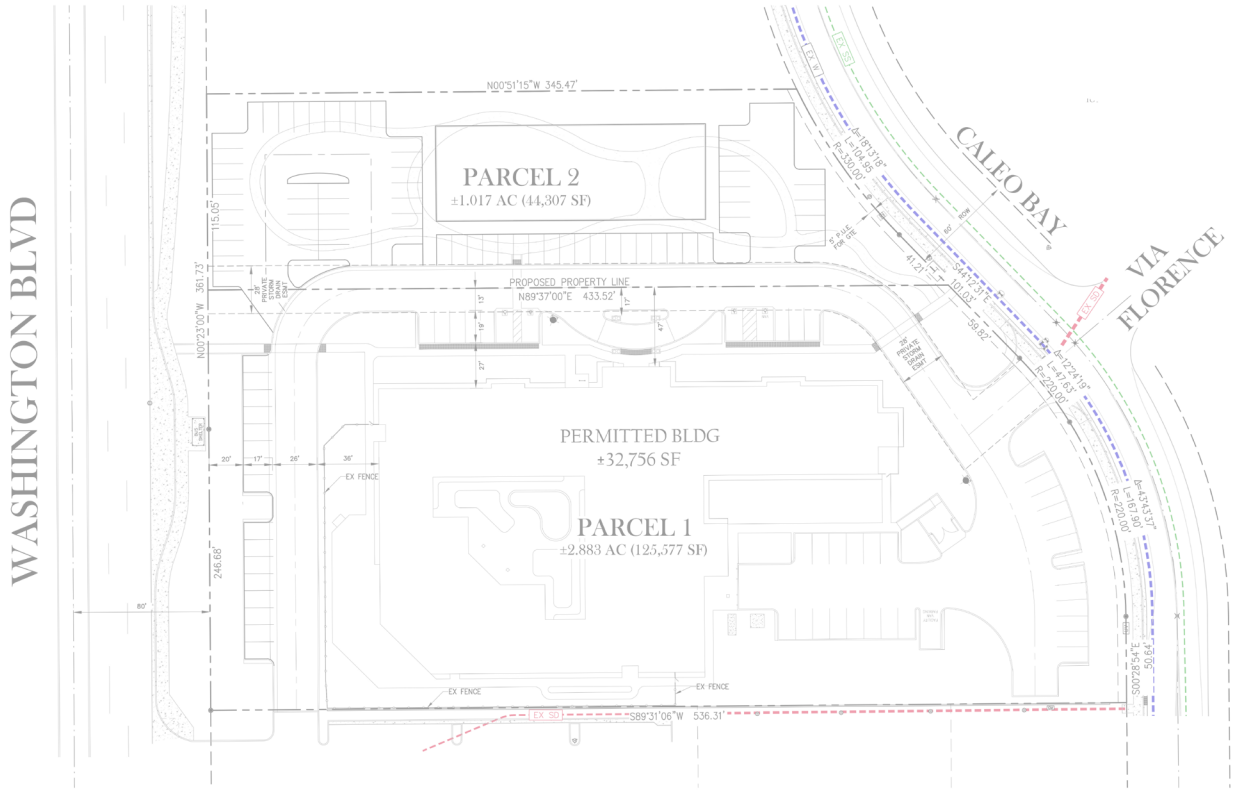
Traffic Study for the
La Quinta Memory Care Center



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1. Executive Summary

Introduction

Fehr & Peers conducted a traffic study to evaluate the potential traffic impacts of the proposed La Quinta Memory Care Facility. This report documents the results of the traffic impact analysis, consistent with the guidelines outlined in the City of La Quinta Engineering Bulletin #06-13.

Description of Proposed Project

The proposed project is a 32,756 square foot, 66-bed memory care facility in the City of La Quinta. The project is located at 47805 Caleo Bay Drive. The project boundaries are roughly north of Avenue 48, south of Via Marquessa, east of Washington Street and west of Caleo Bay, as shown in Figure 1.

The proposed project is comprised of two parcels. The memory care facility would be built on Parcel 1, which is the southern parcel. The project would build a park on the site of Parcel 2. However, Parcel 2 is currently zoned for commercial land use. To maintain a conservative analysis, we assumed that up to 14,800 sq. ft. of retail would be eventually constructed on Parcel 2.

Study Area and Analysis Scenarios

The project would generate between 101 and 5,000 daily project trips. Consistent with Engineering Bulletin #06-13, there is a 0.5-mile project study radius. The approximate project study area is bounded by Washington Street, Avenue 48, Adams Avenue, and 47th Avenue. The following intersections were studied as part of the analysis:

1. Washington Street & 48th Avenue
2. Washington Street & Existing Access Driveway
3. Washington Street & 47th Avenue
4. Caleo Bay Drive & 48th Avenue
5. Caleo Bay Drive & Via Florence (site driveway)
6. Adams Street & 48th Avenue

Because the project would not generate a significant number of trips during the AM or weekend mid-day peak hours, analysis was limited to the weekday PM peak hour. Fehr & Peers confirmed this approach with city staff prior to initiating the study. The following scenarios were analyzed:

1. Existing
2. Existing + Project
3. Cumulative Year
4. Cumulative Year + Project

Criteria for Determining Significant Impacts

The criteria for determining a significant impact is detailed by the City of La Quinta in Engineering Bulletin #06-13. Per the Engineering Bulletin, under Existing + Project Conditions, a potentially significant project traffic impact is defined to occur at any signalized intersection if the addition of project trips would result in the LOS for a given intersection to exceed the criteria established in Table 1.

TABLE 1

SIGNIFICANT IMPACT CRITERIA FOR SIGNALIZED INTERSECTIONS

Post-Project Level of Service	Change in LOS
LOS E	Either an increase in delay of 2 seconds or more (HCM) or 30 peak hour trips or more (ICU) on a critical movement per lane.
LOS F	Either an increase in delay of 1 second or more (HCM) or 15 peak hour trips or more (ICU) on critical movements per lane.

Source: City of La Quinta Engineering Bulletin #06-13.

A potentially significant impact at an unsignalized study intersection is defined to occur when, with the addition of project traffic, an intersection has a projected LOS F on a side street for two-way stop control or LOS E or worse for the intersection at an all-way stop controlled intersection and the addition of project traffic results in an addition of 3 seconds or more of delay for any movement. Delay shall be calculated for all unsignalized study intersections to demonstrate this condition.

Roadway segment impacts are those defined to occur on any roadway segment if the segment is projected to be operating at LOS E with project traffic included and the peak hour V/C in the peak direction is increased by 0.02 or more by addition of project traffic at existing plus project or at project opening years.

Summary of Findings

Existing Conditions

All six study intersections operate at an acceptable Level of Service (LOS) of D or better both with and without project traffic. There are no significant impacts projected at any study locations.

Project Opening Year and Cumulative Conditions

Project Opening Year (2014) and Cumulative (2020) Conditions were developed by applying an ambient growth rate of 1% per year and applying traffic from development projects near the project site. Project traffic was applied to the "plus Project" scenarios. All six study intersections operate at an acceptable LOS of D or better with and without project traffic under both the Opening and Cumulative scenarios. There are no significant impacts projected at any study locations.

Site Access and On-Site Circulation

The project will provide site access via two driveways. The project will utilize the existing driveway currently used by Walgreens to provide right-in/right-out access from Washington Street. The project would also provide a new driveway at the eastern side of the parcel, comprising of the fourth leg of the Caleo Bay Drive & Via Florence intersection. This driveway would be stop-controlled and provide full access to and from the project site.

The proposed on-site circulation is consistent with the City of La Quinta Municipal Code. There are additional enhancements that can be implemented to further improve on-site circulation. These enhancements are described in Chapter 2.

Parking

The project provides sufficient accessible and general parking for the Memory Care facility. If the underlying zoning of Parcel 2 (retail) were to be developed, the project would still provide a sufficient number of parking stalls for both land uses. However, in this case, the project would need to provide additional detail as to which parking stalls would be covered, and provide one to three additional accessible parking spaces near the retail site.

2. Proposed Development

The proposed development is comprised of a memory care facility with adjacent park in the City of La Quinta. Because one of the two project parcels is zoned for commercial land use, the analysis conservatively assumes that the project would comprise of a memory care facility plus retail land use.

Location

The project is on an existing vacant lot located north of Avenue 48, south of Via Marquessa, east of Washington Street, and west of Caleo Bay Drive, as shown in Figure 1.

Land Use and Intensity

The proposed project is a 32,756 sq. ft., 66-bed memory care facility. This analysis also assumes buildout of the underlying zoning on Parcel 2, or up to 14,800 sq. ft. of retail.

Site Plan and Project Access

The project site is located northeast of the Washington Street & Avenue 48 intersection in the City of La Quinta. Regional access to the project is provided by State Route 111 (SR-111). Local access is provided to the site by Washington Street, Avenue 48, and Caleo Bay Drive. The primary project driveway will be located at the intersection of Caleo Bay Drive & Via Florence, with additional access provided from the existing Walgreens driveway along Washington Street north of Avenue 48.

Site Access

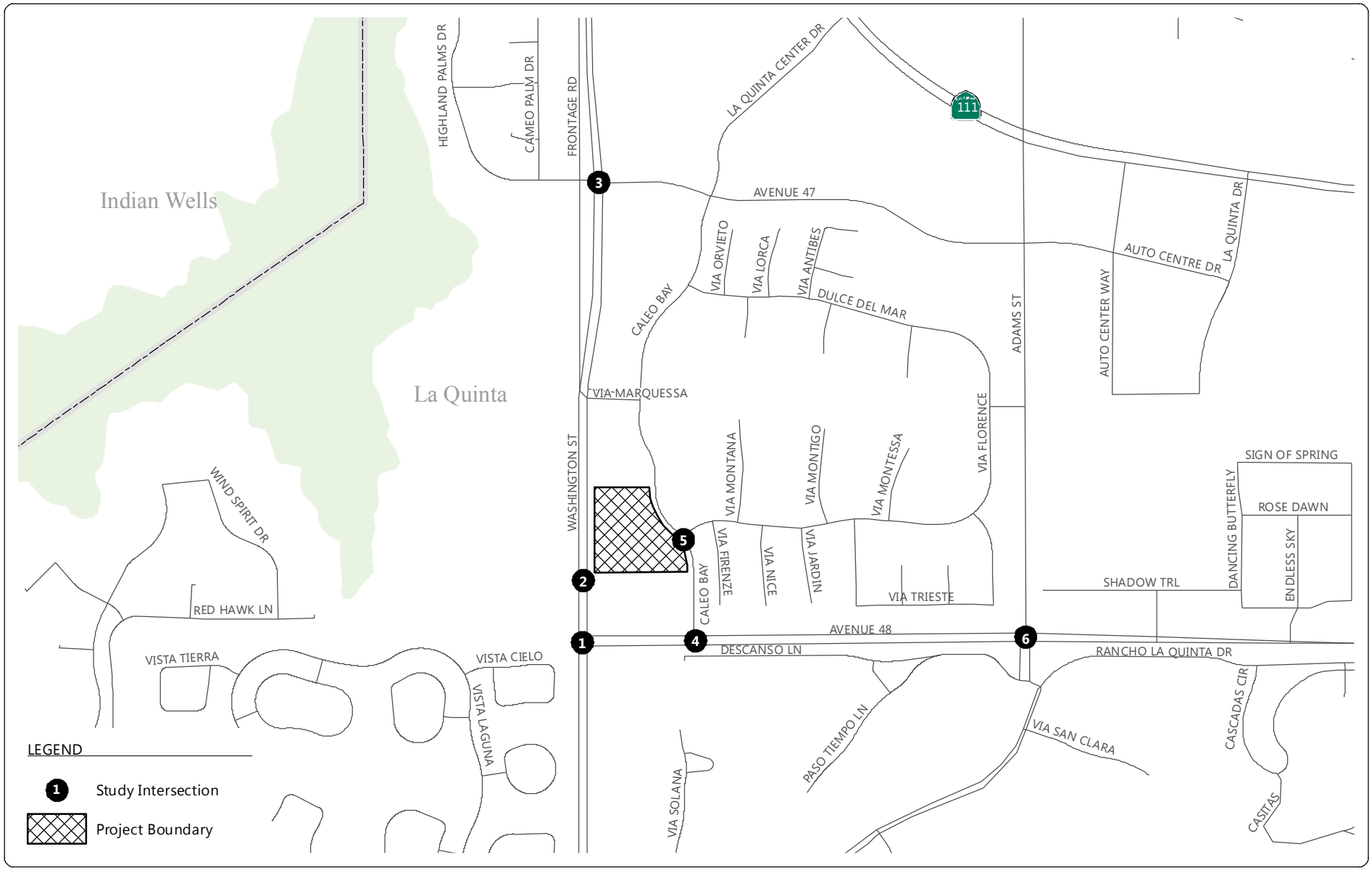
Fehr & Peers completed field observations on January 15, 2013 at the following intersections:

1. Washington Street & 48th Avenue
2. Washington Street & Existing Access Driveway
3. Washington Street & 47th Avenue
4. Caleo Bay Drive & 48th Avenue
5. Caleo Bay Drive & Via Florence (site driveway)
6. Adams Street & 48th Avenue

Our observations are summarized below.

<u>Caleo Bay Drive & Via Florence</u>

The proposed project driveway to be constructed at the intersection of Caleo Bay Drive and Via Florence would be a full access stop-controlled driveway. A two-way left-turn lane provides access in and out of the project site. The intersection was observed to have sufficient sight distance for all project driveway movements. Table 2 presents pictures taken at the intersection showing sight distance at the intersection.



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PROJECT LOCATION

FIGURE 1

TABLE 2 SIGHT DISTANCE AT INTERSECTIONS

Intersection	Photo	Photo
Caleo Bay and Via Florence	 Southbound Arrival	 Northbound Arrival
Washington St and Walgreens Driveway	 Northbound Arrival	 Channelized Right-turn

Source: Fehr & Peers 2011

Washington Street & Walgreens Driveway

The project proposes to utilize the right-turn-in/right-turn-out driveway along Washington Street. This driveway currently exists, providing access to the existing Walgreens. This intersection was observed to have sufficient sight distance for vehicles turning right out of the project site and onto Washington Street. Additionally, there is currently a 145 ft. deceleration right-turn lane along Washington Street providing queuing storage for vehicles accessing the driveway. Table 2 also presents pictures taken at the intersection showing sight distance and the channelized right-turn lane.

The proposed project has adequate access to adjacent local roadways through two proposed driveways: a full access driveway at the intersection of Caleo Bay Drive & Via Florence and a right-turn-in/right-turn-out driveway, which currently exists along Washington Street, providing access to the Walgreens adjacent to the project site. There is adequate sight distance from all approaches at the proposed driveways, and a channelized right-turn lane exists along Washington Street, providing deceleration for vehicles accessing the site from this roadway. In order to maintain adequate sight distance at all project driveways, it is recommended that landscaping along Caleo Bay be limited in height. The trips generated by the proposed project at the driveways are not anticipated to degrade the driveway operations at any of the driveways.

On-Site Circulation

The proposed site plan, shown in Figure 2, was reviewed to assess the on-site circulation for the project and was also compared to the La Quinta Municipal Code. Based on our review, the proposed project meets all of the La Quinta Municipal Code requirements. Additionally, Fehr & Peers supplied a memorandum to the City identifying improvements to the project site plan. The recommendations have been included in the updated site plan.

Parking Supply

A review of the proposed parking supply and parking facility design was conducted. For the Memory Care Facility, the project site plan includes 55 marked parking spaces, four of which are handicapped accessible. Thirty-one of the spaces are contained within a covered carport.

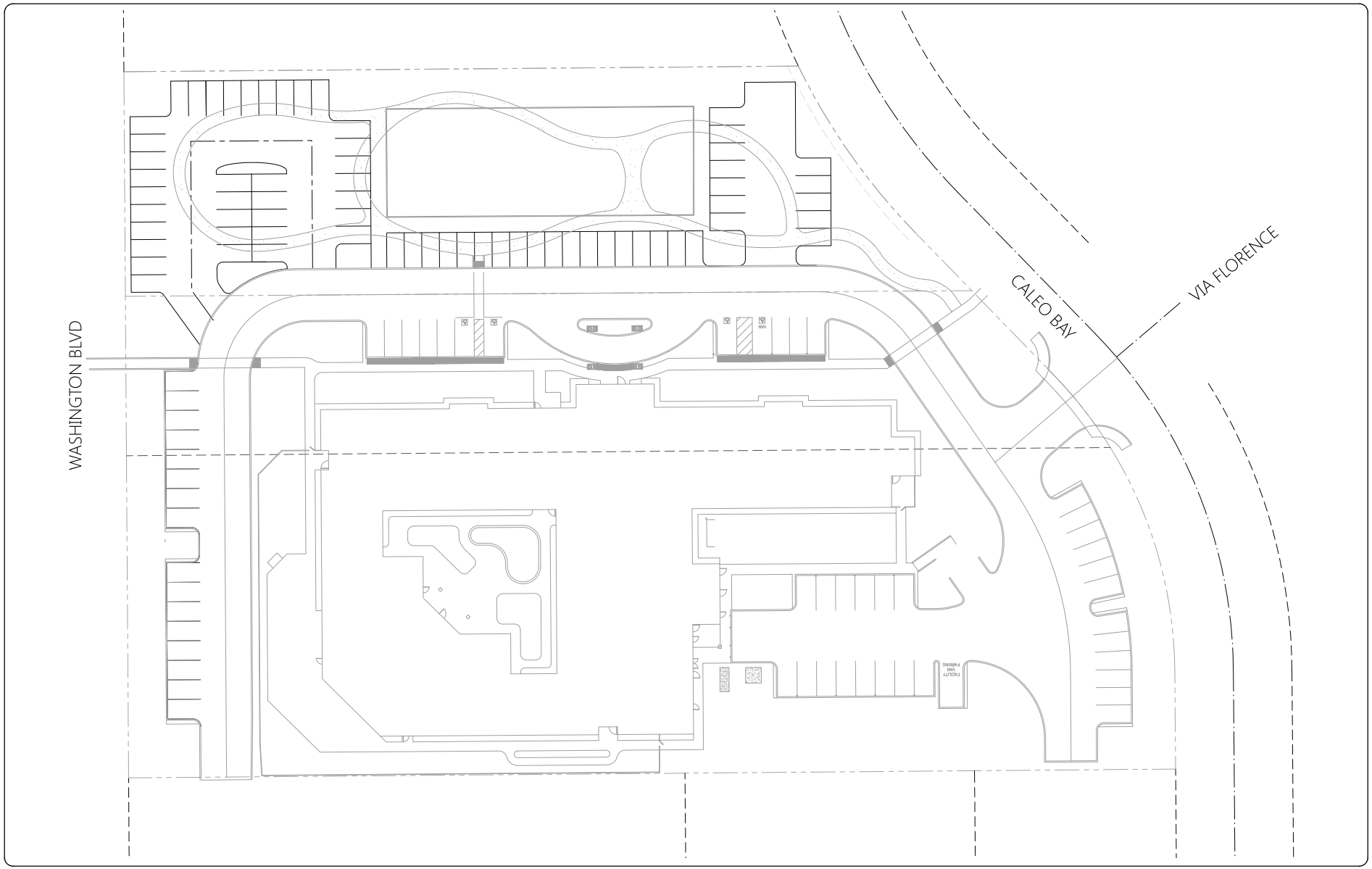
The proposed parking supply was compared to La Quinta Municipal Code requirements (§9.150.060). For the land use category of convalescent hospitals and nursing homes, the City requires one space for every four beds. The proposed facility would house 66 beds, requiring a minimum parking supply of 17 spaces. Since the proposed project includes 54 parking spaces, this municipal code requirement is met. Furthermore, the municipal code also requires that a minimum of 30% of required spaces be covered by a trellis or carport structure. 56% percent of the project's proposed spaces (31) would be covered, thus exceeding the City's minimum requirement.

The City's Municipal Code (§9.150.090) refers to the ADA Accessibility Guidelines for provision of accessible parking spaces. The ADA Accessibility Guidelines (§4.1.2) for new construction require a minimum of three accessible spaces for a parking lot with 51 to 75 total spaces. Since the project proposes four of the 54 spaces to be accessible, this requirement is met.

The second parcel of the project is planned to be developed as a park to serve the Memory Care facility. Since the underlying zoning is commercial, a proposed parking layout for the underlying zoning was supplied. The project could house up to 14,800 sq. ft. of retail land use. The project proposes 67 marked parking stalls if this land use were to be provided. The proposed parking does not designate spaces as handicapped accessible as this layout is predominantly schematic.

The proposed parking supply was compared to La Quinta Municipal Code requirements (§9.150.060). For the land use category of retail commercial, the City requires one space for every 200 square feet of gross floor area. The underlying zoning would permit up to 14,800 square feet of retail space, requiring 74 spaces. When combined with the proposed parking supply for the Memory Care facility, the project would provide 112 parking spaces to be used by both the Memory Care Center and the retail building. When combining the required parking for each land use and comparing this to the total supply, the required parking would be met.

The City's Municipal Code (§9.150.090) reverts to the ADA Accessibility Guidelines for provision of accessible parking spaces. The ADA Accessibility Guidelines (§4.1.2) for new construction require a minimum of five accessible spaces for a parking lot with 100 to 150 total spaces. Near the Memory Care Center a total of four spaces have been designated to be accessible. If the land use on Parcel 2 were to be built to hold retail land uses, a minimum of one parking space would be required to be accessible, while a minimum of three spaces would be preferred to be designated accessible due to the proximity of the retail land use to the designated parking supply.



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PROJECT SITE PLAN

FIGURE 2

A review of the La Quinta Municipal Code Parking Design Facility Standards Code (§9.150.080) was also performed. The project is consistent with the Municipal Code.

Project Timing

The proposed project is anticipated to be completed by 2014.

3. Area Conditions

Study Area

Area of Significant Traffic Impact

The project would generate between 101 and 5,000 daily project trips. Consistent with Engineering Bulletin #06-13, there is a 0.5-mile project study radius. The approximate project study area is bounded by Washington Street, Avenue 48, Adams Avenue, and 47th Avenue. The following intersections were studied as part of the analysis:

1. Washington Street & 48th Avenue
2. Washington Street & Existing Access Driveway
3. Washington Street & 47th Avenue
4. Caleo Bay Drive & 48th Avenue
5. Caleo Bay Drive & Via Florence (site driveway)
6. Adams Street & 48th Avenue

Study Area Land Use

Existing Land Uses

The proposed project would be built on a lot that is currently vacant with no existing land uses.

Approved Future Development

The following projects are currently approved, pending, or under construction in the City of La Quinta:

- Estates at Point Happy – Single-Family Homes
- Laing Homes – Single-Family Homes
- Coral Mountain Apartments – Multi-Family Homes
- La Paloma Assisted Living Care Facility – Senior Residential Center
- Dune Palms Specific Plan – Commercial/Auto Sale Development
- Washington Park – Shopping Center with retail, office and restaurant land uses
- Centre at La Quinta – Shopping Center
- Caleo Bay Park – Office Complex

Area Roadway System

The project site is located northeast of the Washington St & Avenue 48 intersection in the City of La Quinta. Regional access to the project is provided by State Route 111 (SR-111). Local access is provided to the site by Washington Street, Avenue 48, and Caleo Bay. The primary project driveway will be located at the intersection of Caleo Bay & Via Florence, with additional access provided from the existing Walgreens driveway along Washington Street north of Avenue 48. The roadways providing direct access to the project site are described in detail below.

