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1.0 INTRODUCTION AND SUMMARY

A. Purpose of Report and Study Objectives

The purpose of this traffic impact analysis is to evaluate the Shops at Coral Mountain development from a traffic circulation standpoint. The project site is located south of Avenue 58, west and east of Madison Avenue in the City of La Quinta.

Study objectives include:
(1) Documentation of existing traffic conditions in the vicinity of the site;
(2) Evaluation of existing plus ambient growth plus cumulative (2011) traffic conditions;
(3) Evaluation of existing plus ambient growth plus cumulative plus project (2011) traffic conditions;
(4) Evaluation of general plan buildout without project traffic conditions;
(5) Evaluation of general plan buildout with project traffic conditions;
(6) Determination of on-site and off-site improvements and system management actions needed to achieve City of La Quinta level of service requirements.

Urban Crossroads, Inc. prepared this traffic analysis closely adhering to the assumptions indicated in the recently revised City of La Quinta Engineering Bulletin #06-13 (June 2008). Through correspondence with City of La Quinta staff, Urban Crossroads, Inc. has discussed key traffic impact study assumptions to ensure that City requirements and concerns are addressed in the report.

B. Executive Summary

1. Site Location and Study Area

The project site is located south of Avenue 58, west and east of Madison Avenue in the City of La Quinta. Exhibit 1-A illustrates the traffic analysis study area.
The project will have three (3) access points to Madison Avenue and two (2) access points to Avenue 58. At the western portion of the project, one full access point is proposed along Avenue 58 (Project Access #1) and one right-in/right-out access along Madison Street (Project Access #3). The eastern portion of the project is proposing one full access (Project Access #5) and one right-in/right-out access (Project Access #4) along Avenue 58 and one right-in/right-out access (Project Access #2) along Madison Street.

Pursuant to discussions with City of La Quinta staff, the study area includes the following intersections:

- **Project Access #1 (NS) at:**
  - Avenue 58 (EW) - Future Intersection

- **Madison Street (NS) at:**
  - Avenue 56 (EW)
  - Avenue 58 (EW)
  - Project Access #2 (EW) - Future Intersection
  - Project Access #3 (EW) - Future Intersection
  - Avenue 60 (EW)

- **Project Access #4 (NS) at:**
  - Avenue 58 (EW) - Future Intersection

- **Project Access #5 (NS) at:**
  - Avenue 58 (EW) - Future Intersection

- **Monroe Street (NS) at:**
  - Avenue 58 (EW)

Per City of La Quinta Engineering Bulletin #06-13, a sensitivity analysis with an increase of 1 standard deviation trip increase is required at all site access points and adjacent arterial intersections. Based on this criterion, the following intersections are analyzed:
Project Access #1 (NS) at:
• Avenue 58 (EW) - Future Intersection

Madison Street (NS) at:
• Avenue 58 (EW)
• Project Access #2 (EW) - Future Intersection
• Project Access #3 (EW) - Future Intersection

Project Access #4 (NS) at:
• Avenue 58 (EW) - Future Intersection

Project Access #5 (NS) at:
• Avenue 58 (EW) - Future Intersection

The following roadway segments will be analyzed pursuant to discussions with City of La Quinta Staff:

Madison Street (NS):
• North of Avenue 58
• South of Avenue 58

Avenue 58 (EW):
• West of Madison Street
• East of Madison Street

2. Development Description

The Shops at Coral Mountain project is proposing to construct approximately 105,071 square feet of retail/commercial space. The project site consists of a western and eastern portion at either side of Madison Street. The Western portion of the site consists of 68,200 square feet of retail/commercial and the eastern portion of the site consists of approximately 36,871 square feet of retail/commercial. Exhibit 1-B illustrates the site plan. It is estimated that the project will be completed by 2011.
At project buildout (2011), the Shops at Coral Mountain project is anticipated to generate approximately 10,360 trip-ends per day with 690 vehicles per hour during the PM peak hour and 957 vehicles per hour during Saturday Mid-day.

3. Principal Findings

a. Required Level of Service (LOS)

The definition of an intersection deficiency has been obtained from the City of La Quinta Engineering Bulletin #06-13. The City of La Quinta General Plan states that peak hour intersection operations of LOS “D” and a maximum volume to capacity ratio of 0.90 or better are generally acceptable. Therefore, intersections operating at LOS “E” or “F” and/or a volume to capacity ratio greater than 0.90 will be considered deficient.

For roadway segments, the maximum allowable volume to capacity ratio is 0.90. Therefore, any roadway segment with a volume to capacity ratio greater than 0.90 is considered unacceptable.

A potentially significant project traffic impact is assumed to occur if the project will add 20 or more trips to any critical movement at intersections operating at LOS E. Similarly, an increase of 10 or more project trips to any critical movement at intersections operating at LOS F will be considered a significant impact.

For roadway segments, a project specific traffic impact is defined to occur on any road segment if the project would cause the existing LOS to fall worse than LOS D at project buildout. A potentially significant project specific impact is also defined to occur on any road segment that is already operating at LOS E or LOS F, if the V/C ratio is increased by 0.02.
b. **Existing Conditions Level of Service**

*Existing Conditions Intersection Analysis*
For existing conditions, the study area intersections are currently operating at acceptable levels of service with existing geometry.

*Existing Conditions Road Segment Analysis*
For existing conditions, the study area roadway segments are currently operating at acceptable levels of service with existing geometry.

c. **Existing Plus Ambient Plus Cumulative (2011) Level of Service**

*Existing Plus Ambient Plus Cumulative (2011) Intersection Analysis*
For Existing plus Ambient plus Cumulative (2011) traffic conditions, the study area intersections are projected to operate at acceptable levels of service during the peak hours with existing geometry except for the following intersection:

Monroe Street (NS) at:
- Avenue 58 (EW)

*Existing Plus Ambient Plus Cumulative (2011) Roadway Segment Analysis*
For Existing plus Ambient plus Cumulative (2011) traffic conditions, the study area roadway segments are anticipated to operate with acceptable levels of service of LOS “D” or better.

d. **Existing plus Ambient plus Cumulative plus Project (2011) Level of Service**

*Existing plus Ambient plus Cumulative plus Project (2011) Intersection Analysis*
For Existing plus Ambient plus Cumulative plus Project (2011) traffic conditions, the following study area intersection is projected to operate at
unacceptable levels of service during the peak hours without improvements:

Monroe Street (NS) at:
- Avenue 58 (EW)

**Existing plus Ambient plus Cumulative plus Project (2011) Intersection Project Related Impact Assessment**

For Existing plus Ambient plus Cumulative plus Project (2011) traffic conditions, a project related impact assessment has been conducted. The results of the analysis indicate that project related impacts are not anticipated at the study area intersections with the improvements outlined in the City of La Quinta’s CIP program. A traffic signal is warranted at the intersection of Monroe Street/ Avenue 58 for Existing plus Ambient plus Cumulative (2011) conditions. This traffic signal improvement (AD-32) is included in the City of La Quinta’s *Capital Improvement Plan Fiscal Year 2008/2009 Through 2012/2013* (April 2008) report.

The implementation of the traffic signal improvements illustrated in Exhibit 1-C is anticipated to address LOS deficiencies at the intersection of Monroe Street/ Avenue 58. Project related improvements are summarized in Table 1-1.

**Existing plus Ambient plus Cumulative plus Project (2011) Roadway Segment Analysis**

For Existing plus Ambient plus Cumulative plus Project (2011) traffic conditions, the study area roadway segments are currently operating at acceptable levels of service with existing geometry.

**Existing plus Ambient plus Cumulative plus Project (2011) Roadway Segment Project related impact Assessment**

For Existing plus Ambient plus Cumulative plus Project (2011), a roadway segment project related impact assessment has been conducted. The
RECOMMENDED IMPROVEMENTS FOR EXISTING PLUS AMBIENT PLUS CUMULATIVE PLUS PROJECT (2011) CONDITIONS

LEGEND:

- Traffic Signal Warranted for EAC (2011) Conditions
- Traffic Signal Warranted for EACP (2011) Conditions
- Stop Sign
- Existing Lane
- Project Related Improvement
- Capital Improvement Plan (CIP)

248' = Turn Pocket Length
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</tr>
<tr>
<td>-- Eastbound</td>
<td>• Construct an EB Right Turn Lane</td>
</tr>
<tr>
<td><strong>Project Access #5 (NS) at:</strong></td>
<td></td>
</tr>
<tr>
<td>• Avenue 58(EW)</td>
<td>• Construct a NB Left Turn Lane</td>
</tr>
<tr>
<td>-- Northbound</td>
<td>• Construct an EB Right Turn Lane</td>
</tr>
<tr>
<td>-- Eastbound</td>
<td>• Construct a WB Left Turn Lane</td>
</tr>
<tr>
<td>-- Westbound</td>
<td></td>
</tr>
</tbody>
</table>
results of the analysis indicate that project related specific impacts are not anticipated at the study area road segment with existing lane configurations.

e. General Plan Buildout Without Project Traffic Conditions Level of Service

**General Plan Buildout Without Project Intersection Analysis**
For General Plan Buildout Without Project traffic conditions, the study area intersections are projected to operate at acceptable levels of service during the peak hours with full General Plan Buildout lane configurations.

**General Plan Buildout Without Project Roadway Segment Analysis**
For General Plan Buildout Without Project traffic conditions, the study area roadway segments are anticipated to operate with acceptable levels of service of LOS “D” or better during the peak hours with General Plan Buildout lane configurations.

f. General Plan Buildout With Project Traffic Conditions Level of Service

**General Plan Buildout With Project Intersection Analysis**
For General Plan Buildout With Project traffic conditions, the study area intersections are projected to operate at acceptable levels of service during the peak hours with full General Plan Buildout lane configurations.

**General Plan Buildout With Project Roadway Segment Analysis**
The study area roadway segments are anticipated to operate with acceptable levels of service of LOS “D” or better during the peak hours with existing geometry. Since the study area road segments are operating at acceptable levels of service, a cumulative impact assessment for the study area segments is not necessary.
4. Traffic Signal Warrants

For Existing plus Ambient plus Cumulative (2011) conditions, a traffic signal is projected to be warranted at the following study area intersections (see Appendix “C”):

Madison Street (NS) at:
- Avenue 58 (EW)

Madison Street (NS) at:
- Avenue 60 (EW)

Monroe Street (NS) at:
- Avenue 58 (EW)

The installation of traffic signals for the abovementioned intersections are currently included in the City of La Quinta’s Capital Improvement Plan Fiscal Year 2008/2009 Through 2012/2013 (April 2008) report. The developer needs to contribute its fair share towards the cost of the traffic signal installation at the abovementioned intersections. The fair share calculations are summarized in Table 8-1. The fair share percent contribution of the project to the intersection of Madison Street/Avenue 58 is 51.9%. For the intersection of Madison Street/Avenue 60, the project’s fair share contribution is 31.6%. At the intersection of Monroe Street/Avenue 58, the project’s fair share contribution is 7.9%.

For Existing plus Ambient plus Cumulative plus Project (2011) conditions, a traffic signal is projected to be warranted at the following study area intersection (see Appendix “C”):

Project Access #1 (NS) at:
- Avenue 58 (EW)
**TABLE 8-1**

PROJECT FAIR SHARE PERCENTAGE SUMMARY

PROJECT FAIR SHARE AT PROJECT 2011

<table>
<thead>
<tr>
<th>INTERSECTION</th>
<th>EXISTING PEAK HOUR TRAFFIC</th>
<th>E+A+C+P (2011) PEAK HOUR TRAFFIC</th>
<th>TOTAL NEW PEAK HOUR TRAFFIC</th>
<th>PROJECT PEAK HOUR TRAFFIC</th>
<th>PROJECT FAIR SHARE PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Weekday PM</td>
<td>Saturday MID-DAY</td>
<td>Weekday PM</td>
<td>Saturday MID-DAY</td>
<td>Weekday PM</td>
</tr>
<tr>
<td>Madison St./ Avenue 58</td>
<td>549</td>
<td>398</td>
<td>1,713</td>
<td>1,792</td>
<td>1,164</td>
</tr>
<tr>
<td>Madison St./ Avenue 60</td>
<td>289</td>
<td>234</td>
<td>674</td>
<td>690</td>
<td>385</td>
</tr>
<tr>
<td>Monroe St./ Avenue 58</td>
<td>341</td>
<td>182</td>
<td>1,490</td>
<td>1,397</td>
<td>1,149</td>
</tr>
</tbody>
</table>

* The payment of the fair share percentages is based on the specified improvement being adopted into the City's CIP. Otherwise, the project will be fully responsible for the improvement.
5. **Conclusions**

The proposed Shops at Coral Mountain consist of two sites at either side of Madison Street, south of Avenue 58. The western portion of the site consists of 68,200 square feet of retail/commercial and the eastern portion of the site consists of approximately 36,871 square feet of retail/commercial. At project buildout (2011), the proposed project is anticipated to generate approximately 10,360 trip-ends per day with 690 vehicles per hour during the PM peak hour and 957 vehicles per hour during Saturday Mid-day.

6. **Recommendations**

The project is responsible for the construction of site-specific improvements. These improvements are provided below. Site-specific circulation and access recommendations are depicted on Exhibit 8-A and described below:

- Provide a minimum 250-foot westbound left turn pocket at Project Access#1/Avenue 58.

- Provide a minimum 250-foot westbound left turn pocket at Project Access#5/Avenue 58.

- Provide a minimum 250-foot southbound right turn pocket at Project Access#3/Madison Street.

- Provide a minimum 250-foot eastbound right turn pocket at Project Access#4/Avenue 58.

- Provide a minimum 250-foot eastbound right turn pocket at Project Access#5/Avenue 58.

- Construct Madison Street at its ultimate full-section width as a Secondary...
Roadway from Avenue 58 to the southerly project boundary in conjunction with development.

- Construct Madison Street at its ultimate half-section width as a Secondary Roadway from south of Project Access #3 to the southern project boundary (western portion of the project) in conjunction with development.

- Construct Avenue 58 at its ultimate half-section width as a Secondary Roadway from the westerly project boundary to the easterly project boundary in conjunction with development.

- On-site signing and striping should be implemented in conjunction with detailed construction plans for the project site.

- Provide stop sign control at the project access points that do not meet signal warrants.

- Provide a traffic signal at the intersection of Project Access #1/ Avenue 58 for E+A+C+P (2011) conditions when warranted.

Sight distance at the project entrance should be reviewed with respect to standard City of La Quinta sight distance standards at the time of preparation of final grading, landscape and street improvement plans.

Traffic signing and striping should be implemented in conjunction with detailed construction plans for the project site.

The project should contribute towards a citywide roadway and traffic signal improvement program through payment of infrastructure development fees to the City of La Quinta.
2.0 PROPOSED DEVELOPMENT

A. Location

The project site is located south of Avenue 58, west and east of Madison Avenue in the City of La Quinta.

B. Land Use and Intensity

The Shops at Coral Mountain project is proposing to construct approximately 105,071 square feet of retail/commercial space.

C. Site Plan

The project site consists of a western and eastern portion at either side of Madison Street. The western portion of the site consists of 68,200 square feet of retail/commercial and the eastern portion of the site consists of approximately 36,871 square feet of retail/commercial.

The project will have five (5) access points to Madison Avenue and Avenue 58. At the western portion of the project, one full access point is proposed along Avenue 58 (Project Access #1) and one right-in/right-out access along Madison Street (Project Access #3). The eastern portion of the project is proposing one full access (Project Access #5) and one right-in/right-out access (Project Access #4) along Avenue 58 and one right-in/right-out access (Project Access #2) along Madison Street.

