Endo Engineering *Traffic Engineering* *Air Quality Studies* *Noise Assessments*

February 10, 1999

Mr. Ric Stephens
The AEI•CASC Companies
937 South Via Lata, Suite 500
Colton, CA 92324

SUBJECT: Coral Mountain Specific Plan No. 218
Amendment No. 1 - Traffic Impact Study

Dear Mr. Stephens;

Endo Engineering is pleased to submit this analysis of the circulation impacts associated with the Coral Mountain Specific Plan No. 218, Amendment No. 1 in unincorporated Riverside County, south and east of the City of La Quinta. Coral Mountain Specific Plan is located on either side of Madison Street and Monroe Street, between Avenue 58 (to the north) and Avenue 62 (to the south). The proposed Coral Mountain Specific Plan includes a maximum development of 3,500 dwelling units and 9.2 acres of commercial uses. It also includes 6.8 acres of community facilities, 41 acres of parks and trails, two championship golf courses with clubhouses and maintenance facilities and a 10-acre school. The golf courses will include recreational amenities such as swimming pools, tennis courts and exercise facilities in a "country club" atmosphere. The previously approved Specific Plan 218 (previously named Rancho La Quinta Specific Plan) included the development of 4,262 homes, 35 acres of commercial uses, and 2 golf courses on-site

The study follows the format and methodology specified by Riverside County in their November 1991 *Traffic Impact Study Report Preparation Guide*. It details in graphic and narrative form: (1) existing circulation conditions; (2) conditions with and without the project in the year 2004; (3) conditions with and without the project in the year 2010; and (4) recommended mitigation measures. We trust that the information provided herein will be of value to Riverside County staff in their review of the impacts and conditions of approval associated with the project. Should questions or comments develop regarding the findings and recommendations within this report, please do not hesitate to contact our offices at (949) 362-0020.

Cordially,

ENDO ENGINEERING

Vicki Lee Endo
Registered Professional
Traffic Engineer TR 1161

28811 Woodcock Drive, Laguna Niguel, CA 92677-1330
(949) 362-0020 FAX: (949) 362-0015

TRAFFIC IMPACT STUDY

CORAL MOUNTAIN AT LA QUINTA
SPECIFIC PLAN NO. 218
AMENDMENT NO. 1

NORTH OF AVENUE 62 AND SOUTH OF AVENUE 58
ON EITHER SIDE OF MADISON ST. AND MONROE ST.

RIVERSIDE COUNTY

February 10, 1999

Prepared For:

AEI CASC COMPANIES
937 South Via Lata, Suite 500
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I. INTRODUCTION AND SUMMARY

I. A PURPOSE AND OBJECTIVES

The purpose of this report is to provide in graphic and narrative form: (1) existing roadway and traffic conditions; (2) probable traffic changes related to the proposed project; and (3) mitigation measures required to meet County minimum level of service requirements and traffic engineering design standards.

The scope of the study complies with Riverside County specifications as set forth in the November 1991 *Traffic Impact Study Report Preparation Guide* developed by the Transportation Planning and Development Review Division. The analysis herein employs the 1994 update to the *Highway Capacity Manual* (HCM) to analyze levels of service via the Highway Capacity Software (HCS) package prepared under FHWA sponsorship and maintained by the McTrans Center at the University of Florida Transportation Research Center.

I. B EXECUTIVE SUMMARY

Site Location and Study Area

The project site is located on either side of Madison Street and Monroe Street, between Avenue 58 (to the north) and Avenue 62 (to the south), within unincorporated Riverside County. Twenty-one key intersections were analyzed including:

Jefferson Street @
- Avenue 50
- Avenue 52
- Avenue 54

Madison Street @
- Avenue 50
- Avenue 52
- Avenue 54
- Airport Boulevard
- Avenue 58
- Resort Village Access
- Avenue 60

Monroe Street @
- Avenue 50
- Avenue 52
- Avenue 54
- Airport Boulevard
- Avenue 58
- Avenue 60
- N. Primary Housing Access
- S. Primary Housing Access
- Active Adult Village Access
- Avenue 62

Active Adult Village Access
- Avenue 60

Development Description

The proposed project is the Coral Mountain Specific Plan 218 Amendment No. 1, an amendment to the Rancho La Quinta Specific Plan 218 approved in 1988 (see Figure II-2). It includes a maximum development of 3,500 dwelling units and 9.2 acres of commercial uses. It also includes 6.8 acres of community facilities, 41 acres of parks and trails, two championship golf courses with clubhouses and maintenance facilities and a 10-acre school. The previously approved Specific Plan 218 included the development of 4,262 homes, 35 acres of commercial uses, and 2 golf courses on-site.

Principal Findings

The Riverside County Comprehensive General Plan circulation policies require a minimum Level of Service "C", except that a Level of Service "D" could be allowed with Board of Supervisors' approval in urban areas only at intersections of any combination of major street, arterials, expressways, or conventional State Highways within one mile of a freeway interchange and also at freeway ramp intersections. Level of Service "D" would only be allowed in those instances where mitigation to Level of Service "C" is deemed impractical.

Existing Conditions

Thirteen of the fourteen unsignalized key intersections are currently operating at level of service (LOS) C or better during both morning and evening peak hours. The intersection of Jefferson Street and Avenue 50 provides LOS F operation during the morning peak hour and LOS C during the evening peak hour. This intersection appears to currently warrant signalization. Once a traffic signal is installed, the peak hour LOS will be acceptable at this intersection.

Year 2004 Conditions

All of the key intersections will provide acceptable levels of service (LOS C or better) in the year 2004 with or without site traffic. The peak hour level of service will drop at six of the key intersections, once site traffic is added to the street system.

Year 2010 Conditions

All of the key intersections will provide acceptable levels of service (LOS C or better) in the year 2010 with or without site traffic. The peak hour level of service will drop at six of the key intersections, once site traffic is added to the street system.

Conclusions

All of the key intersections currently operate at acceptable levels of service (except the intersection of Jefferson Street @ Avenue 50). With development of the initial phase of the proposed project and 45 percent of the cumulative projects, ten key intersections in the project vicinity would require signalization by the year 2004. Upon project build-out (year 2010), eighteen of the twenty-one key intersections will require signalization, as shown in Table VI-1.

As shown in Figure VI-2, almost all of the roadways in the study area (except in the vicinity of Jefferson Street near Avenue 50 and Avenue 52) will provide adequate levels of service as two-lane facilities. Upon project buildout, Madison Street will need to be extended as a four-lane facility through the study area. Monroe Street will require widening to a 4-lane facility from a point south of Avenue 54 to a point north of Avenue 50 to provide adequate levels of service in the year 2010. In addition, Avenue 50, Avenue 52, and Avenue 54 will require improvements to their master planned cross-sections in the vicinity of Madison Street and Jefferson Street by the year 2010 (as shown in Figure VI-3).

Recommendations

Areawide improvements to the circulation network will be required with or without the project to accommodate year 2004 and year 2010 peak hour traffic demands, as discussed in Sections VI.C and VII.B. The following mitigation measures are recommended to reduce potential circulation impacts associated with the proposed project and site access.

1. Specific design standards for internal streets shall be consistent with County street requirements for residential loop streets and residential cul-de-sacs.

2. The proposed internal circulation layout shall be subject to the review and approval of the County Transportation Department during the development review process to insure compliance with County minimum access and design standards.

3. Intersection spacing on-site shall comply with County of Riverside standards.

4. All internal streets shall be fully constructed to their master planned cross-section as adjacent on-site development occurs.

5. Sidewalks and streetlights shall be installed on-site as specified by the County.

6. Clear, unobstructed sight distance shall be provided at all internal street intersections on-site.

7. The project proponent shall provide (at a minimum) the lane geometrics shown in Figures VI-2 and VI-3 at the site access locations in conjunction with adjacent development.

8. The project proponent shall install a traffic signal when warranted at the intersection of: (1) the Resort Village access @ Madison Street, (2) the Active Adult Village @ Avenue 60, and (3) the north Primary Housing Village access @ Monroe Street.

9. The project proponent shall apply for an amendment of the Riverside County Circulation Element to redesignate portions of Madison Street and Avenue 60 to be consistent with the roadway widths shown in the Specific Plan.[1] In addition, the proposed transition between Madison Street and Avenue 60 will impact the access for the parcels located at the existing intersection of Madison Street and Avenue 60. Although most of these roadways lie within the Coral Mountain Specific Plan area, the rights-of-way of these roadways extends across parcels that are not part of the project site.

10. The project proponent shall participate in the Traffic Uniform Mitigation Fee (TUMF) Program and the County Traffic Signal Mitigation Program in an effort to make their "fair-share" contribution to future roadway improvements within the project vicinity.

---

1. Although the Coral Mountain Specific Plan shows Avenue 62 as a Secondary Highway, a two-lane cross-section appears to be adequate to serve year 2010 total traffic volumes (6,420 ADT). Since this link is not on the Riverside County Circulation Element, the project proponent should consider revising the Specific Plan to show Avenue 62 as a Collector Street adjacent to the project site.

II. PROPOSED DEVELOPMENT

II. A SUMMARY OF DEVELOPMENT

Project Location

The project site is located in unincorporated Riverside County, in the Coachella Valley, south and east of the City of La Quinta. Regional access is provided by Interstate 10 and State Route 111. The project site is located partially within the Sphere of Influence of the City of La Quinta.

The Coral Mountain Specific Plan area includes approximately 1,280 acres within unincorporated Riverside County, on either side of Madison Street and Monroe Street, between Avenue 58 (to the north) and Avenue 62 (to the south). The northern and western site boundaries abut the City of La Quinta. Figure II-1 depicts the location of the project site, the study area and the key intersections analyzed herein.

Figure II-1 illustrates the study area and the 21 key intersections evaluated. The key intersections include:

Jefferson Street @
- Avenue 50
- Avenue 52
- Avenue 54

Madison Street @
- Avenue 50
- Avenue 52
- Avenue 54
- Airport Boulevard
- Avenue 58
- Resort Village Access
- Avenue 60

Monroe Street @
- Avenue 50
- Avenue 52
- Avenue 54
- Airport Boulevard
- Avenue 58
- Avenue 60
- N. Primary Housing Access
- S. Primary Housing Access
- Active Adult Village Access
- Avenue 62

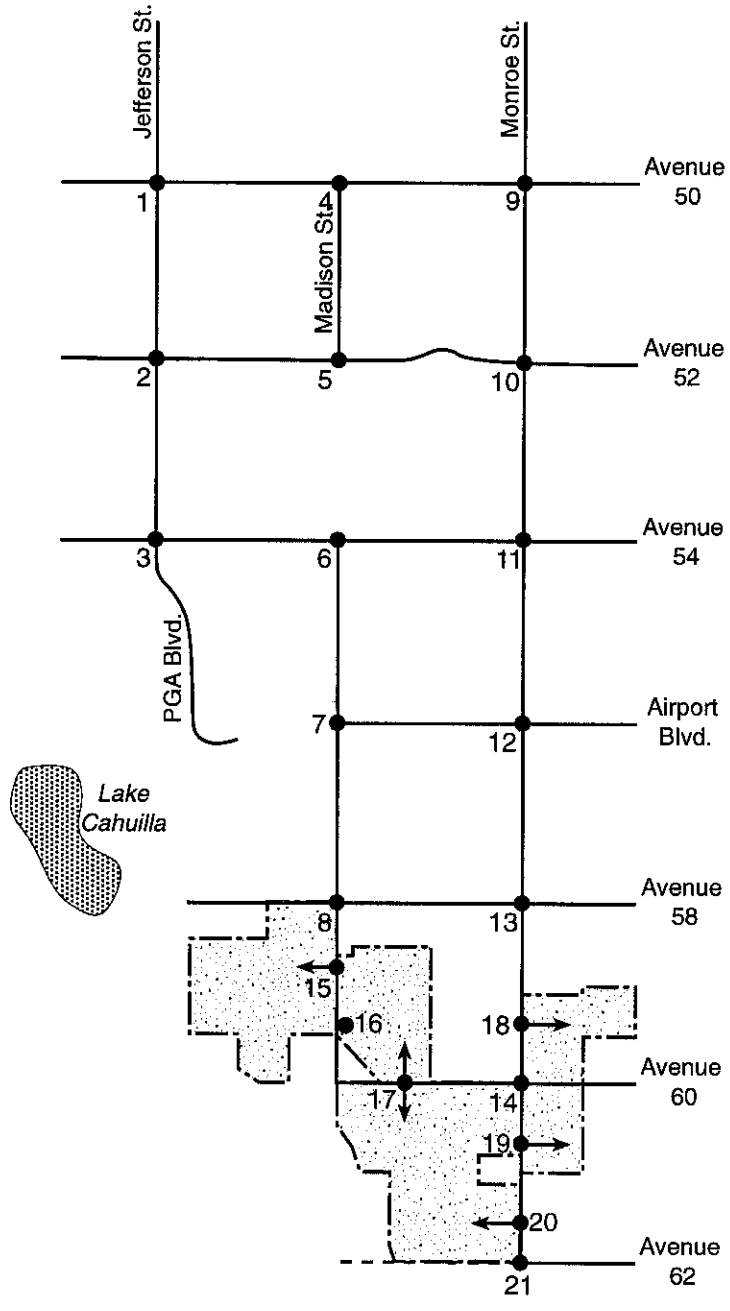
Active Adult Village Access
- Avenue 60

Project Land Use and Circulation Plan

The proposed project is the Coral Mountain Specific Plan 218 Amendment No. 1, an amendment to the Rancho La Quinta Specific Plan 218 approved in 1988 (see Figure II-2). It includes a maximum development of 3,500 dwelling units and 9.2 acres of commercial uses. It also includes 6.8 acres of community facilities, 41 acres of parks and trails, two championship golf courses with clubhouses and maintenance facilities and a 10-acre school. The golf courses will include recreational amenities such as swimming pools, tennis courts and exercise facilities in a "country club" atmosphere. Table II-1 details the land uses proposed on-site by community.

The previously approved Specific Plan 218 included the development of 4,262 homes, 35 acres of commercial uses, and 2 golf courses on-site, as shown in Table II-2. The currently proposed Coral Mountain Specific Plan Amendment Number 1 represents a substantial reduction in residential (18%) and commercial (74%) development intensity. The currently proposed project includes a maximum development of 762 fewer dwellings and 25.8 fewer acres of commercial uses.

