m ³)
Nitrogon Diovido (NO.)	1 Hour	0.18 ppm (339 μg/m³)	100 ppb
Nitrogen Dioxide (NO₂)	Annual Arithmetic Mean	0.030 ppm (57 μg/m³)	53 ppb (100 μg/m³)
	24 Hour	0.04 ppm (105 μg/m³)	N/A
Sulfur Dioxide (SO ₂)	3 Hour	_	N/A
	1 Hour	0.25 ppm (665 μg/m³)	75 ppb
Dortioulate Metter (DM)	Annual Arithmetic Mean	20 μg/m³	N/A
Particulate Matter (PM ₁₀)	24 Hour	50 μg/m ³	150 μg/m³
Particulate Metter Fine (DM)	Annual Arithmetic Mean	12 μg/m³	15 μg/m³
Particulate Matter – Fine (PM _{2.5})	24 Hour	N/A	35 μg/m³
Sulfates	24 Hour	25 μg/m³	N/A
Load	Calendar Quarter	N/A	1.5 μg/m³
Lead	30 Day Average	1.5 μg/m³)	N/A
Hydrogen Sulfide	1 Hour	0.03 ppm (42 μg/m ³)	N/A
Vinyl Chloride (chloroethene)	24 Hour	0.01 ppm (26 μg/m ³)	N/A
Visibility-Reducing Particles	8 Hour (10:00 to 18:00 PST)	_	N/A

Source: CARB 2015b

Notes: mg/m³=milligrams per cubic meter; ppm=parts per million; ppb=parts per billion; µg/m³=micrograms per cubic meter

<u>Air Quality Attainment Plans</u>

The SCAQMD and the Southern California Association of Governments (SCAG) are the agencies responsible for preparing the Air Quality Management Plan (AQMP) for the Basin pursuant to the federal Clean Air Act in order to reduce emissions of criteria pollutants for which the Basin is in nonattainment. The SCAQMD's adopted 2012 AQMP establishes a program of rules and

regulations directed at reducing air pollutant emissions and achieving state (California) and national air quality standards. The 2012 AQMP is a regional and multi-agency effort including the SCAQMD, CARB, SCAG, and the EPA. The 2012 AQMP pollutant control strategies are based on the latest scientific and technical information and planning assumptions, including the 2012 Regional Transportation Plan/Sustainable Communities Strategy, updated emission inventory methodologies for various source categories, and SCAG's latest growth forecasts (SCAQMD 2013). (SCAG's latest growth forecasts were defined in consultation with local governments and with reference to local general plans.)

The AQMP provides local guidance for the State Implementation Plan (SIP), which establishes the framework for air quality basins to achieve attainment of the state and federal ambient air quality standards. Areas that meet ambient air quality standards are classified as attainment areas, while areas that do not meet these standards are classified as nonattainment areas. Areas for which there is insufficient data available are designated unclassified. The attainment status for the western region of Los Angeles County is included in Table 2-4, Federal and State Ambient Air Quality Attainment Status for Western Los Angeles County. The region is in nonattainment for state ozone, PM₁₀, and PM_{2.5} standards and nonattainment for federal ozone and PM_{2.5} standards.

TABLE 2-4: FEDERAL AND STATE AMBIENT AIR QUALITY ATTAINMENT STATUS FOR WESTERN LOS ANGELES COUNTY

Pollutant	Federal	State
8-Hour Ozone (O ₃)	Nonattainment	Nonattainment
Coarse Particulate Matter (PM ₁₀)	Attainment	Nonattainment
Fine Particulate Matter (PM _{2.5})	Nonattainment	Nonattainment
Carbon Monoxide (CO)	Unclassified/Attainment	Attainment
Nitrogen Dioxide (NO ₂)	Unclassified/Attainment	Attainment
Sulfur Dioxide (SO ₂)	Attainment	Attainment

Source: CARB 2015c

Toxic Air Contaminant Regulations

In 1983, the California legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health. The Health and Safety Code defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." A substance that is listed as a hazardous air pollutant pursuant to subsection (b) of Section 112 of the federal Clean Air Act (42 United States Code Section 7412[b]) is a TAC. Under state law, the California Environmental Protection Agency, acting through CARB, is authorized to identify a substance as a TAC if it determines the substance is an air pollutant that may cause or contribute to an increase in mortality or to an increase in serious illness, or may pose a present or potential hazard to human health.

California regulates TACs primarily through Assembly Bill (AB) 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics "Hot Spot" Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for CARB to designate substances as toxic air contaminants. Once a TAC is identified, CARB adopts an "airborne toxics control measure" for sources that emit designated TACs. If there is a safe threshold for a substance (a point below which there is no toxic effect), the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions. To date, CARB has established formal control measures for eleven TACs, all of which are identified as having no safe threshold.

Air toxics from stationary sources are also regulated in California under the Air Toxics "Hot Spot" Information and Assessment Act of 1987. Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High-priority facilities are required to perform a health risk assessment and, if specific thresholds are exceeded, are required to communicate the results to the public in the form of notices and public meetings.

Since the last update to the TAC list in December 1999, CARB has designated 244 compounds as toxic air contaminants (CARB 1999). Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines.

California Diesel Risk Reduction Plan

In September 2000, CARB adopted the Diesel Risk Reduction Plan (DRRP), which recommends many control measures to reduce the risks associated with DPM and achieve a goal of an 85 percent reduction of DPM generated by 2020. The DRRP incorporates measures to reduce emissions from diesel-fueled vehicles and stationary diesel-fueled engines. CARB's ongoing efforts to reduce diesel-exhaust emissions from these sources include the development of specific statewide regulations, which are designed to further reduce DPM emissions. The goal of each regulation is to make diesel engines as clean as possible by establishing state-of-the-art technology requirements or emission standards to reduce DPM emissions.

Since the initial adoption of the DRRP in September 2000, CARB has adopted numerous rules related to the reduction of diesel particulate matter from mobile sources, as well as the use of cleaner-burning fuels. Transportation sources addressed by these rules include public transit buses, school buses, on-road heavy-duty trucks, and off-road heavy-duty equipment.

On-Road Heavy-Duty Diesel Vehicles (In Use) Regulation

CARB's On-Road Heavy-Duty Diesel Vehicles (In Use) Regulation requires diesel trucks and buses that operate in California to be upgraded to reduce emissions. Heavier trucks were required to be retrofitted with particulate matter filters beginning January 1, 2012, and older trucks were

required to be replaced starting January 1, 2015. By January 1, 2023, nearly all trucks and buses will need to have 2010 model year engines or equivalent. The regulation applies to nearly all privately and federally owned diesel-fueled trucks and buses, as well as to privately and publicly owned school buses with a gross vehicle weight rating greater than 14,000 pounds.

Local

South Coast Air Quality Management District

The SCAQMD is the air pollution control agency for Orange County and the urban portions of Los Angeles, Riverside, and San Bernardino counties. The agency's primary responsibility is ensuring that the federal and state ambient air quality standards are attained and maintained in the South Coast Air Basin. The SCAQMD is also responsible for adopting and enforcing rules and regulations concerning air pollutant sources, issuing permits for stationary sources of air pollutants, inspecting stationary sources of air pollutants, responding to citizen complaints, monitoring ambient air quality and meteorological conditions, awarding grants to reduce motor vehicle emissions, and conducting public education campaigns, as well as many other activities. All projects are subject to SCAQMD rules and regulations in effect at the time of construction.

The following is a list of noteworthy SCAQMD rules that are required of the proposed project during construction activities:

- Rule 402 (Nuisance). This rule prohibits the discharge from any source whatsoever such
 quantities of air contaminants or other material which cause injury, detriment, nuisance,
 or annoyance to any considerable number of persons or to the public, or which endanger
 the comfort, repose, health, or safety of any such persons or the public, or which cause,
 or have a natural tendency to cause, injury or damage to business or property. The rule
 does not apply to odors emanating from agricultural operations necessary for the growing
 of crops or the raising of fowl or animals.
- Rule 403 (Fugitive Dust). This rule requires fugitive dust sources to implement Best Available Control Measures for all sources, and all forms of visible particulate matter are prohibited from crossing any property line. Rule 403 is intended to reduce PM₁₀ emissions from any transportation, handling, construction, or storage activity that has the potential to generate fugitive dust. Examples of some PM₁₀ suppression techniques are summarized below.
 - a. Portions of the construction site to remain inactive longer than a period of three months will be seeded and watered until grass cover is grown or otherwise stabilized in a manner acceptable to the City.
 - All on-site roads will be paved as soon as feasible or watered periodically or chemically stabilized.

- c. All material transported off-site will be either sufficiently watered or securely covered to prevent excessive amounts of dust.
- d. The area disturbed by clearing, grading, earth moving, or excavation operations will be minimized at all times.
- e. Where vehicles leave the construction site and enter adjacent public streets, the streets will be swept daily or washed down at the end of the work day to remove soil tracked onto the paved surface.
- f. A wheel washing system will be installed and used to remove bulk material from tires and vehicle undercarriages before vehicles exit the site.
- g. Water will be applied to active portions of the site, including unpaved roads, in sufficient quantity.
- Rule 1113 (Architectural Coatings). This rule requires manufacturers, distributors, and end-users of architectural and industrial maintenance coatings to reduce ROG emissions from the use of these coatings, primarily by placing limits on the ROG content of various coating categories.

2.3 IMPACT ASSESSMENT

The impact analysis below is based on guidance from the SCAQMD, the applicable air quality control agency for the Basin. According to the SCAQMD, an air quality impact is considered significant if a proposed project would violate any ambient air quality standard, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations.

Methodology

The proposed project's criteria air pollutant emissions were calculated using the California Emissions Estimator Model (CalEEMod), version 2016.3.1 computer program (refer to Appendix A). CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for the use of government agencies, land use planners, and environmental professionals. This model was developed in coordination with the SCAQMD and is the most current emissions model approved for use in California by various other air districts. Emissions modeling is based on project-specific data (e.g., size and type of proposed use) and vehicle trip information from the project's traffic impact analysis (refer to Appendix B, *Traffic Impact Study*).

Thresholds of Significance

The following thresholds of significance are based, in part, on CEQA Guidelines Appendix G. For purposes of this analysis, the proposed project may have a significant adverse impact related to land use if it would do any of the following:

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

The significance criteria established by the applicable air quality management or air pollution control district (SCAQMD) may be relied upon to make the above determinations. According to the SCAQMD, an air quality impact is considered significant if a proposed project would violate any ambient air quality standard, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations. The SCAQMD has established thresholds of significance for air quality for construction and operational activities of land use developments, which are applicable to the proposed project, as shown in Table 2-5, SCAQMD Regional Significance Thresholds.

TABLE 2-5: SCAQMD REGIONAL SIGNIFICANCE THRESHOLDS

Air Pollutant	Construction Activities	Operations
Reactive Organic Gases (ROG)	75 pounds/day	55 pounds/day
Carbon Monoxide (CO)	550 pounds/day	550 pounds/day
Nitrogen Oxides (NOx)	100 pounds/day	55 pounds/day
Sulfur Oxides (SOx)	150 pounds/day	150 pounds/day
Coarse Particulates (PM10)	150 pounds/day	150 pounds/day
Fine Particulates (PM2.5)	55 pounds/day	55 pounds/day

Source: SCAQMD 1993 (PM_{2.5} threshold adopted June 1, 2007)

Carbon Monoxide Hot-Spot Analysis

In addition to the daily thresholds listed above, the proposed project would be subject to the ambient air quality standards. These standards are addressed though an analysis of localized carbon monoxide impacts. The California 1-hour and 8-hour CO standards are:

- 1-hour = 20 parts per million
- 8-hour = 9 parts per million

The significance of localized impacts depends on whether ambient CO levels in the vicinity of a project are above state and federal CO standards. CO concentrations in Los Angeles County do not exceed the California or national ambient air quality standards criteria, and the Basin has been designated as attainment under the 1-hour and 8-hour standards.

Localized Significance Thresholds

In addition to the CO hot-spot analysis, the SCAQMD developed localized significance thresholds (LSTs) for emissions of NO₂, CO, PM₁₀, and PM_{2.5} generated at new development sites (off-site mobile source emissions are not included in the LST analysis). LST screening thresholds represent the maximum emissions at a project site that are not expected to cause or contribute to an exceedance of the most stringent national or state ambient air quality standard. LST screening thresholds are based on the ambient concentrations of that pollutant within the project source receptor area (SRA), as demarcated by the SCAQMD, and the distance to the nearest sensitive receptor. The project site is located in SCAQMD SRA 13. Table 2-6, *Local Significance Threshold (LST) Analysis Screening Thresholds – Pounds per Day*, shows the screening thresholds for a 1-acre, 2-acre, and 5-acre project site in SRA 13 with sensitive receptors located within 200 meters of a project site.

TABLE 2-6: LOCAL SIGNIFICANCE THRESHOLD (LST) ANALYSIS SCREENING THRESHOLDS — POUNDS PER DAY

Project Size	NOx	со	PM ₁₀	PM _{2.5}
1 Acre (construction/operations)	161 / 161	2,500 / 2,500	51 / 13	18 / 5
2 Acres (construction/operations)	190 / 190	3,108 / 3,108	59 / 15	20 / 5
5 Acres (construction/operations)	256 / 256	4,608 / 4,608	79 / 19	26 / 7

Source: SCAQMD 2009

Toxic Air Contaminant Thresholds

The SCAQMD regulates levels of air toxics through a permitting process that covers both construction and operation. The SCAQMD has adopted Rule 1401 for both new and modified sources that use materials classified as air toxics. The SCAQMD CEQA Guidelines for permit processing consider the following types of projects significant:

- Any project involving the emission of a carcinogenic or TAC identified in SCAQMD Rule 1401 that exceeds the maximum individual cancer risk of 1 in 1 million or 10 in 1 million if the project is constructed with best available control strategy for toxics using the procedures in SCAQMD Rule 1401.
- Any project that could accidentally release an acutely hazardous material or routinely release a TAC, posing an acute health hazard.
- Any project that could emit an air contaminant not currently regulated by SCAQMD rule but that is on the federal or state air toxics list.

Based on these significance thresholds and criteria, the project's effects have been categorized as either "no impact," a "less than significant impact," or a "potentially significant impact." Mitigation measures are recommended for potentially significant impacts. If a potentially significant impact cannot be reduced to a less than significant level through the application of mitigation, it is categorized as a significant and unavoidable impact.

Impact Assessment

<u>Violate Any Air Quality Standards or Contribute Substantially to an Existing or Projected Air</u> Quality Violation During Project Construction

Construction associated with the project would generate short-term emissions of criteria air pollutants. The criteria pollutants of primary concern in the project area include ozone-precursor pollutants (i.e., ROG and NO_x) and PM_{10} . Construction-generated emissions are short term and of temporary duration, lasting only as long as construction activities occur, but have the potential to represent a significant air quality impact.

Construction results in the temporary generation of emissions ensuing from site grading and excavation, road paving, motor vehicle exhaust associated with construction equipment and worker trips, and the movement of construction equipment, especially on unpaved surfaces. Emissions of airborne particulate matter are largely dependent on the amount of ground disturbance associated with site preparation activities as well as weather conditions and the appropriate application of water. Construction-related emissions are expected from site preparation, grading, building construction, paving, architectural coatings, and construction workers commuting. Architectural coatings (i.e., painting) would occur sporadically throughout the building phase, as needed.

The estimate for construction duration is based on CalEEMod model defaults, as are the number and types of equipment that would be used. Please refer to specific detailed modeling inputs/outputs, including construction equipment assumptions, contained in Appendix A.

Construction-Related Regional Air Quality Impacts

The estimated maximum daily construction emissions are summarized in Table 2-7, *Construction-Related Emissions*. As previously stated, all construction projects in the South Coast Air Basin are subject to SCAQMD rules and regulations in effect at the time of construction, including Rule 403 described above. The construction emissions summarized in Table 2-7 account for the quantifiable PM-reducing requirements of SCAQMD Rule 403.

TABLE 2-7: CONSTRUCTION-RELATED EMISSIONS

	Maximum Emissions (pounds per day)						
Construction Activities	Reactive Organic Gases (ROG)	Nitrogen Oxide (NO _x)	Coarse Particulate Matter (PM ₁₀)	Fine Particulate Matter (PM _{2.5})	Carbon Monoxide (CO)	Sulfur Dioxide (SO ₂)	
Year 1 (2017)	24.32	57.77	9.92	6.48	52.43	0.11	
Year 2 (2018)	23.35	51.09	4.94	3.08	49.25	0.10	
SCAQMD Thresholds	75	100	150	55	550	150	
Exceed Threshold?	No	No	No	No	No	No	

Notes: Emissions calculated using CalEEMod version 2016.3.1. Emission estimates account for the quantifiable PM-reducing requirements of SCAQMD Rule 403, including watering exposed surfaces three times daily; cleaning trackout on adjacent streets, covering stockpiles with tarps; watering all haul roads twice daily; and limiting speeds on unpaved roads to 15 miles per hour. Building construction, paving, and architectural coating assumed to occur simultaneously. Refer to Appendix A for daily emission model outputs.

As shown in Table 2-7, emissions resulting from project construction will not exceed any applicable thresholds. Construction-related regional air quality impacts are considered less than significant.

Construction-Related Localized Air Quality Impacts

Localized significance thresholds were developed in response to the SCAQMD Governing Board's Environmental Justice Enhancement Initiative (I-4). The SCAQMD provided the Final Localized Significance Threshold Methodology (dated June 2003 [revised 2009]) for guidance. The LST methodology assists lead agencies in analyzing localized air quality impacts.

For this project, the appropriate source receptor area (SRA) for the localized significance thresholds is the Santa Clarita Valley area (SRA 13) since this area includes the project site. LSTs apply to CO, NO₂, PM₁₀, and PM_{2.5}. The SCAQMD-produced look-up tables provide screening thresholds for projects that disturb 1 acre, 2 acres, and 5 acres, so 4.3 acres (size of the project site) was interpolated.

The SCAQMD's methodology clearly states that "off-site mobile emissions from the project should not be included in the emissions compared to LSTs." Therefore, for purposes of the construction LST analysis, only emissions included in the CalEEMod "on-site" emissions outputs were considered. The nearest existing sensitive receptors to the development boundaries are the residences located 400 meters from the proposed project site. Therefore, to be conservative, LST screening thresholds for receptors at 200 meters were used in this analysis.

Table 2-8, Localized Significance of Emissions – Pounds per Day, presents the results of localized emissions during construction activity. The LST screening thresholds have been adjusted to reflect a maximum disturbance of 4.3 acres for the proposed project.

TABLE 2-8: LOCALIZED SIGNIFICANCE OF EMISSIONS — POUNDS PER DAY

Activity	Nitrogen Oxide (NO _x)	Coarse Particulate Matter (PM ₁₀)	Fine Particulate Matter (PM _{2.5})	Carbon Monoxide (CO)
Demolition (2017)	42.75	5.47	2.54	23.01
Site Preparation (2017)	52.28	9.79	6.45	23.46
Grading (2017)	33.89	4.28	2.92	17.10
Building Construction, Paving, and Architectural Coating (2017)	45.78	2.98	2.79	32.72
Building Construction, Paving, and Architectural Coating (2018)	39.92	2.49	2.33	31.86
Maximum Daily On-Site Emissions	52.28	9.79	6.45	32.72
SCAQMD Localized Screening Threshold (adjusted for 4.3 acres of disturbance)	240.6	74.3	24.6	4258
Significant?	No	No	No	No

Source: CalEEMod version 2016.3.1.

Notes: Emissions projections account for adherence to various components of SCAQMD Rule 403, including application of water on the project site, employment of wheel washing systems, replacement of ground cover in disturbed areas, sweeping adjacent streets daily, and reestablishing vegetation on inactive portions of the site. Building construction, paving, and architectural coating assumed to occur simultaneously.

As shown in Table 2-8, air pollutant emissions resulting from project construction would not exceed the applicable LST screening thresholds; therefore, this impact is less than significant.

Mitigation Measures: No mitigation measures are required.

Level of Significance: Less than significant impact.

<u>Violate Any Air Quality Standards or Contribute Substantially to an Existing or Projected Air Quality Violation During Project Operation</u>

Operational activities associated with the proposed project will result in emissions of ROG, NO_x , CO, sulfur oxides (SO_X), PM_{10} , and $PM_{2.5}$. Operational emissions would be expected from the following primary sources: vehicles, combustion of natural gas and electricity, landscape maintenance equipment, consumer products, and architectural coatings.

Operations-Related Regional Air Quality Impacts

The project's operations-related regional emissions burdens (as calculated with the CalEEMod program), along with a comparison of SCAQMD-recommended significance thresholds, are shown in Table 2-9, *Long-Term Operational Emissions*.

TABLE 2-9: LONG-TERM OPERATIONAL EMISSIONS

	Pollutant (pounds/day)						
Source	Reactive Organic Gases (ROG)	Nitrogen Oxide (NO _x)	Coarse Particulate Matter (PM ₁₀)	Fine Particulate Matter (PM _{2.5})	Carbon Monoxide (CO)	Sulfur Dioxide (SO ₂)	
Summer Emissions	Summer Emissions						
Area Source	9.44	0.00	0.00	0.00	0.05	0.00	
Energy Use	0.30	2.72	0.21	0.21	2.29	0.02	
Mobile Source	5.40	22.44	7.41	2.24	64.41	0.17	
Total	15.15	25.16	7.62	2.45	66.75	0.19	
Potentially Significant Impact Threshold (Daily Emissions)	55	55	550	150	150	55	
Exceed Daily Threshold?	No	No	No	No	No	No	
Winter Emissions							
Area Source	9.44	0.00	0.00	0.00	0.05	0.00	
Energy Use	0.30	2.72	0.21	0.21	2.29	0.02	
Mobile Source	5.28	23.01	7.41	2.24	62.29	0.17	
Total	15.03	25.73	7.62	2.45	64.62	0.18	
Potentially Significant Impact Threshold (Daily Emissions)	55	55	550	150	150	55	
Exceed Daily Threshold?	No	No	No	No	No	No	

 $Notes: {\it Emissions \ calculated \ using \ Cal EEMod \ version \ 2016.3.1.}$

Refer to Appendix A for daily emission model outputs.

As shown in Table 2-9, emissions resulting from project operations would not exceed the SCAQMD regional emissions thresholds for operational activity. Therefore, this impact is less than significant.

Operations-Related Localized Air Quality Impacts

According to the SCAQMD methodology, LSTs apply to the operational phase of a proposed project if the project includes stationary sources or attracts mobile sources that may spend long periods queuing and idling at the site (e.g., warehouse or transfer facilities). Since the proposed project does not include these types of sources, an analysis of operational LSTs is not required.

Level of Significance: Less than significant impact.

Mitigation Measures: No mitigation measures are required.

<u>Conflict with or Obstruct Implementation of the Applicable Air Quality Plan</u>

As part of its enforcement responsibilities, the EPA requires each state with nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution in nonattainment areas, using a

combination of performance standards and market-based programs. Similarly, under state law, the California Clean Air Act requires an air quality attainment plan to be prepared for areas designated as nonattainment with regard to the federal and state ambient air quality standards. Air quality attainment plans outline emissions limits and control measures to achieve and maintain these standards by the earliest practical date.

As previously mentioned, the project site is located in the South Coast Air Basin, which is under the jurisdiction of the SCAQMD. The SCAQMD is required, pursuant to the federal Clean Air Act, to reduce emissions of criteria pollutants for which the air basin is in nonattainment. In order to reduce such emissions, the SCAQMD drafted an Air Quality Management Plan (AQMP). There is currently a draft 2016 AQMP, but it has not yet been adopted (as of November 2016). Therefore, the project will be analyzed against the adopted 2012 AQMP. The 2012 AQMP establishes a program of rules and regulations directed at reducing air pollutant emissions and achieving state (California) and national air quality standards. The pollutant control strategies in the 2012 AQMP are based on the latest scientific and technical information and planning assumptions, including the 2016 Regional Transportation Plan/Sustainable Communities Strategy, updated emission inventory methodologies for various source categories, and SCAG's latest growth forecasts (SCAQMD 2013). (SCAG's latest growth forecasts were defined in consultation with local governments and with reference to local general plans.)

Criteria for determining consistency with the AQMP are defined by the following indicators:

- Consistency Criterion No. 1: The proposed project will not result in an increase in the frequency or severity of existing air quality violations, or cause or contribute to new violations, or delay the timely attainment of air quality standards or the interim emissions reductions specified in the AQMP.
- Consistency Criterion No. 2: The proposed project will not exceed the assumptions in the AQMP or increments based on the years of the project buildout phase.

The violations to which Consistency Criterion No. 1 refer are the California ambient air quality standards (CAAQS) and the national ambient air quality standards (NAAQS). As evaluated above, the project would not exceed the SCAQMD short-term construction thresholds or SCAQMD long-term operational thresholds. The project would not result in an increase in the frequency or severity of existing air quality violations, or cause or contribute to new violations, or delay the timely attainment of air quality standards. Thus, a less than significant impact is expected, and the project would be consistent with the first criterion.

Concerning Consistency Criterion No. 2, the AQMP contains air pollutant reduction strategies and demonstrates that the applicable ambient air quality standards can be achieved within the time frames required under federal law. Growth projections from local general plans adopted by cities in the district are provided to SCAG, which develops regional growth forecasts that are used to develop future air quality forecasts for the AQMP. Development consistent with the growth

projections in the City of Santa Clarita General Plan is considered to be consistent with the AQMP. The proposed project is consistent with the land use designation and development density specified in the General Plan and therefore would not exceed the population or job growth projections used by the SCAQMD to develop the Air Quality Management Plan. Thus, no impact would occur, as the project is consistent with both criteria.

Mitigation Measures: No mitigation measures are required.

Level of Significance: Less than significant impact.

Expose Sensitive Receptors to Substantial Pollutant Concentrations

Sensitive receptors are defined as facilities or land uses that include members of the population who are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. The California Air Resources Board (CARB) has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis. As previously stated, the nearest sensitive receptors are the residences approximately 400 meters southwest of the project site, across I-5.

Construction-Generated Air Toxics

Construction-generated diesel PM emissions contribute to negative health impacts when construction is extended over lengthy periods of time. The use of diesel-powered equipment during construction would be temporary and episodic and would occur over several locations isolated from one another. Furthermore, the proposed project would be subject to and would comply with California regulations limiting vehicle idling to no more than 5 minutes, which would further reduce nearby sensitive receptors' exposure to temporary and variable diesel particulate matter emissions. Project construction would not be a substantial source of other CARB-identified TACs.

Construction projects on a site of less than 5 acres are generally considered to represent less than significant health risk impacts due to (1) limitations on the off-road diesel equipment able to operate and thus a reduced amount of generated DPM, (2) the reduced amount of dust-generating ground disturbance possible compared to larger construction sites, and (3) the reduced duration of construction activities compared to the development of larger sites. For these reasons and because diesel fumes disperse rapidly over relatively short distances, DPM generated by most construction activities, in and of itself, would not be expected to create conditions where the probability of contracting cancer is greater than 10 in 1 million for nearby receptors. Since the project site is 4.3 acres, a less than significant impact is expected.

In addition, SCAQMD Rule 403 requires that basic construction mitigation measures are employed during all construction projects, including measures that would substantially reduce nuisance fugitive dust.

Furthermore, as discussed in the LST analysis previously presented, results indicate that the proposed project would not exceed the SCAQMD localized significance thresholds, and a less than significant impact is expected during construction activity. LSTs were developed in response to environmental justice and health concerns raised by the public regarding exposure of individuals to criteria pollutants in local communities. Therefore, sensitive receptors would not be subject to a significant air quality impact during project construction. This impact is less than significant.

Carbon Monoxide Hot Spots

CO emissions are a function of vehicle idling time, meteorological conditions, and traffic flow. Under certain extreme meteorological conditions, CO concentrations near a congested roadway or intersection may reach unhealthful levels (i.e., adversely affecting residents, schoolchildren, hospital patients, the elderly, etc.).

The Basin is designated as an unclassified/attainment area for the federal CO standards and an attainment area for state standards. There has been a decline in CO emissions even though vehicle miles traveled on urban and rural roads in the United States have increased. On-road mobile source CO emissions declined 24 percent between 1989 and 1998, despite a 23 percent rise in motor vehicle miles traveled over the same 10 years. California trends have been consistent with national trends; CO emissions declined 20 percent in California from 1985 through 1997, while vehicle miles traveled increased 18 percent in the 1990s. Three major control programs have contributed to the reduced per-vehicle CO emissions: exhaust standards, cleaner-burning fuels, and motor vehicle inspection/maintenance programs.

A detailed CO analysis was conducted in the Federal Attainment Plan for Carbon Monoxide (CO Plan) for the SCAQMD's 2003 Air Quality Management Plan. The locations selected for microscale modeling in the CO Plan are worst-case intersections in the Basin and would likely experience the highest CO concentrations. Thus, the CO analysis in the CO Plan is used in a comparison to the proposed project, since it represents a worst-case scenario with heavy traffic volumes within the Basin.

Of the studied locations, the Wilshire Boulevard/Veteran Avenue intersection in Los Angeles experienced the highest CO concentration (4.6 parts per million [ppm]), which is well below the 35-ppm 1-hour CO federal standard. The Wilshire Boulevard/Veteran Avenue intersection is one of the most congested intersections in Southern California with an average daily traffic (ADT) volume of approximately 100,000 vehicles per day. Because CO hot spots were not experienced at the Wilshire Boulevard/Veteran Avenue intersection, it can be reasonably inferred that CO hot spots would not be experienced at any intersections near the project site due to the addition of approximately 1,237 daily trips that would occur as a result of project implementation. Therefore, impacts would be less than significant in this regard.

Mitigation Measures: No mitigation measures are required.

Level of Significance: Less than significant impact.

<u>Create Objectionable Odors Affecting a Substantial Number of People</u>

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

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; in fact, an odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another. It is also important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

Construction activities associated with the project may generate detectable odors from heavy-duty equipment exhaust. Construction-related odors would be short-term in nature and cease upon project completion. Additionally, construction-related odors dissipate rapidly, as the nature of construction necessitates the need to move equipment around the construction site throughout a workday. Any construction-related impacts to existing adjacent land uses would be short term and are less than significant.

In terms of operational activities, the SCAQMD (1993) CEQA Air Quality Handbook identifies land uses associated with odor complaints. These include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The proposed project does not include any uses identified by the SCAQMD as being associated with odors. Any operational-related impacts to existing adjacent land uses would be less than significant.

Mitigation Measures: No mitigation measures are required.

Level of Significance: Less than significant impact.

Result in a Cumulatively Considerable Net Increase of any Criteria Pollutant for Which the Project Region is Nonattainment Under an Applicable Federal or State Ambient Air Quality Standard (Including Releasing Emissions Which Exceed Quantitative Thresholds for Ozone Precursors)

Projects could contribute to an existing or projected air quality exceedance because the western region of Los Angeles County is currently in nonattainment for state ozone, PM₁₀, and PM_{2.5} standards and nonattainment for federal ozone and PM_{2.5} standards. With regard to determining the significance of the cumulative contribution from the project, the SCAQMD recommends that any given project's potential contribution to cumulative impacts be assessed using the same significance criteria as for project-specific impacts. Individual projects that do not generate operational or construction emissions exceeding the SCAQMD's daily thresholds for project-specific impacts would also not cause a cumulatively considerable increase in emissions for those pollutants for which the air basin is in nonattainment, and therefore would not be considered to have a significant, adverse air quality impact. Alternatively, individual project-related construction and operational emissions that exceed SCAQMD thresholds for project-specific impacts would be considered cumulatively considerable. As previously noted, the project will not exceed the applicable SCAQMD regional thresholds for construction and operational-source emissions. As such, the project will result in a less than cumulatively considerable impact.

Mitigation Measures: No mitigation measures are required.

Level of Significance: Less than cumulatively considerable impact.

References

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APPENDIX A CRITERIA AIR POLLUTANT MODELING OUTPUTS

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Wayne Mills Place Project - Los Angeles-South Coast County, Summer

Wayne Mills Place Project

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hotel	108.00	Room	1.30	156,816.00	0
Hotel	182.00	Room	2.30	264,264.00	0
Parking Lot	192.00	Space	0.70	76,800.00	0

1.2 Other Project Characteristics

UrbanizationUrbanWind Speed (m/s)2.2Precipitation Freq (Days)33Climate Zone9Operational Year2018

Utility Company Southern California Edison

 CO2 Intensity
 702.44
 CH4 Intensity
 0.029
 N20 Intensity
 0.006

 (lb/MWhr)
 (lb/MWhr)
 (lb/MWhr)
 (lb/MWhr)

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage adjusted per project applicant.

Construction Phase - Construction, paving, and painting assumed to occur simultaneously.

Demolition -

Vehicle Trips - Adjusted rates per traffic report.

Construction Off-road Equipment Mitigation - Per SCAQMD CEQA Handbook.

Wayne Mills Place Project - Los Angeles-South Coast County, Summer

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Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	40
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblConstructionPhase	NumDays	18.00	230.00
tblConstructionPhase	NumDays	18.00	230.00
tblConstructionPhase	PhaseEndDate	4/23/2018	3/2/2018
tblConstructionPhase	PhaseEndDate	3/28/2018	3/2/2018
tblConstructionPhase	PhaseStartDate	3/29/2018	4/15/2017
tblConstructionPhase	PhaseStartDate	3/3/2018	4/15/2017
tblLandUse	LotAcreage	3.60	1.30
tblLandUse	LotAcreage	6.07	2.30
tblLandUse	LotAcreage	1.73	0.70
tblVehicleTrips	ST_TR	8.19	4.27
tblVehicleTrips	SU_TR	5.95	4.27
tblVehicleTrips	WD_TR	8.17	4.27

2.0 Emissions Summary

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Wayne Mills Place Project - Los Angeles-South Coast County, Summer

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year					lb/d	day							lb/d	lay		
2017	24.3185	57.7699	52.4312	0.1057	18.2675	3.0961	21.1479	9.9840	2.9017	12.6341	0.0000	10,644.43 30	10,644.43 30	1.5554	0.0000	10,683.31 87
2018	23.3487	51.0940	49.2517	0.1046	3.5541	2.5852	6.1393	0.9545	2.4249	3.3794	0.0000	10,482.20 49	10,482.20 49	1.5156	0.0000	10,520.09 53
Maximum	24.3185	57.7699	52.4312	0.1057	18.2675	3.0961	21.1479	9.9840	2.9017	12.6341	0.0000	10,644.43 30	10,644.43 30	1.5554	0.0000	10,683.31 87

Mitigated Construction

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year					lb/	/day							lb	/day		
2017	24.3185	57.7699	52.4312	0.1057	7.0416	3.0961	9.9220	3.8347	2.9017	6.4847	0.0000	10,644.43 30	10,644.43 30	1.5554	0.0000	10,683.31 87
2018	23.3487	51.0940	49.2517	0.1046	2.3511	2.5852	4.9363	0.6592	2.4249	3.0841	0.0000	10,482.20 49	10,482.20 49	1.5156	0.0000	10,520.09 53
Maximum	24.3185	57.7699	52.4312	0.1057	7.0416	3.0961	9.9220	3.8347	2.9017	6.4847	0.0000	10,644.43 30	10,644.43 30	1.5554	0.0000	10,683.31 87
	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	56.96	0.00	45.55	58.92	0.00	40.25	0.00	0.00	0.00	0.00	0.00	0.00

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Wayne Mills Place Project - Los Angeles-South Coast County, Summer

2.2 Overall Operational Unmitigated Operational

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Area	9.4446	4.7000e- 004	0.0499	0.0000		1.8000e- 004	1.8000e- 004		1.8000e- 004	1.8000e- 004		0.1055	0.1055	2.9000e- 004		0.1127
Energy	0.2996	2.7235	2.2877	0.0163		0.2070	0.2070		0.2070	0.2070		3,268.205 1	3,268.205 1	0.0626	0.0599	3,287.626 4
Mobile	5.4037	22.4374	64.4136	0.1749	7.2023	0.2070	7.4092	2.0473	0.1947	2.2420		17,733.75 58	17,733.75 58	1.1077		17,761.44 82
Total	15.1479	25.1614	66.7512	0.1912	7.2023	0.4142	7.6164	2.0473	0.4019	2.4492		21,002.06 64	21,002.06 64	1.1706	0.0599	21,049.18 73

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Area	9.4446	4.7000e- 004	0.0499	0.0000		1.8000e- 004	1.8000e- 004		1.8000e- 004	1.8000e- 004		0.1055	0.1055	2.9000e- 004		0.1127
Energy	0.2996	2.7235	2.2877	0.0163		0.2070	0.2070		0.2070	0.2070		3,268.205 1	3,268.205 1	0.0626	0.0599	3,287.626 4
Mobile	5.4037	22.4374	64.4136	0.1749	7.2023	0.2070	7.4092	2.0473	0.1947	2.2420		17,733.75 58	17,733.75 58	1.1077		17,761.44 82
Total	15.1479	25.1614	66.7512	0.1912	7.2023	0.4142	7.6164	2.0473	0.4019	2.4492		21,002.06 64	21,002.06 64	1.1706	0.0599	21,049.18 73

Wayne Mills Place Project - Los Angeles-South Coast County, Summer

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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	3/1/2017	3/28/2017	5	20	
2	Site Preparation	Site Preparation	3/29/2017	4/4/2017	5	5	
3	Grading	Grading	4/5/2017	4/14/2017	5	8	
4	Building Construction	Building Construction	4/15/2017	3/2/2018	5	230	
5	Paving	Paving	4/15/2017	3/2/2018	5	230	
6	Architectural Coating	Architectural Coating	4/15/2017	3/2/2018	5	230	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0.7

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 631,620; Non-Residential Outdoor: 210,540; Striped Parking Area: 4,608 (Architectural Coating – sqft)

OffRoad Equipment

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Wayne Mills Place Project - Los Angeles-South Coast County, Summer

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Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Grading	Excavators	1	8.00	158	0.38
Paving	Pavers	1	8.00	130	0.42
Paving	Rollers	2	6.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Paving	Paving Equipment	2	6.00	132	0.36
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

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Wayne Mills Place Project - Los Angeles-South Coast County, Summer

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
Architectural Coating	1	42.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	209.00	82.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	793.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	lay		
Fugitive Dust					8.5757	0.0000	8.5757	1.2984	0.0000	1.2984			0.0000			0.0000
Off-Road	4.1031	42.7475	23.0122	0.0388		2.1935	2.1935		2.0425	2.0425		3,924.283 3	3,924.283 3	1.0730		3,951.107 0
Total	4.1031	42.7475	23.0122	0.0388	8.5757	2.1935	10.7692	1.2984	2.0425	3.3410		3,924.283 3	3,924.283 3	1.0730		3,951.107 0

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Wayne Mills Place Project - Los Angeles-South Coast County, Summer

3.2 Demolition - 2017

<u>Unmitigated Construction Off-Site</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	lay		
Hauling	0.4476	13.7825	2.8148	0.0325	0.6932	0.0728	0.7660	0.1900	0.0696	0.2597		3,500.463 6	3,500.463 6	0.2446		3,506.577 6
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0938	0.0720	0.9234	1.9500e- 003	0.1677	1.5600e- 003	0.1692	0.0445	1.4400e- 003	0.0459		193.3376	193.3376	8.0300e- 003		193.5383
Total	0.5414	13.8544	3.7382	0.0344	0.8608	0.0744	0.9352	0.2345	0.0711	0.3056		3,693.801 2	3,693.801 2	0.2526		3,700.115 9

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e				
Category	lb/day												lb/day							
Fugitive Dust					3.2802	0.0000	3.2802	0.4967	0.0000	0.4967			0.0000			0.0000				
Off-Road	4.1031	42.7475	23.0122	0.0388	 	2.1935	2.1935	 	2.0425	2.0425	0.0000	3,924.283 3	3,924.283 3	1.0730	 	3,951.107 0				
Total	4.1031	42.7475	23.0122	0.0388	3.2802	2.1935	5.4737	0.4967	2.0425	2.5392	0.0000	3,924.283 3	3,924.283	1.0730		3,951.107 0				

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Wayne Mills Place Project - Los Angeles-South Coast County, Summer

3.2 Demolition - 2017

<u>Mitigated Construction Off-Site</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	lb/day										
Hauling	0.4476	13.7825	2.8148	0.0325	0.4835	0.0728	0.5563	0.1385	0.0696	0.2082		3,500.463 6	3,500.463 6	0.2446		3,506.577 6
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	 	0.0000
Worker	0.0938	0.0720	0.9234	1.9500e- 003	0.1094	1.5600e- 003	0.1109	0.0302	1.4400e- 003	0.0316		193.3376	193.3376	8.0300e- 003	 	193.5383
Total	0.5414	13.8544	3.7382	0.0344	0.5929	0.0744	0.6672	0.1687	0.0711	0.2398		3,693.801 2	3,693.801	0.2526		3,700.115 9

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e				
Category	lb/day												lb/day							
Fugitive Dust	i i				18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000				
Off-Road	4.9608	52.2754	23.4554	0.0380		2.8786	2.8786		2.6483	2.6483		3,894.950 0	3,894.950 0	1.1934	i ! !	3,924.785 2				
Total	4.9608	52.2754	23.4554	0.0380	18.0663	2.8786	20.9448	9.9307	2.6483	12.5790		3,894.950 0	3,894.950 0	1.1934		3,924.785 2				

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Wayne Mills Place Project - Los Angeles-South Coast County, Summer

3.3 Site Preparation - 2017

<u>Unmitigated Construction Off-Site</u>

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/	lb/day										
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1126	0.0863	1.1081	2.3300e- 003	0.2012	1.8700e- 003	0.2031	0.0534	1.7300e- 003	0.0551		232.0052	232.0052	9.6300e- 003		232.2460
Total	0.1126	0.0863	1.1081	2.3300e- 003	0.2012	1.8700e- 003	0.2031	0.0534	1.7300e- 003	0.0551		232.0052	232.0052	9.6300e- 003		232.2460

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e				
Category	lb/day												lb/day							
Fugitive Dust					6.9103	0.0000	6.9103	3.7985	0.0000	3.7985			0.0000			0.0000				
Off-Road	4.9608	52.2754	23.4554	0.0380	 	2.8786	2.8786		2.6483	2.6483	0.0000	3,894.950 0	3,894.950 0	1.1934	 	3,924.785 2				
Total	4.9608	52.2754	23.4554	0.0380	6.9103	2.8786	9.7889	3.7985	2.6483	6.4468	0.0000	3,894.950 0	3,894.950 0	1.1934		3,924.785 2				

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Wayne Mills Place Project - Los Angeles-South Coast County, Summer

3.3 Site Preparation - 2017

<u>Mitigated Construction Off-Site</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/	lb/day										
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1126	0.0863	1.1081	2.3300e- 003	0.1312	1.8700e- 003	0.1331	0.0362	1.7300e- 003	0.0379		232.0052	232.0052	9.6300e- 003	; ! ! !	232.2460
Total	0.1126	0.0863	1.1081	2.3300e- 003	0.1312	1.8700e- 003	0.1331	0.0362	1.7300e- 003	0.0379		232.0052	232.0052	9.6300e- 003		232.2460

3.4 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e				
Category	lb/day												lb/day							
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000				
Off-Road	3.0705	33.8868	17.1042	0.0297		1.7774	1.7774		1.6352	1.6352		3,037.910 7	3,037.910 7	0.9308		3,061.180 9				
Total	3.0705	33.8868	17.1042	0.0297	6.5523	1.7774	8.3298	3.3675	1.6352	5.0027		3,037.910 7	3,037.910 7	0.9308		3,061.180 9				

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Wayne Mills Place Project - Los Angeles-South Coast County, Summer

3.4 Grading - 2017

<u>Unmitigated Construction Off-Site</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0938	0.0720	0.9234	1.9500e- 003	0.1677	1.5600e- 003	0.1692	0.0445	1.4400e- 003	0.0459		193.3376	193.3376	8.0300e- 003		193.5383
Total	0.0938	0.0720	0.9234	1.9500e- 003	0.1677	1.5600e- 003	0.1692	0.0445	1.4400e- 003	0.0459		193.3376	193.3376	8.0300e- 003		193.5383

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	lay		
Fugitive Dust					2.5063	0.0000	2.5063	1.2881	0.0000	1.2881		! !	0.0000			0.0000
Off-Road	3.0705	33.8868	17.1042	0.0297	 	1.7774	1.7774		1.6352	1.6352	0.0000	3,037.910 7	3,037.910 7	0.9308	! ! !	3,061.180 9
Total	3.0705	33.8868	17.1042	0.0297	2.5063	1.7774	4.2837	1.2881	1.6352	2.9233	0.0000	3,037.910 7	3,037.910 7	0.9308		3,061.180 9

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Wayne Mills Place Project - Los Angeles-South Coast County, Summer

3.4 Grading - 2017

<u>Mitigated Construction Off-Site</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	 	0.0000
Worker	0.0938	0.0720	0.9234	1.9500e- 003	0.1094	1.5600e- 003	0.1109	0.0302	1.4400e- 003	0.0316		193.3376	193.3376	8.0300e- 003		193.5383
Total	0.0938	0.0720	0.9234	1.9500e- 003	0.1094	1.5600e- 003	0.1109	0.0302	1.4400e- 003	0.0316		193.3376	193.3376	8.0300e- 003		193.5383

3.5 Building Construction - 2017

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	lay		
Off-Road	3.1149	26.5546	18.1825	0.0269		1.7879	1.7879		1.6791	1.6791		2,650.979 7	2,650.979 7	0.6531		2,667.307 8
Total	3.1149	26.5546	18.1825	0.0269		1.7879	1.7879		1.6791	1.6791		2,650.979 7	2,650.979 7	0.6531		2,667.307 8

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Wayne Mills Place Project - Los Angeles-South Coast County, Summer

3.5 Building Construction - 2017 Unmitigated Construction Off-Site

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	lay		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4281	10.6916	3.0420	0.0218	0.5249	0.0896	0.6145	0.1511	0.0857	0.2368		2,317.262 0	2,317.262 0	0.1602		2,321.267 8
Worker	1.3070	1.0024	12.8662	0.0271	2.3361	0.0217	2.3579	0.6196	0.0201	0.6396		2,693.837 7	2,693.837 7	0.1118		2,696.633 6
Total	1.7350	11.6940	15.9082	0.0489	2.8611	0.1113	2.9723	0.7707	0.1057	0.8764		5,011.099 7	5,011.099 7	0.2721		5,017.901 3

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	lay		
Off-Road	3.1149	26.5546	18.1825	0.0269		1.7879	1.7879		1.6791	1.6791	0.0000	2,650.979 7	2,650.979 7	0.6531		2,667.307 8
Total	3.1149	26.5546	18.1825	0.0269		1.7879	1.7879		1.6791	1.6791	0.0000	2,650.979 7	2,650.979 7	0.6531		2,667.307 8

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Wayne Mills Place Project - Los Angeles-South Coast County, Summer

3.5 Building Construction - 2017 Mitigated Construction Off-Site

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4281	10.6916	3.0420	0.0218	0.3753	0.0896	0.4649	0.1144	0.0857	0.2001		2,317.262 0	2,317.262 0	0.1602	, ! ! !	2,321.267 8
Worker	1.3070	1.0024	12.8662	0.0271	1.5237	0.0217	1.5455	0.4202	0.0201	0.4402		2,693.837 7	2,693.837 7	0.1118	; ! ! !	2,696.633 6
Total	1.7350	11.6940	15.9082	0.0489	1.8991	0.1113	2.0103	0.5346	0.1057	0.6403		5,011.099 7	5,011.099 7	0.2721		5,017.901 3

3.5 Building Construction - 2018

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	lay		
Off-Road	2.6795	23.3900	17.5804	0.0269		1.4999	1.4999		1.4099	1.4099		2,620.935 1	2,620.935 1	0.6421		2,636.988 3
Total	2.6795	23.3900	17.5804	0.0269		1.4999	1.4999		1.4099	1.4099		2,620.935 1	2,620.935 1	0.6421		2,636.988 3

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Wayne Mills Place Project - Los Angeles-South Coast County, Summer

3.5 Building Construction - 2018

<u>Unmitigated Construction Off-Site</u>

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3772	10.0499	2.7478	0.0217	0.5249	0.0708	0.5958	0.1511	0.0678	0.2189		2,309.771 2	2,309.771 2	0.1521	 	2,313.573 5
Worker	1.1547	0.8714	11.2876	0.0263	2.3361	0.0208	2.3570	0.6196	0.0192	0.6388		2,620.211 8	2,620.211 8	0.0983	 	2,622.668 6
Total	1.5319	10.9213	14.0353	0.0480	2.8611	0.0917	2.9527	0.7707	0.0870	0.8576		4,929.983 0	4,929.983 0	0.2504		4,936.242 1

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	lay		
Off-Road	2.6795	23.3900	17.5804	0.0269		1.4999	1.4999		1.4099	1.4099	0.0000	2,620.935 1	2,620.935 1	0.6421		2,636.988 3
Total	2.6795	23.3900	17.5804	0.0269		1.4999	1.4999		1.4099	1.4099	0.0000	2,620.935 1	2,620.935 1	0.6421		2,636.988

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Wayne Mills Place Project - Los Angeles-South Coast County, Summer

3.5 Building Construction - 2018 Mitigated Construction Off-Site

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/o	day							lb/d	lay		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3772	10.0499	2.7478	0.0217	0.3753	0.0708	0.4462	0.1144	0.0678	0.1822		2,309.771 2	2,309.771 2	0.1521		2,313.573 5
Worker	1.1547	0.8714	11.2876	0.0263	1.5237	0.0208	1.5446	0.4202	0.0192	0.4394		2,620.211 8	2,620.211 8	0.0983		2,622.668 6
Total	1.5319	10.9213	14.0353	0.0480	1.8991	0.0917	1.9907	0.5346	0.0870	0.6215		4,929.983 0	4,929.983 0	0.2504		4,936.242 1

3.6 Paving - 2017

<u>Unmitigated Construction On-Site</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Off-Road	1.6763	17.0389	12.6556	0.0189		1.0172	1.0172		0.9376	0.9376		1,901.776 6	1,901.776 6	0.5674		1,915.960 4
	7.9700e- 003	 				0.0000	0.0000	 	0.0000	0.0000			0.0000		 	0.0000
Total	1.6843	17.0389	12.6556	0.0189		1.0172	1.0172		0.9376	0.9376		1,901.776 6	1,901.776 6	0.5674		1,915.960 4

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Wayne Mills Place Project - Los Angeles-South Coast County, Summer

3.6 Paving - 2017

<u>Unmitigated Construction Off-Site</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	 	0.0000
Worker	0.1251	0.0959	1.2312	2.5900e- 003	0.2236	2.0800e- 003	0.2256	0.0593	1.9200e- 003	0.0612		257.7835	257.7835	0.0107	 	258.0511
Total	0.1251	0.0959	1.2312	2.5900e- 003	0.2236	2.0800e- 003	0.2256	0.0593	1.9200e- 003	0.0612		257.7835	257.7835	0.0107		258.0511

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	lay		
Off-Road	1.6763	17.0389	12.6556	0.0189		1.0172	1.0172		0.9376	0.9376	0.0000	1,901.776 6	1,901.776 6	0.5674		1,915.960 4
Paving	7.9700e- 003	 			 	0.0000	0.0000		0.0000	0.0000			0.0000		;	0.0000
Total	1.6843	17.0389	12.6556	0.0189		1.0172	1.0172		0.9376	0.9376	0.0000	1,901.776 6	1,901.776 6	0.5674		1,915.960 4

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3.6 Paving - 2017

<u>Mitigated Construction Off-Site</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	, ! ! !	0.0000
Worker	0.1251	0.0959	1.2312	2.5900e- 003	0.1458	2.0800e- 003	0.1479	0.0402	1.9200e- 003	0.0421		257.7835	257.7835	0.0107	, ! ! !	258.0511
Total	0.1251	0.0959	1.2312	2.5900e- 003	0.1458	2.0800e- 003	0.1479	0.0402	1.9200e- 003	0.0421		257.7835	257.7835	0.0107		258.0511

3.6 Paving - 2018
Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	day		
Off-Road	1.4239	14.5184	12.4333	0.0189		0.8370	0.8370		0.7718	0.7718		1,872.550 5	1,872.550 5	0.5672		1,886.731 2
Paving	7.9700e- 003					0.0000	0.0000		0.0000	0.0000		i i i	0.0000		 	0.0000
Total	1.4319	14.5184	12.4333	0.0189		0.8370	0.8370		0.7718	0.7718		1,872.550 5	1,872.550 5	0.5672		1,886.731 2

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3.6 Paving - 2018
<u>Unmitigated Construction Off-Site</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	lay		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1105	0.0834	1.0802	2.5200e- 003	0.2236	1.9900e- 003	0.2256	0.0593	1.8400e- 003	0.0611		250.7380	250.7380	9.4000e- 003		250.9731
Total	0.1105	0.0834	1.0802	2.5200e- 003	0.2236	1.9900e- 003	0.2256	0.0593	1.8400e- 003	0.0611		250.7380	250.7380	9.4000e- 003		250.9731

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	lay		
Off-Road	1.4239	14.5184	12.4333	0.0189		0.8370	0.8370	 	0.7718	0.7718	0.0000	1,872.550 5	1,872.550 5	0.5672		1,886.731 2
Paving	7.9700e- 003	 				0.0000	0.0000	 	0.0000	0.0000		i	0.0000			0.0000
Total	1.4319	14.5184	12.4333	0.0189		0.8370	0.8370		0.7718	0.7718	0.0000	1,872.550 5	1,872.550 5	0.5672		1,886.731 2

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Wayne Mills Place Project - Los Angeles-South Coast County, Summer

3.6 Paving - 2018

<u>Mitigated Construction Off-Site</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1105	0.0834	1.0802	2.5200e- 003	0.1458	1.9900e- 003	0.1478	0.0402	1.8400e- 003	0.0420		250.7380	250.7380	9.4000e- 003		250.9731
Total	0.1105	0.0834	1.0802	2.5200e- 003	0.1458	1.9900e- 003	0.1478	0.0402	1.8400e- 003	0.0420		250.7380	250.7380	9.4000e- 003		250.9731

3.7 Architectural Coating - 2017 <u>Unmitigated Construction On-Site</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Archit. Coating	17.0642					0.0000	0.0000		0.0000	0.0000		1 1 1	0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e- 003		0.1733	0.1733	 	0.1733	0.1733		281.4481	281.4481	0.0297		282.1909
Total	17.3965	2.1850	1.8681	2.9700e- 003		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297		282.1909

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3.7 Architectural Coating - 2017 <u>Unmitigated Construction Off-Site</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	,	0.0000
Worker	0.2627	0.2015	2.5856	5.4500e- 003	0.4695	4.3700e- 003	0.4738	0.1245	4.0300e- 003	0.1285		541.3454	541.3454	0.0225	,	541.9072
Total	0.2627	0.2015	2.5856	5.4500e- 003	0.4695	4.3700e- 003	0.4738	0.1245	4.0300e- 003	0.1285		541.3454	541.3454	0.0225		541.9072

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Archit. Coating	17.0642					0.0000	0.0000		0.0000	0.0000	 		0.0000			0.0000
	0.3323	2.1850	1.8681	2.9700e- 003		0.1733	0.1733		0.1733	0.1733	0.0000	281.4481	281.4481	0.0297		282.1909
Total	17.3965	2.1850	1.8681	2.9700e- 003		0.1733	0.1733		0.1733	0.1733	0.0000	281.4481	281.4481	0.0297		282.1909

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Wayne Mills Place Project - Los Angeles-South Coast County, Summer

3.7 Architectural Coating - 2017

<u>Mitigated Construction Off-Site</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	, ! ! !	0.0000
Worker	0.2627	0.2015	2.5856	5.4500e- 003	0.3062	4.3700e- 003	0.3106	0.0844	4.0300e- 003	0.0885		541.3454	541.3454	0.0225	; ! ! !	541.9072
Total	0.2627	0.2015	2.5856	5.4500e- 003	0.3062	4.3700e- 003	0.3106	0.0844	4.0300e- 003	0.0885		541.3454	541.3454	0.0225		541.9072

3.7 Architectural Coating - 2018 <u>Unmitigated Construction On-Site</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	day		
Archit. Coating	17.0642					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e- 003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267	 	282.1171
Total	17.3629	2.0058	1.8542	2.9700e- 003	-	0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.1171

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3.7 Architectural Coating - 2018 <u>Unmitigated Construction Off-Site</u>

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/o	day							lb/c	lay		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2320	0.1751	2.2683	5.2900e- 003	0.4695	4.1900e- 003	0.4737	0.1245	3.8600e- 003	0.1284		526.5497	526.5497	0.0198		527.0435
Total	0.2320	0.1751	2.2683	5.2900e- 003	0.4695	4.1900e- 003	0.4737	0.1245	3.8600e- 003	0.1284		526.5497	526.5497	0.0198		527.0435

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Archit. Coating	17.0642					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e- 003		0.1506	0.1506	 	0.1506	0.1506	0.0000	281.4485	281.4485	0.0267	; ! ! !	282.1171
Total	17.3629	2.0058	1.8542	2.9700e- 003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267		282.1171

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3.7 Architectural Coating - 2018 Mitigated Construction Off-Site

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	 	0.0000
Worker	0.2320	0.1751	2.2683	5.2900e- 003	0.3062	4.1900e- 003	0.3104	0.0844	3.8600e- 003	0.0883		526.5497	526.5497	0.0198		527.0435
Total	0.2320	0.1751	2.2683	5.2900e- 003	0.3062	4.1900e- 003	0.3104	0.0844	3.8600e- 003	0.0883		526.5497	526.5497	0.0198		527.0435

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	lay		
Mitigated	5.4037	22.4374	64.4136	0.1749	7.2023	0.2070	7.4092	2.0473	0.1947	2.2420		17,733.75 58	17,733.75 58	1.1077		17,761.44 82
Unmitigated	5.4037	22.4374	64.4136	0.1749	7.2023	0.2070	7.4092	2.0473	0.1947	2.2420		17,733.75 58	17,733.75 58	1.1077		17,761.44 82

4.2 Trip Summary Information

	Avei	rage Daily Trip Ra	ate	Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hotel	461.16	461.16	461.16	1,100,407	1,100,407
Hotel	777.14	777.14	777.14	1,854,389	1,854,389
Parking Lot	0.00	0.00	0.00		
Total	1,238.30	1,238.30	1,238.30	2,954,796	2,954,796

4.3 Trip Type Information

		Miles			Trip %			Trip Purpos	e %
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Hotel	16.60	8.40	6.90	19.40	61.60	19.00	58	38	4
Hotel	16.60	8.40	6.90	19.40	61.60	19.00	58	38	4
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Wayne Mills Place Project - Los Angeles-South Coast County, Summer

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Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Hotel	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944
Hotel	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944
Parking Lot	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

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					lb/d	day							lb/c	lay		
NaturalGas Mitigated	0.2996	2.7235	2.2877	0.0163		0.2070	0.2070		0.2070	0.2070		3,268.205 1	3,268.205 1	0.0626	0.0599	3,287.626 4
	0.2996	2.7235	2.2877	0.0163		0.2070	0.2070		0.2070	0.2070		3,268.205 1	3,268.205 1	0.0626	0.0599	3,287.626 4

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5.2 Energy by Land Use - NaturalGas <u>Unmitigated</u>

	NaturalGa s Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr					lb/d	day							lb/c	lay		
Hotel	10345.6	0.1116	1.0143	0.8520	6.0900e- 003		0.0771	0.0771		0.0771	0.0771		1,217.124 7	1,217.124 7	0.0233	0.0223	1,224.357 4
Hotel	17434.2	0.1880	1.7092	1.4358	0.0103		0.1299	0.1299	, 	0.1299	0.1299		2,051.080 5	2,051.080 5	0.0393	0.0376	2,063.269 0
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	,	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.2996	2.7235	2.2878	0.0164		0.2070	0.2070		0.2070	0.2070		3,268.205 1	3,268.205 1	0.0626	0.0599	3,287.626 4

Mitigated

	NaturalGa s Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr					lb/d	day							lb/c	lay		
Hotel	17.4342	0.1880	1.7092	1.4358	0.0103		0.1299	0.1299		0.1299	0.1299		2,051.080 5	2,051.080 5	0.0393	0.0376	2,063.269 0
Hotel	10.3456	0.1116	1.0143	0.8520	6.0900e- 003		0.0771	0.0771		0.0771	0.0771		1,217.124 7	1,217.124 7	0.0233	0.0223	1,224.357 4
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000]	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.2996	2.7235	2.2878	0.0164		0.2070	0.2070		0.2070	0.2070		3,268.205 1	3,268.205 1	0.0626	0.0599	3,287.626 4

6.0 Area Detail

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6.1 Mitigation Measures Area

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Mitigated	9.4446	4.7000e- 004	0.0499	0.0000		1.8000e- 004	1.8000e- 004		1.8000e- 004	1.8000e- 004		0.1055	0.1055	2.9000e- 004		0.1127
Unmitigated	9.4446	4.7000e- 004	0.0499	0.0000		1.8000e- 004	1.8000e- 004		1.8000e- 004	1.8000e- 004		0.1055	0.1055	2.9000e- 004		0.1127

6.2 Area by SubCategory Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory					lb/d	day							lb/d	day		
Architectural Coating	1.0753					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.3646		,			0.0000	0.0000	1 	0.0000	0.0000		,	0.0000			0.0000
Landscaping	4.7700e- 003	4.7000e- 004	0.0499	0.0000		1.8000e- 004	1.8000e- 004	y : : :	1.8000e- 004	1.8000e- 004	#	0.1055	0.1055	2.9000e- 004		0.1127
Total	9.4446	4.7000e- 004	0.0499	0.0000		1.8000e- 004	1.8000e- 004		1.8000e- 004	1.8000e- 004		0.1055	0.1055	2.9000e- 004		0.1127

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Wayne Mills Place Project - Los Angeles-South Coast County, Summer

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory					lb/d	day							lb/d	lay		
Architectural Coating	1.0753					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.3646					0.0000	0.0000	1 	0.0000	0.0000			0.0000			0.0000
Landscaping	4.7700e- 003	4.7000e- 004	0.0499	0.0000		1.8000e- 004	1.8000e- 004	1 1 1 1 1	1.8000e- 004	1.8000e- 004		0.1055	0.1055	2.9000e- 004		0.1127
Total	9.4446	4.7000e- 004	0.0499	0.0000		1.8000e- 004	1.8000e- 004		1.8000e- 004	1.8000e- 004		0.1055	0.1055	2.9000e- 004		0.1127

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Wayne Mills Place Project - Los Angeles-South Coast County, Summer

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
101 00 21 0	

11.0 Vegetation

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Wayne Mills Place Project - Los Angeles-South Coast County, Winter

Wayne Mills Place Project Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hotel	108.00	Room	1.30	156,816.00	0
Hotel	182.00	Room	2.30	264,264.00	0
Parking Lot	192.00	Space	0.70	76,800.00	0

1.2 Other Project Characteristics

UrbanizationUrbanWind Speed (m/s)2.2Precipitation Freq (Days)33Climate Zone9Operational Year2018

Utility Company Southern California Edison

 CO2 Intensity
 702.44
 CH4 Intensity
 0.029
 N20 Intensity
 0.006

 (lb/MWhr)
 (lb/MWhr)
 (lb/MWhr)
 (lb/MWhr)

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage adjusted per project applicant.

Construction Phase - Construction, paving, and painting assumed to occur simultaneously.

Demolition -

Vehicle Trips - Adjusted rates per traffic report.

Construction Off-road Equipment Mitigation - Per SCAQMD CEQA Handbook.