D. Phasing and Timing

The proposed project is anticipated to be fully constructed and operational by 2011.
3.0 AREA CONDITIONS

A. Study Area

1. Area of Significant Traffic Impact

Pursuant to discussions with City of La Quinta staff, the study area includes the following intersections:

Project Access #1 (NS) at:
- Avenue 58 (EW) - Future Intersection

Madison Street (NS) at:
- Avenue 56 (EW)
- Avenue 58 (EW)
- Project Access #2 (EW) - Future Intersection
- Project Access #3 (EW) - Future Intersection
- Avenue 60 (EW)

Project Access #4 (NS) at:
- Avenue 58 (EW) - Future Intersection

Project Access #5 (NS) at:
- Avenue 58 (EW) - Future Intersection

Monroe Street (NS) at:
- Avenue 58 (EW)

Per City of La Quinta Engineering Bulletin #06-13, a sensitivity analysis with an increase of 1 standard deviation trip increase is required at all site access points and adjacent arterial intersections. Based on this criterion, the following intersections are analyzed:
The following roadway segments will be analyzed pursuant to discussions with City of La Quinta Staff:

**Madison Street (NS):**
- North of Avenue 58
- South of Avenue 58

**Avenue 58 (EW):**
- West of Madison Street
- East of Madison Street

### B. Study Area Land Use

#### 1. Existing Land Uses

- North – Residential
- South – Residential
- East – Residential
- West – Vacant
2. **Approved Future Development**

Areawide growth calculations and traffic from cumulative projects have been added to existing volumes in the vicinity of the site for future traffic conditions. Cumulative project information has been provided by the City of La Quinta.

C. **Area Roadway System**

Exhibit 3-A identifies the existing roadway conditions for study area roadways. The number of through traffic lanes for existing roadways and the existing intersection controls are identified.

The City of La Quinta General Plan Circulation Element is depicted on Exhibit 3-B. Exhibit 3-C illustrates the City of La Quinta General Plan roadway cross-sections.

D. **Traffic Volumes and Conditions**

Urban Crossroads, Inc. commissioned traffic counts at the study area intersections and road segments in February 2009. In accordance with the City of La Quinta’s Engineering Bulletin #06-13, high weekend use facilities such as shopping centers are required to analyze PM weekday and Saturday mid-day conditions. The City of La Quinta experiences peak hour traffic at atypical times during the day. Hence, measured peak hour traffic levels were conducted during the PM peak hours between 2:30 to 5:30 PM and Saturday Mid-day between 12:00pm to 2:00 pm. Traffic count worksheets are included in Appendix “A”.

In accordance with the City of La Quinta’s traffic study guidelines (Engineering Bulletin #06-13), traffic counts should consider the seasonal population variations within the City of La Quinta. Traffic counts conducted during the peak seasonal period from November 1 to April 15 requires no seasonal adjustments. In contrast, traffic counts conducted during the off season period from May 16 to September 30 should be increased by 40% from measured levels. Since the traffic counts conducted for the study area intersections and road...
EXISTING NUMBER OF THROUGH Lanes
AND INTERSECTION CONTROLS

LEGEND:

= TRAFFIC SIGNAL
= ALL WAY STOP
4 = NUMBER OF LANES
D = DIVIDED
U = UNDIVIDED
= DIRT ROAD

Shops at Coral Mountain Traffic Study
City of La Quinta, CA (JN-06997:06)
Augmented Major - State Highway
136'-144'

Eight Lanes divided, w/breakdown lane

Major Arterial - State Highway
140'

Six Lanes divided, w/bike lane
Augmented Major at Dual Left Intersections - State Highway

*Through lane adjacent to turn lane is reduced 1 foot, but returns to standard width on far side of intersection adjacent to median noise.

Augmented Major at Dual Left Intersections - City Street

*Through lane adjacent to turn lane is reduced 1 foot, but returns to standard width on far side of intersection adjacent to median noise.

Major Arterial at Dual Left Intersections - State Highway

*Through lane adjacent to turn lane is reduced 2 foot, but returns to standard width on far side of intersection adjacent to median noise.

Primary Arterial A at Dual Left Intersections - City Street

*Through lane adjacent to turn lane is reduced 1 foot, but returns to standard width on far side of intersection adjacent to median noise.

Modified Secondary at Single Left Intersections - City Street

*Through lane adjacent to turn lane is reduced 1 foot, but returns to standard width on far side of intersection adjacent to median noise.
segments were conducted during the peak season (February 2009) the traffic counts are not subject to the 40% seasonal factor.

Existing average daily traffic (ADT) volumes on arterial highways throughout the study area are shown on Exhibit 3-D. Existing ADT volumes are based upon empirical machine counts conducted for Urban Crossroads, Inc. in February 2009. Average daily traffic volumes utilized in the analysis for this traffic study were conducted during a typical weekday.

Exhibits 3-E and 3-F illustrates the existing weekday PM and Saturday mid-day peak hour intersection traffic volumes.

E. Verification of Traffic Counts

To validate the traffic counts utilized in the traffic study, the average daily traffic volumes were compared to other traffic count sources such as CVAG empirical counts. The average daily volumes from previous years were examined for consistency with the applicable growth rates provided by the City of La Quinta. The Coachella Valley Association of Governments (CVAG) annually collects 24 hour peak season counts at various locations in the region. The 2008 CVAG traffic data indicates an increase in traffic volumes along Madison Street between 2007 and 2008. However, due to the economic conditions in 2009, daily traffic volumes conducted in February 2009 indicates a general decline in traffic volumes from 2008 levels and closely corresponding 2007 CVAG ADT volumes. To encapsulate fluctuations in traffic volumes, a 1.0% per year ambient growth rate has been applied to future traffic conditions to account for increase in traffic volumes as indicated in historical annual traffic counts conducted before 2007.

F. Level of Service Definitions

The Intersection Capacity Utilization (ICU) methodology is utilized to assess the operation of a signalized intersection. To calculate ICU, the volume of traffic using the intersection is compared with the capacity of the intersection. ICU is usually expressed as a percent, which represents that portion of the hour required to provide sufficient capacity to accommodate all intersection traffic if all approaches operate at capacity.
EXISTING SATURDAY MID-DAY PEAK HOUR INTERSECTION VOLUMES
The definitions of level of service for uninterrupted flow (flow unrestrained by the existence of traffic control devices) are:

- LOS “A” represents free flow. Individual users are virtually unaffected by the presence of others in the traffic stream.

- LOS “B” is in the range of stable flow, but the presence of other users in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver.

- LOS “C” is in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual users becomes significantly affected by interactions with others in the traffic stream.

- LOS “D” represents high-density but stable flow. Speed and freedom to maneuver are severely restricted, and the driver experiences a generally poor level of comfort and convenience.

- LOS “E” represents operating conditions at or near the capacity level. All speeds are reduced to a low, but relatively uniform value. Small increases in flow will cause breakdowns in traffic movement.

- LOS “F” is used to define forced or breakdown flow. This condition exists wherever the amount of traffic approaching a point exceeds the amount which can traverse the point. Queues form behind such locations.

G. ICU Calculation Method:

a. Intersection Capacity Utilization (ICU) for all signalized study area intersections.
b. Saturation Flow Rate
Saturation flow value of 1,600 vehicles per lane per hour for intersections; 2,880 vehicles per lane per hour for dual left-turn/ right-turn lanes.

c. Level of Service Ranges
The following thresholds are used in assigning a letter value to the resulting LOS:

<table>
<thead>
<tr>
<th>LOS</th>
<th>CRITICAL VOLUME TO CAPACITY RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0.00 - 0.60</td>
</tr>
<tr>
<td>B</td>
<td>0.61 - 0.70</td>
</tr>
<tr>
<td>C</td>
<td>0.71 - 0.80</td>
</tr>
<tr>
<td>D</td>
<td>0.81 - 0.90</td>
</tr>
<tr>
<td>E</td>
<td>0.91 - 1.00</td>
</tr>
<tr>
<td>F</td>
<td>&gt; 1.00</td>
</tr>
</tbody>
</table>

d. Peak-Periods
Peak-hour analysis periods are defined as follows:

- 2:30 to 5:30 PM – Weekday PM
- 12:00 to 2:00 PM – Saturday Mid-Day

e. Peak-Hour
The highest one-hour period in both the AM and PM peak periods, as determined by four consecutive 15-minute count periods are used in the ICU calculations. Both AM and PM peak hours are studied.

f. Peak-Hour Data Consistency
Variations in peak-hour volumes can affect LOS calculations because they vary from day-to-day. To minimize these variations, no counts are taken on Mondays, Fridays, holidays or weekends.
Right Turn Movements

If the distance from the edge of the outside through lane is at least 19 feet and parking is prohibited during the peak period, right turning vehicles may be assumed to utilize this “unofficial” right turn lane. Otherwise, all right turn traffic is assigned to the through lane. If a right turn lane exists, right turn activity is checked for conflicts with other critical movements. It is assumed that right turn movements are accommodated during non-conflicting left turn phases (e.g., northbound right turns during westbound left turn phase), as well as non-conflicting through flows (e.g., northbound right turn movements and north/south through flows). Right turn movements become critical when conflicting movements (e.g., northbound right turns, southbound left turns, and eastbound through flows) represent a sum of V/C ratios which are greater than the normal through/left turn critical movements.

If a free right turn lane exists (right turns do not have to stop for the signal), a flow rate of 1,600 vehicles per hour per lane is assumed. The V/C ratio of the right turn lane is reported but not included in the sum of the critical V/C ratios.

H. HCM Methodology

For unsignalized intersections, the 2000 Highway Capacity Manual (HCM) (Transportation Research Board Special Report 209) is utilized to calculate the level of service. The HCM defines level of service as a qualitative measure which describes operational conditions within a traffic stream, generally in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. The criteria used to evaluate LOS (Level of Service) conditions vary based on the type of roadway and whether the traffic flow is considered interrupted or uninterrupted.

The level of service is typically dependent on the quality of traffic flow at the intersections along a roadway. The HCM methodology expresses the level of service at an intersection in terms of delay time for the various intersection approaches. The HCM uses different
procedures depending on the type of intersection control. The levels of service determined in this study are determined using the HCM methodology.

The study area intersections with stop control on the minor have been analyzed using the unsignalized intersection methodology of the HCM. For these intersections, the calculation of level of service is dependent on the occurrence of gaps occurring in the traffic flow of the main street. Using data collected describing the intersection configuration and traffic volumes at the study area locations, the level of service has been calculated. The level of service criteria for this type of intersection analysis is based on total delay per vehicle for the worst minor street movements.

The levels of service are defined for the unsignalized methodology:

<table>
<thead>
<tr>
<th>LEVEL OF SERVICE</th>
<th>AVERAGE TOTAL DELAY PER VEHICLE (SECONDS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0 to 10.00</td>
</tr>
<tr>
<td>B</td>
<td>10.01 to 15.00</td>
</tr>
<tr>
<td>C</td>
<td>15.01 to 25.00</td>
</tr>
<tr>
<td>D</td>
<td>25.01 to 35.00</td>
</tr>
<tr>
<td>E</td>
<td>35.01 to 50.00</td>
</tr>
<tr>
<td>F</td>
<td>50.01 and up</td>
</tr>
</tbody>
</table>

I. City of La Quinta Required Intersection Level of Service

Required Level of Service (LOS): The definition of an intersection deficiency has been obtained from the City of La Quinta Engineering Bulletin #06-13. The City of La Quinta General Plan states that peak hour intersection operations of LOS “D” or better are generally acceptable. Therefore, any intersection operating at LOS “E” or “F”, and/ or a volume to capacity ratio greater than 0.90 will be considered deficient.
J. Existing Intersection Level of Service

Existing peak hour traffic operations have been evaluated for study area intersections. Existing intersection level of service calculations are based upon manual weekday PM and Saturday mid-day peak hour turning movement counts conducted for Urban Crossroads, Inc. The results of the existing conditions analysis are summarized in Table 3-1, along with the existing intersection geometrics and traffic control devices at each analysis location.

For existing conditions, the study area intersections are currently operating at acceptable levels of service with existing geometry. Existing Conditions operation analysis worksheets are provided in Appendix "B".

K. City of La Quinta Required Roadway Segment Level of Service

The City of La Quinta General Plan states that road segment operations of LOS “D” or better are generally acceptable. Therefore, any road segment operating at LOS “E” or “F” will be considered deficient. In addition, the maximum allowable volume to capacity ratio is 0.90. Therefore, any roadway segments with a volume to capacity ratio greater than 0.90 is considered unacceptable.

Based on the roadway cross-section and classification, the corresponding capacity is used to determine the roadway segment daily LOS. For the purpose of this report, the daily traffic volumes of the roadway capacities were derived from the City of La Quinta General Plan Circulation Element (March 2002). The roadway capacity thresholds for City of La Quinta roadways are as follows:
### TABLE 3-1

**INTERSECTION ANALYSIS FOR EXISTING CONDITIONS**

<table>
<thead>
<tr>
<th>INTERSECTION</th>
<th>TRAFFIC CONTROL(^1)</th>
<th>INTERSECTION APPROACH LANES(^1)</th>
<th>ICU / DELAY(^2) (SECS.)</th>
<th>LEVEL OF SERVICE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>L  T  R</td>
<td>L  T  R</td>
<td>PM  MID-DAY</td>
<td>PM  MID-DAY</td>
</tr>
<tr>
<td>Madison St. (NS) at:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 56th Ave. - Airport (EW)</td>
<td>TS</td>
<td>1 2 0</td>
<td>0 0 0 1 0 1</td>
<td>0.190 0.170 A A</td>
</tr>
<tr>
<td>• 63rd Ave. (EW)</td>
<td>AWS</td>
<td>1 2 1</td>
<td>1 1 1 1 2 1</td>
<td>8.0 8.4 A A</td>
</tr>
<tr>
<td>Monroe St. (NS) at:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 63rd Ave. (EW)</td>
<td>AWS</td>
<td>0 0 0</td>
<td>0.5 0.5 0 0 2 0</td>
<td>8.8 9.6 A A</td>
</tr>
</tbody>
</table>

---

\(^1\) When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; 1l = Shared left/thru/right lane; 0.5 = Shared Lane

\(^2\) Per City of La Quinta Engineering Bulletin, the ICU method shall be used to determine signalized intersection level of service. For unsignalized intersections, the intersection delay has been calculated using the HCM methodology. Delay and level of service calculated using the following analysis software: Traficx, Version 8.0 (2008). Intersection level of service shown is based on the V/C for intersections with traffic signals. For intersections with cross street stop control, the delay and level of service for worst individual movement (or movements sharing a single lane) are shown.

\(^3\) TS = Traffic Signal
AWS = All Way Stop

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### TABLE 3-2
CITY OF LA QUINTA ROADWAY SEGMENT CAPACITIES

<table>
<thead>
<tr>
<th>ROADWAY CLASSIFICATION</th>
<th>ROADWAY LANE CONFIGURATION</th>
<th>LOS&quot;E&quot; CAPACITY VEHICLES PER DAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Augmented Major Arterial</td>
<td>8-Lane Divided</td>
<td>76,000</td>
</tr>
<tr>
<td>Major Arterial Roadway</td>
<td>6-Lane Divided</td>
<td>57,000</td>
</tr>
<tr>
<td>Prime Arterial</td>
<td>4-Lane Divided</td>
<td>38,000</td>
</tr>
<tr>
<td>Secondary Roadway</td>
<td>4-Lane Undivided</td>
<td>28,000</td>
</tr>
<tr>
<td>Collector Roadway</td>
<td>2-Lane Undivided</td>
<td>14,000</td>
</tr>
<tr>
<td>Local Roadway</td>
<td>2-Lane Undivided</td>
<td>9,000</td>
</tr>
</tbody>
</table>

Source: City of La Quinta General Plan Circulation Element, March 2002

L. **Existing Roadway Segments Level of Service**

The results of the existing conditions roadway segment analysis are summarized in Table 3-3, along with the existing number of lanes, ADT and volume to capacity ratios. For existing conditions, the study area roadway segments are currently operating at acceptable levels of service with existing geometry.