Caleo Bay is classified as a Local Street in the La Quinta General Plan and runs north-south just east of the project site. It generally provides one travel lane in each direction plus a two-way left-turn lane in the center median. Parking is generally prohibited on both sides of Caleo Bay and the posted speed limit is 30 mph.

Washington Street is classified as an Augmented Major City Street in the La Quinta General Plan and runs north-south immediately west of the project site. It generally provides three travel lanes in each direction plus left-turn channelization at major intersections. Parking is generally prohibited on both sides of Washington Street and the posted speed limit is 50 mph with an average daily traffic volume of 38,841.

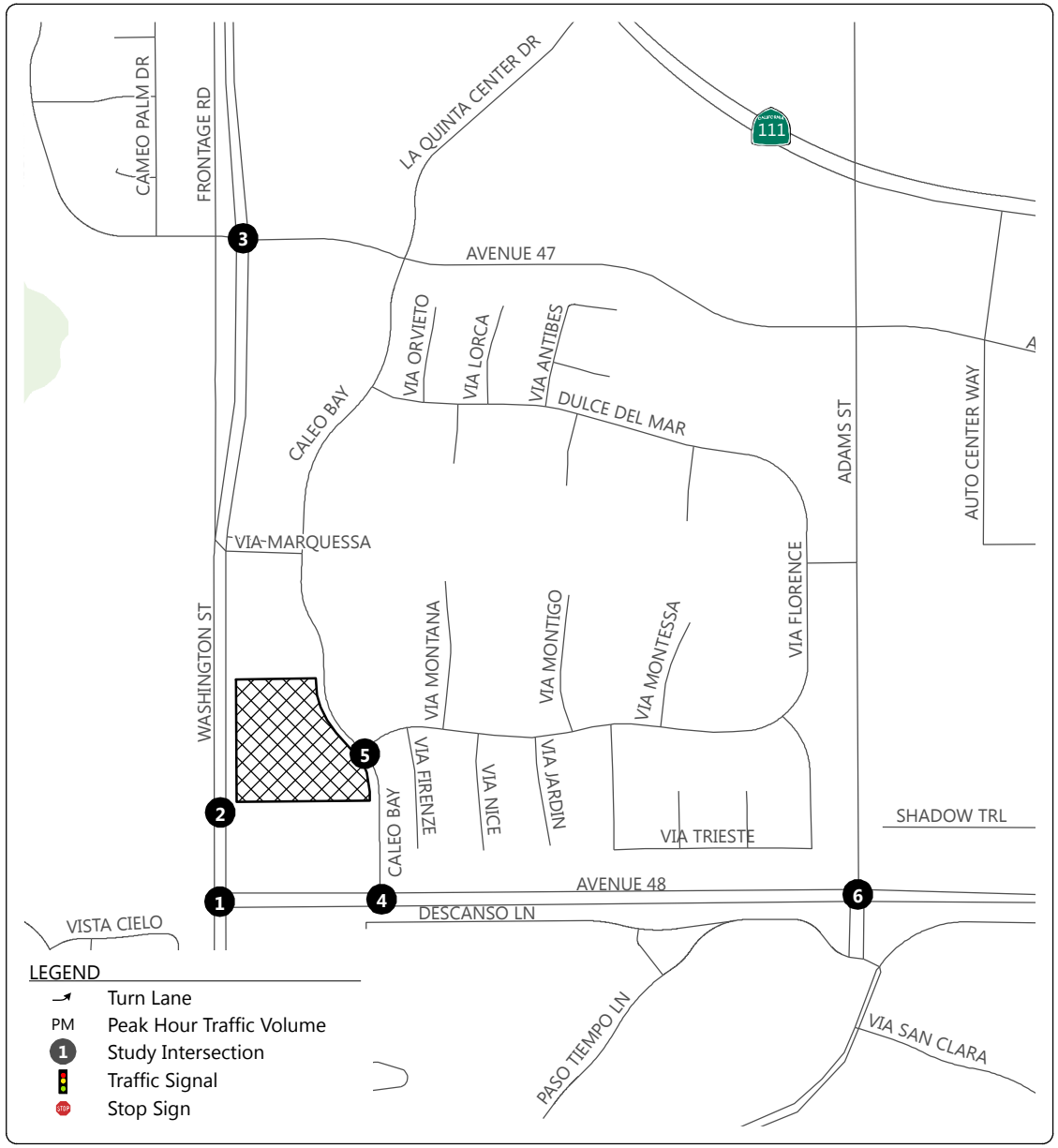
Traffic Volumes and Conditions

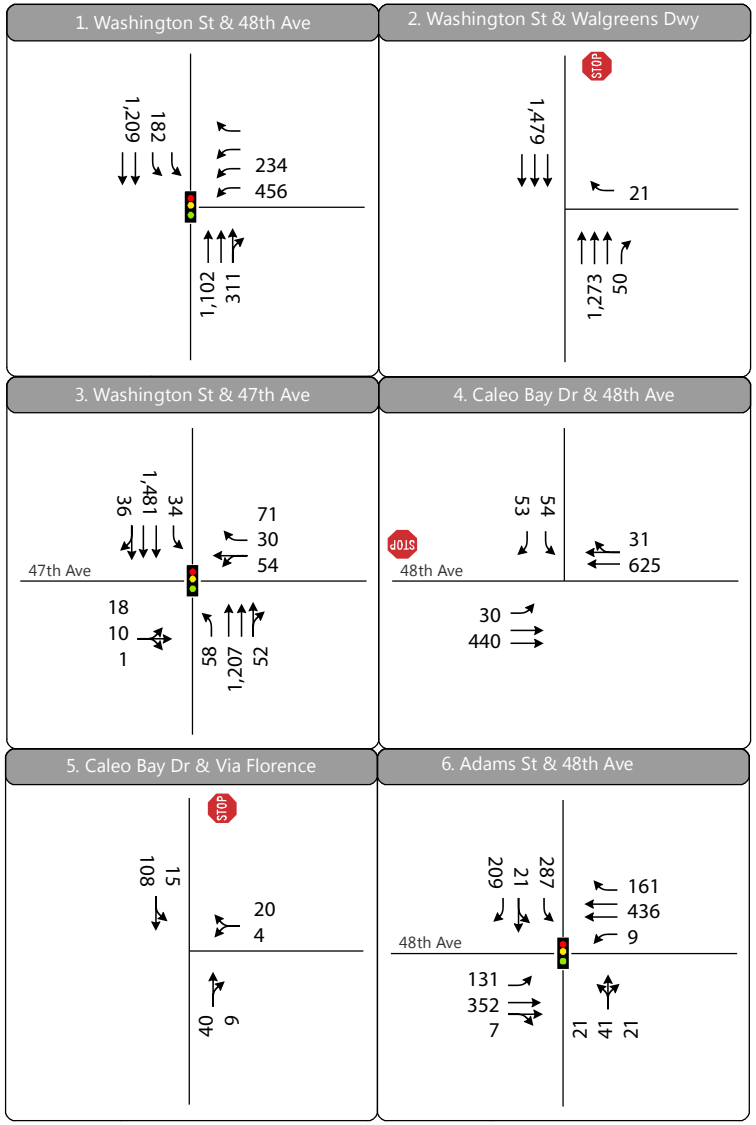
PM peak hour traffic counts were collected on a typical mid-week day during the week of January 7, 2013, and are included in Appendix A. Weekday morning and weekend afternoon peak hour counts were not collected, as the project is not expected to generate a significant amount of traffic during those peak hours. The existing project traffic volumes and intersection geometries are shown on Figure 3.

Level of Service Definitions and Analysis Methodologies

LOS is a qualitative measure used to describe the condition of traffic flow, ranging from excellent "free-flow" conditions at LOS A to overloaded "stop-and-go" conditions at LOS F. LOS D is typically considered to be the minimum desirable level of service in urban areas. Table 3 identifies the level of service thresholds based on delay.

[1] Source: Coachella Valley Association of Governments 2011 Traffic Census Report





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INTERSECTION LANE CONFIGURATIONS, AND PEAK HOUR TRAFFIC VOLUMES EXISTING CONDITIONS

FIGURE 3

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TABLE 3
SIGNALIZED INTERSECTION LOS CRITERIA

Level of Service	Description	Delay (Seconds)
A	Operations with very low delay occurring with favorable progression and/or short cycle length.	≤ 15.0
B	Operations with low delay occurring with good progression and/or short cycle lengths.	> 15.0 to 25.0
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	> 25.0 to 35.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	> 35.0 to 55.0
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	> 55.0 to 80.0
F	Operation with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths.	> 80.0

Source: *Highway Capacity Manual* (Transportation Research Board, 2000).

This study uses Highway Capacity Manual (HCM 2000) methodology approved by the City of La Quinta for signalized and unsignalized intersections. HCM methodology measures average delay at signalized and all-way stop-controlled intersections, and delay at the critical turning movement for side-street stop-controlled intersections. This study employs input parameters identified by the City in Engineering Bulletin #06-13.

City of La Quinta Required Intersection Level of Service

The City of La Quinta requires LOS D or better at all intersections and along all roadway segments.

Existing Intersection Level of Service

Existing intersection Level of Service (LOS) was calculated using the inputs prescribed by the City coupled with the traffic count data and field collected data, both of which were collected in January 2013. Table 4 identifies the existing level of service at the six study intersections. As shown in Table 4, all six intersections operate at an acceptable LOS D or better.

TABLE 4
INTERSECTION LEVELS OF SERVICE – EXISTING CONDITIONS

Intersection	Control	PM Peak Hour	
		Delay	LOS
Washington Street & Avenue 48	Signalized[1]	15.1	B
Washington Street & Walgreens Driveway	SSSC[2]	9.7	A
Washington Street & Avenue 47	Signalized	12.3	B
Caleo Bay Drive & Avenue 48	SSSC	21.7	C
Caleo Bay Drive & Via Florence	SSSC	8.9	A
Adams Street & Avenue 48	Signalized	33.6	C

Notes:
1- Delay for signalized intersections based on application of *2000 Highway Capacity Manual* Methodology. Delay was calculated using Synchro 6.0 software. **BOLD** type indicates unacceptable operations.
2- Delay for side-street stop controlled (SSSC) intersections reported for worst approach.
Source: Fehr & Peers, 2013.

City of La Quinta Required Roadway Segment Level of Service

The City of La Quinta requires LOS D or better along roadway segments in the City.

Existing Roadway Segment Level of Service

Roadway segment analysis for this project was not required by the City. The Coachella Valley Association of Governments (CVAG) regularly collects and publishes roadway segment counts. CVAG collected counts in 2011 along three roadway segments within the project study area: Adams Street south of SR-111, Washington Street south of SR-111, and Avenue 48 west of Jefferson Street. As shown in Table 5, all three of these roadway segments operate at an acceptable LOS D or better under existing conditions.

TABLE 5
ROADWAY SEGMENT LEVEL OF SERVICE – EXISTING CONDITIONS

Segment	Capacity	Volume	LOS
Washington Street, South of SR-111	56,000	38,841	D
Adams Street, South of SR-111	37,400	8,574	C
Avenue 48, West of Jefferson Street	37,400	18,758	C

Notes:
1- Delay for signalized intersections based on application of *2000 Highway Capacity Manual* Methodology. Delay was calculated using Synchro 6.0 software. **BOLD** type indicates unacceptable operations.
2- Delay for side-street stop controlled (SSSC) intersections reported for worst approach.
Source: Fehr & Peers, 2013.

Transit Service

The project site is located directly adjacent to a Sun Line Transit Agency bus stop. The bus stop is located along Washington Street and provides direct pedestrian access to the site. Sun Line Transit Line 70 runs along Washington Street with 45-minute headways and has a stop for both the northbound and southbound transit routes. A covered bus bench is provided for the northbound route.

4. Projected Traffic

This section presents the project traffic projected for the Memory Care Facility and documents trip distribution and trip assignment characteristics for both the project itself and related development projects.

Site Traffic

Trip Generation

Trip Generation, 9th Edition (ITE, 2012) was used to develop trip generation estimates for the proposed project. The proposed project is estimated to generate 881 daily trips, including 32 during the AM peak hour and 79 during the PM peak hour. The trip generation estimates for the proposed project are summarized in Table 6.

Information regarding anticipated facility operations and activity were also provided by the project sponsor. The project assumes that there would be 17 employees during the day shift, six employees for the evening shift, and three employees for the night shift. The day shift would be from 7:00 AM to 4:00 PM, the evening shift from 4:00 to 11:00 PM, and the night shift from 11:00 PM to 7:00 AM. The project assumes that there would be approximately 10 visitors per day.

Although the project itself would be for a memory care facility with adjacent park, this study assumes that the park parcel would operate as a 14,800 sq. ft. retail facility, which provides for the underlying zoning.

TABLE 6
TRIP GENERATION RATES

Land Use	ITE Code	Unit	Daily Rate	AM Peak Hour			PM Peak Hour		
				Rate	Inbound %	Outbound %	Rate	Inbound %	Outbound %
Nursing Home	620	ksf	7.60	0.55	71%	29%	0.74	52%	48%
Shopping Center	820	ksf	42.70	0.96	62%	38%	3.71	48%	52%

TRIP GENERATION ESTIMATES

Land Use	Size	Unit	Daily	AM Peak Hour			PM Peak Hour		
				Total	Inbound	Outbound	Total	Inbound	Outbound
Nursing Home	32.7	ksf	249	18	13	5	24	12	12
Shopping Center	14.8	ksf	632	14	9	5	55	26	29
Total Trip Generation			**881**	**32**	**22**	**10**	**79**	**38**	**41**

Notes:
1- Trip generation calculated from ITE Trip Generation (9th Edition, 2012)
Source: Fehr & Peers 2013

Trip Distribution

The geographic distribution of trips generated by the proposed project is dependent on characteristics for the street system serving the site, the level of accessibility of routes to or from the proposed site, and the locations of employment and commercial centers to which users of the project would be drawn. Our analysis assumed the following trip distribution:

- 50% of traffic from north of the project site (including via SR-111)
- 25% of traffic from south of the project site
- 25% of traffic from east of the project site

The trip distribution applied in this analysis is shown in Figure 4.

Modal Split

The project is serviced by one transit route that operates at 45-minute headways. To maintain a conservative analysis, we assumed that all project trips would arrive by automobile, with a 100% mode split for personal automobile use.

Trip Assignment

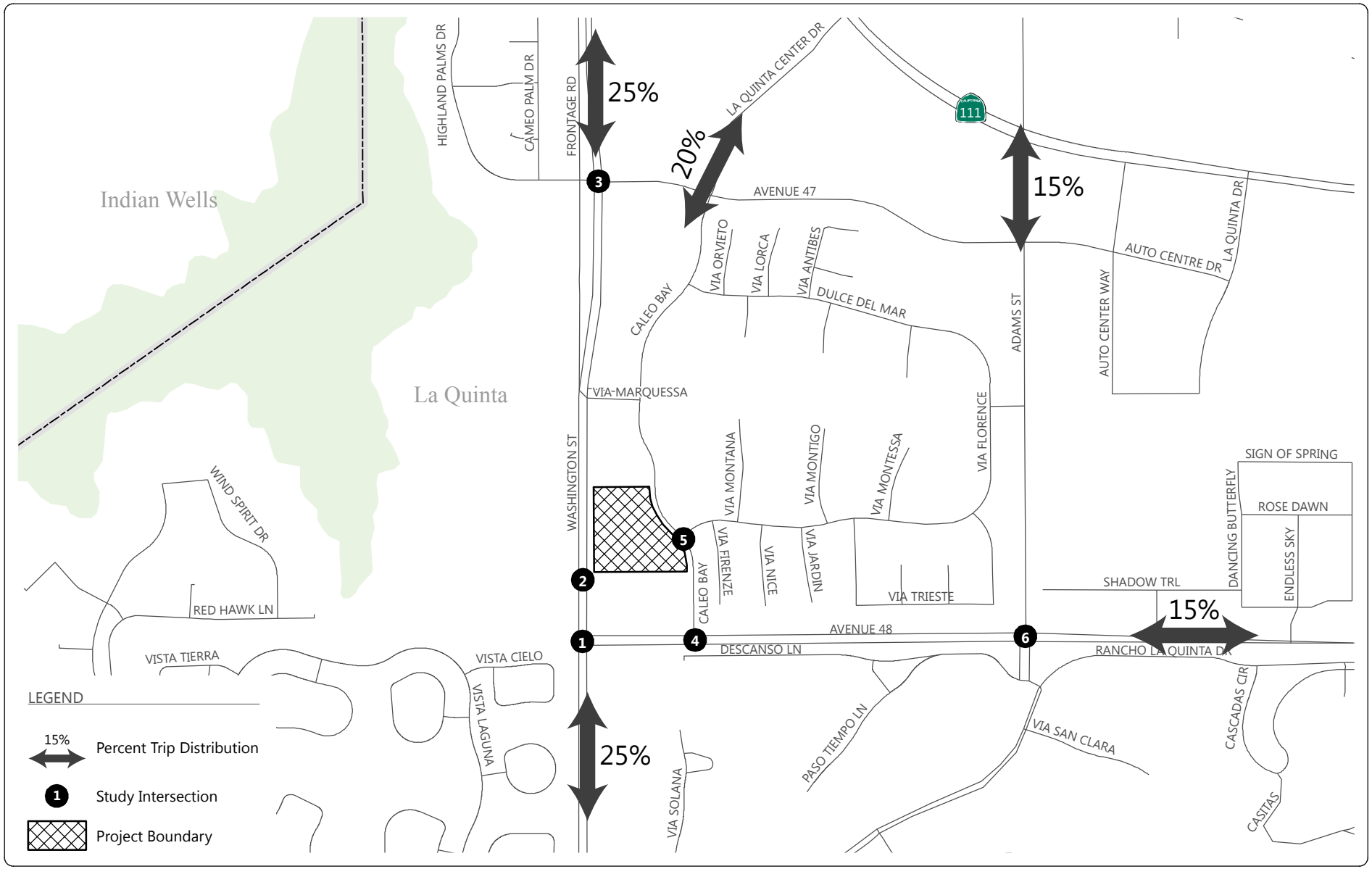
The trip generation estimates summarized in Table 6 were used to assign project-generated traffic to the study intersections. Figure 5 illustrates the estimated project-generated peak hour traffic volumes at each of the analyzed intersections during a typical weekday peak hour.

Cumulative Development Traffic

Method of Projection

The opening year (2014) and cumulative year (2020) base traffic projects reflect changes to existing traffic conditions that can be expected from three primary sources. The first source is non-site traffic for the study area. The second source is traffic generated by specific development projects in, or in the vicinity of, the study area. The third source is roadway or intersection capacity enhancements.

For the background traffic volume growth, a list of development projects within a 1-mile radius of the project site was obtained from the City of La Quinta. The trip generation for each development project was estimated using *Trip Generation, 9th Edition*. Additionally, an ambient growth rate of 1% per year was applied to the traffic counts to develop future year traffic projections.



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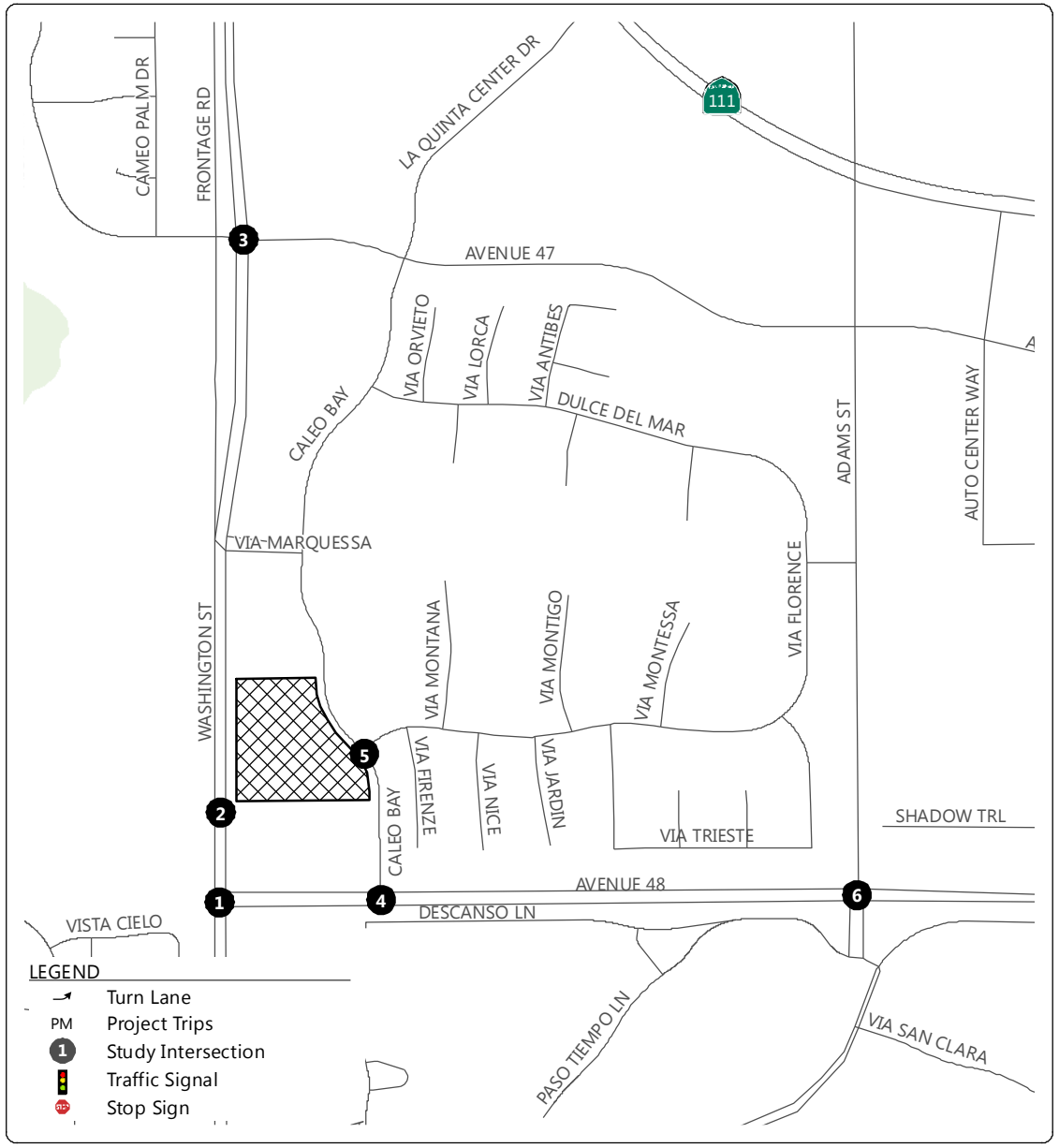
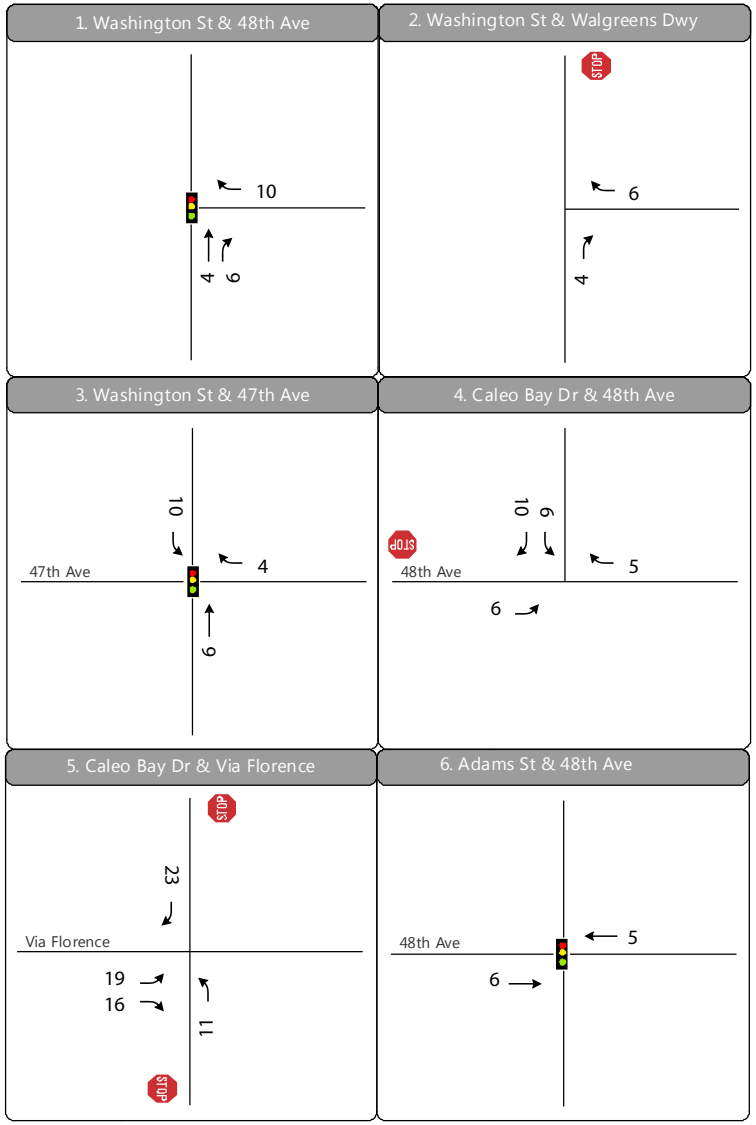
PROJECT TRIP DISTRIBUTION

FIGURE 4





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INTERSECTION LANE CONFIGURATIONS, AND PEAK HOUR TRAFFIC VOLUMES PROJECT TRIP ASSIGNMENT

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FIGURE 5

Non-Site Traffic for Study Area

For the background traffic volume growth, a list of development projects within a 1-mile radius of the project site was obtained from the City of La Quinta. The trip generation for each development project was estimated using *Trip Generation, 9th Edition* and is provided in Appendix B of this report. Trips generated by these development projects were distributed based on the roadway access from each project site, land use type, and population areas.