Figure II-1
Site Location



Legend

- Project Site
- ● 8 Key Intersection Reference Number

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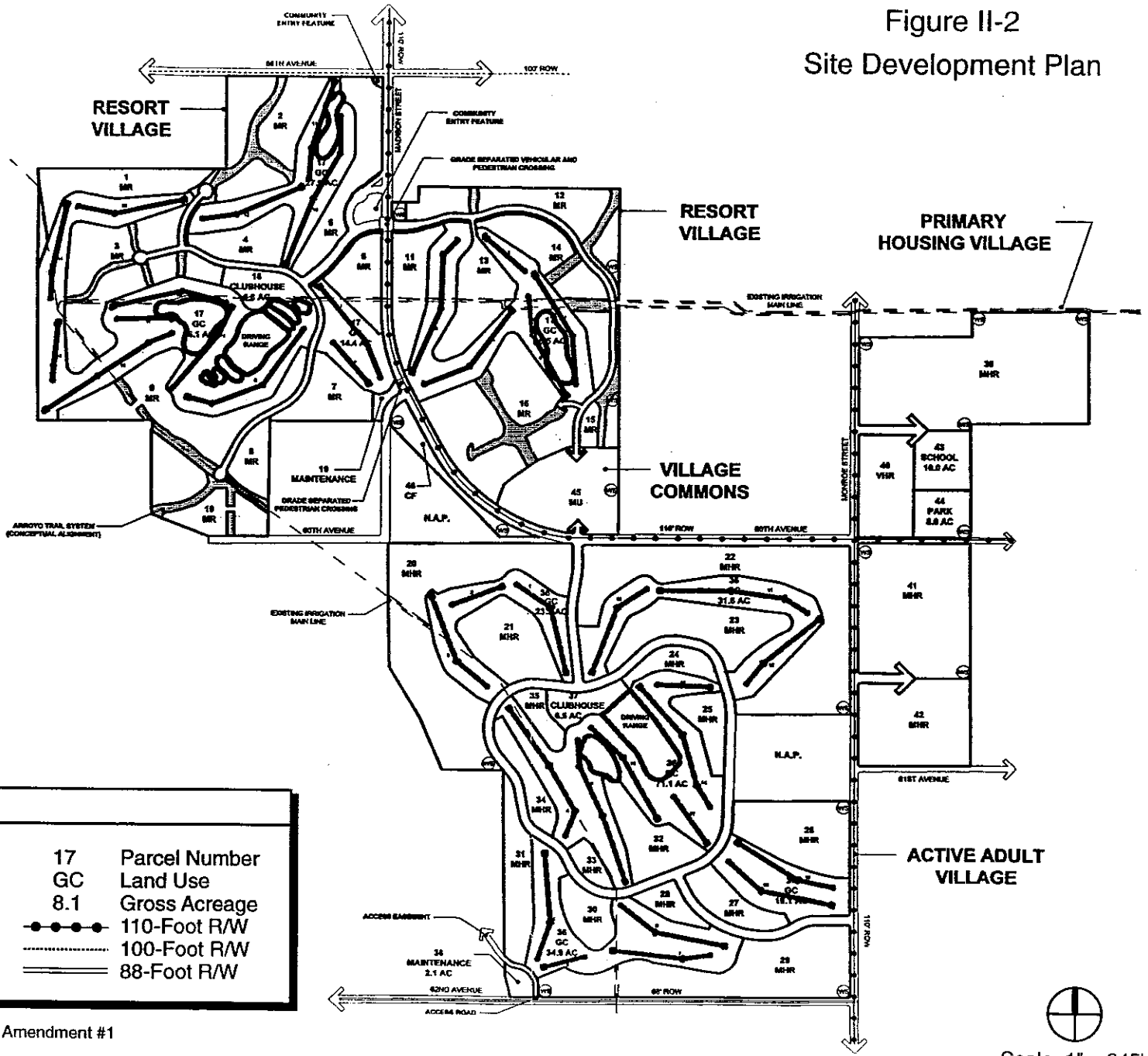
Scale: 1" = 5660'

Figure II-2
Site Development Plan



Legend

MR	Medium Residential	17	Parcel Number
MHR	Medium High Residential	GC	Land Use
VHR	Very High Residential	8.1	Gross Acreage
MU	Mixed Use	●-●-●-●	110-Foot R/W
GC	Golf Course	·····	100-Foot R/W
CF	Community Facilities	═══	88-Foot R/W

Source: The AEI CASC Companies, S.P. 218 Amendment #1

Scale: 1" = 845'

Table II-1
Proposed Coral Mountain
Land Uses By Planning Area

Land Use Type	Acres	Dwelling Units
Resort Village		
Single Family Residential	274.1	782
Golf Course	182.0	--
- Clubhouse (10,000 S.F.)		
- Maintenance (4,000 S.F.)		
Community Facilities (10,000 S.F.)	6.8	--
Arroyo Trail System	28.7	--
R.O.W./Easements	45.8	--
Subtotal	537.4	782
Active Adult Village		
Single Family Residential	285.0	1,375
Golf Course	188.8	--
- Clubhouse (10,000 S.F.)		
- Maintenance (4,0000 S.F.)		
R.O.W./Easements	52.9	--
Subtotal	526.7	1,375
Primary Housing Village		
Residential		
- Single Family	142.8	779
- Multi-Family	17.1	397
Park	8.0	--
School (80,000S.F.)	10.0	--
R.O.W.	12.1	--
Subtotal	190.0	1,176
Village Commons		
Multi-Family Residential	12.0	167
Commercial/Retail (100,000 S.F.)	9.2	--
Recreation Facilities/Park	4.0	--
Subtotal	25.2	167
Total	**1279.3**	**3,500**

The proposed project consists of three master planned communities with a variety of housing products and densities designed for specific lifestyles. Links will be provided between the community parks and existing trails along the Westside Flood Levy (which traverses the western boundary of the site). Links on-site will also be provided as shown in the ECVP Coachella Valley Trails Plan.

Table II-2
Approved Versus Proposed
On-Site Land Uses

Land Use Type	Approved Rancho La Quinta Specific Plan 218	Proposed Coral Mountain SP 218 Amendment No.1
Residential		
- Single Family	4,262 Dwellings	2,936 Dwellings
- Multi-Family	--	564 Dwellings
Total	4,262 Dwellings	3,500 Dwellings
Commercial/Retail	35 Acres	9.2 Acres
Community Facilities	--	6.8 Acres
Golf Courses (2)	380 Acres	371 Acres
Parks/Trails	40 Acres	41 Acres
School	--	10 Acres

The proposed circulation system for Coral Mountain includes improvements to Riverside County Circulation Element standards along Madison Street, Monroe Street, Avenue 58, Avenue 60 and Avenue 62. These roads will be dedicated to and maintained by Riverside County. The internal loop collector system proposed to serve the residential and recreational areas on-site will consist primarily of private streets. A grade separated pedestrian crossing is proposed across Madison Street, just north of 60th Avenue.

Madison Street, Monroe Street, and Avenue 60 will be improved to arterial standards with 86 feet of pavement within 110-foot rights-of-way. Avenue 58 (west of Madison Street) will be improved to major standards (76 feet of pavement with an 100-foot right-of-way). Avenue 62 (west of Monroe Street) will be improved to secondary standards (64 feet of pavement with an 88-foot right-of-way).

A variety of intersection improvements will be provided in conjunction with Specific Plan implementation. Traffic signals will be installed at the intersections of Monroe Street with Avenue 58 and Avenue 60. The legs of the intersection of Monroe Street and Avenue 58 will all be widened to provide two lanes in each direction.

Zoning and Land Use Category

The proposed project is generally consistent with the current General Plan and Zoning designations on-site. The proposed project is the Coral Mountain Specific Plan 218 Amendment No. 1, an amendment to the Rancho La Quinta Specific Plan 218 approved in 1988. The currently proposed Coral Mountain Specific Plan Amendment No. 1 represents a substantial reduction in residential (18%) and commercial (74%) development intensity. The currently proposed project includes a maximum development of 762 fewer dwellings and 25.8 fewer acres of commercial uses.

Project Phasing

The project will be constructed in five phases. The initial phase will include the golf course construction and some of the adjacent residential planning areas. The remaining phases will include primarily residential and commercial development.

The initial development phase will begin grading in the year 2000 and be completed by the year 2004. It will include 873 single family dwellings and two golf courses with a total of 36 holes. Ultimate development of the site could occur by the year 2010.

III. AREA CONDITIONS

III. A STUDY AREA

The study area was developed through coordination with County of Riverside staff. As shown in Figure III-1, it includes the following 21 key intersections:

Jefferson Street @
- Avenue 50
- Avenue 52
- Avenue 54

Madison Street @
- Avenue 50
- Avenue 52
- Avenue 54
- Airport Boulevard
- Avenue 58
- Resort Village Access
- Avenue 60

Avenue 60 @
- Active Adult Village Access

Monroe Street @
- Avenue 50
- Avenue 52
- Avenue 54
- Airport Boulevard
- Avenue 58
- Avenue 60
- N. Primary Housing Access
- S. Primary Housing Access
- Active Adult Village Access
- Avenue 62

Only fourteen of these key intersections exist today (see Figure II-1, for the intersections numbered 1-14). Six key intersections will not exist in the future without on-site development (refer to Figure II-1 for intersections numbered 15-20). It should be noted that the proposed project includes a realignment of the intersection of Madison Street and Avenue 60 on-site to replace the existing "dog leg" with a gentle curve. A connection between Madison Street and Avenue 60 (west of Madison Street) will be maintained via a new tee intersection on-site (see intersection 16 on Figure II-1).

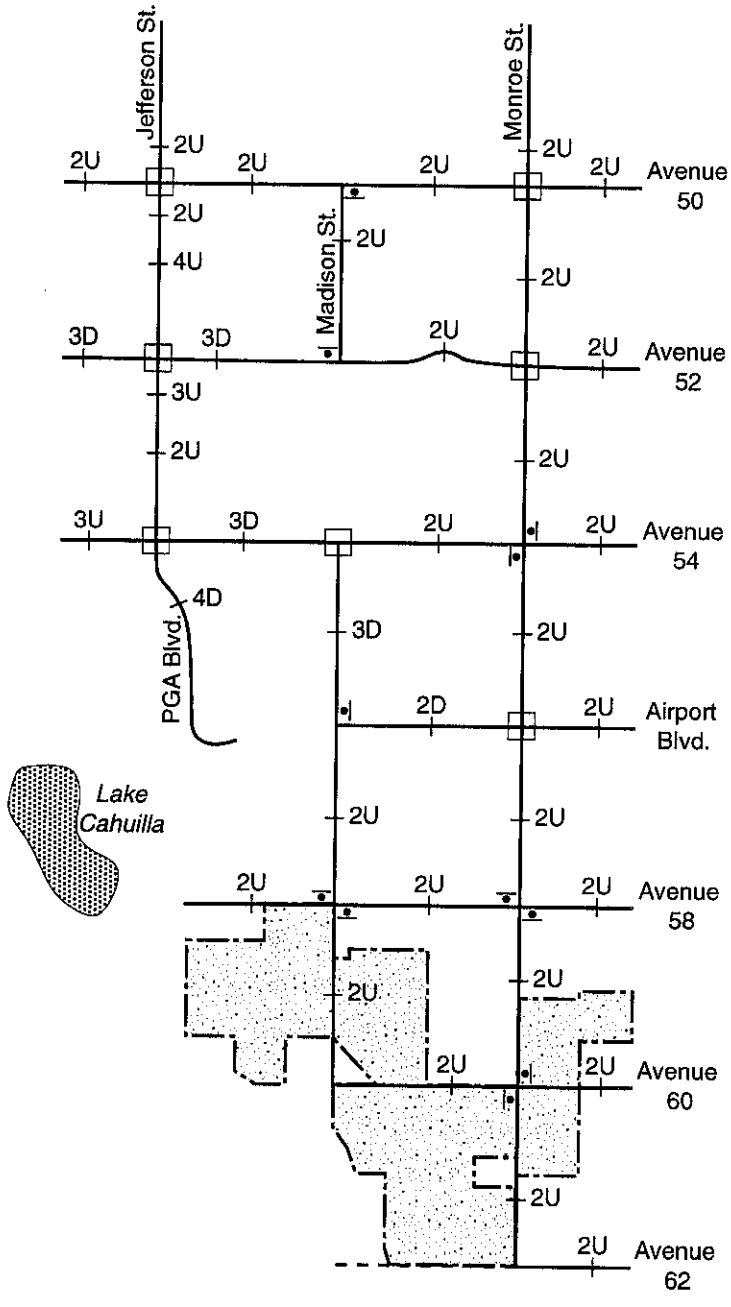
Figure III-1 illustrates the existing transportation system within the study area. As shown therein, Madison Street does not currently extend southerly of Avenue 60 and Avenue 60 does not extend west of Madison Street. Madison Street and Avenue 60 meet and form a "dog leg" rather than an intersection. Similarly, intersection number 21 is currently a "dog leg" where Avenue 62 meets Madison Street. Avenue 62 is currently an unpaved road west of Monroe Street that carries so little traffic it functions more like a driveway than a street. Monroe Street does not currently extend south of Avenue 62.

III. B STUDY AREA LAND USE

The site is located within the jurisdictional boundaries of Riverside County and is included within the Lower Coachella Valley Land Use Planning Area. It is also partially located within the Sphere of Influence of the City of La Quinta. The City of La Quinta boundary borders the project site on the north and west.

The majority of the project site is currently used for agricultural purposes or consists of fallow fields. Approximately 250 acres on-site include native vegetation.

Figure III-1
Existing Transportation System



Legend

- 2U — Number of Through Lanes (D = Divided U = Undivided)
- STOP Sign
- Three or Four-Way Stop

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Scale: 1" = 5660'

Land adjacent to the site is primarily used for agricultural purposes. A residential/recreational development (PGA West Specific Plan) is located to the northwest, within the City of La Quinta. As shown in Figure III-2, eight approved Specific Plans are located within the study area. These include: the Travertine and Green Specific Plans (to the west), the Vista Santa Rosa Specific Plan and Specific Plan 015, 016 and 017 (to the north). In addition The Ranch Specific Plan (formerly Oak Tree West) is located in the northwest portion of the study area and The Quarry project is located south of Lake Cahuilla.

Table III-1 provides land use information for the approved cumulative non-site developments within the study area. As shown therein, approved non-site developments will include the future development of 2,100 hotel rooms, 530,000 square feet of commercial building area, and 5,827 new homes. The approved non-site residential uses include 774 multi-family dwellings and 5,053 single family dwellings.

III. C SITE ACCESSIBILITY

Area Roadway System

Regional access is currently provided by Interstate 10 and State Highway 111. Although Jefferson Street and Monroe Street provide the most direct access to these regional transportation facilities, the future connection of Madison Street (north of Avenue 54) will facilitate regional access.

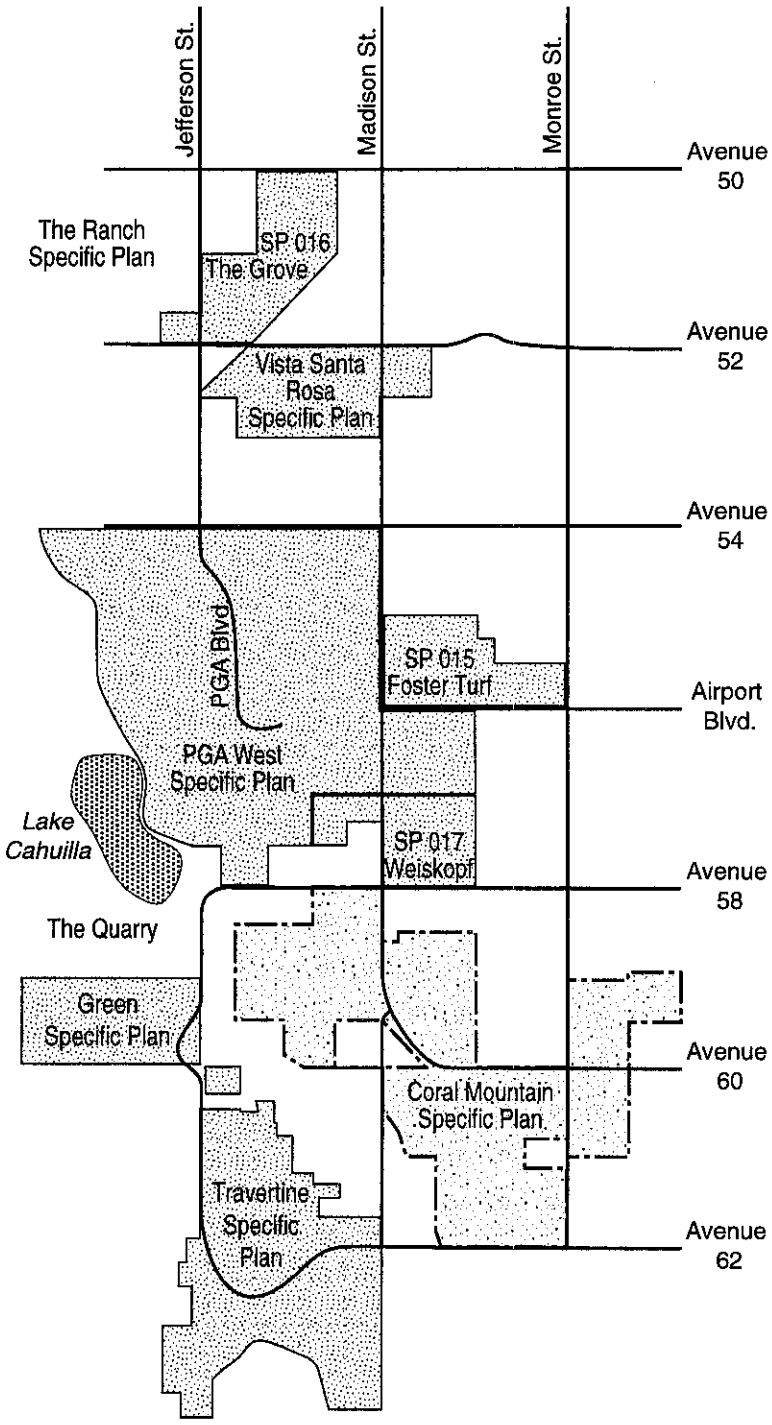
Figure III-1 depicts the existing transportation system in the study area. Traffic control devices and mid-block lane geometrics are shown based upon a field survey made in May of 1998.

Figure III-3 depicts the future transportation system in the project vicinity, based upon the Circulation Element of the Riverside County Comprehensive General Plan. Figure III-4 provides typical street cross-sections for master planned roadways in Riverside County, including right-of-way requirements.