M. **Transit Service**

Transit Service is currently not available in the study area.
### TABLE 3-3
ROADWAY SEGMENT LEVEL OF SERVICE ANALYSIS FOR EXISTING TRAFFIC CONDITIONS

<table>
<thead>
<tr>
<th>ROADWAY SEGMENT</th>
<th>GENERAL PLAN ROADWAY CLASSIFICATION</th>
<th>EXISTING FUNCTIONAL CLASSIFICATION</th>
<th>LOS E CAPACITY</th>
<th>EXISTING NUMBER OF LANES</th>
<th>EXISTING ADT</th>
<th>VOLUME / CAPACITY</th>
<th>LOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Madison Street (NS):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>† North of Avenue 58</td>
<td>Major Roadway (6D)</td>
<td>Primary Arterial -A (4D)</td>
<td>36,000</td>
<td>4</td>
<td>5,312</td>
<td>0.14</td>
<td>A</td>
</tr>
<tr>
<td>‡ South of Avenue 58</td>
<td>Secondary Roadway (4U)</td>
<td>Secondary Roadway (4U)</td>
<td>28,000</td>
<td>4</td>
<td>3,343</td>
<td>0.12</td>
<td>A</td>
</tr>
<tr>
<td>Avenue 58 (NS):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>† West of Madison Street</td>
<td>Secondary Roadway (4U)</td>
<td>Secondary Roadway (4U)</td>
<td>21,000</td>
<td>3</td>
<td>1,469</td>
<td>0.07</td>
<td>A</td>
</tr>
<tr>
<td>‡ East of Madison Street</td>
<td>Secondary Roadway (4U)</td>
<td>Secondary Roadway (4U)</td>
<td>28,000</td>
<td>4</td>
<td>1,631</td>
<td>0.06</td>
<td>A</td>
</tr>
</tbody>
</table>

---

1 General Plan Roadway Classification based on the adopted City of La Quinta Circulation Element.

2 Some road segments are not built to their ultimate General Plan buildout classification. LOS "E" capacity is based on the current functional roadway classification that closely corresponds City of La Quinta roadway classifications.

3 Acceptable capacity ratio in the City of La Quinta is 0.90 with a corresponding LOS "D". Therefore, volume to capacity ratios greater than 0.91 (LOS "E") is considered unacceptable. Level of Service "E" capacities were derived from the Link/Volume Capacity as applied in the City of La Quinta General Plan Circulation Element (2002).

4 Average Daily Traffic (ADT) expressed in vehicles per day. Existing ADT values were obtained from empirical data. See Appendix "B".

5 Level of Service:
   - A = 0.00 - 0.50
   - B = 0.61 - 0.70
   - C = 0.71 - 0.80
   - D = 0.81 - 0.90
   - E = 0.91 - 1.00
   - F = > 1.00

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3-20
4.0 PROJECTED TRAFFIC

A. Site Traffic

1. Trip Generation

Trip generation represents the amount of traffic which is attracted and produced by a development. The traffic generation for the project is based upon the specific land uses which have been planned for the development. The proposed project is proposing to construct approximately 105,071 square feet of retail/commercial space. The project site consists of a western and eastern portion at either side of Madison Street. The Western portion of the site consists of 68,200 square feet of retail/commercial and the eastern portion of the site consists of approximately 36,871 square feet of retail/commercial. The following land uses have been assumed for each phase:

- 68,201 square foot Shopping Center (Western Site)
- 36,871 square foot Shopping Center (Eastern Site)

Trip generation rates for this project are shown in Table 4-1. The trip generation rates are based upon data collected by the Institute of Transportation Engineers (ITE). In accordance with the City of La Quinta’s Engineering Bulletin #06-13, "if the ITE Trip Generation Report provides an equation for calculating trip generation that has a good regression curve fit to the data points (R^2 > 0.7), the equation should be utilized in place of the peak hour average rates." In addition, the ITE rate of the peak hour of the generator rates should be utilized as opposed to the peak hour of the adjacent street traffic rates. However, the ITE Trip Generation Manual does not provide PM peak hour of the generator rates for a Shopping Center (820 TSF). Hence, the fitted curve equation for the peak hour of the adjacent street traffic is utilized to calculate the project’s trip generation for the PM peak hour. For the Saturday mid-day peak hour, the peak hour of the generator fitted curve equation is applied to determine the project’s trip generation for Saturday mid-day. Weekday...
### TABLE 4-1

#### PROJECT TRIP GENERATION RATES

<table>
<thead>
<tr>
<th>LAND USE</th>
<th>ITE CODE</th>
<th>QUANTITY</th>
<th>UNITS</th>
<th>PEAK HOUR TRIP RATES</th>
<th></th>
<th></th>
<th></th>
<th>DAILY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shopping Center (Eastern Project Site)</td>
<td>820</td>
<td>36.871</td>
<td>TSF</td>
<td>4.22 IN</td>
<td>4.57 OUT</td>
<td>8.79 TOTAL</td>
<td>6.38 IN</td>
<td>6.89 OUT</td>
</tr>
<tr>
<td>Shopping Center (Western Project Site)</td>
<td>820</td>
<td>68.200</td>
<td>TSF</td>
<td>3.42 IN</td>
<td>3.71 OUT</td>
<td>7.13 TOTAL</td>
<td>5.15 IN</td>
<td>4.75 OUT</td>
</tr>
</tbody>
</table>

With 1 Standard Deviation

<table>
<thead>
<tr>
<th>LAND USE</th>
<th>ITE CODE</th>
<th>QUANTITY</th>
<th>UNITS</th>
<th>PEAK HOUR TRIP RATES</th>
<th></th>
<th></th>
<th></th>
<th>DAILY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shopping Center (Eastern Project Site)</td>
<td>820</td>
<td>36.871</td>
<td>TSF</td>
<td>6.97 IN</td>
<td>7.32 OUT</td>
<td>11.54 TOTAL</td>
<td>9.13 IN</td>
<td>8.64 OUT</td>
</tr>
<tr>
<td>Shopping Center (Western Project Site)</td>
<td>820</td>
<td>68.200</td>
<td>TSF</td>
<td>6.17 IN</td>
<td>6.46 OUT</td>
<td>9.88 TOTAL</td>
<td>7.90 IN</td>
<td>7.50 OUT</td>
</tr>
</tbody>
</table>

1 Source: ITE (Institute of Transportation Engineers) Trip Generation Manual, 7th Edition, 2003. Rates based on the Fitted Curve Equation plus 1 standard deviation. The "Peak Hour of the Generator" rates are used for Saturday Trip generation rates based on the City's Engineering Bulletin #06-13. Rates shown utilizes the fitted curve equation since the R2 >0.70

2 TSF = Thousand Square Feet

3 PM Peak Hour of Adjacent Street Traffic rates are utilized since Peak hour of the Generator Rates are unavailable.
daily project trip generation rates have been applied to calculate the project’s anticipated daily traffic volumes.

Pass-by trip reductions have been applied to the overall project trip generation. These pass-by trips account for traffic that will access the site as an intermediate stop on the way to a primary destination. For project buildout conditions (2011), a pass-by reduction of 15% has been applied to the project trip generation. It is anticipated that a larger percentage of pass-by trips will occur at General Plan Buildout due to the increase in development from near-by areas and the associated traffic generated by these projects. Hence, a 25% pass-by reduction has been applied to the project trip generation for General Plan Buildout Conditions.

Both daily and peak hour trip generation for the proposed project for near term conditions are shown in Table 4-2. Based on these assumptions, the proposed project is projected to generate a total of approximately 10,360 trip-ends per day with 690 vehicles per hour during the weekday PM peak hour and 957 vehicles per hour during the Saturday mid-day peak hour for near term project buildout (2011) conditions. For General Plan Buildout conditions, the proposed project is anticipated to generate a total of approximately 9,141 trip-ends per day with 609 vehicles per hour during the weekday PM peak hour and 845 vehicles per hour during the Saturday mid-day peak hour for near term project buildout (2011) conditions. Table 4-3 summarizes the project trip generation for General Plan Buildout conditions.

To account for the variations in the average peak hour rates, the City of La Quinta requires a worst case sensitivity analysis which incorporates 1 statistical standard deviation for commercial projects to identify marginal traffic issues with potential additional traffic volumes. The additional traffic volumes associated with the statistical standard deviation trip generation is applied to all site access intersections and adjacent arterial intersections. Based on these assumptions, the proposed project is projected to generate approximately 12,381 trip-ends per day with 1,179 vehicles per hour during the weekday PM peak hour and 1,450 vehicles per hour
<table>
<thead>
<tr>
<th>LAND USE</th>
<th>QUANTITY</th>
<th>UNITS¹</th>
<th>PEAK HOUR</th>
<th></th>
<th></th>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Weekday PM Peak Hour</td>
<td>Saturday</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>IN</td>
<td>OUT</td>
<td>TOTAL</td>
<td>IN</td>
<td>OUT</td>
<td>TOTAL</td>
</tr>
<tr>
<td>Shopping Center (Eastern Project Site)</td>
<td>36.871</td>
<td>TSF</td>
<td>156</td>
<td>169</td>
<td>325</td>
<td>235</td>
<td>217</td>
<td>452</td>
</tr>
<tr>
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<td>-25</td>
<td>-48</td>
<td>-35</td>
<td>-33</td>
<td>-68</td>
</tr>
<tr>
<td>SUBTOTAL</td>
<td></td>
<td></td>
<td>133</td>
<td>144</td>
<td>277</td>
<td>200</td>
<td>184</td>
<td>384</td>
</tr>
<tr>
<td>Shopping Center (Western Project Site)</td>
<td>68.2</td>
<td>TSF</td>
<td>233</td>
<td>253</td>
<td>486</td>
<td>351</td>
<td>324</td>
<td>675</td>
</tr>
<tr>
<td></td>
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<td>-38</td>
<td>-73</td>
<td>-53</td>
<td>-49</td>
<td>-102</td>
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<td>SUBTOTAL</td>
<td></td>
<td></td>
<td>198</td>
<td>215</td>
<td>413</td>
<td>298</td>
<td>275</td>
<td>573</td>
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<tr>
<td>TOTAL THE SHOPS AT CORAL MOUNTAIN</td>
<td></td>
<td></td>
<td>331</td>
<td>359</td>
<td>690</td>
<td>498</td>
<td>459</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SHOPPING CENTER WITH 1 STANDARD DEVIATION ²</td>
<td></td>
<td></td>
<td>36.871</td>
<td>TSF</td>
<td>257</td>
<td>270</td>
<td>527</td>
<td>337</td>
</tr>
<tr>
<td>SUBTOTAL</td>
<td></td>
<td></td>
<td>218</td>
<td>229</td>
<td>447</td>
<td>286</td>
<td>271</td>
<td>557</td>
</tr>
<tr>
<td>Shopping Center (Western Project Site)</td>
<td>68.2</td>
<td>TSF</td>
<td>421</td>
<td>440</td>
<td>881</td>
<td>539</td>
<td>512</td>
<td>1051</td>
</tr>
<tr>
<td></td>
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<td>-66</td>
<td>-129</td>
<td>-81</td>
<td>-77</td>
<td>-158</td>
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<tr>
<td>SUBTOTAL</td>
<td></td>
<td></td>
<td>358</td>
<td>374</td>
<td>732</td>
<td>458</td>
<td>435</td>
<td>893</td>
</tr>
<tr>
<td>TOTAL THE SHOPS AT CORAL MOUNTAIN (WITH 1 SIGMA)</td>
<td>576</td>
<td>603</td>
<td>1,179</td>
<td>744</td>
<td>706</td>
<td>1,450</td>
<td>12,381</td>
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</tr>
</tbody>
</table>

¹ TSF = Thousand Square Feet

² Trip Generation utilized for the Worst-Case Sensitivity Analysis

³ "Pass-By" reduction rates have been used to account for traffic that will access the site as an intermediate stop on the way to a primary destination.
<table>
<thead>
<tr>
<th>LAND USE</th>
<th>QUANTITY</th>
<th>UNITS ¹</th>
<th>PEAK HOUR</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>MEAN</th>
<th>MEAN</th>
<th>MEAN</th>
<th>MEAN</th>
<th>MEAN</th>
<th>MEAN</th>
<th>DAILY</th>
<th>DAILY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shopping Center (Eastern Project Site)</td>
<td>36.871</td>
<td>TSF</td>
<td>Weekday PM</td>
<td>Peak Hour</td>
<td>Saturday</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>IN</td>
<td>OUT</td>
<td>TOTAL</td>
<td>IN</td>
<td>OUT</td>
<td>TOTAL</td>
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<td></td>
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<tr>
<td></td>
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<td>156</td>
<td>169</td>
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<td>Shopping Center (Western Project Site)</td>
<td>68.2</td>
<td>TSF</td>
<td>Weekday PM</td>
<td>Peak Hour</td>
<td>Saturday</td>
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<td>Pass-By -25%</td>
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<tr>
<td>SUBTOTAL</td>
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<td>175</td>
<td>190</td>
<td>365</td>
<td>263</td>
<td>243</td>
<td>506</td>
<td>5,445</td>
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</tr>
<tr>
<td>TOTAL THE SHOPS AT CORAL MOUNTAIN</td>
<td>292</td>
<td>317</td>
<td>609</td>
<td>439</td>
<td>406</td>
<td>845</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

¹ TSF = Thousand Square Feet

² "Pass-By" reduction rates have been used to account for traffic that will access the site as an intermediate stop on the way to a primary destination.
during the Saturday mid-day peak hour for near term project buildout (2011) conditions.

The aforementioned sensitivity analysis with the statistical standard deviation project trip generation increase applies to these site access intersections and adjacent arterial intersections:

Project Access #1 (NS) at:
- Avenue 58 (EW) - Future Intersection

Madison Street (NS) at:
- Avenue 58 (EW)
- Project Access #2 (EW) - Future Intersection
- Project Access #3 (EW) - Future Intersection

Project Access #4 (NS) at:
- Avenue 58 (EW) - Future Intersection

Project Access #5 (NS) at:
- Avenue 58 (EW) - Future Intersection

2. Trip Distribution

Trip distribution represents the directional orientation of traffic to and from the project site. Trip distribution is heavily influenced by the geographical location of the site, the location of commercial and recreational opportunities and the proximity to the regional freeway system. The directional orientation of traffic has been determined by evaluating existing and proposed land uses and highways within the community and existing traffic volumes.

The trip distribution for this study has been based upon near-term conditions, including those highway facilities which are either in place or are planned for the next few years, representing the opening occupancy time-frame for the project. The trip distribution patterns for the project are depicted on Exhibit 4-A. It is anticipated that the project trip distribution for General Plan Buildout conditions will differ
NEAR TERM PROJECT TRIP DISTRIBUTION

WESTERLY PROJECT SITE

INSET A - OUTBOUND

15
5
10
V
5
10
V
5
15
20
70
5
15
15
5

SIXTH AVE.

SITE

10 = PERCENT TO/FROM PROJECT
50 = FULL ACCESS
V = RIGHT-IN/RIGHT-OUT ONLY

INSET A - INBOUND

15
5
10
V
5
10
V
5
15
20
70
5
15
15
5

SIXTH AVE.

SITE

10 = PERCENT TO/FROM PROJECT
50 = FULL ACCESS
V = RIGHT-IN/RIGHT-OUT ONLY

EASTERLY PROJECT SITE

INSET A - OUTBOUND

15
5
10
V
5
10
V
5
15
20
70
5
15
15
5

SIXTH AVE.

SITE

10 = PERCENT TO/FROM PROJECT
50 = FULL ACCESS
V = RIGHT-IN/RIGHT-OUT ONLY

INSET A - INBOUND

15
5
10
V
5
10
V
5
15
20
70
5
15
15
5

SIXTH AVE.

SITE

10 = PERCENT TO/FROM PROJECT
50 = FULL ACCESS
V = RIGHT-IN/RIGHT-OUT ONLY
compared to near term conditions due to the completion of nearby major cumulative projects. Project trip distribution patterns for General Plan Buildout conditions are graphically depicted on Exhibit 4-B.

3. **Modal Split**

The traffic-reducing potential of public transit has not been considered in this report.

4. **Trip Assignment**

The assignment of traffic from the site to the adjoining roadway system has been based upon the site's trip generation, trip distributions, proposed arterial highway and local street systems. Based on the identified project traffic generation and distributions, project related ADT volumes for near term (2011) conditions are shown on Exhibit 4-C. Project weekday PM and Saturday mid-day peak hour intersection turning movement volumes are shown on Exhibits 4-D and 4-E, respectively. For General Plan Buildout Conditions, project related ADT volumes are shown in Exhibit 4-F. Project only (General Plan Buildout) weekday PM and Saturday mid-day peak hour intersection turning movement volumes are shown on Exhibits 4-G and 4-H, respectively.