Wayne Mills Place Project - Los Angeles-South Coast County, Winter

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Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	40
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblConstructionPhase	NumDays	18.00	230.00
tblConstructionPhase	NumDays	18.00	230.00
tblConstructionPhase	PhaseEndDate	4/23/2018	3/2/2018
tblConstructionPhase	PhaseEndDate	3/28/2018	3/2/2018
tblConstructionPhase	PhaseStartDate	3/29/2018	4/15/2017
tblConstructionPhase	PhaseStartDate	3/3/2018	4/15/2017
tblLandUse	LotAcreage	3.60	1.30
tblLandUse	LotAcreage	6.07	2.30
tblLandUse	LotAcreage	1.73	0.70
tblVehicleTrips	ST_TR	8.19	4.27
tblVehicleTrips	SU_TR	5.95	4.27
tblVehicleTrips	WD_TR	8.17	4.27

2.0 Emissions Summary

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Wayne Mills Place Project - Los Angeles-South Coast County, Winter

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year					lb/d	day							lb/d	lay		
2017	24.5152	57.9468	51.4849	0.1031	18.2675	3.0975	21.1479	9.9840	2.9030	12.6341	0.0000	10,380.86 33	10,380.86 33	1.5585	0.0000	10,419.82 48
2018	23.5245	51.2380	48.3643	0.1021	3.5541	2.5864	6.1405	0.9545	2.4260	3.3804	0.0000	10,222.32 39	10,222.32 39	1.5187	0.0000	10,260.29 14
Maximum	24.5152	57.9468	51.4849	0.1031	18.2675	3.0975	21.1479	9.9840	2.9030	12.6341	0.0000	10,380.86 33	10,380.86 33	1.5585	0.0000	10,419.82 48

Mitigated Construction

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year					lb/	'day							lb/	'day		
2017	24.5152	57.9468	51.4849	0.1031	7.0416	3.0975	9.9220	3.8347	2.9030	6.4847	0.0000	10,380.86 33	10,380.86 33	1.5585	0.0000	10,419.82 48
2018	23.5245	51.2380	48.3643	0.1021	2.3511	2.5864	4.9375	0.6592	2.4260	3.0852	0.0000	10,222.32 39	10,222.32 39	1.5187	0.0000	10,260.29 14
Maximum	24.5152	57.9468	51.4849	0.1031	7.0416	3.0975	9.9220	3.8347	2.9030	6.4847	0.0000	10,380.86 33	10,380.86 33	1.5585	0.0000	10,419.82 48
	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	56.96	0.00	45.55	58.92	0.00	40.24	0.00	0.00	0.00	0.00	0.00	0.00

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Wayne Mills Place Project - Los Angeles-South Coast County, Winter

2.2 Overall Operational Unmitigated Operational

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day												lb/d	lay		
Area	9.4446	4.7000e- 004	0.0499	0.0000		1.8000e- 004	1.8000e- 004		1.8000e- 004	1.8000e- 004		0.1055	0.1055	2.9000e- 004		0.1127
Energy	0.2996	2.7235	2.2877	0.0163		0.2070	0.2070		0.2070	0.2070		3,268.205 1	3,268.205 1	0.0626	0.0599	3,287.626 4
Mobile	5.2838	23.0104	62.2853	0.1661	7.2023	0.2088	7.4111	2.0473	0.1965	2.2438		16,850.91 20	16,850.91 20	1.1077		16,878.60 47
Total	15.0280	25.7344	64.6230	0.1824	7.2023	0.4160	7.6182	2.0473	0.4037	2.4509		20,119.22 27	20,119.22 27	1.1706	0.0599	20,166.34 38

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Area	9.4446	4.7000e- 004	0.0499	0.0000		1.8000e- 004	1.8000e- 004		1.8000e- 004	1.8000e- 004		0.1055	0.1055	2.9000e- 004		0.1127
Energy	0.2996	2.7235	2.2877	0.0163		0.2070	0.2070		0.2070	0.2070		3,268.205 1	3,268.205 1	0.0626	0.0599	3,287.626 4
Mobile	5.2838	23.0104	62.2853	0.1661	7.2023	0.2088	7.4111	2.0473	0.1965	2.2438		16,850.91 20	16,850.91 20	1.1077		16,878.60 47
Total	15.0280	25.7344	64.6230	0.1824	7.2023	0.4160	7.6182	2.0473	0.4037	2.4509		20,119.22 27	20,119.22 27	1.1706	0.0599	20,166.34 38

Wayne Mills Place Project - Los Angeles-South Coast County, Winter

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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	3/1/2017	3/28/2017	5	20	
2	Site Preparation	Site Preparation	3/29/2017	4/4/2017	5	5	
3	Grading	Grading	4/5/2017	4/14/2017	5	8	
4	Building Construction	Building Construction	4/15/2017	3/2/2018	5	230	
5	Paving	Paving	4/15/2017	3/2/2018	5	230	
6	Architectural Coating	Architectural Coating	4/15/2017	3/2/2018	5	230	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0.7

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 631,620; Non-Residential Outdoor: 210,540; Striped Parking Area: 4,608 (Architectural Coating – sqft)

OffRoad Equipment

Wayne Mills Place Project - Los Angeles-South Coast County, Winter

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Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Grading	Excavators	1	8.00	158	0.38
Paving	Pavers	1	8.00	130	0.42
Paving	Rollers	2	6.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Paving	Paving Equipment	2	6.00	132	0.36
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

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Wayne Mills Place Project - Los Angeles-South Coast County, Winter

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
Architectural Coating	1	42.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	209.00	82.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	793.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2017

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Fugitive Dust					8.5757	0.0000	8.5757	1.2984	0.0000	1.2984			0.0000			0.0000
Off-Road	4.1031	42.7475	23.0122	0.0388		2.1935	2.1935		2.0425	2.0425		3,924.283 3	3,924.283 3	1.0730		3,951.107 0
Total	4.1031	42.7475	23.0122	0.0388	8.5757	2.1935	10.7692	1.2984	2.0425	3.3410		3,924.283 3	3,924.283	1.0730		3,951.107 0

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Wayne Mills Place Project - Los Angeles-South Coast County, Winter

3.2 Demolition - 2017

<u>Unmitigated Construction Off-Site</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	lay		
Hauling	0.4583	13.9845	3.0133	0.0319	0.6932	0.0740	0.7671	0.1900	0.0708	0.2608		3,443.735 5	3,443.735 5	0.2543		3,450.093 2
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1037	0.0797	0.8549	1.8300e- 003	0.1677	1.5600e- 003	0.1692	0.0445	1.4400e- 003	0.0459		182.0869	182.0869	7.6100e- 003		182.2772
Total	0.5621	14.0641	3.8681	0.0338	0.8608	0.0755	0.9364	0.2345	0.0722	0.3067		3,625.822 5	3,625.822 5	0.2619		3,632.370 4

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	lay		
Fugitive Dust					3.2802	0.0000	3.2802	0.4967	0.0000	0.4967		1 1 1	0.0000			0.0000
Off-Road	4.1031	42.7475	23.0122	0.0388		2.1935	2.1935		2.0425	2.0425	0.0000	3,924.283 3	3,924.283 3	1.0730		3,951.107 0
Total	4.1031	42.7475	23.0122	0.0388	3.2802	2.1935	5.4737	0.4967	2.0425	2.5392	0.0000	3,924.283 3	3,924.283	1.0730		3,951.107 0

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Wayne Mills Place Project - Los Angeles-South Coast County, Winter

3.2 Demolition - 2017

<u>Mitigated Construction Off-Site</u>

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Hauling	0.4583	13.9845	3.0133	0.0319	0.4835	0.0740	0.5575	0.1385	0.0708	0.2093		3,443.735 5	3,443.735 5	0.2543		3,450.093 2
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1037	0.0797	0.8549	1.8300e- 003	0.1094	1.5600e- 003	0.1109	0.0302	1.4400e- 003	0.0316		182.0869	182.0869	7.6100e- 003		182.2772
Total	0.5621	14.0641	3.8681	0.0338	0.5929	0.0755	0.6684	0.1687	0.0722	0.2409		3,625.822 5	3,625.822 5	0.2619		3,632.370 4

3.3 Site Preparation - 2017

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Fugitive Dust	i i				18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.9608	52.2754	23.4554	0.0380		2.8786	2.8786	1 1 1	2.6483	2.6483		3,894.950 0	3,894.950 0	1.1934	i !	3,924.785 2
Total	4.9608	52.2754	23.4554	0.0380	18.0663	2.8786	20.9448	9.9307	2.6483	12.5790		3,894.950 0	3,894.950 0	1.1934		3,924.785 2

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Wayne Mills Place Project - Los Angeles-South Coast County, Winter

3.3 Site Preparation - 2017

<u>Unmitigated Construction Off-Site</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1245	0.0956	1.0259	2.2000e- 003	0.2012	1.8700e- 003	0.2031	0.0534	1.7300e- 003	0.0551		218.5043	218.5043	9.1300e- 003		218.7326
Total	0.1245	0.0956	1.0259	2.2000e- 003	0.2012	1.8700e- 003	0.2031	0.0534	1.7300e- 003	0.0551		218.5043	218.5043	9.1300e- 003		218.7326

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Fugitive Dust					6.9103	0.0000	6.9103	3.7985	0.0000	3.7985			0.0000			0.0000
Off-Road	4.9608	52.2754	23.4554	0.0380	 	2.8786	2.8786		2.6483	2.6483	0.0000	3,894.950 0	3,894.950 0	1.1934	 	3,924.785 2
Total	4.9608	52.2754	23.4554	0.0380	6.9103	2.8786	9.7889	3.7985	2.6483	6.4468	0.0000	3,894.950 0	3,894.950 0	1.1934		3,924.785 2

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Wayne Mills Place Project - Los Angeles-South Coast County, Winter

3.3 Site Preparation - 2017

<u>Mitigated Construction Off-Site</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1245	0.0956	1.0259	2.2000e- 003	0.1312	1.8700e- 003	0.1331	0.0362	1.7300e- 003	0.0379		218.5043	218.5043	9.1300e- 003		218.7326
Total	0.1245	0.0956	1.0259	2.2000e- 003	0.1312	1.8700e- 003	0.1331	0.0362	1.7300e- 003	0.0379		218.5043	218.5043	9.1300e- 003		218.7326

3.4 Grading - 2017

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	day		
Fugitive Dust	i i				6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	3.0705	33.8868	17.1042	0.0297		1.7774	1.7774		1.6352	1.6352		3,037.910 7	3,037.910 7	0.9308	i !	3,061.180 9
Total	3.0705	33.8868	17.1042	0.0297	6.5523	1.7774	8.3298	3.3675	1.6352	5.0027		3,037.910 7	3,037.910 7	0.9308		3,061.180 9

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Wayne Mills Place Project - Los Angeles-South Coast County, Winter

3.4 Grading - 2017

<u>Unmitigated Construction Off-Site</u>

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1037	0.0797	0.8549	1.8300e- 003	0.1677	1.5600e- 003	0.1692	0.0445	1.4400e- 003	0.0459		182.0869	182.0869	7.6100e- 003		182.2772
Total	0.1037	0.0797	0.8549	1.8300e- 003	0.1677	1.5600e- 003	0.1692	0.0445	1.4400e- 003	0.0459		182.0869	182.0869	7.6100e- 003		182.2772

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	day		
Fugitive Dust	i i				2.5063	0.0000	2.5063	1.2881	0.0000	1.2881			0.0000			0.0000
Off-Road	3.0705	33.8868	17.1042	0.0297		1.7774	1.7774		1.6352	1.6352	0.0000	3,037.910 7	3,037.910 7	0.9308	i i	3,061.180 9
Total	3.0705	33.8868	17.1042	0.0297	2.5063	1.7774	4.2837	1.2881	1.6352	2.9233	0.0000	3,037.910 7	3,037.910 7	0.9308		3,061.180 9

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Wayne Mills Place Project - Los Angeles-South Coast County, Winter

3.4 Grading - 2017

<u>Mitigated Construction Off-Site</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1037	0.0797	0.8549	1.8300e- 003	0.1094	1.5600e- 003	0.1109	0.0302	1.4400e- 003	0.0316		182.0869	182.0869	7.6100e- 003		182.2772
Total	0.1037	0.0797	0.8549	1.8300e- 003	0.1094	1.5600e- 003	0.1109	0.0302	1.4400e- 003	0.0316		182.0869	182.0869	7.6100e- 003		182.2772

3.5 Building Construction - 2017

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	lay		
Off-Road	3.1149	26.5546	18.1825	0.0269		1.7879	1.7879		1.6791	1.6791		2,650.979 7	2,650.979 7	0.6531		2,667.307 8
Total	3.1149	26.5546	18.1825	0.0269		1.7879	1.7879		1.6791	1.6791		2,650.979 7	2,650.979 7	0.6531		2,667.307 8

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Wayne Mills Place Project - Los Angeles-South Coast County, Winter

3.5 Building Construction - 2017 Unmitigated Construction Off-Site

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	lay		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4455	10.7288	3.3338	0.0212	0.5249	0.0909	0.6159	0.1511	0.0870	0.2381		2,256.955 1	2,256.955 1	0.1708	 	2,261.225 0
Worker	1.4452	1.1102	11.9114	0.0255	2.3361	0.0217	2.3579	0.6196	0.0201	0.6396		2,537.077 8	2,537.077 8	0.1060	 	2,539.728 4
Total	1.8907	11.8390	15.2452	0.0467	2.8611	0.1127	2.9737	0.7707	0.1070	0.8777		4,794.033 0	4,794.033 0	0.2768		4,800.953 4

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	lay		
Off-Road	3.1149	26.5546	18.1825	0.0269		1.7879	1.7879		1.6791	1.6791	0.0000	2,650.979 7	2,650.979 7	0.6531		2,667.307 8
Total	3.1149	26.5546	18.1825	0.0269		1.7879	1.7879		1.6791	1.6791	0.0000	2,650.979 7	2,650.979 7	0.6531		2,667.307 8

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Wayne Mills Place Project - Los Angeles-South Coast County, Winter

3.5 Building Construction - 2017 Mitigated Construction Off-Site

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	lay		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4455	10.7288	3.3338	0.0212	0.3753	0.0909	0.4663	0.1144	0.0870	0.2014		2,256.955 1	2,256.955 1	0.1708	 	2,261.225 0
Worker	1.4452	1.1102	11.9114	0.0255	1.5237	0.0217	1.5455	0.4202	0.0201	0.4402		2,537.077 8	2,537.077 8	0.1060	 	2,539.728 4
Total	1.8907	11.8390	15.2452	0.0467	1.8991	0.1127	2.0117	0.5346	0.1070	0.6416		4,794.033 0	4,794.033 0	0.2768		4,800.953 4

3.5 Building Construction - 2018

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	lay		
Off-Road	2.6795	23.3900	17.5804	0.0269		1.4999	1.4999		1.4099	1.4099		2,620.935 1	2,620.935 1	0.6421		2,636.988 3
Total	2.6795	23.3900	17.5804	0.0269		1.4999	1.4999		1.4099	1.4099		2,620.935 1	2,620.935 1	0.6421		2,636.988 3

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Wayne Mills Place Project - Los Angeles-South Coast County, Winter

3.5 Building Construction - 2018 <u>Unmitigated Construction Off-Site</u>

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3931	10.0725	3.0204	0.0211	0.5249	0.0720	0.5969	0.1511	0.0688	0.2200		2,248.028 8	2,248.028 8	0.1622	 	2,252.083 8
Worker	1.2780	0.9650	10.3929	0.0248	2.3361	0.0208	2.3570	0.6196	0.0192	0.6388		2,467.403 8	2,467.403 8	0.0929	 	2,469.725 2
Total	1.6711	11.0375	13.4133	0.0459	2.8611	0.0928	2.9539	0.7707	0.0880	0.8587		4,715.432 6	4,715.432 6	0.2551		4,721.809 1

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	lay		
Off-Road	2.6795	23.3900	17.5804	0.0269		1.4999	1.4999		1.4099	1.4099	0.0000	2,620.935 1	2,620.935 1	0.6421		2,636.988 3
Total	2.6795	23.3900	17.5804	0.0269		1.4999	1.4999		1.4099	1.4099	0.0000	2,620.935 1	2,620.935 1	0.6421		2,636.988 3

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Wayne Mills Place Project - Los Angeles-South Coast County, Winter

3.5 Building Construction - 2018 Mitigated Construction Off-Site

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/o	day							lb/d	lay		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3931	10.0725	3.0204	0.0211	0.3753	0.0720	0.4473	0.1144	0.0688	0.1833		2,248.028 8	2,248.028 8	0.1622		2,252.083 8
Worker	1.2780	0.9650	10.3929	0.0248	1.5237	0.0208	1.5446	0.4202	0.0192	0.4394		2,467.403 8	2,467.403 8	0.0929	 	2,469.725 2
Total	1.6711	11.0375	13.4133	0.0459	1.8991	0.0928	1.9919	0.5346	0.0880	0.6226		4,715.432 6	4,715.432 6	0.2551		4,721.809 1

3.6 Paving - 2017 <u>Unmitigated Construction On-Site</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Off-Road	1.6763	17.0389	12.6556	0.0189		1.0172	1.0172		0.9376	0.9376		1,901.776 6	1,901.776 6	0.5674		1,915.960 4
	7.9700e- 003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.6843	17.0389	12.6556	0.0189		1.0172	1.0172		0.9376	0.9376		1,901.776 6	1,901.776 6	0.5674		1,915.960 4

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Wayne Mills Place Project - Los Angeles-South Coast County, Winter

3.6 Paving - 2017
<u>Unmitigated Construction Off-Site</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	lay		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	 	0.0000
Worker	0.1383	0.1062	1.1398	2.4400e- 003	0.2236	2.0800e- 003	0.2256	0.0593	1.9200e- 003	0.0612		242.7826	242.7826	0.0102	 	243.0362
Total	0.1383	0.1062	1.1398	2.4400e- 003	0.2236	2.0800e- 003	0.2256	0.0593	1.9200e- 003	0.0612		242.7826	242.7826	0.0102		243.0362

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	lay		
Off-Road	1.6763	17.0389	12.6556	0.0189		1.0172	1.0172		0.9376	0.9376	0.0000	1,901.776 6	1,901.776 6	0.5674		1,915.960 4
Paving	7.9700e- 003					0.0000	0.0000		0.0000	0.0000		i i i	0.0000		 	0.0000
Total	1.6843	17.0389	12.6556	0.0189		1.0172	1.0172		0.9376	0.9376	0.0000	1,901.776 6	1,901.776 6	0.5674		1,915.960 4

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Wayne Mills Place Project - Los Angeles-South Coast County, Winter

3.6 Paving - 2017

<u>Mitigated Construction Off-Site</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	, ! ! !	0.0000
Worker	0.1383	0.1062	1.1398	2.4400e- 003	0.1458	2.0800e- 003	0.1479	0.0402	1.9200e- 003	0.0421		242.7826	242.7826	0.0102	; ! ! !	243.0362
Total	0.1383	0.1062	1.1398	2.4400e- 003	0.1458	2.0800e- 003	0.1479	0.0402	1.9200e- 003	0.0421		242.7826	242.7826	0.0102		243.0362

3.6 Paving - 2018
<u>Unmitigated Construction On-Site</u>

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	day		
Off-Road	1.4239	14.5184	12.4333	0.0189		0.8370	0.8370		0.7718	0.7718		1,872.550 5	1,872.550 5	0.5672		1,886.731 2
1	7.9700e- 003					0.0000	0.0000		0.0000	0.0000		1	0.0000		 	0.0000
Total	1.4319	14.5184	12.4333	0.0189		0.8370	0.8370		0.7718	0.7718		1,872.550 5	1,872.550 5	0.5672		1,886.731 2

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Wayne Mills Place Project - Los Angeles-South Coast County, Winter

3.6 Paving - 2018
<u>Unmitigated Construction Off-Site</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	lay		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1223	0.0923	0.9945	2.3700e- 003	0.2236	1.9900e- 003	0.2256	0.0593	1.8400e- 003	0.0611		236.1152	236.1152	8.8900e- 003		236.3373
Total	0.1223	0.0923	0.9945	2.3700e- 003	0.2236	1.9900e- 003	0.2256	0.0593	1.8400e- 003	0.0611		236.1152	236.1152	8.8900e- 003		236.3373

Mitigated Construction On-Site

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	lay		
Off-Road	1.4239	14.5184	12.4333	0.0189		0.8370	0.8370		0.7718	0.7718	0.0000	1,872.550 5	1,872.550 5	0.5672		1,886.731 2
ı	7.9700e- 003					0.0000	0.0000	 	0.0000	0.0000			0.0000			0.0000
Total	1.4319	14.5184	12.4333	0.0189		0.8370	0.8370		0.7718	0.7718	0.0000	1,872.550 5	1,872.550 5	0.5672		1,886.731 2

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Wayne Mills Place Project - Los Angeles-South Coast County, Winter

3.6 Paving - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	 	0.0000
Worker	0.1223	0.0923	0.9945	2.3700e- 003	0.1458	1.9900e- 003	0.1478	0.0402	1.8400e- 003	0.0420		236.1152	236.1152	8.8900e- 003	 	236.3373
Total	0.1223	0.0923	0.9945	2.3700e- 003	0.1458	1.9900e- 003	0.1478	0.0402	1.8400e- 003	0.0420		236.1152	236.1152	8.8900e- 003		236.3373

3.7 Architectural Coating - 2017 <u>Unmitigated Construction On-Site</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/e	day							lb/d	day		
Archit. Coating	17.0642					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e- 003	 	0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297	,	282.1909
Total	17.3965	2.1850	1.8681	2.9700e- 003		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297		282.1909

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Wayne Mills Place Project - Los Angeles-South Coast County, Winter

3.7 Architectural Coating - 2017 <u>Unmitigated Construction Off-Site</u>

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	lay		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2904	0.2231	2.3937	5.1300e- 003	0.4695	4.3700e- 003	0.4738	0.1245	4.0300e- 003	0.1285		509.8434	509.8434	0.0213		510.3760
Total	0.2904	0.2231	2.3937	5.1300e- 003	0.4695	4.3700e- 003	0.4738	0.1245	4.0300e- 003	0.1285		509.8434	509.8434	0.0213		510.3760

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	day		
Archit. Coating	17.0642					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e- 003		0.1733	0.1733	1 1 1	0.1733	0.1733	0.0000	281.4481	281.4481	0.0297		282.1909
Total	17.3965	2.1850	1.8681	2.9700e- 003		0.1733	0.1733		0.1733	0.1733	0.0000	281.4481	281.4481	0.0297		282.1909

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Wayne Mills Place Project - Los Angeles-South Coast County, Winter

3.7 Architectural Coating - 2017

<u>Mitigated Construction Off-Site</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2904	0.2231	2.3937	5.1300e- 003	0.3062	4.3700e- 003	0.3106	0.0844	4.0300e- 003	0.0885		509.8434	509.8434	0.0213	; ! ! !	510.3760
Total	0.2904	0.2231	2.3937	5.1300e- 003	0.3062	4.3700e- 003	0.3106	0.0844	4.0300e- 003	0.0885		509.8434	509.8434	0.0213		510.3760

3.7 Architectural Coating - 2018 <u>Unmitigated Construction On-Site</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Archit. Coating	17.0642					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e- 003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.1171
Total	17.3629	2.0058	1.8542	2.9700e- 003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.1171

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Wayne Mills Place Project - Los Angeles-South Coast County, Winter

3.7 Architectural Coating - 2018 <u>Unmitigated Construction Off-Site</u>

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	lay		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2568	0.1939	2.0885	4.9800e- 003	0.4695	4.1900e- 003	0.4737	0.1245	3.8600e- 003	0.1284		495.8419	495.8419	0.0187		496.3084
Total	0.2568	0.1939	2.0885	4.9800e- 003	0.4695	4.1900e- 003	0.4737	0.1245	3.8600e- 003	0.1284		495.8419	495.8419	0.0187		496.3084

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	day		
Archit. Coating	17.0642					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e- 003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267	,	282.1171
Total	17.3629	2.0058	1.8542	2.9700e- 003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267		282.1171

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Wayne Mills Place Project - Los Angeles-South Coast County, Winter

3.7 Architectural Coating - 2018 Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2568	0.1939	2.0885	4.9800e- 003	0.3062	4.1900e- 003	0.3104	0.0844	3.8600e- 003	0.0883		495.8419	495.8419	0.0187		496.3084
Total	0.2568	0.1939	2.0885	4.9800e- 003	0.3062	4.1900e- 003	0.3104	0.0844	3.8600e- 003	0.0883		495.8419	495.8419	0.0187		496.3084

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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Wayne Mills Place Project - Los Angeles-South Coast County, Winter

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	lay		
Mitigated	5.2838	23.0104	62.2853	0.1661	7.2023	0.2088	7.4111	2.0473	0.1965	2.2438		16,850.91 20	16,850.91 20	1.1077		16,878.60 47
Ommagatou	5.2838	23.0104	62.2853	0.1661	7.2023	0.2088	7.4111	2.0473	0.1965	2.2438		16,850.91 20	16,850.91 20	1.1077		16,878.60 47

4.2 Trip Summary Information

	Avei	rage Daily Trip Ra	ate	Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hotel	461.16	461.16	461.16	1,100,407	1,100,407
Hotel	777.14	777.14	777.14	1,854,389	1,854,389
Parking Lot	0.00	0.00	0.00		
Total	1,238.30	1,238.30	1,238.30	2,954,796	2,954,796

4.3 Trip Type Information

		Miles			Trip %			Trip Purpos	e %
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Hotel	16.60	8.40	6.90	19.40	61.60	19.00	58	38	4
Hotel	16.60	8.40	6.90	19.40	61.60	19.00	58	38	4
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

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Wayne Mills Place Project - Los Angeles-South Coast County, Winter

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Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Hotel	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944
Hotel	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944
Parking Lot	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
NaturalGas Mitigated	0.2996	2.7235	2.2877	0.0163		0.2070	0.2070		0.2070	0.2070		3,268.205 1	3,268.205 1	0.0626	0.0599	3,287.626 4
NaturalGas Unmitigated	0.2996	2.7235	2.2877	0.0163		0.2070	0.2070		0.2070	0.2070		3,268.205 1	3,268.205 1	0.0626	0.0599	3,287.626 4

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Wayne Mills Place Project - Los Angeles-South Coast County, Winter

5.2 Energy by Land Use - NaturalGas <u>Unmitigated</u>

	NaturalGa s Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr					lb/d	day							lb/c	lay		
Hotel	10345.6	0.1116	1.0143	0.8520	6.0900e- 003		0.0771	0.0771	i i i	0.0771	0.0771		1,217.124 7	1,217.124 7	0.0233	0.0223	1,224.357 4
Hotel	17434.2	0.1880	1.7092	1.4358	0.0103		0.1299	0.1299	, 	0.1299	0.1299		2,051.080 5	2,051.080 5	0.0393	0.0376	2,063.269 0
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	,	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.2996	2.7235	2.2878	0.0164		0.2070	0.2070		0.2070	0.2070		3,268.205 1	3,268.205 1	0.0626	0.0599	3,287.626 4

Mitigated

	NaturalGa s Use	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr					lb/d	day							lb/c	lay		
Hotel	10.3456	0.1116	1.0143	0.8520	6.0900e- 003		0.0771	0.0771		0.0771	0.0771		1,217.124 7	1,217.124 7	0.0233	0.0223	1,224.357 4
Hotel	17.4342	0.1880	1.7092	1.4358	0.0103		0.1299	0.1299		0.1299	0.1299		2,051.080 5	2,051.080 5	0.0393	0.0376	2,063.269 0
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000]	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.2996	2.7235	2.2878	0.0164		0.2070	0.2070		0.2070	0.2070		3,268.205 1	3,268.205 1	0.0626	0.0599	3,287.626 4

6.0 Area Detail

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Wayne Mills Place Project - Los Angeles-South Coast County, Winter

6.1 Mitigation Measures Area

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Mitigated	9.4446	4.7000e- 004	0.0499	0.0000		1.8000e- 004	1.8000e- 004		1.8000e- 004	1.8000e- 004		0.1055	0.1055	2.9000e- 004		0.1127
Unmitigated	9.4446	4.7000e- 004	0.0499	0.0000		1.8000e- 004	1.8000e- 004		1.8000e- 004	1.8000e- 004		0.1055	0.1055	2.9000e- 004		0.1127

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory					lb/d	day							lb/d	day		
Architectural Coating	1.0753					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.3646					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.7700e- 003	4.7000e- 004	0.0499	0.0000		1.8000e- 004	1.8000e- 004		1.8000e- 004	1.8000e- 004		0.1055	0.1055	2.9000e- 004		0.1127
Total	9.4446	4.7000e- 004	0.0499	0.0000		1.8000e- 004	1.8000e- 004		1.8000e- 004	1.8000e- 004		0.1055	0.1055	2.9000e- 004		0.1127

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Wayne Mills Place Project - Los Angeles-South Coast County, Winter

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory					lb/d	day							lb/d	day		
Architectural Coating	1.0753					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.3646					0.0000	0.0000		0.0000	0.0000		,	0.0000			0.0000
Landscaping	4.7700e- 003	4.7000e- 004	0.0499	0.0000		1.8000e- 004	1.8000e- 004		1.8000e- 004	1.8000e- 004		0.1055	0.1055	2.9000e- 004		0.1127
Total	9.4446	4.7000e- 004	0.0499	0.0000		1.8000e- 004	1.8000e- 004		1.8000e- 004	1.8000e- 004		0.1055	0.1055	2.9000e- 004		0.1127

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Wayne Mills Place Project - Los Angeles-South Coast County, Winter

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
<u>Boilers</u>						
Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type	

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX B TRAFFIC IMPACT STUDY

TRAFFIC IMPACT STUDY

For

Valencia Springhill Suites Plus Residence Inn

Santa Clarita, California

Submitted To:

Excel Hotel Group 10660 Scripps Ranch Boulevard, Suite 100, San Diego, California 92131

Submitted By:

Darnell & Associates, Inc. 4411 Mercury Street, Suite 207A San Diego California, 92111

September 14, 2016

160605 - Valencia Springhill Traffic Study 09/16

Darrell & Associates, Inc.

TRANSPORTATION PLANNING & TRAFFIC ENGINEERING

September 14, 2016

Neil Patel Excel Hotel Group 10660 Scripps Ranch Boulevard, Suite 100, San Diego, California 92123

D&A Ref. No.: 160605

Subject:

Traffic Impact Study for the Proposed Valencia Springhill Suites Plus the Residence Inn

located in Santa Clarita, California

Dear Mr. Neil Patel:

In accordance with your authorization, Darnell & Associates, Inc. (D&A) has prepared this Traffic Impact Study assessing the impacts associated with the proposed project located on the southside of Wayne Mills Place in the City of Santa Clarita.

The Traffic Impact Study analyzes the traffic impacts related to the project oN the surrounding roadways and intersections under the following conditions: Existing and Existing Plus Project Conditions.

If you have any questions, please feel free to contact the office.

Sincerely,

DARNELL & ASSOCIATES, INC.

Date Signed:

9/14/2016

Bill E. Darnell, P.E. Firm Principal RCE 22338

BED/iam

160605 - Springhill Suites Residential Inn-Valencia Traffic Study/09/16

TRAFFIC IMPACT STUDY

FOR

VALENCIA SPRINGHILL SUITES PLUS RESIDENCE INN

SANTA CLARITA, CALIFORNIA

Submitted To:

Excel Hotel Group 10660 Scripps Ranch Boulevard, Suite 100, San Diego, California 92131

Submitted By:

Darnell & Associates, Inc. 4411 Mercury Street, Suite 207A San Diego California, 92111 (619) 233-9373

September 14, 2016
160605 - Springhill Suites Residential Inn-Valencia Traffic Study/09/16

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APPENDICIES

APPENDIX A

➤ 24-Hour Segment Counts➤ AM/PM Peak Hour Turn Counts

APPENDIX B

> Existing Conditions Analysis Worksheets

APPENDIX C

> Existing + Project Conditions Analysis Worksheets

APPENDIX D

> 2017 Opening Day Conditions Analysis Worksheets

SECTION I - INTRODUCTION

This traffic study evaluates the traffic conditions associated with the proposed Valencia Springhill plus Residence Inn project (herein referred to as "the project") located at 27413 Wayne Mills Place in the City of Santa Clarita, CA. Figure 1 illustrates the location of the project site in the region.

PROJECT DESCRIPTION

The project site is generally located on the south side of Wayne Mills Place, east of I-5, and west of Tourney Road. The existing site currently is occupied by a 120-Room Best Western Hotel. The project will construct a 182-Room Springhill Suites/Residence Inn and a 108-room Holiday Inn Express on the existing Best Western Site. Access to the project will be through an existing driveway located on Wayne Mills Place. Figure 2 illustrates the project site plan.

SCENARIOS STUDIED

The following list contains the scenarios analyzed for the project:

Existing Conditions: This scenario refers to the conditions at the time traffic volume counts were obtained in July 2016 and account for the existing lane configurations at the study intersections and roadway segments.

Existing Plus Project Conditions: This scenario includes the project traffic, which is added to the existing traffic volumes.

2017 Opening Day Conditions: This scenario includes the project traffic, with 3% ambient growth added to the existing traffic volumes.

LEVEL OF SERVICE

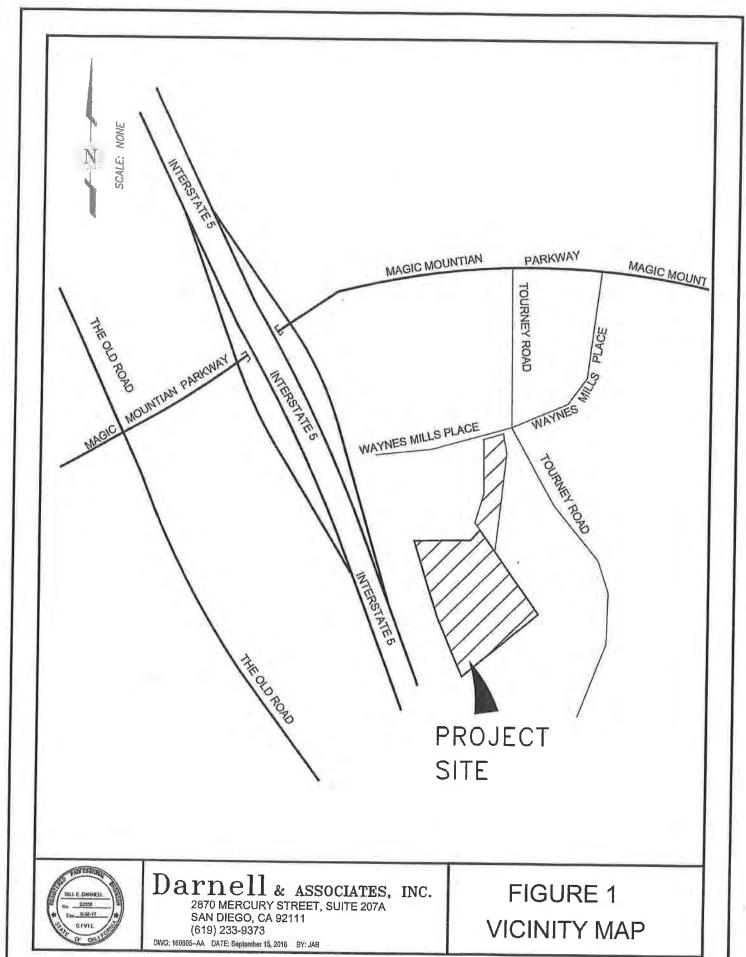
Level of Service (LOS) is a professional industry standard by which the operating conditions of a given roadway segment or intersection are measured. Level of Service is defined on a scale of A to F; where LOS A represents the best operating conditions and LOS F represents the worst operating conditions. LOS A facilities are characterized as having free flowing traffic conditions with no restrictions on maneuvering or operating speeds; traffic volumes are low and travel speeds are high. LOS F facilities are characterized as having forced flow with many stoppages and low operating speeds.

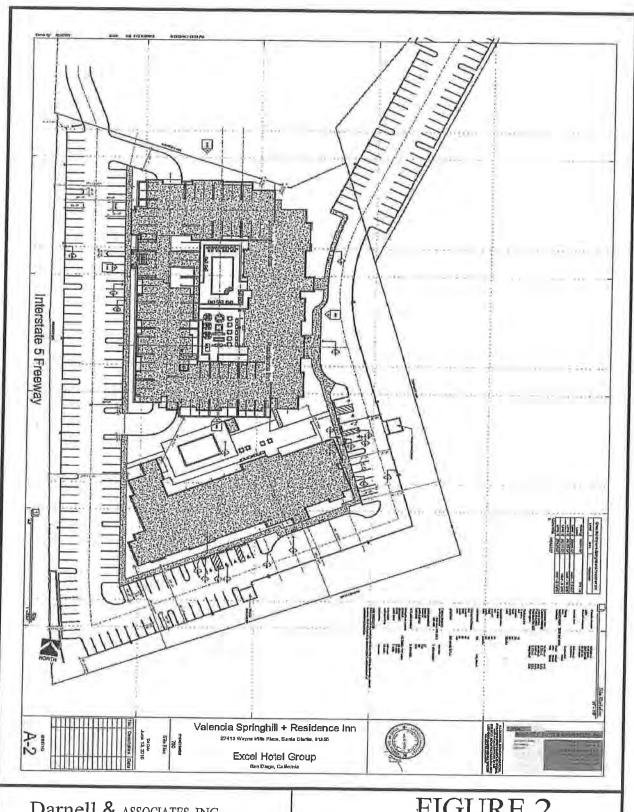
For all signalized study area intersections, the Intersection Capacity Utilization (ICU) methodology is utilized to assess the operation and performance of the intersection. The ICU represents the ratio of the volume of traffic using the intersection with the capacity of the intersection.

For all unsignalized area intersections, the Highway Capacity Manual (HCM) methodology is utilized to estimate the LOS. The HCM method estimates the LOS based on intersection delay.

LOS along the roadway segments in the study area is determined utilizing the City's volume to capacity at urban arterial highways.

Table 1 shows the criteria used for intersections. Table 2 summarizes the criteria used along arterial roadways. In the City of Santa Clarita, LOS D is considered the acceptable threshold for intersections and roadway segments.





Darnell & ASSOCIATES, INC.

160605-AA.dwg

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FIGURE 2 PROJECT SITE PLAN

Table 1 - Level of Service Criteria at Intersections									
	Intersections								
LOS	Signalized Volume-to-Capacity Ratio (ICU) ¹	Unsignalized Delay (Seconds/Vehicle) ²							
A	0.00 - 0.60	Less than or Equal to 10.0							
В	0.61 - 0.70	10.1 to 15.0							
С	0.71 to 0.80	15.1 to 25.0							
D	0.81 - 0.90	25.1 to 35.0							
Е	0.91 – 1.00	35.1 to 50.0							
F	> 1.00	> 50.0							

¹ The volume of traffic using the intersection is compared with the capacity of the intersection. A 1,750 vehicle per hour per lane was assumed as the saturation flow value for through and turning lanes.

LOS = Level of Service; mph = miles per hour

Table 2 - Level of Service Criteria Along Arterial Roadways									
LOS	8-Lane Divided	6-Lane Divided	4-Lane Divided	4-Lane Undivided	2-Lane Undivided				
A	48,000	36,000	24,000	16,000	5,000				
В	54,000	40,400	27,000	18,000	7,500				
С	60,000	45,000	30,000	20,000	10,000				
D	66,000	49,500	33,000	22,000	12,500				
Е	72,000	54,000	36,000	24,000	15,000				
F	This condition represe	nts system breakdown	and does not have a spe	ecific relationship to servi	ce volumes.				
he value	es shown in the table are ref	ferenced from the City of	Santa Clarita General Plan	Circulation Element					

ANALYSIS METHODOLOGY

The intersection analysis evaluated the operations of the study area intersections during a typical weekday for the AM and PM peak periods. The AM peak is defined as the time period between 7:00 and 9:00 AM. The PM peak is defined as the time period between 4:00 and 6:00 PM. Synchro 8 was used as the software program to evaluate the operations at unsignalized intersections.

REPORT ORGANIZATION

Following this section, Section II evaluates the existing roadway characteristics and traffic conditions surrounding the project area. Section III examines the project trip generation and distribution assumptions. Section IV analyzes the traffic for existing plus project conditions. Section V provides recommended mitigation measures. Section VII summarizes the report's findings and conclusions.

² The delay ranges shown are based on the 2000 Highway Capacity Manual (HCM)

SECTION II - EXISTING CONDITIONS

This section of the traffic study is intended to assess the existing conditions of the roadways and intersections within the vicinity of the project to determine travel flow and/or delay difficulties, if any, that exist prior to adding the traffic generated by the proposed project. The existing conditions analysis establishes a base condition which is used to assess the other scenarios discussed in this report.

Darnell & Associates, Inc. (D&A) conducted a field review of the area surrounding the project in June 2016. The existing roadway geometrics are illustrated in Figure 3.

EXISTING ROADWAY CHARACTERISTICS

The key segments analyzed in the study area are identified below:

<u>Magic Mountain Parkway:</u> Magic Mountain Parkway is a six-lane divided roadway in the study area with painted medians and is classified as a major highway. The roadway generally runs in the east-west direction. Parking is restricted on both sides of the roadway and the posted speed limit is 50 miles per hour (mph). Based on the City's Circulation Element, an improvement to restripe the roadway from 6-lanes to 8-lanes.

<u>Tourney Road</u>: Tourney Road is a three-lane roadway with a center two-way left-turning lane in the study area and is classified as a secondary highway. The roadway generally runs in the north-south direction. Bicycle lanes and parking are provided on both sides of the roadway. There are no posted speed limit signs in the immediate vicinity of the project.

ROADWAY SEGMENT DAILY TRAFFIC

Daily traffic volume data were obtained along the study area roadway segments on Thursday, July 28, 2016. Figure 4 presents the existing conditions traffic volumes used in this analysis. Count summaries are included in Appendix A.

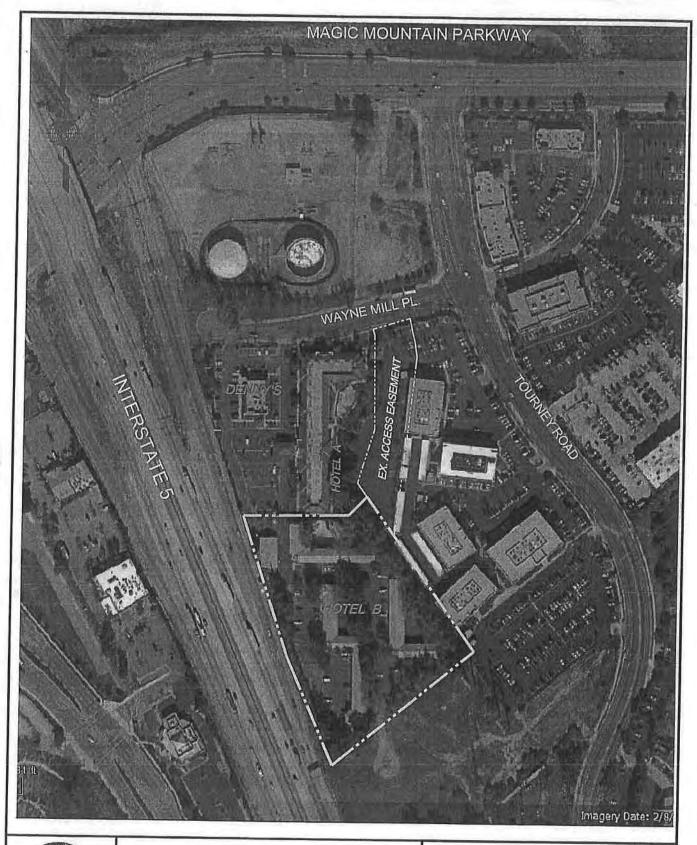
KEY INTERSECTIONS

Figure 3 provides intersection configurations and traffic control for the key intersections. The key intersections analyzed in the study area are identified below:

- The Old Road/Magic Mountain Parkway (signal);
- I-5 SB Ramps/Magic Mountain Parkway (signal);
- I-5 NB Ramps/Magic Mountain Parkway (signal);
- Tourney Road/Magic Mountain Parkway (signal);
- Tourney Road/Wayne Mills Place (two-way stopped control)

INTERSECTION TRAFFIC COUNTS

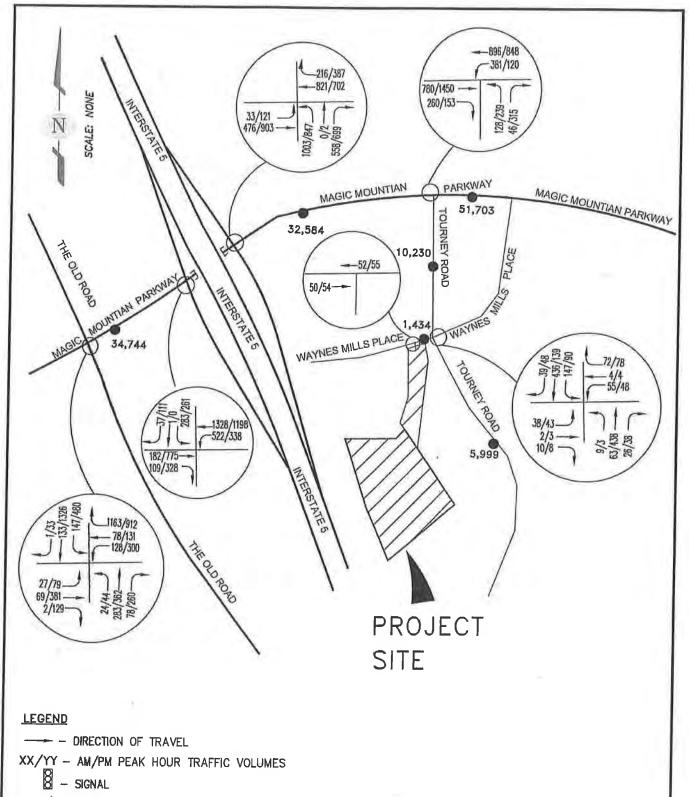
Peak-hour traffic volume data were obtained at the study area intersections on Thursday, July 28, 2016. Figure 4 presents the existing conditions traffic volumes used in this analysis. Count summaries are included in Appendix A.





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FIGURE 3 EXISTING DEVELOPMENT CONDITIONS



o - STOP SIGN



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FIGURE 4

EXISTING TRAFFIC VOLUMES

EXISTING LEVEL OF SERVICE CONDITIONS

Roadway Segments

Table 3 summarizes the LOS along the roadway segments in the study area. As shown in the table, all roadway segments operate at LOS A except for the Magic Mountain Parkway segment between Tourney Road and Wayne Mills Place, which operates at LOS "E".

Table 2 - Existing Ro Roadway Segment	Classification	Existing Number of Lanes	LOS "E" Capacity	ADT	v/c	LOS
Magic Mountain Pkwy						
The Old Rd to I-5 SB Ramps	Major Arterial	6-Lane	54,000	34,744	0.64	A
I-5 NB Ramps to Tourney Road	Wajor Arterial	Divided	Capacity 54,000	32,584	0.60	A
Tourney Road to Wayne Mills Place				51,703	0.96	Е
Tourney Rd	0 1	4.7				
Magic Mountain Pkwy to Wayne Mills Place		4-Lane Undivided	24,000	10,230	0.43	A
South of Wayne Mills Place	Inghway	Charvided		5,999	0.25	Α

Intersections

Table 4 summarizes the LOS at the intersections in the study area. As shown in the table, all signalized intersections operate at LOS "A" during the peak periods. The unsignalized intersection of Tourney Road/Wayne Mills Place operates at LOS "D" or better during the peak periods.

		Traffic	Peak	Existing Conditions		
#	Intersection	Control	Hour	ICU/Delay (a)	LOS (b)	
1	The Old Rd & Magic Mountain Pkwy	Signal	AM	0.196	A	
1			PM	0.470	A	
2	I-5 SB Ramps & Magic Mountain Pkwy	Signal	AM	0.356	A	
_			PM	0.403	A	
3	I-5 NB Ramps & Magic Mountain Pkwy	Signal	AM	0.493	A	
3			PM	0.510	Α	
4	Tourney Rd & Magic Mountain Pkwy	Signal	AM	0.465	A	
4	Tourney Ru & Magic Mountain Pkwy		PM	0.530	A	
5	Tourney Rd & Wayne Mills Pl	TWSC	AM	24.9	С	
3			PM	25.7	D	
-	D' ID ON MILE	OWIGO	AM	DVIE		
6	Project Dwy & Wayne Mills Pl	OWSC	PM	DNE		

DNE: Does not exist

A copy of the analysis worksheets for conditions can be found in Appendix B.

⁽a) ICU's are reported at signalized intersections. Delays are reported as the worst movement at unsignalized intersections.

⁽b) LOS calculations are based on the methodology outlined in the 2000 Highway Capacity Manual (HCM) and performed using Synchro 8, TWSC = Two Way Stop Control, OWSC = One Way Stop Control.

SECTION III - PROJECT RELATED CONDITIONS

TRIP GENERATION

Trip generation rates published by the *Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition* were applied to the existing and proposed use in order to determine the traffic generation characteristics of the site. The existing site contains a 120-Room Best Western Hotel. The project consists of a 182-Room Springhill Suites/Residence Inn and a 108-Room Holiday Inn Express, which results in a net increase of 170 hotel rooms. Upon reviewing the various land uses contained in the *ITE Trip Generation Manual*, land use code of 312 (Business Hotel) was the most appropriate and applied to the project.

Table 4 summarizes the weekday trip generation. As shown in the table, the project is forecasted to generate a net increase of 1,237 daily trips with 99 AM peak-hour trips and 105 PM peak-hour trips.

	Table 4	- Trip Ge	neration Rates	and Cal	culations S	Summary			
			Trip Generati	on Rates	8				
				AM Peak Hour			PM Peak Hour		
Land Use	Daily		Rate	% In	% Out	Rate	% In	% Out	
Business Hotel	7.27 trips/rooms		0.58/Room	59%	41%	0.62/Room	60%	40%	
			Trip Gener	ration					
	Total No. of Units	Daily	AM Peak Hour			PM Peak Hour			
Land Use			Total	In	Out	Total	In	Out	
Existing Uses									
Best Western	120 rooms	873	70	42	28	75	45	30	
Proposed Uses									
Springhill Suites/Residence Inn	182 rooms	1,324	106	63	43	113	68	45	
Holiday Inn Express	108 rooms	786	63	38	25	67	41	26	
Subtotal (Proposed – Existing) 2,110			169	101	68	180	109	71	
Net New Trips 1,			99	59	40	105	64	41	

Trip Generation Rates are based on rates published by the *Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition.*

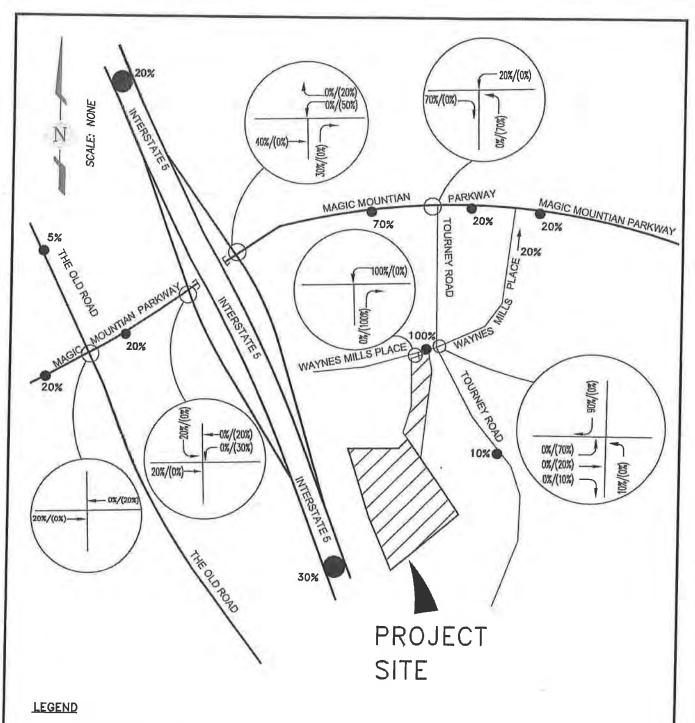
TRIP DISTRIBUTION/TRIP ASSIGNMENT

Based on existing travel patterns in the study area and on logical connections to regional facilities, the following list shows the assumed project trip distribution for the proposed project:

- 20 percent to/from the north via I-5;
- 40 percent to/from the south;
 - 30 percent via I-5;
 - 10 percent via Tourney Road;
- 20 percent to/from the east via Magic Mountain Parkway; and
- 20 percent to/from the west via Magic Mountain Parkway.

Figure 5 displays the assumed project trip distribution through the study intersections. Based on the project trip generation and distribution, the peak-hour trips were assigned to the intersections in the study area. Figure 6 illustrates the weekday project trip assignment.

The impacts associated with the addition of project traffic are discussed in the following section, Section IV.



--- - DIRECTION OF TRAVEL

XX% - TRIP DISTRIBUTION PERCENTAGE



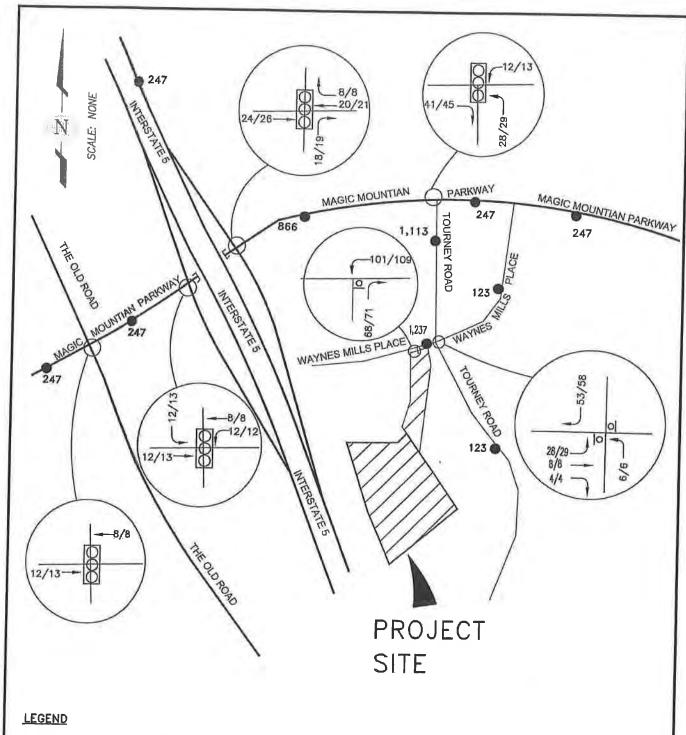
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FIGURE 5

PROJECT TRIP DISTRIBUTION



- - DIRECTION OF TRAVEL

XX/YY - AM/PM PEAK HOUR TRAFFIC VOLUMES

- SIGNAL

ol - STOP SIGN



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FIGURE 6

PROJECT TRAFFIC

SECTION IV – IMPACTS

This section describes the Level of Service analyses for the study area intersections and roadway segments with the addition of project traffic to Existing Conditions.

EXISTING PLUS PROJECT CONDITIONS

The daily and peak hour turn volumes for existing plus project conditions are illustrated in Figure 7.

Roadway Segments

The roadway segments were analyzed with the traffic generated from the proposed project added to existing traffic volumes. Table 5 displays the Level of Service Analysis results for the roadway segments under the Existing Plus Project scenario. As shown in the table, all roadway segments are expected to operate at LOS "A" with the addition of the project except for the segment between Tourney Road and Wayne Mills Place along Magic Mountain Parkway. This segment will continue to operate at LOS "E". However, with the addition of the project traffic, the increase in v/c ratio does not exceed the significance threshold. As a result, no additional roadway improvements are required and/or recommended.

Intersections

The intersections were analyzed with the traffic generated from the proposed project added to existing traffic volumes. Table 6 displays the Level of Service Analysis results for the study intersections under the Existing Plus Project scenario. As shown in the table, all intersections, including the project driveway, are expected to operate at LOS "D" or better with the addition of the project traffic. The increase in delay does not exceed the significance thresholds. As a result, no additional intersection improvements are required and/or recommended.

A copy of the ICU/LOS worksheets for existing plus project conditions can be found in Appendix C.

2017 OPENING DAY PLUS PROJECT CONDITIONS

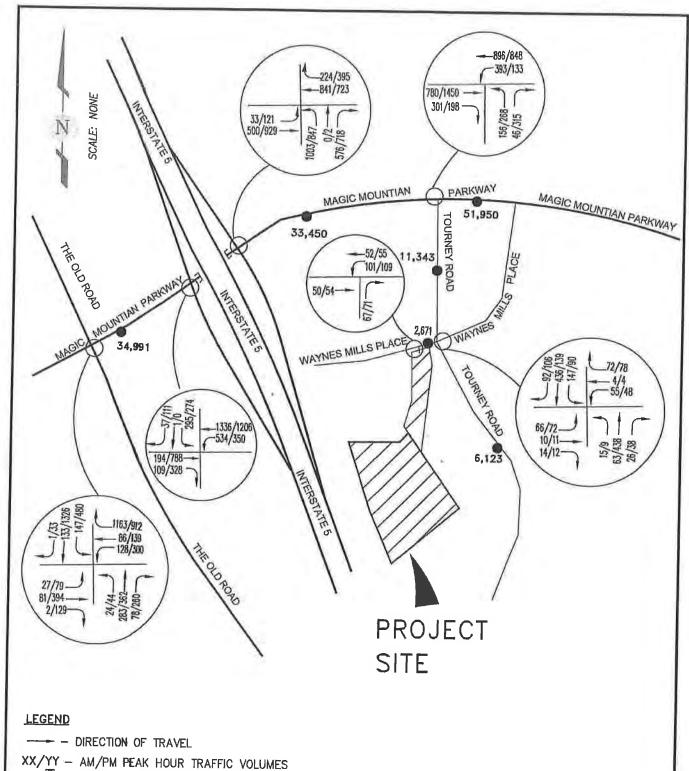
Opening Day 2017 traffic conditions are estimated by adding 3% ambient growth to existing traffic volumes plus project traffic. Figure 8 presents the 2017 Opening Day volumes and Figure 9 presents the Opening Day plus project conditions.

Roadway Segments

The roadway segments were analyzed with the traffic generated from the proposed project added to existing traffic volumes plus 3% ambient growth. Table 7 displays the Level of Service Analysis results for the roadway segments under the Existing Plus Project scenario. As shown in the table, all roadway segments are expected to operate at LOS "A" with the addition of the project except for the segment between Tourney Road and Wayne Mills Place along Magic Mountain Parkway. This segment will continue to operate at LOS "E". However, with the addition of the project traffic, the increase in v/c ratio does not exceed the significance threshold. As a result, no additional roadway improvements are required and/or recommended.

Intersections

The intersections were analyzed with the traffic generated from the proposed project added to existing traffic volumes plus 3% ambient growth. Table 8 displays the Level of Service Analysis results for the study intersections under the Existing Plus Project scenario. As shown in the table, all intersections, including the project driveway, are expected to operate at LOS "D" or better with the addition of the project traffic. The increase in delay does not exceed the significance thresholds. As a result, no additional intersection improvements are required and/or recommended.



8 - SIGNAL

o - STOP SIGN



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FIGURE 7 EXISTING PLUS PROJECT TRAFFIC VOLUMES

Table 5 - F	Table 5 - Existing Plus Project Roadway Segment Level of Service Summary	oadway Segm	ent Level of	Service Sur	nmary					
		Existing		Ex	Existing		Existing Plus Project	Plus Pro	ject	
Roadway Segment	Classification	Number of Lanes	LOS "E" Capacity	ADT	v/c	v/c LOS	ADT	-	ros	v/c LOS A in v/c
Magic Mountain Pkwy								-		
The Old Rd to I-5 SB Ramps	Mei Antonia	6-Lane	000	34,744	0.64	Ą	34,991	0.65	Ą	0.00
I-5 NB Ramps to Tourney Road	мајог Апепа	Divided	24,000	32,584	09.0	A	33,450	0.62	A	0.02
Tourney Road to Wayne Mills Place				51,703	96.0	H	51,950	96.0	田	0.00
Tourney Road										
Magic Mountain Pkwy to Wayne Mills Place	Secondary Highway	4-Lane	24,000	10,230	0.43	A	11,343	0.47	A	0.05
South of Wayne Mills Place		Onarvidea		5,999	0.25	A	6,123	0.26	A	0.01
Wayne Mills Place										
West of Tourney Road	Local	2-Lane	5,000	1,434	0.29	A	2,671 0.53	0.53	A	0.24
Volume on this estimated Connectivity of LOS E and the winter limits of LOS E and the City of Control Connectivity Connect	the off Of E are the	Other of Conta Clos	to Comment Die	7:	A	T.	E	100		

			•		are a marriage that traject anterested at the formularly	mary		
		Traffic		Existing Conditions	onditions	Existing Plus Project	is Project	∆ in
	Intersection	Control	Peak Hour	ICU/Delay (a)	(p) TOS	ICU/Delay (a)	(p) (O)	ICU/Delay
	The Old Doed & Menic Manufain Dlang	Cimol	AM	0.196	A	0.198	A	0.002
- 1	THE OIG ROAD & MARKE MOUNTAIN LAWY	orginal	PM	0.470	A	0.475	A	0.005
	7 L.S CB Romne & Marie Mountain Dlaw	Cional	AM	0.356	A	0.362	A	9000
- 1	1-5 SE Manips & Magic Mountain Lowy	Signal	PM	0.403	A	0.415	A	0.012
	I.5 MR Rams & Marie Mountain Dlaw	Ciomol	AM	0.493	A	0.496	A	0.003
- 1	1-5 IND INDING IN 1918 IN 1919 IN 1919	Olgital	PM	0.510	A	0.523	A	0.013
	Tourney Road & Marrie Mountain Dlang	Cimal	AM	0.465	A	0.480	A	0.015
- 1	rodincy made to magne mountain rowy	Oigilai	PM	0.530	A	0.536	A	9000
	Tourney Road & Wayne Mills Dlace	Ja/MT	AM	5.4	A	8.9	A	2.4
- 1	tominey two w wayine minis i lace	T W 3C	PM	5.0	A	6.4	A	1.4
	Project Driveway & Wayne Mills Dlace	DWC	AM	TING	р	8.8	A	5.0
	region private a wayin million lace	0 0 0 0	PM	CIA	2	68	Α	0 %

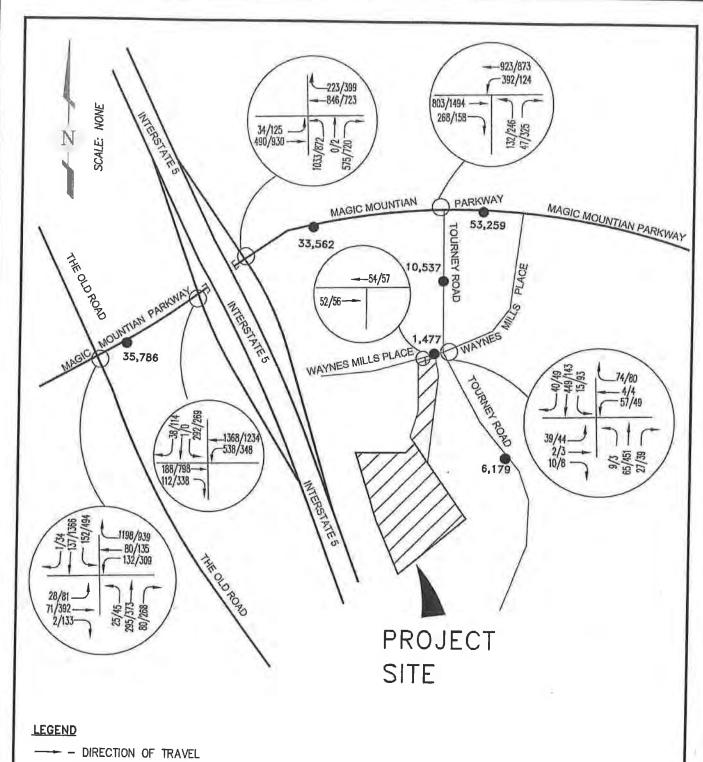
Notes:

DNE = Does not exist, TWSC = Two Way Stop Control, OWSC = One Way Stop Control.

a. ICU is reported at signalized intersections.

b. LOS calculations are based on the methodology outlined in the 2000 Highway Capacity Manual (HCM).

Delays at unsignalized intersections are reported based on intersection delay using Synchro 8 – Intersection Capacity Software



XX/YY - AM/PM PEAK HOUR TRAFFIC VOLUMES

8 - SIGNAL

o - STOP SIGN



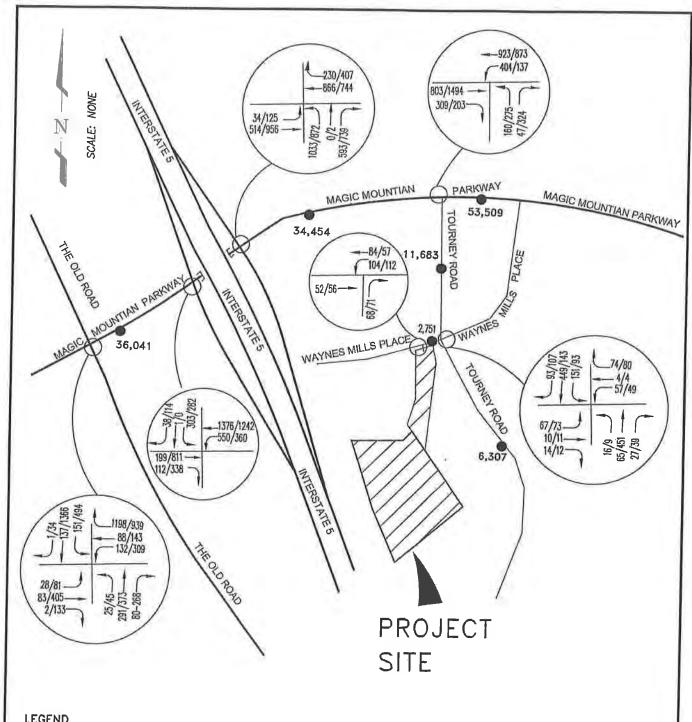
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FIGURE 8

2017 OPENING DAY TRAFFIC VOLUMES



LEGEND

- DIRECTION OF TRAVEL

XX/YY - AM/PM PEAK HOUR TRAFFIC VOLUMES

8 - SIGNAL

o - STOP SIGN



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FIGURE 9

2017 PLUS OPENING DAY PLUS EXISTING PLUS PROJECT TRAFFIC VOLUMES

Table 7 -Existing Plus Project Plus 2017 Opening Day Roadway Segment Level of Service Summary	Project Plus 2017 Op	ening Day Ro	adway Segmo	ent Level o	f Servi	ce Sum	mary			
		Existing Number of	LOS "E"	Existing Plus Project	Plus Pr	oject	Existing Plus Am	Existing Plus Project Plus Ambient Growth	ject owth	
Roadway Segment	Classification	Lanes	Capacity	ADT	a/c	v/c LOS	ADT	a/c	ros	v/c LOS A in v/c
Magic Mountain Pkwy										
The Old Rd to I-5 SB Ramps	Maine Associat	6-Lane	000	34,991	0.65	A	36,041	36,041 0.67 B	В	0.02
I-5 NB Ramps to Tourney Road	Major Arterial	Divided	24,000	33,450	0.62	В	34,454	0.64	В	0.02
Tourney Road to Wayne Mills Place				51,950	96.0	E	53,509	0.99	H	0.03
Tourney Road										
Magic Mountain Pkwy to Wayne Mills Place	Secondary Highway	4-Lane	24,000	11,343	0.47	A	11.683	0.49	A	0.02
South of Wayne Mills Place		Ollulvideu		6,123	0.26	A	6,307	0.26 A	A	0.00
Wayne Mills Place										
West of Tourney Road	Local	2-Lane	5,000	2,671 0.53	0.53	A	2,751	0.28	A	0.01
Volume on this segment was estimated. Capacity is based on the up	he upper limits of LOS E per the City of Santa Clarita General Plan Circulation Element, ADT=Average Daily Traffic, LOS=Level of Service.	City of Santa Clar	ita General Plan	Circulation El	ement, A	DT= Ave	rage Daily Tra	affic. LOS	= Level c	of Service.

# Intersection Control Feat Existing Conditions LOS (b) ICU/Delay (a) Existing Plus Project Plus A in Conditions Existing Plus Project Plus A in Conditions Existing Plus Project Plus A in Cu/Delay (a) LOS (b) ICU/Delay (a) LOS (b) A 0.0049 A 0.0049 A 0.0049 A 0.0049 A 0.0049 A 0.0049 A 0.015 A<		Tab	ole 8 - Exis	ting Plu	s Project Plus 2	017 Openii	Table 8 - Existing Plus Project Plus 2017 Opening Day Intersection Level of Service Summary	on Level of Se	rvice Summary		
Intersection Control Hour ICU/Delay (a) LOS (b) ICU/Delay (a) LOS (b) ICU/Delay (a) LOS (b) ICU/Delay (a) LOS (b) Ambient Growth The Old Road & Magic Signal AM 0.196 A 0.198 A 0.202 A Hountain Pkwy Signal PM 0.196 A 0.198 A 0.202 A I-5 SB Ramps & Magic Signal AM 0.356 A 0.475 A 0.490 A Hountain Pkwy Am 0.403 A 0.415 A 0.426 A 0.351 A Hountain Pkwy Am 0.493 A 0.496 A 0.510 A							Existing Plu	s Project	Existing Plus Pr	roject Plus	
The Old Road & Magic Control Hour ICU/Delay (a) LOS (b) ICU/Delay (a) LOS (b) ICO/Delay (a) LOS (b) AB COS (b) AB			Traffic	Peak	Existing Con-	ditions	Condit	ions	Ambient G	rowth	Δ in
The Old Road & Magic AM 0.196 A 0.198 A 0.202 A Mountain Pkwy Signal PM 0.470 A 0.475 A 0.490 A I-5 SB Ramps & Magic Signal PM 0.403 A 0.415 A 0.426 A I-5 NB Ramps & Magic Signal PM 0.493 A 0.496 A 0.510 A Mountain Pkwy Amgic Signal PM 0.510 A 0.496 A 0.510 A Mountain Pkwy Signal PM 0.510 A 0.480 A 0.533 A 0.536 A 0.492 A Mountain Pkwy Signal PM 0.530 A 0.536 A 0.546 A A A 0.546 A A 0.546 A A <th>#</th> <th></th> <th>Control</th> <th>Hour</th> <th>ICU/Delay (a)</th> <th>TOS (P)</th> <th>ICU/Delay (a)</th> <th>TOS (P)</th> <th>ICU/Delay (a)</th> <th>TOS (P)</th> <th>ICU/Delay</th>	#		Control	Hour	ICU/Delay (a)	TOS (P)	ICU/Delay (a)	TOS (P)	ICU/Delay (a)	TOS (P)	ICU/Delay
Mountain Pkwy Signal PM 0.470 A 0.475 A 0.490 A A I-5 SB Ramps & Magic Signal AM 0.356 A 0.415 A 0.426 A Mountain Pkwy Signal PM 0.493 A 0.496 A 0.510 A Mountain Pkwy Signal PM 0.510 A 0.480 A 0.533 A 0.536 A 0.480 A A Mountain Pkwy Signal PM 0.530 A 0.536 A 0.546 A A 0.546 A A 0.546 A A 0.546 A	_	The Old Road & Magic	0:22	AM	0.196	A	0.198	A	0.202	A	0.004
1-5 SB Ramps & Magic Signal AM 0.356 A 0.362 A 0.371 A Hountain Pkwy Signal PM 0.403 A 0.415 A 0.426 A Hountain Pkwy Signal PM 0.510 A 0.523 A 0.510 A Mountain Pkwy Signal PM 0.530 A 0.480 A 0.492 A Mountain Pkwy Am 0.530 A 0.536 A 0.536 A 0.536 A Tourney Road & Wayne Mills Twsc AM 5.4 A 6.8 A 7.1 A Place Signal AM 5.0 A 6.4 A 6.7 A A Place Signal AM 5.0 A 6.7 A 6.7 A A Place Am 5.0 A 6.7 A 4.9 A A A A A </td <td>1</td> <td>Mountain Pkwy</td> <td>Signal</td> <td>PM</td> <td>0.470</td> <td>A</td> <td>0.475</td> <td>A</td> <td>0.490</td> <td>A</td> <td>0.015</td>	1	Mountain Pkwy	Signal	PM	0.470	A	0.475	A	0.490	A	0.015
Mountain Pkwy Signal PM 0.403 A 0.415 A 0.426 A 0.426 A A 1-5 NB Ramps & Magic Signal AM 0.493 A 0.496 A 0.510 A A Mountain Pkwy Signal PM 0.510 A 0.523 A 0.546 A A Mountain Pkwy Signal PM 0.530 A 0.536 A 0.536 A A 0.546 A A Tourney Road & Wayne Mills Twsc AM 5.4 A 6.8 A 7.1 A A Place Signal AM 5.0 A 6.4 A 6.7 A B A A B A A	-	I-5 SB Ramps & Magic	0:20	AM	0.356	A	0.362	A	0.371	A	900.0
1-5 NB Ramps & Magic Signal AM 0.493 A 0.496 A 0.510 A Mountain Pkwy Signal PM 0.510 A 0.523 A 0.536 A 0.480 A 0.492 A Mountain Pkwy Signal AM 0.465 A 0.536 A 0.536 A 0.546 A Tourney Road & Wayne Mills TWSC AM 5.4 A 6.8 A 7.1 A Project Driveway & Wayne OwSC AM 5.0 A 6.7 A A Mills Place PM 5.0 A 5.0 A 5.0 A	7	Mountain Pkwy	orginal	PM	0.403	A	0.415	A	0.426	A	0.012
Mountain Pkwy Signal PM 0.510 A 0.523 A 0.536 A 0.536 A 0.536 A 0.536 A 0.536 A A 0.536 A <	C	I-5 NB Ramps & Magic	Cime	AM	0.493	A	0.496	A	0.510	A	0.003
Tourney Road & Magic Signal AM 0.465 A 0.480 A 0.492 A Mountain Pkwy PM 0.530 A 0.536 A 0.536 A <td>2</td> <td>Mountain Pkwy</td> <td>Signal</td> <td>PM</td> <td>0.510</td> <td>A</td> <td>0.523</td> <td>A</td> <td>0.543</td> <td>A</td> <td>0.013</td>	2	Mountain Pkwy	Signal	PM	0.510	A	0.523	A	0.543	A	0.013
Mountain Pkwy Jighad PM 0.530 A 0.536 A 0.536 A <t< td=""><td>_</td><td>Tourney Road & Magic</td><td>Cima</td><td>AM</td><td>0.465</td><td>A</td><td>0.480</td><td>A</td><td>0.492</td><td>A</td><td>0.015</td></t<>	_	Tourney Road & Magic	Cima	AM	0.465	A	0.480	A	0.492	A	0.015
Tourney Road & Wayne Mills TWSC AM 5.4 A 6.8 A 7.1 A Place Pince 5.0 A 6.4 A 6.7 A Project Driveway & Wayne OWSC AM 5.0 A 4.9 A Mills Place PM FM 5.0 A 5.0 A A	t	Mountain Pkwy	Signai	PM	0.530	A	0.536	A	0.546	A	9000
Place I w 3C PM 5.0 A 6.4 A 6.7 A Project Driveway & Wayne OWSC AM 5.0 A 4.9 A A Mills Place PM PM 5.0 A 5.0 A A A	4	Tourney Road & Wayne Mills	Do/MT	AM	5.4	A	8.9	A	7.1	A	0.3
Project Driveway & Wayne AM DNE 5.0 A 4.9 A Mills Place 5.0 A 5.0 A A A	J	Place	I Wac	PM	5.0	A	6.4	A	6.7	A	0.3
Mills Place 5.0 A 5.0 A 5.0 A	7		Oavio	AM	TANG		5.0	A	4.9	A	0.0
	>		Ows.	PM	מאות		5.0	A	5.0	A	0.0

DNE = Does not exist, TWSC = Two Way Stop Control, OWSC = One Way Stop Control.

(a) ICU is reported at signalized intersections.

(b) LOS calculations are based on the methodology outlined in the 2000 Highway Capacity Manual (HCM).

Delays at unsignalized intersections are reported based on intersection delay using Synchro 8 – Intersection Capacity Software

SECTION V - SUMMARY OF FINDINGS AND CONCLUSIONS

The following list provides a summary of the key findings for the project:

- The project is forecasted to generate a net increase of approximately 1,237 daily trips with 99 AM peak-hour trips and 105 PM peak-hour trips.
- All study area intersections, including the project driveway, are expected to operate at an acceptable LOS "D" or better during the AM and PM peak hours with the addition of project traffic.
- All study area roadway segments are expected to operate at an acceptable LOS "A" or better, except
 for the segment of Magic Mountain Parkway between Tourney Road and Wayne Mills Place, which
 is currently operating at LOS "E" and will continue to operate at LOS "E" with the addition of project
 traffic.
- The increase in project traffic at the study area intersections and roadway segments do not result in a significant impact and therefore no additional improvements are required and/or recommended.