Ambient Growth Rate

An ambient growth rate of 1% per year was applied to the existing counts to account for ambient growth in the project study area.

Total Future Traffic

The total future traffic volumes without project for 2014 (Opening Year) and 2020 (General Plan Buildout Year) are provided in Figures 6 and 7. These volumes were developed by applying a growth rate of 1% per year to existing counts and applying traffic generated by approved and pending development projects to the study intersections.

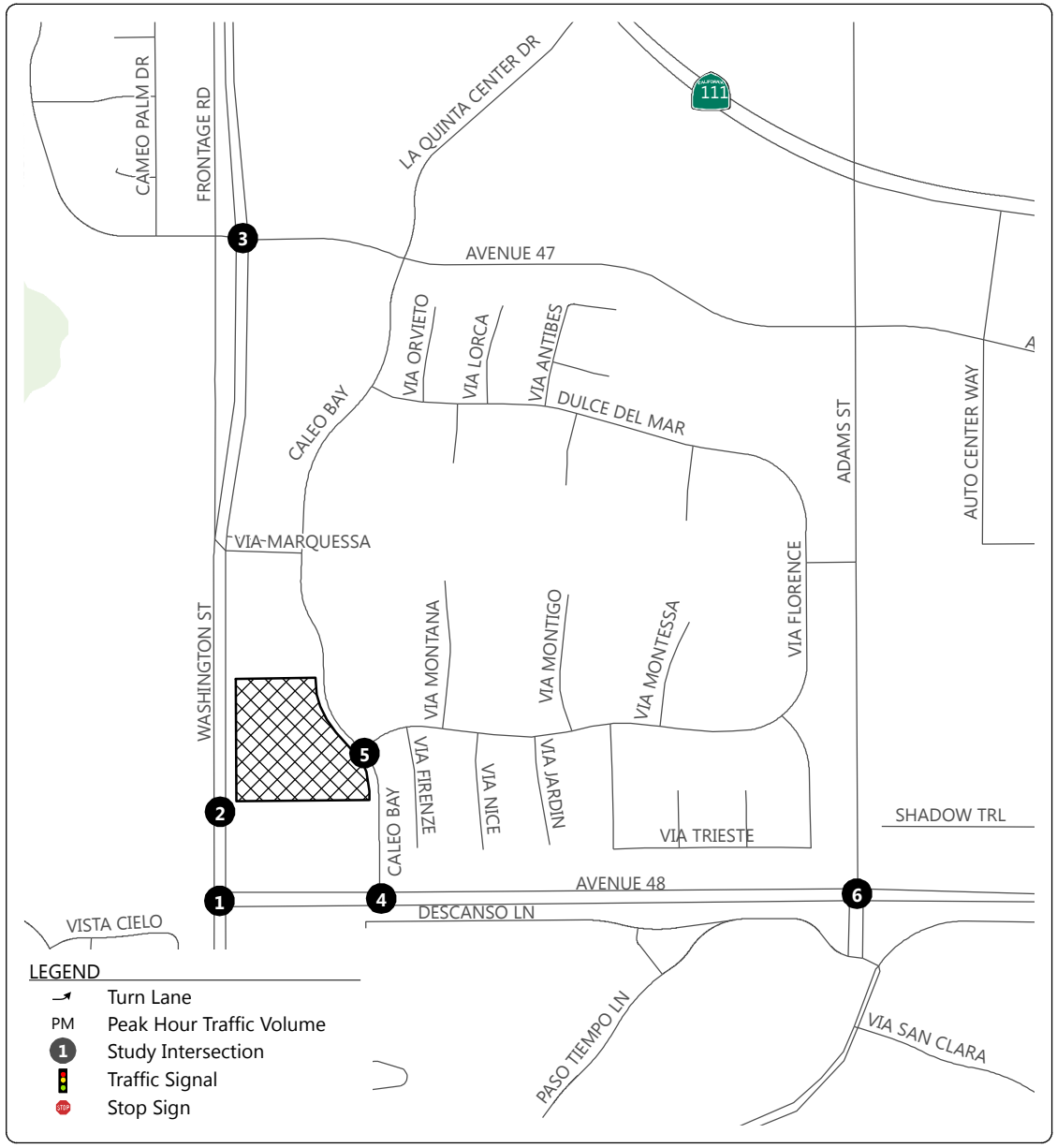
Opening Year (2014) Intersection Level of Service

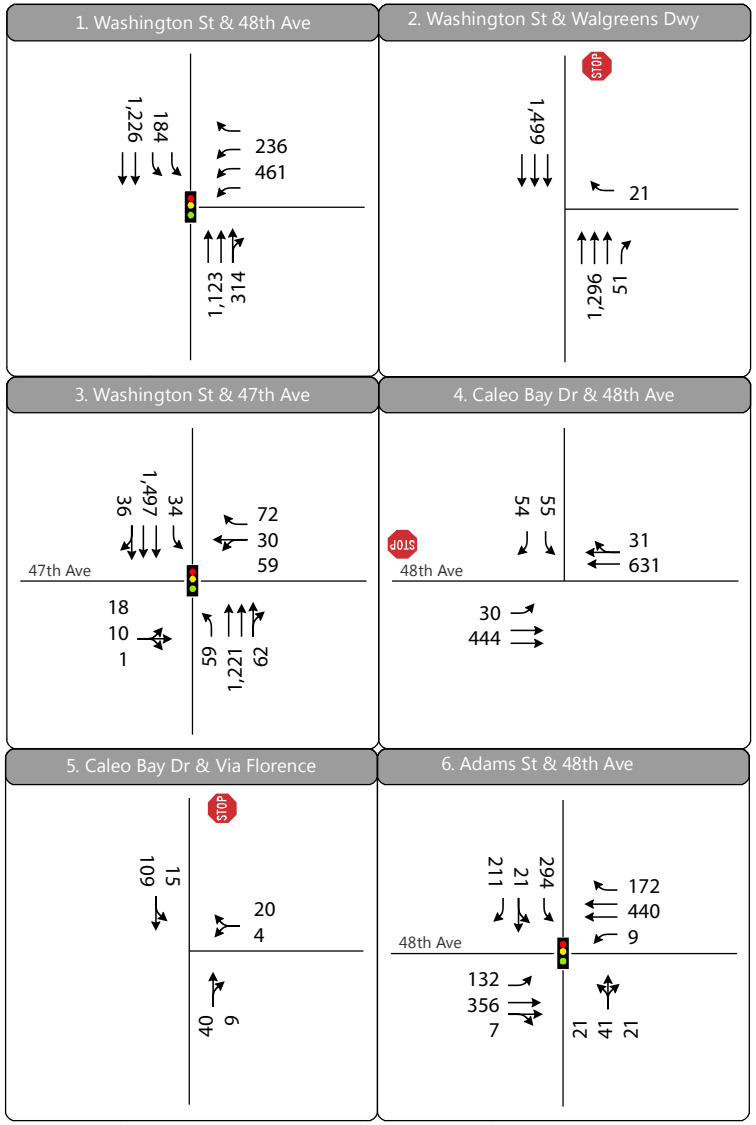
Opening Year (2014) intersection Level of Service (LOS) was calculated using the inputs prescribed by the City coupled with the Opening Year (2014) No Project traffic forecasts and intersection geometries collected in January 2013. Table 7 identifies the Opening Year (2014) No Project level of service at the six study intersections. As shown in Table 7, all six intersections operate at an acceptable LOS D or better.

TABLE 7
INTERSECTION LEVELS OF SERVICE – OPENING YEAR (2014) NO PROJECT CONDITIONS

Intersection	Control	PM Peak Hour	
		Delay	LOS
Washington Street & Avenue 48	Signalized[1]	15.2	B
Washington Street & Walgreens Driveway	SSSC[2]	9.7	A
Washington Street & Avenue 47	Signalized	12.4	B
Caleo Bay Drive & Avenue 48	SSSC	22.1	C
Caleo Bay Drive & Via Florence	SSSC	8.9	A
Adams Street & Avenue 48	Signalized	33.6	C

Notes:
1- Delay for signalized intersections based on application of *2000 Highway Capacity Manual* Methodology. Delay was calculated using Synchro 6.0 software. **BOLD** type indicates unacceptable operations.
2- Delay for side-street stop controlled (SSSC) intersections reported for worst approach.
Source: Fehr & Peers, 2013.





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INTERSECTION LANE CONFIGURATIONS, AND PEAK HOUR TRAFFIC VOLUMES OPENING YEAR (2014) NO PROJECT

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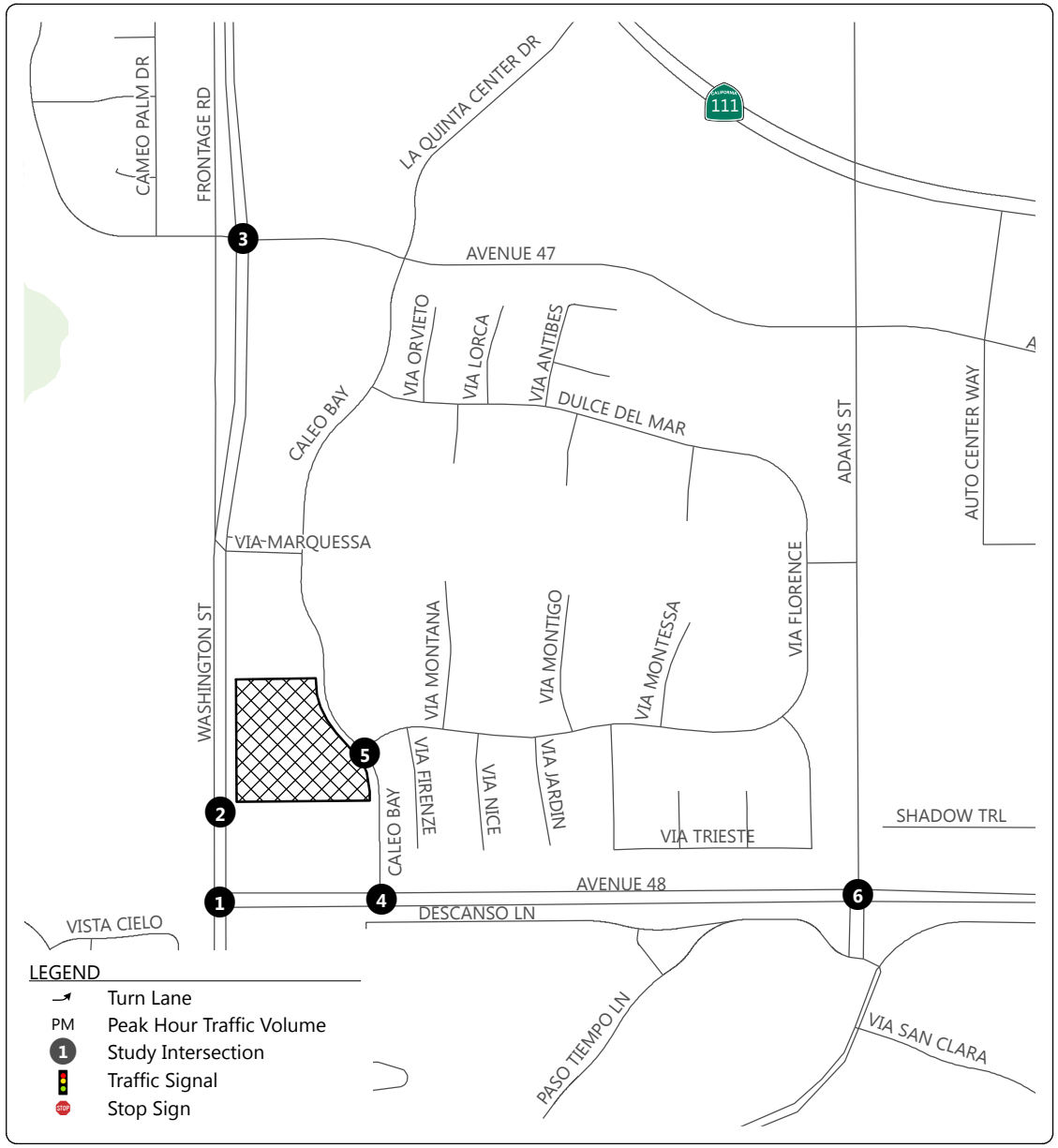
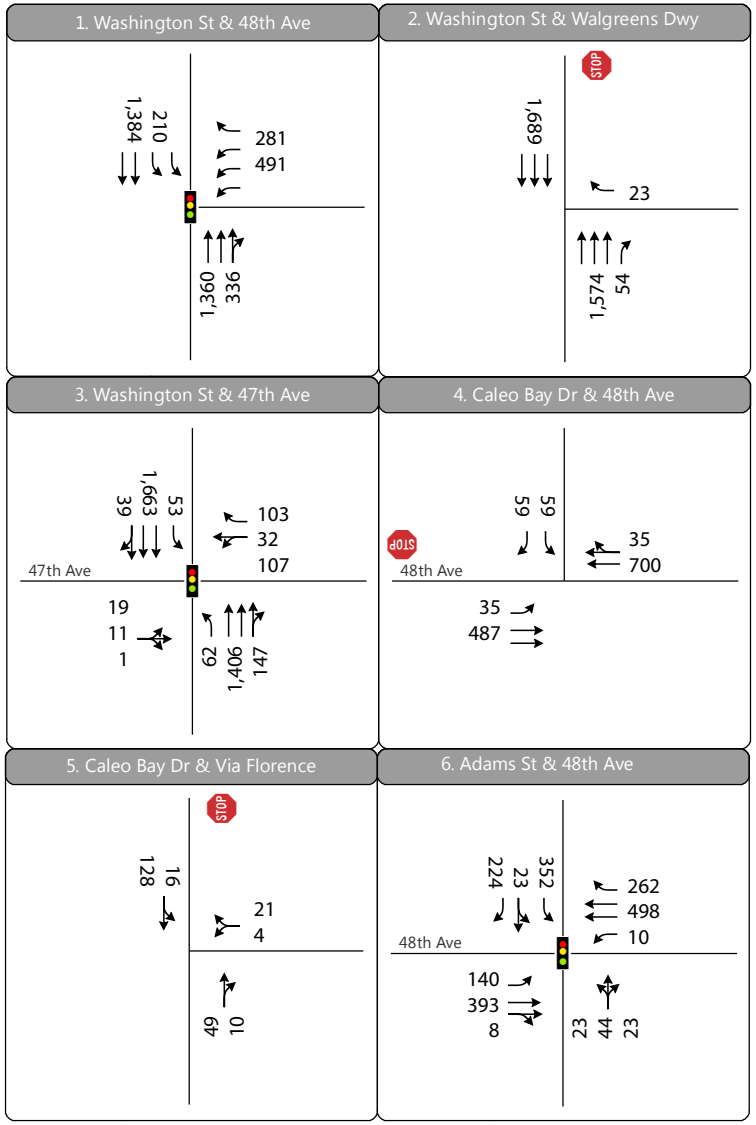
FIGURE 6





Not to Scale

INTERSECTION LANE CONFIGURATIONS, AND PEAK HOUR TRAFFIC VOLUMES CUMULATIVE YEAR (2020) NO PROJECT

FIGURE 7

FEHR PEERS

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Cumulative Year (2020) Intersection Level of Service

Cumulative Year (2020) intersection LOS was calculated using the inputs prescribed by the City coupled with the Cumulative Year (2020) No Project traffic forecasts and intersection geometries collected in January 2013. Table 8 identifies the Cumulative Year (2020) No Project level of service at the six study intersections. As shown in Table 8, all six intersections operate at an acceptable LOS D or better.

TABLE 8
INTERSECTION LEVELS OF SERVICE – CUMULATIVE YEAR (2020) NO PROJECT CONDITIONS

Intersection	Control	PM Peak Hour	
		Delay	LOS
Washington Street & Avenue 48	Signalized[1]	16.9	B
Washington Street & Walgreens Driveway	SSSC[2]	9.4	A
Washington Street & Avenue 47	Signalized	15.3	B
Caleo Bay Drive & Avenue 48	SSSC	27.9	D
Caleo Bay Drive & Via Florence	SSSC	9.0	A
Adams Street & Avenue 48	Signalized	35.5	D

Notes:
1- Delay for signalized intersections based on application of *2000 Highway Capacity Manual* Methodology. Delay was calculated using Synchro 6.0 software. **BOLD** type indicates unacceptable operations.
2- Delay for side-street stop controlled (SSSC) intersections reported for worst approach.
Source: Fehr & Peers, 2013.

5. Traffic Impact Assessment Methodology

This section describes the methodology for the La Quinta Memory Center Traffic Impact Assessment. The traffic impact analysis compares the projected LOS at each study intersection under Existing, Opening Year, and Cumulative Year plus Project conditions to the Existing, Opening Year and Cumulative Year No Project conditions to estimate the incremental increase in delay caused by the proposed project.

Scenarios

The following scenarios were analyzed as part of the traffic impact assessment:

- **Existing** – Represents 2013 conditions with traffic counts collected in 2013
- **Existing plus Project** – Represents existing conditions with the addition of project traffic
- **Opening Year (2014)** – Represents 2013 conditions plus ambient growth plus traffic from development projects projected for opening by year 2014
- **Opening Year plus Project (2014)** – Represents 2014 conditions with the addition of project traffic
- **Cumulative Year (2020)** – Represents General Plan buildout conditions, developed by applying ambient growth to existing conditions plus traffic generated by development projects slated to open by year 2020
- **Cumulative Year (2020) plus Project** – Represents 2020 conditions with the addition of project traffic

Potential Significant Impact Criteria

The criteria for determining a significant impact is detailed by the City of La Quinta in Engineering Bulletin #06-13.

Per the Engineering Bulletin, under Existing + Project conditions, a potentially significant project specific traffic impact is defined to occur at any signalized intersection if the addition of project trips will result in the LOS for a given intersection to exceed the criteria established in Table 9.

A potentially significant impact at an unsignalized study intersection is defined to occur when, with the addition of project traffic, an intersection has a projected LOS F on a side street for two-way stop-control or LOS E or worse for the intersection at an all-way stop controlled intersection and the addition of project traffic results in an addition of three seconds or more of delay for any movement. Delay shall be calculated for all unsignalized study intersections to demonstrate this condition.

Roadway segment impacts are those defined to occur on any roadway segment if the segment is projected to be operating at LOS E with project traffic included and the peak hour V/C in the peak direction is increased by 0.02 or more by addition of project traffic at existing plus project or at project opening years.

TABLE 9
SIGNIFICANT IMPACT CRITERIA FOR SIGNALIZED INTERSECTIONS UNDER EXISTING PLUS PROJECT CONDITIONS

Post-Project Level of Service	Change in LOS
LOS E	Either an increase in delay of 2 seconds or more (HCM) or 30 peak hour trips or more (ICU) on a critical movement per lane.
LOS F	Either an increase in delay of 1 second or more (HCM) or 15 peak hour trips or more (ICU) on critical movements per lane.

Source: City of La Quinta Engineering Bulletin #06-13.

6. Near Term Conditions Traffic Analysis for Intersections and Road Segments

This chapter provides the results of the traffic impact analysis under Existing plus Project, Opening Year plus Project, and Cumulative plus Project conditions.

Level of Service for Existing plus Ambient Growth plus Project Opening Year

Existing plus Project traffic volumes are shown in Figure 8, and were developed by applying project traffic to existing traffic counts. Table 10 documents the LOS results for the Existing plus Project scenarios. The LOS results are attached in Appendix C.

Table 10 compares the delay for the No Project and With Project scenarios to identify significant impacts at study intersections. As shown in these tables, all intersections are operating at LOS D or better in both scenarios. The City only provides significance criteria for intersections operating at an unacceptable LOS E or F. Thus, there are no significant impacts at the study locations.