Madison Street is shown in the Riverside County Circulation Element as an Urban Arterial Highway, north of 60th Avenue, with a 134-foot right-of-way and a 110-foot roadbed. Monroe Street is shown as an Arterial Highway, north of 62nd Avenue, with a 110-foot right-of-way and a 86-foot roadbed. Avenue 60 is shown as a Secondary Highway (between Madison Street and Monroe Street) and as an Arterial Highway (east of Monroe Street). Secondary Highways typically have an 88-foot right-of-way and a 64-foot roadbed. Avenue 58 is shown as a Major Highway with a 100-foot right-of-way and 76 feet curb-to-curb. Avenue 62, adjacent to the project site, is not shown in the Circulation Element as a master planned street. Similarly, Madison Street, south of Avenue 60, is not shown in the Riverside County Circulation Element.

The Coral Mountain Specific Plan Circulation Plan differs from the Riverside County Circulation Element is several respects. Table III-2 includes the roadway classifications of Riverside County and the proposed project to facilitate a comparison. As shown therein, the proposed project includes a smaller right-of-way and cross-section for Madison Street on-site that is consistent with the City of La Quinta classification (north of Avenue 58) of Primary Arterial (110-foot right-of-way). The realignment of Madison Street proposed on-site carries the 110-foot right-of-way through to Avenue 60. This change upgrades Avenue 60 on-site from the Secondary Highway cross-section shown by Riverside County to a consistent Arterial Highway cross-section.

Figure III-2
Cumulative Development



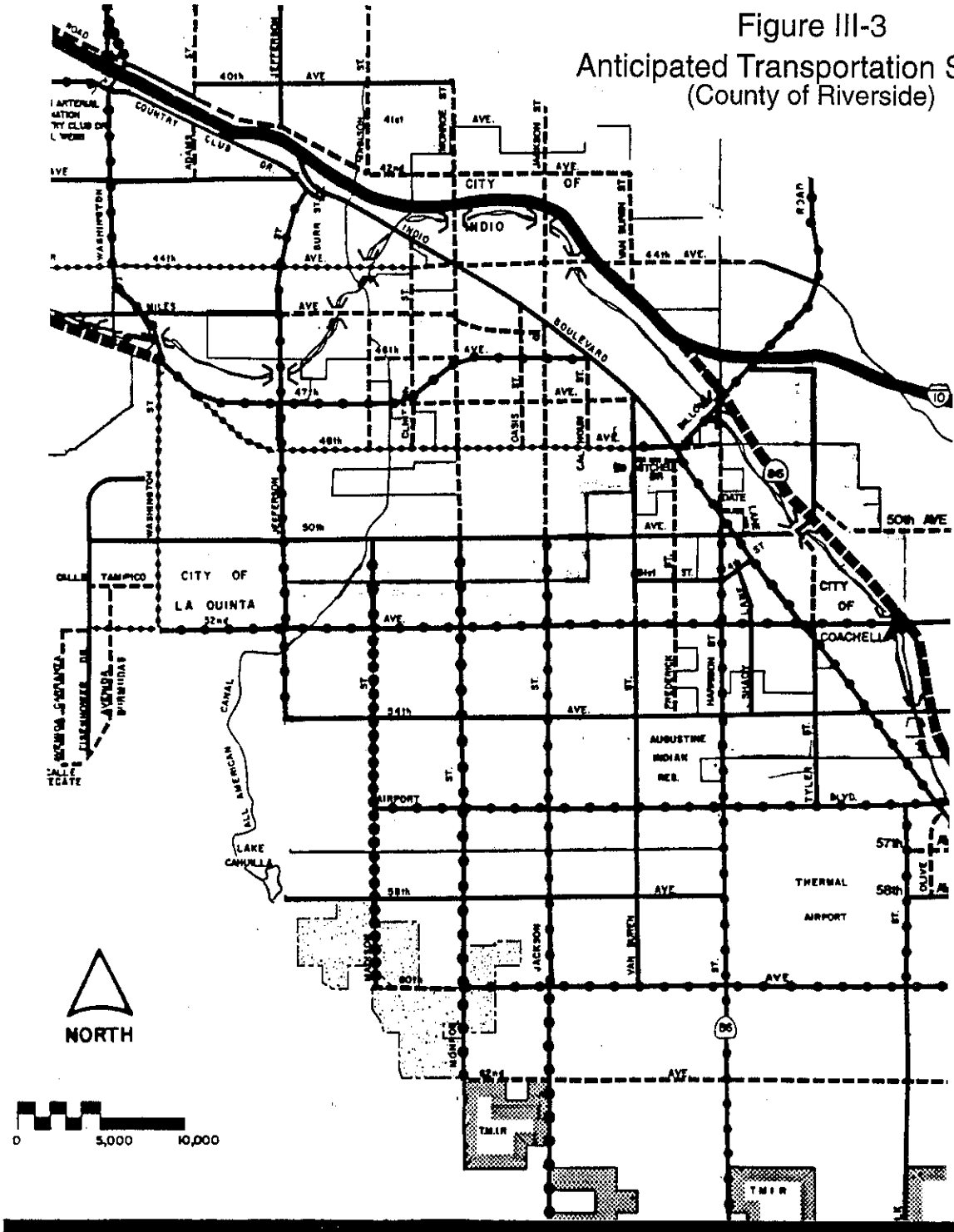
Endo Engineering

Scale: 1" = 5660'

Table III-1
Approved Cumulative Non-Site Developments

Development/Land Use Type	Hotel Rooms	Dwelling Units	Bldg. Area (Square Feet)
The Ranch Specific Plan			
Commercial/Retail	--	--	120,000
Hotel	600	--	--
Subtotal	600		120,000
PGA West Specific Plan			
Single Family Residential	--	400	--
Hotel	1,000	--	--
Commercial/Retail	--	--	100,000
Subtotal	1,000	400	100,000
Foster Turf (SP 015)			
Single Family Residential	--	200	--
The Grove (SP 016)			
Single Family Residential	--	820	--
Commercial/Retail	--	--	210,000
Subtotal		820	210,000
PGA Weiskopf (SP 017)			
Single Family Residential	--	400	--
Vista Santa Rosa Specific Plan			
Single Family Residential	--	850	--
The Quarry			
Single Family Residential	--	580	--
Green Specific Plan			
Single Family Residential	--	277	--
Travertine Specific Plan			
Single Family Residential	--	1,526	--
Multiple Family Residential	--	774	--
Hotel	500	--	--
Commercial/Retail	--	--	100,000
Subtotal	500	2,300	100,000
Total	**2,100**	**5,827**	**530,000**

Figure III-3
Anticipated Transportation System
(County of Riverside)



LEGEND

CLASSIFICATION	RIGHT OF WAY	SYMBOL
SECONDARY	88'	
MAJOR	100'	
ARTERIAL	110'	
MOUNTAIN ARTERIAL	110'	
URBAN ARTERIAL	134'	
EXPRESSWAY	VARIABLE	
FREEWAY	VARIABLE	
SPECIFIC PLAN ROAD	VARIABLE	
BRIDGE		
SPHERE OF INFLUENCE		
STATE & FEDERAL LANDS		

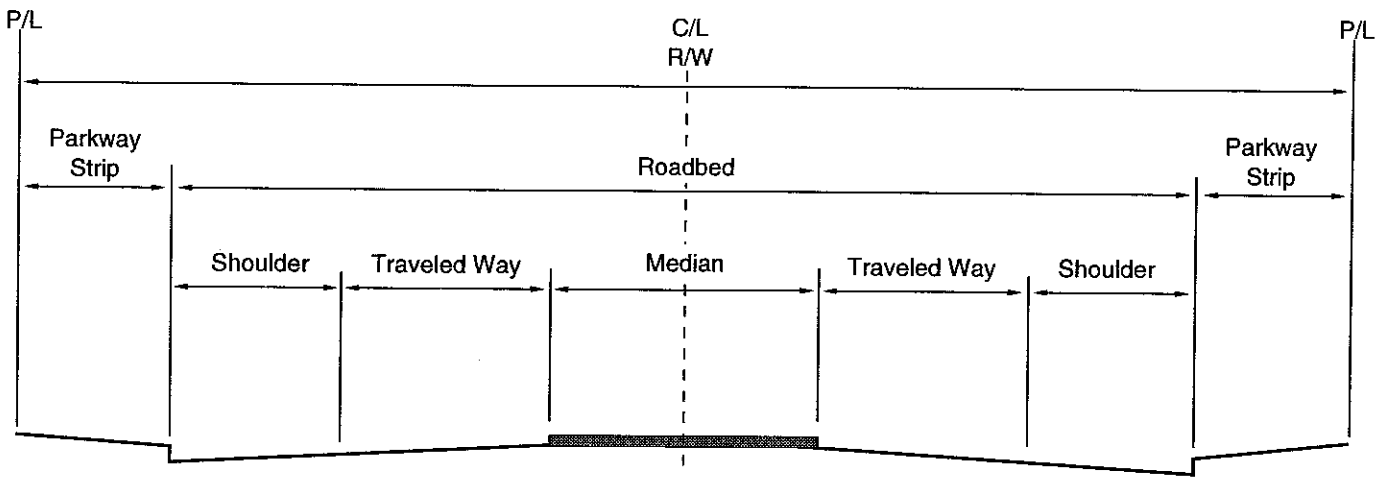
THIS MAP WAS ADOPTED MARCH 6, 1984 BY THE RIVERSIDE COUNTY BOARD OF SUPERVISORS THROUGH RESOLUTION NO. 84-77 AS A PART OF THE PUBLIC FACILITIES AND SERVICES ELEMENT OF THE COMPREHENSIVE GENERAL PLAN.

RESOLUTION	DATE	RESOLUTION	DATE	RESOLUTION	DATE
84-452	12-11-84	88-485	10-5-88	*94-217	12-27-94
84-527	12-18-84	88-645	12-19-88	*96-158	06-13-96
85-291	5-28-85	89-536	11-28-89	96-199	06-07-96
85-362	10-29-85	89-615	12-19-89	96-217	06-17-96
85-750	12-31-85	89-638	12-19-89	96-336	12-17-96
86-317	7-15-86	90-725	10-16-90	97-097	04-29-97
86-454	10-21-86	91-036	6-4-91	97-380	12-09-97
87-134	5-12-87	*92-085	10-22-92		
87-356	12-22-87	*94-222	04-26-94		
88-179	6-14-88	94-394	12-27-94		

*INDICATES AMENDMENT TO THIS MAP

NOTE: CIRCULATION MAPS ARE A GRAPHIC REPRESENTATION IDENTIFYING THE GENERAL LOCATION AND CLASSIFICATION OF EXISTING AND PROPOSED THOROUGHFARES IN THE COUNTY. ANY QUESTIONS REGARDING PRECISE ALIGNMENT OR IMPROVEMENT STANDARDS SHOULD BE REFERRED TO THE COUNTY TRANSPORTATION DEPARTMENT.

Figure III-4
Typical Street Cross Sections



Corridor Classification	Median	Traveled Way	Shoulder	Parkway Strip	Roadbed	R/W
Urban Arterial Highway	14'	38'	10'	12'	110'	134'
Arterial Highway	18'	26'	8'	12'	86'	110'
Major Highway	12' Painted	24'	8'	12'	76'	100'
Major Frontage Road	12' Painted	24'	8' One Side	10'/6'	70'	86'
Secondary Highway	NA	24'	8'	12'	64'	88'
Industrial Collector Street	12' Painted	12'	10'	11'	56'	78'
Collector Street	NA	12'	10'	11'	44'	66'
Local Street	NA	12'	8'	10'	40'	60'

Table III-2
Circulation Plan Comparison

Roadway Link	Riverside County Classification	Proposed Coral Mountain Classification
Madison Street		
- N/O Avenue 60	Urban Arterial	Arterial Highway
- S/O Avenue 60	Not Shown	Collector[a]
Monroe Street		
- N/O Avenue 62	Arterial Highway	Arterial Highway
Avenue 58		
- W/O Madison Street	Major Highway	Major Highway
Avenue 60		
- E/O Monroe Street	Arterial Highway	Arterial Highway
- W/O Monroe Street	Secondary Highway	Arterial Highway
Avenue 62		
- W/O Monroe Street	Not Shown	Secondary Highway

a. This classification was designed to match the City of La Quinta 60-foot right-of-way.

Traffic Volumes

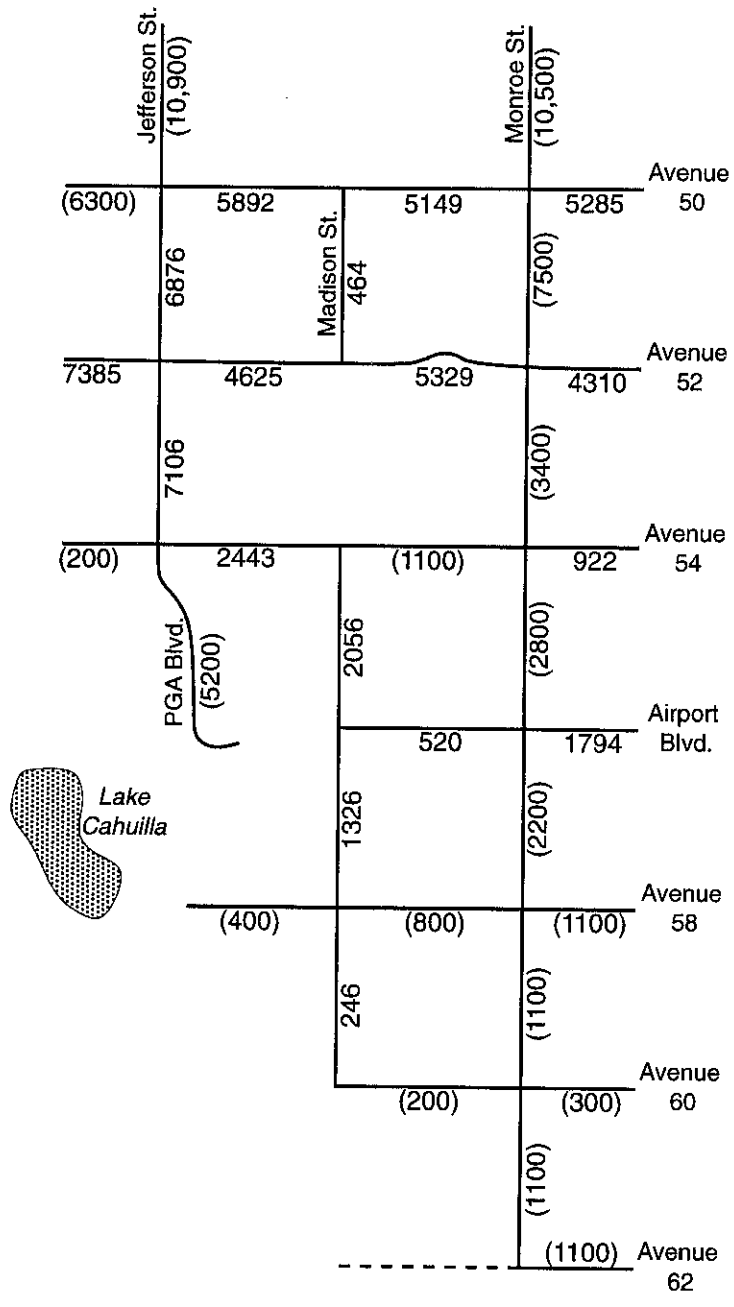
To analyze the peak hour conditions at the fourteen existing key intersections, morning and evening peak hour traffic counts were made in May of 1998 at the key intersections by Counts Unlimited, Inc. These manual traffic counts were made between 7:00 AM and 9:00 AM and between 4:00 PM and 6:00 PM.

The turning movement count data from the morning and evening peak hours at the key intersections is included in Appendix 1. Figure A-1 in Appendix 1 illustrates the location of the traffic counts. Figure A-2 in Appendix 1 illustrates the May 1998 turning movements during the morning and evening peak hours.

Figure III-5 depicts the current peak season daily traffic volumes on roadway links in the study area. The daily volumes shown therein include 24-hour counts collected by CVAG in 1997 and estimated 1999 daily volumes. The 1999 volume estimates were derived from the 1998 evening peak hour traffic counts at the key intersections by assuming that 8.5% of the daily traffic currently occurs during the evening peak hour.[1] A 13 percent adjustment was incorporated in these estimates, since the peak hour counts were made in May of 1998 rather than the peak season (February or March) of 1999.