APPENDIX A

➤ 24-Hour Segment Counts ➤ AM/PM Peak Hour Turn Counts

Prepared by ND5/ATD

VOLUME

Wayne Mills PI E/O Driveway #3

Day: Monday Date: 7/4/2016

City: Santa Clarita Project #: CA16_5446_001

W	DAILY TOTALS			NE 0		.5j	_	HB 734		WB 700						1	Total 1,434
AM Period	NB SB	E	В	W	3		TOTAL	PM Period	NB	- 311	SB	H	36	W	3	-	TOTA
00:00 00:15		7		15		2.2		12:00				13		6		19	9
		9		10		19		12:15	1			11		11		22	
00:30		5		5	20	10		12:30				11		9		20	
00:45		3		3	33	6	57			_		12		10	36	2.2	
01:00	10	10		3		13		13:00				13		5		18	
01:13		2		5		7		13:15	1			8		8		16	
01:45		5		5	11.4	10		13:30	1			6	26	1		7	
02:00		5		2	14	7	35		-			8	35	_ 5	19	13	
02:15		Ö		1		1		14:00				12		10		22	
02:30		1		1		2		14:15 14:30	K II			8		3		11	
02:45	/	0		1	5	1	11	14:45				7		5	-	12	
03:00		1		2		3	.11	15:00				4	31	13	31	17	
03:15		2		ō		2		15:15				6		4		10	
03:30		1		1		2		15:30				6		3		7	
03:45		0		0	3	0	7	15:45				8	24	13	20	19	
04:00		4		Q	-	4	-	16:00				9	24	6	26	14	
04:15		O		Ö		0		16:15				10		10		20	
04:30		1		1		2		16:30				7		4.			
04:45		ō	5	5	6	5	11	16:45				ģ	35	6	28	11 15	6
05:00		2		2		4		17:00				5	22	6	20	11	
05:15	(2		5		7		17:15				2		10		12	
05:30		3		2		5		17:30				6		9		15	
05:45		3	10	4	13	7	23	17:45	2			4	17	4	29	8	4
06:00		4		3		7	-	18:00				5		2	43	7	
06:15		6		4		10		18:15)			7		9		15	
06:30		4		6		10		18:30				10		14		24	
06:45		3	17	7	20	10	37	18:45				2	24	9	34	11	5
07:00		.7		2		9		19:00				6		8	-9/74	14	
07:15		.2		12		14		19:15				10		3		13	
07:30		.7		10		17		19:30				4		4		8	
07:45		8	24	17	41	25	65	19:45				7	27	7	22	14	4
08:00		9		3		12		20:00				3	301	8	-	11	
08:15		4		:9		13		20:15				7		13		20	
08:30		1.1		8		19		20:30				8		10		18	
08:45		9	33	8	28	17	61	20:45				2	20	9	40	11	60
09:00		19		16		35		21:00				11		15		26	-
09:15		17		8		25		21:15				8		7		15	
09:30		21		15		36		21:30				3		9		12	
09:45		23	80	17	56	40	136	21:45				7	29	11	42	18	7:
10:00		27		10		37		22:00				7		13		20	
10:15		26		10		36		22:15				6		17	- 7	23	
10:30		22	2.4	13	Decid	35		22:30				4		14	- 10	18	
10:45		21	96	11	44	32	140	22:45				9	26	20	64	29	90
11:00		20		12		32		23:00				8		9		17	
11:15		15		7		22		23:15				7		9	- 9	16	
11:30		23	pia.	5	66.60	28	4	23:30				10		8	- 8	18	
11:45		11	69	8	32	19	101	23:45	_			5	30	8	34	13	64
TOTALS			389		295		684	TOTALS					345		405		750
SPLIT %			56.9%		43.1%		47.7%	SPLIT %					46.0%		54.0%		52.3
	DAILY TOTALS	- 11		NB		SB	23	EB	W	6	=	-111-				To	otal
	Dillier TOTALS			0		0		734	70		100		2-3		- 1		434
VI Peak Hour			09:45		09:00		09:30	PM Peak Hour					12:00		22:00		22:0
VI Pk Volume			98		56		149	PM Pk Volume					47		64		90
k Hr Factor			0.907		0.824		0.931	Pk Hr Factor					0.904		0.800		0.77
-9 Volume			57		69		126	4 - 6 Volume					52		57		109
9 Peak Hour			08:00		07:15		07:45	4 - 6 Peak Hour									
9 Pk Volume			33		42			4 - 6 Pk Volume					16:00		16:45		16:0
k Hr Factor							Commence of the						35		31		63
THE PERSON			0.750		0.618		0.690	Pk Hr Factor					0.875		0.775		0.78

Prepared by NDS/ATD

VOLUME

Tourney Rd Bet. Magic Mountain Pkwy & Wayne Mills Pl

Day: Thursday Date: 7/28/2016

	DAILY	TOTALS	NB	SB	E				Total
AM Perio	75 1 -	SB	5,001	5,229	0				10,230
00:00	13	7	EB WB	TOTAL 20	PIM Perio	The state of the s	SB	EB WB	TOTAL
00:15	9	5		14	12:15	137 132	76 90		213
00:30	3	5 5 22		8	12:30	104	96		222
00:45	6 31			11 59	12:45	116 489	115 377		200 231 866
01:00	4	4		8	13:00	78	135		231 866 213
01:15	5	5		10	13:15	85	109		194
01:30	4	3		7	13:30	84	99		183
01:45 02:00	6 14	1 13		2 27	13:45	91 338	116 459		207 797
02:00	2	11		9	14:00	78	76		154
02:30	2	5		13	14:15	78	88		166
02:45	2 12	2 21		7 4 33	14:30	78	102		180
03:00	5	1		6 33	14:45 15:00	91 325 91	100 366		191 691
03;15	3	Ō		3	15:15	81	85 87		176
03:30	8	4		12	15:30	101	69		168
03:45	3 19	4 9		7 28	15:45	83 356	71 312		170
04:00	0	3		3	16:00	105	85	-	154 668
04:15	3	6		9	16:15	101	78		190 179
04:30	8	6		14	16:30	137	60		197
04:45	7 18	11 26		18 44	16:45	136 479	73 296		209 775
05:00	11	13		24	17:00	182	66		248
05:15	25	23		48	17:15	95	69		164
05:30	23	15		38	17:30	127	55		182
05:45	24 83	17 68		41 151	17:45	94 498	46 236		140 734
06:00 06:15	29 21	24		53	18:00	95	51		146
06:30	43	40		61	18:15	57	60		117
06:45	31 124	34 77 1 7 5		77	18:30	63	48		111
07:00	33	77 175 55		108 299	18:45	61 276	38 197		99 473
07:15	39	97		88	19:00	40	34		7.4
07:30	38	118		136	19:15	41	33		74
07:45	40 150	155 425		156 195 575	19:30	45	34		79
08:00	38	153		195 575 191	19:45 20:00	37 163	30 131		67 294
08:15	55	177		232	20:00	41 36	31		72
08:30	41	138		179	20:30	39	35 29		71
08:45	48 182	145 613		193 795	20:45	21 137	24 119		68
09:00	70	116		186	21:00	50	33		45 256
09:15	82	88		170	21:15	20	16		83 36
09:30	85	99		184	21:30	25	30		55
09:45		102 405		177 717	21:45	27 122	30 109		57 231
10:00		120		206	22:00	22	18		40
10:15	82	99		181	22:15	16	23		39
10:30	102	72		174	22:30	14	11		25
10:45	72 342 101	99 390 84		171 732	22:45	9 51	10 62		19 123
11:15	86			185	23:00	15	13		28
11:30	125	91 91		177	23:15	13	6		19
11:45		89 355		216	23:30	11	9		20
TOTALS	1709	2522		199 777	23:45	9 48	15 43		24 91
SPLIT %	40.498			4231	TOTALS	3292	2707		5999
37 61 76	40,476	59.6%	5/11	41.4%	SPLIT%	54.9%	45.1%		58.6%
	DAILYTO	OTALS	NB	SB	EB	WB		1	Total
	1000	- 1000	5,001	5,229	0	0		-	10,230
M Peak Hour	11:30	07:45		11:30	PM Peak Hour	16:15	13:00		12:00
M Pk Volume	504	623		850	PM Pk Volume	556	459		866
k Hr Factor	0.920	0.880		0.957	Pk Hr Factor	0.764	0.850		0.937
- 9 Volume	332	1038	4	1370	4 - 6 Volume	977	532	0	1509
9 Peak Hour	08:00	07:45		07:45	4 - 6 Peak Hour	16:15	16:00		16:15
9 Pk Volume	182	623	P g	797	4 - 6 Pk Volume	556	296		833
Hr Factor	0.827	0.880	0.650 0.06	0.859	Pk Hr Factor	0.764	0.871	0.050 a	0.840

Prepared by NDS/ATD

VOLUME

Tourney Rd S/O Wayne Mills Pl

Day: Thursday Date: 7/28/2016

	DAILY TO	TALS	NB 2,940	SB 3,059	EB 0	WB 0	4	23.3	Total
AM Period	il NB	SB	EB WB	TOTAL	PM Period		ćn.	- 1445	5,999
00:00	12	6	- 40	18	12:00	42	SB [B WB	TOTA
00:15		8		12	12:15	47	53		95
00:30		5		15	12:30	42	56		100
00:45		3 22		15 9 54	12:45	33 164	49 211		98
01:00		6		9	13:00	49	48		97
01:15		3		6	13:15	40	65		
01:30	4	6		10	13:30	50	58		105
01:45		4 19		9 34	13:45	48 187	37 208		108
02:00		8		15	14:00	44	42		85 39
02:15		4		12	14:15	30	43		86
02:30	5	2		7	14:30	50	45		73
02:45		3 17		8 42	14:45	46 170	40 170		95
03:00		2		7	15:00	43	53		86 34
03:15	1 (6		7	15:15	45	51		96
03:30	5 8	В		13	15:30	41			96
03:45	5 16 8	3 19		13 8 35	15:45	45 174	34		75 92 35
04:00	8 7			15	16:00	41	47 185 39		
04:15	9 1	3		22	16:15				80
04:30	13 4			17	16:30	45 50	41		86
04:45	16 46 8			24 78	16:45		40		90
05:00	14 1			24 /8		49 185	54 174		103 35
05:15	21 1			34	17:00	54	43		97
05:30	26 9			35	17:15	50	61		111
05:45	19 80 25				17:30	65	55		120
06:00	27 2	1			17:45	51 220	72 231		123 45
06:15	29 28			48	18:00	67	41		108
06:30	29 26			55	18:15	51	44		95
06:45	25 110 39	9 112		55	18:30	50	45		95
07:00	31 25	3 112		64 222	18:45	50 218	37 167		95 87 38
07:15				56	19:00	45	53		98
07:30				75	19:15	43	45		88
07:45		4770		86	19:30	33	52		85
08:00				57 274	19:45	36 157	54 204		90 36:
08:15				71	20:00	41	48		89
08:30				52	20:15	37	49		86
	32 31	200		63	20:30	48	46		94
08:45	35 130 23 30 36			58 244	20:45	36 162	57 200		93 362
09:00				66	21:00	40	38		78
09:15	38 33			71	21:15	42	35		78
	35 37			72	21:30	30	29		59
09:45	45 148 34			79 288	21:45	26 138	27 130		53 268
10:00	22 48			70	22:00	21	27		48
10:15	34 34			68	22:15	22	21		43
10:30	40 40			80	22:30	16	12		28
10:45	42 138 40			82 300	22:45	15 74	23 83		38 157
11:00	43 39			82	23:00	17	26		43
11:15	35 38			73	23:15	17	11		28
11:30	34 58			92	23:30	14	22		36
11:45	48 160 57	192	***	105 352	23:45	8 56	12 71		20 127
TOTALS	1035	1025		2060	TOTALS	1905	2034		3939
SPLIT %	50.2%	49.8%	The state of the s	34.3%	SPLIT %	48.4%	51.6%		
-	Shelmin a best of	Marian -	NB	SB	200 PE AU		DATE (III		65.7
	DAILY TOT	ALS	2,940	3.059	EB O	WB 0			Total
A Peak Hour	11:45	11:30							5,999
A Pk Volume	179			11:45	PM Peak Hour	17:30	17:00		17:15
		221			PM Pk Volume	234	231		462
k Hr Factor	0.952	0.953		0.948	Pk Hr Factor	0.873	0.802		0.939
- 9 Volume	265	259	世 1	518	4-6 Volume	405	405	01	The second second
9 Peak Hour	07:15	07:15			4 - 6 Peak Hour	17:00	17:00		810
9 Pk Volume	139	150	M - 16		- 6 Pk Volume				17:00
No. of the last of	0.827	0.833	8,050 0:000		CONTRACTOR OF THE PARTY OF THE	220	231	9 0	451
k Hr Factor					Pk Hr Factor	0.846	0.802	17,616 3,60	0.91

Prepared by NDS/ATO

VOLUME

Magic Mountain Pkwy Bet. I-5 NB Ramps & Tourney Rd

Day: Thursday Date: 7/28/2016

	DAILY TOTALS			NB 0		SB O		EB 16,525	W 5 16,0			14.11	mile.		_	Total 32,584
AM Period	NB SB	E		WB	1	TC	TAL	PM Period		SB	EF		W	В		OTAL
00:00 00:15		50		34		84		12:00			263	3	22	7	490	
00:30		34 25		28 36		62 61		12:15 12:30	1		248		293	3	54:	
00;45		19			118		246				251 240		283		543	
01:00		29		21	220	50	2.40	13:00			265		286		489	
01:15		28		14		42		13:15	1		249		273		527	
01:30 01:45		22	- 22	12	-	34	70.5	13:30	1		213		245		458	
02:00		30	96	12	59	29	155				200		238	1042		
02:15		22		13 7		43 29		14:00 14:15			206		247		453	
02:30		8		18		26		14:15			224		213		437	
02:45		8	68	14	52	22	120	14:45			246 229		241 247		487	
03:00		10		6		16		15:00			240		258	940	498	
03:15		13		7		20		15:15			293		268		561	
03:30 03:45		23	- 24	19	20	42		15:30			306		243		549	
04:00		28	74	18	50	46	124	15:45			353				606	
04:00		19 25		21		40		16:00			373		245		618	-
04:30		52		28 54		53 106		16:15 16:30			358		272		630	
04:45		68	164	60	163	128	327	16:45			391	1514	248		639	
05:00		57	101	94	103	151	361	17:00			392 402	1514	290 276	1055	682	
05:15		63		135		198		17:15			433		268		678 701	
05:30		67		147		214		17:30			366		223		589	
05:45		72	259	193	569	265	828	17:45			405	1606	249	1016	654	2622
06:00		91		180		271		18:00			288		248	4010	536	
06:15 06:30		87		169		256		18:15			277		215		492	
06:45		133	400	220	000	353	Take 1	18:30			244		177		421	
07:00		155	488	184	806	414 339	1294	18:45			218	1027	195	835	413	1862
07:15		177		250		427	- 1	19:00 19:15			222		174		396	
07:30		233		247		480		19:30			203 177		163		366	
07:45		285	850	279	960	564	1810	19:45			189	791	170 174	681	347 363	1472
08:00		270		257		527		20:00			181	1.31	136	OOT	317	1412
08:15		248		253		501		20:15			150		152		302	
08:30 08:45		227		233		460		20:30			138		165		303	
09:00		240	985	243	986		1971	20:45			127	596	153	606	280	1202
09:15		236		247 245		483		21:00			141		173		314	
09:30		228		235		451 463		21:15 21:30			135		164		299	1
09:45		257	927	217	944		1871	21:45			161		144	COF	305	*****
10:00		208		239		447	2072	22:00			138 97	575	124	605	262	1180
10:15		243		246		489		22:15			96		96		192	
10:30		208		229		437		22:30			78		82		160	
10:45 11:00		200	859	213	927		1786	22:45			63	334	63	351	126	685
11:15		243		244		487		23:00			61		66		127	
11:15		211 236		252 292		463 528	1	23:15			54		52		106	
11:45		234	924		1026		1950	23:30 23:45			50	mm/4	45	200	95	5.5.
TOTALS		1000	5822		6660		2482	TOTALS			59	10703	24	187 9399	83	411 20102
SPLIT%	1.1		46.6%	-	53.4%		38.3%	SPLIT %			-	A STATE OF THE PARTY OF THE PAR		10-07		- 25 - G-10
	10 NO.		10000				70,070	Sin-We	ST CONTRACT		-	53.2%		46,8%		61.7%
	DAILY TOTALS			NB O		SB 0	-	EB 16,525	WB 16,059							tal
AM Peak Hour			00.00		44.00		Carron.		10/059						32,	584
M Pk Volume			1025		11:30		07:30	PM Peak Hour				16:30		12:15		16:30
Pk Hr Factor			1036		1050		2072	PM Pk Volume				1518		1110		2700
7 - 9 Volume	- 0 0 -		0.909		0.896		0.918	Pk Hr Factor				0.934		0.947	-	0.963
- 9 Peak Hour			07:30		1946		3781	4 - 6 Volume	. 0	1)		3120		2071		5191
- 9 Pk Volume	b 6		1036		1026			4 - 6 Peak Hour	241			16:30		16:15		16:30
Pk Hr Factor	0.000 0.000		0.909		1036			4 - 6 Pk Volume	0	F		1618		1086		2700
THE POPULATION OF THE PARTY OF	areas and	_	0.503	1	0.928		0.918	Pk Hr Factor	0.000	9,068		0.934		0,936		0.963

Prepared by ND5/ATD

VOLUME

Magic Mountain Pkwy Bet. The Old Rd & I-5 SB Ramps

Day: Thursday Date: 7/28/2016

	DAILY TOTALS			NB 0	1	SB O		EB 12,286	WB 22,458						Total 14,744
AM Period	NB SB	Æ	3	WE		- 121)TAL	PM Period	1300	SB E	В	W	Ř:	-	OTAL
00:00		20		56		7.6		12:00		22		39		620	
00:15	X.	16		30		45		12:15		12		46		583	
00:30		7		42		49		12:30		11		41		532	
00:45		19		24	152	43	214	12:45		12		36			
01:00	A .	19		20		39		13:00		13		33		474	
01:15	1	6		20		26		13:15		11		32		434	
01:30		14		26	7.6	40		13:30		21		30		516	
01:45		14	53	20	86	34	139	13:45		12		208		329	
02:00		8		24		32		14:00		18		27		464	
02:15 02:30		13		22		35		14:15		16.		246		411	
02:30		6		32		38		14:30	Y	18	5	259		444	
03:00		10	37	29	107	39	144	14:45		134	4 673	303		437	
03:00		9		10		19		15:00		160		290)	450	
03:30		10		22		32		15:15		218	3	335		553	
03:45		5	2.5	36		41	120	15:30		263		287	,	548	
04:00		12	36	60	128	72	154	15:45		256	895	329	1241	585	
04:05		1		37		38		16:00		241		312		553	
04:15		5		50		55		16:15		243		328		571	
04:45		16	20	95	200	111	35.3	16:30		266		312		578	
05:00		8	30	118	300	125	330	16:45		271	1021	359	1311	630	233
05:15		12		103		115		17:00		268		344		512	
05:30		20		154		174		17:15		295		306		501	
05:45		16	00	254	00.4	270	sepe.	17:30		253		327		580	
06:00		35	83	323	834	358	917	17:45		254		347	1324	601	239
06:15				178		215		18:00		228		417		645	-
06:30		36		217		253		18:15		209		338		547	- 11
06:45		39	of alm	270		309	Just	18:30		357		274		631	
07:00		32 52	145	359	1024	391	1169	18:45		286	1080	289	1318	575	2398
07:15				297		349		19:00		270	-	246		516	Sec.
07:30		65		353		418		19:15		219		283		502	
07:45		71 90	270	314	4000	385	Name of	19:30		275		212		487	
08:00		61	278	368	1332	458	1610	19:45		322	1086	209	950	531	2036
08:15				338		399		20:00		301		178		479	
08:30		81		292	- 11	373		20:15		244		192		436	
08:45		71	200	266	4400	337		20:30		346		191		537	
09:00		75 89	288	292	1188		1476	20:45		393	1284	157	718	550	2002
09:15		126		357		446		21:00		343		172		515	17.3%
09:30				320		446		21:15		247		157		404	
09:45		126	477	389		515	-	21:30		122		149	- 4	271	
10:00		136	477	416	1482		1959	21:45		129	841	120	598	249	1439
10:15		162		500		662		22:00		71		123		194	1
10:30		129		504		633		22:15		85		102		187	
10:45		142 167	600	503	2010	645	200	22:30		96		84	4 7 4 1	180	
11:00		119	600	511	2018		2618	22:45		34	286	74	383	108	669
11:15		114		486		605		23:00		51	-	87		138	
11:30		155		488		602		23:15		70		65		135	
11:45		218	606	432	1025	587	7402	23:30		36		45		81	
- Table 200 - 100		TTO	The State of the S		1826		2432	23:45		31	188	57	254	88	442
TOTALS	E		2695	-	10477		13172	TOTALS			9591		11981		21572
SPLIT %			20.5%		79.5%	- 4	37.9%	SPLIT %			44.5%	F	55.5%		62.1%
4	DAILY TOTALS			NB		SB		EB	WB					- 0	
2	DAILY TOTALS			0		0		12,286	22,458						tal 744
M Peak Hour			11:30		10:00		tono	DAA DAUL O					- 1		
M Pk Valume							10:00	PM Peak Hour			20:30		12:00		17:15
k Hr Factor	25-		721		2018		2618	PM Pk Volume			1329		1628		2427
- 9 Volume	-	-	0.794	T	0.987		0.965	Pk Hr Factor			0.845		0.885		0,941
	g g		566		2520	1	3086	4 - 6 Volume	0	U	2091	400	2635		4726
9 Peak Hour			07:30		07:15	1	07:15	4 - 6 Peak Hour			16:30		16:15		16:45
9 Pk Volume	W. #		303		1373		40°40'8'0'AC	4 - 6 Pk Volume			1100				
k Hr Factor								4 - O Fit Volume	100	1)			1343		2423

Prepared by NOS/ATD

VOLUME

Magic Mountain Pkwy E/O Tourney Rd

Day: Thursday Date: 7/28/2016

	DAILY TOTALS			N		SB 0	EB 25,14	WB 3 26,560		- 11		= 70	1	Total
AM Period	NB SB	E	8	W		TOTAL	PM Period	100000	SB E		0/07			1,70
00:00		71		62		133	12:00	100	35		WE 458		-	OTAL
00:15		66	5	56		122	12:15		37		495		816	
00:30		68	3	38		106	12:30		35		417		773	
00:45	V 9	47			195	86 44			43					
01:00		50		53		103	13:00		33		465	1//(796	
01:15		44		34		78	13:15		37		456		829	
01:30		48		30		78	13:30		42		542		970	
01:45		41			155	79 33	13:45		42			1958		
02:00		57		44	-	101	14:00		42		396	2000	820	
02:15	1	43		23		56	14:15	V	39	9	523		922	
02:30		53		18		71	14:30		35	7	599		956	
02:45		59	212	35	120	94 332			43		549	2067		
03:00		49		29		78	15:00		42-		523		947	
03:15		42		43		85	15:15		36:		505		866	
03:30		72		41		113	15:30		431	7	427		864	
03:45		33		37	150	70 346			403	1625	305	1760		
04:00 04:15		71		63		134	16:00		459		258		717	
		76		69		145	16:15		425	5	301		726	
04:30		87		97	227	184	16:30		460)	229		689	
04:45		135		106	335	241 704		1	457	1801	331	1119		
05:00 05:15		114		102		216	17:00		505		259		754	
		135		151		286	17:15		423	1	286		709	
05:30 05:45		201		230		431	17:30		504		220		724	
06:00		195		231	714	426 135			428	1860	265	1030	693	289
06:15		165		224		389	18:00		499		345		844	
06:30		195		254		449	18:15		472		398		870	
06:45		226		281		507	18:30		409		396		805	
07:00		206		256	1015	452 1807			415	1795	306	1445	721	324
07:15		192		201		398	19:00		420		349		769	
07:30		201		332		533	19:15		454		370		824	
07:45		253	045	294		547	19:30		362		382		744	
08:00		270	916	389	1216	859 2132			371	1607	360	1461	731	306
08:15		219		325		944	20:00		333		319		652	
08:30		266		389		655	20:15		333		355		688	
08:45		275 264	1004	301	anne.	576	20:30		275		317		592	
09:00		288	1024	341	1356	605 2380			283	1224	309	1300	592	252
09:15		262		333		621	21:00		290		419		709	
09:30		287		364		626	21:15		290		406		696	
09:45		351	1188	427 380	1504	714	21:30		234		284		518	
10:00		309	1100		1504	731 2692			210	1024	247	1356	457	238
10:15		262		401		710	22:00		194		225	-	419	200
10:30		341		410 474		672	22:15		195		201		396	
10:45		325	1237	344	1620	815	22:30		150		149	2280	299	- NAME OF
11:00		353	1257		1629	669 2866	22:45		154	693	126	701	280	139
11:15		343		411		764	23:00		127		141		268	
11:30		313		447		806	23:15		118		114		232	
11:45		360	1369	442	1763	760 802 3132	23:30 23:45		115		109		224	
TOTALS		200	8383	442	10152	18535	THE RESERVE OF THE PARTY OF THE		80	440	71	435	151	875
SPLIT %		-	45.2%		54.8%		TOTALS			16760		16408		3316
			45,276		34.876	35.8%	SPLIT %			50.5%		49.5%		64.2
	DAILY TOTALS			NB		SB	ЕВ	WB				7	To	tal
				0		0	25,143	26,560			-	J	51,	703
Peak Hour			11:45		11:30	11:45	PM Peak Hour			17:30		14:15		14:15
Pk Volume			1450		1842	3262	PM Pk Volume			1903		2194		3804
Hr Factor		-00	0.964		0.930	0.936	Pk Hr Factor			0.944		0.916		0.971
9 Volume	11	-	1940		2572	4512	4 - 6 Volume		0"	3661		2149		5810
Peak Hour			07:45		07:45	07:45	4 - 6 Peak Hour			16:45		200000		
Pk Volume Hr Factor	00 00		1030		1404	2434	4 - 6 Pk Volume		16	1889		16:15		16:45 2985

Project ID: 16-5499-001

City: Santa Clarita

Day: Thursday

Date: 7/28/2016

NS/EW Streets:	1	5 NO Ramp	×		1-5 NO Ran	qet	Magi	c Huuntain S	Plovy	Magis	: Mountain	Piwy	
	16	ORTHBOL	D		SOUTHBOU	ND		EASTBOUNI)	-	WESTEQUIN	io '	_
LANES:	NL 2	NT 0.5	NR 1.5	5L 0	5T 0	SR	EL 2	3 ET	ER 0	Mr.	WT 3.5.	WR 1,5	TOTA
7:00 AM 7:15 AM 7:15 AM 7:45 AM 8:00 AM 8:15 AM 8:45 AM	235 288 237 292 253 221 186 212	0 0 0 0 0 0 0	93 108 129 143 158 125 123	0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0	0 0 0 0 0 0	1 11 11 9 9 4 5	63 67 117 128 116 115 107 119	0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	145 196 197 207 201 216 192 210	39 53 51 72 41 52 35	576 723 742 851 778 736 640 703
TOTAL VOLUMES : APPROACH % & :	NL 1924 65:82%	NT 0 0.00%	NR 999 34,18%	SL 0 #DJV/01	5T 0 #DIV/01	SR 0 #DIV/0)	EL 56 6:31%	E7 832 93.69%	E/L 0 0.00%	WL 0 0.00%	WT 1564 80.37%	WR 362 19,63%	TOTAL 5757
PEAK HIR START TIME:	730 A		obs. I			- 1	100	- 17	7		==		TOTAL
PEAR HE FACTOR	1003	0.897	558	19	0.000	0	33	176	0	0,	0.929	216	3107

NB	Sil	EB	WE
0	0	D.	0

UTURNS

CONTROL : Signatized

Project ID: 16-5499-001

City: Santa Clarita

Day: Thursday Date: 7/28/2016

3561

	PM													
NS/EW Streets:	I-5 NB RAMPS NORTHBOUND				1-5 NB Ramps			Hegic Mountain Play			Magic Mountain Privy			
				SOUTHBOUND			EASTBOUND			7	_			
LANES;	NL.	NT 0,5	NR 1:5	SI.	5T	5R 0	EL:	ET:	ER 0	WL D.	WT 3.5	WR 1,5	TOTA	
4100 PI4	185	0	154	0	9	0	24	221	ō.	0	168	80	B32	
4:15 PM	191	0	175	0	0	0	40	181	0	0	176	85	848	
4:30 PM	105	0	179	0	0	0	32	215	Ò	0	176	62	871	
4:45 PM	235	0	169	.0	CI CI	D	26	217	0	0	175	110	932	
5:00 PM	227	1	160	0	0	Q.	23	22.5	0	0	178	102	937	
5:15 PM	200	1	171	Ø	0	Ď	40	245	0	0	171		921	
5:30 PM	224	0	124	D		0	25	190	Ö	0	1372	93 74	847	
5:45 PM	235	2	196	Ö	0	0	24	202	ā	0	171 152 152	99	901	
TOTAL VOLUMES :	NL 1682	NT	NR 1398	SL	ST	SR	EL.	EI	ER	WL	WT	WR.	TOTA	
APPROACH %'s :	54.54%	0.1356	45,33%	#DIV/GI	#DIV/01	#DIV/01	234 12.07%	1705 87.93%	0.00%	0.00%	1350 65.34%	716 34.66%	7089	

121 903

NB	58	Ę₿	WE
		1	
		0	
		.03	
		0	
		0	
		0	
NB I	58	66	WB
NB D	0.	EB	WB

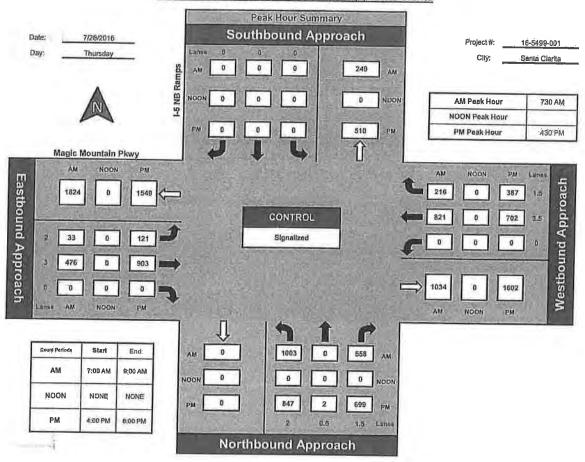
_	PEAK	DR PAG	TOR	

ITM Peak Hour Summary

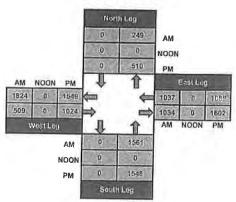


National Data & Surveying Services

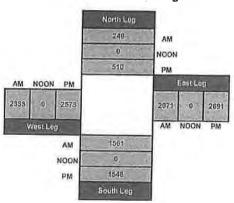
I-5 NB Ramps and Magic Mountain Pkwy , Santa Clarita



Total Ins & Outs



Total Volume Per Leg



Project ID: 16-5499-002

City: Santa Clarita

Day: Thursday Date: 7/28/2016

		2012												
NS/EW Streets:		1-5 50 Ramps			5 SB Ramp	is .	Magi	Hountain	Pkwy	Min	Service .	1		
		NORTHBOL	IND		SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	TM .D	NR Q	SL 1,5	ST 0.5	SR ₽	EL 0	ET 3	ER 2	WL 2	WT	WR 0	TOTA	
7:00 AM 7:15 AM	0	0	0.	31 39	1 D	11 10	0	37 32	17 30	119 135	262 346	0	498 592	
7:30 AM 7:45 AM 8:00 AM	0	0	0	76 65 63	1	6 10 11	o:	51 57	24 26 29	130	355	0	594	
8:15 AM 8:30 AM	0	0	0	67 63 70	0	10	D 0 0	51 57 42 53 46 54	29 22 32	140 151 119	320 285 252	0	651 625 591 520	
8:45 AM	0	0	0		1	15	Õ-	54	20	140	286	0	586	
TOTAL VOLUMES : APPROACH %5's :	# DIV/0!	#D1V/01	NR 0 #DIV/01	SL 514 85,95%	ST 3 0.50%	SR 81 13,55%	0 0,00%	372 65.03%	ER 200 34.97%	WL 1054 30.23%	WT 2433 69.77%	WR Q 0,00%	TOTAL 4657	
PEAK HR STARY TIME :	715	MA		100							-		TOTAL	
PEAR HR VOL	ä	0	0	263	1	37	ú	102	109	572	1320	0	2462	
PEAK HR FACTOR 1		0.000	100		0.034			0.677			0.062	- 1	Abar	

		URNS	
ΝŖ	SB	EB	WB
_			0
			0
			0
			0
			1
			2
			D
ND I	58	EB	WB
a l	0	0	3

CONTROL : Signatived

Project ID: 16-5499-002

City: Santa Clarita

Day: Thursday

Date: 7/28/2016

3012

335 1198

NS/EW Streets:			ros.	1-5 Sh Ramps			Magic Mountain Plovy			Magic Mountain Priviy			
	-	MORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
LANES:	NL 0	NT D	NR D	SL 1:5	5T 0.5	SR	EL 0	ET 3	ER	WL	WT	WR:	тот
				4-4	0.5	4	U	,3	4	2	4	0	
4:00 FM	0	0	0	70	0	42	0	177	73	77	279	n	71
4:15 PM	0	0.	0	47	1	32	D	168		69	2416	0	68
4:30 PM	0	O.	0	76	-0	29	0	173	99	87	295 279	0	73
4:45 PM	O	0	0	60	.0	30	n	188	76	75	330	7	75
5:00 PM	0	D	0	67	0	37	Ď.	168 173 188 195	80	105	300	0	78
5:15 PM	0	0	0	58	0	24	1	219	58 99 76 80 73	74	281		
5:30 PM	0	0	0	43	0	25	n.	180	75	84	294	u u	73
5:45 PM	0	0	0	48	1	32 25 30 37 24 25 30	ō	190	75 72	74	317	0	70
TOTAL VOLUMES 1	NL 0	NT O	NR 0	SL	ST	5R	EL	ET	ER	WL	WT	WR	TOT
	#DIV/01	#DIV/01	#DIV/01	459 65,96%	0,28%	240 33.76%	0.05%	1476 70,52%	616 29,43%	642 21,22%	2384 78.78%	0.00%	583

	UII	URNS			
NB	5B	5B E6			
_	_	ū	D		
		0	Q-		
		D.	0		
		0. 0	:0		
			0		
		1	.0		
		O.	0		
		0	4.		
NB.	58	ED	WB		
0	0	1	1		

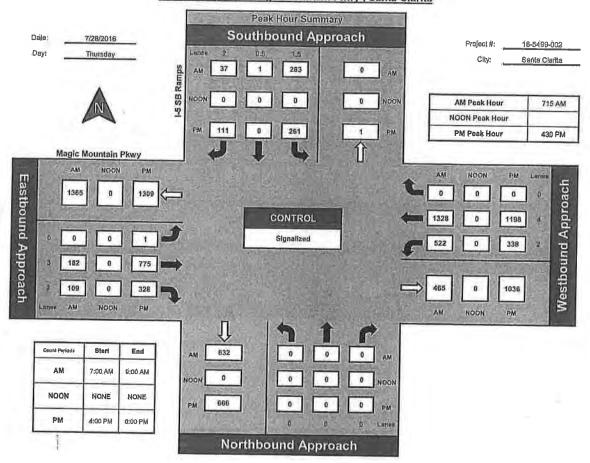
CONTROL | Signatured

ITM Peak Hour Summary

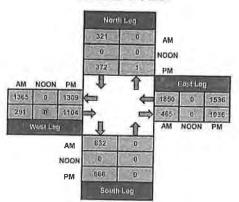


National Data & Surveying Services

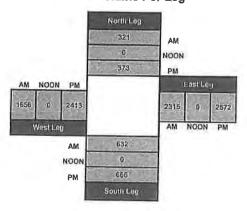
1-5 SB Ramps and Magic Mountain Pkwy , Santa Clarita







Total Volume Per Leg



Project ID: 16-5499-003

City: Santa Clarita

Day: Thursday

Date: 7/28/2016

UTURNS

		AM												
N5/EW Streets:		The Old Ad			The Old Rd			Mountain S	Kny	Magic	Plany	1		
	NORTHBOUND			SOUTHBOUND			EASTBOUND							
L'ANES:	NL 2	NT 3	NR 1	SL 2	\$T 3	SR 1	EL 2	ET 4	ER 1	WL 2	WT 4	WR 1	TOTA	
7:00 AM 7:15 AM	5	54 62	10	36 33	20 28	0	6	6	1	24 36	20	295 293	440 520	
7:30 AM 7:45 AM	5	71 81	16 18 25 19 20 14	36 33 38 43 33 37 42	28 29 48 54	0	7	16	1		20 20 22 18 18 10 22	263 316	503 574	
8:00 AM MA 21:8 MA 06:8	3	69 66 73	20	33	48 54	0 0,	7	24	0	32 35 25 26 25 30	10	291	536 513	
8:45 AM	11	88	2.1	40	40 30	1	5	15	1	30 30	18	216 246	464 517	
TOTAL VOLUMES :	NL 47 6.03%	NT 584 74.97%	NR 148 19,00%	SL 302 51.27%	5T 285 48,39%	SR 2 0:34%	EL 46 26.14%	ET 120 68.18%	ER 10 5,68%	WL 233 9.24%	WT 148 5.87%	WR 2142 84.90%	101A 4067	
AK HE START TIME 1	715 /	W T				111	-				000		TOTAL	
PEAK HA VOL	24	2.83	78	142	133	4. 1	27	60	2	125	78 .	1161	2133	
PEAK UP FACTOR :		Aucz			Alasia .			The same						

ART TIME 1	715 AM								-
Ur Hit VOL :	24 363	504	11 64	199	Track.		ll as		IDIAL
R FACTOR:	No.	10	1,46	Asia 1		60 Z	125	78 1161	2133
a Paulokul	4.867			0,067		0,790	1	0.928	0.929

CONTROL : Signaltreil

Project ID: 16-5499-003

City: Santa Clarita

Day: Thursday

Oate: 7/28/2016

N5/EW Streets:	The Old Rd NORTHBOUND			The Old Rd SOUTHBOUND			Magic Mountain Pkwy. EASTBOUND			Hagic	Pkwy		
										WESTBOUND			
LANES:	NL 2	NT 3	NR 1	SL 2	5T 3	SRi 1	EL 2	ET 4	ER 1	WL 2	WT 4	WR I	TOTAL
4:00 FM 4:35 PM	20 12	103 80	57	110	185 190	6	9	92	20	70	35	262	909
4:30 PM	15	88	48 61 63 61 71	131	251	8	17	99	24 18	65	29	206	906
4:45 PM 5:00 PM	5	96 91	63	118	310	7	20	94 85		84	33	251	1116
5:15 PM	16	78 97	71	134	374	11	18:	94	31 32 33	71	27	233	1063
5:30 PM 5:45 PM	12	103	56	101	344 271	B' 4	28	108	33 21	74 71 63	29 28 33 37 27 30 31	223	1128
TOTAL VOLUMES : APPROACH %'s :	NL 105 7.92%	NT 736 55.55%	NR 484 36.53%	SL 933 29,05%	5T 2223 69.21%	58 55 1.74%	EL 123 11,34%	ET 750 69.12%	ER 212 19.54%	WL 595 22,59%	WT 254 9,64%	WR 1765 67.77%	TOTAL 825G

	Die	JRN5	
NB	SB	EB	WB
10	0.	0	5
3	0	0	B
3	0	2	4
4	0	0	6
0	1	D	6
7	1	0	
3	1	D.	7
6	0	1	7.
NE	SB	EB	WD 51
40	3	3	51

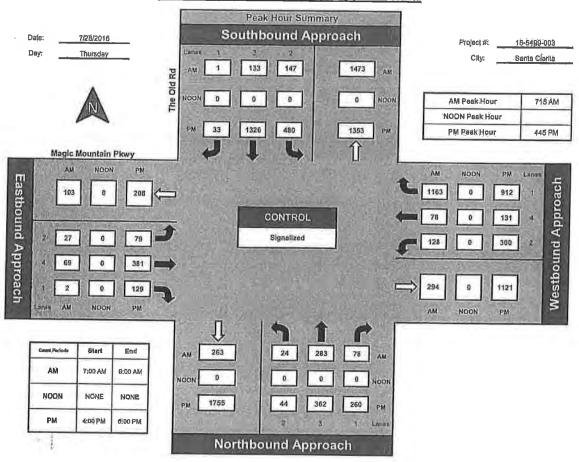
PEAK HR START TIME:	41	5 PM		300	-					100	700	Licrotate
PEAK HE VOL:	44	362	260	480	1326	51 79	381	129	300	(3)	912	4437
PEAK HE FACTOR 1		0.952		-	0.894		0.971	_		0.912		0.962

CONTROL : Signalized

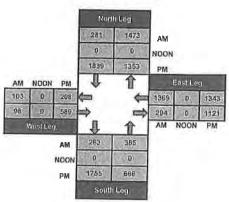
ITM Peak Hour Summary



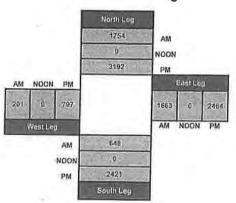
The Old Rd and Magic Mountain Pkwy , Santa Clarita







Total Volume Per Leg



Project 1D: 16-5499-004

City: Sanla Clinita

Day: Thursday

Date: 7/28/2016

NS/EW Streets:	10/-7	ourney Rd	-	100	Tourney R	a T	12000	Mountain	Pkwv	Marik	Mountain I	trins.	1
	par.	NOBHTRIC	4D		SOUTHBOU	ND		EASTBOUN	D		WESTBOUH		_
LANES;	S. NET	Tη U	NR J	5L 0	5.T 0	SR 0	EL 0	ET 3	ER 1	WL.	WT 3	WR 0	TOTA
7:00 AM	25	0	g	0	0	0	0	124	31	28	159	- 6	376
7:15 AM	27	-0	10	0	0	0	0		31 38 61	61	226	-0	491
7:30 AM	32	.0	10 6 10 15	13	0	0	Ó	176	61	63 66 91	213	0	558
7:45 AM	32	0	6	0	0	0	0	217	56	91	252	.0	664
MA 00:8	30	0	10	0	0	0	0	207	24	68	221	ď	630
8:15 AM	33	0	15	0	0	O	Q	178	56 74 62	117	252 221 225	n	630
B:30 AM	70	O	15	Ð	D	0	-0	178	58	85	Ign	.6	567
8:45 AM	32.	D	15	0	a	Ö	α	163	63	85 82	250 138	0	575
TOTAL VOLUMES :	FAL 242 72.89%	NT 0 0.00%	NR 90 27.11%	5L 0 #DIV/01	ST 0 #DIV/01	SR 0 #DIV/01	EL 0 0.00%	ET 1370 75.15%	ER 453 24.85%	WE 622 26,63%	WT 1714 73.37%	WR 0 0.00%	10TA 4491

	011	IRNS	
NB	SĐ.	EΒ	WB
			2
			3
			5
			5
			3
NB I	58	EB	WB

CONTROL: Signatural

1450 153

120 848

Project ID: 16-5499-004

City: Santa Chilla

Day: Thursday

Date: 7/28/2016

3125

NS/EW Streets:	1	Curney Rd	#	1000	Tourney R	d	Magic	: Mountain I	Pkyy	Magic	Hountain F	kim	
	N	ORTHBOU	ID		SOUTHBOL	IND		EASTEOUNI	0		WESTBOUNG	3	
LANES:	NL 2	MT D	NR 1	SL 0	5T 0	SR 0	EL 0	ET.	ER 1	WL,	ŴΤ :3	WR 0	TOTA
4:00 PM	54.	0	48	Ū	b	0	01	311	56	2B:	202	0	699
4:15 PM	53	0	53 79	0	0	o o	Ö.	319 355	43	28: 37	212	0	717
4:30 PM	54	0	79	.0	0	D	0	355	34	27 42 24	205	0	754
4:45 PM	68	0	74	0:	0	0	0.	347	32 45	27	214	0	777
5:00 PM	71	0	103	D.	0	G	0:	363	45	24	215	n	821
5:15 PM	46	0	59	ŋ	0	0	Ò.	3.85	42	27	214	n	773
5:30 PM	47	0	103 59 68 54	0	D	Ò	Ď	345	33	22	180	n	695
5:45 PM	45	0	54	0	0	Ü	Ó	347 363 385 345 374	42 33 28	16	200	ō	720
TOTAL VOLUMES : APPROACH %'s:	NL 438 44,88%	0.00%	NR 538 55.12%	SL 0 #DIV/QI	ST Q ≇DIV/QI	SR Q #DIV/OI	EL 0.00%	ET 2799 69,94%	ER 313 10.06%	WL 223 11.94%	WT 1645 88,06%	WR 0 0.00%	TOTA 5956

NB -SB EB WB 2 2 2 1 1 2 2 1 0 0 0 0	UTURNS									
1 1 2 1 0	NB	SB	ΈB	We						
1 0										
0										
				0						
	0	58	EB.	WB 7						

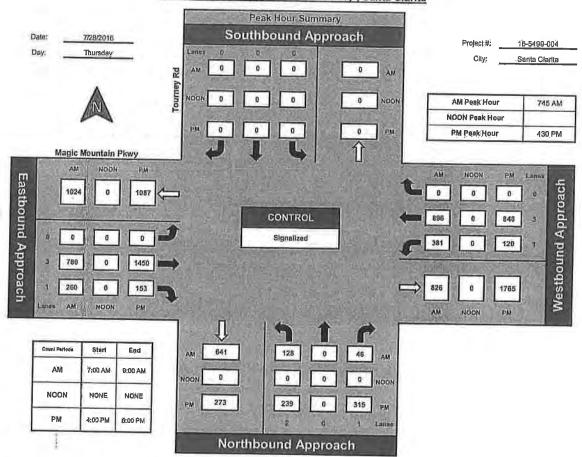
PEAN HR FACTOR 1	0.796

CONTROL : Signatured

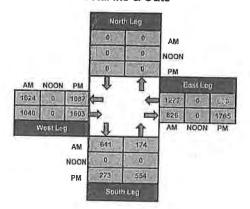
ITM Peak Hour Summary



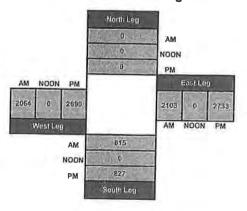
Tourney Rd and Magic Mountain Pkwy , Santa Clarita







Total Volume Per Leg



Project ID: 16-5499-005

City: Santa Clarita

Day: Thursday

Date: 7/28/2016

NS/EW Streets:		Tourney Ro	ti.		Tourney Rd		. W	ayne Mile	pl	, W	nyne Min.	0)	
		ORTHBOU	CIN	5	OUTHBOU	10-		EASTBOUN	D		WESTBOUN		_
LANES:	NL 1	NT 1	ŃR	SL 1	ST 1	SŘ 1	EL 0.5	ET 0.5	ER J	WL O:	WT:	WR O	TOTAL
7:00 AM	0	7	6	23	26	11	12	1	0	5	-	10	112
7:15 AM	0	8	10	30	57	9	6	2	0	7	0	19	
7:38 AM	2	B	11	35 35 37 34 45	78 105	7	12	2	1	13	1	16	151
7:45 AM	6	115	7	37	105	12	13	0	0	14	3	11	222
8:00 AM	2	14	8	34	113	7	11	2	3	17	ő	21	220
8:15 AM	0	20	4	45	118	10	B	0	1	16	ň	22	220
MA GE:B	4	14 33.	7	31	100 92	1.0	6	0	2	12	1	10	244
8:45 AM	1	33.	16	41	92	6	5	Ġ.	5	13 16 12 10	ő	22 16 11 21 22 18 13	185 227 228 244 202 223
TOTAL VOLUMES :	NL 12 6,00%	NT 119 59.50%	NR 69 34.50%	SL 276 26.62%	57 689 66.44%	5R 72 6.94%	EL 73 75.26%	ET 7 7.22%	ER 17 17.53%	WL 90 37,56%	WT 7 2.93%	WR 142 59.41%	TOTAL 1573
EAK HR START TIME !	7157	AM: I	1000						-	-			Tryyay
PEAK HR VOL	9	63	76 1	147	436	ao T	-39	4	0 I	-	140	OWNERS OF	
			1990			22	201	5	10	33	4	72	90)
PEAK HR FACTOR :	-	0.1175			0.899	14 200		6.735	- 100		heer	- /	August .
		63	26	147	436 0,899	39	38	2 0.735	10	55	0.867		90) 0.92

	un	JRN5	
NB	58	EB	WB
_	0	_	_
	0		
	0		
	D		
	1		
	ò		
no I	P# 1		- V-0 - 1
NB O	SB 2	60	WB
	7		

CONTROL (2-Way Stop (EB/WB)

Project ID: 16-5499-005

City: Santa Clarita

Day: Thursday

Date: 7/28/2016

NS/EW Streets:	79	Tourney Ro			Towney Rd		W	TOTAL MALE	PI	·W	ayne Mas	N	1
	- 10	ORTHBOUN	ID.	S	оитньои	div		EASTBOUN	D	,	NESTBOUN	D	
LANES:	NL i	NT 1	NR/ 1	SL 1	ST 1	SR 1	EJ. D.Ş	ET 0,5	ER 1	WL 0	WT 1	WA 0	TOTA
4:00 PM 4:15 PM	1	69 80 109	14	28	43	14	6	0	4	11	1	27	218
4:30 PM 4:45 PM	0	109	9	26- 21 25 18 24	40 28 34 37 35 27 20	12	12	0	2	11	1	12	203
5:00 PM 5:15 PM	0	136	8	18	37	14 12 10	13	1	3	17	0	32	220 250 267 182
5:30 PM	0	113 136 79 96 70	7	19 18	35 27	10	9	0	7	12	0	32 18 19	182 199
5:45 PM	3	70	5	18	20	7	12	0	3	12	2	16	165
TOTAL VOLUMES : APPROACH % 's :	NL B 0.96%	NT 752 90,49%	NR 71 8.54%	SL 179 33.71%	5T 264 49,72%	SR 88 16.57%	EL 72 78.26%	ET 4 4.35%	ER 16 17,39%	WL 84 33,60%	WT 8 3.20%	WR 158 63.20%	TOTAL 1704
EAR HR START TIME :	415	14	W 66										TOTAL
PEAK HR VOL 1	1	430	34	90	139	48 1	103	3	e 1	-48	4	78	940
PEAK HR-FACTOR :		0.832			0.000			nine.	220				7

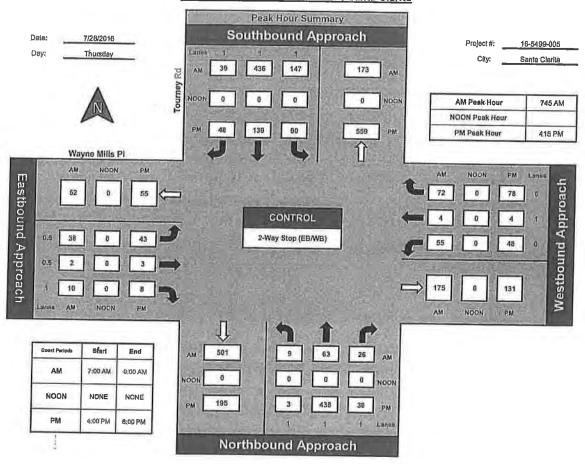
	uru	RNS	
NB	58	EB	WB
0	0		
0	1		
0	0		
1	0		
0	D		
0	3		
0	1		
0	1		
NB:	SB	EB	WB
1	4	0	0

CONTROL : 2-Way Stop (EB/WB)

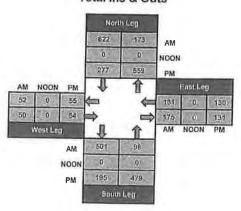
ITM Peak Hour Summary



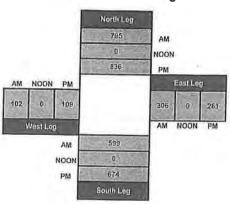
Tourney Rd and Wayne Mills Pl , Santa Clarita



Total Ins & Outs



Total Volume Per Leg



APPENDIX B

> Existing Conditions Analysis Worksheets

			AM PEAK	HOUR	PM PEAK	HOUR
	LANES	CAPACITY	VOL	V/C	VOL	V/C
NBL	2	3400	24	0.007	44	0.013
NBT	3	5100	283	0.055 *	362	0.071
NBR	1	1700	78	0.046	260	0.153
SBL	2	3400	147	0.043 *	480	0.141
SBT	3	5100	133	0.026	1326	0.260
SBR	1	1700	1	0.001	33	0.019
EBL	2	3400	27	0.008	79	0.023
EBT	4	6800	69	0.010 *	381	0.056
BR	1	1700	2	0.001	129	0.076
VBL	2	3400	128	0.038 +	300	0.088
VBT	4	6800	78	0.011	131	0.019
VBR	f	Q	1163	0.000	912	0.000
IGHT TUR	RN ADJUSTMI	ENT		W	BR	0.003 *
	E INTERVAL			0.050 *		0.050 *
OTAL ICU	-			0.196		0.470

^{*}d = defacto right turn lane, f = free right turn lane

			AM PEAK	HOUR	PM PEAK	HOUR
	LANES	CAPACITY	VOL.	V/C	VOL	V/C
NBL	0	0	0	0.000	0	0.000
NBT	0	0	0	0.000	0	0.000
VBR	0	0	0	0.000	0	0.000
SBL	1.5	2550	283	0.111 *	261	0.102
SBT	0.5	850	1	0.001	0	0.000
SBR	2	3400	37	0.011	111	0.033
EBL	0	0	0	0.000	0	0.000
BT	3	5100	182	0.036	775	0.152
BR	2	3400	109	0.032	328	0.096
VBL	2	3400	527	0.155	338	0.099
VBT	4	6800	1328	0.195 *	1198	0.176
VBR	0	0	0	0.000	0	0.000
RIGHT TUF	RN ADJUSTME	ENT				
	E INTERVAL			0.050 *		0.050
OTAL ICU		_		0.356		0.403

			AM PEAK	HOUR	PM PEAK	HOUR
	LANES	CAPACITY	VOL	V/C	VOL	V/C
NBL	2	3400	1003	0.295 *	847	0.249
NBT	0.5	850	0	0.000	2	0.002
NBR	1.5	2550	558	0.219	699	0.274
SBL	0	0	0	0.000	0	0.000
SBT	.0	0	0	0.000	0	0.000
SBR	0	0	:0	0.000	Q	0.000
EBL	2	3400	33	0.010 *	121	0.036
EBT	3	5100	476	0.093	903	0.177 *
EBR	0	0	0	0.000	0	0.000
VBL	0	0	0	0.000	0	0.000
VBT	3.5	5950	821	0.138 *	702	0.118
VBR	1.5	2550	216	0.085	387	0.152
RIGHT TUP	RN ADJUSTMI	ENT		N	BR	0.034 *
LEARANC	E INTERVAL			0.050 *		0.050
OTAL ICU				0.493		0.510

			AM PEAK	HOUR	PM PEAK HOUR		
	LANES	CAPACITY	VOL	V/C	VOL	V/C	
NBL	2	3400	128	0.038 *	239	0.070	
NBT	0	0	0	0.000	0	0.000	
NBR	1	1700	315	0.185	315	0.185	
SBL	0	0	0	0.000	0	0.000	
SBT	0	0	0	0.000	0	0.000	
SBR	0	0	0	0.000	0	0.000	
EBL	0	0	0	0.000	0	0.000	
EBT	3	5100	780	0.153 *	1450	0.284	
BR	1	1700	260	0.153	153	0.090	
VBL	1	1700	381	0.224 *	120	0.071 *	
VBT	3	5100	896	0.176	848	0.166	
VBR	0	0	0	0.000	0	0.000	
	N ADJUSTM			N	BR	0.055 *	
LEARANC	E INTERVAL			0.050 *		0.050 *	
OTAL ICU				0.465		0.530	

	1	-	7	1	-	4	4	†	-	1	+	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		र्स	7	-	44>	ini_ni	19	A	7/	7	4	7
Volume (veh/h)	38	2	10	55	4	72	9	63	26	147	436	39
Sign Control		Stop			Stop		-	Free	20	1711	Free	ua
Grade		0%			0%	590		0%			0%	
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
Hourly flow rate (vph)	41	2	11	60	4	78	10	68	28	160	474	42
Pedestrians							-1.5	-		100	SHAW.	TE
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage									7070			
Right turn flare (veh)			6									
Median type								None		1124	None	
Median storage veh)								- I I		_	(2) 1/25 1/25	and the same
Upstream signal (ft)										THE REAL		
pX, platoon unblocked	1500000											
vC, conflicting volume	962	910	474	888	924	68	516			97		165
vC1, stage 1 conf vol												
vC2, stage 2 conf vol	25.55				-					ST THE	10.00	· Silen
vCu, unblocked vol	962	910	474	888	924	68	516			97		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1	100	EL IT
tC, 2 stage (s)	02//15	1 9 90		***************************************								
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2	THE STATE OF	
p0 queue free %	79	99	98	75	98	92	99			89		
cM capacity (veh/h)	195	243	590	235	238	995	1049			1497		
Direction, Lane#	EB.1	WB 1	NB 1	NB 2	NB 3	SB-1	SB 2	SB 3		- 11		
Volume Total	54	142	10	68	28	160	474	42		=	21-1	
Volume Left	41	60	10	0	0	160	0	0				
Volume Right	11	78	0	0	28	0	0	42				3
oSH .	247	405	1049	1700	1700	1497	1700	1700				
Volume to Capacity	0.22	0.35	0.01	0.04	0.02	0.11	0.28	0.02				
Queue Length 95th (ft)	20	39	1	0	0	9	0	0				
Control Delay (s)	24.9	18.6	8.5	0.0	0.0	7.7	0.0	0.0				2500
ane LOS	С	С	Α			A						
Approach Delay (s)	24.9	18.6	0.8			1.8						3/1
Approach LOS	C.	C										
ntersection Summary				Telegran.								7.11
verage Delay			5.4									
ntersection Capacity Utilization		- 4	44.0%	ICL	J Level of	Service			Α			
nalysis Period (min)			15									

	\rightarrow	1		4	•	4	1	1	1	↓	1
EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NRR	SBI	SRT	SBR
	बी	111		4							PF.
43	3	8	48	4	78				4.7		48
	Stop			Stop		7		00	00		40
	0%										
0.92	0.92	0.92	0.92		0.92	0.92		0.92	0.92		0.92
47	3	9	52								52
					- 1202	250	.,,,,		- 00	10-1	UL
											160
										- 6	OF SOL
		6							-		
							None		-	None	
							0.0.000.80			ITOILO	
									1000		
916	871	151	835	882	476	203			517	3 1 -11	1
									5000		
		alus.								31-17	15/15
				882	476	203			517		-
7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1	100	31.11
*11.49									-25"		
					3.3	2.2			2.2	- 17	-14
					86	100			91		
198	262	895	261	258	589	1368	16.		1048	L. ITSK	1 111
EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	1000			
	141	3	476	41	98	151	52				
		3	0	0	98	0					
		0	0	41	0	0				1200	men.
		1368	1700	1700	1048	1700	1700			- Longia	
		0.00	0.28	0.02	0.09	0.09	0.03				Street.
		0	0	0	8	0	0			-	1000000
			0.0	0.0	8.8	0.0	0.0				1000
	C	Α			Α		1000				
	The state of the s	0.0			2.9				ars:		
D	C										-
						353		1350		1	
		5.0									
ntersection Capacity Utilization 52 Analysis Period (min)			ICL	J Level of	Service			A	1		
		15						400			
	916 916 7.1 3.5 76 198 EB 1 59 47 9 237 0.25 24 25.7 D	43 3 Stop 0% 0.92 0.92 47 3 916 871 7.1 6.5 3.5 4.0 76 99 198 262 EB 1 WB 1 59 141 47 52 9 85 237 392 0.25 0.36 24 40 25.7 19.3 D C	43 3 8 Stop 0% 0.92 0.92 0.92 47 3 9 6 916 871 151 7.1 6.5 6.2 3.5 4.0 3.3 76 99 99 198 262 895 EB 1 WB 1 NB 1 59 141 3 47 52 3 9 85 0 237 392 1368 0.25 0.36 0.00 24 40 0 25.7 19.3 7.6 D C A 25.7 19.3 7.6 D C A 25.7 19.3 0.0 D C	43 3 8 48 Stop 0% 0.92 0.92 0.92 0.92 47 3 9 52 6 916 871 151 835 7.1 6.5 6.2 7.1 3.5 4.0 3.3 3.5 76 99 99 80 198 262 895 261 EB 1 WB 1 NB 1 NB 2 59 141 3 476 47 52 3 0 9 85 0 0 237 392 1368 1700 0.25 0.36 0.00 0.28 24 40 0 0 0.25 0.36 0.00 0.28 24 40 0 0 25.7 19.3 7.6 0.0 D C 5.0 tion 52.4% ICU	43 3 8 48 4 4 Stop Stop 0% 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92	43 3 8 48 4 78 Stop Stop O% O% 0.92 0.92 0.92 0.92 0.92 0.92 47 3 9 52 4 85 6 916 871 151 835 882 476 7.1 6.5 6.2 7.1 6.5 6.2 3.5 4.0 3.3 3.5 4.0 3.3 76 99 99 80 98 86 198 262 895 261 258 589 EB 1 WB 1 NB 1 NB 2 NB 3 SB 1 59 141 3 476 41 98 47 52 3 0 0 98 9 85 0 0 41 0 237 392 1368 1700 1700 1048 0.25 0.36 0.00 0.28 0.02 0.09 24 40 0 0 0 8 25.7 19.3 7.6 0.0 0.0 8.8 D C A A 25.7 19.3 7.6 0.0 0.0 8.8 D C A 2.9 D C	43 3 8 48 4 78 3 Stop Stop O% O% 0.92 0.92 0.92 0.92 0.92 0.92 0.92 47 3 9 52 4 85 3 6 916 871 151 835 882 476 203 7.1 6.5 6.2 7.1 6.5 6.2 4.1 3.5 4.0 3.3 3.5 4.0 3.3 2.2 76 99 99 80 98 86 100 198 262 895 261 258 589 1368 EB 1 WB 1 NB 1 NB 2 NB 3 SB 1 SB 2 59 141 3 476 41 98 151 47 52 3 0 0 98 0 9 85 0 0 41 0 0 237 392 1368 1700 1700 1048 1700 0.25 0.36 0.00 0.28 0.02 0.09 0.09 24 40 0 0 0 0 8 0 25.7 19.3 7.6 0.0 0.0 8.8 0.0 D C A A 25.7 19.3 7.6 0.0 0.0 8.8 0.0 D C A A 25.7 19.3 7.6 0.0 0.0 8.8 0.0 D C A A 25.7 19.3 7.6 0.0 0.0 8.8 0.0 D C A A 25.7 19.3 0.0 2.9 D C	43 3 8 48 4 78 3 438 Stop	## BBL EBT EBR WBL WBT WBR NBL NBT NBR ## 43 3 8 48 4 78 3 438 38 Stop	## BEL BBT BBR WBL WBT WBR NBL NBT NBR SBL ## A3	FBL FBT FBR WBL WBT WBR NBL NBT NBR SBL SBT

APPENDIX C

> Existing + Project Conditions Analysis Worksheets

			AM PEAK	HOUR	PM PEAK	HOUR
	LANES	CAPACITY	VOL	V/C	VOL	V/C
NBL	2	3400	24	0.007	44	0.013
NBT	,3	5100	283	0.055 *	362	0.071
NBR	1	1700	78	0.046	260	0,153
SBL	2	3400	147	0.043 *	480	0.141
SBT	3	5100	133	0.026	1326	0.260 *
SBR	1.	1700	1	0.001	33	0.019
EBL	2	3400	27	0.008	79	0.023
EBT	4	6800	81	0.012 *	394	0.058 *
EBR	1	1700	2	0.001	129	0.076
NBL	2	3400	128	0.038 *	300	0.088 *
NBT	4	6800	86	0.013	139	0.020
NBR	f	0	1163	0.000	912	0.000
RIGHT TUI	RN ADJUSTM	ENT		- FI	BR	0.006 *
CLEARANG	LEARANCE INTERVAL			0.050 *		0.050 *
OTAL ICI	J			0.198		0.475

*d = defacto right turn lane, f = free right turn lane

			AM PEAK	HOUR	PM PEAK	HOUR
	LANES CA	APACITY	VOL	V/C	VOL	V/C
NBL	0	0	0	0.000	0	0.000
NBT	0	0	0	0.000	0	0.000
NBR	0	0	0	0.000	0	0.000
SBL	1.5	2550	295	0.116 *	274	0.107
SBT	0.5	850	1	0.001	0	0.000
SBR	2	3400	37	0.011	111	0.033
EBL	0	0	0	0.000	0	0.000
BT	3	5100	194	0.038	788	0.155
BR	2	3400	109	0.032	328	0.096
VBL	2	3400	534	0.157	350	0.103
VBT	4	6800	1336	0.196 *	1206	0.177
VBR	0	0	0	0.000	0	0.000
RIGHT TUR	RN ADJUSTMEN	Т				
LEARANC	E INTERVAL			0.050 *		0.050
OTAL ICU				0.362		0.415

EXWP

			AM PEAK	HOUR	PM PEAK	HOUR
	LANES	CAPACITY	VOL	V/C	VOL	V/C
NBL.	2	3400	1003	0.295 *	847	0.249
NBT	0,5	850	0	0.000	2	0.002
NBR	1.5	2550	576	0.226	718	0.282
SBL	0	0	0	0.000	0	0.000
SBT	0	0	0	0.000	0	0.000
SBR	0	0	0	0.000	0	0.000
EBL	2	3400	33	0.010 *	121	0.036
EBT	3	5100	500	0.098	929	0.182 *
EBR	0	0	0	0.000	0	0.000
WBL	0	0	0	0.000	0	0.000
VBT	3.5	5950	841	0.141 3	723	0.122
VBR	1.5	2550	224	0.088	395	0.155
RIGHT TUF	RN ADJUSTME	ENT		NI	BR	0.042 *
ELEARANCE INTERVAL				0.050 *		0.050 *
OTAL ICU				0.496		0.523

			AM PEAK	HOUR	PM PEAK	HOUR
	LANES	CAPACITY	VOL	V/C	VOL	V/C
NBL	2	3400	156	0.046 *	268	0.079
NBT	0	0	0	0.000	0	0.000
NBR	1	1700	46	0.027	315	0.185
SBL	0	0	0	0.000	0	0.000
SBT	0	0	0	0.000	0	0.000
SBR	0	0	0	0.000	0	0.000
EBL	0	0	0	0.000	0	0.000
EBT	3	5100	780	0.153 *	1450	0.284 *
EBR	1	1700	301	0.177	198	0.116
VBL	1	1700	393	0.231 *	133	0.078 *
VBT	3	5100	896	0.176	848	0.166
VBR	0	0	0	0.000	0	0.000
	RN ADJUSTM	ENT		N	BR	0.045 *
LEARANCE INTERVAL				0.050 *		0.050 *
OTAL ICL				0,480		0.536

	*	→	1	1	-	*	1	Ť	1	1	1	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations		4	7	- 77	4		79	1	7*	7	4	190
Volume (veh/h)	66	10	14	55	4	72	15	63	26	147	436	92
Sign Control		Stop	Vicane		Stop			Free	20	ian	Free	- 02
Grade		0%			0%			0%		PRODUCTION OF THE PERSON NAMED IN	0%	1
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
Hourly flow rate (vph)	72	11	15	60	4	78	16	68	28	160	474	100
Pedestrians						1230			20	100	are a	1.00
Lane Width (ft)					100			Sec. 15				
Walking Speed (ft/s)										-		
Percent Blockage						SV.						
Right turn flare (veh)			6									
Median type			N -113		272		3 600	None		FEET	None	
Median storage veh)								100000			710110	
Upstream signal (ft)								100 140	TO S	E 1814	17 15	
pX, platoon unblocked												
vC, conflicting volume	975	923	474	908	995	68	574	Elina.		97		
vC1, stage 1 conf vol										-		
vC2, stage 2 conf vol		Ja	Tot Steel	31		THE WAY	Time-	- SV60	150			
vCu, unblocked vol	975	923	474	908	995	68	574	-		97		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1	15-5-37	= 11	4.1		100
tC, 2 stage (s)							42.0			1000		
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2	500	
p0 queue free %	62	95	97	73	98	92	98			89		
cM capacity (veh/h)	190	237	590	219	215	995	999			1497		71
Direction, Lane #	EB 1	WB 1	NB 1	NB.2	NB 3	SB 1	SB 2	SB 3				
Volume Total	98	142	16	68	28	160	474	100	7 8 8 8 1	ELT THE		
Volume Left	72	60	16	0	0	160	0	0				
Volume Right	15	78	0	0	28	0	0	100				
cSH	232	383	999	1700	1700	1497	1700	1700				
Volume to Capacity	0.42	0.37	0.02	0.04	0.02	0.11	0.28	0.06				
Queue Length 95th (ft)	49	42	1	0	0	9	0	0				
Control Delay (s)	32.2	19.9	8.7	0.0	0.0	7.7	0.0	0.0				
Lane LOS	D	C	Α			Α		900				
Approach Delay (s)	32.2	19.9	1.2		72.	1.7			1113/1	1523	معاوده	
Approach LOS	D	С										
ntersection Summary	THE VE	1-1-1	Jan Hy	15 111								
Average Delay			6.8									
ntersection Capacity Utilization	1		44.0%	ICI	J Level of	Service			Α	7		
Analysis Period (min)			15									

	A	→	7	1	4	4	4	†	<i>p</i>	-	1	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4	7	17212	4	THOM	7	4	7/	T	A	Tide Ti
Volume (veh/h)	72	11	12	48	4	78	9	438	38	90	139	106
Sign Control		Stop			Stop	1.7		Free	00		Free	100
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	78	12	13	52	4	85	10	476	41	98	151	115
Pedestrians				-						-		
Lane Width (ft)								"			1.6	
Walking Speed (ft/s)												
Percent Blockage									- 3 - 7			
Right turn flare (veh)			6									
Median type							TIES!	None			None	
Median storage veh)											110-10-	
Upstream signal (ft)											1.50	FEL
pX, platoon unblocked												
vC, conflicting volume	929	884	151	855	958	476	266		100	517		
vC1, stage 1 conf-vol										0.000		
vC2, stage 2 conf vol		and the same							-	1	1	
vCu, unblocked vol	929	884	151	855	958	476	266			517		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1		-	4.1		20
tC, 2 stage (s)												
tF(s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2	-	
p0 queue free %	59	95	99	79	98	86	99			91		
cM capacity (veh/h)	193	256	895	244	232	589	1298	2.40		1048		
Direction, Lane#	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	100	Car.		
Volume Total	103	141	10	476	41	98	151	115		1000		
Volume Left	78	52	10	0	0	98	0	0				
Volume Right	13	85	0	0	41	0	0	115				
cSH	231	376	1298	1700	1700	1048	1700	1700				
Volume to Capacity	0.45	0.38	0.01	0.28	0.02	0.09	0.09	0.07				
Queue Length 95th (ft)	54	43	1	0	0	8	0	0				
Control Delay (s)	33.1	20.3	7.8	0.0	0.0	8.8	0.0	0.0				
ane LOS	D	С	Α			Α						
Approach Delay (s)	33.1	20.3	0.1			2.4						
Approach LOS	D	C										
ntersection Summary		2				156	A Car	100	-	-		
verage Delay			6.4									-
ntersection Capacity Utilization analysis Period (min)		1	52.4%	ICL	Level of	Service			Α	7		
mayala Fellou (IIIII)			15									