B. **Other Development Traffic**

1. **Method of Projection**

To assess existing plus ambient growth plus cumulative traffic conditions, other development traffic is combined with existing traffic and area-wide growth. Other developments which are being processed concurrently in the study area have been provided by the City.
LEGEND:

10.0 = VEHICLES PER DAY (1000’S)
EXHIBIT 4-D
PROJECT WEEKDAY PM PEAK HOUR INTERSECTION VOLUMES

Shops at Coral Mountain Traffic Study
City of La Quinta, CA (JN - 06997:203)
EXHIBIT 4-F
PROJECT (GENERAL PLAN BUILDOUT)
WEEKDAY AVERAGE DAILY TRAFFIC (ADT)

LEGEND:
10.0 = VEHICLES PER DAY (1000’S)
PROJECT (GENERAL PLAN BUILDOUT) SATURDAY MID-DAY PEAK HOUR INTERSECTION VOLUMES
2. **Non-Site Traffic for Study Area**

Cumulative projects within ½ mile of the study area were included in the traffic analysis. Cumulative project information has been provided by the City of La Quinta. Cumulative project trip generation is based on the anticipated completion of each individual project in relation to the project buildout year in 2011. These land use quantities by project buildout year were applied to generate cumulative traffic. Exhibit 4-I illustrates the locations of these cumulative developments.

Table 4-4 presents the other development land uses and trip generation rates. It should be noted that the trip generation rates utilized in the traffic impact analysis are based on the assumptions described in the City of La Quinta Engineering Bulletin #06-13 in determining the appropriate assignment of trip generation. For land uses with a trip generation that has a good regression curve fit to the data points ($R^2 > 0.7$), the equation is utilized in place of the peak hour trip generation average rates. In addition, the ITE rate of the peak hour of the generator should be utilized as opposed to the peak hour of the adjacent street traffic. If the $R^2$ is not provided in the ITE Trip Generation Manual and/or the trip generation does not have good regression curve fit and the peak hour of the generator rates are not available, the peak hour of the adjacent street traffic rates are utilized.

Table 4-5, indicates that the cumulative developments are projected to generate a total of approximately 22,041 trip-ends per day with 2,276 vehicles per hour during the weekday PM peak hour and 2,303 vehicles per hour during the Saturday mid-day peak hour.

Some cumulative trip distribution patterns were derived from previous traffic studies prepared by Urban Crossroads, Inc. The cumulative trip distribution patterns were incorporated into this traffic impact study from the following sources:

- Tentative Tract 33924 Traffic Impact Analysis, La Quinta, July 2005
- La Quinta Motorcoach Resort Traffic Impact Analysis, La Quinta, Mar. 2008
- Madison Street/ Avenue 52 Traffic Impact Analysis, La Quinta, Sept. 2004
### TABLE 4-4

OTHER DEVELOPMENT TRIP GENERATION RATES

<table>
<thead>
<tr>
<th>LAND USE</th>
<th>ITE CODE</th>
<th>QUANTITY</th>
<th>UNITS&lt;sup&gt;2&lt;/sup&gt;</th>
<th>PEAK HOUR TRIP RATES</th>
<th>SATURDAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Family Detached Residential</td>
<td>210G&lt;sup&gt;3&lt;/sup&gt;</td>
<td>3</td>
<td>DU</td>
<td>IN: 1.04, OUT: 0.59, TOTAL: 1.63</td>
<td>DAILY</td>
</tr>
<tr>
<td>Single Family Detached Residential</td>
<td>210G&lt;sup&gt;4&lt;/sup&gt;</td>
<td>4</td>
<td>DU</td>
<td>IN: 1.01, OUT: 0.57, TOTAL: 1.58</td>
<td>SATURDAY: DAILY: 1.96, OUT: 1.6664, TOTAL: 3.6225</td>
</tr>
<tr>
<td>Single Family Detached Residential</td>
<td>210G&lt;sup&gt;3&lt;/sup&gt;</td>
<td>5</td>
<td>DU</td>
<td>IN: 0.99, OUT: 0.56, TOTAL: 1.55</td>
<td>SATURDAY: DAILY: 1.66, OUT: 1.415, TOTAL: 3.076</td>
</tr>
<tr>
<td>Single Family Detached Residential</td>
<td>210G&lt;sup&gt;3&lt;/sup&gt;</td>
<td>15</td>
<td>DU</td>
<td>IN: 0.87, OUT: 0.49, TOTAL: 1.36</td>
<td>SATURDAY: DAILY: 0.87, OUT: 0.7446, TOTAL: 1.6187</td>
</tr>
<tr>
<td>Single Family Detached Residential</td>
<td>210G&lt;sup&gt;3&lt;/sup&gt;</td>
<td>20</td>
<td>DU</td>
<td>IN: 0.85, OUT: 0.48, TOTAL: 1.33</td>
<td>SATURDAY: DAILY: 0.78, OUT: 0.6608, TOTAL: 1.4365</td>
</tr>
<tr>
<td>Single Family Detached Residential</td>
<td>210G&lt;sup&gt;3&lt;/sup&gt;</td>
<td>25</td>
<td>DU</td>
<td>IN: 0.83, OUT: 0.46, TOTAL: 1.29</td>
<td>SATURDAY: DAILY: 0.72, OUT: 0.6105, TOTAL: 1.3272</td>
</tr>
<tr>
<td>Single Family Detached Residential</td>
<td>210G&lt;sup&gt;3&lt;/sup&gt;</td>
<td>29</td>
<td>DU</td>
<td>IN: 0.81, OUT: 0.46, TOTAL: 1.27</td>
<td>SATURDAY: DAILY: 0.68, OUT: 0.5828, TOTAL: 1.2699</td>
</tr>
<tr>
<td>Single Family Detached Residential</td>
<td>210G&lt;sup&gt;3&lt;/sup&gt;</td>
<td>30</td>
<td>DU</td>
<td>IN: 0.81, OUT: 0.48, TOTAL: 1.27</td>
<td>SATURDAY: DAILY: 0.68, OUT: 0.577, TOTAL: 1.2543</td>
</tr>
<tr>
<td>Single Family Detached Residential</td>
<td>210G&lt;sup&gt;3&lt;/sup&gt;</td>
<td>31</td>
<td>DU</td>
<td>IN: 0.81, OUT: 0.45, TOTAL: 1.26</td>
<td>SATURDAY: DAILY: 0.67, OUT: 0.5716, TOTAL: 1.2426</td>
</tr>
<tr>
<td>Single Family Detached Residential</td>
<td>210G&lt;sup&gt;3&lt;/sup&gt;</td>
<td>35</td>
<td>DU</td>
<td>IN: 0.80, OUT: 0.45, TOTAL: 1.25</td>
<td>SATURDAY: DAILY: 0.65, OUT: 0.5531, TOTAL: 1.2023</td>
</tr>
<tr>
<td>Single Family Detached Residential</td>
<td>210G&lt;sup&gt;3&lt;/sup&gt;</td>
<td>45</td>
<td>DU</td>
<td>IN: 0.77, OUT: 0.44, TOTAL: 1.21</td>
<td>SATURDAY: DAILY: 0.61, OUT: 0.5211, TOTAL: 1.1329</td>
</tr>
<tr>
<td>Single Family Detached Residential</td>
<td>210G&lt;sup&gt;3&lt;/sup&gt;</td>
<td>52</td>
<td>DU</td>
<td>IN: 0.76, OUT: 0.43, TOTAL: 1.19</td>
<td>SATURDAY: DAILY: 0.59, OUT: 0.5061, TOTAL: 1.1002</td>
</tr>
<tr>
<td>Single Family Detached Residential</td>
<td>210G&lt;sup&gt;3&lt;/sup&gt;</td>
<td>60</td>
<td>DU</td>
<td>IN: 0.75, OUT: 0.42, TOTAL: 1.17</td>
<td>SATURDAY: DAILY: 0.58, OUT: 0.4932, TOTAL: 1.0722</td>
</tr>
<tr>
<td>Single Family Detached Residential</td>
<td>210G&lt;sup&gt;3&lt;/sup&gt;</td>
<td>67</td>
<td>DU</td>
<td>IN: 0.74, OUT: 0.42, TOTAL: 1.16</td>
<td>SATURDAY: DAILY: 0.57, OUT: 0.4844, TOTAL: 1.0531</td>
</tr>
<tr>
<td>Single Family Detached Residential</td>
<td>210G&lt;sup&gt;3&lt;/sup&gt;</td>
<td>97</td>
<td>DU</td>
<td>IN: 0.71, OUT: 0.4, TOTAL: 1.11</td>
<td>SATURDAY: DAILY: 0.54, OUT: 0.4612, TOTAL: 1.0027</td>
</tr>
<tr>
<td>Single Family Detached Residential</td>
<td>210G&lt;sup&gt;3&lt;/sup&gt;</td>
<td>120</td>
<td>DU</td>
<td>IN: 0.70, OUT: 0.39, TOTAL: 1.09</td>
<td>SATURDAY: DAILY: 0.53, OUT: 0.4613, TOTAL: 0.9811</td>
</tr>
<tr>
<td>Single Family Detached Residential</td>
<td>210G&lt;sup&gt;3&lt;/sup&gt;</td>
<td>200</td>
<td>DU</td>
<td>IN: 0.66, OUT: 0.37, TOTAL: 1.03</td>
<td>SATURDAY: DAILY: 0.51, OUT: 0.4345, TOTAL: 0.9447</td>
</tr>
<tr>
<td>Single Family Detached Residential</td>
<td>210G&lt;sup&gt;3&lt;/sup&gt;</td>
<td>261</td>
<td>DU</td>
<td>IN: 0.64, OUT: 0.36, TOTAL: 1</td>
<td>SATURDAY: DAILY: 0.50, OUT: 0.4287, TOTAL: 0.9319</td>
</tr>
<tr>
<td>Single Family Detached Residential</td>
<td>210G&lt;sup&gt;3&lt;/sup&gt;</td>
<td>1203</td>
<td>DU</td>
<td>IN: 0.54, OUT: 0.3, TOTAL: 0.84</td>
<td>SATURDAY: DAILY: 0.49, OUT: 0.4136, TOTAL: 0.8991</td>
</tr>
</tbody>
</table>

---


2. DU = Dwelling Units

3. In accordance with the City of La Quinta’s Engineering Bulletin #06-13, trip generation rates with a good regression curve fit to the data points ($R^2>0.7$) will utilize the equation rather than the Peak hour of the Generator Average Rates.
### TABLE 4-5
OTHER DEVELOPMENT (2011) LAND USE AND TRIP GENERATION

<table>
<thead>
<tr>
<th>#</th>
<th>TAZ</th>
<th>PROJECT</th>
<th>LAND USE¹</th>
<th>QUANTITY²</th>
<th>UNITS</th>
<th>PM</th>
<th>SATURDAY</th>
<th>DAILY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TT 30834 - Stone Creek</td>
<td>SFDR</td>
<td>35</td>
<td>DU</td>
<td>28</td>
<td>18</td>
<td>44</td>
<td>23</td>
</tr>
<tr>
<td>2</td>
<td>TR 31249 - Coral Ridge Estates</td>
<td>SFDR</td>
<td>26</td>
<td>DU</td>
<td>21</td>
<td>12</td>
<td>33</td>
<td>18</td>
</tr>
<tr>
<td>3</td>
<td>TR 32279 - Palo Verde</td>
<td>SFDR</td>
<td>31</td>
<td>DU</td>
<td>26</td>
<td>14</td>
<td>39</td>
<td>21</td>
</tr>
<tr>
<td>4</td>
<td>TR 28034 - Lion's Gate</td>
<td>SFDR</td>
<td>20</td>
<td>DU</td>
<td>17</td>
<td>10</td>
<td>27</td>
<td>16</td>
</tr>
<tr>
<td>5</td>
<td>TR 34243</td>
<td>SFDR</td>
<td>45</td>
<td>DU</td>
<td>35</td>
<td>20</td>
<td>55</td>
<td>28</td>
</tr>
<tr>
<td>6</td>
<td>TT 33336</td>
<td>SFDR</td>
<td>4</td>
<td>DU</td>
<td>4</td>
<td>2</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>7</td>
<td>TT 32201 - Desert Shell</td>
<td>SFDR</td>
<td>3</td>
<td>DU</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>8</td>
<td>TR 33597 - Malaga</td>
<td>SFDR</td>
<td>15</td>
<td>DU</td>
<td>13</td>
<td>7</td>
<td>20</td>
<td>13</td>
</tr>
<tr>
<td>9</td>
<td>TR 30992 - Piazza Serena</td>
<td>SFDR</td>
<td>67</td>
<td>DU</td>
<td>50</td>
<td>28</td>
<td>78</td>
<td>38</td>
</tr>
<tr>
<td>10</td>
<td>TT 33848 - Mamar</td>
<td>SFDR</td>
<td>3</td>
<td>DU</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>11</td>
<td>TR 29896 - Hideaway</td>
<td>SFDR</td>
<td>281</td>
<td>DU</td>
<td>167</td>
<td>94</td>
<td>261</td>
<td>131</td>
</tr>
<tr>
<td>12</td>
<td>TR 33076 - Madison Club</td>
<td>SFDR</td>
<td>52</td>
<td>DU</td>
<td>40</td>
<td>22</td>
<td>62</td>
<td>31</td>
</tr>
<tr>
<td>13</td>
<td>TR 29863 - The Palms</td>
<td>SFDR</td>
<td>97</td>
<td>DU</td>
<td>69</td>
<td>39</td>
<td>108</td>
<td>53</td>
</tr>
<tr>
<td>14</td>
<td>TR 30023 - Trilogy</td>
<td>SFDR</td>
<td>1203</td>
<td>DU</td>
<td>660</td>
<td>361</td>
<td>1,021</td>
<td>584</td>
</tr>
<tr>
<td>15</td>
<td>SP 2004-072 - Schumacher</td>
<td>SFDR</td>
<td>N/A³</td>
<td>DU</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>16</td>
<td>TR 31910 - Capistrano</td>
<td>SFDR</td>
<td>65</td>
<td>DU</td>
<td>45</td>
<td>25</td>
<td>70</td>
<td>35</td>
</tr>
<tr>
<td>17</td>
<td>SP 2003-067 - Andaluzia</td>
<td>SFDR</td>
<td>200</td>
<td>DU</td>
<td>132</td>
<td>74</td>
<td>206</td>
<td>102</td>
</tr>
<tr>
<td>18</td>
<td>TR 32225 - Santerra</td>
<td>SFDR</td>
<td>29</td>
<td>DU</td>
<td>23</td>
<td>13</td>
<td>36</td>
<td>20</td>
</tr>
<tr>
<td>19</td>
<td>TT 32648 - Khachadourian</td>
<td>SFDR</td>
<td>N/A³</td>
<td>DU</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>20</td>
<td>TR 32679 - 34642 - Griffin Ranch</td>
<td>SFDR</td>
<td>120</td>
<td>DU</td>
<td>84</td>
<td>47</td>
<td>131</td>
<td>64</td>
</tr>
<tr>
<td>21</td>
<td>TR 32742 - Four Seasons</td>
<td>SFDR</td>
<td>5</td>
<td>DU</td>
<td>5</td>
<td>3</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>22</td>
<td>TR 33444 - Coral Canyon</td>
<td>SFDR</td>
<td>N/A³</td>
<td>DU</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>23</td>
<td>TR 31792, TT 31733 - Palizada</td>
<td>SFDR</td>
<td>25</td>
<td>DU</td>
<td>21</td>
<td>12</td>
<td>33</td>
<td>18</td>
</tr>
<tr>
<td>24</td>
<td>SP 94-026 - Travertine</td>
<td>SFDR</td>
<td>N/A³</td>
<td>DU</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>25</td>
<td>TT 51494 - Monroe Dunes</td>
<td>SFDR</td>
<td>30</td>
<td>DU</td>
<td>24</td>
<td>14</td>
<td>38</td>
<td>29</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>1,459</strong></td>
<td><strong>817</strong></td>
<td><strong>2,276</strong></td>
</tr>
</tbody>
</table>

¹ SFDR = Single Family Detached Residential
² DU = Dwelling Units
³ Per City of La Quinta, this project is not anticipated to be completed by 2011
Appendix “D” contains the directional distribution patterns of the cumulative development traffic and cumulative development land use quantities.