TABLE 10
IMPACTS FOR STUDY INTERSECTIONS – EXISTING PLUS PROJECT

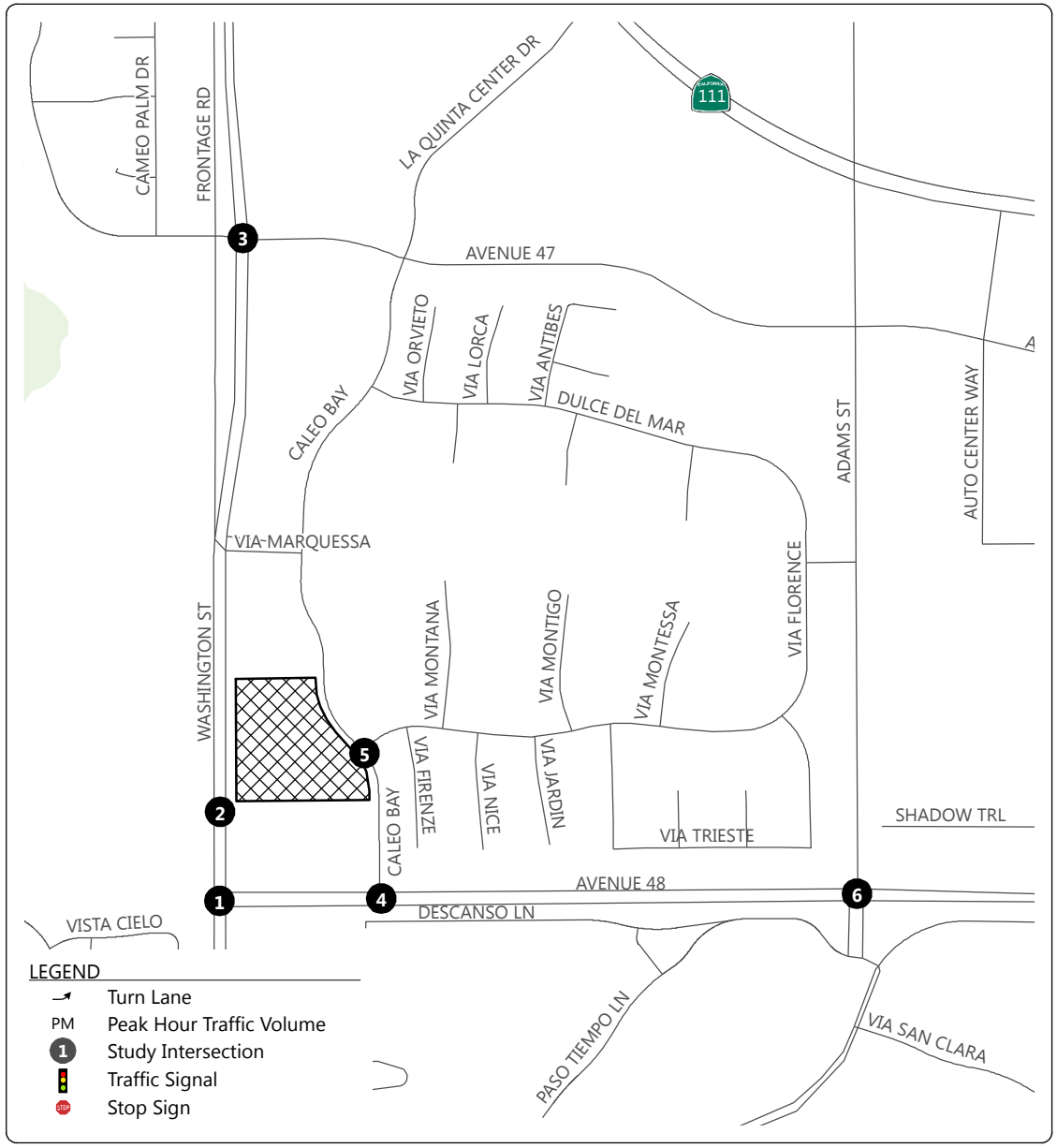
Intersection	Signalization	No Project		With Project			
		Delay	LOS	Delay	LOS	ΔDelay	Impact?
Washington Street & Avenue 48	Signalized[1]	15.1	B	15.3	B	0.2s	No
Washington Street & Walgreens Dwy	SSSC[2]	9.7	A	9.7	A	0.0s	No
Washington Street & Avenue 47	Signalized	12.3	B	12.6	B	0.3s	No
Caleo Bay Drive & Avenue 48	SSSC	21.7	C	22.8	C	1.1s	No
Caleo Bay Drive & Via Florence	SSSC	8.9	A	10.2	B	1.3s	No
Adams Street & Avenue 48	Signalized	33.6	C	33.6	C	0.0s	No

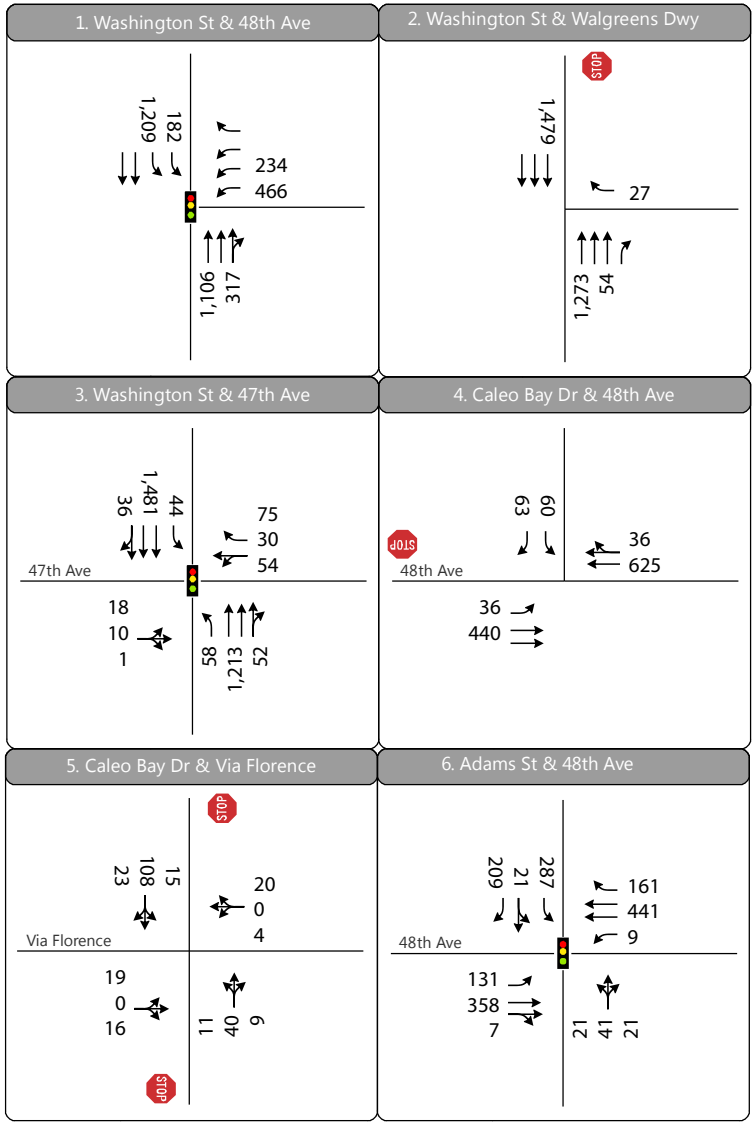
Notes:
1- Delay for signalized intersections based on application of *2000 Highway Capacity Manual* Methodology. Delay was calculated using Synchro 6.0 software. **BOLD** type indicates unacceptable operations.
2- Delay for side-street stop controlled (SSSC) intersections reported for worst approach.
Source: Fehr & Peers, 2013.

Level of Service for Opening Year (2014) plus Project

Opening Year (2014) plus Project traffic volumes are shown in Figure 9, and were developed by applying project traffic to Opening Year (2014) No Project traffic projections. Table 11 documents the LOS results for the Opening Year (2014) plus Project scenarios. The LOS results are attached in Appendix C.

Table 11 compares the delay for the No Project and With Project scenarios to identify significant impacts at study intersections. As shown in these tables, all intersections are operating at LOS D or better in both scenarios. The City only provides significance criteria for intersections operating at an unacceptable LOS E or F. Thus, there are no significant impacts at the study locations.





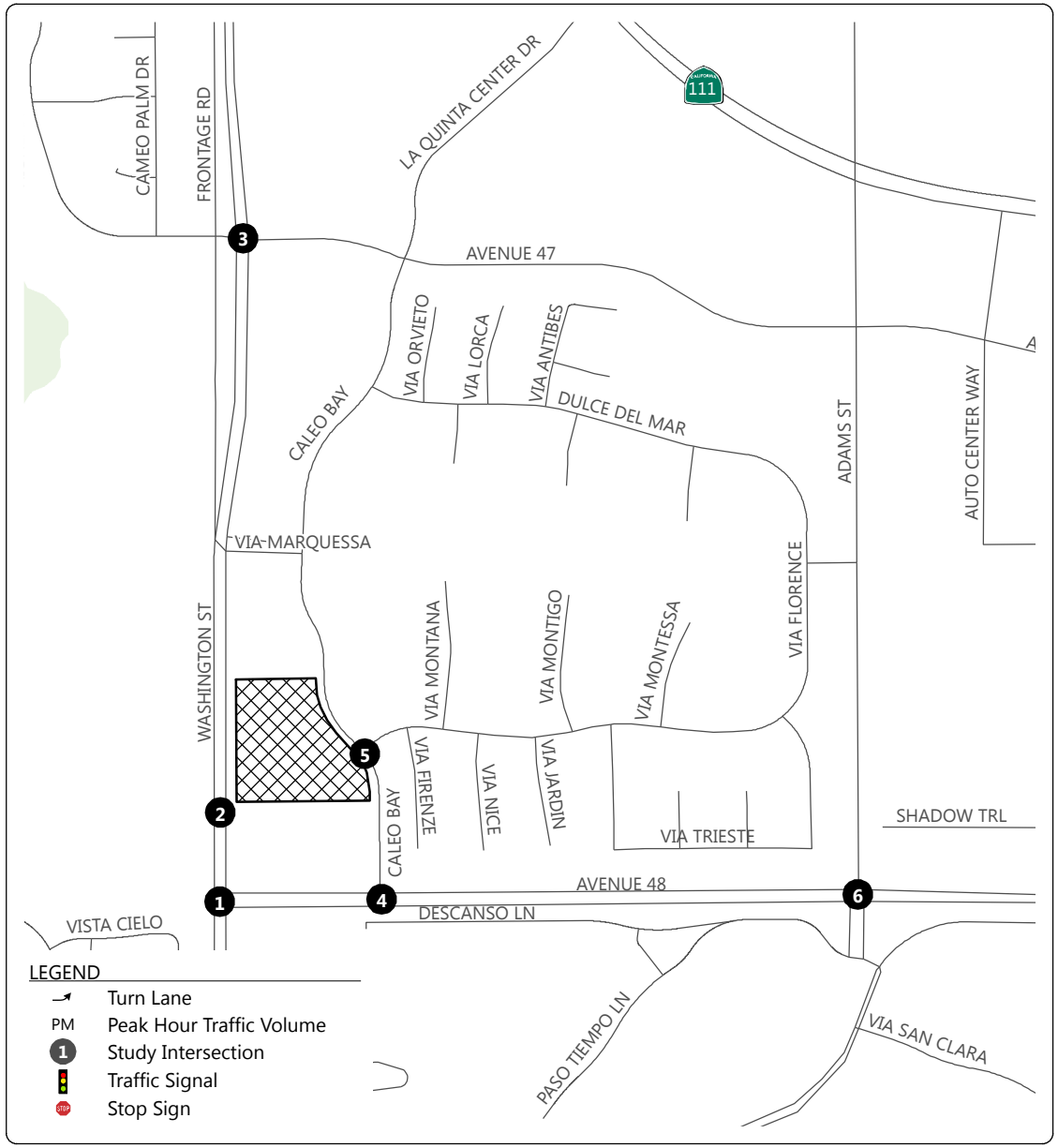
Not to Scale

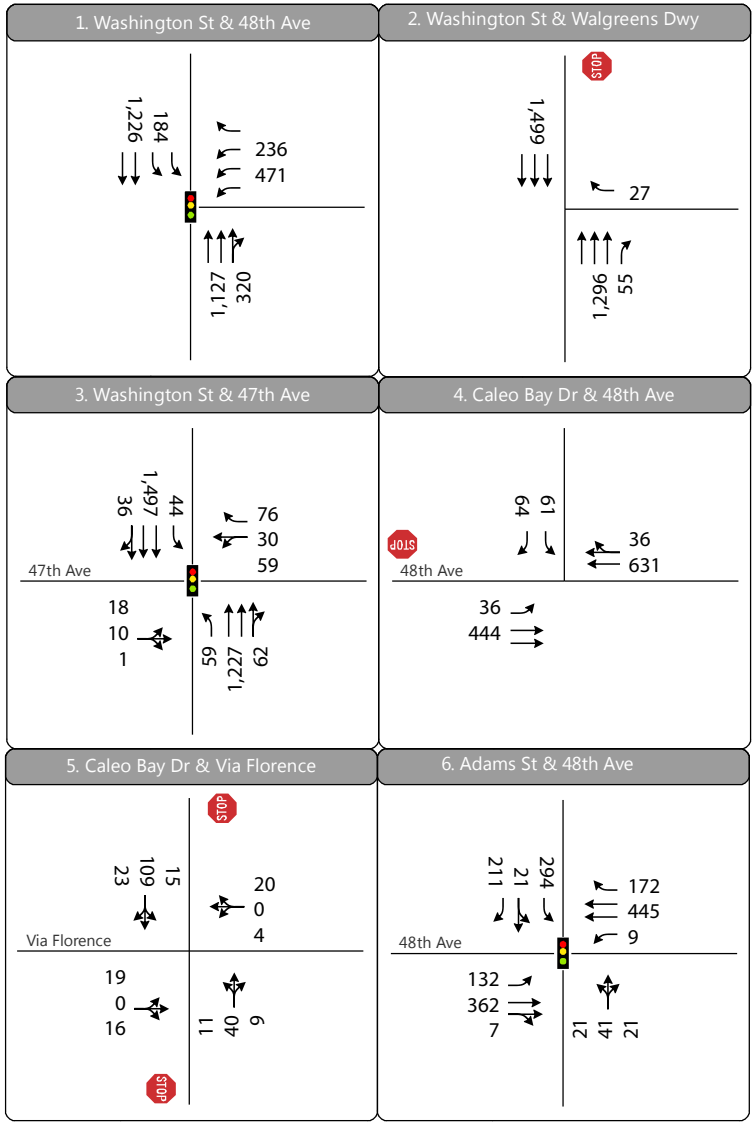
INTERSECTION LANE CONFIGURATIONS, AND PEAK HOUR TRAFFIC VOLUMES EXISTING PLUS PROJECT

FEHR PEERS

Document Path: N:\Jobs\Active\OC Jobs\OC12-0081.01_La Quinta TIA\Graphics\GIS\MXD\f8_expp_volsandlc.mxd

FIGURE 8





N

Not to Scale

INTERSECTION LANE CONFIGURATIONS, AND PEAK HOUR TRAFFIC VOLUMES OPENING YEAR (2014) PLUS PROJECT

FIGURE 9

FEHR PEERS

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TABLE 11
IMPACTS FOR STUDY INTERSECTIONS – OPENING YEAR (2014) PLUS PROJECT

Intersection	Signalization	No Project		With Project			
		Delay	LOS	Delay	LOS	ΔDelay	Impact?
Washington Street & Avenue 48	Signalized[1]	15.2	B	15.4	B	0.2s	No
Washington Street & Walgreens Dwy	SSSC[2]	9.7	A	9.7	A	0.0s	No
Washington Street & Avenue 47	Signalized	12.4	B	12.8	B	0.4s	No
Caleo Bay Drive & Avenue 48	SSSC	22.1	C	23.3	C	1.2s	No
Caleo Bay Drive & Via Florence	SSSC	8.9	A	10.2	B	1.3s	No
Adams Street & Avenue 48	Signalized	33.6	C	33.6	C	0.0s	No

Notes:
1- Delay for signalized intersections based on application of *2000 Highway Capacity Manual* Methodology. Delay was calculated using Synchro 6.0 software. **BOLD** type indicates unacceptable operations.
2- Delay for side-street stop controlled (SSSC) intersections reported for worst approach.
Source: Fehr & Peers, 2013.

Level of Service for Cumulative Year (2020) plus Project

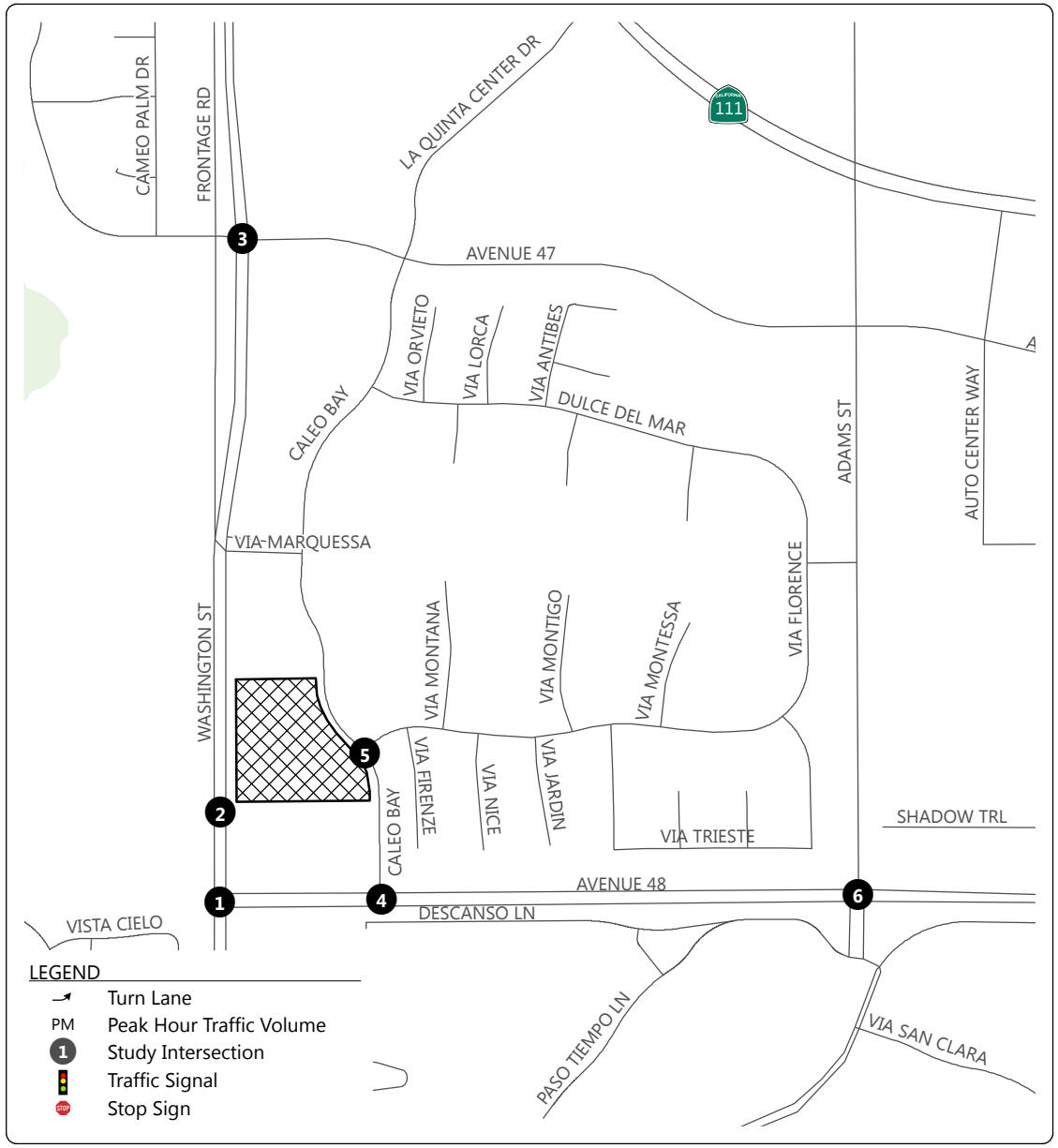
Cumulative Year (2020) plus Project traffic volumes are shown in Figure 10, and were developed by applying project traffic to Cumulative Year (2020) No Project traffic projections. Table 12 documents the LOS results for the Cumulative Year (2020) plus Project scenarios. The LOS results are attached in Appendix C.

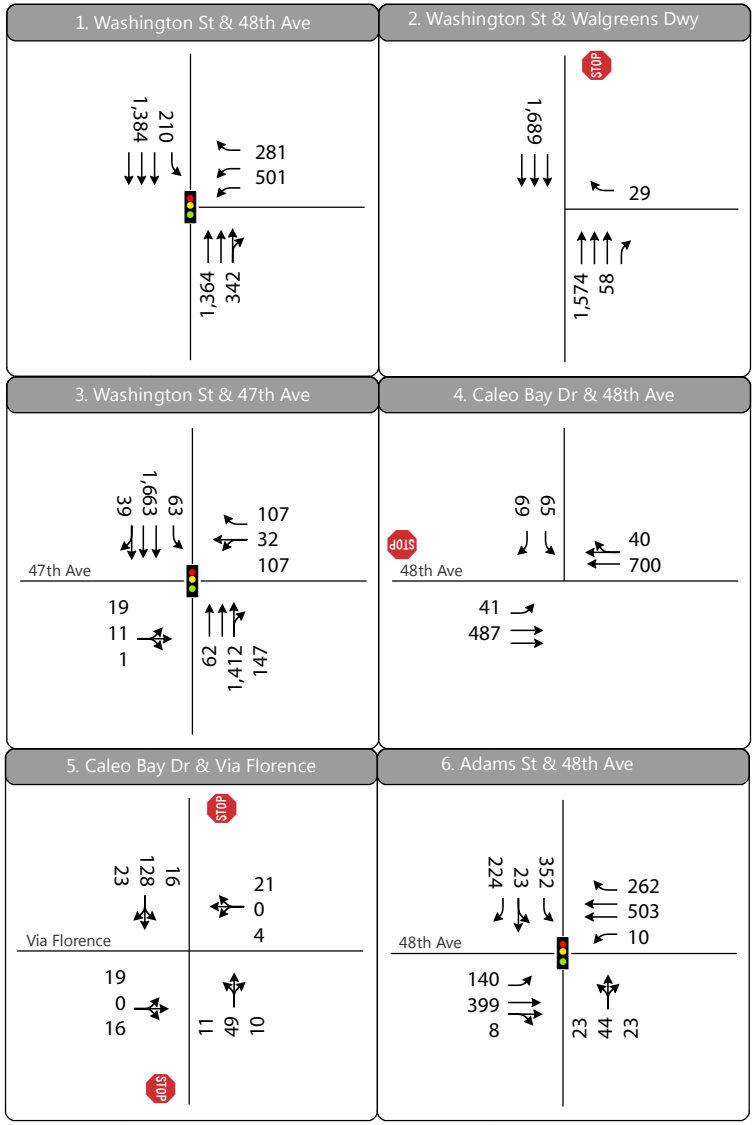
TABLE 12
IMPACTS FOR STUDY INTERSECTIONS – CUMULATIVE YEAR (2020) PLUS PROJECTS

Intersection	Signalization	No Project		With Project			
		Delay	LOS	Delay	LOS	ΔDelay	Impact?
Washington Street & Avenue 48	Signalized[1]	16.9	B	17.0	B	0.1s	No
Washington Street & Walgreens Dwy	SSSC[2]	9.4	A	9.4	A	0.0s	No
Washington Street & Avenue 47	Signalized	15.3	B	15.7	B	0.4s	No
Caleo Bay Drive & Avenue 48	SSSC	27.9	D	30.2	D	2.3s	No
Caleo Bay Drive & Via Florence	SSSC	9.0	A	10.4	B	1.4s	No
Adams Street & Avenue 48	Signalized	35.5	D	35.7	D	0.2s	No

Notes:
1- Delay for signalized intersections based on application of *2000 Highway Capacity Manual* Methodology. Delay was calculated using Synchro 6.0 software. **BOLD** type indicates unacceptable operations.
2- Delay for side-street stop controlled (SSSC) intersections reported for worst approach.
Source: Fehr & Peers, 2013.