1. This assumption was verified through coordination with the Riverside County Transportation Department.

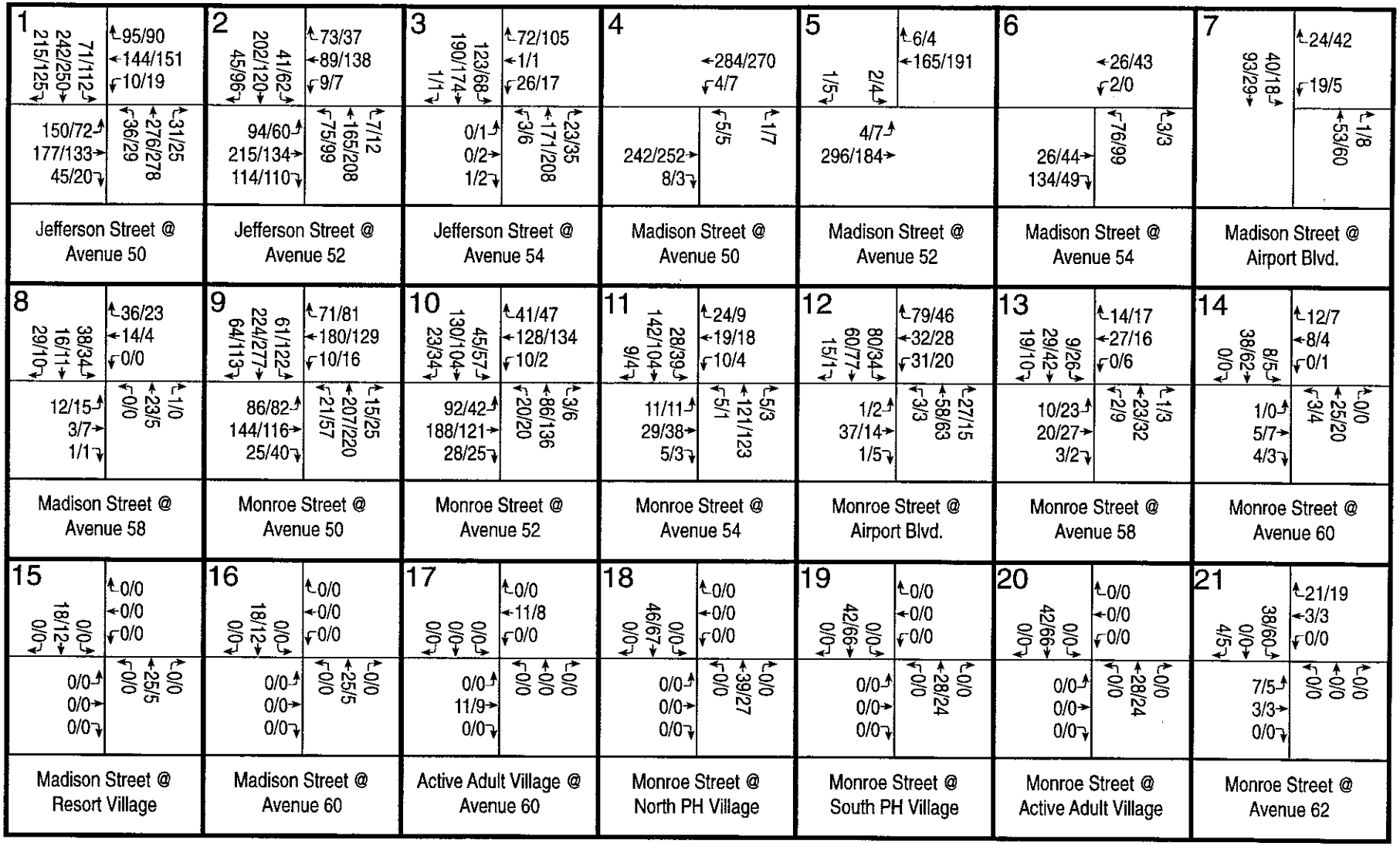
Figure III-5
Current Daily Traffic Volumes



Legend	
2443	1997 Peak Season 24- Hour CVAG Count
(7500)	Estimated 1999 Peak Season Daily Volume

Endo Engineering

Scale: 1" = 5660'



Legend

5/8 AM/PM Peak Hour Turning Volume

Figure III-6

1999 Peak Hour Traffic Volumes
(Peak Season)

Endo Engineering

The morning and evening peak hour traffic counts made before the Memorial Day weekend were proportionally increased by 13 percent to reflect peak season volumes in 1999 (shown in Figure III-6). The traffic counts made after Memorial Day were also adjusted to be consistent with the other intersections and 1997 peak season daily counts from CVAG.

Transit Service

Transit service is provided in the Coachella Valley by the SunLine Transit Agency. There are currently no fixed SunBus routes serving the study area. SunDial, a valley wide curb-to-curb dial-a-ride is available to seniors and persons with disabilities who cannot use SunBus.

Existing Relevant TSM Programs

There are no Transportation System Management plans in effect in the study area at present.

IV. PROJECTED TRAFFIC

IV. A SITE TRAFFIC

Project-Related Trip Generation

The potential trip generation from development on-site was determined from the Institute of Transportation Engineers 1997 publication entitled *Trip Generation* (Sixth Edition). Trip generation forecasts for the proposed project (site traffic generation) are shown in Table IV-1. The trip generation forecasts shown in Table IV-1 are divided into five development areas, and summarized by land use.

The initial phase of site development (including Phase 1 and Phase 2 of the Specific Plan) is expected to be completed by the year 2004. It includes the development of 873 single family dwelling units and both golf courses. As shown in Table IV-1, the initial phase of site development will generate 8,840 daily trips, of which 719 would occur during the morning peak hour (237 inbound and 481 outbound) and 868 would occur during the evening peak hour (540 inbound and 327 outbound).

The proposed project is an amendment to the approved Rancho La Quinta Specific Plan. The original environmental documentation for the Specific Plan included a daily trip generation of 47,010 ADT. Table IV-1 indicates that the proposed Amendment No. 1 to SP 218 would reduce the daily site traffic generation upon build-out by 20 percent.

The trip generation associated with buildout of the site would total approximately 37,520 unadjusted daily trip-ends, of which 2,840 would occur during the morning peak hour (904 inbound and 1,936 outbound) and 3,839 would occur during the evening peak hour (2,270 inbound and 1,569 outbound). It should be noted that the unadjusted Coral Mountain Specific Plan Buildout trip generation forecast in Table V-1 does not account for trip overlap on-site (i.e. trip interactions on-site between the residences and the commercial uses, golf courses, or schools).

The development of mixed-use projects reduces the trip generation associated with the development below that which is projected directly from ITE trip generation rates because these rates were developed from isolated single-use developments and therefore ignore trip overlap. When different land uses are combined on one site, the actual trip generation decreases because residents can remain within the site boundaries to do their shopping or play golf. A single trip from home to the commercial development on-site is counted twice in Table IV-1 (first for the residential development and then again for the commercial development). Adjustments can be made to eliminate this double counting of trips that occurs with mixed use developments.

The adjusted trip generation forecast shown in Table IV-2 details the adjustments made to reflect trip overlap for the Coral Mountain Specific Plan. Up to 10 percent of the residential trips will be assigned to the commercial uses. Approximately 80 percent of the golf course trips and 80 percent of the school trips will be assigned to the residential uses on-site. As shown in Table IV-2, after these adjustments the Coral Mountain Specific Plan will generate an estimated 23,436 external average weekday trips upon buildout. Of that total, an estimated 2,056 external trip-ends will occur during the morning peak hour (with 512 inbound and 1,544 outbound) and 2,307 external trip-ends will occur during the evening peak hour (with 1,501 inbound and 806 outbound).

Table IV-1
Estimated Site Traffic Generation[a]

Planning Area/Land Use (ITE Code)	Land Use Quantity	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily 2-Way
INITIAL PHASE (2004)								
Resort Village								
SFD (210)	275 DU	49	147	196	154	87	241	2,420
Golf (430)	18 Holes	41	8	49	31	29	60	650
Subtotal		90	155	245	185	116	301	3,070
Active Adult Village								
SFD (210)	353 DU	62	187	250	187	105	292	2,970
Golf (430)	18 Holes	41	8	49	31	29	60	650
Subtotal		103	195	299	218	134	352	3,620
Primary Village								
SFD (210)	245 DU	44	131	175	137	77	215	2,150
Year 2004 Total		**237**	**481**	**719**	**540**	**327**	**868**	**8,840**
PROJECT BUILDOUT (YEAR 2010)								
Resort Village								
SFD (210)	782 DU	139	418	557	438	247	685	6,880
Golf (430)	18 Holes	41	8	49	31	29	60	650
Subtotal		180	426	606	469	276	745	7,530
Active Adult Village								
SFD (210)	1375 DU	243	729	972	729	410	1,139	11,560
Golf (430)	18 Holes	41	8	49	31	29	60	650
Subtotal		284	737	1,021	760	439	1,199	12,210
Primary Village								
SFD (210)	779 DU	139	416	555	437	246	683	6,850
MFA (230)	397 DU	26	126	152	129	63	192	2,100
Elem. School (520)	800 Students	139	101	240	96	112	208	770
Subtotal		304	643	947	662	421	1,083	9,720
Village Commons								
Commercial (820)	100 TSF	97	62	159	301	327	628	6,820
MFA (230)	167 DU	13	64	77	63	31	94	1,010
Subtotal		110	126	236	364	358	722	7,830
Community Facil.								
Office (710)	10 TSF	26	4	30	15	75	90	230
Year 2010 Total		**904**	**1,936**	**2,840**	**2,270**	**1,569**	**3,839**	**37,520**
BY LAND USE TYPE								
Residential (210 & 230)	3,500 DU	560	1,753	2,313	1,796	997	2,793	28,400
Commercial (820)	100 TSF	97	62	159	301	327	628	6,820
Golf (430)	36 Holes	82	16	98	62	58	120	1,300
Elementary School (520)	800 Student	139	101	240	96	112	208	770
Office (710)	10 TSF	26	4	30	15	75	90	230
Year 2010 Total		**904**	**1,936**	**2,840**	**2,270**	**1,569**	**3,839**	**37,520**

a. DU=Dwelling Units; SFD=Single Family Detached; MFA=Multi-Family Attached TSF=Thousand Square Feet.

Table IV-2
Adjusted Trip Generation Forecast
(Coral Mountain Specific Plan)

Land Use (Interval)	Unadjusted Trips[a]	Internal Trips[b]	External Trips	Adjusted Trips
Residential Trips				
- Daily	28,400	7,042	21,358	24,879
- AM Inbound	560	162	398	479
- AM Outbound	1,753	230	1,523	1,638
- PM Inbound	1,796	436	1,360	1,578
- PM Outbound	997	243	754	876
Commercial Trips				
- Daily	6,820	5,000	1,820	4,320
- AM Inbound	97	86	11	54
- AM Outbound	62	55	7	35
- PM Inbound	301	180	121	211
- PM Outbound	327	290	37	182
Golf Trips				
- Daily	1,300	1,154	146	723
- AM Inbound	82	46	36	59
- AM Outbound	16	14	2	9
- PM Inbound	62	46	16	39
- PM Outbound	58	57	1	30
Elementary School Trips				
- Daily	770	684	86	428
- AM Inbound	139	85	54	97
- AM Outbound	101	90	11	56
- PM Inbound	96	14	2	9
- PM Outbound	112	33	5	22
Office Trips[c]				
- Daily	230	204	26	128
- AM Inbound	26	13	13	20
- AM Outbound	4	3	1	3
- PM Inbound	15	13	2	9
- PM Outbound	75	66	9	42
All Trips Combined				
- Daily	37,520	14,084	23,436	30,478
- AM Inbound	904	392	512	708
- AM Outbound	1,936	392	1,544	1,740
- PM Inbound	2,270	689	1,501	1,846
- PM Outbound	1,569	689	806	1,151

a. Taken from Table V-1 without accounting for trip overlap.
b. Each value is double counted and must be halved to eliminate the double counting.
c. The Community Facilities on-site were assumed to be Homeowner's Association offices or recreation center administrative offices.

Table IV-3 provides the trip generation forecast for the cumulative projects in the study area. The trip generation forecast is based upon anticipated development by the year 2010. Although the cumulative development shown in Table IV-3 represents less than the approved entitlements, the land uses shown reflect anticipated build-out yields based upon past development trends. In many cases, the developments are fully lotted, with yields far below the entitlements. Where alternative yields are not known, (e.g. the 1000-room hotel at PGA West) the full potential development was assumed.

The commercial uses shown in Table IV-3 represent support commercial uses for the adjacent residential development or the resort hotel development. Since the study area is on the southern edge of development in the Coachella Valley, very few of the commercial trips will be attracted from outside of the study area. Generally, the commercial trips will be from the adjoining residential area, from residential development further to the south, or pass-by trips to residential development further to the south. Other commercial development is provided for the convenience of the hotel guests, and is not designed to attract trips from outside the area.

The commercial uses in the study area will not develop until there is adequate retail demand. When the commercial uses are built in residential areas on the edge of development, the traffic on the streets should either remain unaffected or decrease slightly. Therefore, only the traffic associated with the residential and hotel uses of the cumulative projects were assigned to the street system. Cumulative project commercial trips, recreational trips (i.e. golfing trips), and school trips were assumed to be ancillary to the residential uses and were not explicitly assigned to the street system.

Project-Related Trip Distribution and Assignment

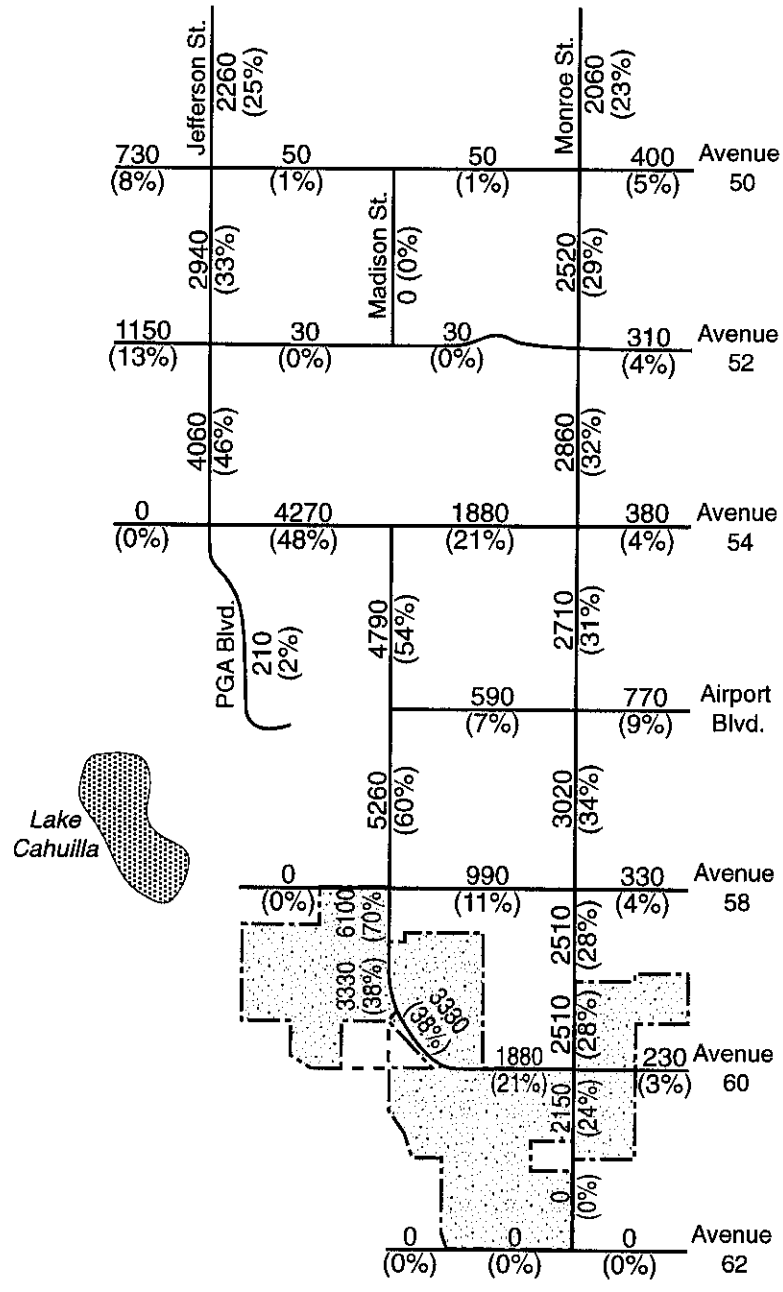
Traffic distribution is the determination of the directional orientation of traffic. It is based upon the geographical location of the site and land uses which will serve as trip origins and destinations. Traffic assignment is the determination of which specific routes project-related traffic will use, once the generalized traffic distribution is determined. The basic factors affecting route selection are minimizing time and distance. Other considerations might be the aesthetic quality of alternate routes, the number of turning maneuvers, and avoidance of congestion. Site access locations directly affect the project traffic assignment.

For the initial development phase (year 2004), Figure IV-1 presents the percentage of project-related daily traffic utilizing the roadway links in the study area, based upon the existing distribution of land uses, turning movements at intersections, and distributions shown in traffic studies for nearby projects.