	\rightarrow	-	1	-	4	1	
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	B		19	†	M	132911	
Volume (veh/h)	50			52	0	68	er entre comment to the
Sign Control	Free	-		Free	Stop	00	
Grade VIII	0%			0%	0%		A STATE OF THE PARTY OF THE PAR
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	54	0	110	57	0.02	74	of Face and the second of
Pedestrians						0.7	and the second s
Lane Width (ft)				1			The second secon
Walking Speed (ft/s)							
Percent Blockage				S. Victor			
Right turn flare (veh)			-				
Median type	TWLTL			None			
Median storage veh)	2			None			
Upstream signal (ft)	-					0 F =	
pX, platoon unblocked				2000	,5335		
vC, conflicting volume			54		220	F1	
vC1, stage 1 conf vol			34		330	54	
vC2, stage 2 conf vol	1/85				54		- 1 N
vCu, unblocked vol			54		276	THE S	
tC, single (s)					330	54	
tC, 2 stage (s)	30		4.1	200	6.4	6.2	
tF (s)			0.0		5.4	72.147	*
p0 queue free %	1000	227	2.2		3.5	3.3	
cM capacity (veh/h)		-	93))	100	93	
1, 10,000	100	-	1551	=.,-	693	1013	
Direction Lane#	EB 1	WB 1	WB 2	NB 1		-	
Volume Total	54	110	57	74	- 17	7,17	1860年11年11年11年11年11日
Volume Left	0	110	0	0			
Volume Right	0	0	0	74		MILITER	Y The second of the second
cSH	1700	1551	1700	1013			
Volume to Capacity	0.03	0.07	0.03	0.07			A STATE OF THE STA
Queue Length 95th (ft)	0	6	0	6			
Control Delay (s)	0.0	7.5	0.0	8.8			100
Lane LOS		Α	243	Α			
Approach Delay (s)	0.0	4.9	deren	8.8			Use of the second second
Approach LOS		155.00		A			
ntersection Summary					25 63		
Average Delay			5.0				
ntersection Capacity Utilization	n	100	23.1%	ICH	Level of	Service	A
Analysis Period (min)			15	100		CONTRICO	
The state of the s			,,,				

Movement			7	-	4	4	-	
Lane Configurations	Movement	EBT	EBR	WBL	WBT	NBI	NRR	
Volume (veh/h) 54 0 109 55 0 71							1357.4	men
Sign Control Free Ow	Volume (veh/h)						71	
Grade 0% 0% 0% 0% 0% 0% 0% 0% 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92		Free					17-10	
Peak Hour Factor 0.92 0.92 0.92 0.92 0.92 0.92 0.92 Hourly flow rate (vph) 59 0 118 60 0 77 Pedestrians Lane Width (It) Walking Speed (IVs) Percent Blockage Right turn flare (veh) Median storage veh) 2 Upstream signal (If) pX, platoon unblocked vC, conflicting volume 59 355 59 vC1, stage 1 conf vol 59 355 59 tC, single (S) 4.1 6.4 6.2 tC, 2 stage (S) 54 tF (s) 2.2 3.5 3.3 p0 queue free % 92 100 92 cM capacity (veh/h) 1545 1700 1007 Volume Total 59 118 60 77 Volume Total 59 118 60 77 Volume Capacity 0.03 0.98 0.04 0.08 Queue Length 95h (If) 0 6 0 6 Control Delay (S) 0.0 7.5 0.0 8.9 Approach LOS Marking 19 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	La Contraction of the Contractio	0%						
Hourly, flow rate (vph) 59 0 118 60 0 77		0.92	0.92	0.92			0.92	
Pedestrians Lane Width (tt)		59	0					Victoria de la companya del companya del companya de la companya d
Walking Speed (ft/s) Percent Blockage Right turn flare (veh) Median itype TWLTL Median storage veh) 2 Upstream signal (ft) pX, platoon unblocked vCc, conflicting volume vC1, stage 1 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC3, stage 2 conf vol vC4, unblocked vol tc, single (s) tc, single (s) tc, 2 stage (s) tf (s) 2.2 3.5 3.3 p0 queue free % 92 100 92 cM capacity (veh/h) 1545 674 1007 Pirection, Lane # EB.1 WB.1 WB.2 NB.1 Volume Total 59 118 60 77 Volume Left 0 118 0 0 0 Volume Right 0 0 0 0 77 CSH 1700 1545 1700 1007 Volume to Capacity 0.03 0.08 0.04 0.08 Queue Length 95th (ft) 0 6 0 6 Control Delay (s) 0 0 5 0 0 0 16tersection Summary						420		
Percent Blockage Right turn flare (veh) Median type Median storage veh) 12 Upstream signal (ft) pX, platoon unblocked vC, conflicting volume vC1, stage 1 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC3, stage 2 conf vol vC4, unblocked vol tC, single (s) tC, 2 stage (s) tC, 2 stage (s) tC, 2 stage (s) tC, 5 stage (s) tC, 2 stage (s) tC, 3 stage (s) tC, 3 stage (s) tC, 3 stage 1 tC, 4 stage 1 tC, 2 stage (s) tC, 3 stage 1 tC, 4 stage 2 tC, 2 stage (s) tC, 3 stage 1 tC, 4 stage 2 tC, 4 stage 2 tC, 2 stage (s) tC, 3 stage 2 tC, 4 stage 3 tC, 4 stage 3 tC, 5 stage 4 tC, 5 stage 8 tC, 3 stage 2 tC, 3 stage 3 t								
Right turn flare (veh) Median type Median storage veh) Upstream signal (ff) pX, platoon unblocked vC, conflicting volume vC1, stage 1 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC3, stage 2 conf vol vC4, unblocked vol tC, single (s) tC, 2 stage (s) tF (s) pQ 20 vC4 conflicting volume vC5 stage (s) tC, 2 stage (s) tF (s) pQ 20 vC5 stage (s) tF (s) pQ 20 vC6 conflicting volume vC7 stage (s) tC, 2 stage (s) tC, 2 stage (s) tF (s) pQ 20 vC7 conflicting volume vC8 stage (s) tC9 vC9 vC9 vC9 vC9 vC9 vC9 vC9				-				
Median type TWLTL None Median storage veh) 2 Upstream signal (ft) 59 pX, platoon unblocked 59 vC1, stage 1 conf vol 59 vC2, stage 2 conf vol 297 vCu, unblocked vol 59 tC, single (s) 4.1 6.4 6.2 tC, 2 stage (s) 5.4 5.4 tF (s) 2.2 3.5 3.3 p0 queue free % 92 100 92 cM capacity (veh/h) 1545 674 1007 Direction, Lane # EB 1 WB 1 WB 2 NB 1 Volume Total 59 118 60 77 volume Left 0 118 0 0 Volume Right 0 0 77 cSH Volume to Capacity 0.03 0.08 0.04 0.08 Queue Length 95th (ft) 0 8 0 6 Control Delay (s) 0.0 7.5 0.0 8.9								
Median storage veh 2 Upstream signal (ft) PX, platoon unblocked VC, conflicting volume 59 355 59 59 VC1, stage 1 conf vol 297 VCU, unblocked vol 59 355 59 IC, single (s) 4.1 6.4 6.2 6.2 100 100 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1008								
Upstream signal (it) pX, platoon unblocked VC, conflicting volume 59 355 59 VC1, stage 1 conf vol 59 355 59 VC2, stage 2 conf vol 297 VC4, unblocked vol 59 355 59 it C. single (s) 4.1 6.4 6.2 tt, 2 stage (s) 5.4 it (s) 2.2 3.5 3.3 po queue free % 92 100 92 cM capacity (veh/h) 1545 674 1007 Direction, Lane # EB 1 WB 1 WB 2 NB 1 Volume Total 59 118 60 77 Volume Left 0 118 0 0 Volume Right 0 0 0 77 cSH 1700 1545 1700 1007 Volume to Capacity 0.03 0.08 0.04 0.08 Queue Length 95th (ft) 0 6 0 6 Control Delay (s) 0.0 7.5 0.0 8.9 Lane LOS A A Approach Delay (s) 0.0 5.0 8.9 Approach LOS A Intersection Sammary		TWLTL			None			Control of the contro
pX, platoon unblocked vC, conflicting volume 59 355 59 vC1, stage 1 conf vol 59 355 59 vC2, stage 2 conf vol 297 vCu, unblocked vol 59 355 59 tC, single (s) 4.1 6.4 6.2 tc, 2 stage (s) 5.4 tF (s) 2.2 3.5 3.3 pO queue free % 92 100 92 cM capacity (veiv/h) 1545 674 1007 Direction, Lane # EB 1 WB 1 WB 2 NB 1	Median storage veh)	2						
vC, conflicting volume 59 355 59 vC1, stage 1 conf vol 297 vCu, unblocked vol 59 355 59 tC, single (s) 4.1 6.4 6.2 tC, 2 stage (s) 5.4 5.4 tF (s) 2.2 3.5 3.3 p0 queue free % 92 100 92 cM capacity (veh/h) 1545 674 1007 Direction, Lane # EB.1 WB.1 WB.2 NB.1 Volume Total 59 118 60 77 Volume Left 0 118 0 0 Volume Right 0 0 0 77 cSH 1700 1545 1700 1007 Volume to Capacity 0.03 0.08 0.04 0.08 Queue Length 95th (ft) 0 6 6 Control Delay (s) 0.0 7.5 0.0 8.9 Lane LOS A A A Approach				1 000				
vC1, stage 1 conf vol 59 vC2, stage 2 conf vol 297 vCu, unblocked vol 59 355 59 tC, single (s) 4.1 6.4 6.2 tC, 2 stage (s) 5.4 5.4 5.4 tF (s) 2.2 3.5 3.3 p0 queue free % 92 100 92 cM capacity (veh/h) 1545 674 1007 Direction, Lane # EB.1 WB.1 WB.2 NB.1 Volume Total 59 118 60 77 Volume Left 0 118 0 0 Volume Right 0 0 0 77 cSH 1700 1545 1700 1007 Volume to Capacity 0.03 0.08 0.04 0.08 Queue Length 95th (ft) 0 6 0 6 Control Delay (s) 0.0 7.5 0.0 8.9 Lane LOS A A A Approach Delay (s) 0.0 5.0 8.9 Approach LOS A								
VC1, stage 1 conf vol VC2, stage 2 conf vol VC2, unblocked vol 59 355 59 tC, single (s) 4.1 6.4 6.2 tC, 2 stage (s) tF (s) 2.2 3.5 3.3 p0 queue free % 92 100 92 cM capacity (veh/h) 1545 674 1007 Direction, Lane # EB 1 WB 1 WB 2 NB 1				59		355	59	STORY BUILDING BUILDING
VC2, stage 2 conf vol 297 VCu, unblocked vol 59 355 59 tC, single (s) 4.1 6.4 6.2 tC, 2 stage (s) 5.4 5.4 tF (s) 2.2 3.5 3.3 p0 queue free % 92 100 92 cM capacity (veh/h) 1545 674 1007 Direction, Lane # EB.1 WB.1 WB.2 NB.1 Volume Total 59 118 60 77 Volume Left 0 118 0 0 Volume Right 0 0 77 cSH 1700 1545 1700 1007 Volume to Capacity 0.03 0.08 0.04 0.08 Queue Length 95th (ft) 0 6 0 6 Control Delay (s) 0.0 7.5 0.0 8.9 Lane LOS A A Approach Delay (s) 0.0 5.0 8.9 Approach LOS A						59		
tC, single (s) 4.1 6.4 6.2 tC, 2 stage (s) 5.4 tF (s) 2.2 3.5 3.3 p0 queue free % 92 100 92 cM capacity (veh/h) 1545 674 1007 Direction, Lane # EB 1 WB 1 WB 2 NB 1 Volume Total 59 118 60 77 Volume Left 0 118 0 0 Volume Right 0 0 0 77 cSH 1700 1545 1700 1007 Volume to Capacity 0.03 0.08 0.04 0.08 Queue Length 95th (ft) 0 6 0 6 Control Delay (s) 0.0 7.5 0.0 8.9 Lane LOS A A Approach Delay (s) 0.0 5.0 8.9 Approach LOS A								A STATE OF THE STA
tC, 2 stage (s) tF (s) 2.2 3.5 3.3 p0 queue free % 92 100 92 cM capacity (veh/h) 1545 674 1007 Direction, Lane # EB 1 WB 1 WB 2 NB 1 Volume Total 59 118 60 77 Volume Left 0 118 0 0 77 cSH 1700 1545 1700 1007 Volume to Capacity 0.03 0.08 0.04 0.08 Queue Length 95th (ft) 0 6 Control Delay (s) Lane LOS A Approach Delay (s) Approach LOS A Intersection Summary						355	59	
tF (s) 2.2 3.5 3.3 p0 queue free % 92 100 92 cM capacity (veh/h) 1545 674 1007 Direction, Lane # EB.1 WB.1 WB.2 NB.1 Volume Total 59 118 60 77 Volume Left 0 118 0 0 Volume Right 0 0 0 77 cSH 1700 1545 1700 1007 Volume to Capacity 0.03 0.08 0.04 0.08 Queue Length 95th (ft) 0 6 0 6 Control Delay (s) 0.0 7.5 0.0 8.9 Lane LOS A Approach Delay (s) 0.0 5.0 8.9 Approach LOS A Intersection Summany				4.1		6.4	6.2	TO 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
p0 queue free %						5.4	3451/	
CM capacity (veh/h) 1545 674 1007 Direction, Lane # EB 1 WB 1 WB 2 NB 1						3.5	3.3	Committee of the Commit
Direction, Lane # EB 1 WB 1 WB 2 NB 1						100	92	
Volume Total 59 118 60 77 Volume Left 0 118 0 0 Volume Right 0 0 0 77 cSH 1700 1545 1700 1007 Volume to Capacity 0.03 0.08 0.04 0.08 Queue Length 95th (ft) 0 6 0 6 Control Delay (s) 0.0 7.5 0.0 8.9 Lane LOS A A Approach Delay (s) 0.0 5.0 8.9 Approach LOS A	cM capacity (veh/h)	SENT		1545		674	1007	
Volume Left 0 118 0 0 Volume Right 0 0 0 77 cSH 1700 1545 1700 1007 Volume to Capacity 0.03 0.08 0.04 0.08 Queue Length 95th (ft) 0 6 0 6 Control Delay (s) 0.0 7.5 0.0 8.9 Lane LOS A A Approach Delay (s) 0.0 5.0 8.9 Approach LOS A		EB 1	WB 1	WB 2	NB 1	365		
Volume Right 0 0 0 77 cSH 1700 1545 1700 1007 Volume to Capacity 0.03 0.08 0.04 0.08 Queue Length 95th (ft) 0 6 0 6 Control Delay (s) 0.0 7.5 0.0 8.9 Lane LOS A A Approach Delay (s) 0.0 5.0 8.9 Approach LOS A		59		60	77			
CSH 1700 1545 1700 1007 Volume to Capacity 0.03 0.08 0.04 0.08 Queue Length 95th (ft) 0 6 0 6 Control Delay (s) 0.0 7.5 0.0 8.9 Lane LOS A A Approach Delay (s) 0.0 5.0 8.9 Approach LOS A Approach LOS A Approach Summary			118	0	0			
Volume to Capacity 0.03 0.08 0.04 0.08 Queue Length 95th (ft) 0 6 0 6 Control Delay (s) 0.0 7.5 0.0 8.9 Lane LOS A A Approach Delay (s) 0.0 5.0 8.9 Approach LOS A		0	0	0	77			
Queue Length 95th (ft) 0 6 0 6 Control Delay (s) 0.0 7.5 0.0 8.9 Lane LOS A A Approach Delay (s) 0.0 5.0 8.9 Approach LOS A				1700	1007			
Control Delay (s) 0.0 7.5 0.0 8.9 Lane LOS A A Approach Delay (s) 0.0 5.0 8.9 Approach LOS A Intersection Summany		0.03	0.08	0.04	0.08			
Lane LOS A A Approach Delay (s) 0.0 5.0 8.9 Approach LOS A Intersection Summary				0	6			
Approach Delay (s) 0.0 5.0 8.9 Approach LOS A		0.0		0.0	8.9			The second secon
Approach LOS A Intersection Summary								
Intersection Summary		0.0	5.0		8.9			
	Approach LOS				Α			
			233	10-2		TE		The state of the s
Average Delay 5.0	Average Delay							
Intersection Capacity Utilization 23.8% ICU Level of Service A	ntersection Capacity Utilization	1		23.8%	ICU	Level of	Service	Α
Analysis Period (min) 15	Analysis Period (min)			15		- a - mode o 17		797

APPENDIX D

➤ 2017 Opening Day Conditions Analysis Worksheets

	-	7	-	4	4	1		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	1		N	4	W	3071		
Volume (veh/h)	52	0	101	54	0	68		
Sign Control	Free			Free	Stop	4.5		
Grade	0%			0%	0%			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Hourly flow rate (vph)	57	0	110	59	0	74		
Pedestrians						3.3		
Lane Width (ft)								
Walking Speed (ft/s)								
Percent Blockage					-			
Right turn flare (veh)								-
Median type	TWLTL			None				
Median storage veh)	2			and the second				
Upstream signal (ft)								
pX, platoon unblocked								
vC, conflicting volume			57		335	57		
vC1, stage 1 conf vol					57			
vC2, stage 2 conf vol					278			
vCu, unblocked vol			57		335	57		112
tC, single (s)			4.1		6.4	6.2		
tC, 2 stage (s)					5.4	a dodes		
F (s)			2.2		3.5	3.3		
o0 queue free %			93		100	93		
cM capacity (veh/h)	27/29/		1548		691	1010		
Direction, Lane #	EB 1	WB 1	WB 2	NB-1	3100	999 7		
/olume Total	57	110	59	74		177		
/olume Left	0	110	0	0				
/olume Right	0	0	0	74				
SH	1700	1548	1700	1010				
olume to Capacity	0.03	0.07	0.03	0.07				
Queue Length 95th (ft)	0	6	0	6				
Control Delay (s)	0.0	7.5	0.0	8.8				
ane LOS		Α	234	A				
pproach Delay (s)	0.0	4.9		8.8				
pproach LOS				Α				
itersection Summary							=>0	
verage Delay			4.9					-
tersection Capacity Utilizati	ion		23.1%	ICU	Level of	Service	A	
nalysis Period (min)			15		SALES TO THE	15.55	4.3	

	-	7	1	4	1	1	
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	P		19	4	14	110/11	
Volume (veh/h)	56	0	109	57	0	71	
Sign Control	Free			Free	Stop	- 4.5	
Grade	0%			0%	0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	61	0	118	62	0	77	Activities of the Control of the Con
Pedestrians			W/45		-	18181	
Lane Width (ft)	200						
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)					-		
Median type	TWLTL			None		E 1-18	A Maria and the second
Median storage veh)	2			1000000	-		The second secon
Upstream signal (ft)			- 1 6 6				
pX, platoon unblocked							
vC, conflicting volume			61		360	61	
vC1, stage 1 conf vol					61	4150	
vC2, stage 2 conf vol					299	S-Crumido	
vCu, unblocked vol			61		360	61	
IC, single (s)			4.1		6.4	6.2	A CANADA CONTRACTOR OF THE PARTY OF THE PART
C, 2 stage (s)					5.4		
F (s)			2.2		3.5	3.3	- Fill Days - State Committee
o0 queue free %			92		100	92	
cM capacity (veh/h)		1530	1542	-17/2	672	1004	Walter Market Company
lirection, Lane#	EB 1	WB 1	WB 2	NB 1	-2017/6	1-3	A STATE OF THE STA
olume Total	61	118	62	77	28/10/2		The state of the s
olume Left	0	118	0	0			
olume Right	0	0	0	- 77			and the second
SH	1700	1542	1700	1004			
olume to Capacity	0.04	0.08	0.04	0.08			
lueue Length 95th (ft)	0.	6	0	6			
Control Delay (s)	0.0	7.5	0.0	8.9			
ane LOS		Α		Α			
pproach Delay (s)	0.0	4.9	1000	8,9			
pproach LOS				Α			
tersection Summary	1	3		Ser 3	-	1953.5	
verage Delay			5.0				
ntersection Capacity Utilization	n		23.8% 15	ICU	Level of	Service	A

	1	-	1	-	←	4	4	†	-	1	ļ	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4	17	7	4>		ħ	4	111	19	^	7/1
Volume (veh/h)	67	10	14	57	4	74	15	65	27	151	449	93
Sign Control		Stop			Stop			Free	11,24		Free	- 200
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	73	11	15	62	4	80	16	71	29	164	488	101
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)			6									
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked	10000											
vC, conflicting volume	1002	949	488	933	1021	71	589			100	S-A	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol	1470		البارة									
vCu, unblocked vol	1002	949	488	933	1021	71	589			100		
tC, single (s)	7.1	6.5	6,2	7.1	6.5	6.2	4.1			4.1	FORE	715
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2,2			2.2		
p0 queue free %	60	95	97	70	98	92	98			89		
oM capacity (veh/h)	181	228	580	209	207	992	986			1493		
Direction, Lane#	EB 1	WB1	NB 1	NB 2	NB3	SB 1	SB 2	SB 3		1	2 11	115 H
Volume Total	99	147	16	71	29	164	488	101	1	1 - 1		=0,00
Volume Left	73	62	16	0	0	164	0	0				
/olume Right	15	80	0	0	29	0	0	101				
SH	221	369	986	1700	1700	1493	1700	1700				
/olume to Capacity	0.45	0.40	0.02	0.04	0.02	0.11	0.29	0.06				
Queue Length 95th (ft)	53	46	1	0:	0	9	0	0				
Control Delay (s)	34.7	21.1	8.7	0.0	0.0	7.7	0.0	0.0				
ane LOS	D	C	Α			A						
pproach Delay (s)	34.7	21.1	1.2			1.7						
Approach LOS	D	C										
itersection Summary			1 2	-	-	UL	E 8					
verage Delay ntersection Capacity Utilizal	tion	4	7.1 14.9%	ICL	Level of	Service			A			
nalysis Period (min)			15			The state of the s			7.4			

	1	-	7	1	4-	1	4	†	1	1	1	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBE
Lane Configurations		र्न	7"		4		7	1	7	7	A	7
Volume (veh/h)	73	11	12	49	4	80	9	451	39	93	143	107
Sign Control		Stop			Stop			Free	00	00	Free	101
Grade		0%			0%			0%		1-1-1	0%	
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
Hourly flow rate (vph)	79	12	13	53	4	87	10	490	42	101	155	116
Pedestrians								10.00			100	1.10
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												STE
Right turn flare (veh)			6								-	
Median type								None			None	15
Median storage veh)								13270420			1,0110	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	957	910	155	880	984	490	272			533		NO.
vC1, stage 1 conf vol							-			1.000		100cm
vC2, stage 2 conf vol	- 100										2011	
vCu, unblocked vol	957	910	155	880	984	490	272			533		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1	STATIST		4.1	No. 171	. 7
tC, 2 stage (s)	- multi-					***	1000			HILDE T		
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	57	95	99	77	98	85	99			90		HOLDING.
cM capacity (veh/h)	183	246	890	234	223	578	1292			1035		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3				- 4
Volume Total	104	145	10	490	42	101	155	116			0 - 10	
/olume Left	79	53	10	0	0	101	0	0				T. of
Volume Right	13	87	0	0	42	0	0	116				
SH	218	363	1292	1700	1700	1035	1700	1700				
olume to Capacity	0.48	0,40	0.01	0.29	0.02	0.10	0.09	0.07				
Queue Length 95th (ft)	59	46	1	0	0	8	0	0				
Control Delay (s)	36.1	21.3	7.8	0.0	0.0	8.9	0.0	0.0				
ane LOS	E	C	Α			Α		0.0				
Approach Delay (s)	36.1	21.3	0.1			2.4						
pproach LOS	E	C				203						* 0
ntersection Summary							=					
verage Delay	le ri		6.7									
ntersection Capacity Utilizat	ion	1	53.4%	ICL	J Level of	Service			Α			
nalysis Period (min)			15									

EXAMBWP

			AM PEAK	HOUR	PM PEAK	PM PEAK HOUR		
	LANES	CAPACITY	VOL	V/C	VOL	V/C		
NBL	2	3400	25	0.007	45	0.013		
NBT	3	5100	291	0.057 *	373	0.073		
NBR	1	1700	80	0.047	268	0.158		
SBL	2	3400	151	0.044 *	494	0.145		
SBT	3	5100	137	0.027	1366	0.268		
SBR	1	1700	1	0.001	34	0.020		
EBL	2	3400	28	0.008	81	0.024		
EBT	:4	6800	83	0.012 *	405	0.060		
BR	1	1700	2	0.001	133	0.078		
VBL	2	3400	132	0.039 *	309	0.091 *		
VBT	4	6800	88	0.013	143	0.021		
VBR	f	0	1198	0.000	939	0.000		
	RN ADJUSTME	ENT		EI	3R	0.008 *		
LEARANG	E INTERVAL			0.050 *		0,050 *		
OTAL ICU				0.202		0.490		

^{*}d = defacto right turn lane, f = free right turn lane

				HOUR	PM PEAK	PM PEAK HOUR		
	LANES	CAPACITY	VOL	V/C	VOL	V/C		
NBL	0	0	0	0.000	0	0.000		
NBT	0.	0	0	0.000	0	0.000		
NBR	0	0	0	0.000	0	0.000		
SBL	1.5	2550	303	0.119 *	282	0.111		
SBT	0.5	850	1	0.001	0	0.000		
SBR	2	3400	38	0.011	114	0.034		
EBL	Ö	0	0	0.000	0	0.000		
EBT	3	5100	199	0.039	811	0.159		
BR	2	3400	112	0.033	338	0.099		
VBL.	2	3400	550	0.162	360	0.106		
VBT	4	6800	1376	0.202 *	1242	0.183		
VBR	0	0	0	0.000	0	0.000		
RIGHT TUF	RN ADJUSTME	ENT						
	E INTERVAL			0.050 *		0.050		
OTAL ICU				0.371		0.426		

EXAMBWP

			AM PEAK	HOUR	PM PEAK	PM PEAK HOUR		
	LANES	CAPACITY	VOL	V/C	VOL	V/C		
NBL	2	3400	1033	0.304 *	872	0.256		
NBT	0.5	850	0	0.000	2	0.002		
NBR	1.5	2550	593	0.233	739	0.290		
SBL	0	Q	0	0.000	0	0.000		
SBT	0	0	0	0.000	0	0.000		
SBR	0	0	0	0.000	0	0.000		
EBL	.2	3400	34	0.010 *	125	0.037		
EBT	3	5100	514	0.101	956	0.187 *		
EBR	0	0	0	0.000	0	0.000		
NBL	0	0	0	0.000	0-	0.000		
NBT	3.5	5950	866	0.146 *	744	0.125		
NBR	1.5	2550	230	0.090	407	0.160		
RIGHT TUP	RN ADJUSTME	ENT		N	BR .	0.050 *		
LEARANG	E INTERVAL			0.050 *	J	0.050		
OTAL ICU				0.510		0.543		

	AM PEAK HOUR			HOUR	PM PEAK HOUR			
	LANES	CAPACITY	VOL	V/C	VOL	V/C		
NBL	2	3400	160	0.047 *	275	0.081		
NBT	0	0	0	0.000	0	0.000		
NBR	1	1700	47	0.028	324	0.191		
SBL	0	0	0	0.000	0	0.000		
SBT	0	0	Ó	0.000	0	0.000		
SBR	0	0	0	0.000	0	0.000		
EBL	O	0	0	0.000	0	0.000		
EBT	3	5100	803	0.157 *	1494	0.293		
BR	1	1700	309	0.182	203	0.119		
VBL	1	1700	404	0.238 *	137	0.081		
VBT	3	5100	923	0.181	873	0.171		
VBR	0	0	0	0.000	0	0.000		
IGHT TUR	RN ADJUSTMI	ENT		N	BR	0.041		
LEARANC	E INTERVAL			0.050 *	4.5	0.050		
OTAL ICU	N .			0.492		0.546		

CHRISTOPHER JEAN & ASSOCIATES, INC. ACOUSTICAL CONSULTING SERVICES

August 17, 2016

ACOUSTICAL ANALYSIS

VALENCIA SPRINGHILL & RESIDENCE INN

WAYNE MILLS PLACE

CITY OF SANTA CLARITA

Prepared by:

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CHRISTOPHER JEAN & ASSOCIATES, INC. ACOUSTICAL CONSULTING SERVICES

SUMMARY

This analysis has been completed to determine the exterior and interior noise exposure and the necessary mitigation measures for the proposed Valencia Springhill & Residence Inn off of Wayne Mills Place in the City of Santa Clarita. A list of requirements and recommendations is given in the following summary. Details are discussed in the body of the report.

A. EXTERIOR NOISE CONTROL

Sound walls at least six feet (6') high must be erected between the Residence Inn entry portico and the adjacent pool area. Sound walls at least ten feet (10') high must be erected around the west end of the Holiday Inn pool area.

B. NOISE CONTROL BARRIER CONSTRUCTION MATERIALS

The required noise control barriers may be constructed using any of the following materials:

- (1) Masonry block
- (2) Stucco on wood frame
- (3) 3/4" plywood
- (4) 1/4" tempered glass or 1/2" Lexan
- (5) Earthen berm
- (6) Any combination of the above materials or any material with a surface weight of at least 3.5 pounds per square foot.

Each completed noise control barrier must present a solid face from top-to-bottom and end-to-end. Cutouts are not permitted except for drain holes.

C. INTERIOR NOISE CONTROL

The buildings shall be constructed, as a minimum, in accordance with the outline of Table 7 found in the body of the report. This will be adequate for all units with the following upgrades:

- (1) Add STC 40 glazing to all rooms along the west face of both buildings.
- (2) Add STC 36 glazing to all rooms along the north and south building faces of both buildings.
- (3) Add STC 28 glazing to all remaining rooms of both buildings including all rooms facing the central courtyard of the Residence Inn building.
- (4) Add resilient channels and two layers 5/8" drywall to the exterior wall assemblies of all rooms along the west, north and south building faces of both buildings.
- (5) Add resilient channels and two layers 5/8" drywall to the ceilings of all top floor rooms along the west, north and south building faces of both buildings.

D. VENTILATION

This analysis assumed that all windows and doors are kept closed. If the allowable interior noise levels are met by requiring that windows and doors be kept closed, then the design of the structure must also specify a ventilation or air conditioning system to provide a habitable interior environment. The ventilation system must not compromise the dwelling or guest room noise reduction.

E. UNIT-TO-UNIT NOISE CONTROL

Common floor/ceiling assemblies between units are subject to Title 24 Sound Transmission Class (STC) and Impact Insulation Class (IIC) requirements. The plan set provided for this analysis did not include common floor/ceiling assembly details. It is highly recommended that one of the following widely used common floor/ceiling assemblies, all of which rate at least STC 50, be incorporated into the building plans:

- (1) 8" concrete slab (Riverbank Acoustical Labs, TL 76-77, 1977, 16f, for Pre-stressed Concrete Institute, STC 58 IIC 71 with carpet, IIC 34 for bare floor)
- (2) 1 1/2" lightweight concrete, plywood sub-floor, 3 1/2" thick fiberglass insulation, resilient channels, drywall ceiling (Geiger and Hamme CCA-14MT, CCA-15MT, 1972, 16f, for Cellular Concrete Association, STC 60 IIC 73 with carpet, IIC 47 with vinyl tile)
- (3) 1 3/8" Gyp-Crete, plywood sub-floor, 2" by 10" wood joists, 3 1/2" thick fiberglass insulation, resilient channels, 1/2" drywall ceiling (Riverbank Acoustical Labs TL 81-16,

for Gyp-Crete Corporation, 1981, STC 60 – Riverbank Acoustical Labs IN 81-14, for Gyp-Crete Corporation, 1981, IIC 51 with sheet vinyl)

As can be seen by the above list, some of the recommended assemblies cannot meet the IIC 50 minimum requirement without carpet. Uncarpeted areas above other living units will require some form of proprietary isolation product included in the assembly to achieve the required rating. Such products include Enkasonic, Acousti-Mat, Regupol and others. Such products are designed to be installed atop the bare sub-floor and topped with either lightweight concrete/Gyp-Crete pour or additional layers of plywood. Each product has its own specific installation requirements. These products can produce both design and field IIC compliance with sheet vinyl or wood flooring. While various lab tests have shown these same products to produce design IIC compliance when used with ceramic tile, field testing experience has proven that actual ceramic tile installations are marginal. The use of ceramic tile or marble is not recommended, regardless of the installation method.

The plan set provided for this analysis did not include common wall assembly details. It is highly recommended that one of the following widely used common wall assemblies, all of which rate at least STC 50, be incorporated into the building plans:

- (1) Two layers of 1/2" direct nailed drywall, 2" by 6" plate, 2" by 4" staggered studs, 3 1/2" thick fiberglass insulation, two layers 1/2" direct nailed drywall (Owens/Corning Fiberglas, OCF W-55-69, 1969, 16f, for Owens/Corning Fiberglas, STC 54)
- (2) Two layers of 5/8" direct nailed drywall, 2" by 6" plate, 2" by 4" staggered studs, 3 1/2' thick fiberglass insulation, two layers 5/8" direct nailed drywall (National Gypsum Company NGC 2376, 1970, 16f, STC 53)
- (3) 5/8" direct nailed drywall, 2" by 4" plate with 2" by 4" studs, 3 1/2" thick fiberglass insulation, 1" clear air space at plate, 2" by 4" plate with 2" by 4" studs, 5/8" direct nailed drywall (Owens/Corning Fiberglas OCF 448, 1967, 16f, STC 56)
- (4) Same as #3 but with two layers of 3 1/2" thick fiberglass insulation (Riverbank Acoustical Labs TL 75-83, 1975, 16f, for U. S. Department of Agriculture, STC 57)
- (5) Two layers 5/8" direct nailed drywall, 2" by 4" plate with 2" by 4" studs, 3 1/2" thick fiberglass insulation, 1" clear air space at plate, 2" by 4" plate with 2" by 4" studs, two layers 5/8" direct nailed drywall (National Gypsum Company, NGC 3056, 1970, 16f, for Gypsum Association, STC 58)
- (6) Same as #5 but with two layers of 3 1/2" thick fiberglass insulation (Riverbank Acoustical Labs TL 75-82, 1975, 16f, for U. S. Department of Agriculture, STC 63)

All wall assemblies between any common space and a living unit must be an STC 50 minimum rated assembly. All plumbing, mechanical and electrical installations shall be installed per the instructions and details contained in Appendix 7. Add all appropriate details to the project plans.

F. PROJECT DISCLOSURE

The acoustical code requirements represent minimal acceptable standards. Compliance with the Building Department acoustical criteria does not require, guarantee or even imply that local sound sources will be mitigated to inaudibility. Compliance with an exterior noise limit of 65 dBA CNEL means that exterior noise will remain clearly audible within the mitigated exterior space. Compliance with an interior noise limit of 45 dBA CNEL means that exterior noise sources will remain audible on the interior of a building.

Due to quality control and other field related problems, the code minimum laboratory ratings of STC/IIC 50 for common assemblies does not guarantee that all common assemblies will pass a field test. In fact, there is a 50 percent chance that half of all common assemblies rated at the STC/IIC minimum could fail field tests. An STC 50 rated assembly will produce around 45 dBA of voice reduction in the field. This means that normal conversation in adjoining units will be audible a certain percentage of the time.

Do not misrepresent the degree of exterior to interior or unit-to-unit acoustical isolation as anything more than meeting code during any phase of this project. Never, ever, use any form of the term "Soundproof" to describe any portion of this project.

G. PROJECT NOISE MITIGATION

Project generated noise levels should not exceed the existing ambient conditions as longs as no truck deliveries occur prior to 7:00 a.m. or after 10:00 p.m., all rooftop mechanical equipment has a specified noise rating of no more than 8.5 bels, rooftop parapet or freestanding acoustic screen walls at least as tall as the tallest piece of rooftop mechanical equipment are erected, and all guest room HVAC units have a specified noise rating of no more than 6.5 bels.

H. CONSTRUCTION NOISE

Construction noise is normally exempt from compliance with the City noise limits. However, even unrestricted construction activities are not likely to exceed the ambient noise conditions produce by the adjacent freeway.

CHRISTOPHER JEAN & ASSOCIATES, INC. ACQUISTICAL CONSULTING SERVICES

1.0 INTRODUCTION

This report presents the results of a noise impact and design study of the proposed Valencia Springhill & Residence Inn project located off of Wayne Mills Place in the City of Santa Clarita. This report includes a discussion of the expected exterior community noise environment and the recommendations for control of noise in the exterior and interior living spaces.

A vicinity map showing the general location of the project site is presented in Exhibit 1 – Site Location Map. An aerial photograph of the existing project site and its surroundings is shown on Exhibit 2. The project site plan is shown on Exhibit 3. The project consists of two hotel buildings.

2.0 APPLICABLE NOISE CRITERIA

The City of Santa Clarita requires all hotel projects to conform to the requirements of Table 1.

TABLE 1

APPLICABLE NOISE CRITERIA (1)

Exterior

65 dBA CNEL

Interior

45 dBA CNEL

Unit-to-Unit

STC 50/IIC 50

(1) Please see Noise Rating Methods (Appendix 1) for an explanation of the commonly applicable acoustical terminology.

The City of Santa Clarita also has a noise ordinance designed to control noise across common property lines. The allowed noise limits for both residential (other hotels in this case) and commercial properties are listed in Table 2 on the following page.

TABLE 2
MUNICIPAL CODE NOISE LIMITS

		RESIL	DENTIAL	COMMERCIAL		
DURATION	<u>SYMBOL</u>	<u>DAY</u>	<u>NIGHT</u>	<u>DAY</u>	NIGHT	
More than 15 minutes in hour	L25	65	55	80	70	
More than 5, less than 15 minutes	L8	70	60	85	75	
More than 1, less than 5 minutes	L2	75	65	90	80	
Less than 1 minute	Lmax	85	75	100	90	

As can be seen from the Table 2 criteria, the noise limits will be most stringent when applied to continuous noise sources such as rooftop mechanical equipment and guest room air conditioning units. Intermittent noise caused by daytime truck deliveries and typical parking lot activities should be able to comply with the various noise limits without much effort, especially due to the high ambient noise levels in the project area (Interstate 5).

In addition, the City noise ordinance exempts construction noise produced within 300 feet of a residential property as long as it occurs only between the hours of 7:00 a.m. to 7:00 p.m. Monday through Friday, and 8:00 a.m. to 6:00 p.m. on Saturday.

3.0 EXISTING NOISE LEVELS

3.1 ROADWAYS

A measurement was performed on the site. The measurement was conducted using a Larson-Davis Model 700 Integrating Sound Level Meter. The average noise level reported from the measurement taken at a point approximately 150 feet from the centerline of Interstate 5 was 79 dBA Leq.

Ten minute traffic counts were taken during the measurement period. The results of the counts are listed in Table 3 on the following page.

TABLE 3
OBSERVED INTERSTATE 5 TRAFFIC COUNTS

	<u>AUTOS</u>	MEDIUM TRUCKS	HEAVY TRUCKS	TOTAL
TEN MINUTES	1,365	44	133	1,542
HOURLY EQUIVALENT	8,190	264	798	9,252
PERCENTAGE	88.5	2.9	8.6	100.0

The primary function of the measurements is to calibrate the Noise Model (FHWA RD-77-108) used to compute the CNEL data. The model relies on the acoustical metric of the average noise level (Leq). By taking the traffic count during the measurement, calculating the Leq value for that traffic sample, and comparing it the measured Leq value, it is possible to calibrate the CNEL model for any factors that are present and not adequately identified in the prediction equations.

The Leq value computer calculation printout is contained in Appendix 2. The calculated and measured Leq values are compared in Table 4.

TABLE 4

COMPARISON OF CALCULATED AND MEASURED AVERAGE NOISE LEVELS

Calculated	82
Measured	79
DIFFERENCE	- 3

The results of Table 4 show that area conditions produce slightly noise than would normally be predicted by the standard computer calculation model. The resulting correction factor will be applied to the design noise level (CNEL) calculations.

3.2 RAILROAD

There are no railroad operations in the vicinity of the project site. Railroad noise does not impact the site.

3.3 AIRCRAFT

There are no concentrated aircraft operations in the vicinity of the project site. Aircraft noise does not impact the site.

4.0 DESIGN NOISE LEVELS

4.1 ROADWAY

The expected future roadway noise impact was projected using the Federal Highway Administration's Highway Noise Prediction Model (FHWA RD-77-108) together with several roadway and site parameters that determine the projected impact of vehicular traffic noise. These include the roadway cross-section (e.g. number of lanes), the roadway active width, the average daily traffic (ADT), the vehicle travel speed, the percentage of auto and truck traffic, the roadway grade, the angle of view, the site conditions ("hard" or "soft" site), and the percentage of average daily traffic that flows each hour throughout a 24 hour period.

The forecast traffic volume was obtained from Caltrans data. CALTRANS data was also used for the percentage of truck traffic and to project the distribution by time of day. The input data is listed in Table 5.

TABLE 5
TRAFFIC INPUT DATA – I-5 FREEWAY

	% DAY	<u>% EVENING</u>	% NIGHT	% VOLUME			
Autos	73.00	8.60	18.40	87.4			
Medium Trucks	73.00	8.60	18.40	2.8			
Heavy Trucks	69.10	6.70	24.20	9.8			
Volume =	188,000	188,000 ADT on					
Speed =	65 MPH						

The calculations are contained in Appendix 3. The calculations, with the Table 4 correction factor applied, yield a design noise level of 83 dBA CNEL at 150 feet from the centerline of the I-5 Freeway.

4.2 RAILROAD

Railroad noise is not expected to increase. Thus, railroad noise will not impact the project site.

4.3 AIRCRAFT

Aircraft noise is not expected to increase. Thus, aircraft noise will not impact the project site.

5.0 MITIGATION MEASURES

5.1 <u>EXTERIOR</u>

The project proposes two exterior use areas. The Residence Inn hotel proposes a central courtyard including a pool area. The proposed building will partially shield this courtyard from freeway noise although the entrance opening in the west side of the building will allow freeway noise to encroach upon this space. The Holiday Inn also proposes an exterior pool area between the two hotel buildings. While the two buildings will partially shield this pool area from freeway noise, the west side of this pool area is open to the freeway. As exterior noise levels are expected to be as high as 83 dBA CNEL outside the west building faces, mitigation of exterior noise would require a sound barrier along the west sides of both pool areas. For purposes of analysis, the barrier height calculations assume that the barrier is located at the top of any slope between the roadway and building pads, and is only intended to reduce exterior noise to 65 dBA CNEL at the first floor level. The assumptions for the barrier height calculations are listed in Table 6 on the following page.

TABLE 6

BARRIER ANALYSIS GENERAL ASSUMPTIONS FOR RECEIVER AND SOURCE GEOMETRY

RECEIVER	ASSUMPTIONS .				
HORIZONTAL GEOMETRY	VERTICAL GEOMETRY .				
Distance behind top-of-roadways barrier: 5' to 10'	Height above pad for ground level receivers: 5'				
Distance behind individual patio and balcony barriers: 1' to 3'	Height above pad for second level receivers: 14'				
SOURCE	ASSUMPTIONS .				
HORIZONTAL GEOMETRY *	VERTICAL GEOMETRY .				
For roadways with grades no greater than 2%, all vehicles were located at the single lane equivalent acoustic	Automobiles: 0' above center of road grade				
center of the full roadway. For roadways with over 2% grade, vehicle count was divided in half and located	Medium Trucks: 2.3' above center of road grade				
at the single lane equivalent acoustic center for each side of the roadway.	Heavy Trucks: 8' above center of road grade				

* = Single Lane Equivalent (SLE) location.

The barrier calculations are contained in Appendix 4. These calculations show that barriers at least six feet (6') high must be erected between the Residence Inn entry portico and the adjacent pool area. The barrier calculations also show that a sound barrier at least ten feet (10') high must be erected around the west end of the Holiday Inn pool area.

The required noise control barriers may be constructed using any of the following materials:

- (1) Masonry block
- (2) Stucco on wood frame
- (3) 3/4" plywood
- (4) 1/4" tempered glass or 1/2" Lexan
- (5) Earthen berm

(6) Any combination of the above materials or any material with a surface weight of at least 3.5 pounds per square foot.

Each completed noise control barrier must present a solid face from top-to-bottom. Cutouts and/or openings are not permitted except for drain holes.

5.2 INTERIOR

The City's exposure criteria for new hotel construction require that the interior noise environment, attributable to outside noise sources, be limited to 45 dBA CNEL. Analysis and recommendations for control of outdoor-to-indoor noise intrusion are presented in this section.

The exterior-to-interior noise reduction expected for the planned construction was based on a detailed analysis of sample rooms and units planned for the development. Calculations of the expected typical noise reduction performance were performed for sample rooms. The analysis was based on the typical spectra expected for the primary sources of community noise impact, the typical octave-band transmission loss for each element in the planned building shell, the relative square footage of each element of the planned building shell, the expected typical interior surface treatment, and the acoustical absorption coefficient for each interior surface treatment. Corrections for the "A" Weighted room absorption factors are also included.

Each component of the building shell (e.g. exterior wall, windows, doors, etc.) provides a different amount of transmission loss for each "A" Weighted octave- band of community noise. With the knowledge of the building shell components and their individual octave band transmission loss values for the noise sources, calculations of the composite building shell transmission loss can be made for each room.

The characteristics of the basic building shell are listed in Table 7 on the following page.

TABLE 7

BASIC BUILDING SHELL CHARACTERISTICS

PANEL	CONSTRUCTION
Exterior Wall	Siding or stucco, 2" X 4" studs, R-13 fiberglass insulation, 5/8" drywall
Windows	Double pane
Sliding Glass Door	Double pane
Roof	Built-up over 1/2" plywood, R-30 fiberglass insulation, 5/8" drywall
Floor	Carpeted except baths

Table 7 construction minimums will provide around 20 dBA of interior noise reduction.

For convenience of assessment, the specific noise levels at the building faces are given in Table 8.

TABLE 8

NOISE LEVELS AT THE BUILDING FACES

	FACE							
	<u>NORTH</u>	<u>EAST</u>	SOUTH	WEST				
Residence Inn	79	70	80	82				
Holiday Inn	80	70	80	83				

The results of Table 8 show that interior noise reduction levels as high as 38 dBA will be required for rooms facing Interstate 5. Since Table 7 construction will yield only around 20 dBA, specific room calculations were carried out to determine whether additional mitigation is needed.

The calculations are contained in Appendix 5, and the results are given in Table 9 on the following page.

TABLE 9

ROOM NOISE REDUCTION VALUES

		NO	SE R	EDU	JCTI	V NC	/S. G	LAZ	NG:	STC
BLDG	ROOM	<u>24</u>	<u>26</u>	<u>28</u>	<u>30</u>	<u>32</u>	<u>34</u>	<u>36</u>	<u>38</u>	<u>40</u>
Res Inn	Studio/1 Bedroom	23	24	26,	27	28	29	29	30	30
	Double Queen	26	27	28	28	29	29	29	29	29
	King	26	28	29	30	31	31	32	32	32
Hol Inn	King	25	27	28	28	29	29	29	29	30
	Double Queen	24	25	27	28	29	30	30	31	31

The results of Table 9 show that Table 7 construction cannot provide the required 38 dBA of interior noise reduction even with significant glazing upgrades. It will be necessary to upgrade the exterior walls and roof/ceiling assemblies. Such upgrades will consist of adding resilient channels to the interior side of the wall stude plus two layers of 5/8" drywall. Similarly, the roof/ceiling assembly (top floor only) can be upgraded by adding resilient channels to the ceiling joists plus two layers of 5/8" drywall.

Additional interior noise reduction calculations were performed to determine the effect of the exterior wall and roof/ceiling upgrades. The calculations are contained in Appendix 6 and the results are given in Table 10.

TABLE 10

ROOM NOISE REDUCTION VALUES
WITH EXTERIOR WALL AND ROOF/CEILING UPGRADES

		<u>NOI</u>	SE R	EDU	CTI	ON V	'S. G	LAZ	ING :	<u>STC</u>
BLDG	ROOM	<u>24</u>	<u>26</u>	<u>28</u>	<u>30</u>	<u>32</u>	<u>34</u>	<u>36</u>	<u>38</u>	<u>40</u>
Res Inn	Studio/1 Bedroom	23	25	27	29	31	33	34	36	3.7
	Double Queen	28	30	32	33	35	36	37	38	38
	King	28	29	31	33	35	36	38	39	40
Hol Inn	King	27	29	31	33	34	35	37	38	38
•	Double Queen	25	27	28	30	32	34	35	37	38

- (1) Add STC 40 glazing to all rooms along the west face of both buildings.
- (2) Add STC 36 glazing to all rooms along the north and south building faces of both buildings.

- (3) Add STC 28 glazing to all remaining rooms of both buildings including all rooms facing the central courtyard of the Residence Inn building.
- (4) Add resilient channels and two layers 5/8" drywall to the exterior wall assemblies of all rooms along the west, north and south building faces of both buildings.
- (5) Add resilient channels and two layers 5/8" drywall to the ceilings of all top floor rooms along the west, north and south building faces of both buildings.

5.3 **VENTILATION**

If interior allowable noise levels are met by requiring that windows be unopenable or remain closed, then the design of the structure must also specify a ventilation or air conditioning system to provide a habitable interior environment. The ventilation system must not compromise the dwelling unit or guest room noise reduction.

5.4 <u>UNIT-TO-UNIT NOISE CONTROL</u>

Common floor/ceiling assemblies between units are subject to Title 24 Sound Transmission Class(STC) and Impact Insulation Class (IIC) requirements. The plan set provided for this analysis did not include common floor/ceiling assembly details. It is highly recommended that one of the following widely used common floor/ceiling assemblies, all of which rate at least STC 50, be incorporated into the building plans:

- (1) 8" concrete slab (Riverbank Acoustical Labs, TL 76-77, 1977, 16f, Pre-stressed Concrete Institute, STC 58 -- IIC 71 with carpet, IIC 34 for bare floor)
- (2) 1 1/2" lightweight concrete, sub-floor, R-11 insulation, resilient channel, drywall ceiling (Geiger and Hamme CCA-14MT, CCA-15MT, 1972, 16f, Cellular Concrete Associates, STC 60 --IIC 73 with carpet, IIC 47 with vinyl tile)
- 1 3/8" Gyp-Crete, sub-floor, 2" by 10" joists, R-11 insulation, resilient channel, 1/2" drywall ceiling (Riverbank Acoustical Labs TL 81-16, Gyp-Crete Corp., 1981, STC 60 -- Riverbank Acoustical Labs IN 81-14, Gyp-Crete Corp., 1981, IIC 51 with sheet vinyl)

As can be seen by the above list, some of the recommended assemblies cannot meet the IIC 50 minimum requirement without carpet. Uncarpeted areas above other living units will require some form of proprietary isolation product under the floor to achieve the required rating. Such products include Enkasonic, Acousti-Mat, Monsanto SC50, and others. Such products are designed to be installed atop the bare sub-floor and

topped with either a LWC/Gyp-Crete pour or additional layers of plywood. Each product has its own specific installation requirements. These products can produce both design and field IIC compliance with sheet vinyl or wood flooring. While various lab tests have shown these same products to produce design IIC compliance when used with ceramic tile, field testing experience has proven that actual ceramic tile installations are marginal. The use of ceramic tile or marble flooring is not recommended, regardless of the installation method.

The plan set provided for this analysis did not include common wall assembly details. It is highly recommended that one of the following widely used common wall assemblies, all of which rate at least STC 50, be incorporated into the building plans:

- (1) Two layers 1/2" direct nailed drywall, 2" by 6" plate, 2" by 4" staggered studs, fiberglass insulation, two layers 1/2" direct nailed drywall (Owens/Corning Fiberglas, OCF W-55-69, 1969, 16f, Owens/Corning Fiberglas, STC 54)
- (2) Two layers 5/8" direct nailed drywall, 2" by 6" plate, 2" by 4" staggered studs, R-11 insulation, two layers 5/8" direct nailed drywall (National Gypsum Co. NGC 2376, 1970, 16f, STC 53)
- (3) 5/8" direct nailed drywall, 2" by 4" plate with 2" by 4" studs, R-11 insulation, 1" airspace at plate, 2" by 4" plate with 2" by 4" studs, 5/8" direct nailed drywall (Owens/Corning Fiberglas OCF 448, 1967, 16f, STC 56)
- (4) Same as #3 with two layers of R-11 insulation (Riverbank Acoustical Labs TL75-83, 1975, 16f, U.S. Department of Agriculture, STC 57)
- (5) Two layers 5/8" drywall direct nailed, 2" by 4" plate with 2" x 4" studs, 1" air space, 2" by 4" plate with 2" by 4" studs, R-11 insulation, two layers 5/8" drywall (National Gypsum Co. NGC 3056, 1970, 16f, Gypsum Association, STC 58)
- (6) Same as #5 with two layers of R-11 insulation (Riverbank Acoustical Labs TL 75-82, 1975, 16f, U.S. Department of Agriculture, STC 63)

All wall assemblies between any common space and a living unit must be an STC 50 minimum rated assembly. All Plumbing and electrical installations shall be installed per the instructions contained in Appendix 7. Put all details onto Plans.

5.5 PROJECT DISCLOSURE

The acoustical code requirements are minimal acceptable standards. Compliance with Building Department acoustical criteria does not require, guarantee or even imply that local sound sources will be mitigated to inaudibility. Compliance with an exterior noise limit of 65 dBA CNEL means that exterior noise will remain clearly audible within

the mitigated exterior space. Compliance with an interior noise limit of 45 dBA CNEL means that exterior noise sources will remain audible on the interior of a structure.

Due to quality control and other field related problems, the code minimum laboratory rating of STC/IIC 50 for common assemblies does not guarantee that all common assemblies will pass a field test. In fact, there is a 50% chance that half of all laboratory rated STC/IIC 50 common assemblies could fail field tests. An STC 50 rated assembly will produce around 45 dBA of voice reduction in the field. This means that normal conversation in adjoining units will be audible a certain percentage of the time.

Do not misrepresent the degree of exterior to interior or unit to unit acoustical isolation as anything more than meeting code during any phase of this project. Never, ever, use any form of the term "Soundproof" to describe any portion of this project.

6.0 PROJECT GENERATED NOISE

Once completed, the operations of the two hotel buildings will generate noise from various sources. Such sources include, motor vehicles moving on and off the project site, truck deliveries, rooftop mechanical units and individual guest room HVAC units, and even people's voices. These various noise sources will combine at the project boundaries and must comply with the City noise limits. This section will examine the various noise sources and compare the combined source noise levels at the project boundaries to the City noise limits.

6.1 PARKING LOT ACTIVITY

Patron and employee vehicles will enter and exit the project site as well as maneuver around the project parking areas once on site. Field measurement experience has shown that a cycle of people entering a parked vehicle, slamming the doors, starting the engine, maneuvering out of the parking space and driving away, immediately followed by another vehicle pulling up, maneuvering into the parking space, shutting off the engine, people exiting the vehicle and slamming the doors produces an average noise level of 68 dBA Leq at a distance of 10 feet. Maximum noise levels are typically 10 dBA higher or 78 dBA max at 10 feet. The analysis has shown that future traffic noise levels from Interstate 5 will be as high as 70 dBA CNEL on the east side of the project site. This means that typical parking lot activities will produce less noise than the adjacent freeway.

6.2 TRUCK DELIVERIES

Deliveries of various products such as linens, toiletries, food and such will be made periodically. Most such deliveries will be made by smaller trucks such as those

used by UPS or FedEx. However, larger deliveries could also be made by tractor-trailer rigs. Typical noise sources and levels are given in Table 11.

TABLE 11

TRUCK DELIVERY NOISE LEVELS

SOURCE	DBA @ 10'	DURATION
•	-	
Truck engine idle	68	15 minutes
Moving Truck (under 10 mph)	76	1 minute
Air brakes	94	8 seconds
Unloading noise	72	15 minutes

The Exhibit 3 site plan shows truck unloading areas on the east side of the Residence in building as well as on the south side of the Holiday Inn Express Building. The unloading area on the east side of the Residence Inn building is about 100 feet from the common property line of the existing hotel (residential) use to the north and about 45 feet from the common property line of the commercial use to the east. These distances would reduce the Table 11 source noise levels by 20 dBA to the north and 13 dBA to the east. This results in 15 minute noise levels of 53 dBA to the north and 60 dBA to the east. Both are well under the allowed L25 noise limits of Table 2. Moving trucks must pass the hotel use to the north creating noise levels similar to the allowed daytime noise limit. Only air brakes have the potential to violate the allowed noise limits. However, air brake noise from trucks delivering to the project hotels will be indistinguishable from air brake noise from trucks delivering to the existing hotel.

6.3 ROOFTOP MECHANICAL/GUEST ROOM HVAC UNITS

Both project buildings will employ rooftop mechanical units as well as individual HVAC units for each guest room. Since noise from such equipment is typically continuous, the combined noise levels from such units must comply with the base noise limits of Table 2 at the adjacent properties. Rooftop mechanical plans were not available for this analysis. For purposes of analysis, each building will be assumed to have 10 rooftop mechanical units, all rated at 9.0 bels (70 dBA at 10 feet). If all ten of these units were located in a cluster approximately 30 feet from the common property line to the north, a combined continuous level of 70 dBA would occur. Rooftop parapet walls at least as tall as the tallest piece of equipment would reduce this level at least 5 dBA. Specifying a maximum manufacturer noise rating of 8.5 bels (65 dBA at 10 feet) would reduce the rooftop mechanical noise by another 5 dBA. Assuming that rooftop parapet walls are used and no rooftop equipment produces more than 65 dBA at 10 feet, the worst-case rooftop noise level at the existing hotel property to the north will be 60 dBA. Even this mitigated level exceeds the nighttime residential use noise limit of Table 2.

Noise from guest room HVAC units will be defined by the nearest 12 units to a single receiver point. If each guest room HVAC unit produces 7.5 bels (55 dBA at 10 feet), then the nearest 12 units to any point on the common property line of the existing hotel use to the north will produce a combined level of 82 dBA. Specifying units with a sound rating of only 6.5 bels would produce a combined level of 72 dBA. Even this mitigated level exceeds the nighttime residential noise limit of Table 2.

The analysis has shown that even mitigated noise from the building mechanical systems will likely exceed the City noise limits. However, freeway noise levels as high as 80 dBA CNEL will occur along the north side of the Residence Inn building. Thus, a building mechanical noise level of 72 dBA will be below the ambient noise levels produced by the freeway. To ensure that this situation remains the case, the project should specify a rooftop mechanical unit maximum allowable noise rating of 8.5 bels and the use of rooftop parapet or freestanding acoustical screen walls at least as tall as the tallest piece of rooftop equipment. Likewise, a maximum allowable noise rating of 6.5 bels should be specified for all guest room HVAC units.

7.0 CONSTRUCTION NOISE

Construction noise is expressly exempted from compliance with the City noise limits as long as all construction activity is restricted to between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday, and between 8:00 a.m. and 6:00 p.m. on Saturday. Construction noise should not occur on Sundays and/or holidays. It should be noted that, due to the extremely loud ambient noise levels produced by the adjacent freeway, construction noise is not likely to exceed the ambient noise conditions on a frequent basis.

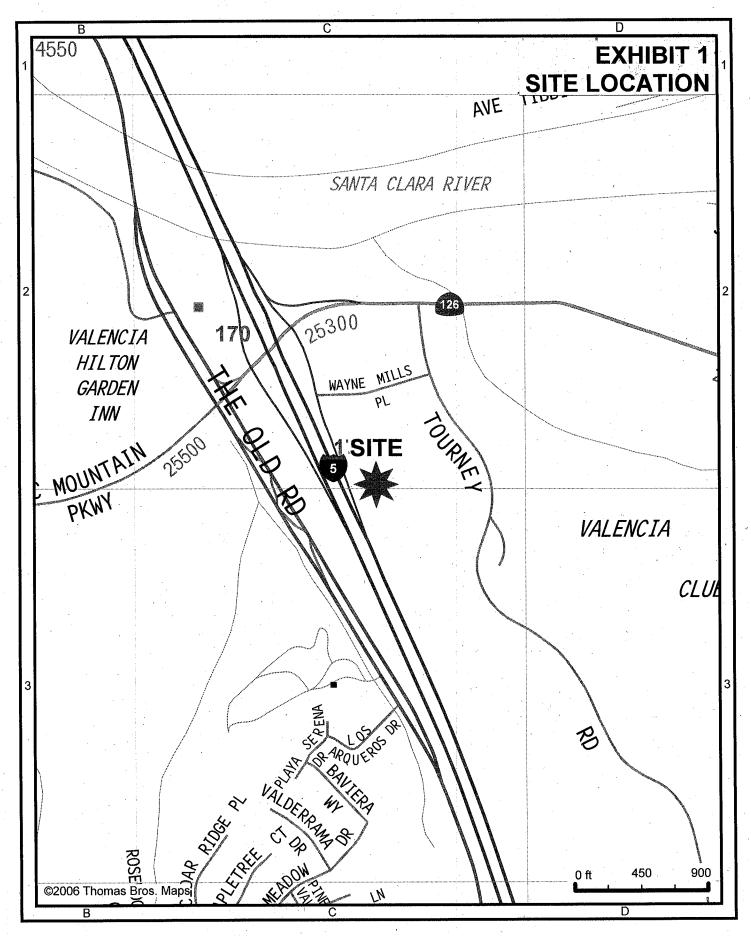
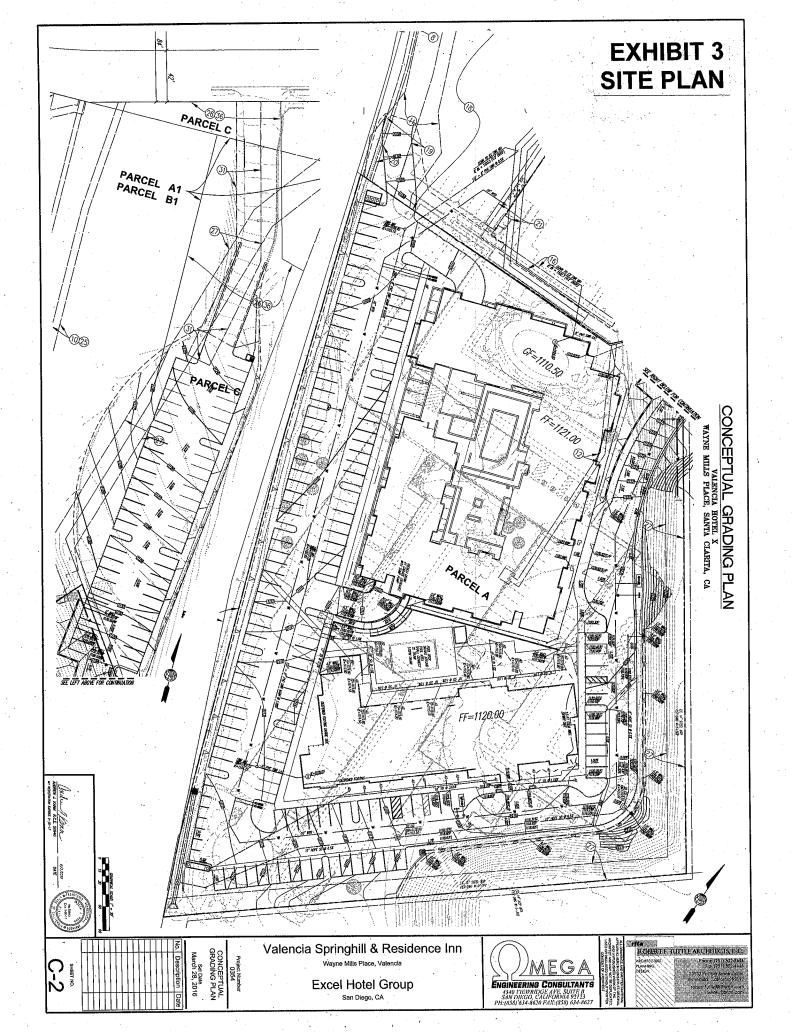


EXHIBIT 2 AERIAL PHOTO



Imagery ©2016 DigitalGlobe, U.S. Geological Survey, USDA Farm Service Agency, Map data ©2016 Google 100 ft



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APPENDIX 1

NOISE RATING METHODOLOGY

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NOISE RATING METHODOLOGY

The A-weighted decibel (dBA) or "A" scale on a sound level meter is typically used for environmental noise measurements because the weighting characteristics of the "A" scale approximate the subjective response of the human ear to a broad frequency band noise source by discriminating against the very low and very high frequencies of the audible sound spectrum.

Since community noise is seldom constant, varying from moment to moment and throughout the day, the "A" weighted noise level needs to be further described to provide meaningful data. The Environmental Protection Agency, the Federal Department of Transportation, several foreign countries and many private consultants are now using three time-exceeded percentile figures to describe noise, which are:

- (1) L₉₀ is the noise level that is exceeded 90 percent of any sample measurement period (such as 24 hours) and is often used to describe the background or ambient noise level.
- (2) L_{50} is the noise level that is exceeded 50 percent of any sample measurement period. It is generally considered to represent the median noise level.
- (3) L₁₀ is the noise level that is exceeded 10 percent of any sample measurement period. It is a good descriptor of fluctuating noise sources such as vehicular traffic. It indicates the near-maximum noise levels that occur for groups of single noise events. Being related to the subjective annoyance to community noise, the L₁₀ is a good design tool in the planning of acoustical barriers.

More recent noise assessment methods are based on the equivalent energy concept where Leq(x) represents the average energy content of a fluctuating noise source over a sample measurement period. The subscript (x) represents the period over which the energy is computed and/or measured. Current practice references the time quantity to either one (1) hour, eight (8) hours, or twenty-four (24) hours. When referenced to one (1) hour, Leq is also called the HNL (Hourly Noise Level).

Since Leq is the summation of the functional products of noise level and duration, many different combinations of noise levels, duration times and time histories can produce similar Leq values. Thus a value of Leq(24) equals 50 means only that the average noise level is 50 dB. During that 24-hour period, there can be times when the noise level is higher than 50 dB and times when it is lower than 50 dB.

If the period of the measurement is only a single event, the energy content is not averaged. The energy expression for a single event is simply the sum of the functional product of the noise level and duration time of the event. This term is called the Le or SENEL (Single Event Noise Exposure Level). The summation of Le values averaged over one hour is Leq(1), over eight hours is Leq(8), over 24 hours is Leq(24), etc.

Leq is further refined into Ldn (Level Day-Night) and CNEL (Community Noise Equivalent Level), where noise that occurs during certain hours of the day are weighted (or penalized) in an attempt to compensate for the general perception that such noise is more annoying during these time periods (typically evening and nighttime hours).

- (1) Ldn is the sound level in dBA that corresponds to the average energy content of the noise being measured over a 24-hour period but includes a ten (10) dBA weighting penalty for noise that occurs during the nighttime hours between 10:00 PM and 7:00 AM. The Ldn is a noise rating method recommended by the Environmental Protection Agency because it takes into account those subjectively more annoying noise events that occur during normal sleeping hours.
- (2) CNEL is the sound level in dBA that corresponds to the average energy content of the noise being measured over a 24-hour period but includes a five (5) dBA penalty for noise that occurs during the evening hours between 7:00 PM and 10:00 PM, and a ten (10) dBA penalty for noise that occurs during the nighttime hours between 10:00 PM and 7:00 AM. For typical highway vehicular traffic situations, computer analysis has shown that the Ldn and CNEL values correlate within 0.5 dBA.

The percentile figures L_{10} , L_{50} and L_{90} can be directly scaled from a graphical recording of the measured noise sample over a particular time period. These figures can also be measured directly using modern automatic noise measuring equipment. Measurement of the parameters Le, Leq, Ldn and CNEL requires even more sophisticated and correspondingly expensive noise measuring equipment. As a result, engineers have devised ways of estimating Leq (and hence, Ldn) using standard instrumentation and methods.