Table 12 compares the delay for the No Project and With Project scenarios to identify significant impacts at study intersections. As shown in these tables, all intersections are operating at LOS D or better in both scenarios. The City only provides significance criteria for intersections operating at an unacceptable LOS E or F. Thus, there are no significant impacts at the study locations.





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Not to Scale

INTERSECTION LANE CONFIGURATIONS, AND PEAK HOUR TRAFFIC VOLUMES CUMULATIVE YEAR (2020) PLUS PROJECT

FEHR PEERS

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FIGURE 10

7. Summary and Recommendations

This chapter summarizes the traffic analysis for the La Quinta Memory Care Center, located at 47805 Caleo Bay Drive in La Quinta, California. The project site access, traffic, on-site circulation, and parking were analyzed as part of this assessment.

Project Access

The project can be accessed by a private driveway on the east side of the project parcel, which would be constructed in-line with the project. The driveway would be the western leg of the Caleo Bay Drive & Via Florence intersection, and would provide full access to and from the project site. The driveway would be stop-controlled. The project can also be accessed from the existing Walgreens driveway. This driveway is right-turn-in, right-turn-out only, and provides access to and from Washington Street.

Project Traffic

Project traffic was forecasted using *Trip Generation, 9th Edition*. The project is forecasted to produce 884 daily trips, 79 of which would occur during the PM peak hour. Project traffic was distributed and assigned to the roadway network based on access, complementary land use, and density.

Potential Significant Impact Assessment Results

The impact of project traffic on nearby intersection operations was analyzed for Existing plus Project, Opening Year (2014) plus Project, and Cumulative Year (2020) plus Project scenarios. The project is not anticipated to produce any significant impacts and all intersections operate at a sufficient LOS D or better under all scenarios.

On-Site Circulation Recommendations

The project site circulation is consistent with requirements in the La Quinta Municipal Code. Fehr & Peers provided recommendations for on-site circulation enhancements in Chapter 2 of this report.

Parking

The project proposes sufficient parking supply for the Memory Care facility. In the event that the proposed park were to be developed as retail, the project site plan provides a sufficient combined parking supply for both retail and convalescent care land uses. In this case, however, an additional one to three parking spaces near the retail area should be designated as accessible.

REFERENCES

2011 Traffic Counts Report, Coachella Valley Association of Governments, http://www.cvag.org/library/pdf_files/trans/CVAG_2011_Trafic_Census.pdf, accessed February 2013.

Traffic Impact Study Guidelines, Engineering Bulletin #06-13, City of La Quinta, June 2012.

La Quinta Municipal Code, City of La Quinta, http://qcode.us/codes/laquinta/, accessed February 2013.

ADA Accessibility Guide, ADA, November 2010.

Highway Capacity Manual, Transportation Research Board, 2000.

Transportation Research Circular No. 212, Interim Materials on Highway Capacity, Transportation Research Board, 1980.

Trip Generation, 9th Edition, Institute of Transportation Engineers, 2010.

APPENDIX A:
TRAFFIC COUNTS

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA13_6000_001 **Day:** TUESDAY

City: La Quinta **Date:** 1/8/2013

PM

NS/EW Streets:	Washington St			Washington St			48th Ave			48th Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 3	NR 0	SL 1	ST 3	SR 0	EL 0	ET 0	ER 0	WL 2	WT 0	WR 1	TOTAL
2:30 PM	0	307	89	35	295	0	0	0	0	99	0	62	887
2:45 PM	0	273	80	55	266	0	0	0	0	165	0	60	899
3:00 PM	0	257	70	38	310	0	0	0	0	95	0	54	824
3:15 PM	0	265	72	54	338	0	0	0	0	97	0	58	884
3:30 PM	0	253	55	65	309	0	0	0	0	97	0	54	833
3:45 PM	0	243	74	49	329	0	0	0	0	103	0	38	836
4:00 PM	0	249	45	32	326	0	0	0	0	95	0	39	786
4:15 PM	0	251	60	49	319	0	0	0	0	109	0	42	830
4:30 PM	0	258	77	30	277	0	0	0	0	95	0	39	776
4:45 PM	0	276	66	47	301	0	0	0	0	122	0	56	868
5:00 PM	0	294	57	54	344	0	0	0	0	96	0	57	902
5:15 PM	0	287	59	48	370	0	0	0	0	106	0	40	910
TOTAL VOLUMES :	0	3213	804	556	3784	0	0	0	0	1279	0	599	10235
APPROACH %'s :	0.00%	79.99%	20.01%	12.81%	87.19%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	68.10%	0.00%	31.90%	
PEAK HR START TIME :	230 PM												TOTAL
PEAK HR VOL :	0	1102	311	182	1209	0	0	0	0	456	0	234	3494
PEAK HR FACTOR :		0.892			0.887			0.000			0.767		0.972

UTURNS

NB	SB	EB	WB
	1		
	5		
	0		
	5		
	8		
	4		
	2		
	6		
	4		
	6		
	3		
	8		
0	52	0	0

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:

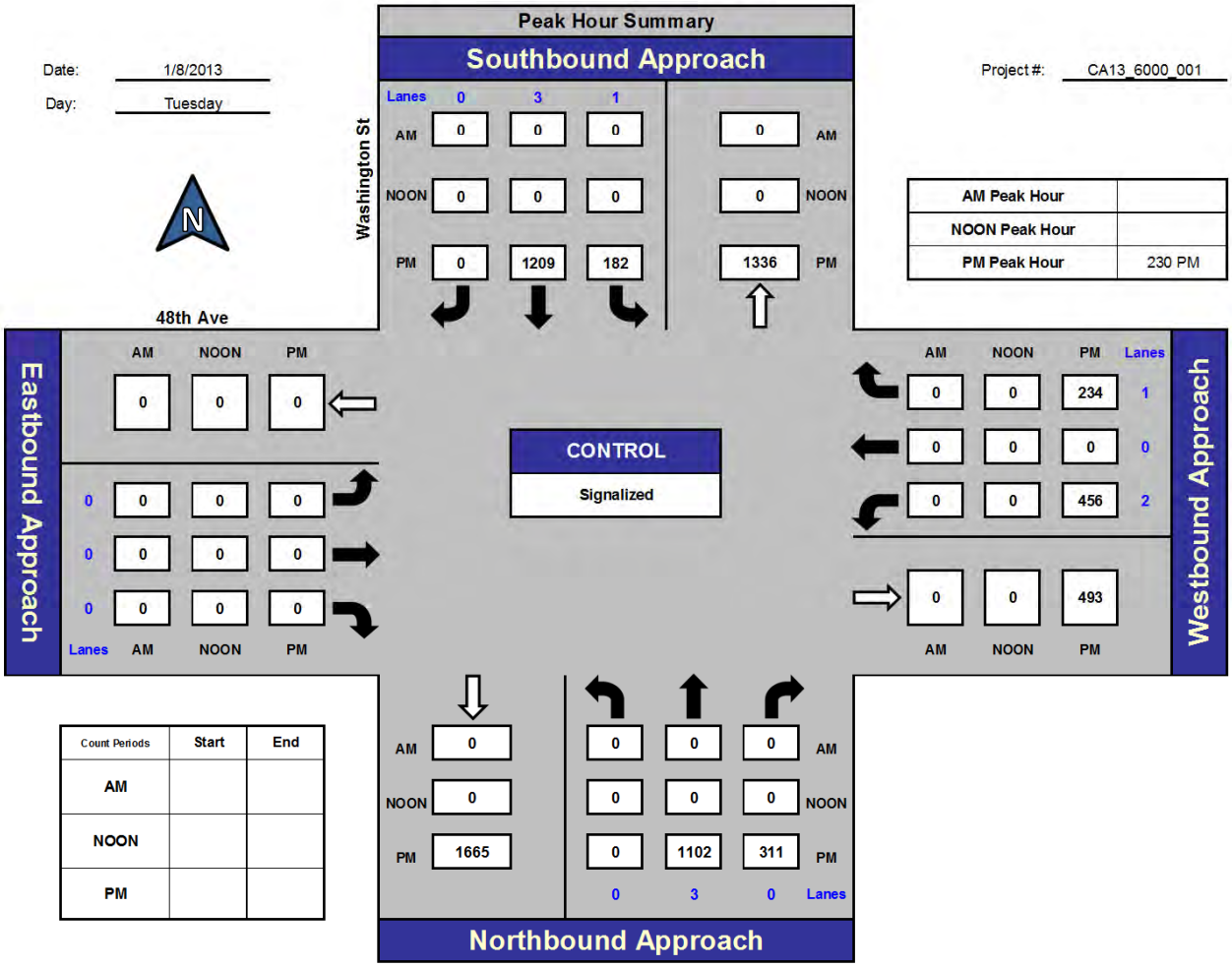
National Data & Surveying Services

Washington St and 48th Ave , La Quinta

Date: 1/8/2013

Day: Tuesday

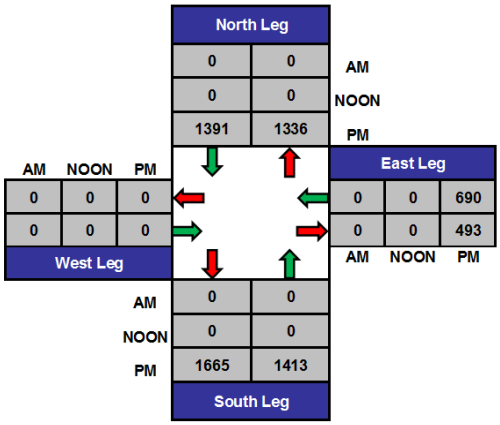
Project #: CA13_6000_001



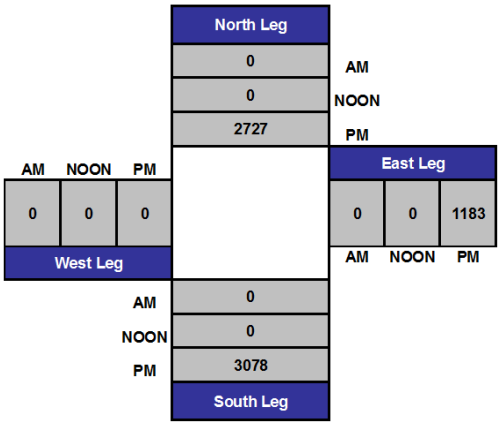
AM Peak Hour	
NOON Peak Hour	
PM Peak Hour	230 PM

Count Periods	Start	End
AM		
NOON		
PM		

Total Ins & Outs



Total Volume Per Leg



Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA13_6000_004 **Day:** TUESDAY

City: La Quinta **Date:** 1/8/2013

PM

NS/EW Streets:	Washington St			Washington St			Existing Access Dr (Walgreens Parking Lot)			Existing Access Dr (Walgreens Parking Lot)			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	3	1	0	3	0	0	0	0	0	1	0	
2:30 PM	0	366	7	0	331	0	0	0	0	0	0	9	713
2:45 PM	0	322	8	0	321	0	0	0	0	0	0	9	660
3:00 PM	0	309	3	0	343	0	0	0	0	0	0	5	660
3:15 PM	0	317	12	0	389	0	0	0	0	0	0	6	724
3:30 PM	0	291	14	0	376	0	0	0	0	0	0	5	686
3:45 PM	0	284	8	0	377	0	0	0	0	0	0	11	680
4:00 PM	0	279	8	0	356	0	0	0	0	0	0	5	648
4:15 PM	0	280	20	0	362	0	0	0	0	0	0	8	670
4:30 PM	0	292	9	0	313	0	0	0	0	0	0	4	618
4:45 PM	0	322	14	0	355	0	0	0	0	0	0	2	693
5:00 PM	0	342	11	0	400	0	0	0	0	0	0	7	760
5:15 PM	0	317	16	0	411	0	0	0	0	0	0	8	752
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	3721	130	0	4334	0	0	0	0	0	0	79	8264
APPROACH %'s :	0.00%	96.62%	3.38%	0.00%	100.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	0.00%	100.00%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	1273	50	0	1479	0	0	0	0	0	0	21	2823
PEAK HR FACTOR :		0.937			0.900			0.000			0.656		0.929

UTURNS

NB	SB	EB	WB

NB	SB	EB	WB
0	0	0	0

CONTROL : No Control

ITM Peak Hour Summary

Prepared by:

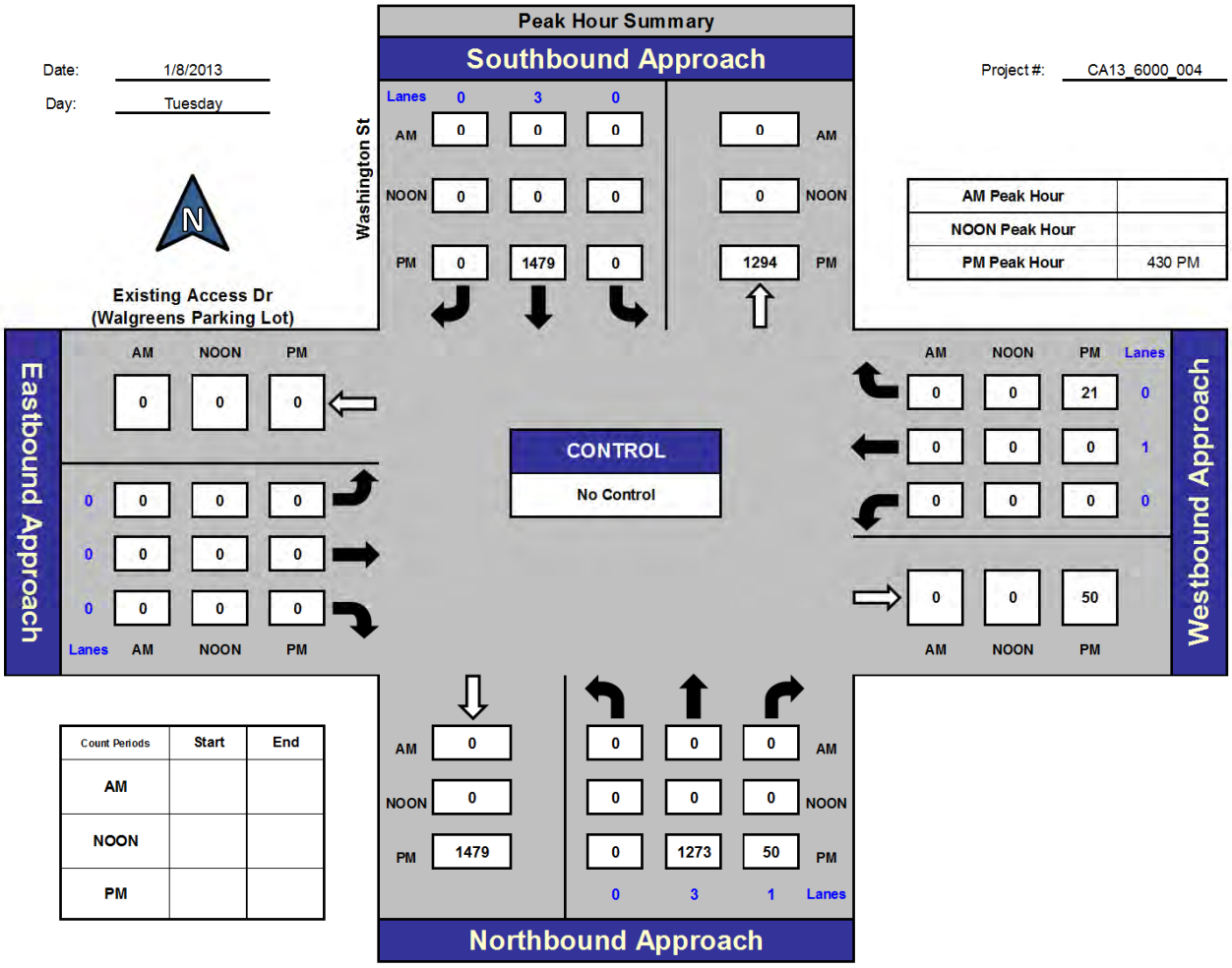
National Data & Surveying Services

Washington St and Existing Access Dr (Walgreens Parking Lot) , La Quinta

Date: 1/8/2013

Day: Tuesday

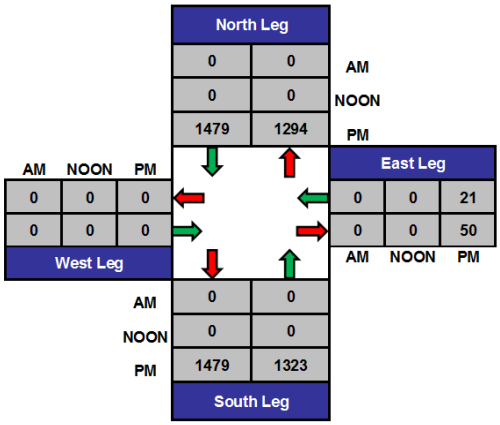
Project #: CA13_6000_004



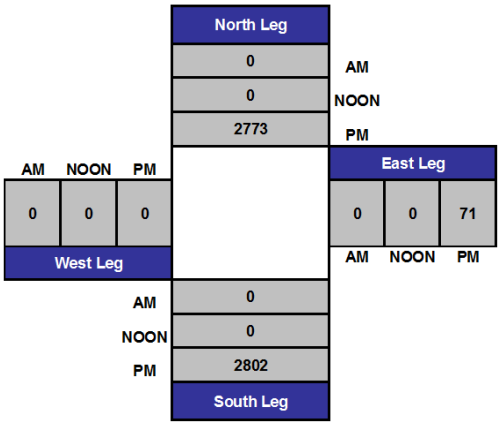
AM Peak Hour	
NOON Peak Hour	
PM Peak Hour	430 PM

Count Periods	Start	End
AM		
NOON		
PM		

Total Ins & Outs



Total Volume Per Leg



Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA13_6000_006 **Day:** TUESDAY

City: La Quinta **Date:** 1/8/2013

PM

NS/EW Streets:	Washington St			Washington St			Ave 47			Ave 47			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 3	NR 0	SL 1	ST 3	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 1	TOTAL
2:30 PM	1	352	20	7	330	3	3	1	1	11	0	28	757
2:45 PM	2	337	11	5	311	1	2	2	0	14	0	19	704
3:00 PM	0	289	13	7	341	1	1	4	0	6	0	16	678
3:15 PM	2	299	18	7	392	2	1	0	1	10	0	21	753
3:30 PM	1	281	19	14	370	2	2	0	3	9	2	18	721
3:45 PM	3	281	10	16	370	3	1	0	3	18	1	19	725
4:00 PM	1	284	13	8	343	2	2	2	1	16	0	11	683
4:15 PM	1	278	7	4	349	1	0	0	0	11	3	8	662
4:30 PM	4	290	13	10	329	3	1	1	1	8	5	20	685
4:45 PM	37	279	15	7	350	16	3	0	0	11	15	16	749
5:00 PM	12	321	7	8	367	11	10	9	0	22	9	26	802
5:15 PM	5	317	17	9	435	6	4	0	0	13	1	9	816
TOTAL VOLUMES :	NL 69	NT 3608	NR 163	SL 102	ST 4287	SR 51	EL 30	ET 19	ER 10	WL 149	WT 36	WR 211	TOTAL 8735
APPROACH %'s :	1.80%	93.96%	4.24%	2.30%	96.55%	1.15%	50.85%	32.20%	16.95%	37.63%	9.09%	53.28%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	58	1207	52	34	1481	36	18	10	1	54	30	71	3052
PEAK HR FACTOR :		0.968			0.862			0.382			0.680		0.935

UTURNS

NB	SB	EB	WB

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:

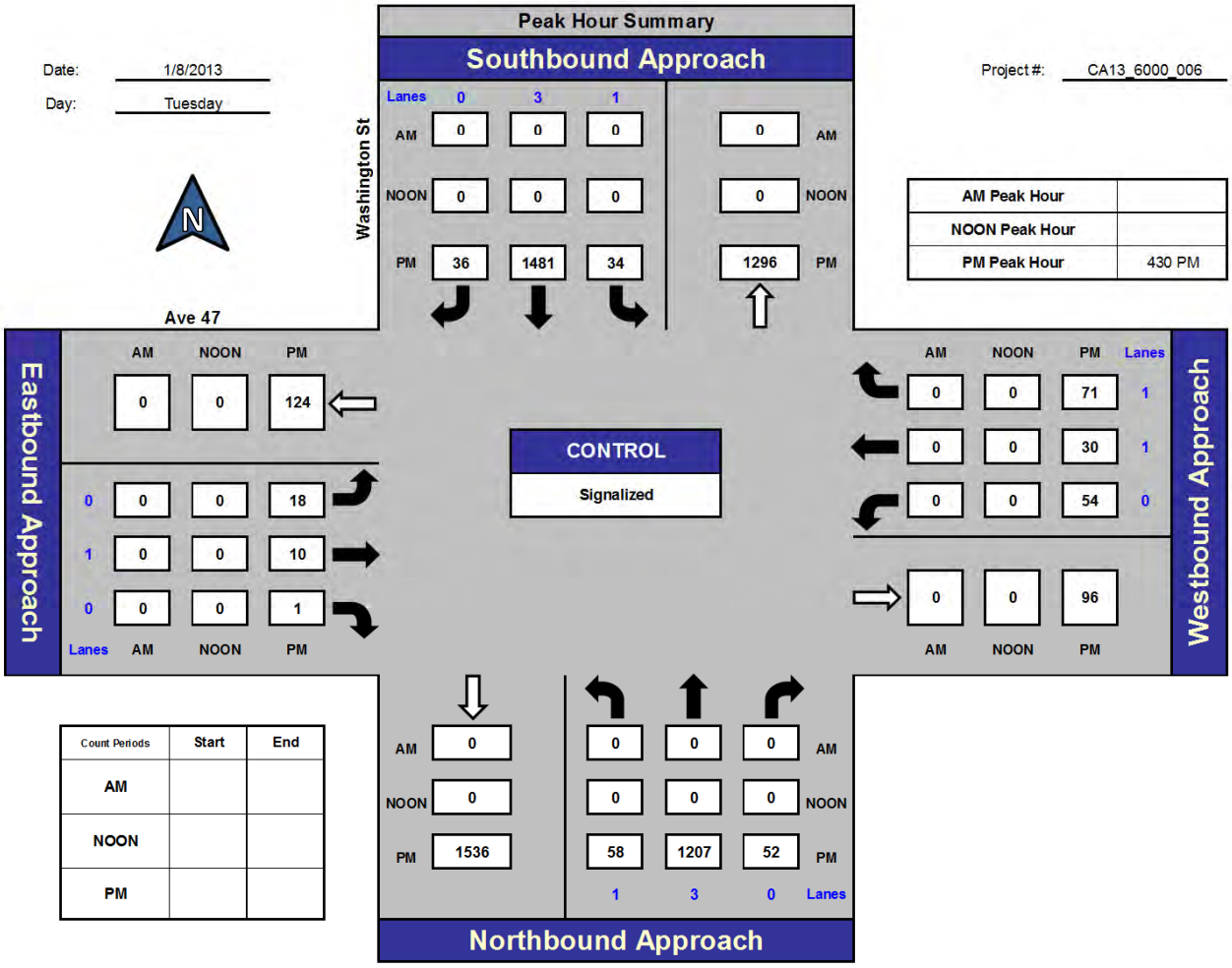
National Data & Surveying Services

Washington St and Ave 47 , La Quinta

Date: 1/8/2013

Day: Tuesday

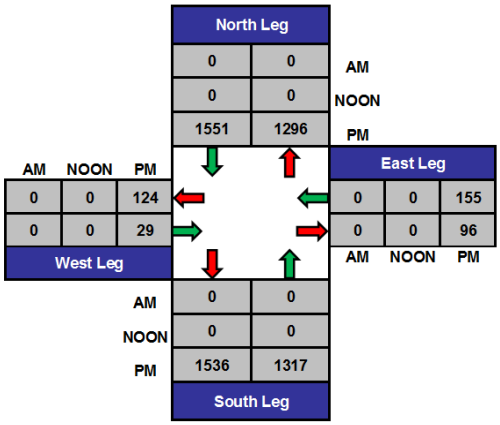
Project #: CA13_6000_006



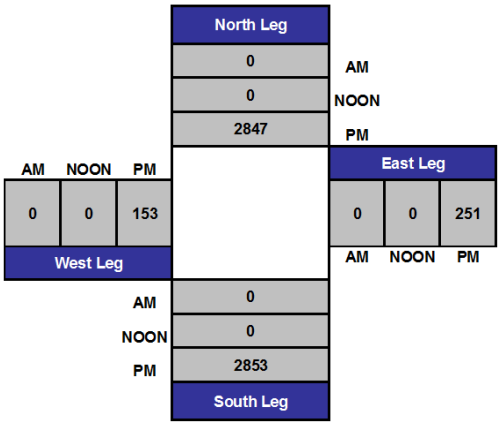
AM Peak Hour	
NOON Peak Hour	
PM Peak Hour	430 PM