Figure IV-2 provides the directional distribution of peak hour site traffic at the key intersections for the initial development phase (year 2004). Figure IV-3 presents the project-related (year 2004) peak hour turning movement volumes in the study area. The year 2004 network did not assume any new roadway extensions (except for those roadways necessary for access to the cumulative projects).

Figure IV-4 presents the percentage distribution of daily project traffic through the study area for the project build-out year (2010). Figure IV-5 provides the directional distribution of peak hour project traffic for the year 2010. Figure IV-6 shows the peak hour site traffic turning movements at the key intersections for the year 2010. The year 2010 roadway network included the completion of Madison Street (north of Avenue 54 and Avenue 50).

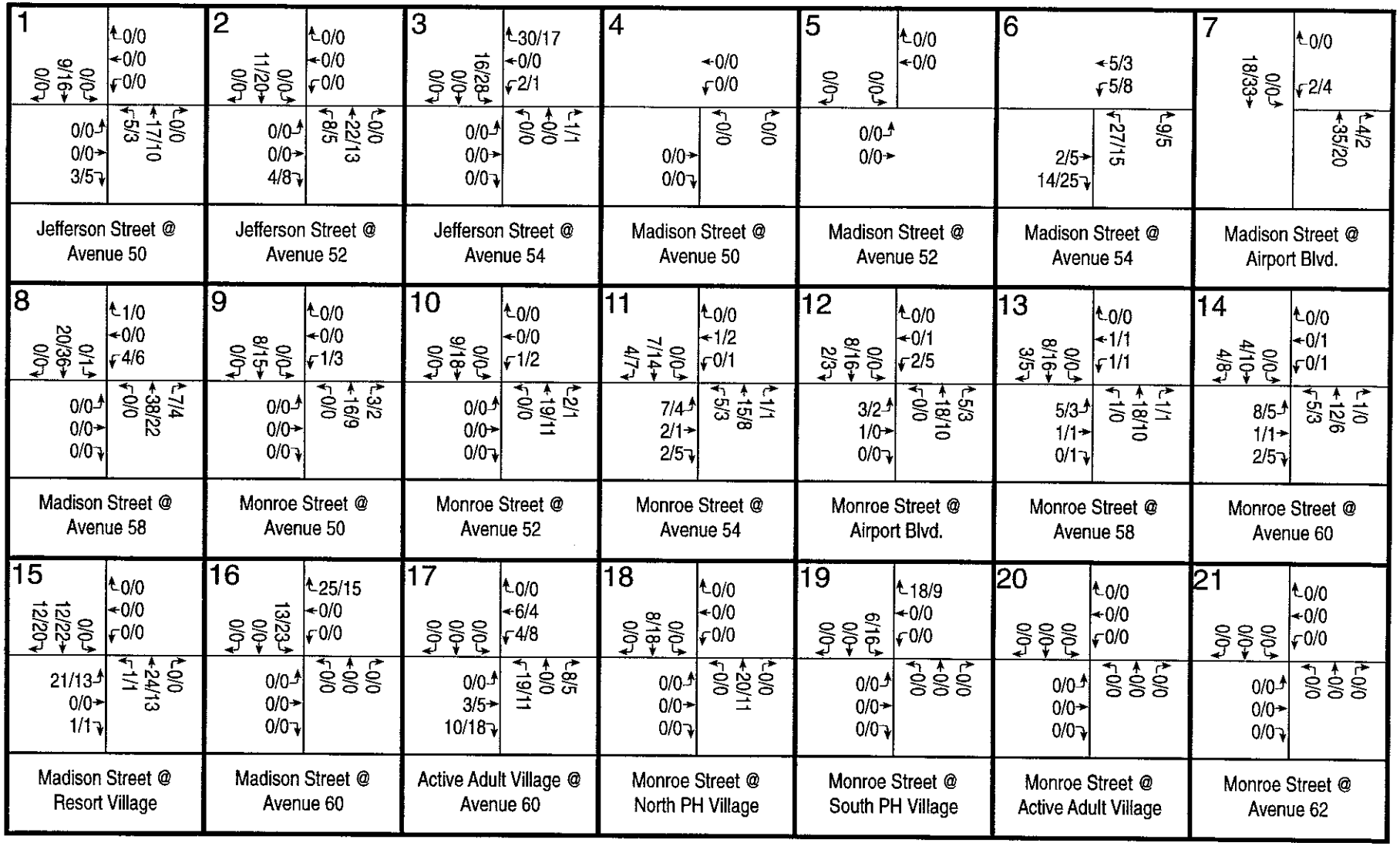
Figure IV-1
Directional Distribution of Daily Site Traffic (Year 2004)



Legend	
2260	Daily Site Traffic Volume
(25%)	Percent of Daily Site External Traffic

Endo Engineering

Scale: 1" = 5660'



Legend

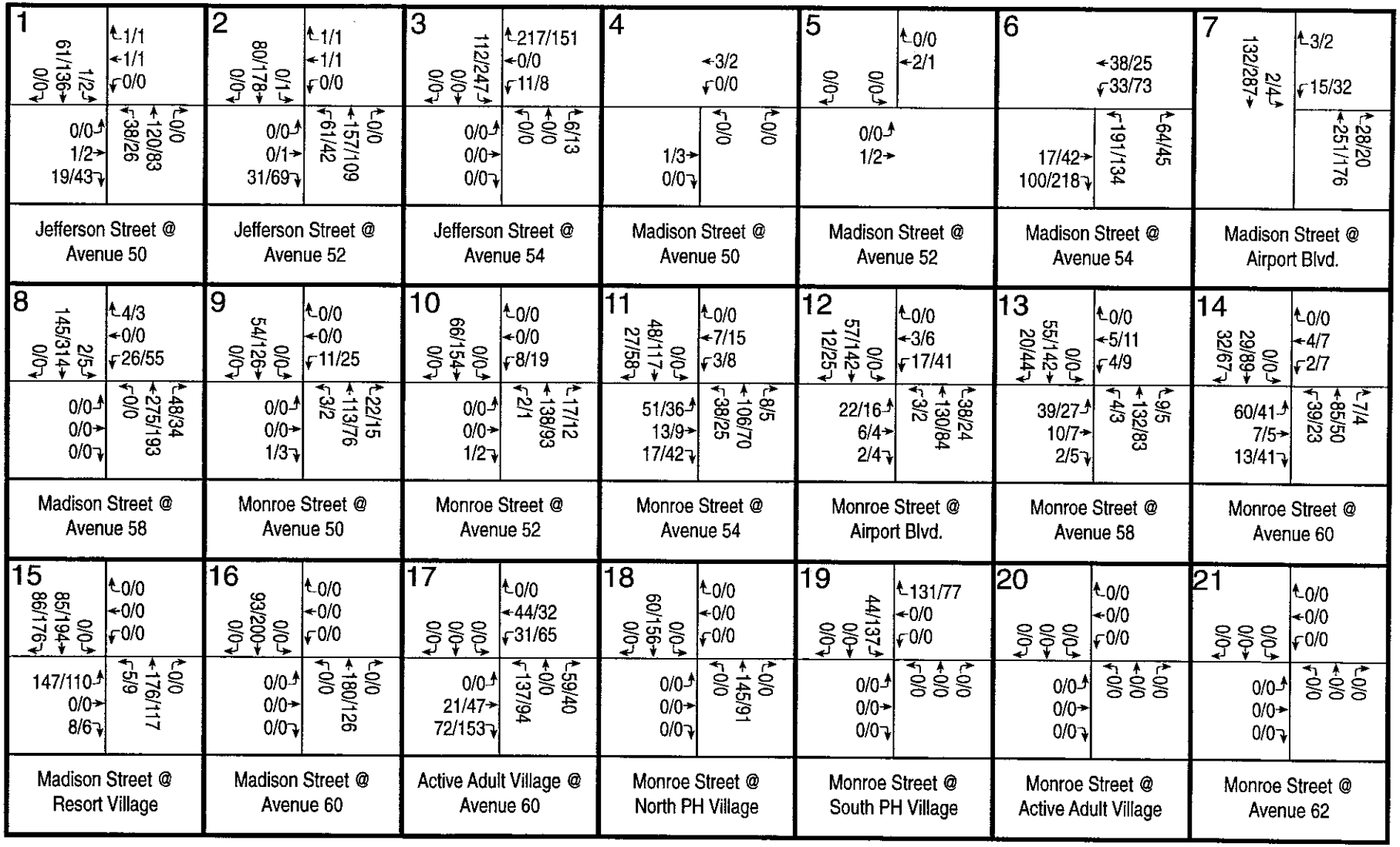
10/10 Percent of AM/PM Peak Hour Traffic

Figure IV-2

Directional Distribution of Peak Hour Site Traffic

(Year 2004)

Endo Engineering



Legend

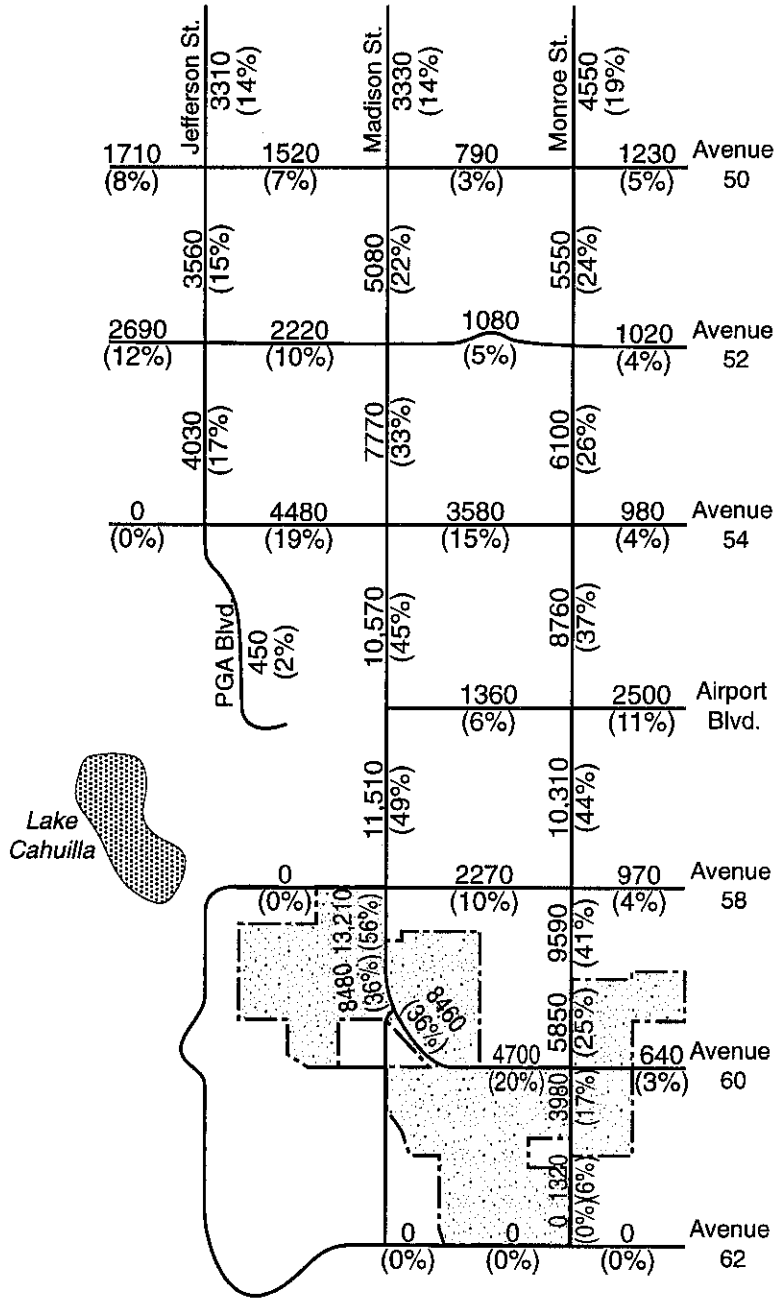
10/10 AM/PM Peak Hour Turning Volume

Figure IV-3

Peak Hour Site Traffic Volumes
(Year 2004)

Endo Engineering

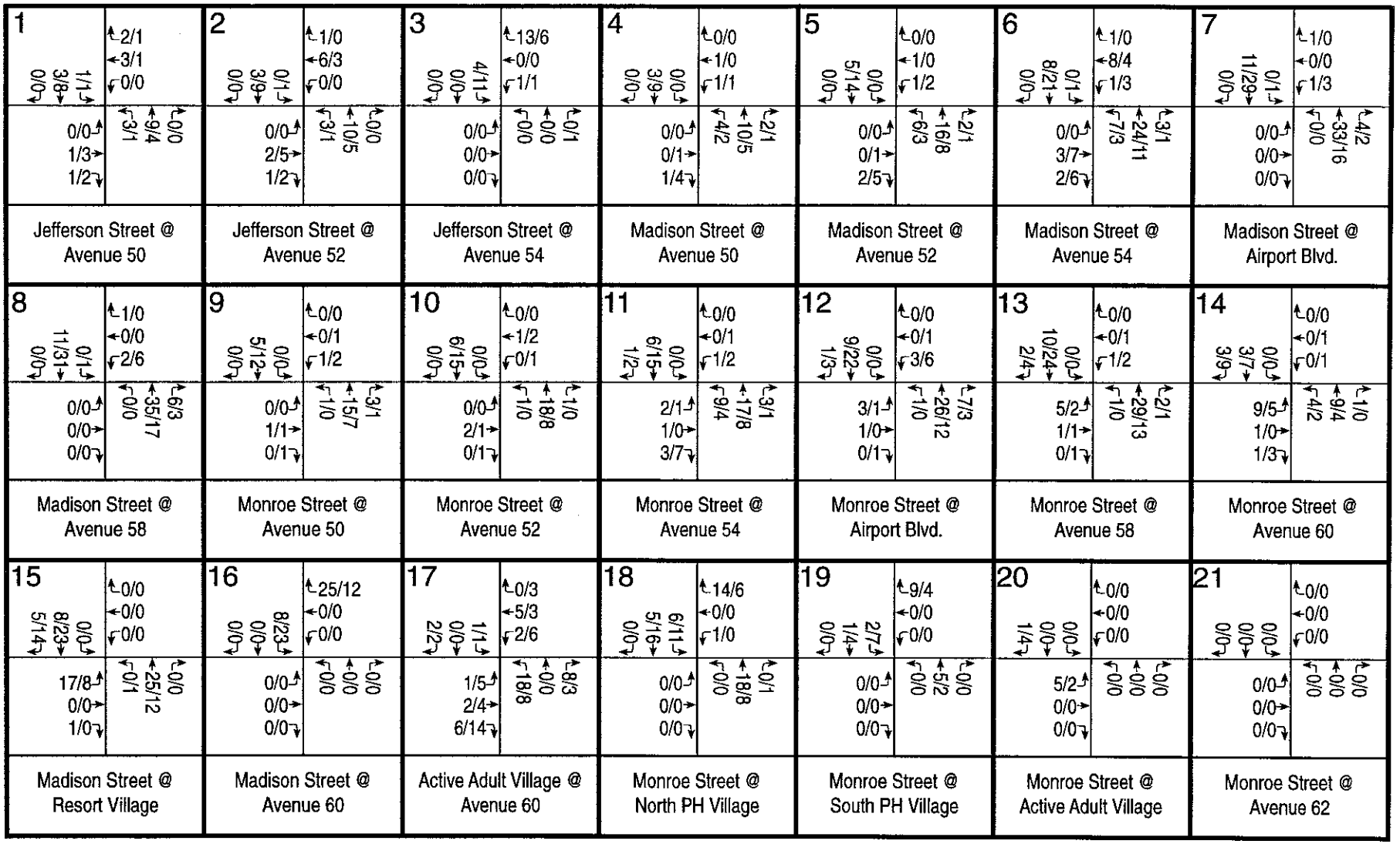
Figure IV-4
Directional Distribution of Daily Site Traffic (Year 2010)



Legend	
2260	Daily Site Traffic Volume
(25%)	Percent of Daily Site External Traffic

Endo Engineering

Scale: 1" = 5660'



Legend

10/10 Percent of AM/PM Peak Hour Traffic

Figure IV-5

Directional Distribution of Peak Hour Site Traffic (Year 2010)