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APPENDIX 2

EXISTING TRAFFIC NOISE CALCULATIONS

HOURLY NOISE LEVEL

PROJECT : SPRINGHILL & RESIDENCE INN STREET NAME : CONT : HARD

INP	UT	DATA

	AUTO	METK	HVTK
SPEED: % VOLUME: VOLUME	65 88.5 = 9252	65 2.9	65 8.600001
HVY TRK GRADIENT	= 0 DBA		

NOISE LEVEL

AUTO	 81.3
MED.TRK.	76.0
HVY.TRK.	83.9
TOTAL	86.2

NOISE LEVEL AT 150 FT

AUTO	MEDIUM TRK	HEAVY TRK	TOTAL
76.5	71.2	79.1	81.5

75.8

75.5 75.1

74.8

74.5

74.2

73.2

LEQ AT SPECIFIED DISTANCES

THE TIPETTED	D10111100
DISTANCE	LEQ
50	86.2
75	84.5
100	83.2
125	82.3
150	81.5
175	80.8
200	80.2
250	79.3
300	78.5
350	77.8
400	77.2
450	76.7
500	76.2

550 600

650

700

750

800

1000

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APPENDIX 3

FUTURE TRAFFIC NOISE CALCULATIONS

FHWA RD-77-108 HIGHWAY NOISE PREDICTION MODEL

PROJECT NAI SITE LOCAT DESCRIPTION SITE TYPE	ION	:SPRINGHILL & :SANTA CLARITA :INTERSTATE 5 :HARD		INN	7 .	
INPUT DATA SPEED % DAY % EVENING % NIGHT	AUTO 65 73 8.60 18.4	MEDIUM TRU 65 73 8.60 18.4	JCK HEAVY 65 69.1 6.70 24.2	TRUCK		
% VOLUME VOLUME	87.4 188000	2.8	9.8			

	AVERAGE DAY	HOURLY NOISE EVENING	LEVELS AT 50 NIGHT	FEET 24 HOUR	CNEL
AUTO	82.17	78.91	77.44	80.53	85.05
MEDIUM TRK.	76.79	73.52	72.05	75.14	79.66
HEAVY TRK.	85.16	81.05	81.86	83.76	88.96
TOTAL	87.33	83.57	83.52	85.84	90.79

NOISE LEVEL AT SPECIFIED DISTANCES

DISTANCE	CNEL
50	90.79
75	89.03
100	87.78
125	86.81
150	86.02
175	85.35
200	84.77
225	84.26
250	83.80
275	83.38
300	83.01
325	82.66
350	82.34
375	82.04
400	81.76
450	81.25
500	80.79
550	80.37
600	80.00
650	79.65
700	79.33
750	79.03
800	78.75
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APPENDIX 4

SOUND BARRIER HEIGHT CALCULATIONS

BARRIER NOISE REDUCTION ANALYSIS, WALL HEIGHT VARIABLE

DEFEDENCE VEHICLE LEVIELS AT 50 DEET

REFERENCE VEHICLE LEVELS AT 50 FEET

AUTO.... = 82.05

M.TRUCK.... = 76.66001

H.TRUCK.... = 85.96

PROJECT.....RESIDENCE INN

DESCRIPTION..POOL AREA NOISE BARRIER

SOURCE ELEVATION..... 0

RECEIVER ELEVATION.... 8

BARRIER ELEVATION..... 8

RECEIVER HEIGHT..... 5

DISTANCE TO SOURCE.... 175

DISTANCE TO RECEIVER... 20

AUTO NOISE LEVEL..... 76.13936

M.TRK NOISE LEVEL..... 70.74936

H.TRK NOISE LEVEL..... 80.04936

SOURCE NOISE LEVEL.... 71.09

ANGULAR CORRECTION (DB) - 10.79181

				•	* *
WALL HEIGHT	ANL	MTNL	HTNL	TNL	TIL
0.00 FN	65.35 0.0000	59.96 0.0000	69.26 0.0000	71.09	0.00
1.00 FN	65.35 0.0000	59.96 0.0000	69.26 0.0000	71.09	0.00
2.00 FN	65.35 0.0000	59.96 0.0000	69.26 0.0000	71.09	0.00
3.00 FN	65.35 0.0000	59.96 0.0000	69.26 0.0000	71.09	0.00
4.00 FN	60.31 0.0028	54.95 0.0004	69.26 0.0000	69.92	1.17
5.00 FN	59.80 0.0483	54.56 0.0351	64.17 0.0072	65.86	5.23
6.00 FN	59.05 0.1494	53.77 0.1254	63.55 0.0634	65.20	5.89
7.00 FN	58.24 0.3059	53.03 0.2712	62.84 0.1750	64.46	6.63
8.00 FN	57.22 0.5174	52.03 0.4719	61.97 0.3416	63.54	7.55

BARRIER NOISE REDUCTION ANALYSIS, WALL HEIGHT VARIABLE

REFERENCE VEHICLE LEVELS AT 50 FEET

AUTO.... = 82.05 M.TRUCK.... 76.66001 H.TRUCK....= 85.96

PROJECT.....HOLIDAY INN

DESCRIPTION..POOL AREA SOUND BARRIER

SOURCE ELEVATION..... 0 RECEIVER ELEVATION.... 2 BARRIER ELEVATION..... 2 RECEIVER HEIGHT..... 5 DISTANCE TO SOURCE..... 175 DISTANCE TO RECEIVER... 20 AUTO NOISE LEVEL..... 76.13936 M.TRK NOISE LEVEL..... 70.74936 H.TRK NOISE LEVEL..... 80.04936

SOURCE NOISE LEVEL.... 74.10

FN

ANGULAR CORRECTION (DB) - 7.781512

0.8963

WALL HEIGHT ANL MTNLHTNL TNL TIL 68.36 62.97 72.27 74.10 0.00 0.00 0.0000 0.0000 FN0.0000 1.00 68.36 62.97 72.27 74.10 0.00 0.0000 0.0000 FN 0.0000 2.00 68.36 62.97 74.10 72.27 0.00 0.0000 0.0000 FN 0.0000 62.97 3.00 68.36 72.27 74.10 0.00 FN 0.0000 0.0000 0.0000 68.36 62.97 72.27 4.00 74.10 0.00 0.0000 0.0000 0.0000 FN5.00 63.20 57.88 72.27 72.91 1.18 0.0072 0.0000 FN0.0138 68.65 6.00 62.47 57.26 67.01 5.45 0.0808 0.0634 0.0222 FN 7.00 61.79 56.55 66.19 67.87 6.23 0.2033 0.1750 0.0996FN60.87 55.68 65.55 6.95 8.00 67.14 FN0.3807 0.3416 0,2319 9.00 59.82 54.64 64.60 66.16 7.94 0.5622 FN 0.6121 0.4183 10.00 58.77 53.58 63.55 65.11 8.99 0.8357 0.6576

CHRISTOPHER JEAN & ASSOCIATES, INC. ACOUSTICAL CONSULTING SERVICES

APPENDIX 5

INTERIOR NOISE REDUCTION CALCULATIONS

ROOM NAME RES INN STUDIO/1 BR + STC = 24

FLOOR AREA 261

SURFACES	TL	@	AREA	T*S
				
EXT.WALL 1	40		171	0.01710
EXT.WALL 2	43		45	0.00226
EXT.WALL 3	50		0	0.00000
INT.WALL			450	
WINDOW 1	22	.05	35	0.22084
WINDOW 2	25	.05	0	0.00000
WINDOW 3	32	.05	0	0.00000
SGD	22	.05	0	0.00000
DOORS	0	.04	0	0.00000
ROOF	40	.04	261	0.02610
FLOOR		.6	261	
ET*S				0.26629
-10LOG(ET*S)				5.7
10LOGA				22.9
NOISE REDUCT	ION		en e	22.6

WORK SHEET FOR CALCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME RES INN STUDIO/1 BR + STC = 26

SURFACES TI	ů.	@	AREA	T*S
EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 2 WINDOW 3 SGD DOORS ROOF	10 13 50 24 27 34 24 0	.05 .05 .05 .05 .04	171 45 0 450 35 0 0 0	0.01710 0.00226 0.00000 0.13934 0.00000 0.00000 0.00000 0.00000 0.00000
FLOOR ET*S -10LOG(ET*S) 10LOGA NOISE REDUCTION		.6	261 	0.18479 7.3 22.9 24.2

ROOM NAME RES INN STUDIO/1 BR + STC = 28

FLOOR AREA 261

SURFACES	TL	@	AREA	T*S
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 2	40 43 50 26 29 36	.05 .05	171 45 0 450 35	0.01710 0.00226 0.00000 0.08792 0.00000
WINDOW 3 SGD DOORS ROOF FLOOR	36 26 0 40	.05 .05 .04 .04 .6	0 0 0 261 261	0.00000 0.00000 0.00000 0.02610
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCTIO	ON			0.13337 8.7 22.9 25.6

WORK SHEET FOR CALCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME RES INN STUDIO/1 BR + STC = 30

SURFACES	TL	@	AREA	T*S
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 2 WINDOW 3 SGD DOORS ROOF	40 43 50 28 31 38 28 0 40	.05 .05 .05 .05 .04	171 45 0 450 35 0 0 0	0.01710 0.00226 0.00000 0.05547 0.00000 0.00000 0.00000 0.00000 0.02610
FLOOR ET*S -10LOG(ET*S) 10LOGA NOISE REDUCTI	ON	.6	261	0.10093 10.0 22.9 26.9

ROOM NAME RES INN STUDIO/1 BR + STC = 32

FLOOR AREA 261

SURFACES	TL	*	@	AREA	T*S
EXT.WALL 1	40			171	0.01710
EXT.WALL 2 EXT.WALL 3 INT.WALL	43 50			45 0 450	0.00226 0.00000
WINDOW 1 WINDOW 2	30 33		.05	35 0	0.03500 0.00000
WINDOW 3 SGD DOORS	40 30 0	•	.05 .05 .04	0 0 0	0.00000 0.00000 0.00000
ROOF FLOOR	40	· · · · · · · · · · · · · · · · · · ·	.04 .6	261 261	0.02610
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCTI	On				0.08046 10.9 22.9 27.8

WORK SHEET FOR CALCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME RES INN STUDIO/1 BR + STC = 34

SURFACES TL	@	AREA	T*S
EXT.WALL 1 40 EXT.WALL 2 43 EXT.WALL 3 50 INT.WALL WINDOW 1 32 WINDOW 2 35 WINDOW 3 42 SGD 32 DOORS 0	.05 .05 .05 .05 .05	171 45 0 450 35 0 0	0.01710 0.00226 0.00000 0.02208 0.00000 0.00000 0.00000
ROOF 40 FLOOR	.04 .6	261 261	0.02610
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCTION			0.06754 11.7 22.9 28.6

ROOM NAME RES INN STUDIO/1 BR + STC = 36

FLOOR AREA 261

SURFACES	TL	@	AREA	T*S
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 2 WINDOW 3 SGD DOORS ROOF	40 43 50 34 37 44 34 0 40	.05 .05 .05 .05 .04	171 45 0 450 35 0 0 0	0.01710 0.00226 0.00000 0.01393 0.00000 0.00000 0.00000 0.00000
FLOOR ET*S -10LOG(ET*S) 10LOGA NOISE REDUCTIO	N.	.6	261	0.05939 12.3 22.9 29.2

WORK SHEET FOR CALCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME RES INN STUDIO/1 BR + STC = 38

SURFACES	TL	@	AREA	T*S
EXT.WALL 1	40	• •	171	0.01710
EXT.WALL 2	43		45	0.00226
EXT.WALL 3	50		0	0.0000
INT.WALL			450	
WINDOW 1	36	.05	35	0.00879
WINDOW 2	39	.05	0	0.00000
WINDOW 3	46	.05	0	0.00000
SGD	36	.05	0	0.00000
DOORS	0	.04	0	0.0000
ROOF	40	.04	261	0.02610
FLOOR		.6	261	
ET*S				0.05425
-10LOG(ET*S)				12.7
10LOGA				22.9
NOISE REDUCTI	ON			29.5
	and the second s	•	4 - 4	

ROOM NAME RES INN STUDIO/1 BR + STC = 40

SURFACES	ŤL	@	AREA	T*S
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 2	40 43 50 38 41	.05 .05	171 45 0 450 35	0.01710 0.00226 0.00000 0.00555 0.00000
WINDOW 3 SGD DOORS ROOF FLOOR	48 28 38 48 0 40	.05 .05 .04 .04	0 0 0 261 261	0.00000 0.00000 0.00000 0.02610
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCT	'ION			0.05100 12.9 22.9 29.8

ROOM NAME RES INN DBL QUEEN + STC = 24

FLOOR AREA 297

SURFACES	TL	@	AREA	T*S
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 2 WINDOW 3 SGD DOORS	40 43 50 22 25 32 22 0	.05 .05 .05 .05	268 73 0 351 0 25 0 0	0.02680 0.00366 0.00000 0.00000 0.07906 0.00000 0.00000
ROOF FLOOR	40	.04 .6	297 297	0.02970
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCT	ION			0.13922 8.6 23.3 25.9

WORK SHEET FOR CALCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME RES INN DBL QUEEN + STC = 26

SURFACES	TL	@	AREA	T*S
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 2 WINDOW 3 SGD DOORS ROOF	40 43 50 24 27 34 24 0	.05 .05 .05 .05 .04	268 73 0 351 0 25 0 0	0.02680 0.00366 0.00000 0.00000 0.04988 0.00000 0.00000 0.00000
FLOOR ET*S -10LOG(ET*S) 10LOGA NOISE REDUCT:	ION	.6	297 	0.11004 9.6 23.3 26.9

ROOM NAME RES INN DBL QUEEN + STC = 28

FLOOR AREA 297

SURFACES '	ΓL	@	AREA	T*S
		, 		
EXT.WALL 1	40		268	0.02680
EXT.WALL 2	43		73	0.00366
EXT.WALL 3	50		0	0.00000
INT.WALL			351	
WINDOW 1	26	.05	0	0.00000
WINDOW 2	29	.05	25	0.03147
WINDOW 3	36	.05	.0	0.00000
SGD	26	.05	0	0.00000
DOORS	0	.04	0	0.00000
ROOF	40	.04	297	0.02970
FLOOR		.6	297	
ET*S				0.09163
-10LOG(ET*S)				10.4
10LOGA				23.3
NOISE REDUCTION	N			27.7

WORK SHEET FOR CALCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME RES INN DBL QUEEN + STC = 30

SURFACES	TL	@	AREA	T*S
EXT.WALL 1	40		268	0.02680
EXT.WALL 2	43		73	0.00366
EXT.WALL 3	50		. 0	0.00000
INT.WALL	•		351	
WINDOW 1	28	.05	0	0.00000
WINDOW 2	31	.05	25	0.01986
WINDOW 3	38	.05	0	0.00000
SGD	28	.05	0	0.0000
DOORS	0	.04	0	0.00000
ROOF	40	.04	297	0.02970
FLOOR		.6	297	
ET*S				0.08002
-10LOG(ET*S)				11.0
10LOGA				23.3
NOISE REDUCTI	ON			28.3

ROOM NAME RES INN DBL QUEEN + STC = 32

FLOOR AREA 297

SURFACES T	'L	@	AREA	T*S
EXT.WALL 1	40		268	0.02680
EXT.WALL 2	43		73	0.00366
EXT.WALL 3	50		0	0.00000
INT.WALL			351	
WINDOW 1	30	.05	0	0.00000
WINDOW 2	33	.05	25	0.01253
WINDOW 3	40	.05	0	0.00000
SGD	30	.05	0	0.00000
DOORS	0	.04	0	0.00000
ROOF	40	.04	297	0.02970
FLOOR		.6	297	
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCTION	1			0.07269 11.4 23.3 28.7

WORK SHEET FOR CALCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME RES INN DBL QUEEN + STC = 34

SURFACES	TL	@	AREA	T*S
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 2 WINDOW 3 SGD DOORS ROOF FLOOR	40 43 50 32 35 42 32 0 40	.05 .05 .05 .05 .04 .04	268 73 0 351 0 25 0 0 297 297	0.02680 0.00366 0.00000 0.00000 0.00791 0.00000 0.00000 0.00000
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCT				0.06806 11.7 23.3 29.0

ROOM NAME RES INN DBL QUEEN + STC = 36

FLOOR AREA 297

SURFACES	TL	@	AREA	T*S
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 2 WINDOW 3 SGD DOORS ROOF	40 43 50 34 37 44 34 0 40	.05 .05 .05 .05 .04	268 73 0 351 0 25 0 0	0.02680 0.00366 0.00000 0.00000 0.00499 0.00000 0.00000 0.00000
FLOOR ET*S -10LOG(ET*S 10LOGA NOISE REDUC		.6	297	0.06515 11.9 23.3 29.2

WORK SHEET FOR CALCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME RES INN DBL QUEEN + STC = 38

SURFACES	TL	@	AREA	T*S
EXT.WALL 1	40		268	0.02680
EXT.WALL 2	43		73	0.00366
EXT.WALL 3	50		0	0.00000
INT.WALL			351	
WINDOW 1	36	.05	0	0.00000
WINDOW 2	39	.05	25	0.00315
WINDOW 3	46	.05	0	0.00000
SGD	36	.05	0	0.00000
DOORS	0	.04	0	0.00000
ROOF	40	.04	297	0.02970
FLOOR		.6	297	
ET*S				0.06331
-10LOG(ET*S)			•	12.0
10LOGA				23.3
NOISE REDUCTION	N			29.3

ROOM NAME RES INN DBL QUEEN + STC = 40

SURFACES	TL	(<u>@</u>	AREA	T*S
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 2 WINDOW 3 SGD DOORS ROOF	40 43 50 38 41 48 38 0 40		.05 .05 .05 .05 .04	268 73 0 351 0 25 0 0	0.02680 0.00366 0.00000 0.00000 0.00199 0.00000 0.00000 0.00000
FLOOR	est to		.6	297	
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCT	ION				0.06214 12.1 23.3 29.4

ROOM NAME RES INN KING + STC = 24

FLOOR AREA 249

SURFACES TL	@	AREA	T*S
EXT.WALL 1 40 EXT.WALL 2 43 EXT.WALL 3 50 INT.WALL WINDOW 1 22 WINDOW 2 25	.05	0 38 0 549 0 25	0.00000 0.00190 0.00000 0.00000 0.07906
WINDOW 3 32 SGD 22 DOORS 0 ROOF 40 FLOOR	.05 .05 .04 .04	0 0 0 249 249	0.00000 0.00000 0.00000 0.02490
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCTION			0.10586 9.8 22.6 26.4

WORK SHEET FOR CALCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME RES INN KING + STC = 26

SURFACES	TL	@	AREA	T*S
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 2 WINDOW 3	40 43 50 24 27 34	.05 .05 .05	0 38 0 549 0 25	0.00000 0.00190 0.00000 0.00000 0.04988 0.00000
SGD DOORS ROOF FLOOR	24 0 40	.05 .04 .04 .6	0 0 249 249	0.00000 0.00000 0.02490
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCT	ION			0.07669 11.2 22.6 27.8

ROOM NAME RES INN KING + STC = 28

FLOOR AREA 249

SURFACES	TL	@	AREA	T*S
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 2	40 43 50 26 29	.05	0 38 0 549 0 25	0.00000 0.00190 0.00000 0.00000 0.03147
WINDOW 3 SGD DOORS ROOF FLOOR	36 26 0 40	.05 .05 .04 .04	0 0 0 249 249	0.00000 0.00000 0.00000 0.02490
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCTIO	N			0.05828 12.3 22.6 29.0

WORK SHEET FOR CALCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME RES INN KING + STC = 30

SURFACES	TL	@	AREA	T*S
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 2 WINDOW 3 SGD DOORS ROOF	40 43 50 28 31 38 28 0 40	.05 .05 .05 .05 .04	0 38 0 549 0 25 0 0	0.00000 0.00190 0.00000 0.00000 0.01986 0.00000 0.00000 0.00000
FLOOR ET*S -10LOG(ET*S) 10LOGA NOISE REDUCTION		.6	249	0.04666 13.3 22.6 29.9

ROOM NAME RES INN KING + STC = 32

FLOOR AREA 249

SURFACES	TL	@	AREA	T*S
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 2	40 43 50 30 33	.05	0 38 0 549 0 25	0.00000 0.00190 0.00000 0.00000 0.01253
WINDOW 3 SGD DOORS ROOF FLOOR	40 30 0 40	.05 .05 .04 .04	0 0 0 249 249	0.00000 0.00000 0.00000 0.02490
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCTI	ON			0.03933 14.1 22.6 30.7

WORK SHEET FOR CALCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME RES INN KING + STC = 34

SURFACES	TL	@	AREA	T*S
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT,WALL WINDOW 1 WINDOW 2 WINDOW 3 SGD DOORS ROOF	40 43 50 32 35 42 32 0 40	.05 .05 .05 .05 .04 .04	0 38 0 549 0 25 0 0 0 249 249	0.00000 0.00190 0.00000 0.00000 0.00791 0.00000 0.00000 0.00000
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCTION	NC		247	0.03471 14.6 22.6 31.2

ROOM NAME RES INN KING + STC = 36

FLOOR AREA 249

SURFACES	CL	@	AREA	T*S
EXT.WALL 1	40		0	0.0000
EXT.WALL 2 EXT.WALL 3	43 50		38 0	0.00190 0.00000
INT.WALL			549	
WINDOW 1	34	.05	0	0.00000
WINDOW 2 WINDOW 3	37 44	.05 .05	25	0.00499 0.00000
SGD	34	.05	0	0.00000
DOORS	0	.04	0	0.00000
ROOF FLOOR	40	.04 .6	249 249	0.02490
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCTION	1			0.03179 15.0 22.6 31.6

WORK SHEET FOR CALCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME RES INN KING + STC = 38

SURFACES	CL , , , , , , ,	@	I	AREA	T*S
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 2 WINDOW 3 SGD DOORS ROOF FLOOR	40 43 50 36 39 46 36 0	.05 .05 .05 .05 .04 .04		0 38 0 549 0 25 0 0 0 249 249	0.00000 0.00190 0.00000 0.00000 0.00315 0.00000 0.00000 0.00000
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCTION	4				0.02995 15.2 22.6 31.8

ROOM NAME RESPINN KING + STC = 40

SURFACES	(10	@	AREA	T*S
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	A CONTRACTOR OF THE PARTY OF TH			~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~
EXT.WALL 1	40		0	0.0000
EXT.WALL 2	43		38	0.00190
EXT.WALL 3	50		0.	0.00000
INT.WALL			549	
WINDOW 1	38	.05	0	0.00000
WINDOW 2	41	.05	25	0.00199
WINDOW 3	48	.05	64 Jan 0 14 Aug	0.00000
SGD	1 138	••• .05	0.	0.00000
DOORS	<b>100</b> 7	.04	0	0.00000
ROOF	40	.04	249	0.02490
FLOOR		.6	249	
ET*S				0.02879
-10LOG(ET*S)				15.4
10LOGA				22.6
NOISE REDUCTI	ON			32.0

ROOM NAME | HLOYDAY KING + STC = 24

FLOOR AREA

SURFACES	TL	@	AREA	T*S	
- CARCO STUDY HORON	d tabutan sama				
EXT.WALL 1	440		171	0.017	110
EXT.WALL 2	743		99	0.004	96
EXT.WALL 3	50		0	0.000	00
INT.WALL			282	. Ogit	
WINDOW 1	22	.05	0	0.000	00
WINDOW 2	1.25	.05	25	0.079	906
WINDOW 3	# 2 <b>0</b>	.05	0	0.000	00
SGD	7221	.05	0	0.000	000
DOORS	0.44	.04	0	0.000	00
ROOF	(40r.	.04	239	0.023	190
FLOOR		.6	239		
ET*S				0.125	02
-10LOG(ET*S)				9.0	
10LOGA				22.4	
NOISE REDUCTION	N			25.4	
					,

# WORK SHEET FOR CALCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME HLOTDAY KING + STC = 26

SURFACES	TĹ	@	AREA	T*S
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 2 WINDOW 3 SGD DOORS ROOF FLOOR	40 43 50 24 27 34 24 0 40	.05 .05 .05 .05 .04 .04	171 99 0 282 0 25 0 0 239 239	0.01710 0.00496 0.00000 0.00000 0.04988 0.00000 0.00000 0.00000
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCT		••		0.09584 10.2 22.4 26.5

ROOM NAME HLOIDAY KING + STC = 28

FLOOR AREA 239

SURFACES	TL	@	AREA	T*S
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3	40 43 50		171 99 0	0.01710 0.00496 0.00000
INT.WALL WINDOW 1 WINDOW 2 WINDOW 3 SGD DOORS ROOF FLOOR	26 29 36 26 0 40	.05 .05 .05 .05 .04 .04	282 0 25 0 0 0 239 239	0.00000 0.03147 0.00000 0.00000 0.00000 0.02390
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCTI	ON			0.07743 11.1 22.4 27.5

# WORK SHEET FOR CALCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME HLOIDAY KING + STC = 30

SURFACES TL	@	AREA	T*S
EXT.WALL 1 40 EXT.WALL 2 43 EXT.WALL 3 50 INT.WALL WINDOW 1 28 WINDOW 2 31 WINDOW 3 38 SGD 28 DOORS 0 ROOF 40	.05 .05 .05 .05 .04	171 99 0 282 0 25 0 0 0	0.01710 0.00496 0.00000 0.00000 0.01986 0.00000 0.00000 0.00000
FLOOR  ET*S -10LOG(ET*S) 10LOGA NOISE REDUCTION	.6	239	0.06582 11.8 22.4 28.2

ROOM NAME HLOIDAY KING + STC = 32

FLOOR AREA 239

SURFACES TL	@	AREA	T*S
EXT.WALL 1 40 EXT.WALL 2 43 EXT.WALL 3 50 INT.WALL WINDOW 1 30 WINDOW 2 33	.05	171 99 0 282 0 25	0.01710 0.00496 0.00000 0.00000 0.01253
WINDOW 3 40 SGD 30 DOORS 0 ROOF 40 FLOOR	.05 .05 .04 .04	0 0 0 239 239	0.00000 0.00000 0.00000 0.02390
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCTION			0.05849 12.3 22.4 28.7

## WORK SHEET FOR CALCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME HLOIDAY KING + STC = 34

SURFACES TL	@	AREA	T*S
EXT.WALL 1 40 EXT.WALL 2 43 EXT.WALL 3 50 INT.WALL WINDOW 1 32 WINDOW 2 35 WINDOW 3 42 SGD 32 DOORS 0	.05 .05 .05 .05 .04	171 99 0 282 0 25 0	0.01710 0.00496 0.00000 0.00000 0.00791 0.00000 0.00000 0.00000
ROOF 40 FLOOR	.04 .6	239 239	0.02390
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCTION			0.05387 12.7 22.4 29.0

ROOM NAME HLOIDAY KING + STC = 36

FLOOR AREA 239

SURFACES	TL	@	AREA	T*S
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 2 WINDOW 3 SGD DOORS ROOF FLOOR	40 43 50 34 37 44 34 0	.05 .05 .05 .05 .04 .04	171 99 0 282 0 25 0 0 0 239 239	0.01710 0.00496 0.00000 0.00499 0.00000 0.00000 0.00000
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCTION	<b>N</b>			0.05095 12.9 22.4 29.3

## WORK SHEET FOR CALCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME HLOIDAY KING + STC = 38

SURFACES	TL	@	AREA	T*S
EXT.WALL 1	40		171	0.01710
EXT.WALL 2	43		99	0.00496
EXT.WALL 3	50		0	0.0000
INT.WALL			282	
WINDOW 1	36	.05	0	0.00000
WINDOW 2	39	.05	25	0.00315
WINDOW 3	46	.05	0	0.00000
SGD	36	.05	. 0	0.00000
DOORS	0	.04	0	0.00000
ROOF	40	.04	239	0.02390
FLOOR		.6	239	
ET*S				0.04911
-10LOG(ET*S)				13.1
10LOGA				22.4
NOISE REDUCTIO	NC			29.4

## WORK STATES FOR THE ULATING ROOM NOISE REDUCTION VALUE

ROOM NAME FRANCEDAY KING + STC = 40

SURFACES	W., 0	AREA	T*S
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 2 WINDOW 3 SGD DOORS ROOF FLOOR	44 48 56 28 .05 20 .05 48 .05 0 .04 40 .04 .6	171 99 0 282 0 25 0 0 25 0 0	0.01710 0.00496 0.00000 0.00199 0.00000 0.00000 0.00000 0.00390
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCTIO			0.04795 13.2 22.4 29.5

ROOM NAME HOLIDAY DBL QUEEN + STC = 24

FLOOR AREA 249

SURFACES	TL	(A)	AREA	T*S
EXT.WALL 1	40		99	0.00990
EXT.WALL 2	43		0	0.0000
EXT.WALL 3	50		0	0.00000
INT.WALL			456	
WINDOW 1	22	.05	25	0.15774
WINDOW 2	25	.05	0	0.00000
WINDOW 3	32	.05	0	0.00000
SGD	*22	.05	0	0.00000
DOORS	0	.04	0 ;	0.00000
ROOF	40	.04	249	0.02490
FLOOR		.6	249	
ET*S				0.19254
-10LOG(ET*S)				7.2
10LOGA				22.6
NOISE REDUCTI	ON			23.8

## WORK SHEET FOR CALCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME HOLIDAY DBL QUEEN + STC = 26

SURFACES	${f TL}$	@	AREA	T*S
			<b></b>	
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3	40 43 50		99 0 0 456	0.00990 0.00000 0.00000
INT.WALL WINDOW 1 WINDOW 2 WINDOW 3 SGD DOORS ROOF FLOOR	24 27 34 24 0 40	.05 .05 .05 .05 .04 .04	25 0 0 0 0 0 249 249	0.09953 0.00000 0.00000 0.00000 0.00000 0.02490
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCT	ION			0.13433 8.7 22.6 25.4

ROOM NAME HOLIDAY DBL QUEEN + STC = 28

FLOOR AREA 249

SURFACES	TL		@	AREA	T*S
EXT.WALL	1 40	•		99	0.00990
EXT.WALL	2 43			0	0.0000
EXT.WALL	3 50			0	0.00000
INT.WALL				456	
WINDOW 1	26		.05	25	0.06280
WINDOW 2	29		.05	0	0.00000
WINDOW 3	36		.05	0	0.00000
SGD	26		.05	, O	0.00000
DOORS	0		.04	0	0.00000
ROOF	40		.04	249	0.02490
FLOOR			.6	249	
ET*S					0.09760
-10LOG (ET	[*S)				10.1
10LOGA					22.6
NOISE REI	DUCTION				26.7
~					

## WORK SHEET FOR CALCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME HOLIDAY DBL QUEEN + STC = 30

SURFACES	TL	@	AREA	T*S
EXT.WALL 1	40		99	0.00990
EXT.WALL 2	43		• • • • • • • • • • • • • • • • • • •	0.00000
EXT.WALL 3	50		0	0.0000
INT.WALL			456	
WINDOW 1	28	.05	25	0.03962
WINDOW 2	31	.05	.0	0.00000
WINDOW 3	38	.05	0	0.0000
SGD	28	.05	0	0.00000
DOORS	0	.04	0	0.00000
ROOF	40	.04	249	0.02490
FLOOR		.6	249	
ET*S				0.07442
-10LOG(ET*S)				11.3
10LOGA				22.6
NOISE REDUCTION	N			27.9

ROOM NAME HOLIDAY DBL QUEEN + STC = 32

FLOOR AREA 249

SURFACES	TL	@	AREA	T*S
EXT.WALL 1	40		99	0.00990
EXT.WALL 2	43		0	0.00000
EXT.WALL 3	50		0	0.00000
INT.WALL			456	
WINDOW 1	30	.05	25	0.02500
WINDOW 2	33 .	.05	0	0.00000
WINDOW 3	40	.05	0	0.00000
SGD	30	.05	0	0.00000
DOORS	0	.04	0	0.00000
ROOF	40	.04	249	0.02490
FLOOR		.6	249	
ET*S				0.05980
-10LOG(ET*S)				12.2
10LOGA				22.6
NOISE REDUCT	TION			28.9

## WORK SHEET FOR CALCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME HOLIDAY DBL QUEEN + STC = 34

SURFACES	TL	@	AREA	T*S
EXT.WALL 1	40		99	0.00990
EXT.WALL 2	43		0	0.00000
EXT.WALL 3 INT.WALL	50		456	0.0000
WINDOW 1	32	.05	25 0	0.01577 0.00000
WINDOW 2 WINDOW 3	35 42	.05 .05	0	0.00000
SGD	32	.05 .04	0	0.00000
DOORS ROOF	0 <b>4</b> 0	.04	249	0.02490
FLOOR		.6	249	
ET*S				0.05057
-10LOG(ET*S) 10LOGA				13.0 22.6
NOISE REDUCTION	NC			29.6

ROOM NAME HOLIDAY DBL QUEEN + STC = 36

FLOOR AREA 249

SURFACES	TL	@	AREA	T*S
EXT.WALL 1	40		99	0.00990
EXT.WALL 2 EXT.WALL 3 INT.WALL	43 50		0 0 456	0.00000
WINDOW 1 WINDOW 2 WINDOW 3	34 37 44	.05 .05 .05	25 0 0	0.00995 0.00000 0.00000
SGD DOORS	34 0	.05 .04	0	0.00000
ROOF FLOOR	40	.04 .6	249 249	0.02490
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCTI	ON			0.04475 13.5 22.6 30.1
		<b></b>	. <b></b>	

# WORK SHEET FOR CALCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME HOLIDAY DBL QUEEN + STC = 38

SURFACES	TL	@	AREA	T*S
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 2 WINDOW 3 SGD DOORS ROOF	40 43 50 36 39 46 36 0 40	.05 .05 .05 .05 .04	99 0 0 456 25 0 0 0	0.00990 0.00000 0.00000 0.00628 0.00000 0.00000 0.00000 0.00000 0.02490
FLOOR ET*S -10LOG(ET*S) 10LOGA NOISE REDUCT	'ION	.6 	249	0.04108 13.9 22.6 30.5

ROOM NAME OF HOLDINAY DEL QUEEN + STC = 40

SURFACES - II	@	AREA	T*S
		## ## ## ## ## ## ## ## ## ## ## ## ##	
EXT.WALL 1	<b>O</b>	99	0.00990
EXT.WALL 2		0	0.00000
EXT.WALL 3		0	0.00000
INT.WALL		456	
WINDOW 1	.05	25	0.00396
WINDOW 2	.05	0	0.00000
WINDOW 3	.05	0	0.00000
ALTOUR TO THE PROPERTY OF THE	.05	0	0.00000
MDOORS "	.04	0	0.00000
ROOF	.04	249	0.02490
FLOOR	.6	249	4. 4.
ET*S	And the state of t		0.03876
-10LOG(ET*S)			14.1
10LOGA			22.6
NOISE REDUCTION			30.8

# CHRISTOPHER JEAN & ASSOCIATES, INC. ACOUSTICAL CONSULTING SERVICES

#### APPENDIX 6

INTERIOR NOISE REDUCTION CALCULATIONS WITH EXTERIOR WALL AND ROOF/CEILING UPGRADES

ROOM NAME, RESIDNO STUDIO/1 BR + UPGRADES + STC = 24

FLOOR AREA 261

SURFACES TL	@	AREA	T*S
EXT WALL 1 50 EXT WALL 2 53 EXT WALL 8 60 INT WALL WINDOW 1 22 WINDOW 2 25 WINDOW 3 32 SGD 22 DOORS 0 ROOF 500 FLOOR	.05 .05 .05 .05 .04 .04	171 45 0 450 35 0 0 0 0 261 261	0.00171 0.00023 0.00000 0.22084 0.00000 0.00000 0.00000 0.00000 0.00261
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCTION			0.22538 6.5 22.9 23.4

# WORK SHEET FOR CALCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME RES INN STUDIO/1 BR + UPGRADES + STC = 26

SURFACES TL @ AREA	T*S
EXT.WALL 1 50 171	0.00171
EXT.WALL 2 53 45	0.00023
EXT.WALL 3 60	0.00000
INT.WALL 450	
WINDOW 1 24 .05 35	0.13934
WINDOW 2 27 .05 0	0.00000
WINDOW 3 .05 0	0.00000
SGD .05 0	0.00000
DOORS .04 0	0.00000
ROOF .04 261	0.00261
FLOOR .6 261	
ET*S	0.14388
-10LOG(ET*S)	8.4
10LOGA	22.9
NOISE REDUCTION	25.3

ROOM NAME RES INN STUDIO/1 BR + UPGRADES + STC = 28

FLOOR AREA 261

SURFACES	TL	@	AREA	T*S
EXT.WALL 1 EXT.WALL 2	50 53		171 45	0.00171 0.00023
EXT.WALL 3 INT.WALL	60		0 450	0.00000
WINDOW 1 WINDOW 2	26 29	.05	35 0	0.08792 0.00000
WINDOW 3 SGD	36 26	.05 .05	0	0.00000
DOORS	0	.04	0	0.00000
ROOF FLOOR	50	.04 .6	261 261	0.00261
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCTI	ON			0.09246 10.3 22.9 27.2

# WORK SHEET FOR CALCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME RES INN STUDIO/1 BR + UPGRADES + STC = 30

SURFACES TL	@	AREA	T*S
EXT.WALL 1 50		171	0.00171
EXT.WALL 2 53		45	0.00023
EXT.WALL 3 60		0	0.00000
INT.WALL	•	450	
WINDOW 1 28	.05	35	0.05547
WINDOW 2 31	.05	0	0.00000
WINDOW 3 38	.05	0	0.00000
SGD 28	.05	0	0.00000
DOORS 0	.04	0	0.00000
ROOF 50	.04	261	0.00261
FLOOR	.6	261	
ET*S			0.06002
-10LOG(ET*S)			12.2
10LOGA			22.9
NOISE REDUCTION			29.1

ROOM NAME RES INN STUDIO/1 BR + UPGRADES + STC = 32

FLOOR AREA 261

SURFACES TL		AREA	T*S
EXT.WALL 1 50 EXT.WALL 2 53 EXT.WALL 3 60 INT.WALL WINDOW 1 30	.05	171 45 0 450 35	0.00171 0.00023 0.00000 0.03500
WINDOW 2 33 WINDOW 3 40 SGD 30 DOORS 0 ROOF 50 FLOOR	.05 .05 .05 .04 .04	0 0 0 0 261 261	0.00000 0.00000 0.00000 0.00000 0.00261
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCTION			0.03955 14.0 22.9 30.9

# WORK SHEET FOR CALCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME RES INN STUDIO/1 BR + UPGRADES + STC = 34

SURFACES	TL	@	AREA	T*S
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 2 WINDOW 3 SGD DOORS	50 53 60 32 35 42 32 0	.05 .05 .05 .05	171 45 0 450 35 0 0	0.00171 0.00023 0.00000 0.02208 0.00000 0.00000 0.00000 0.00000
ROOF FLOOR	50	.04	261 261	0.00261
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCTI	ON			0.02663 15.7 22.9 32.6

ROOM NAME RES INN STUDIO/1 BR + UPGRADES + STC = 36

FLOOR AREA 261

SURFACES	${ m TL}$	@	AREA	T*S
		 	· <b></b>	
EXT.WALL 1	50		171	0.00171
EXT.WALL 2	53		45	0.00023
EXT.WALL 3	60		0	0.00000
INT.WALL			450	
WINDOW 1	34	.05	35	0.01393
WINDOW 2	37	.05	0	0.00000
WINDOW 3	44	.05	0	0.00000
SGD	34	.05	0	0.0000
DOORS	0	.04	0	0.0000
ROOF	50	.04	261	0.00261
FLOOR		.6	261	
ET*S -10LOG(ET*S 10LOGA	)			0.01848 17.3 22.9
NOISE REDUC	TION;	 		34.2

# WORK SHEET FOR CALCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME RES INN STUDIO/1 BR + UPGRADES + STC = 38

SURFACES	${ m TL}$	@	ARE	A	T*S
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 2 WINDOW 3 SGD DOORS ROOF FLOOR	50 53 60 36 39 46 36 0 50	.05 .05 .05 .05 .04 .04	17 45 0 45 35 0 0 0 0 26 26	0	0.00171 0.00023 0.00000 0.00879 0.00000 0.00000 0.00000 0.00000
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCTI	ON				0.01334 18.7 22.9 35.6

ROOM NAME : RES IND STUDIO/1 BR + UPGRADES + STC = 40

FROOR AREA

SURFACES	TL	<b>@</b>	AREA	T*S
TITELDING TO THE STATE OF	E TOTAL			
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 2 WINDOW 3 SGD DOORS ROOF FLOOR	50 53 60 38 41 42 48 38 38 50	.05 .05 .05 .05 .04 .04	171 45 0 450 35 0 0 0 261 261	0.00171 0.00023 0.00000 0.00555 0.00000 0.00000 0.00000 0.00000
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCTI	©N			0.01009 20.0 22.9 36.9

Statistics to the contract of the contract of

ROOM NAME RES INN DBL QUEEN + UPGRADES + STC = 24

FLOOR AREA 297

SURFACES	TL	@	AREA	T*S
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 2 WINDOW 3 SGD DOORS ROOF FLOOR	2 53	.05 .05 .05 .05 .04 .04	268 73 0 351 0 25 0 0 0 297 297	0.00268 0.00037 0.00000 0.00000 0.07906 0.00000 0.00000 0.00000 0.00297
ET*S -10LOG(ET 10LOGA NOISE REDU				0.08507 10.7 23.3 28.0

# WORK SHEET FOR CALCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME RES INN DBL QUEEN + UPGRADES + STC = 26

THOOK AKHAY 257				
SURFACES TL	@		AREA	T*S
EXT.WALL 1 50			268	0.00268
EXT.WALL 2 53			73	0.00037
EXT.WALL 3 60			0	0.0000
INT.WALL			351	
WINDOW 1 24	.05		. 0	0.0000
WINDOW 2 27	.05		25	0.04988
WINDOW 3 34	.05		0	0.0000
SGD 24	.05	*	0 .	0.00000
DOORS 0	.04		0	0.0000
ROOF 50	.04		297	0.00297
FLOOR	. 6	Ar Wy	297	
ET*S				0.05590
-10LOG(ET*S)		7.		12.5
10LOGA				23.3
NOISE REDUCTION				29.9

ROOM NAME RES INN DBL QUEEN + UPGRADES + STC = 28

FLOOR AREA 297

SURFACES	TL	@		AREA	T*S
EXT.WALL 1	50			268	0.00268
EXT.WALL 2	53			73	0.00037
EXT.WALL 3	60			0	0.0000
INT.WALL				351	
WINDOW 1	26	.05		0	0.0000
WINDOW 2	29	.05		25	0.03147
WINDOW 3	36	.05		0	0.00000
SGD	26	.05		0	0.0000
DOORS	0	.04		0	0.0000
ROOF	50	.04		297	0.00297
FLOOR		.6	* *	297	
ET*S					0.03749
-10LOG(ET*S)					14.3
10LOGA				)	23.3
NOISE REDUCTION	ON				31.6

#### WORK SHEET FOR CALCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME RES INN DBL QUEEN + UPGRADES + STC = 30

SURFACES	TL	@	AREA	T*S
EXT.WALL EXT.WALL EXT.WALL INT.WALL	1 50 2 53 3 60		268 73 0 351	0.00268 0.00037 0.00000
WINDOW 1 WINDOW 2 WINDOW 3 SGD DOORS ROOF FLOOR	28 31 38 28 0 50	.05 .05 .05 .05 .04 .04	0 25 0 0 0 297 297	0.00000 0.01986 0.00000 0.00000 0.00000
ET*S -10LOG(ET 10LOGA NOISE REI				0.02587 15.9 23.3 33.2

ROOM NAME RES INN DBL QUEEN + UPGRADES + STC = 32

FLOOR AREA 297

SURFACES TL	@	AREA	T*S
EXT.WALL 1 50 EXT.WALL 2 53 EXT.WALL 3 60 INT.WALL WINDOW 1 30 WINDOW 2 33 WINDOW 3 40 SGD 30 DOORS 0 ROOF 50 FLOOR	.05 .05 .05 .05 .04 .04	268 73 0 351 0 25 0 0 297 297	0.00268 0.00037 0.00000 0.00000 0.01253 0.00000 0.00000 0.00000
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCTION			0.01855 17.3 23.3 34.7

#### WORK SHEET FOR CALCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME RES INN DBL QUEEN + UPGRADES + STC = 34

SURFACES TL	@	AREA	T*S
EXT.WALL 1 50		268	0.00268
EXT.WALL 2 53 EXT.WALL 3 60 INT.WALL		73 0 351	0.00037 0.00000
WINDOW 1 32 WINDOW 2 35 WINDOW 3 42	.05 .05 .05	0 25	0.00000 0.00791 0.00000
SGD 32 DOORS 0	.05 .05 .04	0	0.00000
ROOF 50 FLOOR	.04 .6	297 297	0.00297
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCTION			0.01392 18.6 23.3 35.9

ROOM NAME RES INN DBL QUEEN + UPGRADES + STC = 36

FLOOR AREA 297

SURFACES	TL	@	AREA	T*S
EXT.WALL 1	50		268	0.00268
EXT.WALL 2	53		73	0.00037
EXT.WALL 3	60		. 0	0.0000
INT.WALL			351	
WINDOW 1	34	.05	. 0	0.0000
WINDOW 2	37	.05	25	0.00499
WINDOW 3	44	.05	0	0.0000
SGD	34	.05	.0	0.0000
DOORS	0	.04	0	0.0000
ROOF	50	.04	297	0.00297
FLOOR		.6	297	
ET*S				0.01100
-10LOG(ET*S)				19.6
10LOGA				23.3
NOISE REDUCT	'ION			36.9

# WORK SHEET FOR CALCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME RES INN DBL QUEEN + UPGRADES + STC = 38

SURFACES	TL	@	AREA	T*S
EXT.WALL 1	50		268	0.00268
EXT.WALL 2	53		73	0.00037
EXT.WALL 3	60		0 .	0.00000
INT.WALL		e de la companya de l	351	
WINDOW 1	36	.05	0	0.00000
WINDOW 2	39	.05	25	0.00315
WINDOW 3	46	.05	0 .	0.00000
SGD	36	.05	0	0.00000
DOORS	0	.04	0	0.00000
ROOF	50	.04	297	0.00297
FLOOR		.6	297	
ET*S		·		0.00916
-10LOG(ET*S)				20.4
10LOGA				23.3
NOISE REDUCT	ION		•	37.7

ROOM NAME RES INN DBL QUEEN + UPGRADES + STC = 40

SURFACES	TL	@ [*]	AREA	T*S
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 2 WINDOW 3 SGD DOORS ROOF FLOOR	50 53 60 38 41 48 38 0 50	.05 .05 .05 .05 .04 .04	268 73 0 351 0 25 0 0 0 297 297	0.00268 0.00037 0.00000 0.00000 0.00199 0.00000 0.00000 0.00000
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCT	ION			0.00800 21.0 23.3 38.3

ROOM NAME RES INN KING + UPGRADES + STC = 24

FLOOR AREA 249

SURFACES TL	@	AREA	T*S
EXT.WALL 1 50	)	0	0.00000
EXT.WALL 2 53	3	38	0.00019
EXT.WALL 3 60		0	0.00000
INT:WALL		549	
WINDOW 1 22	.05	0	0.00000
WINDOW 2 25	.05	25	0.07906
WINDOW 3 32	.05	0	0.00000
SGD 22	.05	0	0.00000
DOORS 0	.04	0	0.00000
ROOF 50	.04	249	0.00249
FLOOR	.6	249	
	·		
ET*S			0.08174
-10LOG(ET*S)			10.9
10LOGA			22.6
NOISE, REDUCTION			27.5

#### WORK SHEET FOR CALCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME RES INN KING + UPGRADES + STC = 26

SURFACES	TL	@	)	AREA	T*S
	(분)는 <b>= = = = = =</b> 취 :- a. Or				
EXT.WALL 1	50			0	0.00000
EXT.WALL 2	53			38	0.00019
EXT.WALL 3	60			0	0.00000
INT.WALL				549	
WINDOW 1	24		.05	0 ""	0.00000
WINDOW 2	27		.05	25	0.04988
WINDOW 3	34		.05	0	0.00000
SGD.	24		.05	0	0.000'00
DOORS,	, 0		.04	. 0	0.00000
ROOF,	÷ 50		.04	249	0.00249
FLOOR	- 76 - 75 - 75		.6	249	•
	#				
ET*S	<b>,*</b> *				0.05256
-10LOG(ET*S)					12.8
10LOGA			•		22.6
NOISE REDUCT	ON				29.4

ROOM NAME RES INN KING + UPGRADES + STC = 28

FLOOR AREA 249

SURFACES	TL	@	AREA	T*S
		<del></del>		
EXT.WALL 1	50		0	0.00000
EXT.WALL 2	53		38	0.00019
EXT.WALL 3	60		0	0.00000
INT.WALL			549	
WINDOW 1	26	.05	0	0.00000
WINDOW 2	29	.05	25	0.03147
WINDOW 3	36	.05	0	0.0000
SGD	26	.05	0	0.0000
DOORS	0	.04	0	0.0000
ROOF	50	.04	249	0.00249
FLOOR		. 6	249	
ET*S				0.03415
-10LOG(ET*S)				14.7
10LÖĞA				22.6
NOISE REDUCT	TION			31.3

#### WORK SHEET FOR CALCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME RES INN KING + UPGRADES + STC = 30

SURFACES TL	@	AREA	T*S
EXT.WALL 1 50		0	0.00000
EXT.WALL 2 \$53		38	0.00019
EXT WALL 3 60		0	0.00000
INT.WALL		549	
WINDOW 1 28	.05	0	0.00000
WINDOW 2 31	.05	25	0.01986
WINDOW 3 38	.05	0	0.00000
SGD 28	.05	0	0.00000
DOORS 0	.04	0	0.00000
ROOF 50	.04	249	0.00249
FLOOR	.6	249	
ET*S			0.02254
-10LOG(ET*S)	•		16.5
10L0G(H1 B)			22.6
NOISE, REDUCTION			33.1

ROOM NAME RES INN KING + UPGRADES + STC = 32

FLOOR AREA 249

SURFACES	<b>T</b> L	@	AREA	T*S
EXT WALL 1 EXT WALL 2 EXT WALL 3 INT WALL WINDOW 1 WINDOW 2 WINDOW 3 SGD DOORS ROOF	50 53 60 30 33 40 30 0	.05 .05 .05 .05 .04 .04	0 38 0 549 0 25 0 0	0.00000 0.00019 0.00000 0.01253 0.00000 0.00000 0.00000 0.00249
FLOOR		.6 	249	0.00249
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCT	ion 			0.01521 18.2 22.6 34.8

#### WORK SHEET FOR CALCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME RES INN KING + UPGRADES + STC = 34

SURFACES	TL	@	AREA	T*S
	음.음(급 및 급 음 급 급 공원(조) 2017			
EXT.WALL 1	50		0	0.00000
EXT.WALL 2	53	•	38	0.00019
EXT.WALL 3	60		0	0.00000
INT.WALL			549	
WINDOW 1	32	.05	0	0.00000
WINDOW 2	35	.05	25	0.00791
WINDOW 3	42	.05	0	0.00000
SGD	32	.05	0	0.00000
DOORS	0	.04	0	0.00000
ROOF	., 50	.04	249	0.00249
FLOOR		.6	249	
ET*S	<b>**</b>	·		0.01059
-10L0G(ET*S)				19.8
10LOGA				22.6
NGISE REDUCTI	ON	· .	· · · · · · · · · · · · · · · · · · ·	36.4

ROOM NAME RES INN KING + UPGRADES + STC = 36

FLOOR AREA 249

	4,30		•				
SURFACES	${ m TL}$		@		AREA		T*S
EXT.WALL 1	50				. 0		0.00000
EXT.WALL 2	53				38		0.00019
EXT.WALL 3	60				0		0.00000
INT.WALL	Ä				549		
WINDOW 1	34		.05		. 0		0.00000
WINDOW 2	37		.05		25	5.0	0.00499
WINDOW 3	44		.05	*	0		0.00000
sďb.	34		.05		0 .		0.00000
DOORS	0		.04		0		0.00000
ROOF	50		.04		249		0.00249
FLOOR			.6		249		0.00219
et*s							0.00767
-10LOG(ET*S)	10						21.2
10LOGA							
190 Kg	TON						22.6
NOISE REDUCT	TOTA	1. The contract of the contrac					37.8
- 77777							

#### WORK SHEET FOR CALCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME RES INN KING + UPGRADES + STC = 38

SURFACES	TL	@	AREA	T*S
EXT.WALL 1	50		. 0	0.00000
EXT.WALL 2	53		38	0.00019
EXT.WALL 3	60		0	0.00000
INT.WALL			549	
WINDOW 1	36	.05	. 0	0.00000
WINDOW 2	39	.05	25	0.00315
WINDOW 3	46	.05	0	0.00000
SGD	36	.05	0	0.00000
DÓORS	0	.04	0	0.00000
ROOF.	50	.04	249	0.00249
FLOOR		.6	249	
etys,				0.00583
-10LQG(ET*S)	)			22.3
10LOGA				22.6
NOTSE REDUC	rion		·	39.0

ROOM NAME: RESIDING + UPGRADES + STC = 40

FLOOR AREA; 249

SURFACES	TL MARKET	@	AREA	T*S
randi i ja programa (	The state of the s			
EXT.WALL 1 EXT.WALL 2	5.0 (1) (1) (2) (2) (2) (3) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4		0 38	0.00000
EXT WALL 3	60 (1997)		549	0.00000
WINDOW 1 3 WINDOW 2	38 ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) (	.05 .05	0 25	0.00000 0.00199
WINDOW:8	48	.05	0	0.00000
SCD DOORS	: :0;	.05	0	0.00000 0.00000
ROOF FLOOR	50/ 144	.04	249 249	0.00249
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCTIO				0.00467 23.3 22.6 39.9

1 24. 24. 3

ROOM NAME H	OLIDAY KINGSA UPGRADES	l ama	C = 324

FLOOR AREA 289

SURFACES: TL	@	AREA	T*S
EXT.WALL 1 50		171	0.00171
EXT.WALL 2 59		99	0.00050
EXT.WALL 3 60	1989	0	0.0000
INT.WALL		282	
WINDOW'L 22	.05	0	0.00000
WINDOW 2 25.	.05	25	0.07906
WINDOW 3 32	.05	0	0.00000
SGD - 22	.05	O P	0.00000
DOORS 0	.04	O	0.00000
ROOF 50	.04	289	0.00239
FLOOR .	.6	239	
ET*S			0.08365
-10LOG(ET*S)			10.8
10LOGA			22.4
NOISE REDUCTION			27.1

# WORK SHEET FOR CALCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME | HOLLDAY KING + UPGRADES + STC = 26

SURFACES	TL	@	AREA	T*S
EXT WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 2 WINDOW 3 SGD DOORS	5.0 5.3 6.0 2.4 2.7 3.4 2.4 0.6	.05 .05 .05 .05 .05	171 99 0 282 0 25 0	0.00171 0.00050 0.00000 0.00000 0.04988 0.00000 0.00000
ROOF FLOOR	50.	.04	239 239	0.00239
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCT.	EON			0.05448 12.6 22.4 29.0

ROOM NAME HOLIDAY KING + UPGRADES + STC = 28

FLOOR A	REA	239

SURFACES	TL	121 - 121   12 1 - 122 - 123   <b>@</b> 1 - 123 - 123   124   <b>@</b>	AREA	T*S
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 2 WINDOW 3 SGD * DOORS ROOF FLOOR	50 53 60 26 29 36 46 0	.05 .05 .05 .05 .04 .04	171 99 0 282 0 25 0 0 0 239 239	0.00171 0.00050 0,00000 0.00000 0.03147 0.00000 0.00000 0.00000 0.00000
ET*S -10LOG(ET*S 10LOGA NOISE REDUC				0.03607 14.4 22.4 30.8

# WORK SHEET FOR CAMCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME HOLLDAY KING + UPGRADES + STC = 30

SURFACES	TĽ	@	AREA	T*S
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 2 WINDOW 3	50 53 60 28 31 38	.05 .05 .05	171 99 0 282 0 25	0.00171 0.00050 0.00000 0.00000 0.01986 0.00000
SGD DOORS ROOF FLOOR	28 0 ,450	.05 .04 .04 .6	0 0 239 239	0.00000 0.00000 0.00239
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCTI	On .			0.02445 16.1 22.4 32.5

그 그 겨울 이번 보고 보고 속 속 수 없었다. 생활 생활 생활 보는 모든 수 생각 수 생각 보이스를 보고 살아 보고 그 모고 보고 보고 보고 보다.

ROOM NAME HOLIDAY KING + UPGRADES + STC = 32

FLOOR AREA 239

SURFACES	TL	@ ************************************	AREA	T*S
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 2 WINDOW 3 SGD DOORS ROOF FLOOR	50 53 60 30 33 40 30 0 50	.05 .05 .05 .05 .04 .04	171 99 0 282 0 25 0 0 0 239 239	0.00171 0.00050 0.00000 0.00000 0.01253 0.00000 0.00000 0.00000
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCTIO	N			0.01713 17.7 22.4 34.0

# WORK SHEET FOR CALCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME HOLIDAY KING + UPGRADES + STC = 34

SURFACES	$\mathrm{TL}_{i}$	@	AREA	T*S
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL	50 50 60		171 99 0 282	0.00171 0.00050 0.00000
WINDOW 1 WINDOW 2 WINDOW 3 SGD DOORS ROOF FLOOR	32 35 42 32 0 50	.05 .05 .05 .05 .04 .04	0 25 0 0 0 0 239 239	0.00000 0.00791 0.00000 0.00000 0.00000 0.00239
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCTIO	N			0.01250 19.0 22.4 35.4

ROOM NAME HOLIDAY KING + UPGRADES + STC = 36

FLOOR AREA 239

SURFACES TL	@	AREA	T*S
EXT.WALL 1 50 EXT.WALL 2 53 EXT.WALL 3 60 INT.WALL WINDOW 1 34 WINDOW 2 37 WINDOW 3 44 SGD 34 DOORS 0 ROOF 50 FLOOR	.05 .05 .05 .05 .04 .04	171 99 0 282 0 25 0 0 0 239 239	0.00171 0.00050 0.00000 0.00000 0.00499 0.00000 0.00000 0.00000
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCTION			0.00958 20.2 22.4 36.5

## WORK SHEET FOR CALCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME HOLIDAY KING + UPGRADES + STC = 38

SURFACES	TL	@	AREA	T*S
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 2 WINDOW 3 SGD DOORS ROOF FLOOR	50 53 60 36 39 46 36 0 50	.05 .05 .05 .05 .04 .04	171 99 0 282 0 25 0 0 0 239 239	0.00171 0.00050 0.00000 0.00000 0.00315 0.00000 0.00000 0.00000 0.00000
ET*S -10LOG(ET*S 10LOGA NOISE REDUC				0.00774 21.1 22.4 37.5

ROOM NAME: HOLLDAY KING + UPGRADES + STC = 40

FLOOR ARTIA

SURTACES	TL : "'' ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;	ARE	/A	T*S
	aland the Control of	<b>***</b>		
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3	50 247 F ₄₄ 53 60	17 99 0	1	0.00171 0.00050 0.00000
TOT WALL WINDOW 1 WINDOW 2 WINDOW 3 SGL DOORS ROOF FLOOR		28 05 05 05 05 04 04 04 24 23	9	0.00000 0.00199 0.00000 0.00000 0.00000 0.00239
ET*S +10LOG(ET*S) 10LOGA NOISE REDUCTIO				0.00658 21.8 22.4 38.2

ROOM NAME HOLIDAY DBL QUEEN + UPGRADES + STC = 24

FLOOR AREA: 249

SURFACES	"DE	<b>@</b>	AREA	T*S
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 2 WINDOW 3 SGD DOORS ROOF FLOOR	50 53 60 22 25 32 0	.05 .05 .05 .05 .04 .04	99 0 0 456 25 0 0 0 0 249 249	0.00099 0.00000 0.00000 0.15774 0.00000 0.00000 0.00000 0.00000
ET*S -10LOG(ET*\$) 10LOGÁ NOISE REDUCE	ION E			0.16122 7.9 22.6 24.6

# WORK SHEET FOR CALCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME HOLIDAY DBL QUEEN + UPGRADES + STC = 26

SURFACES	TĽ (	***************** <b>@</b>	AREA	T*S
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 2 WINDOW 3 SGD DOORS ROOF FLOOR	50 53 60 24 27 34 24 0 50	.05 .05 .05 .05 .04 .04	99 0 0 456 25 0 0 0 249 249	0.00099 0.00000 0.00000 0.09953 0.00000 0.00000 0.00000 0.00000
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCT				0.10301 9.9 22.6 26.5

ROOM NAME HOLIDAY DBL QUEEN + UPGRADES + STC = 28

FLOOR AREA 249

SURFACES	TĽ,	@	AREA	T*S
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 2 WINDOW 3 SGD DOORS ROOF	50 58 60 26 29 36 26 0	.05 .05 .05 .05 .04	99 0 0 456 25 0 0 0 0	0.00099 0.00000 0.00000 0.06280 0.00000 0.00000 0.00000 0.00000 0.00249
FLOOR  ET*S -10LOG(ET*\$)  10LOGA  NOISE REDUCTI	ON	.6	249	0.06628 11.8 22.6 28.4

# WORK SHEET FOR CALCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME HOLIDAY DBL QUEEN + UPGRADES + STC = 30

SURFACES	TĹ	@	AREA	T*S
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 2 WINDOW 3 SGD DOORS ROOF	50 53 60 28 31 38 28 0	.05 .05 .05 .05 .04 .04	99 0 0 456 25 0 0 0	0.00099 0.00000 0.00000 0.03962 0.00000 0.00000 0.00000 0.00000
FLOOR		.6	249	
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCTI	ON			0.04310 13.7 22.6 30.3

WORK	SHEET FOR	CALCULATING	ROOM NOISE	REDUCTION	VALUE
			医乳腺性乳糜性 医多种皮肤		

ROOM NAME HOLIDAY DBL QUEEN + UPGRADES + STC = 32

FLOOR AREA 249

SURFACES	TE	@	AREA	T*S
EXT.WALL 1	50		99	0.00099
EXT.WALL 2	53		0	0.00000
EXT.WALL 3	60		0	0.00000
INT.WALL			456	
WINDOW 1	30	.05	25	0.02500
WINDOW 2	33	.05	0	0.00000
WINDOW 3	40	.05	0	0.00000
SGD	3'0	.05	0	0.00000
DOORS	0	.04	0	0.00000
ROOF	50	.04	249	0.00249
FLOOR		.6 	249	
ET*S				0.02848
-10LOG(ET*S)				15.5
10LOGA				22.6
NOISE REDUCTI	ON ,			32.1

# WORK SHEET FOR CALCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME HOLIDAY DBL QUEEN + UPGRADES + STC = 34

SURFACES	TI	@	AREA	T*S
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 2 WINDOW 3 SGD DOORS ROOF FLOOR	50 53 60 32 35 42 32 0 50	.05 .05 .05 .05 .04 .04	99 0 0 456 25 0 0 0 249 249	0.00099 0.00000 0.00000 0.01577 0.00000 0.00000 0.00000 0.00000 0.00249
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCT	 ION			0.01925 17.2 22.6 33.8

ROOM NAME HOLIDAY DBL QUEEN + UPGRADES + STC = 36

FLOOR AREA 249

EXT.WALL 1 50		99	0.00099
EXT.WALL 2 53		0	0.00000
EXT.WALL 3 60	•	0	0.00000
INT.WALL		456	
WINDOW 1 34	.05	25	0.00995
WINDOW 2 37	.05	0	0.00000
WINDOW 3 44	.05	0	0.00000
SGD 34	.05	0	0.0000
DOORS	.04	0	0.00000
ROOF 50	.04	249	0.00249
FLOOR	. 6	249	
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCTION			0.01343 18.7 22.6 35.4

# WORK SHEET FOR CALCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME HOLIDAY DBL QUEEN + UPGRADES + STC = 38

SURFACES	${f T}{f L}$	@	AREA	T*S
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 2 WINDOW 3 SGD DOORS	50 53 60 36 39 46 36	.05 .05 .05 .05	99 0 0 456 25 0 0	0.00099 0.00000 0.00000 0.00628 0.00000 0.00000 0.00000
ROOF FLOOR	50	.04 .04 .6	249 249	0.00249
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCT	ION			0.00976 20.1 22.6 36.7

ROOM NAME HOLIDAY DBL QUEEN + UPGRADES + STC = 40

SURFACES	${ m TL}$	@	AREA	T*S
- Para Para Para Para Para Para Para Par	iou			
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL	50 53 60		99 0 0 0 456	0.00099 0.00000 0.00000
WINDOW 1 WINDOW 2 WINDOW 3 GD DGORS ROOF BLOOR	3.8 4.1 4.8 5.5 04 5.0	.05 .05 .05 .05 .04 .04	25 0 0 0 0 0 249 249	0.00396 0.00000 0.00000 0.00000 0.00000
ET*S -10LOG(ET*S 10LOGA NOISE REDUC				0.00744 21.3 22.6 37.9

ROOM NAME HOLIDAY NW KING (101-401) + UPGRADES + STC = 24

FLOOR AREA 383

SURFACES	TŢ	@	AREA	T*S
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 2 WINDOW 3 SGD DOORS ROOF FLOOR	50 53 60 22 25 32 20 50	.05 .05 .05 .05 .04 .04	132 137 0 357 25 25 0 0 0 383 383	0.00132 0.00069 0.00000 0.15774 0.07906 0.00000 0.00000 0.00000
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCTIO	DN			0.24263 6.2 24.3 24.4

# WORK SHEET FOR CALCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME HOLIDAY NW KING (101-401) + UPGRADES + STC = 26

SURFACES	TL	@	AREA	T*S
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL	50 53 60		132 137 0 357	0.00132 0.00069 0.00000
WINDOW 1 WINDOW 2 WINDOW 3 SGD DOORS ROOF FLOOR	24 27 34 24 0 50	.05 .05 .05 .05 .04 .04	25 25 0 0 0 383 383	0.09953 0.04988 0.00000 0.00000 0.00000 0.00383
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCTI	ON			0.15524 8.1 24.3 26.4

ROOM NAME HOLIDAY NW KING (101-401) + UPGRADES + STC = 28

FLOOR AREA	1.1	3	83	3	
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SURFACES	TL	@		AREA	T*S
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 2 WINDOW 3 SGD DOORS ROOF	50 53 60 26 29 36 26 0 50	.05 .05 .05 .05 .04		132 137 0 357 25 25 0 0	0.00132 0.00069 0.00000 0.06280 0.03147 0.00000 0.00000 0.00000 0.00000
FLOOR		 .6 	<del></del>	383	 
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCT	TION	 			0.10011 10.0 24.3 28.3

# WORK SHEET FOR CALCULATING ROOM NOISE REDUCTION VALUE

ROOM NAME HOLIDAY NW KING (101-401) + UPGRADES + STC = 30

SURFACES	TL .	@	AREA	T*S
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 2 WINDOW 3 SGD DOORS	50 53 60 28 31 38 28 0	.05 .05 .05 .05	132 137 0 357 25 25 0	0.00132 0.00069 0.00000 0.03962 0.01986 0.00000 0.00000
ROOF FLOOR	50	.04 .6	383 383	0.00383
ET*S -10LOG(ET*S 10LOGA NOISE REDUC				0.06532 11.8 24.3 30.1

•40			
WORK SHEET	FOR CAL	ULATING ROOM NOISE REDUCTION VALUE	
ROOM NAME	HOLIDA	NW KING (101-401) + UPGRADES + STC	= 32
FLOOR AREA	383		
SURFACES	TL	@ AREA	T*S
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 2 WINDOW 3 SGD DOORS ROOF FLOOR	50 53 60 30 33 40 30 0 50	132 137 0 357 .05 25 .05 25 .05 0 .05 0 .05 0 .04 0 .04 383 .6 383	0.00132 0.00069 0.00000 0.02500 0.01253 0.00000 0.00000 0.00000
ET*S -10LOG(ET*S 10LOGA NOISE REDUC			0.04337 13.6 24.3 31.9
		~	
WORK SHEET	FOR CAL	ULATING ROOM NOISE REDUCTION VALUE	
WORK SHEET		ULATING ROOM NOISE REDUCTION VALUE NW KING (101-401) + UPGRADES + STC	= 34
	HOLIDA		= 34
ROOM NAME	HOLIDA		= 34 T*S
ROOM NAME FLOOR AREA SURFACES EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 2 WINDOW 3	HOLIDA  383  TL  50 53 60 32 35 42	@ AREA  132 137 0 357 .05 .05 .05 .05 .05 .05 .05	T*S 0.00132 0.00069 0.00000  0.01577 0.00791 0.00000
ROOM NAME FLOOR AREA SURFACESEXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 2	HOLIDA  383  TL  50 53 60 32 35	@ AREA  132 137 0 357 .05 .05 .05 25	T*S 0.00132 0.00069 0.00000 0.01577 0.00791
ROOM NAME FLOOR AREA SURFACES EXT.WALL 1 EXT.WALL 2 EXT.WALL 3 INT.WALL WINDOW 1 WINDOW 1 WINDOW 2 WINDOW 3 SGD DOORS ROOF	HOLIDA  383  TL  50 53 60 32 35 42 32 0 50	@ AREA  132 137 0 357 .05 .05 .05 .05 .05 .05 .05 .05 .05 .05	T*S 0.00132 0.00069 0.00000 0.01577 0.00791 0.00000 0.00000 0.00000

WORK SHEET FOI	R CALCULA	TING ROOM NOISE	REDUCTION VAI	JUE
ROOM NAME HO	OLIDAY NW	KING (101-401)	+ UPGRADES +	STC = 36
FLOOR AREA	383			
SURFACES	TL	@	AREA	T*S
EXT.WALL 3 INT.WALL WINDOW 1	50 53 60 34 37 44 34 0 50	.05 .05 .05 .05 .04 .04	132 137 0 357 25 25 0 0 0 383 383	0.00132 0.00069 0.00000 0.00995 0.00499 0.00000 0.00000 0.00000
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCTION	ON			0.02078 16.8 24.3 35.1
WORK SHEET FO	R CALCULI	TING ROOM NOISE	REDUCTION VAI	LUE
ROOM NAME H	OLIDAY NV	N KING (101-401)	+ UPGRADES +	STC = 38
FLOOR AREA	383			
SURFACES	TL	@	AREA	T*S
EXT.WALL 1 EXT.WALL 2 EXT.WALL 3	50 53 60		132 137 0 357	0.00132 0.00069 0.00000
INT.WALL WINDOW 1 WINDOW 2 WINDOW 3 SGD DOORS ROOF FLOOR	36 39 46 36 0 50	.05 .05 .05 .05 .04 .04	357 25 25 0 0 0 383 383	0.00628 0.00315 0.00000 0.00000 0.00000 0.00383
ET*S -10LOG(ET*S) 10LOGA NOISE REDUCTI	ON			0.01526 18.2 24.3 36.4

ROOM NAME - HOLIDAY NW KING (101-401) + UPGRADES + STC = 40

FLOOR AREA : 38

SURFACES TL	@	AREA	T*S
EXT WALL 1 50 EXT WALL 2		132 137	0.00132 0.00069
EXT. WALL 3 60 INT. WALL		0 357	0.00000
WINDOW I	.05	25	0.00396
WINDOW 3 41, WINDOW 3 48	.05 • · · · · 05	25 0	0.00199 0.00000
SGD DOORS	.04	0	0.00000
ROOB 50 FLOOR	.04 .6	383 383	0.00383
ET*S			0.01178
-10LOG(ET*S) 10LOGA			19.3 24.3
NOISE REDUCTION			37.6

A CHARLES TO A CHA

# CHRISTOPHER JEAN & ASSOCIATES, INC. ACOUSTICAL CONSULTING SERVICES

#### APPENDIX 7

PLUMBING AND ELECTRICAL INSTALLATIONS

# CHRISTOPHER JEAN & ASSOCIATES ACQUISTICAL CONSULTING SERVICES

# PLUMBING NOISE REDUCTION REQUIREMENTS FOR COMPLIANCE WITH THE CALIFORNIA CODE OF REGULATIONS TITLE 24, PART 2, APPENDIX CHAPTER 35

# REQUIRED PLUMBING DESIGN FEATURE IN COMON WALL AND FLOOR/CEILING ASSEMBLIES

The plumbing system, by its nature, can degrade the acoustical integrity of a common wall or floor/ceiling assembly. This is primarily due to the fact that the plumbing system, a sound carrier and a sound source, is generally attached to the studs, plates, joists and drywall of a building's walls and floors. In order to alleviate the problem of plumbing system noise, one hundred percent of the plumbing system must be isolated from the building structure (not just at the common assemblies). Special installation requirements are necessary in order to:

- (1) reduce the level of noise from the plumbing system, and
- (2) isolate the total plumbing system from the building structure.

These special isolation procedures may be accomplished by using an approved commercial isolation system. Hard plastic "isolators" are <u>NOT</u> acceptable. Examples of approved commercial isolation systems in order of preference are:

- (1) "Acousto-Plumb" TM system by Specialty Products, Inc. (www.ispproducts.com),
- (2) Holdrite Silencer System by Holdrite, Inc. (www.holdrite.com), and

(3) the felt lined series of isolators, clamps and hangers from Tolco, Inc.

Only when appropriate commercial isolation products are not available for unusual applications or extra large pipe sizes, will it be acceptable to use high density, 1/4" thick, 2" wide, adhesive backed felt wrap and/or 1/2" thick pre-formed, self-adhesive foam rubber pipe insulation such as Armaflex or Rubatex. If the felt wrap or pre-formed pipe insulation is used, great care must be taken not to compress the insulation material when strapping or anchoring the attachment points. Use of expanding foam products as plumbing isolation is **strictly prohibited**.

#### **SUPPLY LINES**

- All hot and cold water pipes, fittings and valves shall NEVER come in direct contact with either the building structure framing or drywall. Supply lines are to be isolated using Acousto-Plumb, Holdrite Silencer System, Tolco I.S.P. felt lined isolator products, 1/4" high density felt wrap or 1/2" pre-formed pipe insulation. Acousto-Plumb products and installation details can be www.lspproducts.com. Holdrite Silencer System products and installation details can be found at www.holdrite.com. Tolco I.S.P. products can be found at www. cooperindustries.com. Installation details for use of felt wrap or pre-formed pipe insulation are available upon request and approval. If felt wrap or pre-formed pipe insulation are used (and only with prior written approval by the acoustical consultant when appropriate commercial isolation products cannot be located), these installation details must be followed to the letter. No deviations from these details will be allowed.
- All sink and shower faucets, spouts and risers shall be isolated with resilient gaskets that are positioned between the faucet, spout or riser and its mounting surface.
- Water supply stub-outs shall be temporarily isolated from the drywall using the Acousto-Sleeve TM during drywall installation, and then permanently isolated using the Acousto-Scutcheon TM or resilient caulking and a standard plumbing escutcheon.
- Water pressure shall not exceed 65 psi.
- Shower head flow restrictors shall be used to limit water flow to less than three (3) gallons per minute.