Count Periods	Start	End
AM		
NOON		
PM		

Total Ins & Outs



Total Volume Per Leg



Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA13_6000_002 **Day:** TUESDAY

City: La Quinta **Date:** 1/8/2013

PM

NS/EW Streets:	Caleo Bay			Caleo Bay			48th Ave			48th Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 0	NR 0	SL 1	ST 0	SR 1	EL 1	ET 2	ER 0	WL 0	WT 2	WR 0	TOTAL
2:30 PM	0	0	0	11	0	11	10	108	0	0	151	10	301
2:45 PM	0	0	0	8	0	16	11	119	0	0	208	4	366
3:00 PM	0	0	0	22	0	13	5	101	0	0	132	6	279
3:15 PM	0	0	0	13	0	13	4	112	0	0	134	11	287
3:30 PM	0	0	0	16	0	10	9	106	0	0	131	7	279
3:45 PM	0	0	0	9	0	23	6	107	0	0	114	4	263
4:00 PM	0	0	0	6	0	12	8	66	0	0	124	8	224
4:15 PM	0	0	0	13	0	13	8	85	0	0	132	5	256
4:30 PM	0	0	0	19	0	12	8	98	0	0	109	10	256
4:45 PM	0	0	0	11	0	13	8	105	0	0	153	11	301
5:00 PM	0	0	0	17	0	19	8	101	0	0	146	1	292
5:15 PM	0	0	0	17	0	10	4	95	0	0	130	3	259
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	162	0	165	89	1203	0	0	1664	80	3363
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	49.54%	0.00%	50.46%	6.89%	93.11%	0.00%	0.00%	95.41%	4.59%	
PEAK HR START TIME :	230 PM												TOTAL
PEAK HR VOL :	0	0	0	54	0	53	30	440	0	0	625	31	1233
PEAK HR FACTOR :	0.000			0.764			0.904			0.774			0.842

UTURNS

NB	SB	EB	WB
		3	
		5	
		1	
		0	
		1	
		1	
		1	
		0	
		0	
		1	
		3	
		2	
NB	SB	EB	WB
0	0	18	0

CONTROL : 1-Way Stop (SB)

ITM Peak Hour Summary

Prepared by:

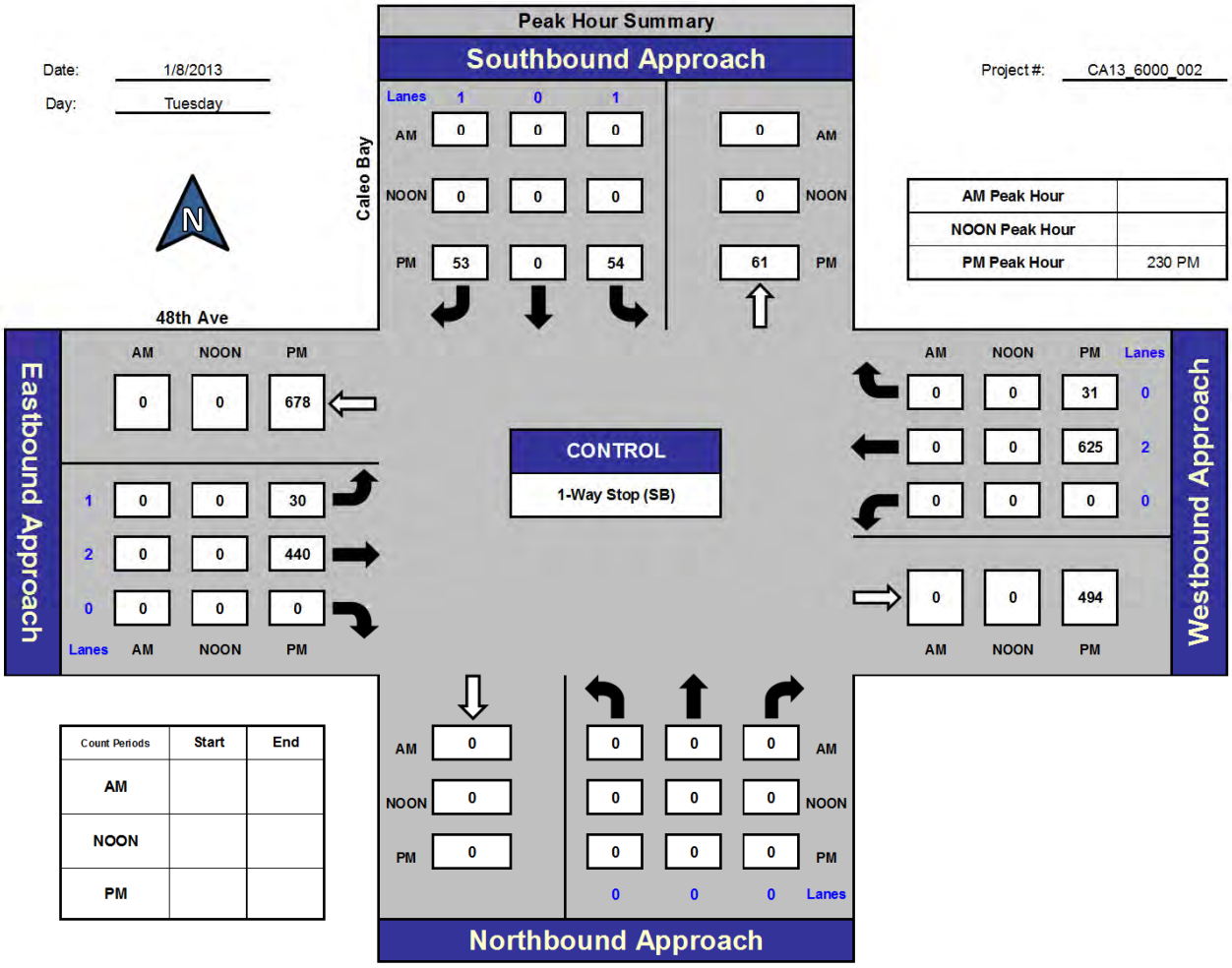
National Data & Surveying Services

Caleo Bay and 48th Ave , La Quinta

Date: 1/8/2013

Day: Tuesday

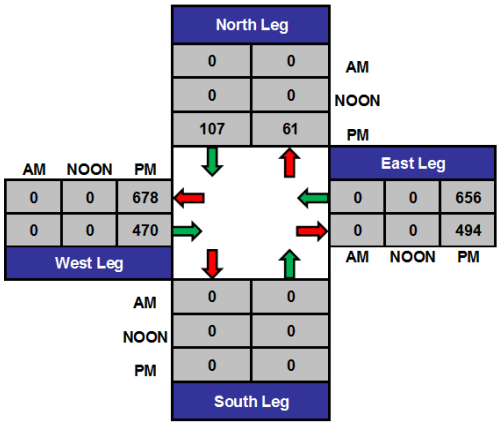
Project #: CA13_6000_002



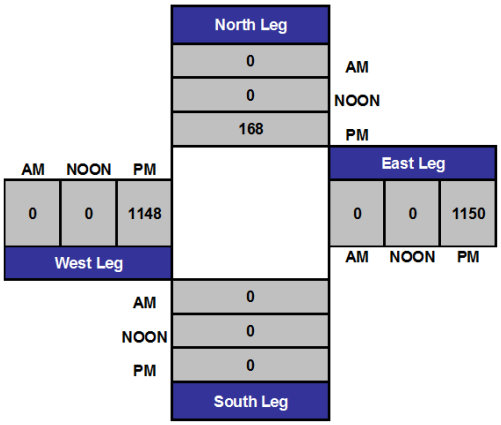
AM Peak Hour	
NOON Peak Hour	
PM Peak Hour	230 PM

Count Periods	Start	End
AM		
NOON		
PM		

Total Ins & Outs



Total Volume Per Leg



Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA13_6000_003 **Day:** TUESDAY

City: La Quinta **Date:** 1/8/2013

PM

NS/EW Streets:	Caleo Bay			Caleo Bay			Via Florence			Via Florence			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	0	0	0	1	0	
2:30 PM	0	18	1	0	20	0	0	0	0	1	0	3	43
2:45 PM	0	13	0	2	30	0	0	0	0	0	0	3	48
3:00 PM	0	12	2	1	24	0	0	0	0	0	0	2	41
3:15 PM	0	14	1	6	28	0	0	0	0	1	0	5	55
3:30 PM	0	12	1	2	21	0	0	0	0	0	0	2	38
3:45 PM	0	10	1	7	23	0	0	0	0	1	0	3	45
4:00 PM	0	7	2	6	16	0	0	0	0	1	0	3	35
4:15 PM	0	10	2	4	21	0	0	0	0	3	0	4	44
4:30 PM	0	14	4	7	27	0	0	0	0	0	0	7	59
4:45 PM	0	7	2	2	22	0	0	0	0	0	0	6	39
5:00 PM	0	9	1	2	38	0	0	0	0	1	0	3	54
5:15 PM	0	5	0	4	19	0	0	0	0	1	0	2	31
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	131	17	43	289	0	0	0	0	9	0	43	532
APPROACH %'s :	0.00%	88.51%	11.49%	12.95%	87.05%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	17.31%	0.00%	82.69%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	0	40	9	15	108	0	0	0	0	4	0	20	196
PEAK HR FACTOR :		0.681			0.769			0.000			0.857		0.831

UTURNS

NB	SB	EB	WB

NB	SB	EB	WB
0	0	0	0

CONTROL : 1-Way Stop (WB)

ITM Peak Hour Summary

Prepared by:

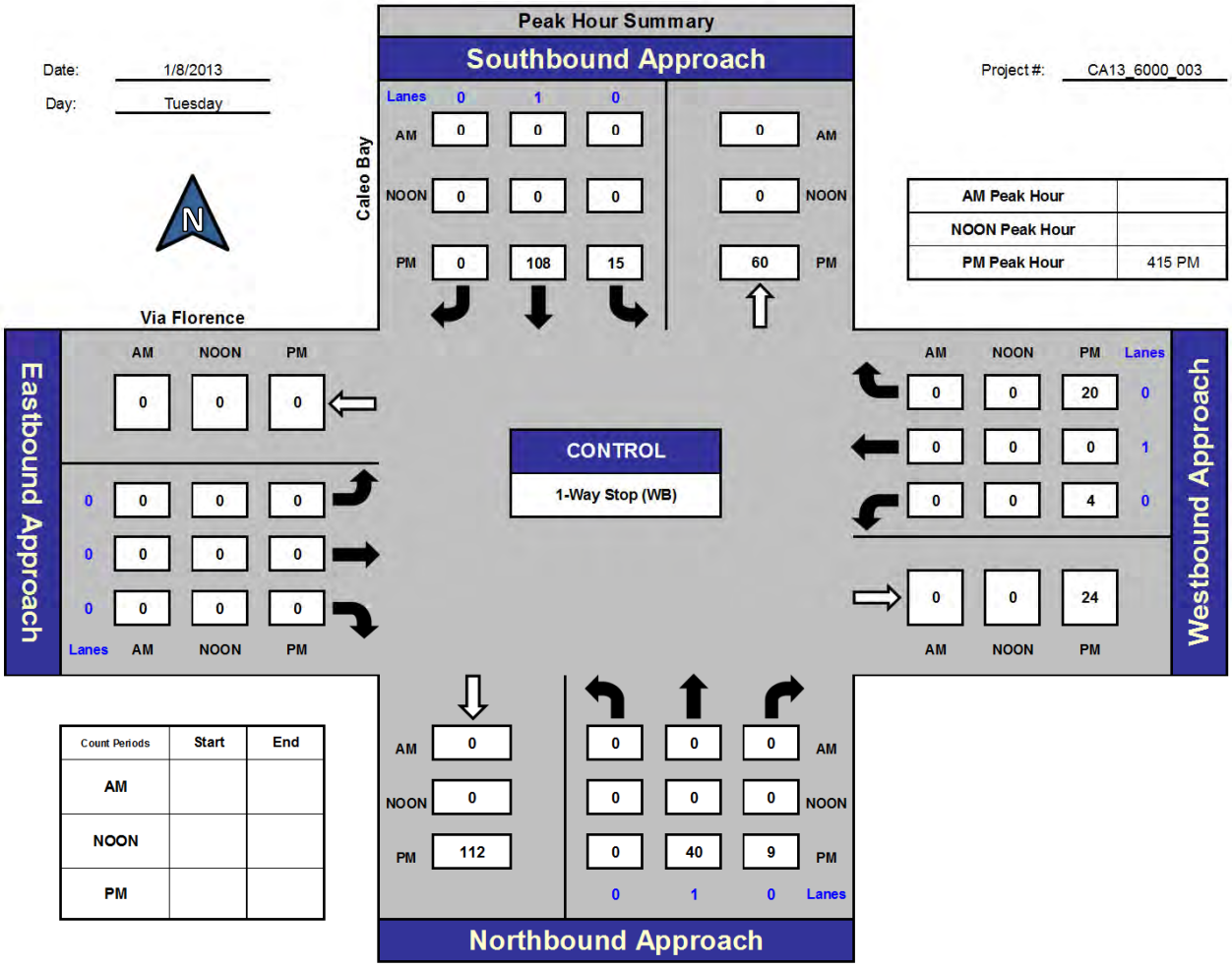
National Data & Surveying Services

Caleo Bay and Via Florence , La Quinta

Date: 1/8/2013

Day: Tuesday

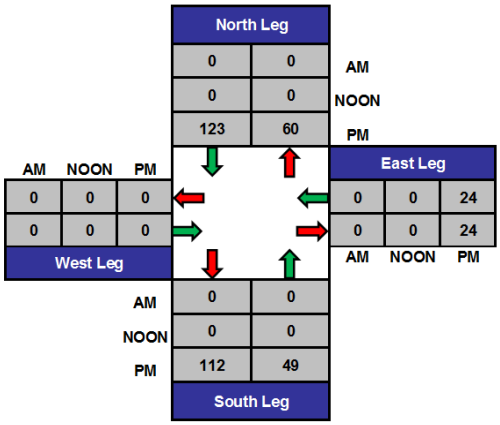
Project #: CA13_6000_003



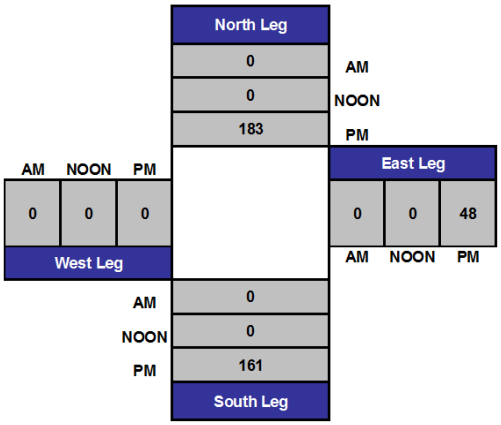
AM Peak Hour	
NOON Peak Hour	
PM Peak Hour	415 PM

Count Periods	Start	End
AM		
NOON		
PM		

Total Ins & Outs



Total Volume Per Leg



Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA13_6000_005 **Day:** TUESDAY

City: La Quinta **Date:** 1/8/2013

PM

NS/EW Streets:	Adams Ave			Adams Ave			48th Ave			48th Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 2	NR 0	SL 1.5	ST 0.5	SR 1	EL 1	ET 2	ER 0	WL 1	WT 2	WR 1	TOTAL
2:30 PM	3	16	7	58	3	59	27	83	3	2	107	38	406
2:45 PM	9	7	6	89	5	75	34	90	2	2	133	49	501
3:00 PM	6	8	6	66	6	33	36	94	1	0	96	47	399
3:15 PM	3	10	2	74	7	42	34	85	1	5	100	27	390
3:30 PM	8	3	3	65	8	48	28	88	8	4	89	38	390
3:45 PM	2	9	4	64	8	47	14	99	7	0	69	40	363
4:00 PM	2	10	4	74	11	37	20	54	4	2	89	43	350
4:15 PM	2	14	2	62	11	46	26	71	1	1	84	44	364
4:30 PM	2	9	2	64	7	34	30	85	2	3	87	45	370
4:45 PM	5	8	3	62	10	60	27	83	6	3	101	43	411
5:00 PM	8	7	4	69	6	50	32	80	5	1	88	30	380
5:15 PM	1	9	5	55	9	46	35	73	4	3	85	44	369
TOTAL VOLUMES :	NL 51	NT 110	NR 48	SL 802	ST 91	SR 577	EL 343	ET 985	ER 44	WL 26	WT 1128	WR 488	TOTAL 4693
APPROACH %'s :	24.40%	52.63%	22.97%	54.56%	6.19%	39.25%	25.00%	71.79%	3.21%	1.58%	68.70%	29.72%	
PEAK HR START TIME :	230 PM												TOTAL
PEAK HR VOL :	21	41	21	287	21	209	131	352	7	9	436	161	1696
PEAK HR FACTOR :		0.798			0.765			0.935			0.823		0.846

UTURNS

NB	SB	EB	WB

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:

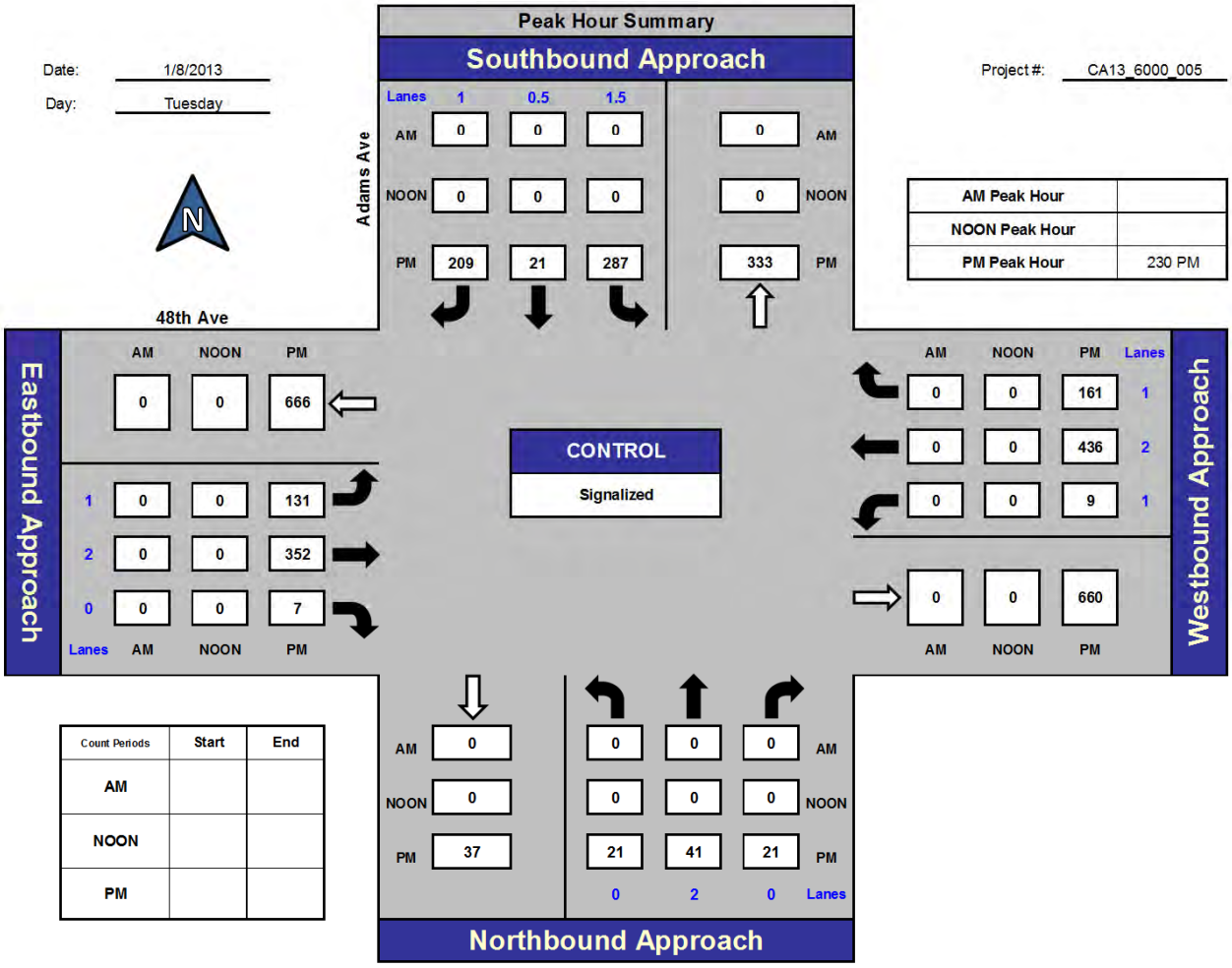
National Data & Surveying Services

Adams Ave and 48th Ave , La Quinta

Date: 1/8/2013

Day: Tuesday

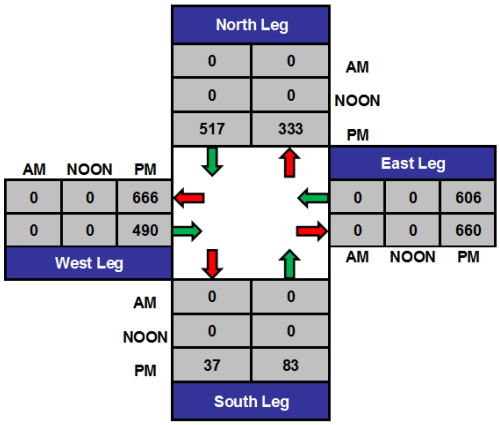
Project #: CA13_6000_005



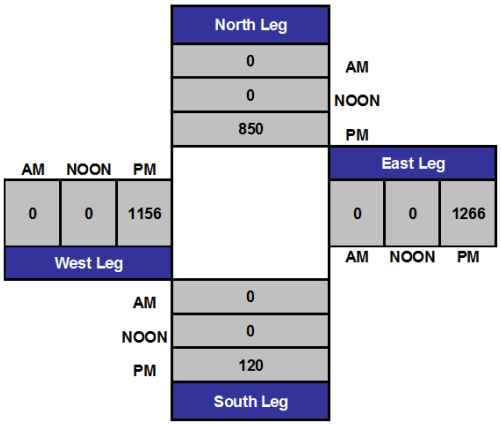
AM Peak Hour	
NOON Peak Hour	
PM Peak Hour	230 PM