Endo Engineering

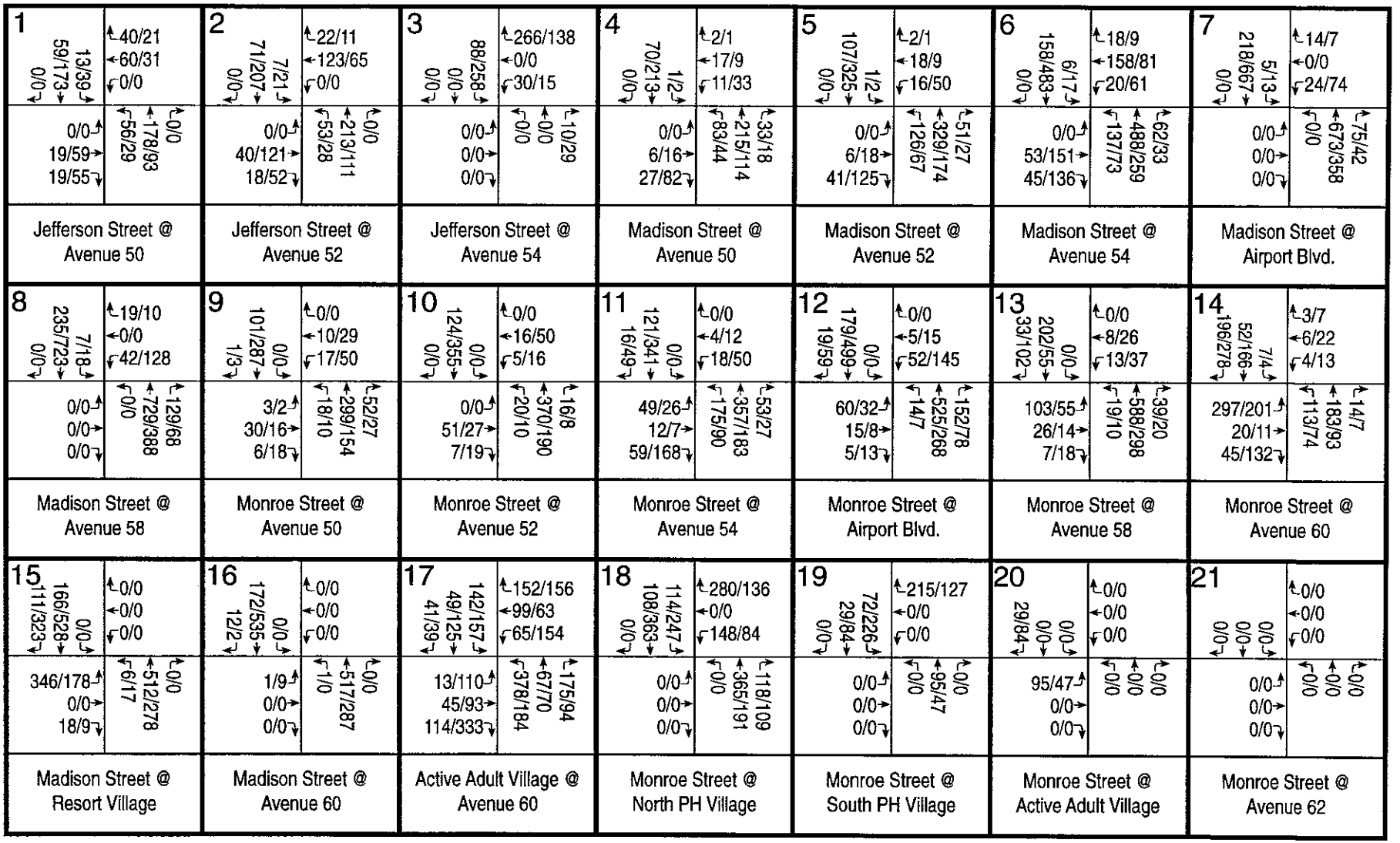


Figure IV-6

Peak Hour Site Traffic Volumes
(Year 2010)

Endo Engineering

Table IV-3
Estimated Trip Generation for Non-Site Cumulative Development[a]

Land Use Category (ITE Code)	Land Use Quantity	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily 2-Way
The Ranch SP								
Commercial (820)	120 TSF	109	69	178	340	368	708	7,660
Hotel (310)	600 Room	230	147	377	212	188	400	5,000
Subtotal		339	216	555	552	556	1,108	12,660
PGA West SP								
SFD (210)	400 DU	72	217	289	240	135	375	3,710
Hotel (310)	1000 Room	434	278	712	393	349	742	8,580
Commercial (820)	100 TSF	97	62	159	301	327	628	6,820
Subtotal		603	557	1,160	934	811	1,745	19,110
Foster Turf SP								
SFD (210)	200 DU	37	112	149	128	72	200	1,960
The Grove SP								
SFD (210)	820 DU	146	438	584	458	257	715	7,180
Commercial (820)	210 TSF	152	97	249	492	533	1,025	10,980
Subtotal		298	535	833	950	790	1,740	18,160
PGA Weiskopf SP								
SFD (210)	400 DU	72	217	289	240	135	375	3,710
Vista Santa Rosa SP								
SFD (210)	850 DU	151	453	604	473	266	739	7,430
The Quarry								
SFD (210)	58 DU	13	38	51	42	24	66	630
Green SP								
SFD (210)	277 DU	51	153	204	172	97	269	2,650
Travertine SP								
SFD (210)	1526 DU	269	808	1,077	801	450	1,251	12,720
MFA (230)	774 DU	44	214	258	223	110	333	3,710
Commercial (820)	100 TSF	97	62	159	301	327	628	6,820
Hotel (310)	500 Room	184	118	302	170	151	321	4,100
Subtotal		594	1,202	1,796	1,495	1,038	2,533	27,350
Total		**2,158**	**3,483**	**5,641**	**4,986**	**3,789**	**8,775**	**93,660**

a. Based upon trip generation rates published by the ITE Trip Generation (Sixth Edition).

Table IV-4 provides daily traffic projections within the study area for each future scenario including year 2004 conditions (with and without the proposed project), and year 2010 conditions (with and without the proposed project). Year 1999 peak season daily volumes are included for comparison.

Table IV-4
Daily Traffic Volumes By Scenario

Roadway Link	1999[a] Peak Season	2004 Ambient	2004 +Project	2010 Ambient	2010 +Project
Jefferson Street					
- N/O Avenue 50	10,900	20,760	23,020	29,510	32,820
- N/O Avenue 52	7,300	18,920	21,860	27,150	30,710
- N/O Avenue 54	6,600	20,090	24,150	27,130	31,160
PGA Boulevard					
- S/O Avenue 54	5,200	12,280	12,490	20,110	20,560
Madison Street					
- N/O Avenue 50	0	0	0	9,540	12,870
- N/O Avenue 52	300	290	290	14,940	20,020
- N/O Avenue 54	0	0	0	22,450	30,220
- N/O Airport Boulevard	1,800	11,180	15,970	23,180	33,750
- N/O Avenue 58	1,200	10,700	15,960	22,810	34,320
- N/O Resort Village Access	200	7,800	13,900	17,250	30,460
- N/O Avenue 60	200	7,800	11,130	17,250	25,730
- S/O Avenue 60	0	7,840	7,840	17,250	17,280
Monroe Street					
- N/O Avenue 50	10,500	15,190	17,250	19,010	23,560
- N/O Avenue 52	7,500	12,530	15,050	16,200	21,750
- N/O Avenue 54	3,400	7,950	10,810	10,060	16,160
- N/O Airport Boulevard	2,800	5,600	8,310	9,380	18,140
- N/O Avenue 58	2,200	4,590	7,610	8,050	18,360
- S/O Avenue 58	1,100	2,380	4,890	4,190	13,780
- N/O Avenue 60	1,100	2,380	4,890	4,190	10,040
- S/O Avenue 60	1,100	2,150	4,300	3,470	7,450
- S/O S. Primary Housing Access	1,100	2,150	2,150	3,470	4,790
- N/O Avenue 62	1,100	2,140	2,150	3,470	3,470
Avenue 50					
- W/O Jefferson Street	6,300	14,540	15,270	11,080	12,790
- E/O Jefferson Street	7,500	8,090	8,140	13,890	15,410
- E/O Madison Street	6,300	7,840	7,890	11,090	11,880
- E/O Monroe Street	5,800	7,550	7,950	10,740	11,970
Avenue 52					
- W/O Jefferson Street	7,500	11,540	12,690	18,860	21,550
- E/O Jefferson Street	4,600	6,610	6,640	13,520	15,740
- E/O Madison Street	4,500	6,500	6,530	10,050	11,130
- E/O Monroe Street	4,300	5,730	6,040	8,100	9,120

a. Estimated from 1998 peak hour traffic counts at the key intersections after they were seasonally adjusted and increased by an annual traffic growth rate. These volumes were rounded to the nearest hundred vehicles.

Table IV-4 (Continued)
Daily Traffic Volumes By Scenario

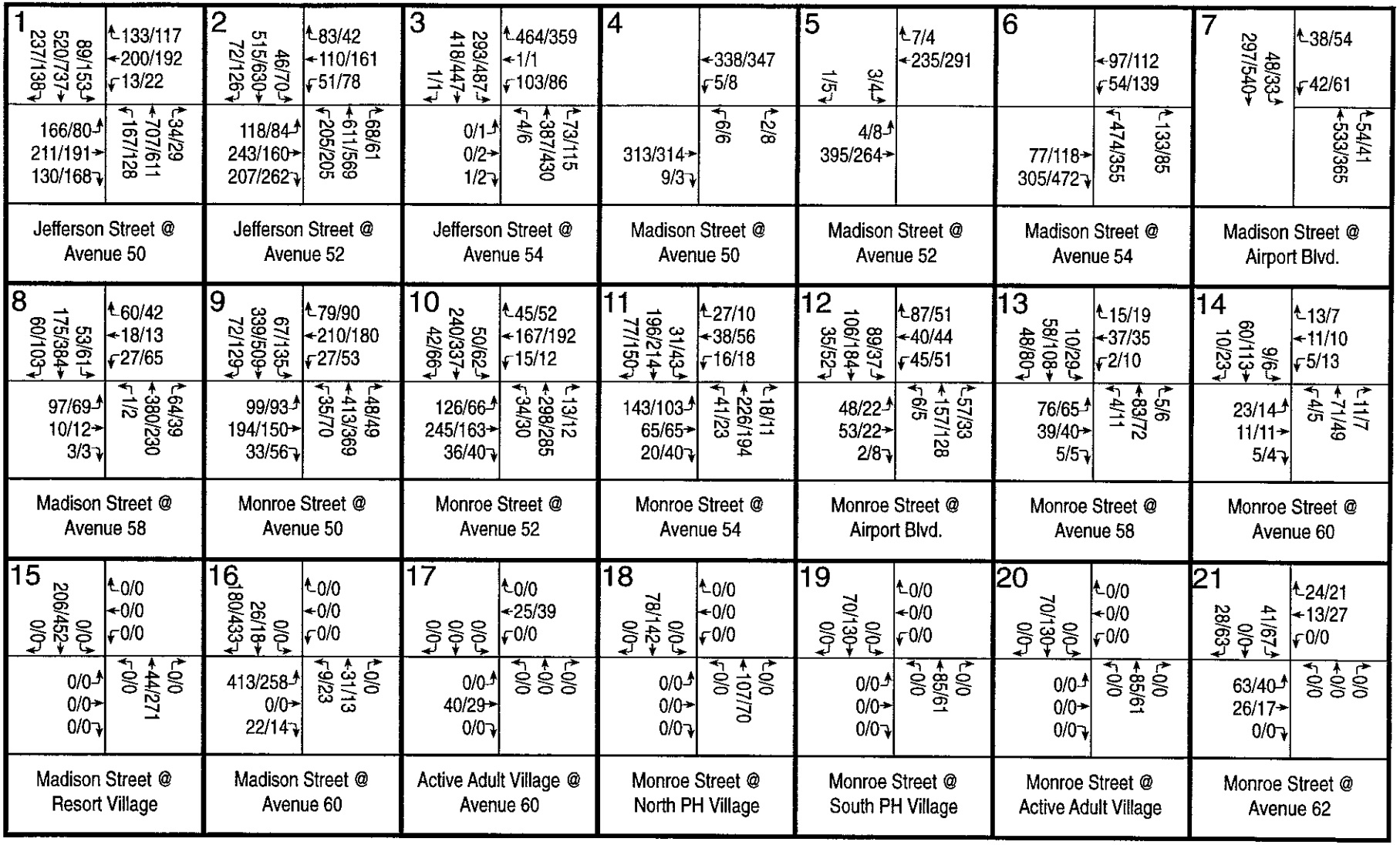
Roadway Link	1999[a] Peak Season	2004 Ambient	2004 +Project	2010 Ambient	2010 +Project
Avenue 54					
- W/O Jefferson Street	200	180	180	200	200
- E/O Jefferson Street	2,800	11,420	15,690	11,100	15,580
- E/O Madison Street	1,100	4,910	6,790	5,150	8,730
- E/O Monroe Street	1,300	2,290	2,670	2,620	3,600
Airport Boulevard					
- E/O Madison Street	900	2,070	2,660	3,570	4,930
- E/O Monroe Street	1,900	2,730	3,500	3,940	6,440
Avenue 58					
- W/O Madison Street	400	2,060	2,060	4,030	4,030
- E/O Madison Street	800	2,610	3,600	4,970	7,240
- E/O Monroe Street	1,100	1,590	1,920	2,260	3,230
Avenue 60					
- E/O Madison Street	200	740	4,070	1,720	10,180
- W/O Monroe Street	200	740	2,620	1,720	6,420
- E/O Monroe Street	300	600	830	1,070	1,710
Avenue 62					
- W/O Monroe Street	0	1,610	1,610	3,320	3,320
- E/O Monroe Street	1,100	1,520	1,520	2,160	2,160

a. Estimated from 1998 peak hour traffic counts at the key intersections after they were seasonally adjusted and increased by an annual traffic growth rate. These volumes were rounded to the nearest hundred vehicles.

IV. B THROUGH TRAFFIC

Year 2004 non-site traffic volumes are provided in Figure IV-7. They were developed by increasing existing turning movements by a 2% annual traffic growth factor and explicitly including the traffic volumes from a portion of eight cumulative projects shown in Table IV-3. The Vista Santa Rosa Specific Plan was not included in the year 2004 non-site traffic because the extension of Madison Street north of Avenue 54 was not assumed for the year 2004. The year 2004 analysis assumed that approximately 45 percent of the remaining eight cumulative projects were completed by the year 2004 (5 years of the assumed 11 year build-out). The year 2004 daily traffic projections are shown in Table IV-4.

Year 2010 non-site peak hour traffic volumes are provided in Figure IV-8. They were developed by increasing existing turning movements by a 2% annual traffic growth factor and explicitly including the traffic volumes from the nine cumulative projects shown in Table IV-3. The year 2010 analysis assumes the extension of Madison Street from Avenue 54 to the north past Avenue 50 is completed. The year 2010 daily traffic projections are shown in Table IV-4.