Based on the identified trip distribution for the cumulative developments on arterial highways throughout the study area, other cumulative development ADT volumes expected at project buildout are shown on Exhibit 4-J. Other cumulative development weekday PM and Saturday mid-day peak hour intersection turning movement volumes at project buildout are shown on Exhibits 4-K and 4-L, respectively.

3. Through Traffic

To account for area-wide growth on roadways, future traffic volumes have been calculated based on a 1% annual growth rate of existing traffic volumes. The ambient growth rate is applied to existing traffic volumes over a two (2) year period for 2011 conditions.

4. General Plan Buildout

For long range buildout conditions, the General Plan Buildout volumes have been derived from the sub-regional travel demand model concurrently being used for long-range planning in the Coachella Valley. This model is referred to as the Coachella Valley Subarea Applications Traffic Model (CVSATM), which is an updated region model of the Coachella Valley Area Transportation Study (CVATS) regional model. This model has been refined to include updates to land use and network changes. General Plan Buildout forecasts have been developed from the traffic model using accepted procedures for model forecast refinement and smoothing.

The traffic forecasts reflect the area-wide growth anticipated between now and General Plan Buildout. The General Plan Buildout peak hour forecasts were refined using the long-range forecasts, along with projected EAC (2015) peak hour traffic.
LEGEND:
10.0 = VEHICLES PER DAY (1000'S)
CUMULATIVE DEVELOPMENT (2011) WEEKDAY PM PEAK HOUR INTERSECTION VOLUMES

Shops at Coral Mountain Traffic Study
City of La Quinta, CA (JN - 06997:210)
volumes at each analysis location. The traffic model zone structure is not designed to provide accurate turning movements along arterial roadways unless refinement and reasonableness checking is performed.

The initial estimate of the future General Plan Buildout peak hour turning movements were reviewed for reasonableness. The reasonableness checks performed include a review of flow conservation in addition to comparisons between the General Plan Buildout and EAC (2011) turning volumes, ensuring a minimum growth of five (5) percent. Where necessary, the initial raw model estimates were adjusted to achieve flow conservation, reasonable growth, and reasonable diversion between parallel routes.

Saturday mid-day peak hour volumes has been derived from calculating the increase in traffic volumes from Existing PM peak hour conditions to General Plan Buildout PM peak hour volumes. The total intersection traffic volumes for Existing PM peak hour is compared to the same total intersection PM peak hour General Plan Buildout traffic volumes. The resulting growth factor from this comparative analysis for each intersection is applied to the corresponding intersection for each individual movement for Existing Saturday mid-day traffic volumes to derive the General Plan Buildout Saturday mid-day peak hour volumes. In essence, this method of projection for the Saturday mid-day traffic volumes incorporates the growth associated with General Plan buildout conditions for each analysis intersection and maintaining the directional traffic flows associated with mid-day Saturday.

C. Total Future Traffic

Existing plus ambient plus cumulative (2011) traffic conditions ADT volumes are shown on Exhibit 4-M and Existing plus ambient plus cumulative plus project (2011) traffic conditions ADT volumes are shown on Exhibit 4-N.
EXISTING PLUS AMBIENT PLUS CUMULATIVE WEEKDAY AVERAGE DAILY TRAFFIC (ADT)

LEGEND:
10.0 = VEHICLES PER DAY (1000'S)
EXISTING PLUS AMBIENT PLUS CUMULATIVE PLUS PROJECT WEEKDAY AVERAGE DAILY TRAFFIC (ADT)

LEGEND:
10.0 = VEHICLES PER DAY (1000'S)
5.0 TRAFFIC IMPACT ASSESSMENT METHODOLOGY

This section of the report describes the criteria in determining a project-related impact. The traffic scenarios identified below are compared to each other to determine a direct or cumulative project impact.

A. Scenarios

In accordance with the City of La Quinta Engineering Bulletin #06-13 and discussions with City staff, this study has analyzed the following scenarios:

a. Existing Traffic Conditions
   The existing conditions refer to the conditions which take into account the existing traffic counts taken in February 2009 and existing lane configurations at study area intersections and roadway segments. Results of the analysis were discussed previously in section 3.0 of the report.

   Existing plus ambient growth plus cumulative traffic conditions includes the cumulative (2011) traffic, which is added to the existing volumes and area wide growth (2%). Existing geometry and intersection controls are analyzed first, then with CIP improvements. The analysis will present the basis for any potentially significant near term (2011) project and cumulative impacts.

   Existing Plus Ambient Growth Plus Cumulative Plus Project (2011) traffic conditions includes the addition of the Project and cumulative developments (2011) proposed within the study area to the existing volumes with 2% ambient growth rate. Existing geometry and intersection controls are analyzed first, then with CIP improvements, and if necessary, additional improvements. The analysis is compared to Existing plus Ambient plus Cumulative (2011) conditions.
to determine potentially significant near term project and cumulative impacts on
the study area intersections and road segments. In addition, a sensitivity
analysis is conducted by adding 1 statistical standard deviation to the project’s
trip generation and analyzed with existing geometry, then with CIP
improvements, and if necessary, additional improvements.

d. General Plan Buildout without Project Traffic Conditions
General Plan without project traffic conditions were derived from the Coachella
Valley Subarea Applications Traffic Model (CVSATM) currently being used for
long range planning in the Coachella Valley area. General Plan Buildout lane
configurations are assumed for the analysis. The analysis will present the basis
for any potential cumulative impacts.

e. General Plan Buildout with Project Traffic Conditions
General Plan without project traffic conditions were derived from the Coachella
Valley Subarea Applications Traffic Model (CVSATM) currently being used for
long range planning in the Coachella Valley area. Project volumes are added to
General Plan Buildout volumes. General Plan Buildout lane configurations
based on the currently adopted General Plan Roadway classification are
assumed to be in place. This scenario is compared with General Plan Buildout
without Project Conditions to determine any potentially significant cumulative
impacts.

B. With Improvement Scenarios

Per the City of La Quinta’s Traffic Study Guidelines, the traffic impact analysis scenarios
discussed in this section consists of calculations based on three lane geometric scenarios:
existing lane geometrics, currently adopted CIP improvements and additional improvements
required to mitigate project related impacts. Only intersections that are significantly
impacted by the project are improved to pre-project (E+A+C) conditions. The CIP
improvements assumed in this analysis were derived from the City of La Quinta’s Capital
CIP projects have been assumed in this analysis relating to the study area intersections and roadway segments:

1) AD13: Avenue 58 Street Improvements (PGA West south to Madison Street)
2) AD25: New Traffic Signal (Madison Street/ Avenue 58)
3) AD26: New Traffic Signal (Madison Street/ Avenue 60)
4) AD32: New Traffic Signal (Monroe Street/ Avenue 58)

The installation of new traffic signals under the CIP program (AD25, AD26 and AD32) at the study area intersections assumes that the intersection lane configurations will be modified to accommodate the operations of the new traffic signal. For “with CIP improvements” scenarios, lane modifications to the study intersection are assumed to be at the minimum in order to accurately analyze intersection operations with the CIP improvement.

Additional recommended improvements beyond the City's funded CIP program are consistent with the City of La Quinta’s General Plan roadway designation for the particular intersection and/or road segment. Improvements recommended in this report do not exceed the allowable lane geometry identified in the City’s General Plan.

C. Potential Traffic Impact Criteria

Potentially significant traffic impacts are divided into intersection impacts and road segment impacts. Intersections and road segments are evaluated for both project specific and cumulative impacts. The traffic impact criterion indicated below for both intersection and road segments are derived from the City of La Quinta traffic guidelines ([Engineering Bulletin #06-13 Revised June 2008](#06-13-Revised-June-2008)).
1. Potentially Significant Impacts for Intersections

Project Specific Impacts at Project Opening

A potentially significant project specific impact is defined to occur at any intersection if the project trips will result in the LOS for an intersection to be worse than LOS D. A potentially significant project specific traffic impact is also assumed to occur at any intersection if the project will exceed the criteria established in the table below. The ICU method only shall be used for this calculation.

<table>
<thead>
<tr>
<th>Impact Criteria For Existing Intersections</th>
<th>Already Operating at LOS E or LOS F</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIGNIFICANT CHANGES IN LOS</td>
<td></td>
</tr>
<tr>
<td>Intersection LOS (Existing)</td>
<td>Increase in Trips equal to or greater than</td>
</tr>
<tr>
<td>LOS E</td>
<td>20 trips *</td>
</tr>
<tr>
<td>LOS F</td>
<td>10 trips *</td>
</tr>
</tbody>
</table>

* To any critical movement (the controlling movements when the sum of the left turn(s) plus though movements per lane for each of the intersecting streets is compared [typically 2 critical movements for a four legged intersection] )

Per the City of La Quinta traffic impact guidelines, a potentially significant impact at an unsignalized study intersection is defined to occur when the addition of the project traffic results in LOS F on the side street for two way control and LOS E or worse for all-way stop control. A potentially significant impact at an unsignalized study intersection that is already operating at LOS E or LOS F is defined to occur when the addition of the project traffic results in an addition of 3 seconds of delay. The delay is calculated for all signalized intersections and indicated if the LOS for any intersections that change from one LOS to another LOS. Improvements fully funded by the City’s Capital Improvements Program (CIP) are assumed to be in place.

Cumulative Impacts
A potentially significant cumulative traffic impact is assumed to occur at any intersection if the project trips will result in the LOS for an intersection to be worse than LOS D at general plan buildout. Additionally, a potentially significant cumulative traffic impact is assumed to occur if the project will add 25 or more Peak Hour Trips to a studied intersection which is projected to operate at worse than LOS D at general plan buildout. The ICU method only shall be used for this calculation. For this analysis scenario, improvements fully funded by the City’s Capital Improvements Program (CIP), the Development Impact Fee Program (DIF) and the Transportation Uniform Mitigation Fee Program (TUMF) are assumed to be in place.

In addition, a potentially significant cumulative traffic impact at an unsignalized study intersection is defined to occur when the addition of the project traffic results in LOS F at buildout on the side street for two way control and LOS E or worse at buildout for all-way stop control. A potentially significant impact at an unsignalized study intersection that is already operating at LOS E or LOS F is defined to occur when the addition of the project traffic results in an addition of 3 seconds of delay. Delay shall be calculated for all unsignalized intersections to demonstrate this.

2. Potentially Significant Impacts for Road Segments

Project Specific Impacts at Project Opening

For roadway segments, project specific traffic impact is defined to occur on any road segment if the project would cause the existing LOS to fall worse than LOS D at project buildout. A potentially significant project specific impact is also defined to occur on any road segment that is already operating at LOS E or LOS F, if the V/C ratio is increased by 0.02. Changes from one LOS to another LOS will be reported in the analysis. Improvements fully funded by the City’s Capital Improvements Program (CIP) are assumed to be in place.

Cumulative Impacts
A potentially significant cumulative traffic impact is defined to occur on any studied road segment if the project would cause the existing LOS to fall to worse than LOS D at general plan buildout. A potentially significant cumulative traffic impact is also defined to occur on any studied road segment that is already operating at LOS E or LOS F, if the project traffic will increase the peak hour V/C in the peak direction by more than 0.05 at City General Plan buildout. The V/C ratio shall be calculated for all studied road segments to demonstrate this. For this analysis scenario, improvements fully funded by the City’s Capital Improvements Program, the DIF and the TUMF are assumed to be in place.

Changes from one LOS to another LOS will be reported in the analysis. Improvements fully funded by the City’s Capital Improvements Program (CIP) are assumed to be in place.
6.0 **NEAR TERM CONDITIONS TRAFFIC ANALYSIS**

This section of the report includes the results of the near term ICU and HCM intersection analysis and roadway segment capacity analysis. Furthermore, this section identifies any potential significant project and cumulative impacts to the study area intersections and roadway segments.

A. **Site Access**

The project will have five (5) access points to Madison Avenue and Avenue 58. At the western portion of the project, one full access point is proposed along Avenue 58 (Project Access #1) and one right-in/right-out access along Madison Street (Project Access #3). The eastern portion of the project is proposing one full access (Project Access #5) and one right-in/right-out access (Project Access #4) along Avenue 58 and one right-in/right-out access (Project Access #2) along Madison Street.

B. **Level of Service for Existing Plus Ambient Plus Cumulative (2011) Conditions**


Existing plus Ambient plus Cumulative (2011) intersection levels of service are shown in Table 6-1. Table 6-1 shows ICU/HCM calculations based on existing lane geometry and CIP improvements at the study area intersections. Existing plus Ambient plus Cumulative (2011) weekday PM and Saturday mid-day peak hour intersection turning movement volumes are shown on Exhibits 6-A and 6-B, respectively.

For Existing plus Ambient plus Cumulative (2011) traffic conditions, the study area intersections are projected to operate at acceptable levels of service during the peak hours with existing geometry except for the following intersection:

Monroe Street (NS) at:
- Avenue 58 (EW)
### TABLE 6-1
INTERSECTION ANALYSIS FOR EXISTING PLUS AMBIENT PLUS CUMULATIVE (2011) CONDITIONS

<table>
<thead>
<tr>
<th>INTERSECTION</th>
<th>TRAFFIC CONTROL</th>
<th>INTERSECTION APPROACH LANES</th>
<th>ICU / DELAY</th>
<th>LEVEL OF SERVICE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>NORTH-BOUND</td>
<td>SOUTH-BOUND</td>
<td>EAST-BOUND</td>
</tr>
<tr>
<td><strong>Madison St. (NS) at:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 56th Ave. - Airport (EW)</td>
<td>TS</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>• 56th Ave. (EW)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Without Improvements</td>
<td>AWS</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>- With CIP Improvements</td>
<td>TS</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>• 60th Ave. (EW)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Without Improvements</td>
<td>AWS</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>- With CIP Improvements</td>
<td>TS</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Monroe St. (NS) at:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 58th Ave. (EW)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Without Improvements</td>
<td>AWS</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>- With CIP Improvements</td>
<td>TS</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

---

1. When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

   - L = Left; T = Through; R = Right; 0.5 = Shared Lane; 1> = Right Turn Overlap;
   - 1 = Improvement

2. Per City of La Quinta Engineering Bulletin, the ICU method shall be used to determine signalized intersection level of service. For unsignalized intersections, the intersection delay has been calculated using the HCM methodology.

   Delay and level of service calculated using the following analysis software: TrafficX, Version 8.0 (2008).

   Intersection level of service shown is based on the VIC for intersections with traffic signals. For intersections with cross street stop control, the delay and level of service for worst individual movement (or movements sharing a single lane) are shown.

3. **TS** = Traffic Signal
   - **AWS** = All Way Stop

---

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---

6-2
However, the intersection of Monroe Street/ Avenue 48 is anticipated to operate at an acceptable level of service with the CIP improvements identified in Table 6-1.

Existing plus Ambient plus Cumulative (2011) intersection operation analysis worksheets are provided in Appendix "E".


For Existing plus Ambient plus Cumulative (2011) conditions, traffic signals are projected to be warranted at the following study area intersections (see Appendix "C"):

   Madison Street (NS) at:
   - Avenue 58 (EW)
   - Avenue 56 (EW)

   Monroe Street (NS) at:
   - Avenue 58 (EW)


The City of La Quinta has established Level of Service capacities for the various types of roadway classifications. For purpose of this analysis, the Level of Service "D" capacity has been established as the acceptable capacity threshold for roadway segments. In addition, any road segments with a volume to capacity (V/C) ratio of greater than .90 is considered unacceptable. Existing plus ambient plus cumulative (2011) average daily traffic (ADT) is depicted previously on Exhibit 4-O. Table 6-2 shows the Existing plus Ambient plus Cumulative (2011) segment analysis with the corresponding levels of service. As shown on Table 6-2, the study area roadway segments are anticipated to operate with acceptable levels of service of LOS “D” or better at the study area road segments.
<table>
<thead>
<tr>
<th>ROADWAY SEGMENT</th>
<th>GENERAL PLAN ROADWAY CLASSIFICATION</th>
<th>EXISTING FUNCTIONAL CLASSIFICATION</th>
<th>LOS E CAPACITY</th>
<th>EXISTING NUMBER OF LANES</th>
<th>EAC ADT</th>
<th>VOLUME / CAPACITY</th>
<th>LOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Madison Street (NS):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* North of Avenue 58</td>
<td>Major Roadway (6D)</td>
<td>Primary Arterial -A (4D)</td>
<td>38,000</td>
<td>4</td>
<td>10,499</td>
<td>0.28</td>
<td>A</td>
</tr>
<tr>
<td>* South of Avenue 58</td>
<td>Secondary Roadway (4U)</td>
<td>Secondary Roadway (4U)</td>
<td>28,000</td>
<td>4</td>
<td>6,775</td>
<td>0.24</td>
<td>A</td>
</tr>
<tr>
<td>Avenue 58 (NS):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* West of Madison Street</td>
<td>Secondary Roadway (4U)</td>
<td>Secondary Roadway (4U)</td>
<td>21,000</td>
<td>3</td>
<td>3,682</td>
<td>0.17</td>
<td>A</td>
</tr>
<tr>
<td>* East of Madison Street</td>
<td>Secondary Roadway (4U)</td>
<td>Secondary Roadway (4U)</td>
<td>28,000</td>
<td>4</td>
<td>3,353</td>
<td>0.12</td>
<td>A</td>
</tr>
</tbody>
</table>

1 General Plan Roadway Classification based on the adopted City of La Quinta Circulation Element.

2 Some road segments are not built to their ultimate General Plan buildout classification. LOS "E" capacity is based on the current functional roadway classification that closely corresponds City of La Quinta roadway classifications.