Count Periods	Start	End
AM		
NOON		
PM		

Total Ins & Outs



Total Volume Per Leg



APPENDIX B:
RELATED PROJECT TRIPS

RELATED PROJECT TRIP GENERATION
2014 PROJECT OPENING YEAR

Project	Project Type	ITE Code	Size	Unit	Trip Generation Rates				Trip Generation			
					Daily	PM Peak Hour			Daily	PM Peak Hour		
						Total	In%	Out%		Total	In	Out
Estates at Happy Point	Single Family Homes	210	9	DU	9.52	1	63%	37%	86	9	6	3
Laing Homes	Single Family Homes	210	0	DU	9.52	1	63%	37%	-	-	-	-
Coral Mountain Apartments	Apartments	220	176	DU	6.65	0.62	65%	35%	1,170	109	73	36
La Paloma Assisted Living Facility	Congregate Care Facility	253	0	DU	2.02	0.17	55%	45%	-	-	-	-
Dune Palms Specific Plan	New Car Sales	841	0	KSF	32.30	2.62	40%	60%	-	-	-	-
Washington Park	Retail	820	0	KSF	42.70	3.71	48%	52%	-	-	-	-
	Restaurant	931	0	KSF	89.95	7.49	67%	33%	-	-	-	-
Centre at La Quinta	Retail	820	42	KSF	42.70	3.71	48%	52%	1,793	156	105	51
Caleo Bay Park	Office	710	0	KSF	11.03	1.49	17%	83%	-	-	-	-

RELATED PROJECT TRIP GENERATION
2020 PROJECT OPENING YEAR

Project	Project Type	ITE Code	Size	Unit	Trip Generation Rates				Trip Generation			
					Daily	PM Peak Hour			Daily	PM Peak Hour		
						Total	In%	Out%		Total	In	Out
Estates at Happy Point	Single Family Homes	210	31	DU	9.52	1	63%	37%	295	31	21	10
Laing Homes	Single Family Homes	210	74	DU	9.52	1	63%	37%	704	74	50	24
Coral Mountain Apartments	Apartments	220	176	DU	6.65	0.62	65%	35%	1,170	109	73	36
La Paloma Assisted Living Facility	Congregate Care Facility	253	208	DU	2.02	0.17	55%	45%	420	35	23	12
Dune Palms Specific Plan	New Car Sales	841	662.4	KSF	32.30	2.62	40%	60%	21,396	1,735	1,162	573
Washington Park	Retail	820	140	KSF	42.70	3.71	48%	52%	5,978	519	348	171
	Restaurant	931	16	KSF	89.95	7.49	67%	33%	1,439	120	80	40
Centre at La Quinta	Retail	820	216.1	KSF	42.70	3.71	48%	52%	9,227	802	537	265
Caleo Bay Park	Office	710	17.595	KSF	11.03	1.49	17%	83%	194	26	17	9

APPENDIX C:
LEVEL OF SERVICE WORKSHEETS

EXISTING

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	0.94	1.00	0.91		0.97	0.95
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	4859	1542	4788		3343	3446
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	4859	1542	4788		3343	3446
Volume (vph)	456	234	1102	311	182	1209
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	470	241	1136	321	188	1246
RTOR Reduction (vph)	0	166	50	0	0	0
Lane Group Flow (vph)	470	75	1407	0	188	1246
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	14.6	14.6	56.1		7.0	67.1
Effective Green, g (s)	14.6	14.6	56.1		7.0	67.1
Actuated g/C Ratio	0.16	0.16	0.63		0.08	0.75
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	791	251	2995		261	2578
v/s Ratio Prot	c0.10		0.29		c0.06	c0.36
v/s Ratio Perm		0.05				
v/c Ratio	0.59	0.30	0.47		0.72	0.48
Uniform Delay, d1	34.8	33.1	8.9		40.4	4.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.2	0.7	0.5		9.4	0.7
Delay (s)	36.0	33.7	9.4		49.8	5.1
Level of Service	D	C	A		D	A
Approach Delay (s)	35.2		9.4			11.0
Approach LOS	D		A			B

Intersection Summary			
HCM Average Control Delay	15.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	89.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

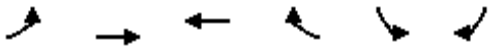
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	21	1273	50	0	1479
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	23	1369	54	0	1590
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			328			
pX, platoon unblocked	0.89	0.89			0.89	
vC, conflicting volume	1899	456			1423	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1759	133			1222	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	97			100	
cM capacity (veh/h)	67	791			502	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	23	456	456	456	54	530	530	530
Volume Left	0	0	0	0	0	0	0	0
Volume Right	23	0	0	0	54	0	0	0
cSH	791	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.03	0.27	0.27	0.27	0.03	0.31	0.31	0.31
Queue Length 95th (ft)	2	0	0	0	0	0	0	0
Control Delay (s)	9.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A							
Approach Delay (s)	9.7	0.0				0.0		
Approach LOS	A							

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	34.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.91		1.00	0.91	
Frt		1.00			1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		0.97			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1799			1805	1583	1770	5054		1770	5067	
Flt Permitted		0.97			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1799			1805	1583	1770	5054		1770	5067	
Volume (vph)	18	10	1	54	30	71	58	1207	52	34	1481	36
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	19	11	1	57	32	76	62	1284	55	36	1576	38
RTOR Reduction (vph)	0	1	0	0	0	68	0	3	0	0	2	0
Lane Group Flow (vph)	0	30	0	0	89	8	62	1336	0	36	1612	0
Turn Type	Split			Split		Perm	Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)		3.3			8.8	8.8	5.6	53.6		2.8	50.8	
Effective Green, g (s)		3.3			8.8	8.8	5.6	53.6		2.8	50.8	
Actuated g/C Ratio		0.04			0.10	0.10	0.07	0.63		0.03	0.60	
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		70			188	165	117	3206		59	3046	
v/s Ratio Prot		c0.02			c0.05		0.04	c0.26		0.02	c0.32	
v/s Ratio Perm						0.00						
v/c Ratio		0.43			0.47	0.05	0.53	0.42		0.61	0.53	
Uniform Delay, d1		39.7			35.7	34.1	38.2	7.7		40.3	9.9	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		4.2			1.9	0.1	4.3	0.4		17.2	0.7	
Delay (s)		43.9			37.5	34.2	42.5	8.1		57.5	10.5	
Level of Service		D			D	C	D	A		E	B	
Approach Delay (s)		43.9			36.0			9.6			11.5	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM Average Control Delay	12.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	84.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	30	440	625	31	54	53
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	36	524	744	37	64	63
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		638				
pX, platoon unblocked						
vC, conflicting volume	781				1096	390
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	781				1096	390
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				68	90
cM capacity (veh/h)	832				199	608

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	36	262	262	496	285	64	63
Volume Left	36	0	0	0	0	64	0
Volume Right	0	0	0	0	37	0	63
cSH	832	1700	1700	1700	1700	199	608
Volume to Capacity	0.04	0.15	0.15	0.29	0.17	0.32	0.10
Queue Length 95th (ft)	3	0	0	0	0	33	9
Control Delay (s)	9.5	0.0	0.0	0.0	0.0	31.5	11.6
Lane LOS	A					D	B
Approach Delay (s)	0.6			0.0		21.7	
Approach LOS						C	

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	34.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	4	0	20	0	40	9	15	108	0
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	0	0	0	5	0	24	0	48	11	18	130	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	244	225	130	220	220	54	130			59		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	244	225	130	220	220	54	130			59		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
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 %	100	100	100	99	100	98	100			99		
cM capacity (veh/h)	687	666	920	730	671	1014	1455			1545		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	29	59	148
Volume Left	5	0	18
Volume Right	24	11	0
cSH	952	1700	1545
Volume to Capacity	0.03	0.03	0.01
Queue Length 95th (ft)	2	0	1
Control Delay (s)	8.9	0.0	1.0
Lane LOS	A		A
Approach Delay (s)	8.9	0.0	1.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	23.2%	ICU Level of Service	A
Analysis Period (min)	15		

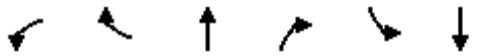
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99		0.95	0.96	1.00
Satd. Flow (prot)	1770	3529		1770	3539	1583		1776		1681	1696	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.99		0.95	0.96	1.00
Satd. Flow (perm)	1770	3529		1770	3539	1583		1776		1681	1696	1583
Volume (vph)	131	352	7	9	436	161	21	41	21	287	21	209
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	154	414	8	11	513	189	25	48	25	338	25	246
RTOR Reduction (vph)	0	1	0	0	0	85	0	13	0	0	0	169
Lane Group Flow (vph)	154	421	0	11	513	104	0	85	0	177	186	77
Turn Type	Prot			Prot		pm+ov	Split			Split		Perm
Protected Phases	7	4		3	8	6	2	2		6	6	
Permitted Phases						8						6
Actuated Green, G (s)	7.0	26.2		1.3	20.5	47.6		16.0		27.1	27.1	27.1
Effective Green, g (s)	7.0	26.2		1.3	20.5	47.6		16.0		27.1	27.1	27.1
Actuated g/C Ratio	0.08	0.30		0.02	0.24	0.55		0.18		0.31	0.31	0.31
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	143	1068		27	838	870		328		526	531	495
v/s Ratio Prot	c0.09	0.12		0.01	c0.14	0.04		c0.05		0.11	c0.11	
v/s Ratio Perm						0.03						0.05
v/c Ratio	1.08	0.39		0.41	0.61	0.12		0.26		0.34	0.35	0.16
Uniform Delay, d1	39.8	23.9		42.3	29.5	9.4		30.2		22.8	23.0	21.5
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	97.3	0.2		9.7	1.3	0.1		1.9		1.7	1.8	0.7
Delay (s)	137.1	24.2		52.0	30.8	9.5		32.1		24.6	24.8	22.2
Level of Service	F	C		D	C	A		C		C	C	C
Approach Delay (s)		54.4			25.5			32.1			23.7	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	33.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	86.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	44.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

EXISTING + PROJECT

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	0.94	1.00	0.91		0.97	0.95
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	4859	1542	4786		3343	3446
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	4859	1542	4786		3343	3446
Volume (vph)	466	234	1106	317	182	1209
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	480	241	1140	327	188	1246
RTOR Reduction (vph)	0	165	51	0	0	0
Lane Group Flow (vph)	480	76	1416	0	188	1246
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	14.8	14.8	56.1		7.0	67.1
Effective Green, g (s)	14.8	14.8	56.1		7.0	67.1
Actuated g/C Ratio	0.16	0.16	0.62		0.08	0.75
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	800	254	2987		260	2572
v/s Ratio Prot	c0.10		0.30		c0.06	c0.36
v/s Ratio Perm		0.05				
v/c Ratio	0.60	0.30	0.47		0.72	0.48
Uniform Delay, d1	34.8	33.0	9.0		40.5	4.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.2	0.7	0.5		9.5	0.7
Delay (s)	36.0	33.7	9.6		50.0	5.2
Level of Service	D	C	A		D	A
Approach Delay (s)	35.2		9.6			11.1
Approach LOS	D		A			B

Intersection Summary			
HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	89.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



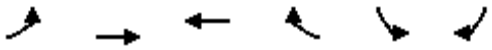
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	27	1273	54	0	1479
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	29	1369	58	0	1590
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			328			
pX, platoon unblocked	0.89	0.89			0.89	
vC, conflicting volume	1899	456			1427	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1758	130			1225	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	96			100	
cM capacity (veh/h)	67	794			501	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	29	456	456	456	58	530	530	530
Volume Left	0	0	0	0	0	0	0	0
Volume Right	29	0	0	0	58	0	0	0
cSH	794	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.04	0.27	0.27	0.27	0.03	0.31	0.31	0.31
Queue Length 95th (ft)	3	0	0	0	0	0	0	0
Control Delay (s)	9.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A							
Approach Delay (s)	9.7	0.0				0.0		
Approach LOS	A							

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	34.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.91		1.00	0.91	
Frt		1.00			1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		0.97			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1799			1805	1583	1770	5054		1770	5067	
Flt Permitted		0.97			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1799			1805	1583	1770	5054		1770	5067	
Volume (vph)	18	10	1	54	30	75	58	1213	52	44	1481	36
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	19	11	1	57	32	80	62	1290	55	47	1576	38
RTOR Reduction (vph)	0	1	0	0	0	72	0	3	0	0	2	0
Lane Group Flow (vph)	0	30	0	0	89	8	62	1342	0	47	1612	0
Turn Type	Split			Split		Perm	Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)		3.3			8.8	8.8	4.6	50.7		4.6	50.7	
Effective Green, g (s)		3.3			8.8	8.8	4.6	50.7		4.6	50.7	
Actuated g/C Ratio		0.04			0.11	0.11	0.06	0.61		0.06	0.61	
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		71			190	167	98	3072		98	3080	
v/s Ratio Prot		c0.02			c0.05		0.04	c0.27		0.03	c0.32	
v/s Ratio Perm						0.01						
v/c Ratio		0.42			0.47	0.05	0.63	0.44		0.48	0.52	
Uniform Delay, d1		39.1			35.1	33.5	38.6	8.7		38.2	9.4	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		4.0			1.8	0.1	12.6	0.5		3.7	0.6	
Delay (s)		43.1			36.9	33.7	51.2	9.2		41.9	10.0	
Level of Service		D			D	C	D	A		D	B	
Approach Delay (s)		43.1			35.4			11.0			10.9	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	12.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	83.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	36	440	625	36	60	63
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	43	524	744	43	71	75
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		638				
pX, platoon unblocked						
vC, conflicting volume	787				1113	393
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	787				1113	393
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				63	88
cM capacity (veh/h)	828				192	606

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	43	262	262	496	291	71	75
Volume Left	43	0	0	0	0	71	0
Volume Right	0	0	0	0	43	0	75
cSH	828	1700	1700	1700	1700	192	606
Volume to Capacity	0.05	0.15	0.15	0.29	0.17	0.37	0.12
Queue Length 95th (ft)	4	0	0	0	0	40	11
Control Delay (s)	9.6	0.0	0.0	0.0	0.0	34.5	11.8
Lane LOS	A					D	B
Approach Delay (s)	0.7			0.0		22.8	
Approach LOS						C	

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	35.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	19	0	16	4	0	20	11	40	9	15	108	23
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	23	0	19	5	0	24	13	48	11	18	130	28
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	284	266	144	280	274	54	158			59		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	284	266	144	280	274	54	158			59		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
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 %	96	100	98	99	100	98	99			99		
cM capacity (veh/h)	642	627	903	648	620	1014	1422			1545		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	42	29	72	176
Volume Left	23	5	13	18
Volume Right	19	24	11	28
cSH	740	926	1422	1545
Volume to Capacity	0.06	0.03	0.01	0.01
Queue Length 95th (ft)	5	2	1	1
Control Delay (s)	10.2	9.0	1.4	0.8
Lane LOS	B	A	A	A
Approach Delay (s)	10.2	9.0	1.4	0.8
Approach LOS	B	A		

Intersection Summary				
Average Delay	2.9			
Intersection Capacity Utilization	21.1%	ICU Level of Service	A	
Analysis Period (min)	15			

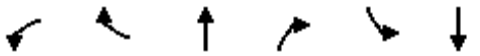
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99		0.95	0.96	1.00
Satd. Flow (prot)	1770	3529		1770	3539	1583		1776		1681	1696	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.99		0.95	0.96	1.00
Satd. Flow (perm)	1770	3529		1770	3539	1583		1776		1681	1696	1583
Volume (vph)	131	358	7	9	441	161	21	41	21	287	21	209
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	154	421	8	11	519	189	25	48	25	338	25	246
RTOR Reduction (vph)	0	1	0	0	0	85	0	13	0	0	0	169
Lane Group Flow (vph)	154	428	0	11	519	104	0	85	0	177	186	77
Turn Type	Prot			Prot		pm+ov	Split			Split		Perm
Protected Phases	7	4		3	8	6	2	2		6	6	
Permitted Phases						8						6
Actuated Green, G (s)	7.0	26.4		1.3	20.7	47.8		16.0		27.1	27.1	27.1
Effective Green, g (s)	7.0	26.4		1.3	20.7	47.8		16.0		27.1	27.1	27.1
Actuated g/C Ratio	0.08	0.30		0.01	0.24	0.55		0.18		0.31	0.31	0.31
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	143	1073		27	844	872		327		525	530	494
v/s Ratio Prot	c0.09	0.12		0.01	c0.15	0.04		c0.05		0.11	c0.11	
v/s Ratio Perm						0.03						0.05
v/c Ratio	1.08	0.40		0.41	0.61	0.12		0.26		0.34	0.35	0.16
Uniform Delay, d1	39.9	23.9		42.4	29.5	9.4		30.3		22.9	23.1	21.6
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	97.3	0.2		9.7	1.3	0.1		1.9		1.7	1.8	0.7
Delay (s)	137.2	24.2		52.1	30.8	9.4		32.2		24.7	24.9	22.2
Level of Service	F	C		D	C	A		C		C	C	C
Approach Delay (s)		54.0			25.5			32.2			23.8	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	33.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	86.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	44.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

OPENING YEAR (2014)

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	0.94	1.00	0.91		0.97	0.95
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	4859	1542	4789		3343	3446
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	4859	1542	4789		3343	3446
Volume (vph)	461	236	1123	314	184	1226
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	475	243	1158	324	190	1264
RTOR Reduction (vph)	0	162	50	0	0	0
Lane Group Flow (vph)	475	81	1432	0	190	1264
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	14.7	14.7	56.1		7.0	67.1
Effective Green, g (s)	14.7	14.7	56.1		7.0	67.1
Actuated g/C Ratio	0.16	0.16	0.62		0.08	0.75
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	795	252	2992		261	2575
v/s Ratio Prot	c0.10		0.30		c0.06	c0.37
v/s Ratio Perm		0.05				
v/c Ratio	0.60	0.32	0.48		0.73	0.49
Uniform Delay, d1	34.8	33.1	9.0		40.5	4.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.2	0.7	0.6		9.7	0.7
Delay (s)	36.0	33.9	9.6		50.2	5.2
Level of Service	D	C	A		D	A
Approach Delay (s)	35.3		9.6			11.1
Approach LOS	D		A			B

Intersection Summary			
HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	89.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



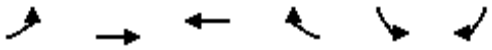
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	21	1296	51	0	1499
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	23	1394	55	0	1612
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			328			
pX, platoon unblocked	0.88	0.88			0.88	
vC, conflicting volume	1931	465			1448	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1788	126			1241	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	97			100	
cM capacity (veh/h)	64	795			491	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	23	465	465	465	55	537	537	537
Volume Left	0	0	0	0	0	0	0	0
Volume Right	23	0	0	0	55	0	0	0
cSH	795	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.03	0.27	0.27	0.27	0.03	0.32	0.32	0.32
Queue Length 95th (ft)	2	0	0	0	0	0	0	0
Control Delay (s)	9.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A							
Approach Delay (s)	9.7	0.0				0.0		
Approach LOS	A							

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	35.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.91		1.00	0.91	
Frt		1.00			1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		0.97			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1799			1803	1583	1770	5048		1770	5068	
Flt Permitted		0.97			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1799			1803	1583	1770	5048		1770	5068	
Volume (vph)	18	10	1	59	30	72	59	1221	62	34	1497	36
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	19	11	1	63	32	77	63	1299	66	36	1593	38
RTOR Reduction (vph)	0	1	0	0	0	69	0	4	0	0	2	0
Lane Group Flow (vph)	0	30	0	0	95	8	63	1361	0	36	1629	0
Turn Type	Split			Split		Perm	Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)		3.3			9.0	9.0	5.5	53.4		2.8	50.7	
Effective Green, g (s)		3.3			9.0	9.0	5.5	53.4		2.8	50.7	
Actuated g/C Ratio		0.04			0.11	0.11	0.07	0.63		0.03	0.60	
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		70			192	169	115	3190		59	3041	
v/s Ratio Prot		c0.02			c0.05		0.04	c0.27		0.02	c0.32	
v/s Ratio Perm						0.01						
v/c Ratio		0.43			0.49	0.05	0.55	0.43		0.61	0.54	
Uniform Delay, d1		39.7			35.6	33.9	38.3	7.8		40.3	10.0	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		4.2			2.0	0.1	5.3	0.4		17.2	0.7	
Delay (s)		43.9			37.6	34.0	43.5	8.3		57.5	10.6	
Level of Service		D			D	C	D	A		E	B	
Approach Delay (s)		43.9			36.0			9.8			11.7	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM Average Control Delay	12.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	84.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	30	444	631	31	55	54
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	36	529	751	37	65	64
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		638				
pX, platoon unblocked						
vC, conflicting volume	788				1105	394
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	788				1105	394
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				67	89
cM capacity (veh/h)	827				196	605

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	36	264	264	501	287	65	64
Volume Left	36	0	0	0	0	65	0
Volume Right	0	0	0	0	37	0	64
cSH	827	1700	1700	1700	1700	196	605
Volume to Capacity	0.04	0.16	0.16	0.29	0.17	0.33	0.11
Queue Length 95th (ft)	3	0	0	0	0	35	9
Control Delay (s)	9.5	0.0	0.0	0.0	0.0	32.3	11.7
Lane LOS	A					D	B
Approach Delay (s)	0.6			0.0		22.1	
Approach LOS						C	

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	34.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	4	0	20	0	40	9	15	109	0
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	0	0	0	5	0	24	0	48	11	18	131	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	245	227	131	221	221	54	131			59		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	245	227	131	221	221	54	131			59		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
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 %	100	100	100	99	100	98	100			99		
cM capacity (veh/h)	686	665	918	728	670	1014	1454			1545		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	29	59	149
Volume Left	5	0	18
Volume Right	24	11	0
cSH	951	1700	1545
Volume to Capacity	0.03	0.03	0.01
Queue Length 95th (ft)	2	0	1
Control Delay (s)	8.9	0.0	1.0
Lane LOS	A		A
Approach Delay (s)	8.9	0.0	1.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	23.2%	ICU Level of Service	A
Analysis Period (min)	15		