Legend

10/10 AM/PM Peak Hour Turning Volume

Figure IV-7

Estimated Peak Hour Non-Site Traffic (Year 2004)

Endo Engineering

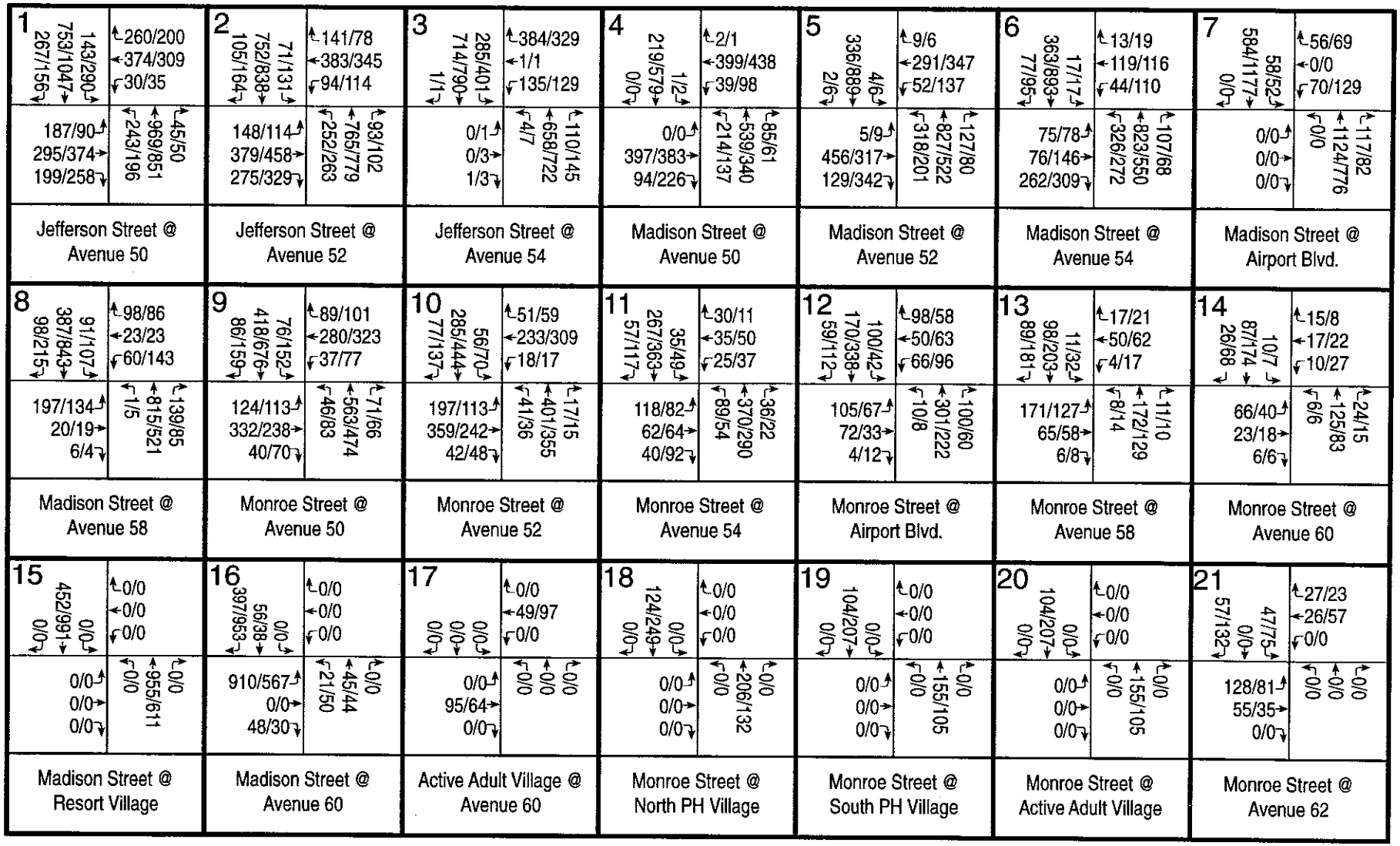


Figure IV-8

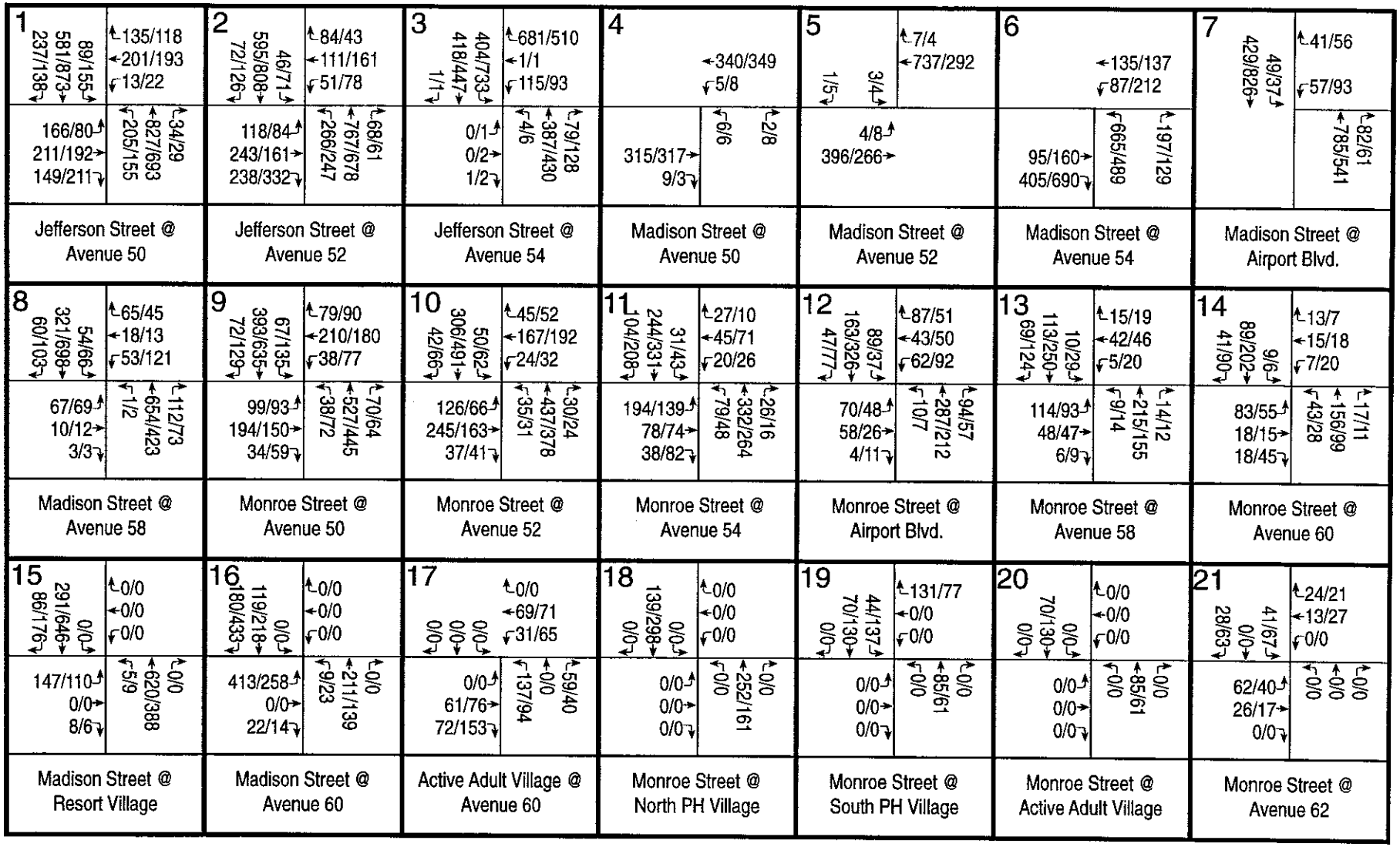
Estimated Peak Hour Non-Site Traffic
(Year 2010)

Endo Engineering

IV. C TOTAL TRAFFIC

Figure IV-9 shows the year 2004 total peak hour traffic volumes within the study area upon completion of the initial project phase. The total peak hour volumes shown in Figure IV-9 were developed by adding the site traffic (shown in Figure IV-3) to the 2004 non-site traffic (depicted in Figure IV-7).

Figure IV-10 shows the year 2010 total peak hour traffic volumes within the study area upon build-out of the proposed project and cumulative projects. The total peak hour volumes shown in Figure IV-10 were developed by adding the site traffic (shown in Figure IV-6) to the 2010 non-site traffic (depicted in Figure IV-8).



Legend

10/10 AM/PM Peak Hour Turning Volume

Figure IV-9

Estimated Peak Hour Total Future Traffic
(Year 2004)

Endo Engineering

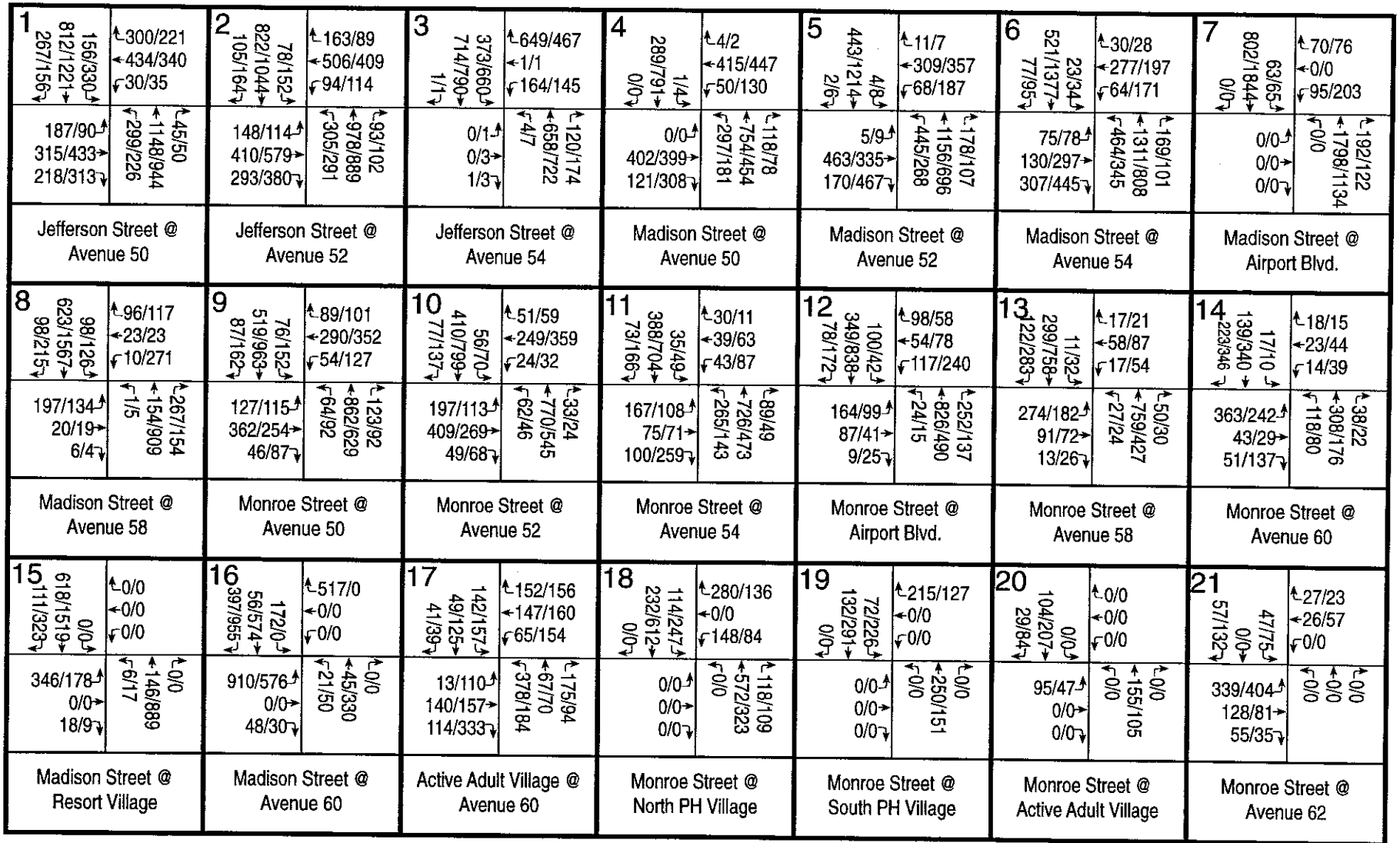


Figure IV-10

Estimated Peak Hour Total Future Traffic
(Year 2010)

Endo Engineering

V. TRAFFIC ANALYSIS

V. A SITE ACCESS

The proposed project benefits from access to several master planned roadways. Madison Street , Monroe Street, and Avenue 60 bisect the project site. Avenue 58 is adjacent to the northern site boundary. Avenue 62 currently terminates at the project site and will be extended adjacent to the southern site boundary in the future to serve the Travertine Specific Plan. Site access is adequate to serve the future traffic demands associated with proposed project.

V. B CAPACITY AND LEVEL OF SERVICE AND IMPROVEMENT ANALYSIS

Roadway capacity has been defined as the maximum number of vehicles that can pass over a given roadway during a given time period under prevailing roadway and traffic conditions. By comparison, levels of service are a relative measure of driver satisfaction, with values ranging from A (free flow) to F (forced flow). Levels of service (LOS) reflect a number of factors such as speed and travel time, traffic interruptions, vehicle delay, freedom to maneuver, driver comfort and convenience, safety and vehicle operating costs.

Peak hour traffic creates the heaviest demand on the circulation system and the lane configuration at intersections is the limiting factor in roadway capacity; consequently, peak hour intersection capacity analyses are useful indicators of "worst-case" conditions. The relationship between peak hour intersection capacity and levels of service is provided in Appendix 2 (Table A-1) for unsignalized intersections and Appendix 4 (Table A-2) for signalized intersections.

The Riverside County Comprehensive General Plan circulation policies require a minimum Level of Service "C", except that a Level of Service "D" could be allowed with Board of Supervisors' approval in urban areas only at intersections of any combination of major street, arterials, expressways, or conventional State Highways within one mile of a freeway interchange and also at freeway ramp intersections. Level of Service "D" would only be allowed in those instances where mitigation to Level of Service "C" is deemed impractical.

Existing 1999 Traffic Conditions

None of the existing key intersections in the project vicinity are controlled by traffic signals. Figure III-1 indicates where stop signs control traffic at the fourteen existing key intersections.

Unsignalized Intersection Analysis

The measure of effectiveness for unsignalized intersections is average total delay per vehicle. The 1994 update to the *Highway Capacity Manual* (TRB Special Report 209) includes an unsignalized intersection operational methodology which is the basis for determining unsignalized intersection delay. The existing unsignalized key intersections were evaluated with the methodology outlined in the 1994 *Highway Capacity Manual* (HCM). A general discussion of this methodology is included in Appendix 2.

The Highway Capacity Software (HCS) package is a direct computerized implementation of the 1994 HCM procedures, prepared under FHWA sponsorship and maintained by the McTrans Center at the University of Florida Transportation Research Center. HCS Release 2.1d was employed to assess the unsignalized key intersections in the project vicinity. Computerized HCS worksheets for the unsignalized intersections analyzed are included in Appendix 2.

Existing average total delay per vehicle values and the corresponding levels of service for the fourteen unsignalized key intersections are provided in Table V-1, assuming existing lane geometrics. As shown therein, all of unsignalized key intersections are operating at level of service (LOS) C or better during both morning and evening peak hours, except one.

Thirteen of the fourteen unsignalized key intersections are currently operating at level of service (LOS) C or better during both morning and evening peak hours. Average intersection delays range from 0.1 to 8.7 seconds per vehicle at these key intersections. The movements with the worst delay at these intersections are operating at LOS C or better (with average delays ranging from 1.9 to 10.0 seconds per vehicle).

The intersection of Jefferson Street and Avenue 50 was found to provide LOS F operation during the morning peak hour and LOS C during the ecvening peak hour. This intersection appears to currently warrant signalization. Once a traffic signal is installed, the peak hour LOS will be acceptable at this intersection.

Traffic Signal Warrants

The justification for the installation of a traffic signal at an intersection is based on the warrants adopted by Caltrans and the Federal Highway Administration. There are 11 types of traffic signal warrants including one for minimum vehicular volume, interruption of continuous traffic, minimum pedestrian volume, school crossings, progressive movement, accident experience, systems organization, a combination of warrants, a four-hour volume warrant, a peak hour delay warrant, and a peak hour volume warrant.

The installation of a traffic signal should be considered if one or more of the warrants is met; however, the satisfaction of a warrant is not necessarily sufficient justification in and of itself for the installation of signals. Delay, congestion, approach conditions, driver confusion, future land use or other evidence of the need for right-of-way assignment beyond that which could be provided by stop signs must be demonstrated. Improper or unwarranted signal installations may cause: (1) excessive delay; (2) disobedience of the signal indications; (3) circuitous travel on alternate routes; and (4) increased accident frequency.[1]

Rural volume warrants (70 percent of the urban warrants) apply when the 85th percentile speed of traffic on the major street exceeds 40 mph in either an urban or a rural area, or when the intersection lies within the built-up area of an isolated community with a population under 10,000. All other areas are considered urban and urban warrants should apply.

Planning level signal warrants (in terms of daily traffic volumes) were checked for the unsignalized key intersections for 1999 peak season conditions. Rural warrants were applied because the existing speeds of traffic on the major streets are greater than 40 mph. As shown in Appendix 3, one intersection (Jefferson Street at Avenue 50) appears to currently meet planning level daily signal warrants.

1. Caltrans; *Traffic Manual;* Revised 3/1/95; pg. 9-1 and 9-2.

Table V-1
Existing Unsignalized Intersection Peak Hour Delay and LOS Summary[a]
(Peak Season Average Weekday)

Unsignalized Intersection	Existing Condition (1999 No Project)				
	Intersection		Movement With The Most Delay		
	Delay	Level of Service	Move	Delay	Level of Service
Jefferson Street @ Avenue 50					
- AM Peak Hour	72	LOS F	EB	135	LOS F
- PM Peak Hour	14.9	LOS C	SB	28.6	LOS D
Jefferson Street @ Avenue 52					
- AM Peak Hour	5.2	LOS B	NB	9.0	LOS B
- PM Peak Hour	5.8	LOS B	NB	10.0	LOS C
Jefferson Street @ Avenue 54					
- AM Peak Hour	3.2	LOS A	SB	4.5	LOS A
- PM Peak Hour	2.7	LOS A	SB	3.2	LOS A
Madison Street @ Avenue 50					
- AM Peak Hour	0.1	LOS A	NB	6.5	LOS B
- PM Peak Hour	0.1	LOS A	NB	5.1	LOS B
Madison Street @ Avenue 52					
- AM Peak Hour	0.1	LOS A	SB	5.3	LOS B
- PM Peak Hour	0.1	LOS A	SB	4.3	LOS A
Madison Street @ Avenue 54					
- AM Peak Hour	2.0	LOS A	EB	2.5	LOS A
- PM Peak Hour	1.7	LOS A	EB	1.9	LOS A
Madison Street @ Airport Boulevard					
- AM Peak Hour	1.1	LOS A	WB	3.7	LOS A
- PM Peak Hour	1.1	LOS A	WB	3.1	LOS A

a. Delay=Average Total Delay (seconds/vehicle); NB=northbound; SB=southbound; WB=westbound; EB=eastbound. LOS was determined from the delay (0-5 sec./veh.=LOS A; 5-10 sec./veh.=LOS B; 10-20 sec./veh.=LOS C; 20-30 sec./veh.=LOS D; 30-45 sec./veh.=LOS E; 45+ sec./veh. = LOS F) per 1994 HCM page 10-12. Appendix 3 includes all of the HCS unsignalized intersection peak hour worksheets.