3 Acceptable capacity ratio in the City of La Quinta is 0.90 with a corresponding LOS "D". Therefore, volume to capacity ratios greater than 0.91 (LOS "E") is considered unacceptable. Level of Service "E" capacities were derived from the Link/Volume Capacity as applied in the City of La Quinta General Plan Circulation Element (2002).

4 Average Daily Traffic (ADT) expressed in vehicles per day.

5 Level of Service:
   A = 0.00 - 0.60
   B = 0.61 - 0.70
   C = 0.71 - 0.80
   D = 0.81 - 0.90
   E = 0.91 - 1.00
   F = > 1.00
C. Level of Service for Existing Plus Ambient Plus Cumulative Plus Project (2011)

1. Intersection Analysis for Existing Plus Ambient Plus Cumulative Plus Project (2011) Conditions

Existing plus Ambient plus Cumulative plus Project (2011) intersection levels of service are shown in Table 6-3. Table 6-3 shows ICU/HCM calculations based on the existing lane geometry and recommended improvements at the study area intersections. Existing plus Ambient plus Cumulative plus Project (2011) weekday PM and Saturday mid-day peak hour intersection turning movement volumes are shown on Exhibits 6-C and 6-D, respectively.

For Existing plus Ambient plus Cumulative plus Project (2011) traffic conditions, the following study area intersections are projected to operate at unacceptable levels of service during the peak hours without improvements:

Monroe Street (NS) at:
- Avenue 58 (EW)

However, the intersection of Monroe Street/ Avenue 48 is anticipated to operate at an acceptable level of service with the CIP improvements identified in Table 6-3.


For Existing plus Ambient plus Cumulative plus Project (2011) conditions, an additional traffic signal is projected to be warranted at the following study area intersection (see Appendix “C”):

Project Access #1 (NS) at:
- Avenue 58 (EW)
### Table 6-3

**Intersection Analysis for Existing Plus Ambient Plus Cumulative Plus Project (2011) Conditions**

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Traffic Control</th>
<th>Interchange Approach Lanes</th>
<th>ICU / Delay (Secs)</th>
<th>Level of Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Access #1 (NS)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 58th Ave. (EW)</td>
<td>TS</td>
<td>1 0 1 0 0 0 0 1 0 1 2 0</td>
<td>0.317 0.357</td>
<td>A A</td>
</tr>
<tr>
<td>Madison St. (NS) at:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 58th Ave. - Airport (EW)</td>
<td>TS</td>
<td>1 2 0 1 2 0 0 0 1 0 1 2 1</td>
<td>0.325 0.326</td>
<td>A A</td>
</tr>
<tr>
<td>• 58th Ave. (EW)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Without Improvements</td>
<td>AWS</td>
<td>1 2 1 1 2 0 1 1 1 1 2 1</td>
<td>22.6 28.5</td>
<td>C D</td>
</tr>
<tr>
<td>- With CIP Improvements</td>
<td>TS</td>
<td>1 2 1 1 2 0 1 1 1 1 2 1</td>
<td>0.422 0.455</td>
<td>A A</td>
</tr>
<tr>
<td>• Project Access #2</td>
<td>CSS</td>
<td>0 2 0 0 2 0 0 0 0 0 0 1</td>
<td>9.6 10.1</td>
<td>A B</td>
</tr>
<tr>
<td>• Project Access #3</td>
<td>CSS</td>
<td>0 2 0 0 2 1 0 0 1 0 0 0</td>
<td>0.8 9.5</td>
<td>A A</td>
</tr>
<tr>
<td>• 60th Ave. (EW)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Without Improvements</td>
<td>CSS</td>
<td>0 0 0 1 0 1 0.5 0.5 0 2 0</td>
<td>16.2 16.3</td>
<td>C C</td>
</tr>
<tr>
<td>- With CIP Improvements</td>
<td>TS</td>
<td>0 0 0 1 0 1 1 1 0 2 0</td>
<td>0.449 0.486</td>
<td>A A</td>
</tr>
<tr>
<td>Project Access #4 (NS)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 58th Ave. (EW)</td>
<td>CSS</td>
<td>0 0 1 0 0 0 0 2 2 0 1 0 0</td>
<td>9.1 9.0</td>
<td>A A</td>
</tr>
<tr>
<td>Project Access #5 (NS)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 58th Ave. (EW)</td>
<td>CSS</td>
<td>1 0 1 0 0 0 0 2 2 1 0 2 0</td>
<td>12.0 11.7</td>
<td>B B</td>
</tr>
<tr>
<td>Monroe St. (NS) at:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 58th Ave. (EW)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Without Improvements</td>
<td>AWS</td>
<td>0 1 0 0.5 0.5 1 0 1 0 0 1 0</td>
<td>48.7 64.3</td>
<td>E F</td>
</tr>
<tr>
<td>- With CIP Improvements</td>
<td>TS</td>
<td>1 1 0 1 1 0 1 1 1 1 1 0</td>
<td>0.558 0.544</td>
<td>A A</td>
</tr>
</tbody>
</table>

1. When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane, there must be sufficient width for right-turning vehicles to travel outside the through lanes. 

   L = Left; T = Through; R = Right; 0.5 = Shared Lane; _1_ = Improvement

2. Per City of La Quinta Engineering Bulletin, the ICU method shall be used to determine signalized intersection level of service. For unsignalized intersections, the intersection delay has been calculated using the HCM methodology. Delay and level of service calculated using the following analysis software: Traffix, Version 8.0 (2008). 

   Intersection level of service shown is based on the VIC for intersections with traffic signals. For intersections with cross street stop control, the delay and level of service for worst individual movement (or movements sharing a single lane) are shown.

3. AWS = All Way Stop
   TS = Traffic Signal
   CSS = Cross Street Stop

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EXISTING PLUS AMBIENT PLUS CUMULATIVE PLUS PROJECT SATURDAY MID-DAY PEAK HOUR INTERSECTION VOLUMES

Table 6-4 identifies the intersection potentially significant project related impact assessment based on the City of La Quinta criteria. The results of the analysis indicate a project related specific impact is not anticipated at the study area intersections with the implementation of the CIP improvements.

Existing plus Ambient plus Cumulative plus Project (2011) analysis worksheets are provided in Appendix "F".


For Existing plus Ambient plus Cumulative plus Project (2011) With 1 standard deviation traffic conditions, the following study area intersections are projected to operate at unacceptable levels of service during the peak hours without improvements:

- Madison Street (NS) at:
  - Avenue 58 (EW)

However, the intersection of Monroe Street/ Avenue 48 is anticipated to operate at an acceptable level of service with the CIP improvements identified in Table 6-5.

Existing plus Ambient plus Cumulative plus Project (2011) plus 1 standard deviation analysis worksheets are provided in Appendix "G".
<table>
<thead>
<tr>
<th>Intersection</th>
<th>Traffic Control</th>
<th>E+A+C (2011)</th>
<th>ICU Delay¹</th>
<th>Level of Service</th>
<th>ICU Delay¹</th>
<th>Level of Service</th>
<th>PM A Delay² V/C</th>
<th>PK. HR. Project Trips To</th>
<th>Significant Impact?¹</th>
<th>MID-DAY Delay¹ V/C</th>
<th>Critical Movement</th>
<th>Intersection</th>
<th>Project</th>
<th>Cumulative</th>
<th>Project</th>
<th>Cumulative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Madison St. (NS) at:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>58th Ave. - Airport (EW)</td>
<td>TS</td>
<td>0.283</td>
<td>0.273</td>
<td>A</td>
<td>0.325</td>
<td>A</td>
<td>0.042</td>
<td>N/A</td>
<td>N/A</td>
<td>0.053</td>
<td>N/A</td>
<td></td>
<td>NO</td>
<td>NO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>58th Ave. (EW)</td>
<td>TS</td>
<td>0.289</td>
<td>0.248</td>
<td>A</td>
<td>0.422</td>
<td>A</td>
<td>0.133</td>
<td>N/A</td>
<td>N/A</td>
<td>0.207</td>
<td>N/A</td>
<td></td>
<td>NO</td>
<td>NO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- With CIP improvements</td>
<td>TS</td>
<td>0.378</td>
<td>0.382</td>
<td>A</td>
<td>0.440</td>
<td>A</td>
<td>0.071</td>
<td>N/A</td>
<td>N/A</td>
<td>0.196</td>
<td>N/A</td>
<td></td>
<td>NO</td>
<td>NO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monroe St. (NS) at:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>58th Ave. (EW)</td>
<td>TS</td>
<td>0.530</td>
<td>0.492</td>
<td>A</td>
<td>0.558</td>
<td>A</td>
<td>0.022</td>
<td>N/A</td>
<td>N/A</td>
<td>0.082</td>
<td>N/A</td>
<td></td>
<td>NO</td>
<td>NO</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

¹ Per City of La Quinta Engineering Bulletin, the ICU method shall be used to determine signalized intersection level of service. The ICU and level of service calculated using the following analysis software: Traffic, Version 8.0 (2008). Intersection level of service shown is based on the V/C for intersections with traffic signals.

² For unsigned intersections, delay (in seconds) are shown.

³ TS = Traffic Signal

⁴ SIG? = Signal

⁵ A = All Way Stop

¹² For SIG F, if the project adds 10 peak hour trips to a critical movement, it is considered as a project specific impact.

A cumulative impact is assumed to occur if the project adds 25 or more peak hour trips to an intersection projected to operate at worse than LOS D at project buildout.

⁶ N/A = This intersection is operating at an acceptable Level of Service "D" or better during the peak hour for EAPC conditions. Project and/or Cumulative Impact is not anticipated at this location.
### TABLE 6-5

**INTERSECTION ANALYSIS FOR EXISTING PLUS AMBIENT PLUS CUMULATIVE PLUS PROJECT (2011) CONDITIONS**

**WORST-CASE SENSITIVITY ANALYSIS WITH 1 STANDARD DEVIATION**

<table>
<thead>
<tr>
<th>INTERSECTION</th>
<th>TRAFFIC CONTROL</th>
<th>INTERSECTION APPROACH LANES</th>
<th>ICU / DELAY²</th>
<th>LEVEL OF SERVICE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>NORTH-BOUND L T R</td>
<td>SOUTH-BOUND L T R</td>
<td>FAST-BOUND L T R</td>
</tr>
<tr>
<td>Project Access #1 (NS)</td>
<td>TS</td>
<td>1 0 1 0 0 0</td>
<td>0 1 0</td>
<td>1 2</td>
</tr>
<tr>
<td>59th Ave. (EW)</td>
<td>TS</td>
<td>1 2 1 1 2 0</td>
<td>1 1 1</td>
<td>1 2</td>
</tr>
<tr>
<td>Madison St. (NS) at:</td>
<td>MLS</td>
<td>1 2 1 1 2 0</td>
<td>1 1 1</td>
<td>1 2</td>
</tr>
<tr>
<td>59th Ave. (EW)</td>
<td>TS</td>
<td>0 2 1 0 2 0</td>
<td>0 0 0</td>
<td>0 0</td>
</tr>
<tr>
<td>- Without Improvements</td>
<td>TS</td>
<td>0 2 0 0 2</td>
<td>1</td>
<td>0 0</td>
</tr>
<tr>
<td>- With CIP Improvements</td>
<td>TS</td>
<td>0 2 0 0 2</td>
<td>1</td>
<td>0 0</td>
</tr>
<tr>
<td>Project Access #2</td>
<td>CSS</td>
<td>0 0 1 0 0 0</td>
<td>0 2</td>
<td>1</td>
</tr>
<tr>
<td>Project Access #3</td>
<td>CSS</td>
<td>0 0 0 0 0 0</td>
<td>2 1</td>
<td>0 2</td>
</tr>
<tr>
<td>Project Access #4 (NS)</td>
<td>CSS</td>
<td>0 0 1 0 0 0</td>
<td>0 2</td>
<td>1</td>
</tr>
<tr>
<td>59th Ave. (EW)</td>
<td>CSS</td>
<td>0 0 0 0 0 0</td>
<td>2 1</td>
<td>0 2</td>
</tr>
</tbody>
</table>

---

1. When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; 1 = Shared Left-Through-Right; 0.5 = Shared Lane

² = Improvement

2. Delay and level of service calculated using the following analysis software: Traffic, Version 7.9 R3 (2007). Per the 2000 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for worst individual movement (or movements sharing a single lane) are shown.

AWS = All Way Stop

TS = Traffic Signal

The City of La Quinta has established Level of Service capacities for the various types of roadway classifications. For purposes of this analysis, the Level of Service "D" capacity has been established as the acceptable capacity threshold for roadway segments. Existing plus Ambient plus Cumulative plus Project (2011) average daily traffic (ADT) is depicted previously on Exhibit 4-P. Table 6-6 shows the Existing plus Ambient plus Cumulative plus Project (2011) conditions segment analysis with appropriate levels of service. As shown on Table 6-6, with the addition of the project traffic, the study area roadway segments are anticipated to operate with acceptable levels of service of LOS “D” or better with existing lane configurations.


Table 6-7 indicates the results of the road segment project related impact assessment. Since the segments are anticipated to operate at acceptable levels of service (LOS “D” or better), a project related impact is not anticipated at the study area road segments with existing lane configurations.
## TABLE 6-6
ROADWAY SEGMENT LEVEL OF SERVICE ANALYSIS FOR EXISTING PLUS AMBIENT PLUS CUMULATIVE PLUS PROJECT (2011) TRAFFIC CONDITIONS

<table>
<thead>
<tr>
<th>ROADWAY SEGMENT</th>
<th>GENERAL PLAN ROADWAY CLASSIFICATION</th>
<th>EXISTING FUNCTIONAL CLASSIFICATION</th>
<th>LOS E CAPACITY</th>
<th>EXISTING NUMBER OF LANES</th>
<th>EACP ADT</th>
<th>VOLUME / CAPACITY</th>
<th>LOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Madison Street (NS):</td>
<td>* North of Avenue 58 Major Roadway (6C) Primary Arterial -A (4D) 38,000 4 4 15,680 0.41 A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>* South of Avenue 58 Secondary Roadway (4U) Secondary Roadway (4U) 28,000 4 4 8,329 0.30 A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avenue 58 (NS):</td>
<td>* West of Madison Street Secondary Roadway (4U) Secondary Roadway (4U) 21,000 4 3 7,740 0.37 A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>* East of Madison Street Secondary Roadway (4U) Secondary Roadway (4U) 28,000 4 4 5,425 0.19 A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 General Plan Roadway Classification based on the adopted City of La Quinta Circulation Element.

2 Some road segments are not built to their ultimate General Plan buildout classification. LOS "E" capacity is based on the current functional roadway classification that closely corresponds City of La Quinta roadway classifications.

3 Acceptable capacity ratio in the City of La Quinta is 0.90 with a corresponding LOS "D". Therefore, volume to capacity ratios greater than 0.91 (LOS "E") is considered unacceptable. Level of Service "E" capacities were derived from the Link/Volume Capacity as applied in the City of La Quinta General Plan Circulation Element (2002).