- The pipe stubs commonly installed to combat water hammer are not effective. A commercially produced water hammer device consisting of a bellows, similar to that made by Plumbing Products, Inc., is recommended.
- Sections of the plumbing supply system employing PEX (cross linked polyethylene tubing) do not require acoustical isolation except where it transitions to or from conventional copper lines.

#### WASTE LINES

- The cavity under plastic or fiberglass tubs and showers shall be packed with fiberglass or spray-on insulation materials and/or lightweight concrete pours. The bottoms of such tubs shall be blocked or supported by lightweight concrete to reduce drumming.
- All waste lines above the slab and at the penetrations of any floor/ceiling assemblies and any walls (including non-common walls) shall be cast iron. The use of ABS waste lines is not recommended. If ABS is used, the entire framing cavity surrounding the ABS pipe shall be completely packed with fiberglass, mineral wool or spray—on adhesive cellulose insulation materials. All elbows below toilet and tub waste outlets shall be isolated from all positioning blocks using carpet padding or high-density 1/4" felt material. The entire framing cavity surrounding these elbows shall be completely packed with fiberglass, mineral wool or spray-on adhesive cellulose insulation materials.
- Waste lines of a diameter greater than two and a half inches (2.5") shall never be installed in a wall framed with less than 2" by 6" studs. Walls framed with 2" by 4" studs simply don't allow sufficient clearance to properly insulate and isolate waste lines and/or avoid pipe contact with the drywall.

Failure to <u>COMPLETELY</u> isolate the plumbing system from the building structure will result in a significant transfer of plumbing noise into the building. Therefore, it is important that all of the above measures and techniques are employed. Collectively, these measures and techniques act as parts of a complete system, each designed to perform a particular function of the total effort. Any circumvention of the function of any one component, whether intentional or not, will ultimately lessen the effectiveness of the entire system. **QUALITY CONTROL IS CRITICAL TO PROPER PLUMBING SYSTEM ISOLATION**.

# CHRISTOPHER JEAN & ASSOCIATES, INC. ACQUISTICAL CONSULTING SERVICES

#### **ELECTRICAL SYSTEM INSTALLATION NOTES**

The following items shall be incorporated into the building plans:

#### **COMMON WALLS**

- Electrical outlets, switches, phone jacks, television antennae boxes and computer outlet boxes installed in opposite sides of a common wall shall be offset a minimum of 24" to comply with the fire code. This offset is not needed for acoustical reasons if insulation is used in the framing cavities and Lowry's #10 putty pads or 3M fire pads are applied around the backs and sides of all outlets, switches, phone jacks, etc.
- All electrical outlets, switches, phone jacks, television antennae boxes and computer outlet boxes installed in common walls shall be backed by and Lowry's #10 putty pads, 3M fire pads or equivalent. Pads shall be stapled to the studs to insure that they remain in place indefinitely (the adhesive backing of the pads deteriorates over time).
- Wiring shall avoid crossing over the air gap of common walls. Where unavoidable, wiring crossovers between common wall studs shall include a loop where the depth is equal to its width.
- Electrical panel boxes, fixture boxes or outlet boxes greater than 25 square inches shall be set in raised boxes that do not touch the opposite side of the common wall.

#### COMMON FLOOR/CEILINGS

- Recessed lighting shall be set in recessed and airtight boxes made of plywood or drywall.
- All other precautions applicable to common wall installations shall also apply to common floor/ceiling installations.

#### TRAFFIC IMPACT STUDY

For

Valencia Springhill Suites Plus Residence Inn

Santa Clarita, California

Submitted To:

Excel Hotel Group 10660 Scripps Ranch Boulevard, Suite 100, San Diego, California 92131

Submitted By:

Darnell & Associates, Inc. 4411 Mercury Street, Suite 207A San Diego California, 92111

> Revised: December 5, 2016 Revised: November 15, 2016 Revised: November 1, 2016 Original: September 14, 2016

## Darrell & Associates, Inc.

- TRANSPORTATION PLANNING & TRAFFIC ENGINEERING

December 5, 2016

Neil Patel Excel Hotel Group 10660 Scripps Ranch Boulevard, Suite 100, San Diego, California 92123

Subject:

Traffic Impact Study for the Proposed Valencia Springhill Suites Plus the Residence Inn

located in Santa Clarita, California

Dear Mr. Neil Patel:

In accordance with your authorization, Darnell & Associates, Inc. (D&A) has prepared this Traffic Impact Study assessing the impacts associated with the proposed project located on the southside of Wayne Mills Place in the City of Santa Clarita.

The Traffic Impact Study analyzes the traffic impacts related to the project on the surrounding roadways and intersections under the following conditions: Existing and Existing Plus Project Conditions. The report has been revised to respond to City Traffic Engineers comments dated October 18, 2016.

If you have any questions, please feel free to contact the office.

Sincerely,

DARNELL & ASSOCIATES, INC.

No. 22338

TRAFFIC

No. 539

D&A Ref. No.: 160605

Bill E. Darnell, P.E. Firm Principal

RCE 22338

Date Signed:

. 12/5/2016

Date Signed:

12/9

BED/jam

160605 - Springhill Suites Residential Inn-Valencia Traffic Study_ Dec 5 2016

## TRAFFIC IMPACT STUDY

## **FOR**

# VALENCIA SPRINGHILL SUITES PLUS RESIDENCE INN

## SANTA CLARITA, CALIFORNIA

#### Submitted To:

Excel Hotel Group 10660 Scripps Ranch Boulevard, Suite 100, San Diego, California 92131

## Submitted By:

Darnell & Associates, Inc. 4411 Mercury Street, Suite 207A San Diego California, 92111 (619) 233-9373

December 5, 2016
160605 - Springhill Suites Residential Inn-Valencia Traffic Study_ Dec 5 2016

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#### **APPENDICIES**

#### APPENDIX A

- ➤ 24-Hour Segment Counts
- > AM/PM Peak Hour Turn Counts

#### APPENDIX B

> Existing Conditions Analysis Worksheets

## APPENDIX C

> Existing + Project Conditions Analysis Worksheets

#### APPENDIX D

➤ 2018 Opening Day Conditions Analysis Worksheets

## APPENDIX E

➤ 2018 Opening Day Plus Project Conditions Analysis Worksheets

#### SECTION I - INTRODUCTION

This traffic study evaluates the traffic conditions associated with the proposed Valencia Springhill plus Residence Inn project (herein referred to as "the project") located at 27413 Wayne Mills Place in the City of Santa Clarita, CA. Figure 1 illustrates the location of the project site in the region.

#### PROJECT DESCRIPTION

The project site is generally located on the south side of Wayne Mills Place, east of I-5, and west of Tourney Road. The existing site currently is occupied by a 120-Room Best Western Hotel. The project will construct a 182-Room Springhill Suites/Residence Inn and a 108-room Holiday Inn Express on the existing Best Western Site. Access to the project will be through an existing driveway located on Wayne Mills Place. Figure 2 illustrates the project site plan.

#### SCENARIOS STUDIED

The following list contains the scenarios analyzed for the project:

Existing Conditions: This scenario refers to the conditions at the time peak hour turning movement

volume counts were obtained in October 2016 and account for the existing lane

configurations at the study intersections and roadway segments.

Existing Plus Project Conditions: This scenario includes the project traffic, which is added to the

existing traffic volumes.

2018 Opening Day Conditions: This scenario includes the project traffic, with 3% per year (6 %

total) ambient growth added to the existing traffic volumes.

#### LEVEL OF SERVICE

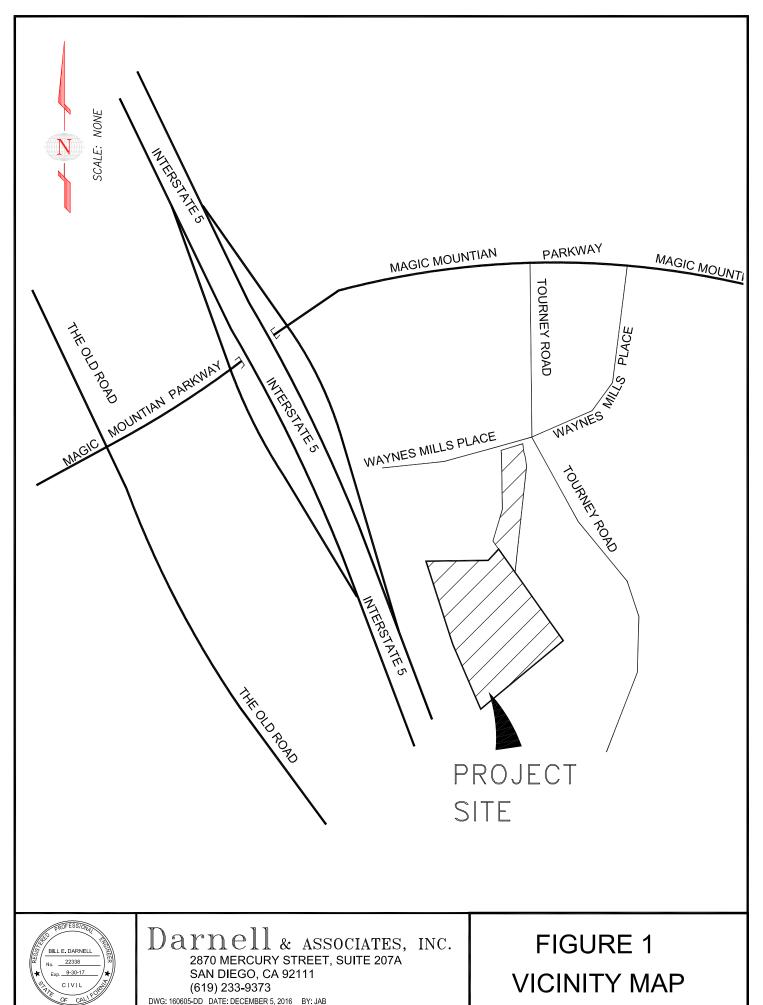
Level of Service (LOS) is a professional industry standard by which the operating conditions of a given roadway segment or intersection are measured. Level of Service is defined on a scale of A to F; where LOS "A" represents the best operating conditions and LOS "F" represents the worst operating conditions. LOS "A" facilities are characterized as having free flowing traffic conditions with no restrictions on maneuvering or operating speeds; traffic volumes are low and travel speeds are high. LOS "F" facilities are characterized as having forced flow with many stoppages and low operating speeds.

For all signalized study area intersections, the Highway Capacity Manual (HCM) methodology is utilized to estimate the LOS. The HCM method estimates the LOS based on intersection delay.

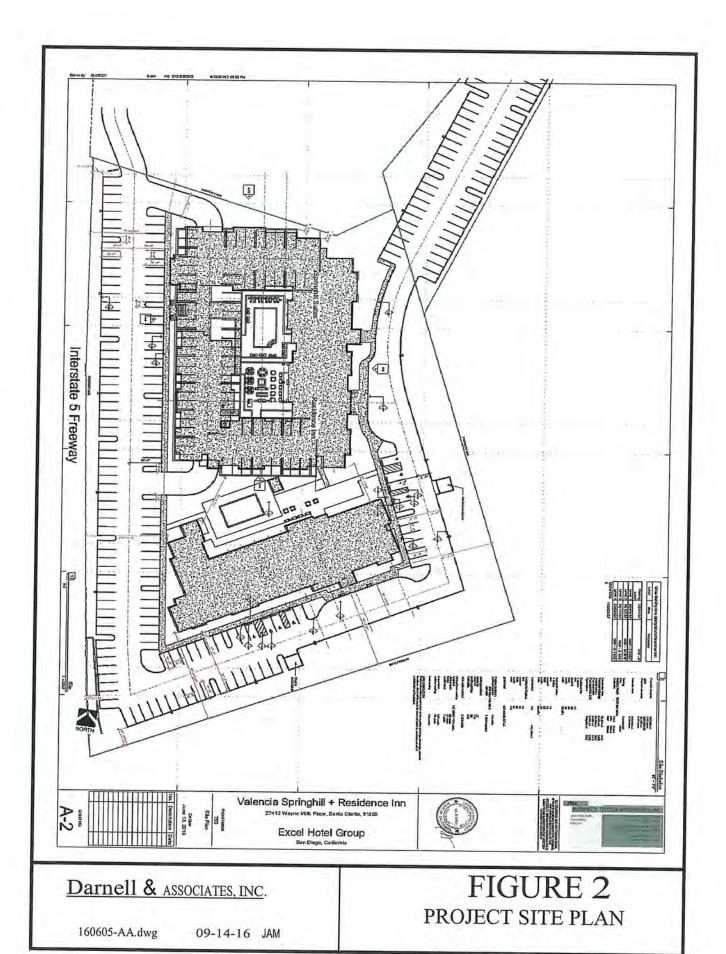
For all unsignalized area intersections, the Highway Capacity Manual (HCM) methodology is utilized to estimate the LOS. The HCM method estimates the LOS based on intersection delay.

LOS along the roadway segments in the study area is determined utilizing the City's volume to capacity at urban arterial highways.

Table 1 shows the criteria used for intersections. Table 2 summarizes the criteria used along arterial roadways. In the City of Santa Clarita, LOS "D" is considered the acceptable threshold for intersections and roadway segments.



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	In	tersections
LOS	Average Control Delay (Seconds/Vehicle)	Unsignalized Delay (Seconds/Vehicle)
A	≤10	Less than or Equal to 10.0
В	> 10 - 20	10.0 to 15.0
С	>20 to 35	15.0 to 25.0
D	>35 - 55	25.0 to 35.0
Е	>55 - 80	35.0 to 50.0
F	> 80	> 50.0

LOS	8-Lane Divided	6-Lane Divided	4-Lane Divided	4-Lane Undivided	2-Lane Undivided
A	48,000	36,000	24,000	16,000	5,000
В	54,000	40,400	27,000	18,000	7,500
C	60,000	45,000	30,000	20,000	10,000
D	66,000	49,500	33,000	22,000	12,500
Е	72,000	54,000	36,000	24,000	15,000

#### ANALYSIS METHODOLOGY

The intersection analysis evaluated the operations of the study area intersections during a typical weekday for the AM and PM peak periods. The AM peak is defined as the time period between 7:00 and 9:00 AM. The PM peak is defined as the time period between 4:00 and 6:00 PM. The signalized intersections were analyzed using the Intersection Capacity Utilization (ICU) procedures with lane capacity of 1,750 vehicles per lane. Synchro 8 was used as the software program to evaluate the operations at unsignalized intersections.

#### REPORT ORGANIZATION

Following this section, Section II evaluates the existing roadway characteristics and traffic conditions surrounding the project area. Section III examines the project trip generation and distribution assumptions. Section IV analyzes the traffic for existing plus project conditions. Section V provides recommended mitigation measures. Section VII summarizes the report's findings and conclusions.

#### **SECTION II - EXISTING CONDITIONS**

This section of the traffic study is intended to assess the existing conditions of the roadways and intersections within the vicinity of the project to determine travel flow and/or delay difficulties, if any, that exist prior to adding the traffic generated by the proposed project. The existing conditions analysis establishes a base condition which is used to assess the other scenarios discussed in this report.

Darnell & Associates, Inc. (D&A) conducted a field review of the area surrounding the project in June 2016. The existing roadway geometrics are illustrated in Figure 3.

#### EXISTING ROADWAY CHARACTERISTICS

The key segments analyzed in the study area are identified below:

<u>Magic Mountain Parkway:</u> Magic Mountain Parkway is a six-lane divided roadway in the study area with painted medians and is classified as a major highway. The roadway generally runs in the east-west direction. Parking is restricted on both sides of the roadway and the posted speed limit is 50 miles per hour (mph) based on the City's Circulation Element, an improvement to restripe the roadway from 6-lanes to 8-lanes.

<u>Tourney Road:</u> Tourney Road is a three-lane roadway with a center two-way left-turning lane in the study area and is classified as a secondary highway. The roadway generally runs in the north-south direction. Bicycle lanes and parking are provided on both sides of the roadway. There are no posted speed limit signs in the immediate vicinity of the project.

<u>Wayne Mills Place</u>: Wayne Mills Place is a two-lane roadway with a center two-way left-turning lane. At Tourney Road it provides one-lane westbound, a painted median, a shared eastbound left and through lane and a exclusive right turn lane.

#### ROADWAY SEGMENT DAILY TRAFFIC

Daily traffic volume data were obtained along the study area roadway segments on Thursday, July 28, 2016 and October 25, 2016. The July 28, 2016 counts were then adjusted using the October 25, 2016 peak hour counts. Analysis of the July 28, 2016 traffic counts concluded that traffic on Magic Mountain Parkway are impacted in the summer months by traffic generated by Magic Mountain. Review of the July 28, 2016 and October 25, 2016 traffic counts allowed the conclusion that the July daily traffic volumes can be adjusted to represent the non-summer traffic conditions. Figure 4 presents the adjusted counts with 10.5 percent reduction on Magic Mountain Parkway west of Interstate 5 and a 3.7 percent reduction west of Tourney Road. A copy of the October 25, 2016 counts are presented in Appendix A. The roadway segments analyzed are:

- Magic Mountain Parkway west of Old Road;
- Magic Mountain Parkway west of Tourney Road
- Magic Mountain Parkway east of Tourney Road;
- Tourney Road between Magic Mountain Parkway and Wayne Mills Place;
- Tourney Road south of Wayne Mills Place; and
- Wayne Mills Place west of Tourney Road.

The Study Area limits were established based on City of Santa Clarita Guidelines to address roadways and intersections that the project would add 50 or more peak hour direction trips.

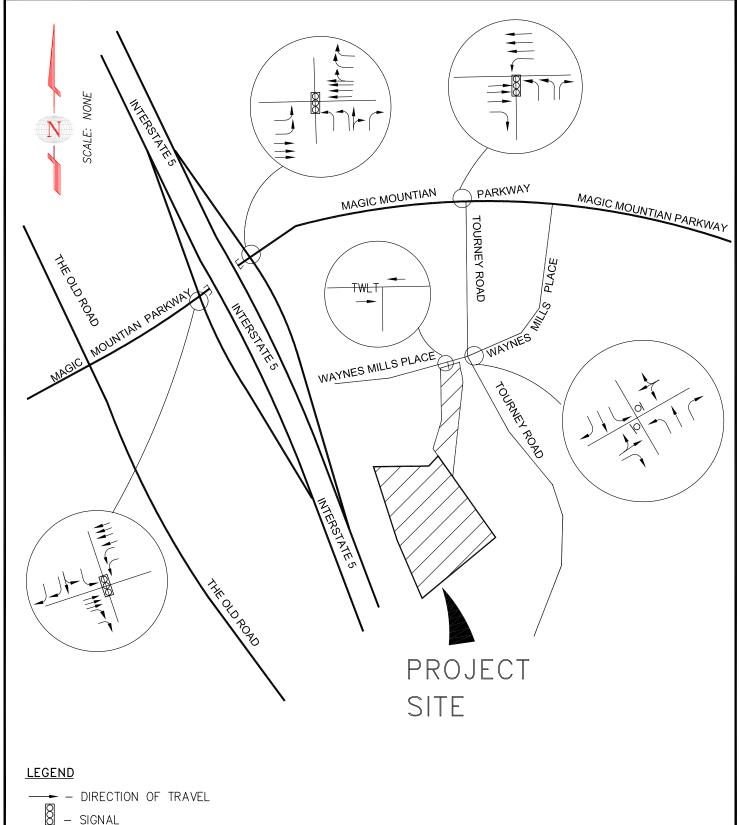
#### **KEY INTERSECTIONS**

Figure 3 provides intersection configurations and traffic control for the key intersections. The key intersections analyzed in the study area are identified below:

- I-5 SB Ramps/Magic Mountain Parkway (signal);
- I-5 NB Ramps/Magic Mountain Parkway (signal);
- Tourney Road/Magic Mountain Parkway (signal);
- Tourney Road/Wayne Mills Place (two-way stopped control)

#### INTERSECTION TRAFFIC COUNTS

Peak-hour traffic volume data were obtained at the study area intersections on October 25, 2016. Figure 4 presents the existing conditions traffic volumes used in this analysis. A copy of the count worksheet is included in Appendix A.



O - STOP SIGN

TWLT - TWO WAY LEFT TURN

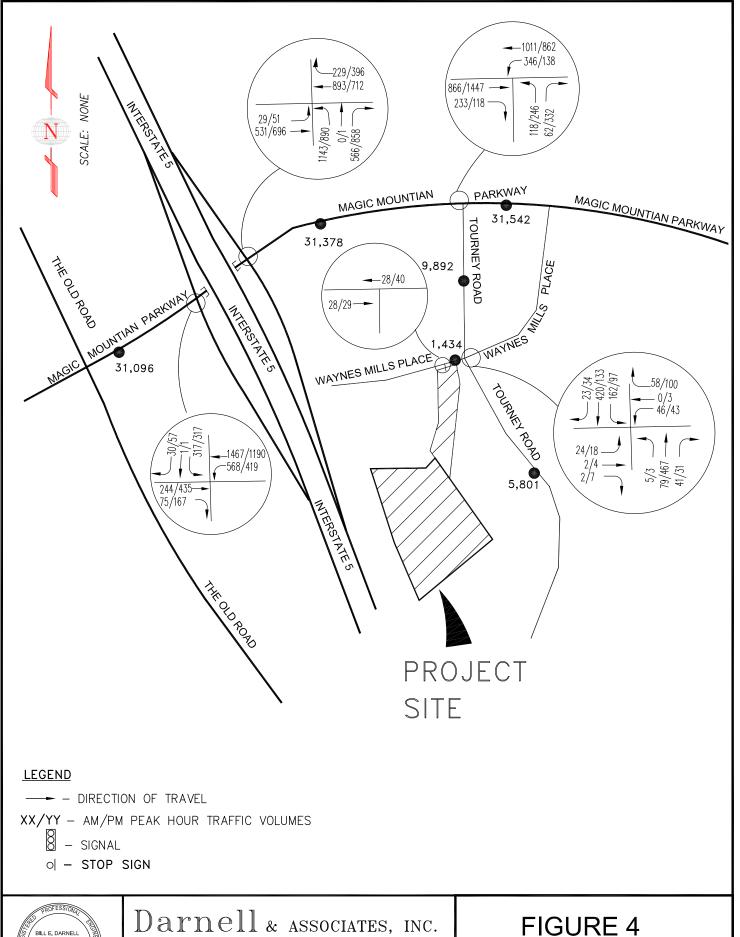


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FIGURE 3

**EXISTING ROADWAY GEOMETRY** 





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EXISTING TRAFFIC VOLUMES

#### EXISTING LEVEL OF SERVICE CONDITIONS

#### Roadway Segments

Table 3 summarizes the LOS along the roadway segments in the study area. As shown in the table, all roadway segments operate at LOS A except for the Magic Mountain Parkway segment between I-5 northbound on/off ramp and Tourney Road, which operates at LOS "B".

The Old Rd to I-5 SB Ramps I-5 NB Ramps to Tourney Road	Classification	Existing Number of Lanes	LOS "E"	ADT	v/c	LOS
Magic Mountain Pkwy		H. G. Y				
The Old Rd to I-5 SB Ramps	Major Arterial	6-Lane	54.000	31,096	0.576	A
I-5 NB Ramps to Tourney Road	- Major Arterial	Divided	54,000	31,378	0.584	В
Tourney Road to Wayne Mills Place				31,542	0.580	A
Tourney Rd	2.302.	1274				
Magic Mountain Pkwy to Wayne Mills Place	Secondary Highway	4-Lane Undivided	24,000	9,892	0.412	A
South of Wayne Mills Place	Tighway	Undivided		5,801	0.242	A

#### Intersections

Table 4 summarizes the LOS at the intersections in the study area. As shown in the table, all signalized intersections operate at LOS "B" or better during the AM and PM peak periods. The unsignalized intersection of Tourney Road/Wayne Mills Place operates at LOS "B" or better during the AM and PM peak periods.

		Traffic	Peak	Existing (	Conditions
#	Intersection	Control	Hour	Delay (a)	LOS (b)
1	I-5 SB Ramps & Magic Mountain Pkwy	Signal	AM	13.1	В
		Signal	PM	14.8	В
2	I-5 NB Ramps & Magic Mountain Pkwy	Signal	AM	18.9	В
		Signal	PM	19.3	В
3	Tourney Rd & Magic Mountain Pkwy	Signal	AM	19.0	В
2	The state of the s	Signal	PM	19.6	В
4	Tourney Rd & Wayne Mills Pl	TWSC	AM	4.4	A
		1 Wat	PM	4.7	В
5	Project Dwy & Wayne Mills PI	OWSC	AM		141
	Troject Day of traying Mills F1	OWSC	PM	Dì	VE.

DNE: Does not exist

A copy of the analysis worksheets for conditions can be found in Appendix B.

⁽a) HCM's's are reported at the signalized intersections. Delays are reported as the worst movement at unsignalized

LOS calculations are based on the methodology outlined in the 2000 Highway Capacity Manual (HCM) and performed using Synchro 8, TWSC = Two Way Stop Control, OWSC = One Way Stop Control.

#### **SECTION III - PROJECT RELATED CONDITIONS**

#### TRIP GENERATION

Trip generation rates published by the *Institute of Transportation Engineers (ITE) Trip Generation Manual*, 9th Edition were applied to the existing and proposed use in order to determine the traffic generation characteristics of the site. The existing site contains a 120 Room Best Western Hotel. The project consists of a 182 Room Springhill Suites/Residence Inn and a 108 Room Holiday Inn Express, which results in a net increase of 170 hotel rooms. Upon reviewing the various land uses contained in the *ITE Trip Generation Manual*, land use code of 312 (Business Hotel) was the most appropriate and applied to the project.

Table 4 summarizes the weekday trip generation. As shown in the table, the project is forecasted to generate a net increase of 1,237 daily trips with 99 AM peak-hour trips and 105 PM peak-hour trips.

	T 11 4	<b></b>		101	1.4.6	•				
	Table 4	Trip Ger	neration Rates	and Cal	culations S	Summary				
			Trip Generati	on Rates	S					
	ъ ::		AM I	Peak Hou	ır	PM P	eak Hou	r		
Land Use	Daily	ī	Rate	% In	% Out	Rate	% In	% Out		
Business Hotel	7.27 trips/s	rooms	0.58/Room	59%	41%	0.62/Room	60%	40%		
			Trip Gener	ration						
Land Use	Total No.	D !!	AM I	Peak Hou	ır	PM Peak Hour				
Land Use	of Units	Daily	Total	In	Out	Total	In	Out		
<b>Existing Uses</b>										
Best Western	120 rooms	873	70	42	28	75	45	30		
Proposed Uses	_	:			_	_	-	_		
Springhill Suites/Residence Inn	182 rooms	1,324	106	63	43	113	68	45		
Holiday Inn Express	108 rooms	786	63	38	25	67	41	26		
Subtotal (Propose	d – Existing)	2,110	169	101	68	180	109	71		
Net New Trips		1,237	99	59	40	105	64	41		

Trip Generation Rates are based on rates published by the *Institute of Transportation Engineers (ITE) Trip Generation Manual*, 9th Edition.

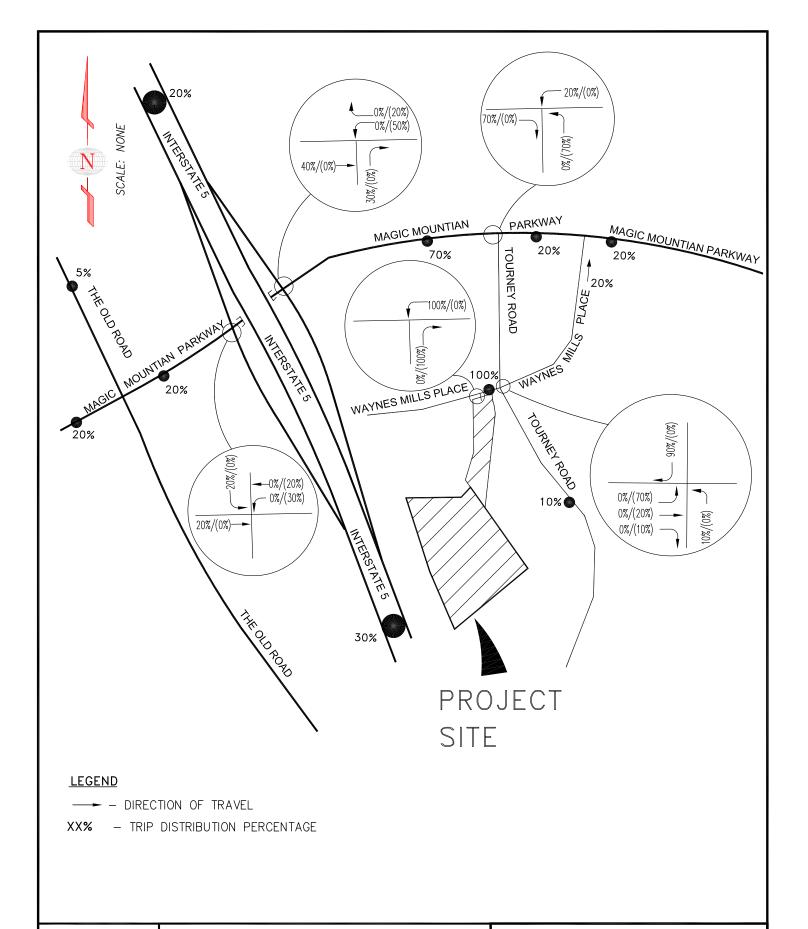
#### TRIP DISTRIBUTION/TRIP ASSIGNMENT

Based on existing travel patterns in the study area and on logical connections to regional facilities, the following list shows the assumed project trip distribution for the proposed project:

- 20 percent to/from the north via I-5;
- 40 percent to/from the south;
  - 30 percent via I-5;
  - 10 percent via Tourney Road;
- 20 percent to/from the east via Magic Mountain Parkway; and
- 20 percent to/from the west via Magic Mountain Parkway.

Figure 5 displays the assumed project trip distribution through the study intersections. Based on the project trip generation and distribution, the peak-hour trips were assigned to the intersections in the study area. Figure 6 illustrates the weekday project trip assignment.

The impacts associated with the addition of project traffic are discussed in the following section, Section IV.

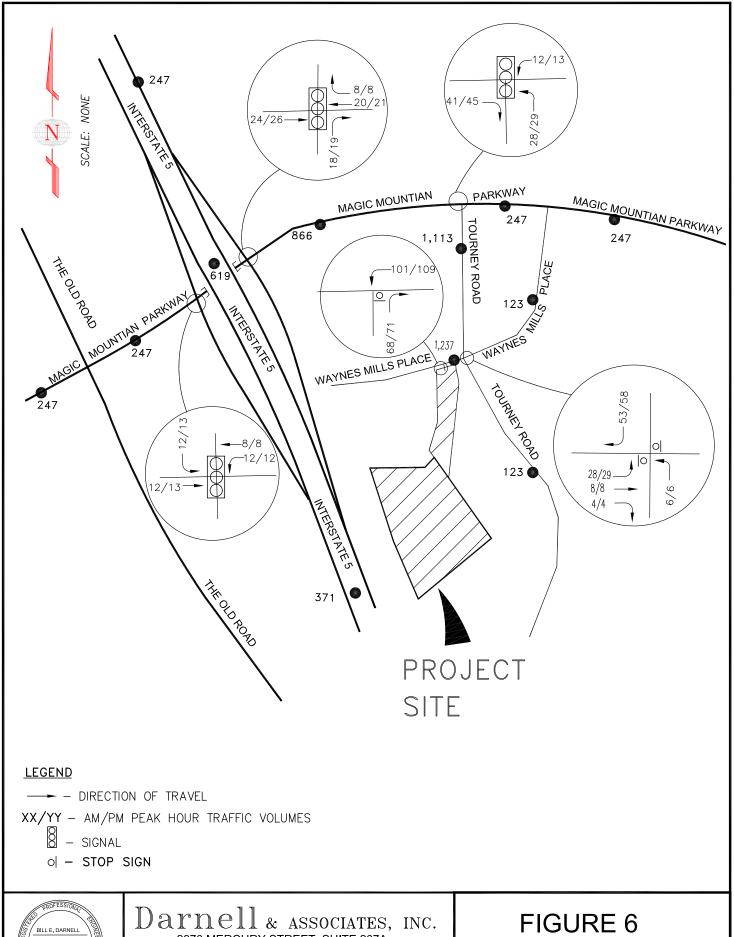




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FIGURE 5
PROJECT TRIP DISTRIBUTION





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FIGURE 6
PROJECT TRAFFIC

#### SECTION IV - IMPACTS

This section describes the Level of Service analyses for the study area intersections and roadway segments with the addition of project traffic to Existing Conditions.

#### EXISTING PLUS PROJECT CONDITIONS

The daily and peak hour turn volumes for existing plus project conditions are illustrated in Figure 7.

#### Roadway Segments

The roadway segments were then analyzed with the traffic generated from the proposed project added to existing traffic volumes. Table 5 displays the Level of Service Analysis results for the roadway segments under the Existing Plus Project scenario. As shown in the table, all roadway segments are expected to operate at LOS "C" or better with the addition of the project.

#### Intersections

The intersections were then analyzed with the traffic generated from the proposed project added to existing traffic volumes. Table 6 displays the Level of Service Analysis results for the study intersections under the Existing Plus Project scenario. As shown in the table, all signalized intersections, are expected to operate at LOS "C" or better with the addition of the project traffic. The unsignalized intersections and the Project Driveway on Wayne Mills Place will operate at LOS "A" and the Tourney Road/Wayne Milles Place intersection will operate at LOS "B or better". The increase in delay does not exceed the significance thresholds.

#### 2018 OPENING DAY PLUS PROJECT CONDITIONS

Opening Day 2018 traffic conditions are estimated by adding 3% per year (6% total) ambient growth to existing traffic volumes plus project traffic. Figure 8 presents the 2018 Opening Day volumes and Figure 9 presents the 2018 Opening Day plus project conditions.

#### Roadway Segments

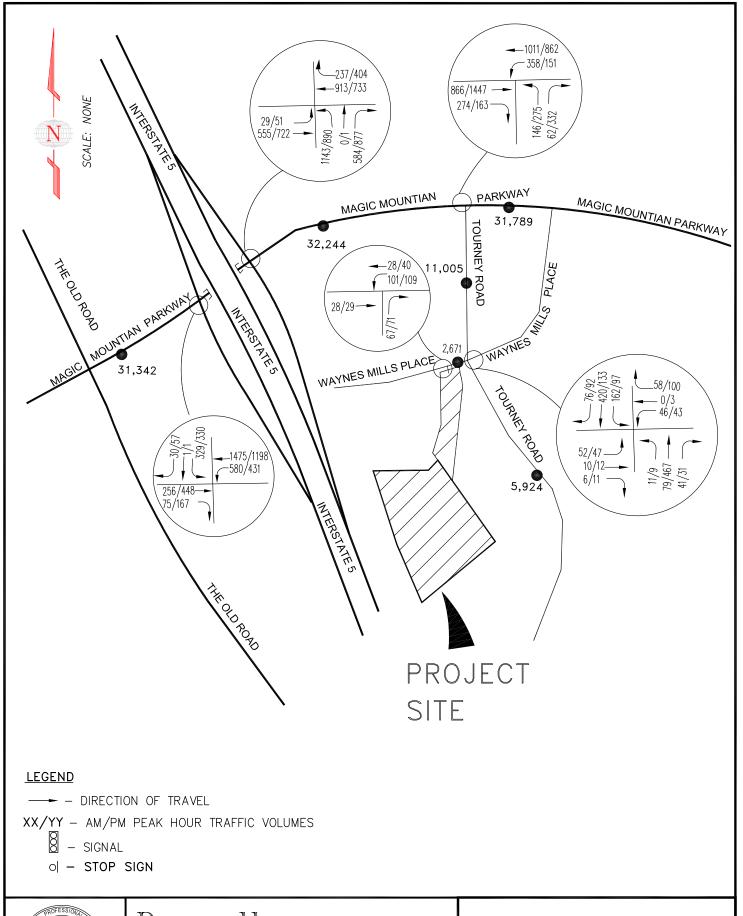
The roadway segments were analyzed with the traffic generated from the proposed project added to existing traffic volumes plus 3% ambient growth. Table 7 displays the Level of Service Analysis results for the roadway segments under the Existing Plus Project scenario. As shown in the table, all roadway segments are expected to operate at LOS "B" or better with the addition of the project.

#### Intersections

The intersections were analyzed with the traffic generated from the proposed project added to existing traffic volumes plus the addition of 3% ambient growth. Table 8 displays the Level of Service Analysis results for the study intersections under the Existing Plus Project scenario. As shown in Table 8, all intersections, including the project driveway, are expected to operate at LOS "C" or better with the addition of the project traffic. Therefore no mitigation is required.

#### MITIGATION

The project does not create any direct impacts that require mitigation.





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FIGURE 7
EXISTING PLUS PROJECT
TRAFFIC VOLUMES

Tab	Table 5 - Existing Plus Project Roadway Segment Level of Service Summary	roject Roadv	way Segme	nt Level of	Service !	summs	ury				
		Existing	SOT	Ex	Existing		Droi	Existing	Existing Plus Project	roject	
Roadway Segment	Classification	Number of Lanes	"E" Capacity	ADT	v/c	ros	ADT		v/c	ros	v/c LOS $\Delta$ in v/c
Magic Mountain Pkwy											
The Old Rd to I-5 SB Ramps	Meion Amoniol	6-Lane	000	31,096	0.576	А	247	31,347 0.580	0.580	В	0.004
I-5 NB Ramps to Tourney Road	Major Arterial	Divided	34,000	31,378	0.584	В	998	32,244	0.597	В	0.016
Tourney Road to Wayne Mills Place				31,542	0.580	A	247	31,789	0.592	В	0.002
Tourney Road											
Magic Mountain Pkwy to Wayne Mills Place	Secondary Highway	4-Lane Undivided	24,000	9,892	0.412	Ą	1,113	11,005	0.459	A	0.047
South of Wayne Mills Place	1			5,801	0.242	А	123	5,924	0.247	А	0.005
Wayne Mills Place											
West of Tourney Road	Local	2-Lane	5,000	1,434	0.286	A	1,236	1,236 2,671 0.534	0.534	С	0.248

Volume on this segment was estimated. Capacity is based on the upper limits of LOS E per the City of Santa Clarita General Plan Circulation Element; ADT= Average Daily Traffic; LOS= Level of Service., Proj. ADT = Project Average Daily Traffic,

Delay 000 000 000 000 000 000 000 000 000 0
Existing Plus Project         A in Delay           13.3         B         0.200           15.2         B         0.400           19.2         B         0.300           19.5         B         0.200           20.1         C         1.1           20.9         C         1.3           5.6         A         1.2           5.9         B         1.2           6.0         B         6.0
Delay (a)         LOS (the property)           13.3         B           15.2         B           19.2         B           19.5         B           20.1         C           20.9         C           5.6         A           5.9         B           6.0         B
13.3 15.2 19.2 19.5 20.1 20.9 5.6 5.9 6.0
B 19.2 B 19.5 B 20.1 B 20.9 A 5.6 B 5.9
19.5 20.1 20.9 5.6 5.9 6.0
20.1 20.9 5.6 5.9 6.0
5.6
5.6 A 5.9 B 6.0 B
B
В

Notes:

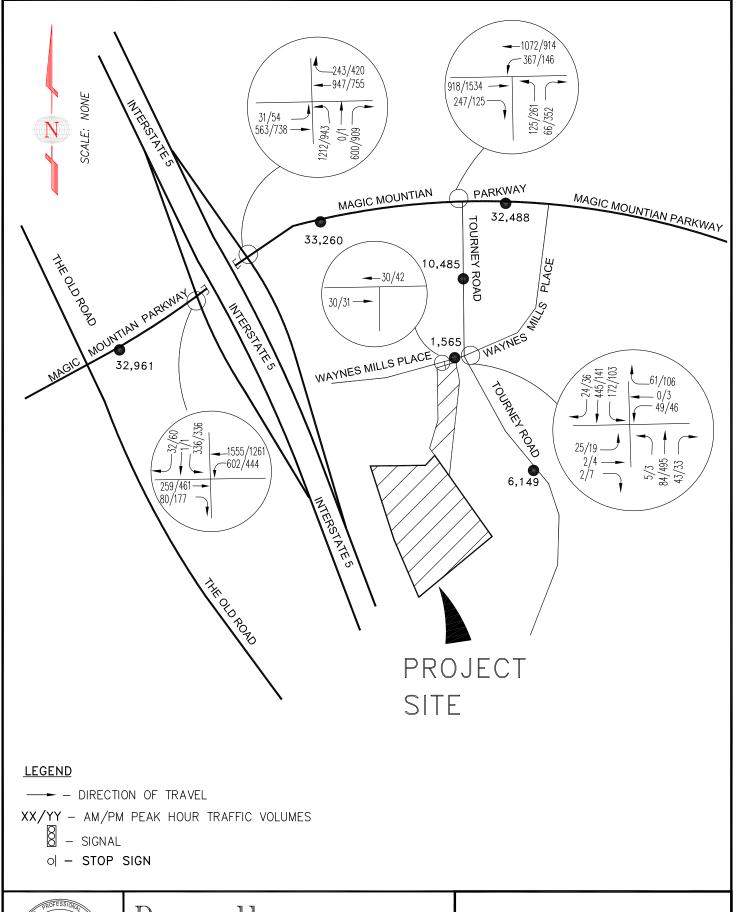
DNE = Does not exist, TWSC = Two Way Stop Control, OWSC = One Way Stop Control.

HCM is reported at signalized intersections. Sign. = Significance.

LOS calculations are based on the methodology outlined in the 2010 Highway Capacity Manual (HCM).

LOS calculations are based on the methodology outlined in the 2010 Highway Capacity Manual (HCM).

Delays at unsignalized intersections are reported based on intersection delay using Synchro 8 – Intersection Capacity Software Project Impacts are considered significant if the Intersection LOS degrades from LOS "D" of better to LOS "E" of LOS "F"

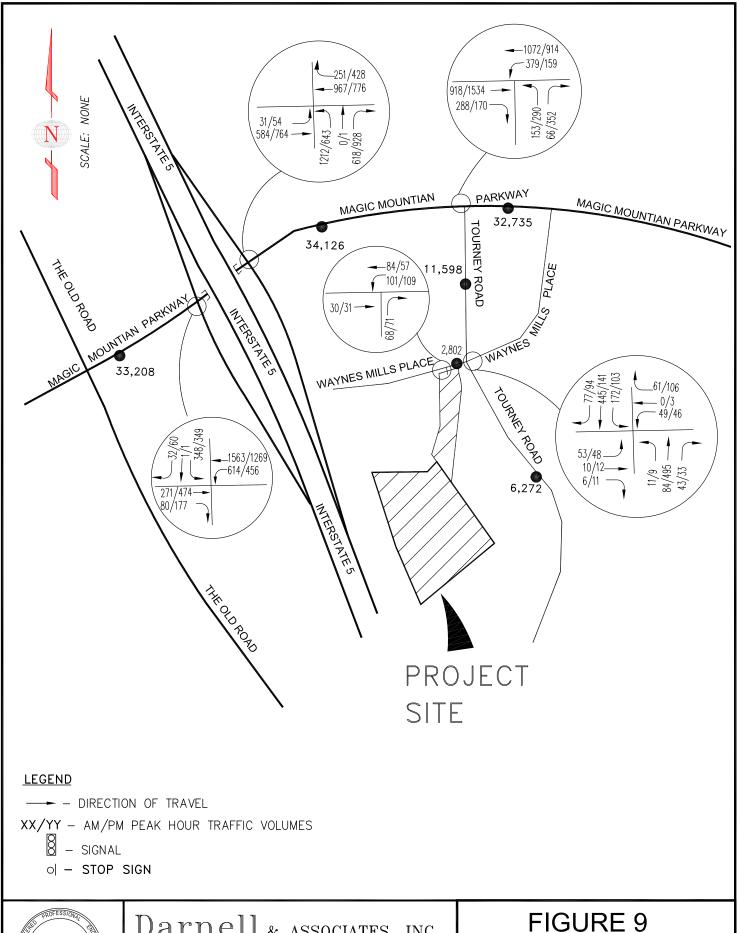




Darnell & Associates, Inc. 2870 MERCURY STREET, SUITE 207A SAN DIEGO, CA 92111 (619) 233-9373

DWG: 160605-DD DATE: DECEMBER 5, 2016 BY: JAB

FIGURE 8
2018 OPENING DAY
TRAFFIC VOLUMES





# Darnell & Associates, Inc. 2870 MERCURY STREET, SUITE 207A SAN DIEGO, CA 92111 (619) 233-9373

DWG: 160605-DD DATE: DECEMBER 5, 2016 BY: JAB

2018 OPENING DAY PLUS PROJECT TRAFFIC VOLUMES

Table 7 –Existi	Table 7 – Existing Plus Project Plus 2018 Opening Day Roadway Segment Level of Service Summary	2018 Openin	g Day Road	way Segme	nt Level	of Ser	vice Summ	ary			
		Existing Number of LOS "E"	FOS "E"	Existing Plus Ambient	Plus Amb	ient	Existing Plus Amb	<b>Existing Plus Project</b> Plus Ambient Growth	ject wth		Sign.
Roadway Segment	Classification	Lanes	Capacity	ADT	v/c	FOS	ADT	v/c	v/c LOS	∆ v/c	(g)
Magic Mountain Pkwy											
The Old Rd to I-5 SB Ramps	Moion Automol	6-Lane	24,000	32,961	0.610	В	33,208	0.615	В	0.005	No
I-5 NB Ramps to Tourney Road	Major Arterial	Divided	34,000	33,260	0.616	В	34,126	0.632	В	0.018	No
Tourney Road to Wayne Mills Place				31,542	0.584	В	32,488	0.602	В	0.018	No
Tourney Road		* '									
Magic Mountain Pkwy to Wayne Mills Place	Secondary Highway	4-Lane	24,000	10,485 0.437		Ą	11,598 0.483		Ą	0.046	No
South of Wayne Mills Place		Charvaca		6,149	0.256	А	6,272	0.261	А	0.005	No
Wayne Mills Place											
West of Tourney Road	Local	2-Lane	5.000	1,565	0.313	A	2.802	0.560 A		0.247	NO

Volume on this segment was estimated. Capacity is based on the upper limits of LOS E per the City of Santa Clarita General Plan Circulation Element; ADT= Average Daily Traffic; LOS= Level of Service, Sign. = Significance. (a) Project Impacts are considered significant if the Intersection LOS degrades from LOS "D" of better to LOS "E" of LOS "F" and increases the v/c 0.2 or greater.

Existing Plus 2018 Ambient Growth Conditions 13.7 B 15.5 B 19.5 B 19.6 B 19.6 B 19.9 B 21.1 C 4.7 A 5.2 B		Table 8 - Existing 1	ting Plus I	Project Pl	us 2018 Openin	g Day Intersec	Plus Project Plus 2018 Opening Day Intersection Level of Service Summary	vice Summa	ry	
Traffic         Peak Control         Growth Conditions         Conditions           1-5 SB Ramps & Magic Mountain Pkwy         Signal PM         AM         13.7         B         14           1-5 NB Ramps & Magic Mountain Pkwy         Signal PM         AM         19.5         B         19           Tourney Road & Magic Mountain Pkwy         Signal PM         AM         19.9         B         20           Tourney Road & Wayne Mills Place         TWSC         AM         4.7         A         6.           Project Driveway & Wayne Mills Place         OWSC         AM         5.2         B         6.           Project Driveway & Wayne Mills Place         OWSC         AM         AM         5.2         B         6.					Existing Plus 2	2018 Ambient	Existing Plus Project Plus 2018 Ambient Growth	roject Plus Growth		
Intersection         Control         Hour         Delay (a)         LOS (b)           1-5 SB Ramps & Magic Mountain Pkwy         Signal         AM         15.5         B         B           1-5 NB Ramps & Magic Mountain Pkwy         Signal         AM         19.5         B         B           Tourney Road & Magic Mountain Pkwy         Signal         AM         19.9         B         B           Tourney Road & Wayne Mills Place         TWSC         AM         4.7         A         A           Project Driveway & Wayne Mills Place         OWSC         AM         5.2         B         B			Traffic	Peak	Growth C	onditions	Conditions	ons		
1-5 SB Ramps & Magic Mountain Pkwy         Signal PM         AM 19.5 B B         B         B           1-5 NB Ramps & Magic Mountain Pkwy         Signal PM         AM 19.5 B B         B         B           Tourney Road & Magic Mountain Pkwy Road & Wayne Mills Place         TWSC PM 5.2 B         AM 4.7 A B         A           Project Driveway & Wayne Mills Place         OWSC PM 5.2 B         AM 5.2 B         B	#	Intersection	Control	Hour	Delay (a)	(q) SOT	Delay (a)	(p) SOT	∆ in Delay	Significant (c)
1-5 3D Rainps & Magic Mountain Pkwy         Signal Signal         PM         15.5         B         B           1-5 NB Ramps & Magic Mountain Pkwy         Signal Signal         AM         19.6         B         B           Tourney Road & Magic Mountain Pkwy         Signal PM         AM         4.7         A           Tourney Road & Wayne Mills Place         TWSC         PM         5.2         B           Project Driveway & Wayne Mills Place         OWSC         AM         DNE         DNE	-	I & CD Domes 9. Mexica Memorina Direction	Cimel	AM	13.7	В	14.1	В	0.4	No
1-5 NB Ramps & Magic Mountain Pkwy         Signal Pkwy         AM Pigen         19.5 B B         B         P           Tourney Road & Magic Mountain Pkwy         Signal Pkw         AM Pigen         19.6 B B         B         B           Tourney Road & Wayne Mills Place Project Driveway & Wayne Mills Place Project Driveway & Wayne Mills Place Pkw         TWSC Pkw AM Pkw         AM Pkw         5.2 B         B	1	1-3 3D Kamps & Magic Mountain FRWy	Signal	PM	15.5	В	15.9	В	0.4	No
19.00 Rainps & Magic Mountain Pkwy         Signal PM         PM         19.6         B         B           Tourney Road & Magic Mountain Pkwy         Signal PM         AM         19.9         B         C           Tourney Road & Wayne Mills Place Project Driveway & Wayne Mills Place Project Drive Project	r	I S ND Domes & Marie Manufolis Direct	Cionel	AM	19.5	В	19.7	В	0.2	No
Tourney Road & Magic Mountain Pkwy         Signal PM         AM PM         19.9 B         B           Tourney Road & Wayne Mills Place         TWSC PM         AM A.7 A         A B           Project Driveway & Wayne Mills Place         OWSC AM DNE         DNE	1	1-5 IND Namps & Magic Mountain Frwy	Signal	PM	19.6	В	19.8	В	0.2	No
Tourney Road & Wayne Mills Place         TWSC         AM         4.7         A           Project Driveway & Wayne Mills Place         OWSC         AM         DNE	C	Townson Dood & Marie Manuelain Direct	Cimol	AM	19.9	В	20.7	С	8.0	No
Tourney Road & Wayne Mills Place         TWSC         AM PM S.2         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B         A B B	n	Tourney Road & Magic Mountain Frwy	Signal	PM	21.1	C	22.4	С	1.3	No
Project Driveway & Wayne Mills Place OWSC AM DNE DNE		Townson Dodd 9- Worms Mills Disse	Com	AM	4.7	A	6.1	A	1.4	No
Project Driveway & Wayne Mills Place OWSC AM DNE		Tourney Road & Wayne Mins Flace	I W SC	PM	5.2	В	9.9	В	1.4	No
rioject Diiveway & wayiie mins riace Owo May	V	Design Designation & Worner Mills Dloop	Jamo	AM	70	1	5.9	A	5.9	No
	C	rioject Diiveway & wayne mins riace	Owac	PM	D	E	5.7	A	5.7	No

DNE = Does not exist, TWSC = Two Way Stop Control, OWSC = One Way Stop Control.

(a) HCM is reported at signalized intersections.
(b) LOS calculations are based on the methodology outlined in the 2000 Highway Capacity Manual (HCM).
Delays at unsignalized intersections are reported based on intersection delay using Synchro 8 – Intersection Capacity Software
(c) Project Impacts are considered significant if the Intersection LOS degrades from LOS "D" of better to LOS "E" of LOS "F"

## SECTION V - SUMMARY OF FINDINGS AND CONCLUSIONS

The following list provides a summary of the key findings for the project:

- The project is forecasted to generate a net increase of approximately 1,237 daily trips with 99 AM peak-hour trips and 105 PM peak-hour trips.
- All study area roadway segments are expected to operate at an acceptable LOS "C" or better for Existing, 2018 Opening Day and 2018 Opening Day Plus Project Conditions.
- The addition of project traffic to the 2018 Opening Day Conditions does not result in a significant impact on the roadway segments analyzed. Therefore no mitigation is required.
- All study area intersections, including the project driveway, are expected to operate at an acceptable LOS "C" or better during the AM and PM peak hours with the addition of project traffic to 2018 Opening Day Conditions.
- The addition of project traffic to the 2018 Opening Day Conditions does not result in a significant impact on the intersections analyzed. Therefore no mitigation is required.

## **APPENDIX A**

24-Hour Segment Counts
 AM/PM Peak Hour Turn Counts
 City of Santa Clarita Traffic Guidelines

➤ 24-Hour Segment Counts

## VOLUME

## Wayne Mills PI E/O Driveway #3

Day: Monday Date: 7/4/2016

	DAILY TOTAL	5			VB O		5B 0	73.4	700					1	Tota
AM Perio	d NB SB		EB	TY	VB		TOTA						-		1,43
00:00			7	_	.5	1	22	12:00	NB SI		111		NB		TOTA
00:15			9		.0		19	12:15			13		6		19
00:30			5		5		10	12:30			11		11		22
00:45			3 24		3 33			7 12:45			12 47		9		20
01:00	117		10	-	3		13	13:00		-	.3		10 3		22
01:15			2			113	7	13:15			8		5		.8
01:30 01:45			5	5		1	.0	13:30			5		8		.6
02:00			4 21				5 3	5 13:45			3 35		1 5 19		7
02:15	1		5	2			7	14:00			2		0		2
02:30	A.		0	1			1	14:15		8			3	1	
02:45			0 6	1			2	14:30		7			5	1	
03:00			0 6	1		- 1				4					
03:15			2	2				15:00		6		-		1	
03:30	1		1	0		1 3		15:15		4		3		7	
03:45			9 4	0	3	2	-	15:30		6		1		19	
04:00		-		0	3	1 4				8		6	26		
04:15		0		0		0		16:00 16:15		9		8		17	
04:30		i		1		2		16:30		10		10		20	
04:45		Ó		5	6	5				7		4		11	
05:00		2		2	-	4	11	17:00		9	35	6		15	
05:15		2		5		7		17:15		5		6		11	
05:30	1	3		2		5		17:30		2		10	)	12	
05:45		3	10	4	13	7	23	17:45		6		9	74	15	
06:00		4		3		7		18:00		4	17	4	29	8	46
06:15		6		4		1.0		18:15		5		2		7	
06:30		4		6		10		18:30		7 10		9		16	
06:45		3	17	7	20	10		18:45		2		14		24	
07:00		7		2		9		19:00		6	24	9	34	11	58
07:15 07:30		2		12		14		19:15		10		8		14	
07:30		7		10		17		19:30		4		3		13	
08:00		8	24	17	41	25	65	19:45		7	27	7	22	8 14	49
08:15		9		3		12		20:00		3		8	44	11	49
08:30		4		9		13		20:15		7		13		20	
08:45		11 9	22	8	22.1	19		20:30		8		10		18	
09:00		19	33	8	28	17	- 61	20:45		2	20	9	40	11	60
09:15		17		16		35		21:00		11		15	- 10	26	- 00
09:30		21		8		25		21:15		8		7		15	
09:45		23	80	15 17	rc l	36	420	21:30		3		9		12	
10:00		27	00	10	56	<u>40</u> 37	136	21:45		7	29	11	42	18	71
10:15		26		10				22:00		7		13		20	-
10:30		22		13		36		22:15 22:30		6		17		23	
10:45		21	96	11	44	32	140	22:45		4		14		18	
11:00		20		12	44	32	140	23:00		9	26	20	64	29	90
11:15		15		7		22		23:15		8		9		17	
11:30		23		5		28		23:30		7		9		16	
11:45		11	69	8	32	19	101	23:45		10	20	8	122	18	1
OTALS			389	-	295		684	TOTALS		5	30	8	34	13	64
PLIT %				_		-	1 = 10.1				345		405		750
1			56.9%		43.1%		47.7%	SPLIT %			46.0%		54.0%		52.3%
	DAILY TOTALS			NB		SB		EB	WB					To	(tel)
		-		0	-	(1)		734	700					1,4	
eak Hour			09:45		09:00		09:30	PM Peak Hour			12:00		22:00		22-00
k Volume			98		56		149	PM Pk Volume			47				22:00
lr Factor			0.907		0.824		0.931	Pk Hr Factor					64		90
Volume			57		69		126	4 - 6 Volume			0.904		0.800		0.776
eak Hour			08:00		07:15		20,000	4 - 6 Peak Hour			52		57		109
k Volume			33		42		0.000	4 - 6 Pk Volume			16:00		16:45		15:00
Ir Factor											35		31		63

## VOLUME

## Tourney Rd Bet. Magic Mountain Pkwy & Wayne Mills Pl

Day: Thursday Date: 7/28/2016

AM Period 00:00 00:15 00:30 00:45 01:00 01:15 01:30 01:45 02:00 02:15 02:30 02:45 03:00 03:15 03:30 03:45 04:00	13 9 3 6 31 4 5 4 1 14 6 2 2 2 2 2 12	SB EB 7 5 5 5 5 3 1 13 3 115	NB 5,001 WB	8 10 7 2 2	12:00 12:15 12:30 12:15 12:30 12:45 13:00 13:15	0 NB 137 132 104	NB 0 SB 76 90 96 95 115 377	EB	WB	TOTA 213 222 200
00:00 00:15 00:30 00:45 01:00 01:15 01:30 01:45 02:00 02:15 02:30 02:45 03:00 03:15 03:30 03:45 04:00	13 9 3 6 31 4 5 4 1 14 6 2 2 2 2 2 12	7 5 5 5 5 22 4 5 3 1 13 3		TOTA 20 14 8 11 5 8 10 7 2 2 2	12:00 12:15 12:30 12:45 13:00 13:15	137 132 104 116 48	SB 76 90 96 96 39 115 377	EB	WB	10,23 TOTA 213 222
00:00 00:15 00:30 00:45 01:00 01:15 01:30 01:45 02:00 02:15 02:30 02:45 03:00 03:45 03:30 03:45 04:00	13 9 3 6 31 4 5 4 1 14 6 2 2 2 2 2 12	7 5 5 5 5 22 4 5 3 1 13 3	WB	20 14 8 11 5 8 10 7 2 2	12:00 12:15 12:30 12:45 13:00 13:15	137 132 104 116 48	76 90 96 89 115 377	ЕВ	WB	213 222
00:15 00:30 00:45 01:00 01:15 01:30 01:45 02:00 02:15 02:30 02:45 03:00 03:15 03:30 03:45 04:00	9 3 6 31 4 5 4 1 14 6 2 1 2 2 12 5	5 22 4 5 3 3 1 13 3 11 15 5 5		14 8 11 5 8 10 7 2 2	12:15 12:30 12:45 13:00 13:15	137 132 104 116 48	76 90 96 89 115 377	20	VVB	213 222
00:30 00:45 01:00 01:15 01:30 01:45 02:00 02:15 02:30 02:45 03:00 03:15 03:30 03:45 04:00	3 6 31 4 5 4 1 14 6 2 1 2 2 12 5	5 22 4 5 3 3 1 13 3 11 15 5 5		8 11 5 8 10 7 2 2	12:15 12:30 12:45 13:00 13:15	132 104 116 48	90 96 89 115 377			222
00:45 01:00 01:15 01:30 01:45 02:00 02:15 02:30 02:45 03:00 03:15 03:30 03:45 04:00	6 31 4 5 4 1 14 6 2 1 2 2 12 5	5 22 4 5 3 3 13 13 3 11 15		11 5 8 10 7 2 2	12:30 12:45 13:00 13:15	104 116 48	96 39 115 377			
01:00 01:15 01:30 01:45 02:00 02:15 02:30 02:45 03:00 03:15 03:30 03:45 04:00	4 5 4 1 14 6 2 2 2 12 5	4 5 3 1 13 3 11 5		11 5 8 10 7 2 2	12:45 13:00 13:15	116 48	89 115 377			200
01:15 01:30 01:45 02:00 02:15 02:30 02:45 03:00 03:15 03:30 03:45	5 4 1 14 6 2 2 2 12 5	5 3 1 13 3 11 5		8 10 7 2 2	13:00 13:15					
01:30 01:45 02:00 02:15 02:30 02:45 03:00 03:15 03:30 03:45	4 1 14 6 2 1 2 2 2 12	3 1 13 3 11 5		10 7 2 2	13:15					231 8
01:45 02:00 02:15 02:30 02:45 03:00 03:15 03:30 03:45	1 14 6 2 1 2 2 12 5	1 13 3 11 5	******	7 2 2		85	135 109			213
02:00 02:15 02:30 02:45 03:00 03:15 03:30 03:45	6 2 2 2 2 12 5	3 11 5	****	2 2	13:30	84	99			194
02:15 02:30 02:45 03:00 03:15 03:30 03:45	2 1 2 2 5 12	1 <b>1</b> 5	******			91 33				183
02:30 02:45 03:00 03:15 03:30 03:45 04:00	2 2 12 5	5		9	14:00	78	76 459			207 79
02:45 03:00 03:15 03:30 03:45 04:00	2 12 5			13	14:15	78				154
03:00 03:15 03:30 03:45 04:00	5			7	14:30	78	88			166
03:15 03:30 03:45 04:00		2 21		4 3		91 32	102			180
03:30 03:45 04:00	3 (	1		6	15:00	91				191 69
03:45 04:00		0		3	15:15	81	85			176
04:00		4		12	15:30	101	87			168
	3 19	1 9		7 28			69			170
	0	3		3	16:00	83 356				154 66
04:15	3 6	5		9	16:15	105	85			190
04:30	8 6	i		14	16:30	101	78			179
04:45	7 18 1	1 26		18 44		137	60			197
05:00	11 1:			24		136 479				209 77
05:15	25 2:				17:00	182	66			248
05:30	23 15			48	17:15	95	69			164
05:45	24 83 17			38	17:30	127	55			182
06:00	29 24			41 151		94 498	46 236			140 734
06:15	21 40			53	18:00	95	51			146
06:30	43 34			61	18:15	57	60			117
06:45	31 124 77			77	18:30	63	48			111
	33 55	175		108 299		61 276				
	39 97			88	19:00	40	34			
				136	19:15	41	33			74
				156	19:30	45	34			74
				195 575	19:45	37 163	30 131			79
				191	20:00	41	31			67 294
				232	20:15	36	35			72
	41 138			179	20:30	39	29			71
	48 182 145			193 795	20:45	21 137	24 119			68
	70 116			186	21:00	50	33			45 256
	82 88			170	21:15	20	16			83
09:30	85 99			184	21:30	25	30			36
	75 312 102	405		177 717	21:45	27 122				55
	86 120			206	22:00	22	30 109 18			57 231
	82 99			181	22:15	16				40
	.02 72			174	22:30	14	23			39
	72 342 99	390		171 732	22:45		11			25
	.01 84			185	23:00		10 62			19 123
	86 91			177	23:15	15	13			28
	25 91			216		13	6			19
11:45 1:	10 422 89	355			23:30	11	9			20
TOTALS	1709	to the second second	The second second	199 777	23:45	9 48	15 43			24 91
UIAL	1709	2522		4231	TOTALS	3292	2707	TOYAL STATE	100	Part of the latest and the latest an
PLIT %	40.4%	59.6%	THE RESERVE	44 404	CDUMA		2707	and the state of	the state of	5999
A DESCRIPTION OF THE PERSON OF		33.070		41.4%	SPLIT %	54.9%	45.1%	KE DE LUE		58.6%
	DAILY TOTA	LS	NB	SB	EB	WB	THE PLAN	11000		Total
			5,001	5,229	0	0				Total 10,230
Peak Hour	11:30	07:45	Anna Caranta	11:30	DM Deal-H				To the second	10,250
Pk Volume	504	623		Fig. 1. Sept. 1. Sept	PM Peak Hour	16:15	13:00	FILE	A STATE OF	12:00
Hr Factor	0.920	0.880		850	PM Pk Volume	556	459	A TAKE		866
Volume	332		They are the	0.957	Pk Hr Factor	0.764	0.850			0.937
Peak Hour			0 0	1370	4 - 6 Volume	977	532	0	-	
	08:00	07:45		07:45	4 - 6 Peak Hour	16:15	16:00		0	1509
Pk Volume	182	623	0 0		4 - 6 Pk Volume	556		A Day St.		16:15
Hr Factor	0.827		0.000		Pk Hr Factor	0.764	296 0.871	0.000	8	833

## VOLUME

## Tourney Rd S/O Wayne Mills Pl

Day: Thursday Date: 7/28/2016

	DAILY	TOTALS	The second secon	NB	SB		ЕВ	WB	Jana S.	and the same	TALL	To
AM Perio	od ND	00			,059		0	0				5,5
00:00	d NB	SB 6	EB \	NB	TOTA	The second secon	od NB	in Sala	SB	EB	WB	TO
00:15	4	8			18 12	12:00	42		53			95
00:30	10	5			15	12:15 12:30	47		53			100
00:45	6 32	3 22				4 12:45	42 33		56			98
01:00 01:15	3	6			9	13:00	49		49 211 48			82
01:15	3	3		183	6	13:15	40		65			97
01:45	5 15	6			10	13:30	50		58			105
02:00	7	4 19 8			9 3		48		37 208			108
02:15	8	4			15	14:00	44		42			85 86
02:30	5	2			12	14:15	30		13			73
02:45	5 25	3 17			7	14:30	50		15			95
03:00	5	2			8 42 7		46		10 170			86
03:15	1	6			7	15:00	43		3			96
03:30	5	8			3	15:15 15:30	45		1			96
03:45	5 16	3 19			3 35		41		4			75
04:00	8	7		1	5	16:00	45		7 185			92
04:15	9	13		2		16:15	45	3				80
04:30	13	4		1	7	16:30	50	4				86
04:45	16 46	8 32		2			49	185 5				90
05:00	14	10		2		17:00	54	4				103
05:15 05:30	21	13		3	4	17:15	50	6				97
05:45	26 19 80	9		3.	5	17:30	65	5.				111
06:00		25 57		4		17:45	51	220 7				120
06:15		21 26		48		18:00	67	4:				123 4
06:30		26		55		18:15	51	44				108
06:45		39 112		55		18:30	50	45				95 95
07:00		25		64			50	218 37				
07:15		45		56		19:00	45	53				98 98
07:30		44		75		19:15	43	45				88
07:45		25 139		86 57		19:30	33	52				85
08:00		36		71	274	19:45		157 54				90 3
08:15	28	24		52		20:00 20:15	41	48				89
08:30	32	31		63		20:30	37	49				86
08:45		23 114		58	244	20:45	48 36	46				94
09:00		36		66	211	21:00	40	162 57	200			93 36
09:15		33		71		21:15	42	38 36				78
09:30		17		72		21:30	30	29				78
09:45 10:00		4 140		79	288	21:45		138 27	130			59
10:00		8		70	ELLE?	22:00	21	27	130			53 26
10:30	34 3 40 4			68		22:15	22	21				48
10:45				80		22:30	16	12				43
11:00	42 138 4			82	300	22:45	15	74 23	83			28 38 15
11:15	35 3			82		23:00	17	26				
11:30	34 5			73		23:15	17	11				43 28
11:45	48 160 5			92		23:30	14	22				36
TOTALS	A STATE OF THE PARTY OF THE PAR	San	- Annual Control of the Control of t	105	352	23:45	8 5	6 12	71			20 12
IUIALS	1035	1025			2060	TOTALS	10	905	2034	173 0000	Samuel Samuel	production of the second
SPLIT %	50.2%	49.8%		ATTENDED	34.3%	SPLIT %		Maria de la compansión de			Estable S	393
Write Control	Assessment of the				0 11570	SI LITYS	40	1.4%	51.6%	S. Victoria	M. San	65.7
	DAILY TOT	TALS	NB 2 040	SB		EB		VB		TO THE		Total
MA Deed	Transfer of the con-		2,940	3,059	200 0 0,000	0		0	200	100		5,999
M Peak Hour	11:45	11:30	ERSETS OF	1	11:45	PM Peak Hour	17	:30	17:00	To Aug.		
M Pk Volume	179	221			398	PM Pk Volume		34				17:1
Pk Hr Factor	0.932	0.953	A. Despera		0.948	Pk Hr Factor	0.8		231			462
7 - 9 Volume	265	253	0	0	518	4 - 6 Volume			0.802	-	Charles de la Constitución de la	0.93
- 9 Peak Hour	07:15	07:15			CONTRACTOR OF STREET	4 - 6 Peak Hour	40		405	0	0	810
9 Pk Volume	139	150	0	0	The second second	4 - 6 Pk Volume	17:		17:00			17:00
Pk Hr Factor	0.827	0.833	0.000	0.000	0.840	Pk Hr Factor	22		231	. 0	0	451
				SIDUV.	0.040	FR HI Factor	0.8	46	0.802	0.000	0.000	0.917