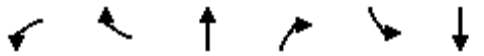
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99		0.95	0.96	1.00
Satd. Flow (prot)	1770	3529		1770	3539	1583		1776		1681	1696	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.99		0.95	0.96	1.00
Satd. Flow (perm)	1770	3529		1770	3539	1583		1776		1681	1696	1583
Volume (vph)	132	356	7	9	440	172	21	41	21	294	21	211
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	155	419	8	11	518	202	25	48	25	346	25	248
RTOR Reduction (vph)	0	1	0	0	0	91	0	13	0	0	0	170
Lane Group Flow (vph)	155	426	0	11	518	111	0	85	0	181	190	78
Turn Type	Prot			Prot		pm+ov	Split			Split		Perm
Protected Phases	7	4		3	8	6	2	2		6	6	
Permitted Phases						8						6
Actuated Green, G (s)	7.0	26.3		1.3	20.6	47.7		16.0		27.1	27.1	27.1
Effective Green, g (s)	7.0	26.3		1.3	20.6	47.7		16.0		27.1	27.1	27.1
Actuated g/C Ratio	0.08	0.30		0.01	0.24	0.55		0.18		0.31	0.31	0.31
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	143	1071		27	841	871		328		525	530	495
v/s Ratio Prot	c0.09	0.12		0.01	c0.15	0.04		c0.05		0.11	c0.11	
v/s Ratio Perm						0.03						0.05
v/c Ratio	1.08	0.40		0.41	0.62	0.13		0.26		0.34	0.36	0.16
Uniform Delay, d1	39.9	23.9		42.3	29.5	9.4		30.3		23.0	23.1	21.5
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	99.5	0.2		9.7	1.3	0.1		1.9		1.8	1.9	0.7
Delay (s)	139.3	24.2		52.0	30.9	9.5		32.2		24.8	25.0	22.2
Level of Service	F	C		D	C	A		C		C	C	C
Approach Delay (s)		54.8			25.3			32.2			23.8	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	33.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	86.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

OPENING YEAR + PROJECT

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	0.94	1.00	0.91		0.97	0.95
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	4859	1542	4787		3343	3446
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	4859	1542	4787		3343	3446
Volume (vph)	471	236	1127	320	184	1226
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	486	243	1162	330	190	1264
RTOR Reduction (vph)	0	162	51	0	0	0
Lane Group Flow (vph)	486	81	1441	0	190	1264
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	14.9	14.9	56.1		7.0	67.1
Effective Green, g (s)	14.9	14.9	56.1		7.0	67.1
Actuated g/C Ratio	0.17	0.17	0.62		0.08	0.75
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	804	255	2984		260	2569
v/s Ratio Prot	c0.10		0.30		c0.06	c0.37
v/s Ratio Perm		0.05				
v/c Ratio	0.60	0.32	0.48		0.73	0.49
Uniform Delay, d1	34.8	33.1	9.1		40.6	4.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.3	0.7	0.6		10.1	0.7
Delay (s)	36.1	33.8	9.7		50.7	5.3
Level of Service	D	C	A		D	A
Approach Delay (s)	35.3		9.7			11.2
Approach LOS	D		A			B

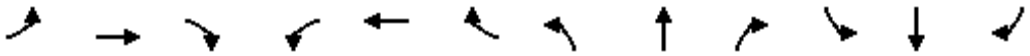
Intersection Summary			
HCM Average Control Delay	15.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	27	1296	55	0	1499
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	29	1394	59	0	1612
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			328			
pX, platoon unblocked	0.88	0.88			0.88	
vC, conflicting volume	1931	465			1453	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1787	123			1244	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	96			100	
cM capacity (veh/h)	64	798			489	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	29	465	465	465	59	537	537	537
Volume Left	0	0	0	0	0	0	0	0
Volume Right	29	0	0	0	59	0	0	0
cSH	798	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.04	0.27	0.27	0.27	0.03	0.32	0.32	0.32
Queue Length 95th (ft)	3	0	0	0	0	0	0	0
Control Delay (s)	9.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A							
Approach Delay (s)	9.7	0.0				0.0		
Approach LOS	A							

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	35.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.91		1.00	0.91	
Frt		1.00			1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		0.97			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1799			1803	1583	1770	5049		1770	5068	
Flt Permitted		0.97			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1799			1803	1583	1770	5049		1770	5068	
Volume (vph)	18	10	1	59	30	76	59	1227	62	44	1497	36
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	19	11	1	63	32	81	63	1305	66	47	1593	38
RTOR Reduction (vph)	0	1	0	0	0	72	0	4	0	0	2	0
Lane Group Flow (vph)	0	30	0	0	95	9	63	1367	0	47	1629	0
Turn Type	Split			Split		Perm	Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)		3.3			9.0	9.0	4.6	50.6		4.6	50.6	
Effective Green, g (s)		3.3			9.0	9.0	4.6	50.6		4.6	50.6	
Actuated g/C Ratio		0.04			0.11	0.11	0.06	0.61		0.06	0.61	
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		71			194	171	98	3060		98	3071	
v/s Ratio Prot		c0.02			c0.05		0.04	c0.27		0.03	c0.32	
v/s Ratio Perm						0.01						
v/c Ratio		0.42			0.49	0.05	0.64	0.45		0.48	0.53	
Uniform Delay, d1		39.2			35.1	33.4	38.6	8.9		38.3	9.6	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		4.0			1.9	0.1	13.5	0.5		3.7	0.7	
Delay (s)		43.2			37.0	33.5	52.2	9.4		42.0	10.2	
Level of Service		D			D	C	D	A		D	B	
Approach Delay (s)		43.2			35.4			11.2			11.1	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	12.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	83.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	36	444	631	36	61	64
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	43	529	751	43	73	76
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		638				
pX, platoon unblocked						
vC, conflicting volume	794				1123	397
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	794				1123	397
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				62	87
cM capacity (veh/h)	823				189	602

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	43	264	264	501	293	73	76
Volume Left	43	0	0	0	0	73	0
Volume Right	0	0	0	0	43	0	76
cSH	823	1700	1700	1700	1700	189	602
Volume to Capacity	0.05	0.16	0.16	0.29	0.17	0.38	0.13
Queue Length 95th (ft)	4	0	0	0	0	42	11
Control Delay (s)	9.6	0.0	0.0	0.0	0.0	35.4	11.8
Lane LOS	A					E	B
Approach Delay (s)	0.7			0.0		23.3	
Approach LOS						C	

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	35.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	19	0	16	4	0	20	11	40	9	15	109	23
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	23	0	19	5	0	24	13	48	11	18	131	28
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	286	267	145	281	275	54	159			59		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	286	267	145	281	275	54	159			59		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
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 %	96	100	98	99	100	98	99			99		
cM capacity (veh/h)	640	626	902	647	619	1014	1420			1545		

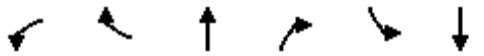
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	42	29	72	177
Volume Left	23	5	13	18
Volume Right	19	24	11	28
cSH	738	926	1420	1545
Volume to Capacity	0.06	0.03	0.01	0.01
Queue Length 95th (ft)	5	2	1	1
Control Delay (s)	10.2	9.0	1.4	0.8
Lane LOS	B	A	A	A
Approach Delay (s)	10.2	9.0	1.4	0.8
Approach LOS	B	A		

Intersection Summary				
Average Delay	2.9			
Intersection Capacity Utilization	21.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99		0.95	0.96	1.00
Satd. Flow (prot)	1770	3529		1770	3539	1583		1776		1681	1696	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.99		0.95	0.96	1.00
Satd. Flow (perm)	1770	3529		1770	3539	1583		1776		1681	1696	1583
Volume (vph)	132	362	7	9	445	172	21	41	21	294	21	211
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	155	426	8	11	524	202	25	48	25	346	25	248
RTOR Reduction (vph)	0	1	0	0	0	91	0	13	0	0	0	171
Lane Group Flow (vph)	155	433	0	11	524	111	0	85	0	181	190	77
Turn Type	Prot			Prot		pm+ov	Split			Split		Perm
Protected Phases	7	4		3	8	6	2	2		6	6	
Permitted Phases						8						6
Actuated Green, G (s)	7.0	26.5		1.3	20.8	47.9		16.0		27.1	27.1	27.1
Effective Green, g (s)	7.0	26.5		1.3	20.8	47.9		16.0		27.1	27.1	27.1
Actuated g/C Ratio	0.08	0.30		0.01	0.24	0.55		0.18		0.31	0.31	0.31
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	143	1076		26	847	873		327		524	529	494
v/s Ratio Prot	c0.09	0.12		0.01	c0.15	0.04		c0.05		0.11	c0.11	
v/s Ratio Perm						0.03						0.05
v/c Ratio	1.08	0.40		0.42	0.62	0.13		0.26		0.35	0.36	0.16
Uniform Delay, d1	40.0	23.9		42.4	29.5	9.4		30.4		23.1	23.2	21.6
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	99.5	0.2		10.7	1.4	0.1		1.9		1.8	1.9	0.7
Delay (s)	139.4	24.2		53.2	30.9	9.5		32.3		24.9	25.1	22.3
Level of Service	F	C		D	C	A		C		C	C	C
Approach Delay (s)		54.5			25.3			32.3			23.9	
Approach LOS		D			C			C			C	

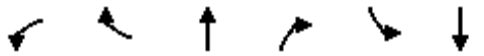
Intersection Summary			
HCM Average Control Delay	33.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	86.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	45.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

CUMULATIVE YEAR (2020)



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	0.94	1.00	0.91		0.97	0.95
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	4859	1542	4804		3343	3446
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	4859	1542	4804		3343	3446
Volume (vph)	491	281	1360	336	210	1384
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	506	290	1402	346	216	1427
RTOR Reduction (vph)	0	134	42	0	0	0
Lane Group Flow (vph)	506	156	1706	0	216	1427
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	15.6	15.6	56.1		7.0	67.1
Effective Green, g (s)	15.6	15.6	56.1		7.0	67.1
Actuated g/C Ratio	0.17	0.17	0.62		0.08	0.74
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	836	265	2971		258	2549
v/s Ratio Prot	c0.10		0.36		c0.06	c0.41
v/s Ratio Perm		0.10				
v/c Ratio	0.61	0.59	0.57		0.84	0.56
Uniform Delay, d1	34.7	34.6	10.2		41.3	5.2
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.2	3.3	0.8		20.4	0.9
Delay (s)	36.0	37.9	11.0		61.7	6.1
Level of Service	D	D	B		E	A
Approach Delay (s)	36.7		11.0			13.4
Approach LOS	D		B			B

Intersection Summary			
HCM Average Control Delay	16.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	90.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



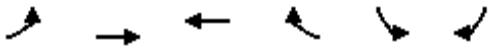
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	23	1574	54	0	1689
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	25	1692	58	0	1816
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			328			
pX, platoon unblocked	0.82	0.82			0.82	
vC, conflicting volume	2298	564			1751	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2147	42			1483	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	97			100	
cM capacity (veh/h)	34	840			370	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	25	564	564	564	58	605	605	605
Volume Left	0	0	0	0	0	0	0	0
Volume Right	25	0	0	0	58	0	0	0
cSH	840	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.03	0.33	0.33	0.33	0.03	0.36	0.36	0.36
Queue Length 95th (ft)	2	0	0	0	0	0	0	0
Control Delay (s)	9.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A							
Approach Delay (s)	9.4	0.0				0.0		
Approach LOS	A							

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	40.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.91		1.00	0.91	
Frt		1.00			1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		0.97			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1801			1794	1583	1770	5013		1770	5068	
Flt Permitted		0.97			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1801			1794	1583	1770	5013		1770	5068	
Volume (vph)	19	11	1	107	32	103	62	1406	147	53	1663	39
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	20	12	1	114	34	110	66	1496	156	56	1769	41
RTOR Reduction (vph)	0	1	0	0	0	94	0	10	0	0	2	0
Lane Group Flow (vph)	0	32	0	0	148	16	66	1642	0	56	1808	0
Turn Type	Split			Split		Perm	Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)		3.0			11.2	11.2	4.1	43.1		4.1	43.1	
Effective Green, g (s)		3.0			11.2	11.2	4.1	43.1		4.1	43.1	
Actuated g/C Ratio		0.04			0.14	0.14	0.05	0.56		0.05	0.56	
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		70			260	229	94	2791		94	2822	
v/s Ratio Prot		c0.02			c0.08		0.04	c0.33		0.03	c0.36	
v/s Ratio Perm						0.01						
v/c Ratio		0.46			0.57	0.07	0.70	0.59		0.60	0.64	
Uniform Delay, d1		36.4			30.9	28.6	36.0	11.3		35.8	11.8	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		4.7			2.8	0.1	21.1	0.9		9.7	1.1	
Delay (s)		41.1			33.7	28.7	57.1	12.2		45.6	12.9	
Level of Service		D			C	C	E	B		D	B	
Approach Delay (s)		41.1			31.6			13.9			13.9	
Approach LOS		D			C			B			B	

Intersection Summary			
HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	77.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	35	487	700	35	59	59
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	42	580	833	42	70	70
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		638				
pX, platoon unblocked						
vC, conflicting volume	875				1227	438
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	875				1227	438
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				56	88
cM capacity (veh/h)	767				161	567

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	42	290	290	556	319	70	70
Volume Left	42	0	0	0	0	70	0
Volume Right	0	0	0	0	42	0	70
cSH	767	1700	1700	1700	1700	161	567
Volume to Capacity	0.05	0.17	0.17	0.33	0.19	0.44	0.12
Queue Length 95th (ft)	4	0	0	0	0	49	11
Control Delay (s)	10.0	0.0	0.0	0.0	0.0	43.5	12.2
Lane LOS	A					E	B
Approach Delay (s)	0.7			0.0		27.9	
Approach LOS						D	

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	37.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	4	0	21	0	49	10	16	128	0
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	0	0	0	5	0	25	0	59	12	19	154	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	283	264	154	258	258	65	154			71		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	283	264	154	258	258	65	154			71		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
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 %	100	100	100	99	100	97	100			99		
cM capacity (veh/h)	646	633	892	689	638	999	1426			1529		

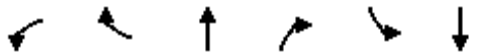
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	30	71	173
Volume Left	5	0	19
Volume Right	25	12	0
cSH	932	1700	1529
Volume to Capacity	0.03	0.04	0.01
Queue Length 95th (ft)	3	0	1
Control Delay (s)	9.0	0.0	0.9
Lane LOS	A		A
Approach Delay (s)	9.0	0.0	0.9
Approach LOS	A		

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	24.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99		0.95	0.96	1.00
Satd. Flow (prot)	1770	3529		1770	3539	1583		1776		1681	1695	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.99		0.95	0.96	1.00
Satd. Flow (perm)	1770	3529		1770	3539	1583		1776		1681	1695	1583
Volume (vph)	140	393	8	10	498	262	23	44	23	352	23	224
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	165	462	9	12	586	308	27	52	27	414	27	264
RTOR Reduction (vph)	0	1	0	0	0	135	0	13	0	0	0	183
Lane Group Flow (vph)	165	470	0	12	586	173	0	93	0	215	226	81
Turn Type	Prot			Prot		pm+ov	Split			Split		Perm
Protected Phases	7	4		3	8	6	2	2		6	6	
Permitted Phases						8						6
Actuated Green, G (s)	7.0	28.3		1.3	22.6	49.7		16.0		27.1	27.1	27.1
Effective Green, g (s)	7.0	28.3		1.3	22.6	49.7		16.0		27.1	27.1	27.1
Actuated g/C Ratio	0.08	0.32		0.01	0.25	0.56		0.18		0.31	0.31	0.31
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	140	1126		26	902	887		320		514	518	484
v/s Ratio Prot	c0.09	0.13		0.01	c0.17	0.06		c0.05		0.13	c0.13	
v/s Ratio Perm						0.05						0.05
v/c Ratio	1.18	0.42		0.46	0.65	0.19		0.29		0.42	0.44	0.17
Uniform Delay, d1	40.9	23.7		43.4	29.5	9.6		31.4		24.5	24.7	22.5
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	132.0	0.3		12.4	1.6	0.1		2.3		2.5	2.7	0.7
Delay (s)	172.9	24.0		55.8	31.1	9.7		33.7		27.0	27.3	23.3
Level of Service	F	C		E	C	A		C		C	C	C
Approach Delay (s)		62.6			24.2			33.7			25.7	
Approach LOS		E			C			C			C	

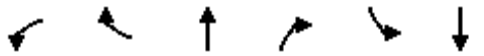
Intersection Summary			
HCM Average Control Delay	35.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	88.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	48.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

CUMULATIVE YEAR + PROJECT



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	0.94	1.00	0.91		0.97	0.95
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	4859	1542	4802		3343	3446
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	4859	1542	4802		3343	3446
Volume (vph)	501	281	1364	342	210	1384
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	516	290	1406	353	216	1427
RTOR Reduction (vph)	0	134	44	0	0	0
Lane Group Flow (vph)	516	156	1715	0	216	1427
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	15.7	15.7	56.1		7.0	67.1
Effective Green, g (s)	15.7	15.7	56.1		7.0	67.1
Actuated g/C Ratio	0.17	0.17	0.62		0.08	0.74
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	840	267	2967		258	2547
v/s Ratio Prot	c0.11		0.36		c0.06	c0.41
v/s Ratio Perm		0.10				
v/c Ratio	0.61	0.58	0.58		0.84	0.56
Uniform Delay, d1	34.7	34.5	10.3		41.3	5.3
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.3	3.2	0.8		20.4	0.9
Delay (s)	36.1	37.8	11.1		61.8	6.2
Level of Service	D	D	B		E	A
Approach Delay (s)	36.7		11.1			13.5
Approach LOS	D		B			B

Intersection Summary			
HCM Average Control Delay	17.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	90.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



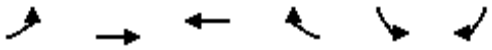
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	29	1574	58	0	1689
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	31	1692	62	0	1816
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			328			
pX, platoon unblocked	0.82	0.82			0.82	
vC, conflicting volume	2298	564			1755	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2146	36			1485	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	96			100	
cM capacity (veh/h)	34	845			369	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	31	564	564	564	62	605	605	605
Volume Left	0	0	0	0	0	0	0	0
Volume Right	31	0	0	0	62	0	0	0
cSH	845	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.04	0.33	0.33	0.33	0.04	0.36	0.36	0.36
Queue Length 95th (ft)	3	0	0	0	0	0	0	0
Control Delay (s)	9.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A							
Approach Delay (s)	9.4	0.0				0.0		
Approach LOS	A							

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	40.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.91		1.00	0.91	
Frt		1.00			1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		0.97			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1801			1794	1583	1770	5014		1770	5068	
Flt Permitted		0.97			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1801			1794	1583	1770	5014		1770	5068	
Volume (vph)	19	11	1	107	32	107	62	1412	147	63	1663	39
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	20	12	1	114	34	114	66	1502	156	67	1769	41
RTOR Reduction (vph)	0	1	0	0	0	98	0	10	0	0	2	0
Lane Group Flow (vph)	0	32	0	0	148	16	66	1648	0	67	1808	0
Turn Type	Split			Split		Perm	Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)		3.0			11.2	11.2	4.1	43.2		4.1	43.2	
Effective Green, g (s)		3.0			11.2	11.2	4.1	43.2		4.1	43.2	
Actuated g/C Ratio		0.04			0.14	0.14	0.05	0.56		0.05	0.56	
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		70			259	229	94	2795		94	2825	
v/s Ratio Prot		c0.02			c0.08		0.04	c0.33		0.04	c0.36	
v/s Ratio Perm						0.01						
v/c Ratio		0.46			0.57	0.07	0.70	0.59		0.71	0.64	
Uniform Delay, d1		36.5			30.9	28.7	36.1	11.3		36.1	11.8	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		4.7			3.0	0.1	21.1	0.9		22.4	1.1	
Delay (s)		41.1			33.9	28.8	57.2	12.2		58.6	12.9	
Level of Service		D			C	C	E	B		E	B	
Approach Delay (s)		41.1			31.7			13.9			14.6	
Approach LOS		D			C			B			B	

Intersection Summary			
HCM Average Control Delay	15.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	77.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	41	487	700	40	65	69
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	49	580	833	48	77	82
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		638				
pX, platoon unblocked						
vC, conflicting volume	881				1245	440
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	881				1245	440
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	94				50	85
cM capacity (veh/h)	763				156	564

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	49	290	290	556	325	77	82
Volume Left	49	0	0	0	0	77	0
Volume Right	0	0	0	0	48	0	82
cSH	763	1700	1700	1700	1700	156	564
Volume to Capacity	0.06	0.17	0.17	0.33	0.19	0.50	0.15
Queue Length 95th (ft)	5	0	0	0	0	60	13
Control Delay (s)	10.0	0.0	0.0	0.0	0.0	49.1	12.5
Lane LOS	B					E	B
Approach Delay (s)	0.8			0.0		30.2	
Approach LOS						D	

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	37.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	19	0	16	4	0	21	11	49	10	16	128	23
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	23	0	19	5	0	25	13	59	12	19	154	28
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	323	304	168	317	312	65	182			71		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	323	304	168	317	312	65	182			71		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
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 %	96	100	98	99	100	97	99			99		
cM capacity (veh/h)	603	596	876	611	590	999	1393			1529		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	42	30	84	201
Volume Left	23	5	13	19
Volume Right	19	25	12	28
cSH	703	907	1393	1529
Volume to Capacity	0.06	0.03	0.01	0.01
Queue Length 95th (ft)	5	3	1	1
Control Delay (s)	10.4	9.1	1.3	0.8
Lane LOS	B	A	A	A
Approach Delay (s)	10.4	9.1	1.3	0.8
Approach LOS	B	A		

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	22.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99		0.95	0.96	1.00
Satd. Flow (prot)	1770	3529		1770	3539	1583		1776		1681	1695	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.99		0.95	0.96	1.00
Satd. Flow (perm)	1770	3529		1770	3539	1583		1776		1681	1695	1583
Volume (vph)	140	399	8	10	503	262	23	44	23	352	23	224
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	165	469	9	12	592	308	27	52	27	414	27	264
RTOR Reduction (vph)	0	1	0	0	0	135	0	13	0	0	0	184
Lane Group Flow (vph)	165	477	0	12	592	173	0	93	0	215	226	80
Turn Type	Prot			Prot		pm+ov	Split			Split		Perm
Protected Phases	7	4		3	8	6	2	2		6	6	
Permitted Phases						8						6
Actuated Green, G (s)	7.0	28.5		1.3	22.8	49.9		16.0		27.1	27.1	27.1
Effective Green, g (s)	7.0	28.5		1.3	22.8	49.9		16.0		27.1	27.1	27.1
Actuated g/C Ratio	0.08	0.32		0.01	0.26	0.56		0.18		0.30	0.30	0.30
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	139	1131		26	908	889		320		512	517	483
v/s Ratio Prot	c0.09	0.14		0.01	c0.17	0.06		c0.05		0.13	c0.13	
v/s Ratio Perm						0.05						0.05
v/c Ratio	1.19	0.42		0.46	0.65	0.19		0.29		0.42	0.44	0.17
Uniform Delay, d1	41.0	23.7		43.5	29.5	9.6		31.5		24.6	24.8	22.6
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	135.3	0.3		12.4	1.7	0.1		2.3		2.5	2.7	0.7
Delay (s)	176.2	24.0		55.9	31.2	9.7		33.8		27.2	27.5	23.4
Level of Service	F	C		E	C	A		C		C	C	C
Approach Delay (s)		63.1			24.3			33.8			25.8	
Approach LOS		E			C			C			C	

Intersection Summary			
HCM Average Control Delay	35.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	88.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	48.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			