4 Average Daily Traffic (ADT) expressed in vehicles per day.

5 Level of Service:
   A = 0.00 - 0.60
   B = 0.61 - 0.70
   C = 0.71 - 0.80
   D = 0.81 - 0.90
   E = 0.91 - 1.00
   F = > 1.00

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## TABLE 6-7

**SIGNIFICANT IMPACT ROADWAY SEGMENT ASSESSMENT FOR EXISTING PLUS AMBIENT PLUS CUMULATIVE PLUS PROJECT (2011) CONDITIONS**

<table>
<thead>
<tr>
<th>INTERSECTION</th>
<th>GENERAL PLAN ROAD CLASSIFICATION</th>
<th>NUMBER OF LANES</th>
<th>LOS E CAPACITY</th>
<th>ADT</th>
<th>V/C</th>
<th>LOS</th>
<th>ADT</th>
<th>Δ V/C</th>
<th>Δ IMPACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Madison Street (NS);</td>
<td>* North of Avenue 58</td>
<td>4</td>
<td>38,000</td>
<td>10,499</td>
<td>0.28</td>
<td>A</td>
<td>5,181</td>
<td>15,660</td>
<td>0.41</td>
</tr>
<tr>
<td>* South of Avenue 58</td>
<td>Secondary Roadway (4U)</td>
<td>4</td>
<td>28,000</td>
<td>5,775</td>
<td>0.24</td>
<td>A</td>
<td>1,554</td>
<td>5,329</td>
<td>0.30</td>
</tr>
<tr>
<td>Avenue 58 (NS);</td>
<td>* West of Madison Street</td>
<td>3</td>
<td>21,000</td>
<td>3,652</td>
<td>0.17</td>
<td>A</td>
<td>4,078</td>
<td>7,740</td>
<td>0.37</td>
</tr>
<tr>
<td>* East of Madison Street</td>
<td>Secondary Roadway (4U)</td>
<td>4</td>
<td>28,000</td>
<td>3,533</td>
<td>0.12</td>
<td>A</td>
<td>2,072</td>
<td>5,425</td>
<td>0.19</td>
</tr>
</tbody>
</table>

1 General Plan Roadway Classification based on the adopted City of La Quinta Circulation Element.

2 Acceptable capacity ratio in the City of La Quinta is 0.90 with a corresponding LOS "D". Therefore, volume to capacity ratios greater than or equal to 0.91 (LOS"E") is considered unacceptable. Level of Service "E" capacities were derived from the Link/Volume Capacity as applied in the City of La Quinta General Plan Circulation Element (2002).

3 Average Daily Traffic (ADT) expressed in vehicles per day.

4 Acceptable capacity ratio in the City of La Quinta is 0.90 with a corresponding LOS "D". Therefore, capacity ratios greater than 0.91 (LOS"E") is considered unacceptable. Level of Service "E" capacities were derived from the Link/Volume Capacity/Level of Service for Riverside County Roadways.

5 Level of Service:
   - A = 0.00 - 0.60
   - B = 0.61 - 0.70
   - C = 0.71 - 0.80
   - D = 0.81 - 0.90
   - E = 0.91 - 1.00
   - F = > 1.00

6 Per City of La Quinta Engineering Bulletin #06-13, a potentially significant project specific traffic impact is defined to occur on any road segment if the project would cause the existing LOS to fall to worse than LOS D at project buildout. In addition, a potentially significant project specific traffic impact is also defined to occur on any road segment operating at LOS E or LOS F, if the V/C ratio is increased by 0.02, it is assumed that CIP improvements are already in place.

T:\Cabin\055001_06597\Excel\06597-01 Report Tables.xls|T 6-7
7.0 GENERAL PLAN BUILDOUT TRAFFIC ANALYSIS

This section discusses the results of the General Plan Buildout without and with Project long range analysis. Intersection and road segment analyses were conducted for with and without the proposed project scenarios with full General Plan Buildout lane configurations.

A. General Plan Buildout Traffic Conditions

General Plan without project traffic conditions were derived from the Coachella Valley Subarea Applications Traffic Model (CVSATM) currently being used for long range planning in the Coachella Valley area. This model has been refined to include updates to land use and network changes. General Plan Buildout forecasts have been developed from the traffic model using accepted procedures for model forecast refinement and smoothing. The traffic forecasts reflect the area-wide growth anticipated between now and General Plan Buildout. Where necessary, the initial raw model estimates were adjusted to achieve flow conservation, reasonable growth, and reasonable diversion between parallel routes. For General Plan Without Project Conditions weekday ADT volumes are shown on Exhibit 7-A.

For General Plan Buildout with Project conditions, project traffic is added to the General Plan Buildout volumes. Exhibit 7-B illustrates the weekday ADT volumes for General Plan Buildout with Project conditions.

B. Level of Service for General Plan Buildout Without Project Conditions

1. Intersection Analysis for General Plan Buildout Without Project Conditions

General Plan Buildout Without Project intersection levels of service for the existing network are shown in Table 7-1. Table 7-1 shows ICU/HCM calculations based on the ultimate General Plan Buildout lane configuration at the study area intersections. General Plan Buildout Without Project weekday PM and Saturday mid-day peak hour intersection turning movement volumes are shown on Exhibits 7-C and 7-D, respectively.
GENERAL PLAN BUILDOUT WITHOUT PROJECT
WEEKDAY AVERAGE DAILY TRAFFIC (ADT)

LEGEND:
10.0 = VEHICLES PER DAY (1000’S)
### TABLE 7-1
INTERSECTION ANALYSIS FOR GENERAL PLAN BUILDOUT WITHOUT PROJECT CONDITIONS

<table>
<thead>
<tr>
<th>INTERSECTION</th>
<th>TRAFFIC CONTROL&lt;sup&gt;3&lt;/sup&gt;</th>
<th>INTERSECTION APPROACH LANES&lt;sup&gt;1&lt;/sup&gt;</th>
<th>ICU / DELAY&lt;sup&gt;2&lt;/sup&gt; (SECS.)</th>
<th>LEVEL OF SERVICE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>L</td>
<td>T</td>
<td>R</td>
<td>L</td>
</tr>
<tr>
<td>Madison St. (NS) at:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 56th Ave. – Airport (EW)</td>
<td>TS</td>
<td>1</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>• 59th Ave. (EW)</td>
<td>TS</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>• 60th Ave. (EW)</td>
<td>TS</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Monroe St. (NS) at:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 58th Ave. (EW)</td>
<td>TS</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

---

<sup>1</sup> When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; T> = Right Turn Overlap; 1 = General Plan Buildout Lane Geometry

<sup>2</sup> Per City of La Quinta Engineering Bulletin, the ICU method shall be used to determine signalized intersection level of service. For un signalized intersections, the intersection delay has been calculated using the HCM methodology.

Delay and level of service calculated using the following analysis software: Traffic, Version 6.0 (2008).

Intersection level of service shown is based on the V/C for intersections with traffic signals. For intersections with cross street stop control, the delay and level of service for worst individual movement (or movements sharing a single lane) are shown.

<sup>3</sup> TS = Traffic Signal
For General Plan Buildout Without Project traffic conditions, the study area intersections are projected to operate at acceptable levels of service during the peak hours with improvements that do not exceed General Plan Buildout lane configurations.

General Plan Buildout Without Project worksheets are provided in Appendix "H"

2. Road Segment Analysis for General Plan Buildout Without Project Conditions

The City of La Quinta has established Level of Service capacities for the various types of roadway classifications. For purposes of this analysis, the Level of Service "D" capacity has been established as the acceptable capacity threshold for roadway segments. The capacity utilized for this analysis is 1600 vehicles per lane, per hour. For General Plan Buildout conditions, peak hour road segment volumes at the peak direction are utilized to calculate the volume to capacity ratios. Table 7-2 shows the General Plan Without Project segment analysis with appropriate levels of service.

As shown on Table 7-2, the study area roadway segments are anticipated to operate with acceptable levels of service of LOS "D" or better during the peak hours with General Plan Buildout lane configurations.

C. Level of Service for General Plan Buildout With Project Conditions

1. Intersection Analysis for General Plan Buildout With Project Conditions

General Plan Buildout With Project intersection levels of service are shown in Table 7-3. Table 7-3 shows ICU/HCM calculations based on the ultimate General Plan Buildout lane configuration at the study area intersections. General Plan Buildout With Project weekday PM and Saturday mid-day peak hour intersection turning movement volumes are shown on Exhibits 7-E and 7-F, respectively.

For General Plan Buildout With Project traffic conditions, the study area
TABLE 7-2  
ROADWAY SEGMENT LEVEL OF SERVICE ANALYSIS FOR  
GENERAL PLAN BUILDOUT WITHOUT PROJECT TRAFFIC CONDITIONS 1

<table>
<thead>
<tr>
<th>ROAD SEGMENT</th>
<th>GENERAL PLAN ROADWAY CLASSIFICATION 2</th>
<th>NUMBER OF LANES</th>
<th>LOS E CAPACITY 2</th>
<th>PEAK HOUR SEGMENT VOLUMES</th>
<th>VOLUME TO CAPACITY 4</th>
<th>LOS 5 PM</th>
<th>MID-DAY</th>
<th>PM</th>
<th>MID-DAY</th>
<th>PM</th>
<th>MID-DAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Madison Street (NS):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* North of Avenue 58</td>
<td>Major Roadway (6D)</td>
<td>6</td>
<td>9,000</td>
<td>2,830</td>
<td>2,128</td>
<td>0.29</td>
<td>0.22</td>
<td>A</td>
<td>A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>* South of Avenue 58</td>
<td>Secondary Roadway (4U)</td>
<td>4</td>
<td>6,400</td>
<td>1,404</td>
<td>1,260</td>
<td>0.22</td>
<td>0.22</td>
<td>A</td>
<td>A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avenue 58 (NS):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* West of Madison Street</td>
<td>Secondary Roadway (4U)</td>
<td>4</td>
<td>6,400</td>
<td>671</td>
<td>485</td>
<td>0.10</td>
<td>0.07</td>
<td>A</td>
<td>A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>* East of Madison Street</td>
<td>Secondary Roadway (4U)</td>
<td>4</td>
<td>6,400</td>
<td>732</td>
<td>452</td>
<td>0.11</td>
<td>0.07</td>
<td>A</td>
<td>A</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 Per City of La Quinta’s Engineering Bulletin, impact criteria for General Plan Buildout Conditions will utilize peak hour segment volumes in the peak direction.

2 General Plan Roadway Classification based on the adopted City of La Quinta Circulation Element.

3 Peak hour road segment capacity based on 1600 vehicles per hour per lane

4 Acceptable capacity ratio in the City of La Quinta is 0.90 with a corresponding LOS "D". Therefore, volume to capacity ratios greater than or equal to 0.91 (LOS"E") is considered unacceptable.

5 Level of Service:
   A = 0.00 - 0.69
   B = 0.61 - 0.70
   C = 0.71 - 0.80
   D = 0.81 - 0.90
   E = 0.91 - 1.00
   F = > 1.00

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7-8
# TABLE 7-3

INTERSECTION ANALYSIS FOR GENERAL PLAN BUILDOUT WITH PROJECT CONDITIONS

<table>
<thead>
<tr>
<th>INTERSECTION</th>
<th>TRAFFIC CONTROL(^3)</th>
<th>INTERSECTION APPROACH LANES(^1)</th>
<th>ICU / DELAY(^2) (SECS.)</th>
<th>LEVEL OF SERVICE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>L</td>
<td>T</td>
<td>R</td>
<td>L</td>
</tr>
<tr>
<td>Project Access #1 (NS)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 58th Ave. (EW)</td>
<td>TS</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Madison St. (NS) at:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 58th Ave. - Airport (EW)</td>
<td>TS</td>
<td>1</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>• 58th Ave. (EW)</td>
<td>TS</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>• Project Access #2 (EW)</td>
<td>CSS</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>• Project Access #3 (EW)</td>
<td>CSS</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>• 60th Ave. (EW)</td>
<td>TS</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Project Access #4 (NS)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 58th Ave. (EW)</td>
<td>CSS</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Project Access #6 (NS)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 58th Ave. (EW)</td>
<td>CSS</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Monroe St. (NS) at:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 58th Ave. (EW)</td>
<td>TS</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

---

1. When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

\[ L = \text{Left}; \ T = \text{Through}; \ R = \text{Right}; \ 1> = \text{Right Turn Overlap}; \]

\[ 1 = \text{General Plan Buildout Lane Geometry} \]

2. Per City of La Quinta Engineering Bulletin, the ICU method shall be used to determine signalized intersection level of service. For unsignalized intersections, the intersection delay has been calculated using the HCM methodology. Delay and level of service calculated using the following analysis software: Traffix, Version 8.0 (2008). Intersection level of service shown is based on the VC for intersections with traffic signals. For intersections with cross street stop control, the delay and level of service for worst individual movement (or movements sharing a single lane) are shown.

3. TS = Traffic Signal

CSS = Cross Street Stop

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7-9
GENERAL PLAN BUILDOUT WITH PROJECT WEEKDAY PM PEAK HOUR INTERSECTION VOLUMES
The intersections are projected to operate at acceptable levels of service during the peak hours with full General Plan Buildout lane configurations.

General Plan Buildout With Project worksheets are provided in Appendix "I".

2. Road Segment Analysis for General Plan Buildout With Project Conditions

The City of La Quinta has established Level of Service capacities for the various types of roadway classifications. For purposes of this analysis, the Level of Service “D” capacity has been established as the acceptable capacity threshold for roadway segments. The capacity utilized for this analysis is 1600 vehicles per lane, per hour. For General Plan Buildout conditions, peak hour road segment volumes at the peak direction are utilized to calculate the volume to capacity ratios. Table 7-4 shows the General Plan With Project segment analysis with appropriate levels of service.

As shown on Table 7-4, the study area roadway segments are anticipated to operate with acceptable levels of service of LOS “D” or better during the peak hours with General Plan Buildout lane configurations. Since the study area road segments are operating at acceptable levels of service, a cumulative impact assessment for the study area segments is not necessary.
### TABLE 7-4

ROADWAY SEGMENT LEVEL OF SERVICE ANALYSIS FOR GENERAL PLAN BUI DLOUT WITH PROJECT TRAFFIC CONDITIONS

<table>
<thead>
<tr>
<th>ROAD SEGMENT</th>
<th>GENERAL PLAN ROADWAY CLASSIFICATION</th>
<th>NUMBER OF LINES</th>
<th>LOS E CAPACITY</th>
<th>PEAK HOUR SEGMENT VOLUMES</th>
<th>VOLUME TO CAPACITY</th>
<th>LOS ³</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>PM</td>
<td>MID-DAY</td>
<td>PM</td>
<td>MID-DAY</td>
</tr>
<tr>
<td>Madison Street (NS):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>North of Avenue 56</td>
<td>Major Roadway (6D)</td>
<td>6</td>
<td>9,800</td>
<td></td>
<td>2,209</td>
<td>0.30</td>
</tr>
<tr>
<td>South of Avenue 56</td>
<td>Secondary Roadway (4U)</td>
<td>4</td>
<td>6,400</td>
<td></td>
<td>1,484</td>
<td>0.23</td>
</tr>
<tr>
<td>Avenue 56 (NS):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>West of Madison Street</td>
<td>Secondary Roadway (4U)</td>
<td>4</td>
<td>6,400</td>
<td></td>
<td>807</td>
<td>0.13</td>
</tr>
<tr>
<td>East of Madison Street</td>
<td>Secondary Roadway (4U)</td>
<td>4</td>
<td>6,400</td>
<td></td>
<td>1,838</td>
<td>0.29</td>
</tr>
</tbody>
</table>

¹ Per City of La Quinta’s Engineering Bulletin, impact criteria for General Plan Buildout Conditions will utilize peak hour segment volumes in the peak direction.

² General Plan Roadway Classification based on the adopted City of La Quinta Circulation Element.

³ Peak hour road segment capacity based on 1600 vehicles per hour per lane.

⁴ Acceptable capacity ratio in the City of La Quinta is 0.90 with a corresponding LOS "D". Therefore, volume to capacity ratios greater than or equal to 0.91 (LOS "E") is considered unacceptable.