## VOLUME

## Magic Mountain Pkwy Bet. I-5 NB Ramps & Tourney Rd

Day: Thursday Date: 7/28/2016

SALE OF	1000		ELINE NES	AL D		VID.	Name of the last	-						10_55	00_003		
	DAILY	TOTALS			-	VB O	_	SB			WB		1	al ii	12		Tota
AND Deviler	al nuo						40000	0	16,	525 1	5,059	- 0.00					32,5
AM Period	d NB	SB		В		VB		TOTA	L PM Perio	od NB	SB	The said	В	A	VB		TOTA
00:00				0		4		4	12:00				53	-	27	49	
00:30				4		8		2	12:15	1			48		93	54	
00:45			1	5	3			1	12:30	1		26			82	54	
01:00	-		2	9 12					46 12:45	-		24			49 105		
01:15			2		2		5		13:00			26			36	55	
01:30	1		2		1		4		13:15			24	9	27		52	
01:45			1		1:		3		13:30			21	.3	24		458	
02:00			30		13							20	0 927				
02:15	1		22		7		4.		14:00			20	6	24	7	453	
02:30			8		18		2		14:15			22	4	21		437	
02:45			8				26		14:30			24	6	24		487	
03:00	-		10		6							22		24	7 948		
03:15			13		7		16		15:00			24		25	8	498	3
03:30			23	1	19				15:15			293		26	8	561	
03:45			28		18		42		15:30			306		24		549	
04:00			19		21							353		2 25	3 1022		
04:15			25		28		40		16:00			373	3	24.		618	
04:30			52		54		53		16:15			358		27	2	630	
04:45			68		60		100		16:30	/		391		248		639	
05:00		-	57		94	103						392	1514	290	1055		
05:15			63		135		151		17:00			402		276		678	
05:30			67		147		198		17:15	1		433		268	3	701	
05:45			72	259	193		214		17:30			366		223	3	589	
06:00			91	233	180		265					405	1606				262
06:15			87				271		18:00			288		248		536	
06:30			133		169		256		18:15			277		215		492	
06:45			177	488	220		353		18:30	1		244		177		421	
07:00			155		237	806	414					218	1027	195	835	413	186
07:15	-		177		184		339		19:00			222		174		396	100
07:30			233		250 247		427		19:15			203		163		366	
07:45			285	850	279	000	480		19:30	1		177		170		347	
08:00			270	050	257	960	564	1810				189	791	174	681	363	147
08:15			248				527		20:00			181		136		317	277
08:30			227		253		501		20:15	1		150		152		302	
08:45			240	985	233	000	460		20:30			138		165		303	
09:00			236	303	243	986	483	1971	20:45			127	596	153	606	280	1202
09:15			206		247		483		21:00			141		173		314	120
09:30			228		245		451		21:15			135		164		299	
09:45			257	027	235	044	463		21:30			161		144		305	
10:00			208	927	217	944	474	1871	21:45			138	575	124	605	262	1180
10:15			243		239		447		22:00			97		110	- 005	207	1100
10:30			208		246		489		22:15			96		96		192	
10:45			200	000	229		437		22:30			78		82		160	
11:00				859	213	927	413	1786	22:45			63	334	63	351	126	685
11:15			243		244		487		23:00	1		61		66	331	127	003
11:30			211		252		463		23:15			54		52	- 1	106	
11:45			236		292	1500	528		23:30			50		45		95	
STREET, SQUARE, SQUARE	Marian Statement	-	234	924	238	1026	472	1950	23:45		-	59	224	24	187	83	411
OTALS		24327	No.	5822		6660	L	12482	TOTALS			STATE	10703	740	9399	27110	20102
PLIT %	D. BEN	Nalla.		46.6%	TER	53.4%	T	38.3%	SPLIT %		The state of the s	TE UTE	53.2%	100	COLUMN TO SERVICE STATE OF THE PERSON SERVICE STATE OF THE	and the same	APRIOR
No. 15	Danie				NB	144	SB				- A Laboratory		JJ.270	S. Jelli	46.8%		61.79
	DAILY TO	TALS			0	-	0		EB	WB						Tot	_
Peak Hour			-						16,525	16,059			May de	510		32,5	84
		F 37 30 1		07:30		11:30	THE	07:30	PM Peak Hour	The state of	NO. THE	35 (1)	16:30	100	12:15	-	16.30
k Volume				1036		1050		2072	PM Pk Volume								16:30
	Mary Mary Park	Billion Kan		0.909	E. Calo	0.896		0.918	Pk Hr Factor				1618		1110		2700
		0		1835		1946	100	3781	4 - 6 Volume		-	The same	0.934	-60	0.947		0.963
Hr Factor Volume	0	The second second		1033													
Volume Peak Hour								COLUMN TO A STATE OF		0	0		3120		2071		5191
Volume	o o			07:30		07:30		07:30	4 - 6 Peak Hour				3120 16:30		2071 16:15		5191 16:30
Volume Peak Hour		0.000						COLUMN TO A STATE OF		0.000	0					Vinda	

#### VOLUME

## Magic Mountain Pkwy Bet. The Old Rd & I-5 SB Ramps

Day: Thursday Date: 7/28/2016

Art Cont	DAILY TOTALS	1	177	N	В	9	SB	EB	WB				_		1	Total
(Asia Later	PARTITIONAL		100	(			0	12,28							1	Tota 34,74
AM Period	NB SB	EB		W			TOTAL	PM Period	NB	SB	E	Seu G	W	R	_	ТОТА
00:00 00:15		20 16		56		7		12:00			22		39.		62	-
00:30		7		42		4		12:15 12:30			12:		46		58	
00:45	the state of the s	19	- 62								117		415		533	
01:00		19		20	)	39		13:00			122					
01:15 01:30		6		20		26	5	13:15			135 111		339		474	
01:45		14		26		40		13:30			213		303		434	
02:00		8	53			34					121				3 329	
02:15		13		24		32		14:00			189		275		464	
02:30		6		32		35		14:15			165		246		411	
02:45		10	37	29	107	38		14:30 14:45			185		259		444	
03:00		- 9	-	10	107	19		15:00			134					
03:15		10		22		32		15:15			160		290		450	
03:30		5		36		41		15:30			218 261		335		553	
03:45 04:00		12	36	60	128	72	164		100		256	895	287 329	1741	548	
04:00		1	-	37		38		16:00			241	693	312	1241	585 553	
04:30		5		50		55		16:15			243		328		571	
04:45		16	30	95	200	111		16:30			266		312		578	
05:00		12	30	118	300	126			-		271	1021		1311	630	
05:15		20		154		174		17:00 17:15			268		344		612	COUNTY.
05:30		16		254		270		17:15			295		306		601	
05:45		35	83	323	834	358		17:45			253	4070	327		580	
06:00		38		178		216		18:00			254	1070	347	1324	601	239
06:15 06:30		36		217		253		18:15			209		417 338		645	
06:45		39		270		309		18:30			357		274		547	
07:00		32	145	359	1024	391	1169				286	1080	289	1318	631 575	239
07:15		52 65		297		349		19:00			270	2000	246	1310	516	259
07:30		71		353 314		418		19:15			219		283		502	
07:45		90	278	368	1332	385 458	1610	19:30 19:45			275		212		487	
08:00		61	2,0	338	1332	399	1010	20:00			322	1086	209	950	531	2036
08:15		81		292		373		20:15		,	301		178		479	100
08:30		71		266		337		20:30			244		192		436	
08:45 09:00		75	288	292	1188	367	1476	20:45			346 393	1284	191 157	710	537	2000
09:00		89		357		446		21:00			343	1204	172	718	550 515	2002
09:30		126		320		446		21:15			247		157		404	
09:45		126 136	477	389	1400	515		21:30			122		149		271	
10:00		162	4//	415 500	1482	552 662	1959	21:45			129	841	120	598	249	1439
10:15		129		504		633		22:00 22:15			71		123		194	
10:30		142		503		645	4	22:30			85		102	- 1	187	
10:45		167	600	511	2018	678	2618	22:45			96		84		180	
11:00		119	-	486		605	A FACT	23:00		-	34 51	286	74	383	108	669
11:15 11:30		114		488	10	602	State of	23:15			70		87		138	
11:45		155	222	432	SCHOOL	587		23:30			36		65 45		135	
Carriera Million and American	The state of the same of the s		606	420	1826	638	2432	23:45			31	188	57	254	81 88	442
TOTALS	Control of the Control		2695	-	10477	133	13172	TOTALS		SUSTER	EU V	9591	difference	11981	Colonia and	21572
SPLIT %	A CONTRACTOR	2	20.5%	25	79.5%		37.9%	SPLIT %		Water.	-	14.5%	1	55.5%	-	62.1%
	DAILY TOTALS	1-	100	NB		SB	- 1	EB	WB							
	PARE TOTALS		200	0		0	11-7	12,286	22,458					1-4	Tot:	-
Peak Hour	the state of the s		11:30		10:00	THERE	10:00	PM Peak Hour					land.		The second	
Pk Volume			721		2018		PROMERCAL	PM Pk Volume				20:30		12:00		17:15
Hr Factor	Contract of the last		0.794		0.987		0.965	Pk Hr Factor				1329		1628		2427
9 Volume	0 0		566		2520	70.01	3086	4-6 Volume		الماسات		0.845		0.885		0.941
Peak Hour			07:30		07:15		Du1090901	4 - 6 Peak Hour	0	D		091		635		4726
Pk Volume	0		303		1373		DOMESTICAL PROPERTY.	- 6 Pk Volume				6:30		6:15		16:45
Hr Factor	0.000 0.000		0.842		0.933		0.906	Pk Hr Factor	0	0		1100		1343		2423
	and the second s					10.00	0.500	CK III FACTO	0.000	0.000	0	.932	- 0	.935		0.962

#### VOLUME

## Magic Mountain Pkwy Bet. Tourney Rd & Wayne Mills Pl

Day: Tuesday Date: 11/1/2016

Pk Hr Factor

0.000

0

0.000

886

0.908

City: Santa Clarita
Project #: CA16_5710_001

1810

0.943

997

0.977

2807

0.959

FE TO .	DAILY TOTALS	Wie	44.7	NB		SB		EB		WB	100	( = , "	4	5			Total
		0		0		16,532	15,010		357						1,542		
AM Period	NB SB	EB		WE		TO	TAL	PM Period	NB	21.	SB	EB	7.5	WE		T	OTAL
00:00		36		23		59		12:00				254		195		449	Control of the Control
00:15		36		23		59		12:15				264		209		473	
00:30		28		10		38		12:30				268		242		510	
00:45		26	126	8	64	34	190	12:45				254	1040	231	877	485	
01:00 01:15		17		13		30		13:00				260		238		498	
01:15		19		8		27		13:15	-			226		200		426	
01:45		19		5		24	- Section	13:30				241		228		469	
02:00		16	71	4	30	20	101	13:45				225	952	189	855	414	1807
02:15		17		5		22		14:00				242		213		455	7
02:30		12		1		13		14:15				226		235		461	
02:45		15 14	го	12	22	27	04	14:30				240		228		468	
03:00		9	58	5	23	19	81	14:45				266		205	881	471	
03:15		9		9		18		15:00				272		228		500	
03:30	And the second second	10		12		21		15:15				323		250		573	
03:45		14	42	21		31	101	15:30				367		267		634	
04:00		19	42	22	59	31 41	101	15:45	_			361	1323	222	967	583	2290
04:15		15						16:00				354		219		573	
04:30		31		35 55		50 86		16:15				387		207		594	
04:45		51	116	78	190	The Control of the Co	200	16:30				389		205		594	
05:00		51	110	85	190	129 136	306	16:45 17:00				439	1569	244	875	683	2444
05:15		56		159		215		17:15				480		252		732	
05:30		58		208		266		17:30				438		246		684	
05:45		86	251	224	676	310	927	17:45				453		255	2223	708	
06:00		67	231	211	0/0	278	921	18:00				417	1788	237	990	654	2778
06:15		99		261		360		18:15				361		274		635	
06:30		107		319		426		18:30				367		228		595	
06:45		143	416	298	1089	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1505	18:45				318		189	200	507	
07:00		127	410	290	1005	417	1505	19:00				308	1354	194	885	502	2239
07:15		139		330		469		19:15				269		174		443	
07:30		184		338		522	F 1	19:30				249		177		426	
07:45		244	694	335	1293	22-22-25-24	1987	19:45				215	000	152		367	
08:00		218	054	329	1233	547	1307	20:00				197	930	139	642	336	1572
08:15		232		290		522		20:15				167		144		311	
08:30		192		276		468		20:30				143		127		270	
08:45		216	858	251	1146	The State of the S	2004	20:45				157	F00	117	100	274	4000
09:00		212	050	225	2270	437	2004	21:00				132	599	98	486	230	1085
09:15		161		202		363	350	21:15				131		133		264	
09:30		163		178	1.11	341	-	21:30				121		101		222	
09:45		188	724	222	827	Charles Co. Co.	1551	21:45				95 104	451	82	200	177	007
10:00		170		166	027	336	.551	22:00					451	70	386	174	837
10:15		163		176		339	200	22:15				103		61		164	
10:30		205		169		374		22:30				92 68		42		134	
10:45		200	738	185	696		434	22:45				69	332	60	199	128	F24
11:00		221		177	220	398	154	23:00	_	-		58	552	36 40	133	105	531
11:15		215		189		404	100	23:15				52				98	
11:30		234		177	-1	411	- 1	23:30				44		40 34		92	
11:45		257	927	205	748		675	23:45				44	199	12	126	78	225
TOTALS			5021	Man.	6841	THE RESERVE	1862	TOTALS				45	11511	12	126 8169	57	325 19680
SPLIT %			42.3%		57.7%	3	7.6%	SPLIT %		VI S		- 45	58.5%		41.5%		62.4%
100	DAILY TOTALS	SI W		NB		SB		EB	V	/B	130					To	tal
	PAIL! IOTALS			0		0		16,532	15,	010							542
M Peak Hour			11:45		07:15	0	7:30	PM Peak Hour					16:45		17:15		16:45
M Pk Volume			1043		1332		The state of the s	PM Pk Volume							17:15		16:45
Pk Hr Factor			0.973		0.985		255/02/23						1810		1012		2807
7 - 9 Volume	0 0	1001	1552	1000			.937	Pk Hr Factor					0.943	112	0.923		0.959
- 9 Peak Hour	0				2439		991	4 - 6 Volume			0		3357		1865		5222
- 9 Pk Volume	0		07:45		07:15		200000	4 - 6 Peak Hour					16:45		16:45		16:45
- J FK Volume	0 0		886		1332	2	170	4 - 6 Pk Volume	- (	Y	n		1910		007		2007

2170

0.937

4 - 6 Pk Volume

Pk Hr Factor

0.000

0.000

1332 0.985

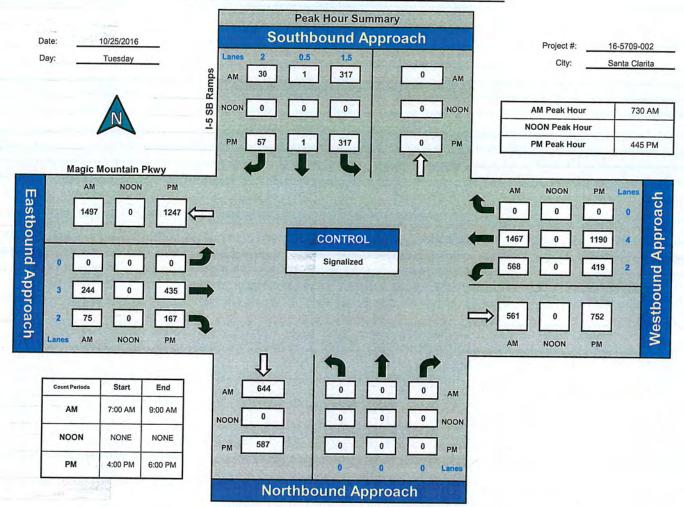
➤ AM/PM Peak Hour Turn Counts

## **ITM Peak Hour Summary**

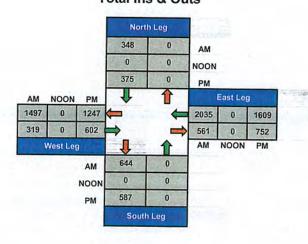
Prepared by:

National Data & Surveying Services

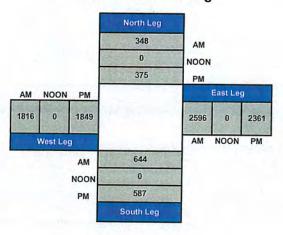
#### I-5 SB Ramps and Magic Mountain Pkwy , Santa Clarita



#### **Total Ins & Outs**



#### **Total Volume Per Leg**

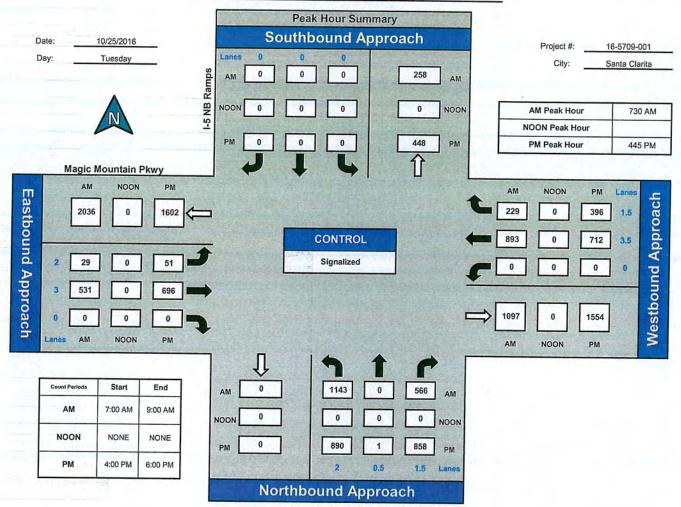


## **ITM Peak Hour Summary**

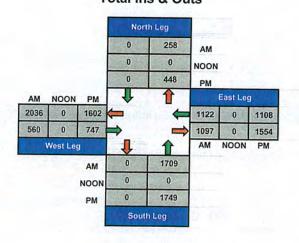
Prepared by:

**National Data & Surveying Services** 

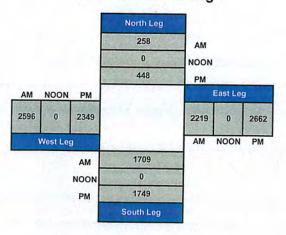
#### I-5 NB Ramps and Magic Mountain Pkwy , Santa Clarita



#### **Total Ins & Outs**



#### Total Volume Per Leg

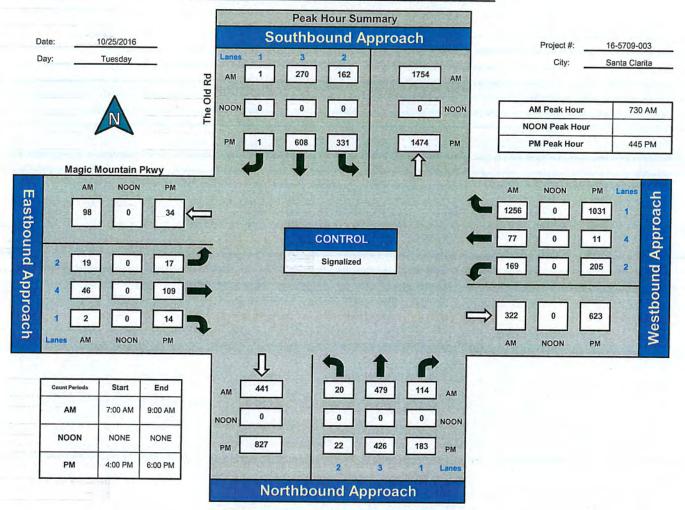


## **ITM Peak Hour Summary**

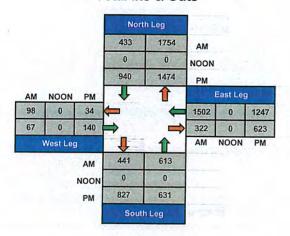
Prepared by:

National Data & Surveying Services

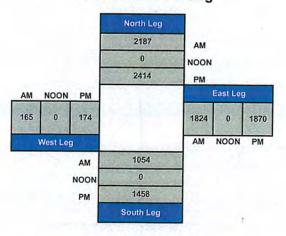
### The Old Rd and Magic Mountain Pkwy , Santa Clarita



#### Total Ins & Outs



### Total Volume Per Leg

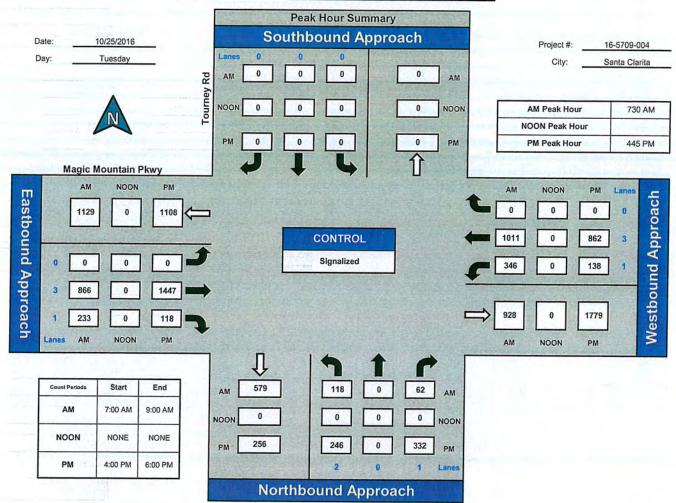


## **ITM Peak Hour Summary**

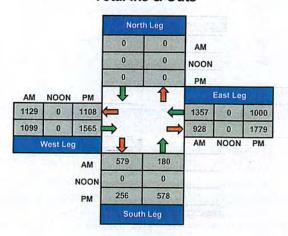
Prepared by:

National Data & Surveying Services

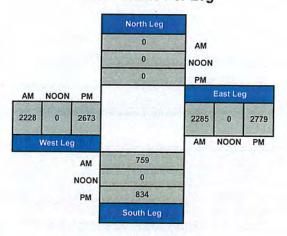
### Tourney Rd and Magic Mountain Pkwy, Santa Clarita



#### **Total Ins & Outs**



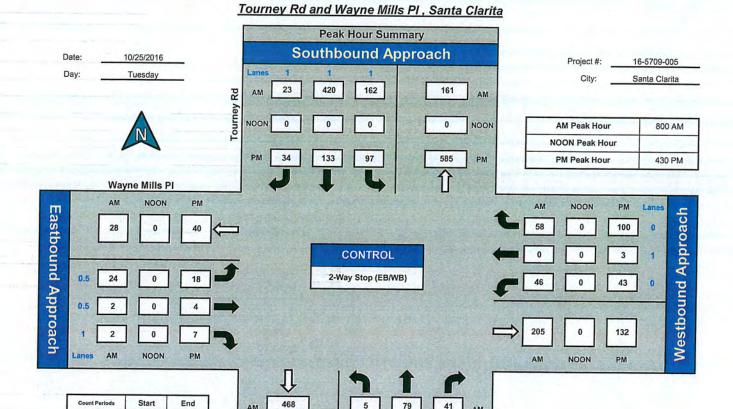
### **Total Volume Per Leg**



### **ITM Peak Hour Summary**

Prepared by:

National Data & Surveying Services



79

0

467

0

3

Northbound Approach

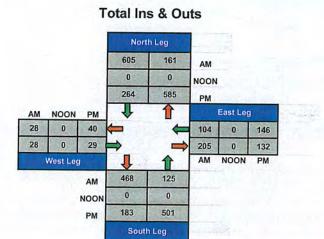
41

0

31

PM

Lane



AM

NOON

7:00 AM

NONE

4:00 PM

9:00 AM

NONE

6:00 PM

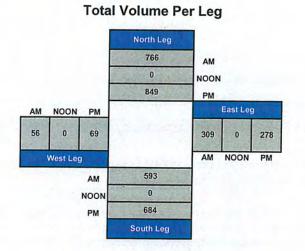
AM

NOON

PM

0

183



## APPENDIX B

➤ Existing Conditions Analysis Worksheets

				_						1110	ing Pian:	AM PEAR
	_	-	1	-	4	*	4	†	1	1		1
Movement	EBL	EBT	EBR	R WBL	WBT	WBR	NBL	NBT	NBR	SBL	207	Ope
Lane Configurations		444		N. W.				NO I	NDIN	ODL	The second second	SBF
Volume (vph)	0	244	75			0	0	0	0		ALC: NO SHAPE	
Ideal Flow (vphpl)	1900	1900	1900		1900	1900	1900	1900	1900	317		75.00
Total Lost time (s)		5.0	5.0	5.0	5.0	1000	1000	1300	1900	1900		
Lane Util. Factor		0.91	0.88	0.97	0.86					5.0	A Committee	-
Fit		1.00	0.85	1.00	1.00					0.95	0.95	0.88
Flt Protected		1.00	1.00	0.95	1.00		1			1.00	1.00	0.85
Satd. Flow (prot)		5085	2787	3433	6408					0.95	0.95	1.00
Flt Permitted		1.00	1.00	0.95	1.00					1681	1686	2787
Satd. Flow (perm)	والقالمة	5085	2787	3433	6408		350			0.95	0.95	1.00
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.00	1681	1686	2787
Adj. Flow (vph)	0	265	82	617	1595	0.52	0.52		0.92	0.92	0.92	0.92
RTOR Reduction (vph)	0	0	56	0	0	0		0	0	345	1	33
Lane Group Flow (vph)	.0	265	26	617	1595	0	0	0	0	0	0	26
Tum Type		NA	Perm	Prot	NA	U	U	0	0	172	174	7
Protected Phases		2	T OIL	1	6	-				Split	NA	Perm
Permitted Phases		-	2	4-	. 0					4	4	FEB 1
Actuated Green, G (s)		29.0	29.0	27.0	61.0					and an	1000	4
Effective Green, g (s)		29.0	29.0	27.0	61.0					19.0	19.0	19.0
Actuated g/C Ratio		0.32	0.32	0.30	0.68					19.0	19.0	19.0
Clearance Time (s)		5.0	5.0	5.0	5.0					0.21	0.21	0.21
Vehicle Extension (s)		3.0	3.0	3.0	3.0					5.0	5.0	5.0
Lane Grp Cap (vph)		1638	898	1029						3.0	3.0	3.0
v/s Ratio Prot		0.05	030	c0.18	4343					354	355	588
v/s Ratio Perm		0.00	0.01	CU. 10	c0.25					0.10	c0.10	
v/c Ratio		0.16	0.03	0.60	0.07							0.00
Uniform Delay, d1		21.8	20.9	26.9	0.37					0.49	0.49	0.01
Progression Factor		1.00	1.00		6.2					31.2	31.2	28.1
Incremental Delay, d2		0.2	0.1	0.74	0.46					1.00	1.00	1.00
Delay (s)		22.0	20.9	20.7	0.2					4.7	4.8	0.0
Level of Service		C	C C		3.0					35.9	36.0	28.1
Approach Delay (s)		21.8	C	С	A					D	D	C
Approach LOS		C			8.0			0.0			35.3	
Intersection Summary		U	-		Α			Α			D	
HCM 2000 Control Delay				Sec. 21		. 101	TEN THE					
HCM 2000 Volume to Capacity ratio			13.1	HCN	1 2000 Lev	el of Serv	rice		В			
Actuated Cycle Length (s)	)		0.49						-0.0		1	
ntersection Capacity Utilization			90.0	Sum	of lost time	e (s)		1	5.0			
Analysis Period (min)		62	2.7%	ICU	Level of Se	ervice			В			
Critical Lane Group			15		11.7							

	*	-	1	1	-	4	4	†	1	1	1	1
Viovement	EBL		EBR		WBT	WBR	NBL	NBT	NBR	SBL	SBT	CD
Lane Configurations		444	77	M. M.		in the state of th		IND	NDIA	N SBL		SB
Volume (vph)	0		167	419		0	0	0	0	317		T'i
Ideal Flow (vphpl)	1900	1900	1900		1900	1900	1900	1900	1900	1900	1900	5
Total Lost time (s)		5.0	5.0	5.0	5.0		1000	1000	1300	5.0		190
Lane Util. Factor		0.91	0.88	0.97	0.86					0.95	0.95	5.
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.8
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	0.88
Satd. Flow (prot)		5085	2787	3433	6408					1681	1686	1.00
Flt Permitted		1.00	1.00	0.95	1.00						F-12 T-12	2787
Satd. Flow (perm)	-	5085	2787	3433	6408					0.95	0.95	1.00
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.00	1681	1686	2787
Adj. Flow (vph)	0	473	182	455	1293	- 0	0.92		0.92	0.92	0.92	0.92
RTOR Reduction (vph)	0	0	119	0	0	0	0	0	0	345	1	62
Lane Group Flow (vph)	0	473	63	455	1293	0	0	0	0	0	0	48
Turn Type		NA	Perm	Prot	NA	U	U	U	0	172	174	14
Protected Phases		- 2		1	6					Split	NA	Perm
Permitted Phases			2		U				11	4	4	
Actuated Green, G (s)		31.0	31.0	23.0	59.0					40.00	(20)00	4
Effective Green, g (s)		31.0	31.0	23.0	59.0					21.0	21.0	21.0
Actuated g/C Ratio		0.34	0.34	0.26	0.66					21.0	21.0	21.0
Clearance Time (s)		5.0	5.0	5.0	5.0					0.23	0.23	0.23
Vehicle Extension (s)		3.0	3.0	3.0	3.0					5.0	5.0	5.0
Lane Grp Cap (vph)		1751	959	877	4200		-			3.0	3.0	3.0
v/s Ratio Prot		0.09	000	c0.13	c0.20					392	393	650
v/s Ratio Perm			0.02	00.10	CU.20					0.10	c0.10	
v/c Ratio		0.27	0.07	0.52	0.31					121 415		0.01
Uniform Delay, d1		21.3	19.8	28.8	6.7					0.44	0.44	0.02
Progression Factor		1.00	1.00	0.78	0.47					29.5	29.5	26.6
Incremental Delay, d2		0.4	0.1	0.4	0.47					1.00	1.00	1.00
Delay (s)		21.7	19.9	22.8	3.3					3.5	3.6	0.1
Level of Service		C	В	C	Α					33.0	33.1	26.7
Approach Delay (s)		21.2		U	8.3			0.0		C	C	C
Approach LOS		C			Α			0.0			32.1	
Intersection Summary					^			Α			С	
HCM 2000 Control Delay			14.8	HCV	/ 2000 Lev	ol of Con	ioo					- 4
HCM 2000 Volume to Capacity ra	tio		0.42	1101	. LOUD LEV	CI OI SEIV	ice		В			
Actuated Cycle Length (s)			90.0	Sum	of lost tim	e (s)		4	IF O			
ntersection Capacity Utilization			7.6%		Level of Se				15.0			
Analysis Period (min)		-	15	,00	-510,010	VIVIOG			В		1	
Critical Lane Group			17									

	*	$\rightarrow$	1	-	4	4	1	1	1	1	1	1
Movement	EBL		EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	CDO
Lane Configurations	1/1/				tttp	75	222		NON.	ODL	901	SBR
Volume (vph)	29	and the second of the second o	0	0	893	229		0	566	0	0	
Ideal Flow (vphpl)	1900		1900	1900	1900	1900		1900	1900	1900	0	0
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0	1900	1900	1900
Lane Util. Factor	0.97	0.91			0.81	0.81	0.97	0.95	0.95			
Frt	1.00	1.00			0.99	0.85	1.00	0.85	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3433	5085			6004	1282	3433	1504	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3433	5085	die		6004	1282	3433	1504	1504			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		0.00	0.00	
Adj. Flow (vph)	32	577	0	0	971	249	1242		0.92	0.92	0.92	0.92
RTOR Reduction (vph)	0	0	0	0	5	153	0	0	615	0	0	0
Lane Group Flow (vph)	32	577	0	0	1001	61	1242	65 243	65	0	0	0
Turn Type	Prot	NA			NA	Perm	Split		242	0	0	0
Protected Phases	5	2			6	Leitii	Split 8	NA	Perm			
Permitted Phases				2012	U	6	0	8				
Actuated Green, G (s)	2.4	33.0			25.6	25.6	47.0	47.0	8			
Effective Green, g (s)	2.4	33.0			25.6	25.6	47.0	47.0	47.0			
Actuated g/C Ratio	0.03	0.37			0.28	0.28		47.0	47.0			
Clearance Time (s)	5.0	5.0			5.0	5.0	0.52	0.52	0.52			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	5.0	5.0	5.0			
Lane Grp Cap (vph)	91	1864			1707	364	3.0	3.0	3.0			-
v/s Ratio Prot	0.01	c0.11			c0.17	304	1792	785	785			
v/s Ratio Perm	2024	00.11			CO. 17	0.05	c0.36	0.16				
v/c Ratio	0.35	0.31			0.59	0.05 0.17	0.00		0.16			
Uniform Delay, d1	43.0	20.4			27.7		0.69	0.31	0.31			
Progression Factor	0.47	0.26			1.00	24.2	16.1	12.2	12.2			
Incremental Delay, d2	2.2	0.4				1.00	1.00	1.00	1.00			
Delay (s)	22.6	5.7			1.5 29.1	1.0	2.2	1.0	1.0			
Level of Service	C	A				25.2	18.3	13.3	13.3			
Approach Delay (s)		6.6			C	С	В	В	В			
Approach LOS		Α			28.4			16.7			0.0	
	emme	^			С			В			Α	
Intersection Summary HCM 2000 Control Delay	N. Control			.3.								
HCM 2000 Control Delay	Jan 18		18.9	HCN	2000 Le	vel of Se	rvice		В			
HCM 2000 Volume to Capacity	ratio		0.65		4							
Actuated Cycle Length (s)			0.0	Sum	of lost tin	ne (s)			15.0			
Intersection Capacity Utilization		62.		ICUI	evel of S	Service			В			
Analysis Period (min)			15									
Critical Lane Group		-	1000									

Movement Lane Configurations Volume (vph) Ideal Flow (vphpl) Total Lost time (s)	51 1900 5.0 0.97	696 1900	0 1900	WBL 0	WBT	WBR	NBL	NBT	NBR	ODI	OPT	
Volume (vph) Ideal Flow (vphpl) Total Lost time (s)	51 1900 5.0 0.97	696 1900						IVOI				
Ideal Flow (vphpl) Total Lost time (s)	1900 5.0 0.97	1900		0		14	44		7	SBL	SBT	SBR
Total Lost time (s)	5.0 0.97				712	396	890	1	858			
Total Lost time (s)	0.97	5.0		1900	1900	1900	1900	1900	1900	1000	0	0
					5.0	5.0	5.0	5.0	5.0	1900	1900	1900
Lane Util. Factor	4 00	0.91			0.81	0.81	0.97	0.95	0.95			
Frt	1.00	1.00			0.97	0.85	1.00	0.85	0.95			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3433	5085			5841	1282	3433	1505	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3433	5085			5841	1282	3433	1505				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	1504			
Adj. Flow (vph)	55	757	0	0	774	430	967		0.92	0.92	0.92	0.92
RTOR Reduction (vph)	0	0	0	0	54	154		1	933	0	0	0
Lane Group Flow (vph)	55	757	0	0	931	65	967	41	43	0	0	0
Turn Type	Prot	NA			NA	Perm		427	424	0	0	0
Protected Phases	5	2			6	Pelli	Split	NA	Perm			
Permitted Phases		-			0		8	8				
Actuated Green, G (s)	3.2	35.0			26.8	6	45.0		8			
Effective Green, g (s)	3.2	35.0			26.8	26.8	45.0	45.0	45.0			
Actuated g/C Ratio	0.04	0.39			0.30	26.8	45.0	45.0	45.0			
Clearance Time (s)	5.0	5.0			5.0	0.30	0.50	0.50	0.50			
Vehicle Extension (s)	3.0	3.0			3.0	5.0	5.0	5.0	5.0			
Lane Grp Cap (vph)	122	1977				3.0	3.0	3.0	3.0	_		
A STATE OF THE PROPERTY OF THE	0.02	c0.15			1739	381	1716	752	752			
v/s Ratio Perm	0.02	00.10		13	c0.16	0.05	0.28	c0.28				
v/c Ratio	0.45	0.38			0.54	0.05	4144		0.28			
	42.5	19.7			0.54	0.17	0.56	0.57	0.56			
A STATE OF THE PARTY OF THE PAR	0.64	0.47			26.4	23.4	15.7	15.7	15.7			
Incremental Delay, d2	2.5	0.47			1.00	1.00	1.00	1.00	1.00			
	29.8	9.8			1.2	1.0	1.3	3.1	3.0			
Level of Service	C	9.0 A			27.6	24.4	17.0	18.8	18.7			
Approach Delay (s)	0	11.1			С	C	В	В	В			
Approach LOS		В		- 0	27.0			17.9			0.0	
		ь			С			В			Α	
htersection Summary HCM 2000 Control Delay						三	1	- 1	-11-		-	
HCM 2000 Volume to Capacity ra	tio		9.3	HCM	2000 Le	vel of Ser	vice		В			
Actuated Cycle Length (s)	uU		56			0.00				+		
ntersection Capacity Utilization			0.0	Sum	of lost tim	ne (s)			15.0			
Analysis Period (min)		57.6		ICU L	evel of S	ervice			В			
Critical Lane Group			15									

	-	1	1	-	1	-	
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	<b>ተ</b> ቀተ	7	7	444	N'N	TION.	
Volume (vph)	866	233	346	1011	118	62	
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	0.91	1.00	1.00	0.91	0.97	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	0.85	
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00	
Satd. Flow (prot)	4684	1458	1630	4684	3162	1458	
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00	
Satd. Flow (perm)	4684	1458	1630	4684	3162	1458	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	941	253	376	1099	128	67	
RTOR Reduction (vph)	0	172	0	0	0	58	
Lane Group Flow (vph)	941	81	376	1099	128	9	
Turn Type	NA	Perm	Prot	NA	Prot	Perm	
Protected Phases	2	1 OIIII	1	6	8	reilli	
Permitted Phases	-	2		U	Ü	8	
Actuated Green, G (s)	31.2	31.2	38.0	74.2	13.4	13.4	
Effective Green, g (s)	31.2	31.2	38.0	74.2	13.4	13.4	
Actuated g/C Ratio	0.32	0.32	0.39	0.76	0.14	0.14	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1497	466	634	3560	434	200	
v/s Ratio Prot	c0.20	100	c0.23	0.23	c0.04	200	
v/s Ratio Perm		0.06	00.20	0.20	00.04	0.01	
v/c Ratio	0.63	0.17	0.59	0.31	0.29	0.05	
Uniform Delay, d1	28.3	23.9	23.7	3.7	37.9	36.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.8	0.2	1.5	0.0	0.4	0.1	
Delay (s)	29.1	24.1	25.2	3.7	38.2	36.6	
Level of Service	C	C	C	Α	D	D	
Approach Delay (s)	28.0		Ŭ	9.2	37.7	D	
Approach LOS	С			A	D		
Intersection Summary							
HCM 2000 Control Delay			19.0	НС	M 2000 I	evel of Ser	rvice B
HCM 2000 Volume to Capac	ity ratio		0.56				
Actuated Cycle Length (s)			97.6	Sur	m of lost t	ime (s)	15.0
Intersection Capacity Utilizat	ion		55.1%		J Level of		В
Analysis Period (min)			15	.50	20.0.01	2011100	Б
c Critical Lane Group							

	-	*	1	←	1	1	
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	ተተተ	77	7	444	77	75	
Volume (vph)	1447	118	138	862	246	332	
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	0.91	1.00	1.00	0.91	0.97	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	0.85	
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00	
Satd. Flow (prot)	4684	1458	1630	4684	3162	1458	
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00	
Satd. Flow (perm)	4684	1458	1630	4684	3162	1458	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	1573	128	150	937	267	361	
RTOR Reduction (vph)	0	46	0	0	0	286	
Lane Group Flow (vph)	1573	82	150	937	267	75	
Turn Type	NA	Perm	Prot	NA	Prot	Perm	
Protected Phases	2	1 01111	1	6	8	reilli	
Permitted Phases	_	2		U	U	8	
Actuated Green, G (s)	54.9	54.9	17.3	77.2	18.4	18.4	
Effective Green, g (s)	54.9	54.9	17.3	77.2	18.4	18.4	
Actuated g/C Ratio	0.52	0.52	0.16	0.73	0.17	0.17	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	2435	757	267	3424	550	254	
v/s Ratio Prot	c0.34	101	c0.09	0.20	c0.08	204	
v/s Ratio Perm	00.01	0.06	00.00	0.20	CO.00	0.05	
v/c Ratio	0.65	0.11	0.56	0.27	0.49	0.30	
Uniform Delay, d1	18.3	12.9	40.7	4.8	39.3	38.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.6	0.1	2.7	0.0	0.7	0.7	
Delay (s)	18.9	13.0	43.4	4.8	40.0	38.6	
Level of Service	В	В	D	4.0 A	40.0 D	D	
Approach Delay (s)	18.5	5	D	10.1	39.2	D	
Approach LOS	В			В	D D		
				Б	D		
ntersection Summary							
HCM 2000 Control Delay			19.6	HC	M 2000 L	evel of Service	В
HCM 2000 Volume to Capac	city ratio		0.60				
Actuated Cycle Length (s)			105.6		m of lost t		15.0
ntersection Capacity Utilizat	tion	3	61.0%	ICI	J Level of	Service	В
Analysis Period (min)			15		,		
Critical Lane Group							

	A	-	. 7	-	- 4-		4	1	-	1	1	1
Movement	EB	L EBT	EBF	R WBL	WB	WBR	R NBL		NBR	SBL	COT	000
Lane Configurations	1	4		14	4		N.		NON *	P)	SBT	SBR
Volume (veh/h)	24	4		46			5		41	162	420	23
Sign Control Grade		Stop			Stop			Free		102	Free	23
	2.43	0%			0%			0%			0%	
Peak Hour Factor	0.92					0.92	0.92		0.92	0.92	0.92	0.92
Hourly flow rate (vph) Pedestrians	26	2	2	50	0	63	5	86	45	176	457	25
Lane Width (ft)									45		.01	20
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type			6									
Median storage veh)								None			None	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	000			100								
vC1, stage 1 conf vol	968	950	457	908	930	86	482			130		
vC1, stage 1 conf vol										156		
Cu, unblocked vol	000		7000									
C, single (s)	968	950	457	908	930	86	482			130		
C, 2 stage (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
F (s)	2.5			75.70								
00 queue free %	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
cM capacity (veh/h)	87	99	100	78	100	94	99			88		
	197	227	604	229	234	973	1081			1455		
Direction, Lane #	EB1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB3				1000
olume Total	30	113	5	86	45	176	457	25		A Continue la la	Mary Control His	1000
olume Left	26	50	5	0	0	176	0	0				
olume Right	2	63	0	0	45	0	0	25				
SH	215	400	1081	1700	1700	1455	1700	1700				
olume to Capacity	0.14	0.28	0.01	0.05	0.03	0.12	0.27	0.01				
ueue Length 95th (ft)	12	29	0	0	0	10	0	0				
ontrol Delay (s)	24.9	17.5	8.3	0.0	0.0	7.8	0.0	0.0				
ane LOS	С	C	Α			Α						
pproach Delay (s)	24.9	17.5	0.3			2.1						
pproach LOS	C	C										
tersection Summary					DEM SE	on feat				Maria de la companya	1	200
verage Delay			4.4						30.03		- 11	100
tersection Capacity Utilization		4	1.5%	ICU	Level of	Service			Α			
nalysis Period (min)			15			o sen						

	A	-	. >	-	- 4	4	. 4	1	p	1	1	1
Movement	EB	L EBT	EBF	R WBL	WBT	WBF	R NBI	NBT	NIDD	ODY	Ope	-
Lane Configurations		4	1		4		TABLE TO SERVICE TO SE		NBR	SBL	SBT	SBR
Volume (veh/h)	18			43	3		) 3		31	97	133	77
Sign Control		Stop	0		Stop			Free	31	97	Free	34
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92		1777		0.92	0.92	0.92		0.92	0.92	0.92	0.00
Hourly flow rate (vph)	20	4	8	47	3	109		17.10	34	105	145	0.92
Pedestrians						7.7			04	100	140	37
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)			6									
Median type								None			None	
Median storage veh)											None	
Upstream signal (ft)												
pX, platoon unblocked	.114	2000										
vC, conflicting volume	980	903	145	876	907	508	182			541		
vC1, stage 1 conf vol										011		
/C2, stage 2 conf vol /Cu, unblocked vol		410										
C, single (s)	980	903	145	876	907	508	182			541		
	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
C, 2 stage (s) F (s)												
0 gueue free %	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
M capacity (veh/h)	88	98	99	81	99	81	100			90		
Property and a contract of	168	248	903	243	247	565	1394			1027		
irection, Lane#	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3			Plant Trans	EFEC.
olume Total	32	159	3	508	34	105	145	37	the American	and sugar su		18m
olume Left	20	47	3	0	0	105	0	0				
olume Right	8	109	0	0	34	0	0	37				
SH	241	399	1394	1700	1700	1027	1700	1700				
olume to Capacity	0.13	0.40	0.00	0.30	0.02	0.10	0.09	0.02				
ueue Length 95th (ft)	11	47	0	0	0	9	0	0.02				
ontrol Delay (s)	23.1	19.9	7.6	0.0	0.0	8.9	0.0	0.0				
ine LOS	C	C	A			Α	0.0	0.0				
proach Delay (s)	23.1	19.9	0.0			3.3						
proach LOS	C	C										
ersection Summary		1:/4			34/11/19				- 10 ₁ -	410	100000000000000000000000000000000000000	
erage Delay			4.7						),			9
ersection Capacity Utilization		5	5.3%	ICU	Level of	Service			В			
alysis Period (min)			15		- September 197				D			

# APPENDIX C

> Existing + Project Conditions Analysis Worksheets

	*	-	7	1	4	4	1	Ť	-	1	Ing i ian. /	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	ODE
Lane Configurations		<b>ተተተ</b>	77	ሻሻ		10000	HUL	INEM	IADIA	N SDL		SBF
Volume (vph)	0	256	75	580	27.00	0	0	0	0	329		30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Lane Util. Factor		0.91	0.88	0.97	0.86					0.95	0.95	0.88
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		5085	2787	3433	6408					1681	1686	2787
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		5085	2787	3433	6408	- in				1681	1686	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	278	82	630	1603	0	0	0	0	358	1	33
RTOR Reduction (vph)	0	0	56	0	0	0	0	0	0	0	Ó	26
Lane Group Flow (vph)	0	278	26	630	1603	0	0	0	0	179	180	7
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		2		1	6	- 1				4	4	remi
Permitted Phases			2							-7	4	4
Actuated Green, G (s)		29.0	29.0	27.0	61.0					19.0	19.0	19.0
Effective Green, g (s)		29.0	29.0	27.0	61.0					19.0	19.0	19.0
Actuated g/C Ratio		0.32	0.32	0.30	0.68					0.21	0.21	0.21
Clearance Time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1638	898	1029	4343					354	355	
v/s Ratio Prot		0.05		c0.18	c0.25					0.11	c0.11	588
v/s Ratio Perm			0.01							0.11	CU.11	0.00
v/c Ratio		0.17	0.03	0.61	0.37					0.51	0.51	0.00
Uniform Delay, d1		21.9	20.9	27.0	6.2					31.4	31.4	0.01
Progression Factor		1.00	1.00	0.74	0.45					1.00	1.00	28.1
Incremental Delay, d2		0.2	0.1	0.8	0.2					5.1	5.1	1.00
Delay (s)		22.1	20.9	20.7	3.0					36.4	36.5	0.0
Level of Service		C	C	C	A					D D	30.5 D	28.1
Approach Delay (s)		21.8			8.0			0.0		D		C
Approach LOS		C			A			A			35.7 D	
Intersection Summary			- Fift	Comments.	0.0		THE REAL PROPERTY.	***************************************	-	-	U	The state of
HCM 2000 Control Delay			13.3	HCI	M 2000 Lev	vel of Sen	ice		В	PP.	100	4
HCM 2000 Volume to Capacity rati	0		0.50			.5/ 5/ 56/			Б			
Actuated Cycle Length (s)			90.0	Sum	of lost tim	ne (s)			15.0			
ntersection Capacity Utilization		6	3.0%		Level of S				B	123		
Analysis Period (min)			15			J. 1100			D			
Critical Lane Group												

	1	-	7	-	-	1	4	Ť	-	1	1	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBI
Lane Configurations		<b>ተ</b> ተተ	77	1/1	tttt			1,01	IVDIX	19		17
Volume (vph)	0		167		1198	0	0	0	0	330		5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		1900
Total Lost time (s)		5.0	5.0	5.0	5.0	47.5.2	1303		1000	5.0		5.0
Lane Util. Factor		0.91	0.88	0.97	0.86					0.95	0.95	0.88
Fit		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		5085	2787	3433	6408					1681	1686	2787
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	
Satd. Flow (perm)		5085	2787	3433	6408					1681	1686	1.00
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		2787
Adj. Flow (vph)	0	487	182	468	1302	0	0.02	0.32	0.92	359	0.92	0.92
RTOR Reduction (vph)	0	0	119	0	0	0	0				1	62
Lane Group Flow (vph)	0	487	63	468	1302	0	0	0	0	0 179	0	48
Turn Type		NA	Perm	Prot	NA		- 0		U		181	14
Protected Phases		2		1	6					Split	NA	Perm
Permitted Phases			2		U					4	4	
Actuated Green, G (s)		31.0	31.0	23.0	59.0					04.0	04.0	4
Effective Green, g (s)		31.0	31.0	23.0	59.0					21.0	21.0	21.0
Actuated g/C Ratio		0.34	0.34	0.26	0.66					21.0	21.0	21.0
Clearance Time (s)		5.0	5.0	5.0	5.0					0.23	0.23	0.23
Vehicle Extension (s)		3.0	3.0	3.0	3.0					5.0	5.0	5.0
Lane Grp Cap (vph)		1751	959	877	4200					3.0	3.0	3.0
//s Ratio Prot		0.10	000	c0.14	c0.20					392	393	650
//s Ratio Perm		0.10	0.02	00.14	60.20					0.11	c0.11	1.50
/lc Ratio		0.28	0.07	0.53	0.31						2.72	0.01
Jniform Delay, d1		21.4	19.8	28.9	6.7					0.46	0.46	0.02
Progression Factor		1.00	1.00	0.79	0.50					29.6	29.6	26.6
ncremental Delay, d2		0.4	0.1	0.75	0.30					1.00	1.00	1.00
Delay (s)		21.8	19.9	23.2	3.5					3.8	3.8	0.1
evel of Service		C	В	C C	3.5 A					33.4	33.5	26.7
Approach Delay (s)		21.3	Ь	C	8.7					C	C	C
Approach LOS		C						0.0			32.4	
		-			Α			Α			C	
ntersection Summary ICM 2000 Control Delay	- 11	- 510				1 - 1	1		300			-(1)
ICM 2000 Control Delay			15.2	HCI	4 2000 Lev	el of Ser	vice		В			
ICM 2000 Volume to Capacity ratio	0		0.43									
ctuated Cycle Length (s)			90.0	Sun	of lost tim	e (s)		7	15.0			
tersection Capacity Utilization		5	8.5%	ICU	Level of S	ervice			В			
nalysis Period (min)			15						2			
Critical Lane Group												

	1	-	1	-	- 4	4	. 4	Ť	-	1	lg Flaii. A	1
Movement	EBL	EBT	EBR	R WBL	WBT	WBR	NBL		KIDD	000	Y	
Lane Configurations	44			, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	tttp				NBR	SBL	SBT	SBR
Volume (vph)	29		0	0		237			584	•		
Ideal Flow (vphpl)	1900	1900	1900			1900		1900	1900	1000	0	0
Total Lost time (s)	5.0	5.0			5.0	5.0		5.0	5.0	1900	1900	1900
Lane Util. Factor	0.97	0.91			0.81	0.81		0.95	0.95			
Frt	1.00	1.00			0.99	0.85	1.00	0.85	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3433	5085			6001	1282	3433	1504	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3433	5085		- 11	6001	1282	3433	1504	1504	4		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.00
Adj. Flow (vph)	32	603	0	0	992	258	1242	0.52	635	0.92		0.92
RTOR Reduction (vph)	0	0	0	0	6	157	0	59	59	0	0	0
Lane Group Flow (vph)	32	603	0	0	1025	62	1242	259	258	0	0	0
Turn Type	Prot	NA			NA	Perm	Split	NA	Perm	U	U	0
Protected Phases	5	2			6	, 6,,,,,	8	8	1.61111			
Permitted Phases						6		U	8			
Actuated Green, G (s)	2.4	33.0			25.6	25.6	47.0	47.0	47.0			
Effective Green, g (s)	2.4	33.0			25.6	25.6	47.0	47.0	47.0			
Actuated g/C Ratio	0.03	0.37			0.28	0.28	0.52	0.52	0.52			
Clearance Time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	91	1864			1706	364	1792	785	785			_
v/s Ratio Prot	0.01	c0.12			c0.17	004	c0.36	0.17	700			
v/s Ratio Perm					00,11	0.05	00.00	0.17	0.17			
v/c Ratio	0.35	0.32			0.60	0.17	0.69	0.33	0.33			
Uniform Delay, d1	43.0	20.5			27.8	24.2	16.1	12.4	12.4			
Progression Factor	0.53	0.32			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	2.2	0.4			1.6	1.0	2.2	1.1	1.1			
Delay (s)	25.1	7.1			29.4	25.2	18.3	13.5	13.5			
Level of Service	C	Α			С	С	В	В	В			
Approach Delay (s)		8.0			28.6		_	16.7	Ь		0.0	
Approach LOS		Α			C			В			Α	
ntersection Summary		1	77		7-3						٨	_
HCM 2000 Control Delay			19.2	HC	M 2000 Le	aval of Sa	nvico		<u> </u>	- ·	100	- 1
HCM 2000 Volume to Capaci	ty ratio		0.66	1101	W 2000 L	VEI UI SE	VICE		В			
Actuated Cycle Length (s)			90.0	Sun	n of lost ti	me (e)			15.0			
Intersection Capacity Utilization	on	6	3.0%	ICII	Level of	Service			15.0 B			
Analysis Period (min)			15	100	2010101	DOI VICE			В			
c Critical Lane Group												

Section   Company   Comp		1	-	. >	-	-		4	†	-	1	1	1
Cane Configurations				T EBI	R WBL	WBT	WBR	NBI	NRT	NED	CDI-	ODT	000
Solidite (typh)   51   722   0   0   733   404   890   1   877   0   0   0   0   10   10   10   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   1900   19				1		The province of the contract o					ODL	201	SBR
Content   Cont	Volume (vph)			2 (	0 0						0		
Content   Cont	Ideal Flow (vphpl)												
Care			5.0	)							1900	1900	1900
Fit Protected			0.91						region modern a				
Filt Protected	AM2	1.00	1.00										
Satd. Flow (prof)		0.95	1.00						Section 1 and 1				
Satd, Flow (perm) 3433 5085 5843 1282 3433 1505 1504  Peak-hour factor, PHF 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92		3433	5085						13.4				
Satic Flow (perm)   3433   5085   5843   1282   3433   1505   1504	The state of the s	0.95	1.00										
Peak-hour factor, PHF   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92   0.92		3433	5085						1111				
Adj. Flow (vph) 55 785 0 0 0 797 439 967 1 953 0 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1		0.92		0.92	0.92								_
RTOR Reduction (vph)		55											
Lane Group Flow (vph)   55   785   0   0   959   67   967   441   434   0   0   0   0	RTOR Reduction (vph)												
Turn Type	Lane Group Flow (vph)										1.5		
Permitted Phases Permitted Phases Actuated Green, G (s) 3.2 35.0 26.8 26.8 45.0 45.0 45.0 45.0 26.8 26.8 45.0 45.0 45.0 45.0 26.8 26.8 45.0 45.0 45.0 45.0 26.8 26.8 45.0 45.0 45.0 45.0 26.8 26.8 45.0 45.0 45.0 45.0 26.8 26.8 45.0 45.0 45.0 26.8 26.8 45.0 45.0 45.0 26.8 26.8 45.0 45.0 26.8 26.8 45.0 45.0 26.8 26.8 45.0 45.0 26.8 26.8 26.8 45.0 45.0 26.9 26.8 26.8 26.8 26.8 26.8 26.8 26.8 26.8		Prot									0	0	0
Permitted Phases							I CIIII			Perm			
Actuated Green, g (s) 3.2 35.0 26.8 26.8 45.0 45.0 45.0 Effective Green, g (s) 3.2 35.0 26.8 26.8 45.0 45.0 45.0 A5.0 Actuated g/C Ratio 0.04 0.39 0.30 0.30 0.50 0.50 0.50 0.50 Clearance Time (s) 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0						U	6	0	0				
Effective Green, g (s) 3.2 35.0 26.8 26.8 45.0 45.0 45.0 Actuated g/C Ratio 0.04 0.39 0.30 0.30 0.50 0.50 0.50 Clearance Time (s) 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	Actuated Green, G (s)	3.2	35.0			26.8		150	45.0				
Actuated g/C Ratio 0.04 0.39 0.30 0.30 0.50 0.50 0.50 0.50 Clearance Time (s) 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0													
Clearance Time (s)   5.0   5.0   5.0   5.0   5.0   5.0   5.0   5.0   5.0     Vehicle Extension (s)   3.0   3.0   3.0   3.0   3.0   3.0     Lane Grp Cap (vph)   122   1977   1739   381   1716   752   752     V/s Ratio Prot   0.02   c0.15   c0.16   0.28   c0.29     V/s Ratio Perm   0.05   0.29     V/s Ratio Perm   0.05   0.29     V/s Ratio Perm   0.05   0.29     V/s Ratio Perm   0.05   0.18   0.56   0.59   0.58     Uniform Delay, d1   42.5   19.9   26.5   23.4   15.7   15.9   15.8     Progression Factor   0.65   0.48   1.00   1.00   1.00   1.00   1.00     Incremental Delay, d2   2.5   0.6   1.3   1.0   1.3   3.3   3.2     Delay (s)   30.3   10.1   27.8   24.4   17.0   19.3   19.0     Level of Service   C   B   C   C   B   B   B     Approach Delay (s)   11.4   27.2   18.1   0.0     Approach LOS   B   C   B   C   B   A     Approach LOS   B   C   B   C   B   A      Intersection Summary   HCM 2000 Volume to Capacity ratio   0.58     Actuated Cycle Length (s)   90.0   Sum of lost time (s)   15.0     Intersection Capacity Utilization   58.5%   ICU Level of Service   B     Analysis Period (min)   15	Actuated g/C Ratio	0.04											
Vehicle Extension (s)         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0	Clearance Time (s)												
Lane Grp Cap (vph) 122 1977 1739 381 1716 752 752  v/s Ratio Prot 0.02 c0.15 c0.16 0.28 c0.29  v/s Ratio Perm  v/c Ratio 0.45 0.40 0.55 0.18 0.56 0.59 0.58  Uniform Delay, d1 42.5 19.9 26.5 23.4 15.7 15.9 15.8  Progression Factor 0.65 0.48 1.00 1.00 1.00 1.00 1.00 1.00  Incremental Delay, d2 2.5 0.6 1.3 1.0 1.3 3.3 3.2  Delay (s) 30.3 10.1 27.8 24.4 17.0 19.3 19.0  Level of Service C B C C B B B B  Approach Delay (s) 11.4 27.2 18.1 0.0  Approach LOS B C C B C B A  Intersection Summary  HCM 2000 Control Delay 19.5 HCM 2000 Level of Service B  Analysis Period (min) 155	Vehicle Extension (s)												
V/s Ratio Prot         0.02         c0.15         c0.16         0.28         c0.29           V/s Ratio Perm         0.05         0.05         0.29           V/c Ratio         0.45         0.40         0.55         0.18         0.56         0.59         0.58           Uniform Delay, d1         42.5         19.9         26.5         23.4         15.7         15.9         15.8           Progression Factor         0.65         0.48         1.00         1.00         1.00         1.00         1.00           Incremental Delay, d2         2.5         0.6         1.3         1.0         1.3         3.3         3.2           Delay (s)         30.3         10.1         27.8         24.4         17.0         19.3         19.0           Level of Service         C         B         C         C         B         B           Approach LOS         B         C         C         B         B         A           Intersection Stirmary         HCM 2000 Control Delay         19.5         HCM 2000 Level of Service         B           HCM 2000 Volume to Capacity ratio         0.58         A         Sum of lost time (s)         15.0           Intersection Capacity Utilization <td></td>													
V/s Ratio         0.45         0.40         0.55         0.18         0.56         0.59         0.58           Uniform Delay, d1         42.5         19.9         26.5         23.4         15.7         15.9         15.8           Progression Factor         0.65         0.48         1.00         1.00         1.00         1.00         1.00           Incremental Delay, d2         2.5         0.6         1.3         1.0         1.3         3.3         3.2           Delay (s)         30.3         10.1         27.8         24.4         17.0         19.3         19.0           Level of Service         C         B         C         C         B         B           Approach Delay (s)         11.4         27.2         18.1         0.0           Approach LOS         B         C         B         A           Intersection Stromacy         HCM 2000 Control Delay         19.5         HCM 2000 Level of Service         B           HCM 2000 Volume to Capacity ratio         0.58         A         Sum of lost time (s)         15.0           Intersection Capacity Utilization         58.5%         ICU Level of Service         B							301			752			
Uniform Delay, d1	v/s Ratio Perm	1416	00.10			CO. 10	0.05	0.28	cu.29				
Uniform Delay, d1		0.45	0.40			0.55		0.50	0.50				
Progression Factor	Uniform Delay, d1												
Incremental Delay, d2	Progression Factor												
Delay (s) 30.3 10.1 27.8 24.4 17.0 19.3 19.0 Level of Service C B C C B B B B A Approach Delay (s) 11.4 27.2 18.1 0.0 Approach LOS B C C B B B B A A Intersection Summary  HCM 2000 Control Delay 19.5 HCM 2000 Level of Service B Actuated Cycle Length (s) 90.0 Sum of lost time (s) 15.0 Intersection Capacity Utilization 58.5% ICU Level of Service B Analysis Period (min) 15	Incremental Delay, d2												
Level of Service         C         B         C         C         B         B         B           Approach Delay (s)         11.4         27.2         18.1         0.0           Approach LOS         B         C         B         B         A           Intersection Surmary         HCM 2000 Control Delay         19.5         HCM 2000 Level of Service         B           HCM 2000 Volume to Capacity ratio         0.58         Actuated Cycle Length (s)         90.0         Sum of lost time (s)         15.0           Intersection Capacity Utilization         58.5%         ICU Level of Service         B	Delay (s)												
Approach Delay (s)  Approach LOS  B  C  B  C  B  C  B  A  A  Intersection Surmary  HCM 2000 Control Delay  HCM 2000 Volume to Capacity ratio  Actuated Cycle Length (s)  Intersection Capacity Utilization  Analysis Period (min)  11.4  27.2  18.1  B  A  C  B  A  ICU Level of Service  B  ICU Level of Service  B  ICU Level of Service  B	Level of Service												
Approach LOS         B         C         B         A           Intersection Surmary         HCM 2000 Control Delay         19.5         HCM 2000 Level of Service         B           HCM 2000 Volume to Capacity ratio         0.58         Actuated Cycle Length (s)         90.0         Sum of lost time (s)         15.0           Intersection Capacity Utilization         58.5%         ICU Level of Service         B	Approach Delay (s)						C	В		В			
Intersection Summary  HCM 2000 Control Delay  HCM 2000 Volume to Capacity ratio  Actuated Cycle Length (s)  Intersection Capacity Utilization  Actuated Cycle Length (s)  Intersection Capacity Utilization  Analysis Period (min)  A  HCM 2000 Level of Service  B  ICU Level of Service  B													
HCM 2000 Control Delay  HCM 2000 Control Delay  HCM 2000 Level of Service  B  Actuated Cycle Length (s)  Intersection Capacity Utilization  Analysis Period (min)  19.5  HCM 2000 Level of Service  B  ICU Level of Service  B	Intersection Summani	-		The state of		U			В			Α	
HCM 2000 Volume to Capacity ratio  Actuated Cycle Length (s)  Intersection Capacity Utilization  Analysis Period (min)  O.58  Sum of lost time (s)  ICU Level of Service  B  ICU Level of Service  B		- 1-		40.5	- 44				133 ==			375	
Actuated Cycle Length (s) 90.0 Sum of lost time (s) 15.0 Intersection Capacity Utilization 58.5% ICU Level of Service B Analysis Period (min) 15	HCM 2000 Volume to Canacit	v rotio			HCI	И 2000 Le	evel of Se	rvice		В			_
Intersection Capacity Utilization 58.5% ICU Level of Service B  Analysis Period (min) 15	Actuated Cycle Length (c)	y ratio											
Analysis Period (min)  58.5% ICU Level of Service  B	Intersection Canacity Hilliantia	n	100										
	Analysis Period (min)	ii.			ICU	Level of	Service			В			
				15									

Lane Configurations  Volume (vph)  Ideal Flow (vphpl)  Total Lost time (s)  Lane Util. Factor  Frt  Flt Protected  Satd. Flow (prot)  Fit Permitted  Satd. Flow (perm)  Peak-hour factor, PHF  Adj. Flow (vph)  RTOR Reduction (vph)  Lane Group Flow (vph)  Turn Type  Protected Phases  Permitted Phases  Actuated Green, G (s)  Effective Green, g (s)  Actuated g/C Ratio  Clearance Time (s)  Vehicle Extension (s)	866 750 5.0 .91 .00 .00 .884 .00 .684	274 1750 5.0 1.00 0.85 1.00 1458 1.00	358 1750 5.0 1.00 1.00 0.95	WBT 1011 1750 5.0 0.91 1.00	NBL 146 1750 5.0 0.97	NBR 62 1750 5.0		
Lane Configurations  Volume (vph)  Ideal Flow (vphpl)  Total Lost time (s)  Lane Util. Factor  Frt  Flt Protected  Satd. Flow (prot)  Fit Permitted  Satd. Flow (perm)  Peak-hour factor, PHF  Adj. Flow (vph)  RTOR Reduction (vph)  Lane Group Flow (vph)  Turn Type  Protected Phases  Permitted Phases  Actuated Green, G (s)  Effective Green, g (s)  Actuated g/C Ratio  Clearance Time (s)  Vehicle Extension (s)	750 5.0 91 .00 .00 .84 .00	274 1750 5.0 1.00 0.85 1.00 1458	358 1750 5.0 1.00 1.00	1011 1750 5.0 0.91	146 1750 5.0	<b>6</b> 2 1750		
Volume (vph)  Ideal Flow (vphpl)  Total Lost time (s)  Lane Util. Factor  Frt  Flt Protected  Satd. Flow (prot)  Flt Permitted  Satd. Flow (perm)  Peak-hour factor, PHF  Adj. Flow (vph)  RTOR Reduction (vph)  Lane Group Flow (vph)  Turn Type  Protected Phases  Permitted Phases  Actuated Green, G (s)  Satd. Slow (vph)  Satd. Flow (vph)  Satd. Flow (vph)  9  Turn Type  Protected Phases  Permitted Phases  Actuated Green, G (s)  Satd. Slow (vph)  Satd. Slow (vph	866 750 5.0 .91 .00 .00 .884 .00	274 1750 5.0 1.00 0.85 1.00 1458	358 1750 5.0 1.00 1.00	1011 1750 5.0 0.91	146 1750 5.0	62 1750		
Ideal Flow (vphpl) Total Lost time (s) Lane Util. Factor Frt Flt Protected Satd. Flow (prot) Flt Permitted Satd. Flow (perm) Peak-hour factor, PHF Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph) Turn Type Protected Phases Permitted Phases Permitted Phases Actuated Green, G (s) Effective Green, g (s) Actuated g/C Ratio Clearance Time (s) Jehicle Extension (s)	750 5.0 .91 .00 .00 .684 .00	1750 5.0 1.00 0.85 1.00 1458	1750 5.0 1.00 1.00	1750 5.0 0.91	1750 5.0	1750		
Total Lost time (s)  Lane Util. Factor 0  Frt 1  Flt Protected 1.  Satd. Flow (prot) 46  Satd. Flow (perm) 46  Peak-hour factor, PHF 0.  Adj. Flow (vph) 9  RTOR Reduction (vph)  Lane Group Flow (vph) 9  Turn Type N  Protected Phases  Permitted Phases  Permitted Phases  Actuated Green, G (s) 31  Effective Green, g (s) 31  Actuated g/C Ratio 0.3  Clearance Time (s) 5  /ehicle Extension (s) 3	5.0 .91 .00 .00 .884 .00	5.0 1.00 0.85 1.00 1458	5.0 1.00 1.00	5.0 0.91	5.0			
Lane Util. Factor       0         Frt       1         Flt Protected       1         Satd. Flow (prot)       46         Flt Permitted       1         Satd. Flow (perm)       46         Peak-hour factor, PHF       0         Adj. Flow (vph)       9         RTOR Reduction (vph)       9         Lane Group Flow (vph)       9         Turn Type       N         Permitted Phases       Permitted Phases         Actuated Green, G (s)       31         Actuated g/C Ratio       0.3         Clearance Time (s)       5         /ehicle Extension (s)       3	.91 .00 .00 .884 .00	1.00 0.85 1.00 1458	1.00	0.91		5.0		
Frt         1           Flt Protected         1.           Satd. Flow (prot)         46           Flt Permitted         1.           Satd. Flow (perm)         46           Peak-hour factor, PHF         0.           Adj. Flow (vph)         9           RTOR Reduction (vph)         9           Lane Group Flow (vph)         9           Turn Type         N           Protected Phases         Permitted Phases           Actuated Green, G (s)         31           Actuated Green, g (s)         31           Actuated g/C Ratio         0.3           Clearance Time (s)         5           /ehicle Extension (s)         3	.00 .00 .884 .00	0.85 1.00 1458	1.00			1.00		
Fit Protected	.00 884 .00 884	1.00 1458		1.00	1.00	0.85		
Satd. Flow (prot)       46         Flt Permitted       1.         Satd. Flow (perm)       46         Peak-hour factor, PHF       0.         Adj. Flow (vph)       9         RTOR Reduction (vph)       9         Turn Type       N         Protected Phases         Permitted Phases         Actuated Green, G (s)       31         Actuated g/C Ratio       0.3         Clearance Time (s)       5         Vehicle Extension (s)       3	.00 .84	1458		1.00	0.95	1.00		
FIt Permitted 1.  Satd. Flow (perm) 46  Peak-hour factor, PHF 0.  Adj. Flow (vph) 9  RTOR Reduction (vph)  Lane Group Flow (vph) 9  Turn Type N  Protected Phases Permitted Phases  Actuated Green, G (s) 31  Actuated Green, g (s) 31  Actuated g/C Ratio 0.3  Clearance Time (s) 5  /ehicle Extension (s) 46	.00 884		1630	4684	3162	1458		
Satd. Flow (perm)         46           Peak-hour factor, PHF         0.           Adj. Flow (vph)         9           RTOR Reduction (vph)         9           Lane Group Flow (vph)         9           Turn Type         N           Permitted Phases           Permitted Phases           Actuated Green, G (s)         31           Effective Green, g (s)         31           Actuated g/C Ratio         0.3           Clearance Time (s)         5           /ehicle Extension (s)         3	84	1.111	0.95	1.00	0.95	1.00		
Peak-hour factor, PHF         0.           Adj. Flow (vph)         9           RTOR Reduction (vph)         9           Lane Group Flow (vph)         9           Turn Type         N           Protected Phases         Permitted Phases           Actuated Green, G (s)         31           Effective Green, g (s)         31           Actuated g/C Ratio         0.3           Clearance Time (s)         5           /ehicle Extension (s)         3		1458	1630	4684	3162	1458		
Adj. Flow (vph)       9         RTOR Reduction (vph)       9         Lane Group Flow (vph)       9         Turn Type       N         Protected Phases         Permitted Phases         Actuated Green, G (s)       31         Effective Green, g (s)       31         Actuated g/C Ratio       0.3         Clearance Time (s)       5         /ehicle Extension (s)       3		0.92	0.92	-0.92	0.92	0.92		
RTOR Reduction (vph)  Lane Group Flow (vph)  Protected Phases Permitted Phases Actuated Green, G (s)  Effective Green, g (s)  Actuated g/C Ratio  Clearance Time (s)  /ehicle Extension (s)	141	298	389	1099	159	67		
Lane Group Flow (vph)         9           Turn Type         N           Protected Phases         Permitted Phases           Actuated Green, G (s)         31           Effective Green, g (s)         31           Actuated g/C Ratio         0.3           Clearance Time (s)         5           Vehicle Extension (s)         3	0	204	0	0	0	58		
Turn Type Protected Phases Permitted Phases Actuated Green, G (s) 31 Effective Green, g (s) 31 Actuated g/C Ratio 0.3 Clearance Time (s) 5 /ehicle Extension (s) 3	41	94	389	1099	159	9		
Protected Phases Permitted Phases Actuated Green, G (s) 31 Effective Green, g (s) 31 Actuated g/C Ratio 0.3 Clearance Time (s) 5 Vehicle Extension (s) 3	VA	Perm	Prot	NA	Prot	Perm		
Actuated Green, G (s) 31  Effective Green, g (s) 31  Actuated g/C Ratio 0.3  Clearance Time (s) 5  /ehicle Extension (s) 3	2	Cilli	1	6	8	reilli		
Effective Green, g (s) 31 Actuated g/C Ratio 0.3 Clearance Time (s) 5 /ehicle Extension (s) 3	=-/	2		U	U	8		
Effective Green, g (s) 31 Actuated g/C Ratio 0.3 Clearance Time (s) 5 /ehicle Extension (s) 3	1.9	31.9	39.7	76.6	14.2	14.2		
Actuated g/C Ratio 0.3 Clearance Time (s) 5 Vehicle Extension (s) 3		31.9	39.7	76.6	14.2	14.2		
Clearance Time (s) 5 /ehicle Extension (s) 3		0.32	0.39	0.76	0.14	0.14		
Vehicle Extension (s) 3	.0	5.0	5.0	5.0	5.0	5.0		
	.0	3.0	3.0	3.0	3.0	3.0		
ane Grp Cap (vph) 148		461	641	3559	445	205		
//s Ratio Prot c0.2		101	c0.24	0.23	c0.05	200		
/s Ratio Perm		0.06	00.21	0.20	00.00	0.01		
/c Ratio 0.6	33	0.20	0.61	0.31	0.36	0.05		
Jniform Delay, d1 29.		25.2	24.3	3.8	39.2	37.4		
Progression Factor 1.0		1.00	1.00	1.00	1.00	1.00		
ncremental Delay, d2 0.		0.2	1.6	0.0	0.5	0.1		
Delay (s) 30.		25.4	26.0	3.8	39.7	37.5		
	C	C	C	Α	D	D		
pproach Delay (s) 29.		-	_	9.6	39.0	D		
	С			A	D			
ntersection Summary								
CM 2000 Control Delay			20.1	ЦО	M 2000 !	evel of Service		
CM 2000 Volume to Capacity ratio			0.58	пС	IVI ZUUU LI	evel of Service	С	
ctuated Cycle Length (s)			100.8	0,	n of last "	ma (a)	* AME 10	
tersection Capacity Utilization			56.7%		n of lost ti	' '	15.0	
nalysis Period (min)				ICL	Level of	Service	В	
Critical Lane Group			15					