⁵ Level of Service:
- A = 0.00 - 0.60
- B = 0.61 - 0.70
- C = 0.71 - 0.80
- D = 0.81 - 0.90
- E = 0.91 - 1.00
- F = > 1.00

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8.0 CONCLUSIONS AND RECOMMENDATIONS

A. Project Access

The project will have five (5) access points to Madison Avenue and Avenue 58. At the western portion of the project, one full access point is proposed along Avenue 58 (Project Access #1) and one right-in/right-out access along Madison Street (Project Access #3). The eastern portion of the project is proposing one full access (Project Access #5) and one right-in/right-out access (Project Access #4) along Avenue 58 and one right-in/right-out access (Project Access #2) along Madison Street.

B. Traffic Impacts

The Shops at Coral Mountain project is proposing to construct approximately 105,071 square feet of retail/commercial space. The project site consists of a western and eastern portion at either side of Madison Street. The Western portion of the site consists of 68,200 square feet of retail/commercial and the eastern portion of the site consists of approximately 36,871 square feet of retail/commercial. It is estimated that the project will be completed by 2011.

At project buildout (2011), the Shops at Coral Mountain project is anticipated to generate approximately 10,360 trip-ends per day with 690 vehicles per hour during the PM peak hour and 957 vehicles per hour during Saturday Mid-day.

For Existing plus Ambient plus Cumulative plus (2011) conditions, a traffic signal is projected to be warranted at the following study area intersections (see Appendix “C”):

- Madison Street (NS) at:
  - Avenue 58 (EW)

- Madison Street (NS) at:
  - Avenue 60 (EW)
Monroe Street (NS) at:
  • Avenue 58 (EW)

The installation of traffic signals for the abovementioned intersections are currently included in the City of La Quinta’s *Capital Improvement Plan Fiscal Year 2008/2009 Through 2012/2013* (April 2008) report. The developer needs to contribute its fair share towards the cost of the traffic signal installation at the abovementioned intersections. The fair share calculations are summarized in Table 8-1. The fair share percent contribution of the project to the intersection of Madison Street/Avenue 58 is 51.9%. For the intersection of Madison Street/Avenue 60, the project’s fair share contribution is 31.6%. At the intersection of Monroe Street/Avenue 58, the project’s fair share contribution is 7.9%.

For Existing plus Ambient plus Cumulative plus Project (2011) conditions, an additional traffic signal is projected to be warranted at the following study area intersection (see Appendix “C”):

Project Access #1 (NS) at:
  • Avenue 58 (EW)

C. *Deceleration Lane Guidance*

The City of La Quinta requires auxiliary lanes on all primary and secondary arterials and higher order street classifications. For a right-turn lane at project access points, the criteria outlined by the City of La Quinta requires a projected peak hour ingress turning volume estimated to be 50 vehicles per hour or greater. A right turn deceleration lane with taper and storage is required if this criterion is met. Deceleration lane length and transition lane length for the access driveways requiring a right turn lane was derived from the City of La Quinta’s Engineering Bulletin #06-13 based on the 50 mile per hour posted speed limit. The projected right-turn ingress traffic volumes (EACP conditions) at Project Access #1/ Avenue 58 and Project Access#2/ Madison Street are anticipated to be less than the City’s right-turn inbound traffic volume threshold. Hence, right-turn lanes are not required at these locations. However, the estimated inbound (EACP) project traffic at Project Access #3/ Madison Street, Project Access #4/ Avenue 58, and Project Access #5/ Avenue 58 requires right-turn lanes with taper and storage. However, storage distance is not required at intersections satisfying the City of La Quinta’s right-turn volume requirements due to minimal vehicular
### TABLE 8-1

**PROJECT FAIR SHARE PERCENTAGE SUMMARY**

**PROJECT FAIR SHARE AT PROJECT 2011**

<table>
<thead>
<tr>
<th>INTERSECTION</th>
<th>EXISTING PEAK HOUR TRAFFIC</th>
<th>E+A+C+P (2011) PEAK HOUR TRAFFIC</th>
<th>TOTAL NEW PEAK HOUR TRAFFIC</th>
<th>PROJECT PEAK HOUR TRAFFIC</th>
<th>PROJECT FAIR SHARE PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Madison St./ Avenue 58</td>
<td>549 Weekday PM 398 Saturday MID-DAY</td>
<td>1,713 Weekday PM 1,792 Saturday MID-DAY</td>
<td>1,164 Weekday PM 1,394 Saturday MID-DAY</td>
<td>521 Weekday PM 723 Saturday MID-DAY</td>
<td>44.8% 51.9%</td>
</tr>
<tr>
<td>Madison St./ Avenue 60</td>
<td>289 Weekday PM 234 Saturday MID-DAY</td>
<td>674 Weekday PM 690 Saturday MID-DAY</td>
<td>385 Weekday PM 456 Saturday MID-DAY</td>
<td>104 Weekday PM 144 Saturday MID-DAY</td>
<td>27.0% 31.6%</td>
</tr>
<tr>
<td>Monroe St./ Avenue 58</td>
<td>341 Weekday PM 182 Saturday MID-DAY</td>
<td>1,490 Weekday PM 1,397 Saturday MID-DAY</td>
<td>1,149 Weekday PM 1,215 Saturday MID-DAY</td>
<td>70 Weekday PM 96 Saturday MID-DAY</td>
<td>6.1% 7.9%</td>
</tr>
</tbody>
</table>

* The payment of the fair share percentages is based on the specified improvement being adopted in to the City's CIP. Otherwise, the project will be fully responsible for the improvement.
conflict for right-turn ingress movements. Table 8-2 summarizes the required right-turn lane requirements at the project access points.

In addition to right-turn auxiliary lanes, the City of La Quinta requires a left turn deceleration lane with taper and storage for any driveway with a projected peak hour ingress turning volumes of 25 vehicles per hour or greater. For left turn bays at the project site, the City of La Quinta requires the ITE method in determining single-lane left turn queue storage length at signalized intersections. Exhibit 8-A illustrates the nomograph utilized to calculate the storage length required for the westbound left turn bay at Project Access #1/ Avenue 58. The storage length has been calculated based on the following assumptions:

- 100 second cycle length
- 20 percent truck/ bus mix
- 50 mph speed limit
- 104 Saturday mid-day peak hour left turn volume

The minimum storage length indicated in Exhibit 8-A is 150 feet for Project Access #1/ Avenue 58. For unsignalized intersections (Project Access #5/ Avenue 58), left turn storage is calculated based on the nomograph illustrated in Exhibit 8-B. The results of the analysis indicate a 50 foot storage length is anticipated to accommodate westbound ingress traffic at intersection of Project Access #5/ Avenue 58. However, the City of La Quinta requires a minimum of 100 feet of storage plus taper length. Table 8-3 summarizes the City of La Quinta left turn deceleration length requirements.

D. Recommended Improvements for Existing Plus Ambient Plus Cumulative Plus Project (2011) Conditions

Based on the results of the analysis in Section 6.0, the improvements identified in Exhibit 8-C are recommended to mitigate project-related improvements for Existing plus Ambient plus Cumulative plus Project (2011). The project should contribute towards the City of La Quinta’s Development Impact Fee program.
### TABLE 8-2

**RIGHT TURN LENGTHS AT PROJECT ACCESS FOR ROADWAYS ADJACENT TO THE SITE**

<table>
<thead>
<tr>
<th>INTERSECTION</th>
<th>E+A+C+P (2011) PEAK HOUR TURNING VOLUME</th>
<th>AUXILIARY LANE</th>
<th>POSTED SPEED LIMIT (MPH)</th>
<th>TRANSITION</th>
<th>BAY LENGTH (FEET)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PM</td>
<td>MID-DAY</td>
<td>DECELERATION</td>
<td>STORAGE</td>
<td>TOTAL</td>
</tr>
<tr>
<td>Project Access #1 (NS) at:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avenue 58 - Eastbound</td>
<td>30</td>
<td>45</td>
<td>NO</td>
<td>50</td>
<td>0</td>
</tr>
<tr>
<td>Madison Street (NS) at:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project Access #2 (EW) - Northbound</td>
<td>20</td>
<td>30</td>
<td>NO</td>
<td>50</td>
<td>0</td>
</tr>
<tr>
<td>Project Access #3 (EW) - Southbound</td>
<td>99</td>
<td>149</td>
<td>YES</td>
<td>50</td>
<td>150</td>
</tr>
<tr>
<td>Project Access #4 (NS) at:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avenue 58 (EW) - Eastbound</td>
<td>53</td>
<td>80</td>
<td>YES</td>
<td>50</td>
<td>150</td>
</tr>
<tr>
<td>Project Access #5 (NS) at:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avenue 58 (EW) - Eastbound</td>
<td>33</td>
<td>50</td>
<td>YES</td>
<td>50</td>
<td>150</td>
</tr>
</tbody>
</table>

---

1 Right Turn Transition length derived from City of La Quinta Engineering Bulletin #06-13, June 2008

2 Right Turn Deceleration length derived from City of La Quinta Engineering Bulletin #06-13, June 2008

3 Per City of La Quinta Traffic Guidelines, a right turn deceleration lane is not required for any driveways with less than 50 peak hour ingress turning volume.

4 Exclusive right-turn lane is not required

5 Storage length is not required due to the minimal vehicular conflict to the right turn movement.
SINGLE-LANE LEFT-TURN STORAGE
AT SIGNALIZED INTERSECTION

Desirable: 95% probability of storing all left-turn vehicles
Minimum: 85% probability

SOURCE: ITE, "Transportation and Land Development" (Second Edition) 2002, Fig 5-24, p.5-51
LEFT-TURN STORAGE AT NONSIGNALIZED INTERSECTIONS

Grade, unsignalized intersections
\( S \) = Storage length required

\( V_L \) = Opposing volume (vph)
\( V_T \) = Left Turning volume (vph)

SOURCE: M.D. Harmerlink, "Volume Warrants for Left-Turn Storage Lanes at Unsignalized Grade Intersection," Highway Research Record 211, 1967
TABLE 8-3
LEFT TURN LENGTHS AT PROJECT ACCESS FOR ROADWAYS ADJACENT TO THE SITE

<table>
<thead>
<tr>
<th>INTERSECTION</th>
<th>E+A+C+P (2011) PEAK HOUR TURNING VOLUME</th>
<th>AUXILIARY LANE</th>
<th>POSTED SPEED LIMIT (MPH)</th>
<th>BAY LENGTH (FEET)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PM</td>
<td>MID-DAY</td>
<td></td>
<td>DECELERATION</td>
</tr>
<tr>
<td>Project Access #1 (NS) at:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Avenue 58</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Westbound</td>
<td>69</td>
<td>104</td>
<td>YES</td>
<td>50</td>
</tr>
<tr>
<td>Project Access #5 (NS) at:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Avenue 58 (EW)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Westbound</td>
<td>27</td>
<td>40</td>
<td>YES</td>
<td>50</td>
</tr>
</tbody>
</table>

1 Deceleration length derived from City of La Quinta Engineering Bulletin #06-13, June 2008

2 Storage length for signalized intersection is based on the Nomograph in Exhibit 8-A. For unsignalized intersections, storage length is calculated based on the nomograph illustrated in Exhibit 8-B. Per City of La Quinta’s guidelines, a minimum 100 feet of storage length is required.

3 Based on the City of La Quinta Engineering Bulletin, a left-turn deceleration lane with taper and storage is not required for left turn ingress turning volumes estimated to be less than 25 vehicles per hour.
RECOMMENDED IMPROVEMENTS FOR EXISTING PLUS AMBIENT PLUS CUMULATIVE PLUS PROJECT (2011) CONDITIONS

LEGEND:

- **C** = TRAFFIC SIGNAL WARRANTED FOR EAC (2011) (CIP) CONDITIONS
- **P** = TRAFFIC SIGNAL WARRANTED FOR EACP (2011) CONDITIONS
- **D** = STOP SIGN
- **E** = EXISTING LANE
- **J** = PROJECT RELATED IMPROVEMENT
- **F** = CAPITAL IMPROVEMENT PLAN (CIP)
- **250'** = TURN POCKET LENGTH
E. General Plan Buildout Conditions

The results of the General Plan Buildout analysis are presented in Section 7.0. Based on the results of the analyses for “with” and “without” improvements, the study area intersections and road segments are anticipated to operate at an acceptable level during the peak hours with General Plan Buildout lane configurations illustrated in Exhibit 8-D.

F. On-Site Circulation Recommendations

The project is responsible for the construction of site-specific improvements. These improvements are provided below. Site-specific circulation and access recommendations are depicted on Exhibit 8-E and described below:

- Provide a minimum 250-foot westbound left turn pocket at Project Access#1/ Avenue 58.
- Provide a minimum 250-foot westbound left turn pocket at Project Access#5/ Avenue 58.
- Provide a minimum 250-foot southbound right turn pocket at Project Access#3/ Madison Street.
- Provide a minimum 250-foot eastbound right turn pocket at Project Access#4/ Avenue 58.
- Provide a minimum 250-foot eastbound right turn pocket at Project Access#5/ Avenue 58.
- Construct Madison Street at its ultimate full-section width as a Secondary Roadway from Avenue 58 to the southerly project boundary in conjunction with development.
- Construct Madison Street at its ultimate half-section width as a Secondary
CONSTRUCT A TRAFFIC SIGNAL AT THE INTERSECTION OF PROJECT ACCESS 1 AND AVENUE 58 FOR E=A+C+P (2011) CONDITION WHEN WARRANTED.

CONSTRUCT AVENUE 58 AT ITS ULTIMATE HALF-SECTION AS A SECONDARY ROADWAY FROM THE WESTERN PROJECT BOUNDARY TO MADISON STREET IN CONJUNCTION WITH DEVELOPMENT.

CONSTRUCT AVENUE 58 AT ITS ULTIMATE HALF-SECTION AS A SECONDARY ROADWAY FROM MADISON STREET TO THE EASTERN PROJECT BOUNDARY IN CONJUNCTION WITH DEVELOPMENT.

CONSTRUCT MADISON STREET AT ITS ULTIMATE FULL-SECTION AS A SECONDARY ROADWAY FROM AVENUE 58 TO THE SOUTHERLY PROJECT BOUNDARY (EASTERN PORTION OF THE PROJECT) IN CONJUNCTION WITH DEVELOPMENT.

ON-SITE TRAFFIC SIGNING AND STRIPING SHOULD BE IMPLEMENTED IN CONJUNCTION WITH DETAILED CONSTRUCTION PLANS FOR THE PROJECT SITE.

SIGHT DISTANCE AT THE PROJECT ACCESS SHOULD BE REVIEWED WITH RESPECT TO CALTRANS STANDARDS AND THE CITY OF LA QUINTA SIGHT DISTANCE STANDARDS AT THE TIME OF PREPARATION OF FINAL GRADING, LANDSCAPING, AND STREET IMPROVEMENTS PLANS.

CONSTRUCT MADISON STREET AT ITS ULTIMATE HALF-SECTION AS A SECONDARY ROADWAY FROM SOUTH OF PROJECT ACCESS 3 TO THE SOUTHERLY PROJECT BOUNDARY (WESTERN PORTION OF THE PROJECT) IN CONJUNCTION WITH DEVELOPMENT.

LEGEND:
- = TRAFFIC SIGNAL
- = STOP SIGN
250' = TURN POCKET LENGTH

La Quinta Shops at Coral Mountain Traffic Study
City of La Quinta, CA (JN - 06597:100)
Roadway from south of Project Access #3 to the southern project boundary (western portion of the project) in conjunction with development.

- Construct Avenue 58 at its ultimate half-section width as a Secondary Roadway from the westerly project boundary to the easterly project boundary in conjunction with development.

- On-site signing and striping should be implemented in conjunction with detailed construction plans for the project site.

- Provide stop sign control at the project access points that do not meet the minimum warrants for a traffic signal.

- Construct a traffic signal at the intersection of Project Access #1/ Avenue 58 for E+A+C+P (2011) conditions when warranted.

Sight distance at the project entrance should be reviewed with respect to standard City of La Quinta sight distance standards at the time of preparation of final grading, landscape and street improvement plans.

Traffic signing and striping should be implemented in conjunction with detailed construction plans for the project site.

The project should contribute towards a citywide roadway and traffic signal improvement program through payment of infrastructure development fees to the City of La Quinta.