	-	1	1	<b>←</b>	1	1	
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	<b>ተ</b> ተተ	7	7	444	1919	TADIC	
Volume (vph)	1447	163	151	862	275	332	
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	0.91	1.00	1.00	0.91	0.97	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	0.85	
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00	
Satd. Flow (prot)	4684	1458	1630	4684	3162	1458	
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00	
Satd. Flow (perm)	4684	1458	1630	4684	3162	1458	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	1573	177	164	937	299	361	
RTOR Reduction (vph)	0	63	0	0	299	284	
Lane Group Flow (vph)	1573	114	164	937	299	284 77	
Turn Type	NA	Perm	Prot	NA	Prot	Perm	
Protected Phases	2	Cilli	1	6	Prot 8	rerm	
Permitted Phases	2	2	į.	0	0	0	
Actuated Green, G (s)	57.3	57.3	18.6	80.9	19.7	8 19.7	
Effective Green, g (s)	57.3	57.3	18.6	80.9	19.7	19.7	
Actuated g/C Ratio	0.52	0.52	0.17	0.73	0.18	0.18	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		
ane Grp Cap (vph)	2426	755	274	3426		3.0	
/s Ratio Prot	c0.34	700	c0.10		563	259	
/s Ratio Perm	60.04	0.08	CU. 10	0.20	c0.09	0.05	
/c Ratio	0.65	0.06	0.60	0.27	0.52	0.05	
Uniform Delay, d1	19.3	13.9	42.5	5.0	0.53	0.30	
Progression Factor	1.00	1.00	1.00	1.00	41.3	39.4	
ncremental Delay, d2	0.6	0.1	3.5	0.0	1.00	1.00	
Delay (s)	19.9	14.0	46.0	5.0	1.0	0.6	
evel of Service	19.9 B	14.0 B	46.0 D	5.0 A	42.2	40.1	
Approach Delay (s)	19.3	Ь	D	11.1	D	D	
Approach LOS	19.3 B				41.0		
**	Ь			В	D		
ntersection Summary							
ICM 2000 Control Delay			20.9	HC	M 2000 L	evel of Service	ce C
ICM 2000 Volume to Capac	city ratio		0.61				
ctuated Cycle Length (s)			110.6		m of lost ti		15.0
tersection Capacity Utilizat	ion		61.0%	ICL	J Level of	Service	В
nalysis Period (min)			15				-
Critical Lane Group							

	1	-		-	+	4		†	1	1	Ţ	1
Movement	EBI			WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	CDL
Lane Configurations Volume (veh/h) Sign Control Grade	52	2 10 Stop 0%	6		0 Stop	58	19	79 Free	41	162	420 Free	SBF 76
Peak Hour Factor	0.92			0.92	0% 0.92		0.00	0%	2.22	1000	0%	
Hourly flow rate (vph) Pedestrians Lane Width (ft) Walking Speed (ft/s)	57				0.92	0.92 63	0.92 12	0.92 86	0.92 45	0.92 176	0.92 457	0.92 83
Percent Blockage Right turn flare (veh)												
Median type Median storage veh)			6					None			None	
Upstream signal (ft) pX, platoon unblocked vC, conflicting volume vC1, stage 1 conf vol	982	963	457	927	1001	86	539			130		
vC2, stage 2 conf vol	227											
vCu, unblocked vol	982	963	457	927	1001	86	539			130		
tC, single (s) tC, 2 stage (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
00 queue free %	71	95	99	77	100	94	99			88		
cM capacity (veh/h)	192	222	604	213	211	973	1029			1455		
Direction, Lane#	EB1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	30413 500	VATE AND	ARREN	Total Control
/olume Total	74	113	12	86	45	176	457	83		1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1	11.14-22-07	Allegan.
/olume Left	57	50	12	0	0	176	0	0				
/olume Right	7	63	0	0	45	0	0	83				
SH	216	378	1029	1700	1700	1455	1700	1700				
olume to Capacity	0.34	0.30	0.01	0.05	0.03	0.12	0.27	0.05				
lueue Length 95th (ft)	36	31	1	0	0	10	0	0				
control Delay (s)	30.6	18.6	8.5	0.0	0.0	7.8	0.0	0.0				
ane LOS	D	C	A			A		262				
pproach Delay (s) pproach LOS	30.6 D	18.6 C	0.7			1.9						
tersection Summary		TAN SE					2 - 11/1	W 1 1 1 1 1 1	E DATE OF THE SE	Tions		
verage Delay			5.6							F. Brail	Alm-	
ntersection Capacity Utilization nalysis Period (min)		4	1.5% 15	ICU	Level of	Service			Α			

	1	-	7	-	4	1	4	†	1	1	Ţ	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	CDF
Lane Configurations Volume (veh/h) Sign Control Grade	47	4 12 Stop 0%	i ⁿ 11		4		N	467 Free	31	97	133 Free	SBR 92
Peak Hour Factor	0.92			0.92	0.92	0.92	0.92	0% 0.92	0.00	0.00	0%	
Hourly flow rate (vph) Pedestrians Lane Width (ft) Walking Speed (ft/s) Percent Blockage	51			47	3	109	10	508	0.92 34	0.92 105	0.92 145	0.92 100
Right turn flare (veh) Median type			6									
Median storage veh) Upstream signal (ft) pX, platoon unblocked								None			None	
vC, conflicting volume vC1, stage 1 conf vol vC2, stage 2 conf vol	993	916	145	895	983	508	245			541		
Cu, unblocked vol	993	916	145	895	983	508	245			541		
C, single (s) C, 2 stage (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
F (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
00 queue free %	69	95	99	79	99	81	99			90		
M capacity (veh/h)	164	242	903	227	222	565	1322			1027		
Direction, Lane#	EB1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3		17.600	HTTP://EDIA	TOTAL STREET
olume Total	76	159	10	508	34	105	145	100	AND PERSONS	All Sex Ser	and the second	22
olume Left	51	47	10	0	0	105	0	0				
olume Right	12	109	0	0	34	0	0 .	100				
SH	214	384	1322	1700	1700	1027	1700	1700				
olume to Capacity	0.36	0.41	0.01	0.30	0.02	0.10	0.09	0.06				
lueue Length 95th (ft)	38	49	1	0	0	9	0	0				
control Delay (s)	31.5	20.8	7.7	0.0	0.0	8.9	0.0	0.0				
ane LOS	D	C	Α			Α		2:3				
pproach Delay (s) pproach LOS	31.5 D	20.8 C	0.1			2.7						
itersection Summary	(Alaske	1 1	1 - 218	N. Carrier	Ne se						1111	Total Tab
verage Delay Itersection Capacity Utilization nalysis Period (min)			5.9 55.3% 15	ICU	Level of	Service			В		- / +-	

	-		1	-	4	1	
Movement	EBT	EBF	R WBL	. WBT	NBL	NBR	
Lane Configurations	P		1		W	3,21,	344° (VE)
Volume (veh/h)	28	0			0	68	
Sign Control	Free			Free	Stop		
Grade	0%			0%	0%		
Peak Hour Factor	0.92	0.92	0.92		0.92	0.92	
Hourly flow rate (vph)	30		4100	30	0.52	74	
Pedestrians			110	00	U	14	
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	TWLTL			Nama			
Median storage veh)	2			None			
Upstream signal (ft)	2						p.
pX, platoon unblocked							
vC, conflicting volume					9725.21		
vC1, stage 1 conf vol			30		280	30	
vC2, stage 2 conf vol					30		
					250		
vCu, unblocked vol			30		280	30	
tC, single (s)			4.1		6.4	6.2	
tC, 2 stage (s)					5.4		
tF(s)			2.2		3.5	3.3	
p0 queue free %			93		100	93	
cM capacity (veh/h)			1582		716	1044	
Direction, Lane#	EB 1	WB 1	WB 2	NB 1	- 100		
Volume Total	30	110	30	74			the second secon
Volume Left	0	110	0	0			
Volume Right	0	0	0	74			
SH	1700	1582	1700	1044			
Volume to Capacity	0.02	0.07	0.02	0.07			
Queue Length 95th (ft)	0	6	0	6			
Control Delay (s)	0.0	7.4	0.0	8.7			
ane LOS		Α	7.7	A			
Approach Delay (s)	0.0	5.8		8.7			
Approach LOS		2.4		A			
ntersection Summary					<b>建</b> 加油		
verage Delay			6.0				
ntersection Capacity Utilization	i.	2	23.1%	ICU I	evel of	Service	A
Analysis Period (min)			15	0.00			Α

	-	. >	1	4	1	1	
Movement	EBI	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	P		*		W	MDIX	25 100 25
Volume (veh/h)	29	0			0	71	
Sign Control	Free			Free	Stop		
Grade	0%			0%	0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	32		118	43	0.52	77	
Pedestrians			. 10	40	U	11	
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	TWLTL			None			
Median storage veh)	2			None			
Upstream signal (ft)	2						
pX, platoon unblocked							
vC, conflicting volume			20		255	-72-	
vC1, stage 1 conf vol			32		312	32	
vC2, stage 2 conf vol					32		
vCu, unblocked vol			00		280		
tC, single (s)			32		312	32	
tC, 2 stage (s)			4.1		6.4	6.2	
tF (s)					5.4		
p0 queue free %			2.2		3.5	3.3	
cM capacity (veh/h)			93		100	93	
			1581		690	1042	
Direction, Lane#	EB1	WB 1	WB 2	NB 1	200		
Volume Total	32	118	43	77			
/olume Left	0	118	0	0			
/olume Right	0	0	0	77			
SH	1700	1581	1700	1042			
olume to Capacity	0.02	0.07	0.03	0.07			
Queue Length 95th (ft)	0	6	0	6			
Control Delay (s)	0.0	7.5	0.0	8.7			
ane LOS		Α		Α			
pproach Delay (s)	0.0	5.5		8.7			
pproach LOS		311		A			
itersection Summary		Hall Mar	4-17	14614	N. W. S. S.		
verage Delay			5.8			100000000000000000000000000000000000000	
ntersection Capacity Utilization	on	2	3.8%	ICUL	evel of S	Service	A
nalysis Period (min)			15		- Paragonia	The state of	n

# APPENDIX D

➤ 2018 Opening Day Conditions Analysis Worksheets

	1 + 4 .						3.00	NI FEAT				
	_	-	1	-	4	-	1	Ť	1	1	+	4
Viovement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations		ተተተ	77	44	titt					15		77
Volume (vph)	0	259	80	602		0	0	0	0	336		32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		1900
Total Lost time (s)		5.0	5.0	5.0	5.0				1000	5.0	5.0	5.0
Lane Util. Factor		0.91	0.88	0.97	0.86					0.95	0.95	0.88
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		5085	2787	3433	6408					1681	1686	2787
Flt Permitted		1.00	1.00	0.95	1.00		1			0.95	0.95	1.00
Satd. Flow (perm)	ZER	5085	2787	3433	6408					1681	1686	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	282	87	654	1690	0	0.02	0.52	0.32	365	1	35
RTOR Reduction (vph)	0	0	59	0	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	282	28	654	1690	0	0	0	. 0	182	184	28 7
Turn Type		NA	Perm	Prot	NA		-	- 0	.0			
Protected Phases		2	11/2	1	6					Split	NA	Perm
Permitted Phases			2	,						4	4	4
Actuated Green, G (s)		29.0	29.0	27.0	61.0					40.0	40.0	4
Effective Green, g (s)		29.0	29.0	27.0	61.0					19.0	19.0	19.0
Actuated g/C Ratio		0.32	0.32	0.30	0.68					19.0	19.0	19.0
Clearance Time (s)		5.0	5.0	5.0	5.0					0.21	0.21	0.21
Vehicle Extension (s)		3.0	3.0	3.0	3.0					5.0	5.0	5.0
Lane Grp Cap (vph)		1638	898	1029	4343			-	-	3.0	3.0	3.0
v/s Ratio Prot		0.06	000	c0.19	c0.26					354	355	588
v/s Ratio Perm		9.516	0.01	00.10	00.20					0.11	c0.11	5.52
v/c Ratio		0.17	0.03	0.64	0.39					0.54	0.50	0.00
Uniform Delay, d1		21.9	20.9	27.2	6.3					0.51	0.52	0.01
Progression Factor		1.00	1.00	0.76	0.51					31.4	31.4	28.1
Incremental Delay, d2		0.2	0.1	1.0	0.31					1.00	1.00	1.00
Delay (s)		22.1	20.9	21.8	3.4					5.3	5.3	0.0
Level of Service		C	C	C	Α					36.7	36.8	28.1
Approach Delay (s)		21.8	O	C	8.6			0.0		D	D	C
Approach LOS		C			Α			0.0 A			36.0	
Intersection Summary								A			D	
HCM 2000 Control Delay			13.7	HCI	M 2000 Le	vol of Con	doo		_		W	
HCM 2000 Volume to Capacity ratio	)		0.52	1101	VI ZUUU LE	vei oi ser	vice		В			
Actuated Cycle Length (s)			90.0	Cum	of lost tim	20 (0)			45.0			
Intersection Capacity Utilization		6	5.5%		Level of S				15.0	Ē		
Analysis Period (min)			15	100	reveror 2	ervice			C			
Critical Lane Group		- 1	10									

	1	-	7	*	-	1	4	†	1	1	1	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	ODE
Lane Configurations		444	777	44			1,12.5	, indi	IVE	T		SBF
Volume (vph)	0	461	177	444	1261	- 0	0	0.	0	336	4 1	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	60 1900
Total Lost time (s)		5.0	5.0	5.0	5.0	1,5,5,5		1000	1000	5.0	5.0	5.0
Lane Util. Factor		0.91	0.88	0.97	0.86					0.95	0.95	0.88
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Fit Protected		1.00	1.00	0.95	1.00					0.95	0.95	
Satd. Flow (prot)		5085	2787	3433	6408					1681	1686	1.00
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	2787
Satd. Flow (perm)	-	5085	2787	3433	6408					1681	1686	1.00
	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		2787
Adj. Flow (vph)	0	501	192	483	1371	0.02	0.32	0.52	0.92	365	0.92	0.92
RTOR Reduction (vph)	0	0	126	0	0	0	0	0		1000	1	65
Lane Group Flow (vph)	0	501	66	483	1371	0	0	0	0	0 182	0	50
Turn Type		NA	Perm	Prot	NA	- 0	- 0	0	U		184	15
Protected Phases		2		1	6					Split	NA	Perm
Permitted Phases			2	•	U					4	4	
Actuated Green, G (s)		31.0	31.0	23.0	59.0					01.0		4
Effective Green, g (s)		31.0	31.0	23.0	59.0					21.0	21.0	21.0
Actuated g/C Ratio		0.34	0.34	0.26	0.66					21.0	21.0	21.0
Clearance Time (s)		5.0	5.0	5.0	5.0					0.23	0.23	0.23
Vehicle Extension (s)		3.0	3.0	3.0	3.0					5.0	5.0	5.0
Lane Grp Cap (vph)		1751	959	877	4200					3.0	3.0	3.0
v/s Ratio Prot		0.10	555	c0.14	c0.21					392	393	650
v/s Ratio Perm		0.10	0.02	CO. 14	60.21					0.11	c0.11	
v/c Ratio		0.29	0.02	0.55	0.33					2.35		0.01
Uniform Delay, d1		21.5	19.8	29.0	6.8					0.46	0.47	0.02
Progression Factor		1.00	1.00	0.82	0.57					29.7	29.7	26.6
Incremental Delay, d2		0.4	0.1	0.6	0.57					1.00	1.00	1.00
Delay (s)		21.9	19.9	24.5	4.1					3.9	4.0	0.1
Level of Service		C	В	C C						33.6	33.7	26.7
Approach Delay (s)		21.3	В	C	A			-5.5		C	C	C
Approach LOS		C			9.4			0.0			32.6	
The Water					Α			Α			C	
Intersection Summary HCM 2000 Control Delay	25							9	Was s		310	(0.0)
			15.5	HCI	M 2000 Lev	vel of Sen	/ice		В			
HCM 2000 Volume to Capacity rati	0		0.45									
Actuated Cycle Length (s)		4	90.0		of lost tim			1	5.0			
Intersection Capacity Utilization		6	0.1%	ICU	Level of S	ervice			В			
Analysis Period (min)			15									
Critical Lane Group		7 - 1								- 1		

	1	-	1	1	<b>←</b>	1	4	1	-	1	1	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	del	ተተተ			fiff	7		ĵ.	77	ODL	ODI	ODN
Volume (vph)	31	563	0	0	947	243		0	600	0	. 0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0	1300	1900	1900
Lane Util. Factor	0.97	0.91			0.81	0.81	0.97	0.95	0.95			
Fit	1.00	1.00			0.99	0.85	1.00	0.85	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3433	5085			6004	1282	3433	1504	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3433	5085			6004	1282	3433	1504	1504			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.00	0.00	0.00
Adj. Flow (vph)	34	612	0	0	1029	264	1317	0.92	652	0.92	0.92	0.92
RTOR Reduction (vph)	0	0	0	0	5	162	0	57	57	0	0	0
Lane Group Flow (vph)	34	612	0	0	1061	65	1317	269	269	0	0	0
Turn Type	Prot	NA			NA	Perm	Split	NA	Perm	U	0	0
Protected Phases	5	2			6	Citi	8	8	Pellii			
Permitted Phases					U	6	0	0	0			
Actuated Green, G (s)	2.4	33.0			25.6	25.6	47.0	47.0	8 47.0			
Effective Green, g (s)	2.4	33.0			25.6	25.6	47.0	47.0	47.0			
Actuated g/C Ratio	0.03	0.37			0.28	0.28	0.52	0.52				
Clearance Time (s)	5.0	5.0			5.0	5.0	5.0	5.0	0.52 5.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	91	1864			1707	364	1792	785				
v/s Ratio Prot	0.01	c0.12			c0.18	304	c0.38	0.18	785			
v/s Ratio Perm		44116			00.10	0.05	CU.30	0.18	0.40			
v/c Ratio	0.37	0.33			0.62	0.03	0.73	0.34	0.18			
Uniform Delay, d1	43.1	20.5			28.0	24.3	16.7		0.34			
Progression Factor	0.49	0.27			1.00	1.00	1.00	12.5 1.00	12.5			
Incremental Delay, d2	2.4	0.4			1.7	1.1	2.7		1.00			
Delay (s)	23.4	6.0			29.7	25.3	19.4	1.2	1.2			
Level of Service	C	A			C	C		13.7	13.7			
Approach Delay (s)		6.9			28.9	C	В	B	В			
Approach LOS		A			C C			17.5			0.0	
Intersection Summary					-			В			Α	
HCM 2000 Control Delay			19.5	HCV	1 2000 Le	unl of O				HITTO I		4
HCM 2000 Volume to Capacity	ratio		0.69	TION	1 2000 LE	vei oi Se	rvice		В			
Actuated Cycle Length (s)			90.0	Cum	of lost tir	20 (0)			45.0			
ntersection Capacity Utilization	310		5.5%		Level of S				15.0			
Analysis Period (min)	1	0.0	15	100	revelor s	pervice			C			
Critical Lane Group			10									

	1	-	7	-	-	4	4	Ť	-	1		1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL		NBR	ODI	007	-
Lane Configurations	1/1/1				tttp				NOR #	SBL	SBT	SBR
Volume (vph)	54	738	0	0	755	420			909	0		
Ideal Flow (vphpl)	1900	1900	1900	1900		1900	1900		1900	1900	0	0
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0		5.0	1900	1900	1900
Lane Util. Factor	0.97	0.91			0.81	0.81	0.97	0.95	0.95			
Frt	1.00	1.00			0.97	0.85	1.00	0.85	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3433	5085			5841	1282	3433	1505	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3433	5085			5841	1282	3433	1505	1504			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.00	0.00
Adj. Flow (vph)	59	802	0	0	821	457	1025	1	988		0.92	0.92
RTOR Reduction (vph)	0	0	0	0	54	164	0	35	43	0	0	0
Lane Group Flow (vph)	59	802	0	0	991	69	1025	460	452	0	0	0
Turn Type	Prot	NA			NA	Perm	Split	NA	Perm	0	U	0
Protected Phases	5	2			6	, 0,111	8	8	reiiii			
Permitted Phases						6	U	0	8			
Actuated Green, G (s)	3.2	35.0			26.8	26.8	45.0	45.0	45.0			
Effective Green, g (s)	3.2	35.0			26.8	26.8	45.0	45.0	45.0			
Actuated g/C Ratio	0.04	0.39			0.30	0.30	0.50	0.50	0.50			
Clearance Time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	122	1977			1739	381	1716	752	752			53
v/s Ratio Prot	0.02	c0.16			c0.17	001	0.30	c0.31	152			
v/s Ratio Perm					00.17	0.05	0.50	60.51	0.20			
v/c Ratio	0.48	0.41			0.57	0.18	0.60	0.61	0.30			
Uniform Delay, d1	42.6	20.0			26.7	23.5	16.0	16.2	16.1			
Progression Factor	0.60	0.42			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	2.8	0.6			1.4	1.00	1.5	3.7	3.5			
Delay (s)	28.4	8.9			28.1	24.5	17.6	19.9	19.6			
Level of Service	C	Α			C	C	В	B	19.6 B			
Approach Delay (s)		10.2			27.4	O	Ь	18.6	Ь		0.0	
Approach LOS		В			C			В			0.0	
Intersection Summary	19	200	tall in	01-						:	Α	DOM:
HCM 2000 Control Delay			19.6	HCI	M 2000 Le	evel of Se	rvice		В			
HCM 2000 Volume to Capacity	ratio		0.60		2000 20	20010106	IVICE		D			
Actuated Cycle Length (s)			90.0	Sun	of lost tir	me (e)			15.0			
Intersection Capacity Utilization	1		).1%	ICH	Level of S	Service		7. 70	15.0 B			
Analysis Period (min)			15	100	2010101	JOI VICE			В			
c Critical Lane Group			-		- 11 -			Sales .	-			

Semilled Place   Semi
ane Configurations olume (vph) 918 247 367 1072 125 66 leal Flow (vphpl) 1750 1750 1750 1750 1750 1750 1750 1750
Solume (vph)   918   247   367   1072   125   66     Itela Flow (vphpl)   1750   1750   1750   1750   1750   1750     Itela Flow (vphpl)   1750   1750   1750   1750   1750     Itela Flow (vphpl)   1750   1750   1750   1750   1750     Itela Flow (vphpl)   1.00   1.00   1.00   0.91   0.97   1.00     Itela Flow (vph)   1.00   1.00   0.91   0.97   1.00     Itela Flow (vph)   1.00   1.00   0.95   1.00   0.95   1.00     Itela Flow (vph)   1.00   1.00   0.95   1.00   0.95   1.00     Itela Flow (vph)   1.00   1.00   0.95   1.00   0.95   1.00     Itela Flow (vph)   1.00   1.00   0.95   1.00   0.95   1.00     Itela Flow (vph)   1.00   1.00   0.95   1.00   0.95   1.00     Itela Flow (vph)   1.00   1.00   0.95   1.00   0.95   1.00     Itela Flow (vph)   1.00   1.00   0.95   1.00   0.95   1.00     Itela Flow (vph)   1.00   1.00   0.95   1.00   0.95   1.00     Itela Flow (vph)   1.00   1.00   0.95   1.00   0.95   1.00     Itela Flow (vph)   1.00   1.00   0.95   1.00   0.95   1.00     Itela Flow (vph)   1.00   1.00   0.95   1.00   0.95   1.00     Itela Flow (vph)   1.00   1.00   0.95   1.00   0.95   1.00     Itela Flow (vph)   1.540   479   638   3604   421   194     Itela Flow (vph)   1.540   479   638   3604   421   194     Itela Flow (vph)   1.540   479   638   3604   421   194     Itela Flow (vph)   1.540   479   638   3604   421   194     Itela Flow (vph)   1.540   479   638   3604   421   194     Itela Flow (vph)   1.540   479   638   3604   421   194     Itela Flow (vph)   1.540   479   638   3604   421   194     Itela Flow (vph)   1.540   479   638   3604   421   194     Itela Flow (vph)   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00
Seal Flow (vphpl)
otal Lost time (s) 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 ane Util. Factor 0.91 1.00 1.00 0.91 0.97 1.00 rt 1.00 0.85 1.00 1.00 1.00 0.85 1.00 0.95 1.00 atd. Flow (prot) 4684 1458 1630 4684 3162 1458 t Permitted 1.00 1.00 0.95 1.00 0.95 1.00 atd. Flow (perm) 4684 1458 1630 4684 3162 1458 atd. Flow (perm) 4684 1458 1630 4684 3162 1458 atd. Flow (perm) 4684 1458 1630 4684 3162 1458 atd. Flow (perm) 4684 1458 1630 4684 3162 1458 atd. Flow (perm) 4684 1458 1630 4684 3162 1458 atd. Flow (perm) 998 268 399 1165 136 72 TOR Reduction (vph) 998 88 399 1165 136 72 TOR Reduction (vph) 998 88 399 1165 136 10 atm. Type NA Perm Prot NA Prot Perm otected Phases 2 1 6 8 att. Flow (perm) 13.7 13.7 tective Green, G (s) 33.8 33.8 40.3 79.1 13.7 13.7 tective Green, G (s) 33.8 33.8 40.3 79.1 13.7 13.7 tuated g/C Ratio 0.33 0.33 0.39 0.77 0.13 0.13 att. att. att. Green (permitted) 1540 479 638 3604 421 194 Ratio Prot CO.21 co.24 0.25 co.04
ane Util. Factor
th
the Protected 1.00 1.00 0.95 1.00 0.95 1.00 atd. Flow (prot) 4684 1458 1630 4684 3162 1458 temperated 1.00 1.00 0.95 1.00 0.95 1.00 atd. Flow (perm) 4684 1458 1630 4684 3162 1458 atd. Flow (perm) 4684 1458 1630 4684 3162 1458 atd. Flow (perm) 998 268 399 1165 136 72 TOR Reduction (vph) 0 180 0 0 0 62 atd. Flow (vph) 998 88 399 1165 136 10 atd. Flow (vph) 998 88 399 1165 136 10 atd. Flow (vph) 998 88 399 1165 136 10 atd. Flow (vph) 998 88 399 1165 136 10 atd. Flow (vph) 998 88 399 1165 136 10 atd. Flow (vph) 998 88 399 1165 136 10 atd. Flow (vph) 998 88 399 1165 136 10 atd. Flow (vph) 998 88 399 1165 136 10 atd. Flow (vph) 998 88 399 1165 136 10 atd. Flow (vph) 998 88 399 1165 136 10 atd. Flow (vph) 998 88 399 1165 136 10 atd. Flow (vph) 998 88 399 1165 136 10 atd. Flow (vph) 998 88 399 1165 136 10 atd. Flow (vph) 998 88 399 1165 136 10 atd. Flow (vph) 998 88 399 1165 136 10 atd. Flow (vph) 998 88 399 1165 136 10 atd. Flow (vph) 998 88 399 1165 136 10 atd. Flow (vph) 998 88 399 1165 136 10 atd. Flow (vph) 998 88 399 1165 136 10 atd. Flow (vph) 998 88 399 1165 136 10 atd. Flow (vph) 998 88 399 1165 136 10 atd. Flow (vph) 998 88 399 1165 136 10 atd. Flow (vph) 998 88 399 1165 136 10 atd. Flow (vph) 998 88 399 1165 136 10 atd. Flow (vph) 998 88 399 1165 136 10 atd. Flow (vph) 998 88 399 1165 136 10 atd. Flow (vph) 998 88 399 1165 136 10 atd. Flow (vph) 998 88 399 1165 136 10 atd. Flow (vph) 998 88 399 1165 136 10 atd. Flow (vph) 998 88 399 1165 136 136 10 atd. Flow (vph) 998 88 399 1165 136 136 10 atd. Flow (vph) 998 88 399 1165 136 136 10 atd. Flow (vph) 998 88 399 1165 136 136 10 atd. Flow (vph) 998 88 399 1165 136 136 10 atd. Flow (vph) 998 88 399 1165 136 136 10 atd. Flow (vph) 998 88 399 1165 136 136 10 atd. Flow (vph) 998 88 399 1165 136 136 10 atd. Flow (vph) 998 88 399 1165 136 136 10 atd. Flow (vph) 998 88 399 1165 136 136 10 atd. Flow (vph) 998 100 atd. Flow (vph)
atd. Flow (prot)  4684
t Permitted 1.00 1.00 0.95 1.00 0.95 1.00 atd. Flow (perm) 4684 1458 1630 4684 3162 1458 eak-hour factor, PHF 0.92 0.92 0.92 0.92 0.92 dj. Flow (vph) 998 268 399 1165 136 72 TOR Reduction (vph) 0 180 0 0 0 62 ene Group Flow (vph) 998 88 399 1165 136 10 em Type NA Perm Prot NA Prot Perm otected Phases 2 1 6 8 emitted Phases 2 1 6 8 emitted Green, G (s) 33.8 33.8 40.3 79.1 13.7 13.7 fective Green, g (s) 33.8 33.8 40.3 79.1 13.7 13.7 fective Green, g (s) 33.8 33.8 40.3 79.1 13.7 13.7 futuated g/C Ratio 0.33 0.33 0.39 0.77 0.13 0.13 exarance Time (s) 5.0 5.0 5.0 5.0 5.0 hicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 ne Grp Cap (vph) 1540 479 638 3604 421 194 Ratio Prot Co.21 co.24 0.25 co.04
atd. Flow (perm)  4684 1458 1630 4684 3162 1458 eak-hour factor, PHF  0.92 0.92 0.92 0.92 0.92 dj. Flow (vph)  998 268 399 1165 136 72  TOR Reduction (vph)  0 180 0 0 0 62 ene Group Flow (vph)  998 88 399 1165 136 10  entry Type  NA Perm Prot NA Prot Perm  otected Phases  2 1 6 8 entry tender of the control of the contr
Beak-hour factor, PHF         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92         0.92
dj. Flow (vph) 998 268 399 1165 136 72  FOR Reduction (vph) 0 180 0 0 0 62  Inne Group Flow (vph) 998 88 399 1165 136 10  Inn Type NA Perm Prot NA Prot Perm  otected Phases 2 1 6 8  Intermitted Phases 2 8  Intermitted Green, G (s) 33.8 33.8 40.3 79.1 13.7 13.7  fective Green, g (s) 33.8 33.8 40.3 79.1 13.7 13.7  Intertuated g/C Ratio 0.33 0.33 0.39 0.77 0.13 0.13  Descrance Time (s) 5.0 5.0 5.0 5.0 5.0  Intermitted Extension (s) 3.0 3.0 3.0 3.0 3.0  Intermitted Phases 2 8  Intermitted Phases 3 8  Intermitted Phases 4 9  Intermitted Phase 5 9  Intermitted Phase 638 3604 421 194  Intermitted Phase 638 3604 621 194  Intermitted Phase 638 3604 421 194  Intermitted Phase 638 3604 198  Intermitted Phase 638 3604  Intermited Phase 638 3604  Intermitted Phase 638 3604  Intermitted Phase
TOR Reduction (vph) 0 180 0 0 0 62  Inne Group Flow (vph) 998 88 399 1165 136 10  Inn Type NA Perm Prot NA Prot Perm  otected Phases 2 1 6 8  Intermitted Phases 2 8  Intertited Green, G (s) 33.8 33.8 40.3 79.1 13.7 13.7  fective Green, g (s) 33.8 33.8 40.3 79.1 13.7 13.7  Intertituted g/C Ratio 0.33 0.33 0.39 0.77 0.13 0.13  Permitted g/C Ratio 0.33 0.33 0.39 0.77 0.13 0.13  Permitted g/C Ratio 0.33 0.30 0.30 0.77 0.13 0.13  Permitted g/C Ratio 0.33 0.33 0.39 0.77 0.13 0.13  Permitted g/C Ratio 0.33 0.33 0.39 0.77 0.13 0.13  Permitted g/C Ratio 0.33 0.33 0.39 0.77 0.13 0.13  Permitted g/C Ratio 0.33 0.30 0.30 0.30 0.30 0.30  Permitted g/C Ratio 0.33 0.30 0.30 0.30 0.30 0.30  Permitted g/C Ratio 0.33 0.30 0.30 0.30 0.30 0.30  Permitted g/C Ratio 0.33 0.30 0.30 0.30 0.30 0.30 0.30  Permitted g/C Ratio 0.33 0.30 0.30 0.30 0.30 0.30 0.30  Permitted g/C Ratio 0.33 0.30 0.30 0.30 0.30 0.30 0.30 0.3
Section   Sect
Inn Type
otected Phases 2 1 6 8 ermitted Phases 2 8 stuated Green, G (s) 33.8 33.8 40.3 79.1 13.7 13.7 fective Green, g (s) 33.8 33.8 40.3 79.1 13.7 13.7 tuated g/C Ratio 0.33 0.33 0.39 0.77 0.13 0.13 earance Time (s) 5.0 5.0 5.0 5.0 5.0 hicle Extension (s) 3.0 3.0 3.0 3.0 3.0 ne Grp Cap (vph) 1540 479 638 3604 421 194 Ratio Prot c0.21 c0.24 0.25 c0.04
Permitted Phases 2 8 Estuated Green, G (s) 33.8 33.8 40.3 79.1 13.7 13.7 Estivated g/C Ratio 0.33 0.33 0.39 0.77 0.13 0.13 Estrance Time (s) 5.0 5.0 5.0 5.0 5.0 Estivated g/C Ratio 0.30 3.0 3.0 3.0 3.0 3.0 Estivated g/C Ratio 0.33 0.33 0.39 0.77 0.13 0.13 Estivated g/C Ratio 0.33 0.33 0.39 0.77 0.13 0.13 Estivated g/C Ratio 0.33 0.30 3.0 3.0 3.0 3.0 Estivated Green, G (s) 33.8 33.8 40.3 79.1 13.7 13.7 Estivated Green, G (s) 33.8 33.8 40.3 79.1 13.7 13.7 Estivated Green, G (s) 33.8 33.8 40.3 79.1 13.7 13.7 Estivated Green, G (s) 33.8 33.8 40.3 79.1 13.7 13.7 Estivated Green, G (s) 33.8 33.8 40.3 79.1 13.7 13.7 Estivated Green, G (s) 33.8 33.8 40.3 79.1 13.7 13.7 Estivated Green, G (s) 33.8 33.8 40.3 79.1 13.7 13.7 Estivated Green, G (s) 33.8 33.8 40.3 79.1 13.7 13.7 Estivated Green, G (s) 33.8 33.8 40.3 79.1 13.7 13.7 Estivated Green, G (s) 33.8 33.8 40.3 79.1 13.7 13.7 Estivated g/C Ratio 0.33 0.39 0.77 0.13 0.13 Estivated g/C Ratio 0.33 0.39 0.39 0.77 0.13 0.13 Estivated g/C Ratio 0.33 0.30 0.30 0.30 0.13 Estivated g/C Ratio 0.33 0.30 0.30 0.30 0.13 Estivated g/C Ratio 0.33 0.30 0.30 0.30 0.13 Estivated g/C Ratio 0.33 0.30 0.30 0.30 0.13 Estivated g/C Ratio 0.33 0.30 0.30 0.30 0.30 0.13 Estivated g/C Ratio 0.33 0.30 0.30 0.30 0.30 0.30 Estivated g/C Ratio 0.33 0.30 0.30 0.30 0.30 0.30 0.30 Estivated g/C Ratio 0.30 0.30 0.30 0.30 0.30 0.30 0.30 0.3
tuated Green, G (s) 33.8 33.8 40.3 79.1 13.7 13.7 fective Green, g (s) 33.8 33.8 40.3 79.1 13.7 13.7 tuated g/C Ratio 0.33 0.33 0.39 0.77 0.13 0.13 fearance Time (s) 5.0 5.0 5.0 5.0 5.0 5.0 5.0 ficle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 fearance Time Grp Cap (vph) 1540 479 638 3604 421 194 Ratio Prot c0.21 c0.24 0.25 c0.04
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Ratio Prot c0.21 c0.24 0.25 c0.04
D. ( D.
V.VV [111]
Ratio 0.65 0.18 0.63 0.32 0.32 0.05
iform Delay, d1 29.4 24.6 25.2 3.6 40.4 38.9
ogression Factor 1.00 1.00 1.00 1.00 1.00
remental Delay, d2 0.9 0.2 1.9 0.1 0.4 0.1
ay (s) 30.4 24.8 27.1 3.7 40.8 39.0
vel of Service C C C A D D
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ersection Summary
M 2000 Central Delay
M 2000 Control Delay 19.9 HCM 2000 Level of Service B M 2000 Volume to Capacity ratio 0.59
ueted Ouele Landth (-)
receipe Conseils Hilliantia
lysis Period (min)  57.7%  ICU Level of Service  B
Critical Lane Group

	-	1	1	-	1	1	
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	ተተተ	7	19	ተተተ	44	T T	
Volume (vph)	1534	125	146	914	261	352	
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	0.91	1.00	1.00	0.91	0.97	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	0.85	
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00	
Satd. Flow (prot)	4684	1458	1630	4684	3162	1458	
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00	
Satd. Flow (perm)	4684	1458	1630	4684	3162	1458	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	1667	136	159	993	284	383	
RTOR Reduction (vph)	0	45	0	0	0	284	
Lane Group Flow (vph)	1667	91	159	993	284	99	
Turn Type	NA	Perm	Prot	NA	Prot	Perm	
Protected Phases	2		1	6	8	Cili	
Permitted Phases		2				8	
Actuated Green, G (s)	60.1	60.1	18.5	83.6	19.6	19.6	
Effective Green, g (s)	60.1	60.1	18.5	83.6	19.6	19.6	
Actuated g/C Ratio	0.53	0.53	0.16	0.74	0.17	0.17	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	2486	774	266	3459	547	252	
v/s Ratio Prot	c0.36		c0.10	0.21	c0.09	202	
v/s Ratio Perm		0.06			00.00	0.07	
v/c Ratio	0.67	0.12	0.60	0.29	0.52	0.39	
Uniform Delay, d1	19.3	13.3	43.9	4.9	42.5	41.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.7	0.1	3.6	0.0	0.8	1.0	
Delay (s)	20.1	13.4	47.5	5.0	43.4	42.5	
Level of Service	C	В	D	Α	D	D	
Approach Delay (s)	19.6			10.8	42.9	_	
Approach LOS	В			В	D		
Intersection Summary							
HCM 2000 Control Delay			21.1	HC	M 2000 L	evel of Service	ce C
HCM 2000 Volume to Capaci	ity ratio		0.63				
Actuated Cycle Length (s)			113.2	Sur	m of lost t	ime (s)	15.0
Intersection Capacity Utilizati	on	1	64.2%		Level of		C .
Analysis Period (min)			15		a any other		o de la companya de l
C Critical Lane Group							

	1	-	7	-	4	1	4	1	1	1	1	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL		NBR	SBL	SBT	ODE
Lane Configurations Volume (veh/h) Sign Control Grade	25	Stop	2		0 Stop	61	5	84 Free	43	172	445 Free	SBF 24
Peak Hour Factor	0.00	0%	0.00	0.00	0%	-	5.07	0%			0%	
Hourly flow rate (vph) Pedestrians Lane Width (ft) Walking Speed (ft/s)	0.92 27	0.92 2	0.92	0.92 53	0.92	0.92 66	0.92 5	0.92 91	0.92 47	0.92 187	0.92 484	0.92 26
Percent Blockage												
Right turn flare (veh) Median type			6					None			i Car	
Median storage veh) Upstream signal (ft) pX, platoon unblocked								None			None	
vC, conflicting volume vC1, stage 1 conf vol vC2, stage 2 conf vol	1026	1007	484	962	986	91	510			138		
vCu, unblocked vol	1026	1007	484	962	986	91	510			138		
tC, single (s) tC, 2 stage (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	85	99	100	75	100	93	99			87		
cM capacity (veh/h)	178	209	583	209	215	966	1055			1446		
Direction, Lane #	EB1	WB1	NB1	NB 2	NB 3	SB 1	SB 2	SB 3	WITT.			THE T
Volume Total	32	120	5	91	47	187	484	26 .	PRODUCTION OF THE PARTY OF THE	SANAL MISSEE THE	A LANGE	SELSE
Volume Left	27	53	5	0	0	187	0	0				
Volume Right	2	66	0	0	47	0	0	26				
SH	194	370	1055	1700	1700	1446	1700	1700				
Volume to Capacity	0.16	0.32	0.01	0.05	0.03	0.13	0.28	0.02				
Queue Length 95th (ft)	14	34	0	0	0	11	0	0				
Control Delay (s)	27.6	19.3	8.4	0.0	0.0	7.9	0.0	0.0				
ane LOS	D	C	Α			Α						
Approach Delay (s) Approach LOS	27.6 D	19.3 C	0.3			2.1						
itersection Summary	造型	14.			THE WITTEN	The state of the s	WS GO	II-AIF-AIF	The state of	E scalls		100000
verage Delay ntersection Capacity Utilization nalysis Period (min)		4	4.7 3.2% 15	ICU	Level of	Service	312-1		Α	15-12-5		

	A	-	7	-	-	4	. 4	1	-	1	1	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	R NBI	NBT	NBR	SBL	ODT	200
Lane Configurations Volume (veh/h) Sign Control Grade	19	4 Stop 0%	7		3 Stop		P	495 Free	33	103	SBT 141 Free	SBR 36
Peak Hour Factor	0.92		0.92	0.00	0%	0.00	-0.11	0%			0%	
Hourly flow rate (vph) Pedestrians Lane Width (ft) Walking Speed (ft/s)	21	4	8	0.92 50	0.92 3	0.92 115			0.92 36	0.92 112	0.92 153	0.92 39
Percent Blockage												
Right turn flare (veh)			6									
Median type Median storage veh) Upstream signal (ft) pX, platoon unblocked								None			None	
vC, conflicting volume vC1, stage 1 conf vol vC2, stage 2 conf vol	1039	958	153	928	961	538	192			574		
vCu, unblocked vol	1039	958	153	928	961	538	192			574		
tC, single (s) tC, 2 stage (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	86	98	99	77	99	79	100			89		
cM capacity (veh/h)	149	228	893	222	227	543	1381			999		
Direction, Lane #	EB1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	東京会学 か		MINERAL SERVICE	
Volume Total	33	168	3	538	36	112	153	39	3.37	Objection 1		100
Volume Left	21	50	3	0	0	112	0	0				
Volume Right	8	115	0	0	36	0	0	39				
cSH	212	373	1381	1700	1700	999	1700	1700				
Volume to Capacity	0.15	0.45	0.00	0.32	0.02	0.11	0.09	0.02				
Queue Length 95th (ft)	13	57	0	0	0	9	0	0				
Control Delay (s)	26.0	22.4	7.6	0.0	0.0	9.1	0.0	0.0				
ane LOS	D	C	Α			Α						
Approach Delay (s) Approach LOS	26.0 D	22.4 C	0.0			3.3						
ntersection Summary												
werage Delay itersection Capacity Utilization		5	5.2 7.7%	ICII	Level of S	Name of the last	1					
nalysis Period (min)		0	15	100	revel of S	bervice			В			

## APPENDIX E

➤ 2018 Opening Day Plus Project Conditions Analysis Worksheets

	*	-	7	-	<del>-</del>	*	1	1	1	1	1	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBI
Lane Configurations		<b>ተ</b> ቀተ	77	1979	tttt			110	MEN	N,	4	777
Volume (vph)	0	271	80	614	1563	0	. 0	.0	0	348	1	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0	1000	1000	1000	1000	5.0	5.0	5.0
Lane Util. Factor		0.91	0.88	0.97	0.86					0.95	0.95	0.88
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00				1,	0.95	0.95	1.00
Satd. Flow (prot)		5085	2787	3433	6408					1681	1686	2787
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	
Satd. Flow (perm)		5085	2787	3433	6408					1681	1686	1.00
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		-	2787
Adj. Flow (vph)	0	295	87	667	1699	0.32	0.52	0.92		0.92	0.92	0.92
RTOR Reduction (vph)	0	0	59	0	0	0	0		0	378	1	35
Lane Group Flow (vpt)	0	295	28	667	1699	0	0	0	0	0	0	28
Turn Type		NA	Perm	Prot	NA		U	U	. 0	189	190	7
Protected Phases		2	Cini	1	6				10000	Split	NA	Perm
Permitted Phases			2		0				100	4	4	- 113
Actuated Green, G (s)		29.0	29.0	27.0	61.0					10.0	- 42.5	4
Effective Green, g (s)		29.0	29.0	27.0	61.0					19.0	19.0	19.0
Actuated g/C Ratio		0.32	0.32	0.30	0.68					19.0	19.0	19.0
Clearance Time (s)		5.0	5.0	5.0	5.0				-1-	0.21	0.21	0.21
Vehicle Extension (s)		3.0	3.0	3.0	3.0					5.0	5.0	5.0
Lane Grp Cap (vph)		1638	898				-		100	3.0	3.0	3.0
v/s Ratio Prot		0.06	090	1029	4343					354	355	588
v/s Ratio Perm		0.00	0.04	c0.19	c0.27					0.11	c0.11	
v/c Ratio		0.18	0.01	0.05	0.00							0.00
Uniform Delay, d1			0.03	0.65	0.39					0.53	0.54	0.01
Progression Factor		21.9	20.9	27.4	6.4					31.6	31.6	28.1
ncremental Delay, d2		1.00	1.00	0.78	0.54					1.00	1.00	1.00
Delay (s)		0.2	0.1	1.0	0.2					5.7	5.7	0.0
evel of Service		22.2	20.9	22.3	3.6					37.2	37.3	28.1
Approach Delay (s)		C	С	C	Α					D	D	C
Approach LOS		21.9			8.9			0.0			36.5	
		C			Α			Α			D	
ntersection Summary		10	F 18						Varyant.	-		
ICM 2000 Control Delay			14.1	HCI	M 2000 Le	vel of Sen	vice		В			
ICM 2000 Volume to Capacity ratio	0		0.53		100		17 5 G		-			
ctuated Cycle Length(s)			90.0	Sun	of lost tim	ne (s)			15.0			
ntersection Capacity Mization		- 6	5.8%		Level of S				0.0			
nalysis Period (min)			15	100	FLA 2 14 20 C	-0735 I			9			
Critical Lane Group	AC					-0			No.	T. dans		

	1	-	7	1	-	4	4	†	-	1	Ing Flan. r	1
Viovement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	ODT	OD
Lane Configurations		<b>ተ</b> ቀቀ	77			J. Commission	1400	INDI	NDIA	301	-	SBF
Volume (vph)	0	474	177		1269	0	.0	0	0	349		77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	60
Total Lost time (s)		5.0	5.0	5.0	5.0	-		1000	1300	5.0	5.0	1900 5.0
Lane Util. Factor		0.91	0.88	0.97	0.86					0.95	0.95	
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.88
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	0.85
Satd. Flow (prot)		5085	2787	3433	6408					1681	1686	2787
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	
Satd. Flow (perm)		5085	2787	3433	6408					1681	1686	1.00
Peak-hour factor, PHF (	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		2787
Adj. Flow (vph)	0	515	192	496	1379	0	0.02	0.52	0.92	379	0.92	0.92
RTOR Reduction (vph)	0	0	126	0	0	0	0	0	0		1	65
Lane Group Flow (vph)	0	515	66	496	1379	0	0	0	0	189	0	50
Turn Type		NA	Perm	Prot	NA		-	- 0	U		191	15
Protected Phases		2		1	- 6					Split	NA	Perm
Permitted Phases			2		- 0					4	4	
Actuated Green, G (s)		31.0	31.0	23.0	59.0					04.0	04.0	4
Effective Green, g (s)		31.0	31.0	23.0	59.0					21.0	21.0	21.0
Actuated g/C Ratio		0.34	0.34	0.26	0.66					21.0	21.0	21.0
Clearance Time (s)		5.0	5.0	5.0	5.0					0.23	0.23	0.23
Vehicle Extension (s)		3.0	3.0	3.0	3.0					5.0	5.0	5.0
Lane Grp Cap (vph)		1751	959	877	4200					3.0	3.0	3.0
v/s Ratio Prot		0.10	000	c0.14	c0.22					392	393	650
v/s Ratio Perm			0.02	00.14	60.22					0.11	c0.11	
v/c Ratio		0.29	0.07	0.57	0.33						12.52	0.01
Uniform Delay, d1		21.5	19.8	29.2	6.8					0.48	0.49	0.02
Progression Factor		1.00	1.00	0.84	0.61					29.8	29.8	26.6
ncremental Delay, d2		0.4	0.1	0.7	0.01					1.00	1.00	1.00
Delay (s)		21.9	19.9	25.1	4.3					4.2	4.3	0.1
evel of Service		C	В	C	4.3 A					34.0	34.1	26.7
Approach Delay (s)		21.4	ь	C	9.8			0.0		C	C	C
Approach LOS		C			9.6 A			0.0 A			33.0	
ntersection Summary								A			С	
ICM 2000 Control Delay		- 15	15.9	HOL	1.0000.1	1.10	-	4	= E. 111	4/2		4.9
ICM 2000 Volume to Capacity ratio			0.46	HUI	/ 2000 Lev	el of Serv	rice		В			
ctuated Cycle Length (s)			90.0	0								
ntersection Capacity Utilization			1.4%	Sum	of lost tim	e (s)		1	5.0	E.		
nalysis Period (min)		0	15	ICU	Level of Se	ervice			В			
Critical Lane Group			10									

	1	-	1	1	4	4	4	†	-	1	1	1
Movement	EBL		EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	CDF
Lane Configurations	de				fff	77		P)	F P	ODL	901	SBR
Volume (vph)	31		- 0	0	967	251		0		0	0	
Ideal Flow (vphpl)	1900		1900	1900	1900	1900		1900	1900	1900	1900	1000
Total Lost time (s)	5.0				5.0	5.0		5.0	5.0	1500	1900	1900
Lane Util. Factor	0.97				0.81	0.81	0.97	0.95	0.95			
Frt	1.00	1.00			0.99	0.85	1.00	0.85	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00	1		
Satd. Flow (prot)	3433	5085			6001	1282	3433	1504	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3433	5085			6001	1282	3433	1504	1504			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.00	0.00
Adj. Flow (vph)	34	638	0	0	1051	273	1317	0.32	672		0.92	0.92
RTOR Reduction (vph)	0	0	0	0	6	166	0	52	52	0	0	0
Lane Group Flow (vph)	34	638	0	0	1086	66	1317	284	284	0	0	0
Turn Type	Prot	NA			NA	Perm	Split	NA		0	0	0
Protected Phases	5	2	1		6	I Cilli	Spill 8	NA 8	Perm			
Permitted Phases					U	6	0	0				
Actuated Green, G (s)	2.4	33.0			25.6	25.6	47.0	47.0	8			
Effective Green, g (s)	2.4	33.0			25.6	25.6	47.0	47.0	47.0			
Actuated g/C Ratio	0.03	0.37			0.28	0.28	0.52	0.52	47.0			
Clearance Time (s)	5.0	5.0			5.0	5.0	5.0	5.0	0.52			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	5.0			
ane Grp Cap (vph)	91	1864			1706	364	1792	785	3.0			
//s Ratio Prot	0.01	c0.13			c0.18	304	c0.38		785			
//s Ratio Perm		34.54			00.10	0.05	CU.30	0.19	0.40			
/c Ratio	0.37	0.34			0.64	0.03	0.73	0.00	0.19			
Iniform Delay, d1	43.1	20.6			28.1	24.3	16.7	0.36	0.36			
rogression Factor	0.49	0.28			1.00	1.00	1.00	12.7	12.7			
ncremental Delay, d2	2.4	0.5			1.8	1.1	2.7	1.00	1.00			
elay (s)	23.7	6.2			30.0	25.4	19.4	1.3	1.3			
evel of Service	C	A			C	C C		14.0	14.0			
pproach Delay (s)	-	7.1			29.2	C	В	B	В			
pproach LOS		Α			C C			17.6 B			0.0	
ntersection Summary	(5.00)					1		Þ		-	A	_
CM 2000 Control Delay			19.7	HCM	1 2000 Le	vel of Se	rvice		B B		200	
CM 2000 Volume to Capaci	ty ratio		0.70			. 0. 0. 00	1100		D			
ctuated Cycle Length (s)			90.0	Sum	of lost tir	ne (s)			15.0			
tersection Capacity Utilization	on	6	5.8%	ICITI	Level of S	Service			15.0 C	-		
nalysis Period (min)			15	.001	-5101010	OI VICE			U			
Critical Lane Group			- 15						V15 .1			

	1	-	7	-	<b>—</b>	4	4	Ť	-	6	ng Plan: P	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL		MDD	000	Y	_
Lane Configurations	44	444			attt	7	Nº Nº		NBR	SBL	SBT	SB
Volume (vph)	54		0	0	776	428	943					
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900		928	0	0	7.5
Total Lost time (s)	5.0	5.0	4000	,,,,,	5.0	5.0	5.0		1900	1900	1900	190
Lane Util. Factor	0.97	0.91			0.81	0.81	0.97	0.95	5.0			
Frt	1.00	1.00			0.97	0.85	1.00	0.95	0.95			
Flt Protected	0.95	1.00			1.00	1.00	0.95		0.85			
Satd. Flow (prot)	3433	5085			5843	1282	3433	1.00	1.00			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1505	1504			
Satd. Flow (perm)	3433	5085			5843	1282		1.00	1.00			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92		3433	1505	1504			
Adj. Flow (vph)	59	830	0.52	0.52	843	0.92	0.92	0.92	0.92	0.92	0.92	0.92
RTOR Reduction (vph)	0	0	0	0		465	1025	1	1009	0	0	0
Lane Group Flow (vph)	59	830	0	0	53	166	0	32	43	0	0	0
Turn Type	Prot	NA	U	U	1018	71	1025	475	462	0	0	0
Protected Phases	5	2			NA	Perm	Split	NA	Perm			
Permitted Phases	3	. 4			6		8	8		-		
Actuated Green, G (s)	3.2	35.0			422	6			8			
Effective Green, g (s)	3.2	35.0			26.8	26.8	45.0	45.0	45.0			
Actuated g/C Ratio	0.04	0.39			26.8	26.8	45.0	45.0	45.0			
Clearance Time (s)	5.0				0.30	0.30	0.50	0.50	0.50			
/ehicle Extension (s)	3.0	5.0			5.0	5.0	5.0	5.0	5.0			
ane Grp Cap (vph)		3.0			3.0	3.0	3.0	3.0	3.0			
/s Ratio Prot	122	1977			1739	381	1716	752	752			
s Ratio Perm	0.02	c0.16			c0.17		0.30	c0.32				
c Ratio	0.40					0.06			0.31			
niform Delay, d1	0.48	0.42			0.59	0.19	0.60	0.63	0.61			
	42.6	20.1			26.9	23.5	16.0	16.4	16.2			
rogression Factor	0.61	0.42			1.00	1.00	1.00	1.00	1.00			
cremental Delay, d2	2.8	0.6			1.4	1.1	1.5	4.0	3.7			
elay (s)	28.9	9.2			28.3	24.6	17.6	20.4	20.0			
evel of Service	С	Α			C	C	В	C	В			
pproach Delay (s)		10.5			27.6			18.9	-		0.0	
pproach LOS		В			C			В			Α	
tersection Summary		3537	7,88	7	S = 100 F					0.0		-
CM 2000 Control Delay	La la		19.8	HCN	1 2000 Le	vel of Se	rvice		В			- 1
CM 2000 Volume to Capacity	ratio	1	0.62	-		. 5, 0, 00	1.00					
tuated Cycle Length (s)			0.0	Sum	of lost tir	ne (s)			15.0			
ersection Capacity Utilization	1		4%		Level of S				В.			
alysis Period (min)			15			2011106			Ь	171		
Critical Lane Group			0.3									

	-	*	1	←	1	-	
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	ተተተ	7	19	ተተተ	1/1/1	77	
Volume (vph)	918	288	379	1072	153	66	
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	0.91	1.00	1.00	0.91	0.97	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	0.85	
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00	
Satd. Flow (prot)	4684	1458	1630	4684	3162	1458	
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00	
Satd. Flow (perm)	4684	1458	1630	4684	3162	1458	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	998	313	412	1165	166	72	
RTOR Reduction (vph)	0	209	0	0	0	62	
Lane Group Flow (vph)	998	104	412	1165	166	10	
Turn Type	NA	Perm	Prot	NA	Prot	Perm	
Protected Phases	2	-	1	6	8	1 Cilli	
Permitted Phases		2			U	8	
Actuated Green, G (s)	35.0	35.0	40.3	80.3	14.6	14.6	
Effective Green, g (s)	35.0	35.0	40.3	80.3	14.6	14.6	
Actuated g/C Ratio	0.33	0.33	0.38	0.77	0.14	0.14	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1562	486	626	3585	440	202	
v/s Ratio Prot	c0.21		c0.25	0.25	c0.05	202	
v/s Ratio Perm		0.07		66-69		0.01	
v/c Ratio	0.64	0.21	0.66	0.32	0.38	0.05	
Uniform Delay, d1	29.6	25.1	26.6	3.8	41.0	39.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.9	0.2	2.5	0.1	0.5	0.1	
Delay (s)	30.5	25.3	29.1	3.9	41.6	39.2	
Level of Service	C	C	C	Α	D	D	
Approach Delay (s)	29.2			10.5	40.9	1.7	
Approach LOS	C			В	D		
Intersection Summary							
HCM 2000 Control Delay			20.7	HC	M 2000 L	evel of Servi	ice C
HCM 2000 Volume to Capac	city ratio		0.60				
Actuated Cycle Length (s)			104.9	Sur	m of lost ti	ime (s)	15.0
Intersection Capacity Utilizat	tion		59.3%		Level of		В
Analysis Period (min)			15				<b>D</b>
c Critical Lane Group							

	-	1	1	-	1	-	
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	<b>ተ</b> ቀተ	7	19	<b>ተ</b> ተተ	1/1/1	7	
Volume (vph)	1534	170	159	914	290	352	
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	0.91	1.00	1.00	0.91	0.97	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	0.85	
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00	
Satd. Flow (prot)	4684	1458	1630	4684	3162	1458	
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00	
Satd. Flow (perm)	4684	1458	1630	4684	3162	1458	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	1667	185	173	993	315	383	
RTOR Reduction (vph)	0	61	0	0	0	284	
Lane Group Flow (vph)	1667	124	173	993	315	99	
Turn Type	NA	Perm	Prot	NA	Prot	Perm	
Protected Phases	2		1	6	8	Feilii	
Permitted Phases	-	2		0	U	8	
Actuated Green, G (s)	63.0	63.0	20.0	88.0	20.9	20.9	
Effective Green, g (s)	63.0	63.0	20.0	88.0	20.9	20.9	
Actuated g/C Ratio	0.53	0.53	0.17	0.74	0.18	0.18	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	2481	772	274	3466	555	256	
v/s Ratio Prot	c0.36		c0.11	0.21	c0.10	200	
v/s Ratio Perm		0.09		0.2.	00.10	0.07	
v/c Ratio	0.67	0.16	0.63	0.29	0.57	0.39	
Uniform Delay, d1	20.4	14.4	46.0	5.1	44.9	43.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.7	0.1	4.7	0.0	1.3	1.0	
Delay (s)	21.1	14.5	50.7	5.1	46.2	44.3	
Level of Service	C	В	D	A	D	D	
Approach Delay (s)	20.5			11.9	45.2		
Approach LOS	С			В	D		
Intersection Summary							
HCM 2000 Control Delay			22.4	НС	M 2000 L	evel of Service	ce C
HCM 2000 Volume to Capac	city ratio		0.64				•
Actuated Cycle Length (s)			118.9	Su	m of lost ti	ime (s)	15.0
Intersection Capacity Utilizat	tion		64.2%		J Level of		C .
Analysis Period (min)			15	100			Ü
c Critical Lane Group							

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Movement	EBL	EB	EBF	R WBL	. WBT	WBF	R NBI	NBT	NBR	SBL	SBT	CDC
Lane Configurations Volume (veh/h) Sign Control Grade	53	10 Stop 0%	6		Stop	61	þ	84 Free	<b>1</b> 7	172	445 Free	SBR 77
Peak Hour Factor	0.92	0.92		0.92	0%		0.00	0%	100	3,000	0%	
Hourly flow rate (vph) Pedestrians Lane Width (ft) Walking Speed (ft/s)	58	11			0.92	0.92 66			0.92 47	0.92 187	0.92 484	0.92 84
Percent Blockage Right turn flare (veh)			6									
Median type Median storage veh) Upstream signal (ff) pX, platoon unblocked				_				None			None	
vC, conflicting volume vC1, stage 1 conf vol vC2, stage 2 conf vol	1039	1020	484	982	1057	91	567			138		
vCu, unblocked vol	1039	1020	484	982	1057	91	567			138		
tC, single (s) tC, 2 stage (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free % cM capacity (veh/h)	67 174	95 204	99 583	72 194	100 194	93 966	99 1005			87 1446		
Direction, Lane #	EB1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	000	100	1440		
Volume Total	75	120	12	91	47	187	484	SB 3 84	3 714 3		7-11	70
Volume Left	58	53	12	0	0	187	0	0				
Volume Right	7	66	0	0	47	0	0	84				
SH	195	348	1005	1700	1700	1446	1700	1700				
Volume to Capacity	0.38	0.34	0.01	0.05	0.03	0.13	0.28	0.05				
Queue Length 95th (ft)	42	37	1	0	0	11	0	0.00				
Control Delay (s)	35.0	20.7	8.6	0.0	0.0	7.9	0.0	0.0				
ane LOS	D	C	Α			Α		0.0				
pproach Delay (s) pproach LOS	35.0 D	20.7 C	0.7			1.9						
itersection Summary				1 . 91	10/6	WEW TE	To.	SPECTOR WITH	THE IN	A STATE OF		
Average Delay ntersection Capacity Utilization unalysis Period (min)		4	6.1 3.2% 15	ICU	Level of	Service			A			

 	. 140		Juci
Timin	Plan:	PMF	FAK

	1	-	. 7	-	-		. 4	Ť	p-	1	Ig Plan: Pl	1
Movemen	EBI	L EB	T EBF	R WBL	. WBT	WBF	NBL	NBT	NDD	ODI	ODT	-
Lane Configurations Volume (veh/h) Sign Control	48	3 12 Stop	1 11 2 11	1	3 Stop	106	19	1	NBR <b>j</b> */ 33	SBL 103	SBT 141 Free	SBF 94
Grade Peak Hour Factor	0.92	0%		0.00	0%		- 5.03	0%			0%	
Hourly flow rate (vph) Pedestrians Lane Width (ft)	52				0.92			0.92 538	0.92 36	0.92 112	0.92 153	0.92 102
Walking Speed (ft/s) Percent Blockage												
Right turn flare (veh) Median type Median etgage veh)			6					None			None	
Median storage veh) Upstream signal (ft) pX, platoon unblocked											Tiono	
vC, conflicting volume vC1, stage 1 conf vol vC2, stage 2 conf vol	1052	971	153	947	1037	538	255			574		
vCu, unblocked vol	1052	971	153	947	1037	538	255			574		
tC, single (s) tC, 2 stage (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tF (s) p0 queue free %	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
cM capacity (veh/h)	64 145	94 223	99 893	76 207	98 204	79 543	99 1310			89		
Direction, Lane #	EB1	WB 1	NB 1	NB 2	NB 3	SB 1		05.0	They live in an are	999		
Volume Total	77	168	10	538	36	112	SB 2 153	SB 3				
Volume Left	52	50	10	0	0	112	0	0				
Volume Right	12	115	0	0	36	0	0	102				
cSH	190	358	1310	1700	1700	999	1700	1700				
Volume to Capacity	0.41	0.47	0.01	0.32	0.02	0.11	0.09	0.06				
Queue Length 95th (ft)	45	60	1	0	0	9	0	0				
Control Delay (s)	36.9	23.6	7.8	0.0	0.0	9.1	0.0	0.0				
Lane LOS	Ε.	C	Α			Α						
Approach Delay (s) Approach LOS	36.9 E	23.6 C	0.1			2.8						
Intersection Summary	(A) (A) (A)		- 4 W 2 N		DE SY					ar areas		
Average Delay Intersection Capacity Utilization Analysis Period (min)		į	6.6 57.7% 15	ICU	Level of	Service			В			
100			-									

		. >	1		4	1	
Movement	EBT	EBF	R WBI	WBT	NBL	NBR	
Lane Configurations	P		7		W	TADIX_	
Volume (veh/h)	30				0	68	
Sign Control	Free			Free	Stop	00	
Grade	0%			0%	0%		
Peak Hour Factor	0.92		0.92		0.92	0.92	
Hourly flow rate (vph)	33				0.52	74	
Pedestrians	2.00				U	14	
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	TWLTL			None			
Median storage veh)	2			None			
Upstream signal (ft)	-						
pX, platoon unblocked							
vC, conflicting volume			33		005	00	
vC1, stage 1 conf vol			33		285	33	
vC2, stage 2 conf vol					33		
vCu, unblocked vol			33		252	00	
tC, single (s)			4.1		285	33	
tC, 2 stage (s)			4.1		6.4	6.2	
tF(s)			2.2		5.4		
p0 queue free %			93		3.5	3.3	
cM capacity (veh/h)			1579		100 714	93 1041	
Direction, Lane #	EB1	WB 1	WB 2	NB 1	7 14	1041	
/olume Total	33	110	33	74	picina		
/olume Left	0	110	0				
/olume Right	0	0	0	0 74			
SH	1700	1579	1700	1041			
/olume to Capacity	0.02	0.07	0.02	0.07			
Queue Length 95th (ft)	0.02	6	0.02				
Control Delay (s)	0.0	7.4	0.0	6			
ane LOS	0.0	7.4 A	0.0	8.7			
Approach Delay (s)	0.0	5.7		A			
Approach LOS	0.0	0.7		8.7 A			
itersection Summary				THE POST			
verage Delay			5.9	n			
ntersection Capacity Utilization	1		23.1%	ICUL	evel of	Service	Α
nalysis Period (min)			15				
HOLVI S.							

	-	. >	1	-	4	1		
Movement	EBT	T EBF	WBL	WBT	NBL	NBR		
Lane Configurations	1		70		Y	INDIA	The Boundary of the Control of the C	1
Volume (veh/h)	31				0	. 71		
Sign Control	Free	9		Free	Stop			
Grade	0%	iy		0%	0%			
Peak Hour Factor	0.92	0.92	0.92		0.92	0.92		
Hourly flow rate (vph) Pedestrians	34	0	118	46	0	77		
Lane Width (ft) Walking Speed (ft/s)								
Percent Blockage								
Right turn flare (veh)								
Median type	TWLTL			None				
Median storage veh) Upstream signal (ft)	2							
pX, platoon unblocked								
vC, conflicting volume			34		316	34		
vC1, stage 1 conf vol					34			
vC2, stage 2 conf vol					283			
vCu, unblocked vol			34		316	34		
tC, single (s)			4.1		6.4	6.2		
tC, 2 stage (s)					5.4			
tF (s)			2.2		3.5	3.3		
p0 queue free %			92		100	93		
cM capacity (veh/h)			1578		688	1040		
Direction, Lane#	EB1	WB 1	WB 2	NB 1	LOT MILE			10000
Volume Total	34	118	46	77			and the second s	
Volume Left	0	118	0	0				
Volume Right	0	0	. 0	77				
SH (all all all all all all all all all al	1700	1578	1700	1040				
/olume to Capacity	0.02	0.08	0.03	0.07				
Queue Length 95th (ft)	0	6	0	6				
Control Delay (s)	0.0	7.5	0.0	8.7				
ane LOS		Α		Α				
Approach Delay (s)	0.0	5.4		8.7				
Approach LOS				Α				
itersection Summary		nie jene						2 30
verage Delay			5.7					100
ntersection Capacity Utilization nalysis Period (min)	1	2	3.8%	ICUL	evel of S	Service	Α	
30.6								