Table V-1 (Continued)
Existing Unsignalized Intersection Peak Hour Delay and LOS Summary[a]
(Peak Season Average Weekday)

Unsignalized Intersection	Existing Condition (1999 No Project)				
	Intersection		Movement With The Most Delay		
	Delay	Level of Service	Move	Delay	Level of Service
Madison Street @ Avenue 58					
- AM Peak Hour	2.4	LOS A	SB	3.7	LOS A
- PM Peak Hour	2.3	LOS A	SB	3.6	LOS A
Monroe Street @ Avenue 50					
- AM Peak Hour	6.4	LOS B	NB	8.8	LOS B
- PM Peak Hour	8.7	LOS B	SB	10.1	LOS C
Monroe Street @ Avenue 52					
- AM Peak Hour	5.6	LOS B	SB	7.4	LOS B
- PM Peak Hour	4.0	LOS A	WB	4.5	LOS A
Monroe Street @ Avenue 54					
- AM Peak Hour	1.4	LOS A	EB	5.2	LOS B
- PM Peak Hour	1.4	LOS A	EB	5.1	LOS B
Monroe Street @ Airport Boulevard					
- AM Peak Hour	2.5	LOS A	WB	3.4	LOS A
- PM Peak Hour	1.9	LOS A	WB	2.3	LOS A
Monroe Street @ Avenue 58					
- AM Peak Hour	2.0	LOS A	NB	3.7	LOS A
- PM Peak Hour	2.6	LOS A	SB	4.1	LOS A
Monroe Street @ Avenue 60					
- AM Peak Hour	1.2	LOS A	EB	3.4	LOS A
- PM Peak Hour	0.8	LOS A	EB	3.5	LOS A

a. Delay=Average Total Delay (seconds/vehicle); NB=northbound; SB=southbound; WB=westbound; EB=eastbound. LOS was determined from the delay (0-5 sec./veh.=LOS A; 5-10 sec./veh.=LOS B; 10-20 sec./veh.=LOS C; 20-30 sec./veh.=LOS D; 30-45 sec./veh.=LOS E; 45+ sec./veh. = LOS F) per 1994 HCM page 10-12. Appendix 3 includes all of the HCS unsignalized intersection peak hour worksheets.

Year 2004 Ambient Conditions

Traffic Signal Warrants

Planning level signal warrants (in terms of daily traffic volumes) were checked for the unsignalized key intersections for 2004 peak season conditions without the proposed project. Rural warrants were applied because the speeds of traffic on the major streets are expected to be greater than 40 mph. As shown in Appendix 3, eight intersections appear to meet planning level daily signal warrants based upon year 2004 non-site (ambient) volumes including:

Jefferson Street @	**Monroe Street @**	**Madison Street @**
• Avenue 52	• Avenue 50	• Avenue 54
• Avenue 54	• Avenue 52	• Airport Boulevard
	• Avenue 54	• Avenue 58

One of these intersections (Monroe Street @ Avenue 54) is projected to provide acceptable levels of service for year 2004 non-site traffic volumes without signalization.

Unsignalized Intersection Analysis

Tables V-2 and V-3 provide the delay values and levels of service at the key unsignalized and signalized intersections, respectively, for year 2004 conditions with and without the proposed project. The non-site traffic volumes included 45 percent (5/11) of the cumulative traffic (excluding Vista Santa Rosa because Madison Street was not expected to be extended by the year 2004).[2] The lane geometrics assumed for the year 2004 at all key intersections are shown in Figure VI-2.

As shown in Tables V-2 and V-3, all of the unsignalized key intersections will provide LOS B or better operation in the year 2004. The movements with the most delay at the unsignalized key intersections are projected to experience LOS C or better, with average total delays of up to 13.3 seconds/vehicle.

Signalized Intersection Analysis

The signalized key intersections will operate at acceptable levels of service (LOS C or better) in the year 2004 prior to the addition of site traffic. The intersection with the longest average stopped delay is Jefferson Street @ Avenue 50 during the evening peak hour (with an average of 22.1 seconds/vehicle which corresponds to LOS C).

Year 2004 Plus Project Traffic Conditions

Traffic Signal Warrants

Planning level signal warrants (in terms of daily traffic volumes) were checked for the unsignalized key intersections for 2004 peak season conditions with the proposed project. Rural warrants were applied because the speeds of traffic on the major streets are expected to be greater than 40 mph. As shown in Appendix 3, five intersections appear to meet planning level daily signal warrants based upon year 2004+project (total) volumes including:

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2. The 45% factor was determined from 5/11, since 2004 is 5 years from 1999 and buildout of the cumulative developments was assumed to occur by the year 2010, which is 11 years from 1999.

Table V-2
Year 2004 Unsignalized Intersection Peak Hour Delay and LOS Summary[a]
(Peak Season Average Weekday)

Unsignalized Intersection	No-Project			With Project			Change In	
	Intersection Delay/LOS	Move w/ Most Delay Move	Most Delay/LOS	Intersection Delay/LOS	Move w/ Most Delay Move	Most Delay/LOS	Intersection Delay	LOS
Madison Street @ Avenue 50								
- AM Peak Hour	0.1/LOS A	NB	7.4/LOS B	0.1/LOS A	NB	7.4/LOS B	0.0	No
- PM Peak Hour	0.2/LOS A	NB	5.9/LOS B	0.2/LOS A	NB	6.0/LOS B	0.0	No
Madison Street @ Avenue 52								
- AM Peak Hour	0.1/LOS A	SB	6.9/LOS B	0.1/LOS A	SB	6.9/LOS B	0.0	No
- PM Peak Hour	0.1/LOS A	SB	5.2/LOS B	0.1/LOS A	SB	5.2/LOS B	0.0	No
Madison Street @ Avenue 60								
- AM Peak Hour	5.9/LOS B	EB	9.2/LOS B	12.1/LOS C	EB	26.4/LOS D	6.2	B-C
- PM Peak Hour	3.0/LOS A	EB	8.2/LOS B	5.1/LOS B	EB	19.9/LOS C	2.1	A-B
Monroe Street @ Avenue 54								
- AM Peak Hour	4.1/LOS A	EB	9.7/LOS B	Signalized			NA	NA
- PM Peak Hour	4.0 LOS A	EB	13.3/LOS C	(See Table V-3)			NA	NA
Monroe Street @ Airport Boulevard								
- AM Peak Hour	5.1/LOS B	WB	8.9/LOS B	10.5/LOS C	WB	19.4/LOS C	5.4	B-C
- PM Peak Hour	4.3/LOS A	WB	6.6/LOS B	10.6/LOS C	WB	19.2/LOS C	6.3	A-C

a. Delay=Average Total Delay (seconds/vehicle). NA=Not Applicable (either this intersection does not exist with the "no project" scenario so a comparison between conditions with and without the project is not possible). NB=northbound; SB=southbound; EB=eastbound. LOS was determined from the delay (0-5 sec./veh.=LOS A; 5-10 sec./veh.=LOS B; 10-20 sec./veh.=LOS C; 20-30 sec./veh.=LOS D; 30-45 sec./veh.=LOS E; 45+ sec./veh.=LOS F) per 1994 HCM page 10-12. Appendix 3 includes all of the HCS unsignalized intersection peak hour worksheets.

Table V-2 (Continued)
Year 2004 Unsignalized Intersection Peak Hour Delay and LOS Summary[a]
(Peak Season Average Weekday)

Unsignalized Intersection	No-Project			With Project			Change In	
	Intersection Delay/LOS	Move w/ Most Delay Move	Most Delay/LOS	Intersection Delay/LOS	Move w/ Most Delay Move	Most Delay/LOS	Intersection Delay	LOS
Monroe Street @ Avenue 58								
- AM Peak Hour	2.9/LOS A	NB	4.8/LOS A	4.6/LOS A	NB	7.1/LOS B	1.7	No
- PM Peak Hour	3.6/LOS A	SB	5.1/LOS B	5.8/LOS B	SB	8.4/LOS B	2.2	A-B
Monroe Street @ Avenue 60								
- AM Peak Hour	1.3/LOS A	EB	4.3/LOS A	2.1/LOS A	EB	6.4/LOS B	0.8	No
- PM Peak Hour	1.1/LOS A	EB	4.4/LOS A	1.8/LOS A	EB	6.1/LOS B	0.7	No
Monroe Street @ S. Primary Village Access								
- AM Peak Hour	NA	NA	NA	1.6/LOS A	WB	3.2/LOS A	NA	NA
- PM Peak Hour	NA	NA	NA	1.4/LOS A	WB	3.0/LOS A	NA	NA
Monroe Street @ Avenue 62								
- AM Peak Hour	2.1/LOS A	SB	3.8/LOS A	2.1/LOS A	SB	3.8/LOS A	0.0	No
- PM Peak Hour	2.5/LOS A	SB	3.9/LOS A	2.5/LOS A	SB	3.9/LOS A	0.0	No
Active Adult Village @ Avenue 60								
- AM Peak Hour	NA	NA	NA	2.6/LOS A	NB	5.3/LOS B	NA	NA
- PM Peak Hour	NA	NA	NA	1.9/LOS A	NB	5.7/LOS B	NA	NA

a. Delay=Average Total Delay (seconds/vehicle). NA=Not Applicable (either this intersection does not exist with the "no project" scenario so a comparison between conditions with and without the project is not possible). NB=northbound; SB=southbound; EB=eastbound; WB=westbound. LOS was determined from the delay (0-5 sec./veh.=LOS A; 5-10 sec./veh.=LOS B; 10-20 sec./veh.=LOS C; 20-30 sec./veh.=LOS D; 30-45 sec./veh.=LOS E; 45+ sec./veh.=LOS F) per 1994 HCM page 10-12. Appendix 3 includes all of the HCS unsignalized intersection peak hour worksheets.

Table V-3
Year 2004 Signalized Intersection Peak Hour Delay and LOS Summary[a]
(Peak Season Average Weekday)

Signalized Intersection	No-Project			With Project			Change In	
	Avg. Delay (Sec./Veh.)	Critical V/C	LOS	Avg. Delay (Sec./Veh.)	Critical V/C	LOS	Avg. Delay (Sec./Veh.)	LOS
Jefferson Street @ Avenue 50								
- AM Peak Hour	20.4	0.854	LOS C	19.9	0.700	LOS C	-0.5	No
- PM Peak Hour	22.1	0.911	LOS C	20.8	0.805	LOS C	-1.3	No
Jefferson Street @ Avenue 52								
- AM Peak Hour	16.3	0.620	LOS C	17.3	0.716	LOS C	1.0	No
- PM Peak Hour	14.5	0.524	LOS B	14.9	0.612	LOS B	0.4	No
Jefferson Street @ Avenue 54								
- AM Peak Hour	10.1	0.529	LOS B	10.7	0.611	LOS B	0.6	No
- PM Peak Hour	13.2	0.666	LOS B	22.2	0.834	LOS C	9.0	B-C
Madison Street @ Avenue 54								
- AM Peak Hour	5.7	0.407	LOS B	6.7	0.585	LOS B	1.0	No
- PM Peak Hour	6.4	0.427	LOS B	7.6	0.638	LOS B	1.2	No
Madison Street @ Airport Boulevard								
- AM Peak Hour	3.4	0.463	LOS A	4.3	0.668	LOS A	0.9	No
- PM Peak Hour	4.4	0.415	LOS A	5.3	0.613	LOS B	0.9	A-B
Madison Street @ Avenue 58								
- AM Peak Hour	7.2	0.417	LOS B	8.4	0.660	LOS B	1.2	No
- PM Peak Hour	6.9	0.525	LOS B	12.8	0.876	LOS B	5.9	No
Madison Street @ Resort Village Access								
- AM Peak Hour	NA	NA	NA	5.4	0.488	LOS B	NA	NA
- PM Peak Hour	NA	NA	NA	3.8	0.476	LOS A	NA	NA

a. Average Delay=Average Stopped Delay (seconds per vehicle). Appendix 4 includes all of the HCS signalized intersection peak hour worksheets. NA=Not Applicable (either this intersection does not exist with this scenario).

Table V-3 (Continued)
Year 2004 Signalized Intersection Peak Hour Delay and LOS Summary[a]
(Peak Season Average Weekday)

Signalized Intersection	No-Project			With Project			Change In	
	Avg. Delay (Sec./Veh.)	Critical V/C	LOS	Avg. Delay (Sec./Veh.)	Critical V/C	LOS	Avg. Delay (Sec./Veh.)	LOS
Monroe Street @ Avenue 50								
- AM Peak Hour	10.1	0.469	LOS B	10.3	0.555	LOS B	0.2	No
- PM Peak Hour	9.9	0.574	LOS B	11.3	0.774	LOS B	1.4	No
Monroe Street @ Avenue 52								
- AM Peak Hour	10.0	0.365	LOS B	10.1	0.462	LOS B	0.1	No
- PM Peak Hour	9.5	0.405	LOS B	9.4	0.499	LOS B	-0.1	No
Monroe Street @ Avenue 54								
- AM Peak Hour	Unsignalized			11.9	0.660	LOS B	7.8	A-B
- PM Peak Hour	(See Table V-2)			12.1	0.707	LOS B	8.1	A-B

a. Average Delay=Average Stopped Delay (seconds per vehicle). Appendix 4 includes all of the HCS signalized intersection peak hour worksheets.

Monroe Street @
- Avenue 54
- Airport Boulevard
- Avenue 58

Madison Street @
- Resort Village
- Avenue 60

Three of these intersections are projected to provide acceptable levels of service based upon year 2004 total traffic volumes without signalization (Monroe Street @ Airport Boulevard, Monroe Street @ Avenue 58, and Madison Street @ Avenue 60).

Unsignalized Intersection Analysis

With the addition of project-related traffic, all of the unsignalized key intersections will provide LOS C or better operation in the year 2004, as shown in Table V-2. The initial phase site traffic will cause the peak hour LOS in the year 2004 to drop at three of the ten unsignalized key intersections analyzed. The movements with the most delay at these intersections are projected to operate at LOS C or better, with one exception (that will experience LOS D operation).

Signalized Intersection Analysis

The measure of effectiveness for signalized intersections is average stopped delay per vehicle. The 1994 update to the *Highway Capacity Manual* includes a signalized intersection operational methodology which is the basis for determining signalized intersection delay. The Highway Capacity Software (HCS) package is a direct computerized implementation of the 1994 HCM procedures. HCS Release 2.4d was utilized to evaluate the one key signalized intersection in the project vicinity.

The 1994 *Highway Capacity Manual* (HCM) signalized intersection capacity and level of service methodology addresses the capacity and level of service of intersection approaches as well as the level of service of the intersection as a whole. The analysis is undertaken in terms of the ratio of demand flow rate to capacity (V/C ratio) for individual movements during the peak hour and the composite V/C ratio for the sum of critical movements or lane groups within the intersection. The level of service is determined based upon average stopped delay per vehicle.

Average stopped delay is the total time vehicles are stopped in an intersection approach during a specified time interval divided by the volume departing from the approach during the same time period. It does not include queue follow-up time (i.e. the time required for the vehicle to travel from the last-in-queue position to the first-in- queue position).

A critical V/C ratio less than 1.00 indicates that all movements at the intersection can be accommodated within the defined cycle length and phase sequence by proportionally allocating green time. In other words, the total available green time in the phase sequence is adequate to handle all movements, if properly allocated.

It is possible to have unacceptable delays (LOS F) while the V/C ratio is below 1.00 (when the cycle length is long, the lane group has a long red time because of signal timing and/or the signal progression for the subject movements is poor). Conversely, a saturated approach (with V/C ratio $\geq$ 1.00) may have low delays if the cycle length is short and/or the signal progression is favorable. Therefore, an LOS F designation may not necessarily mean that the intersection, approach or lane group is overloaded and LOS A to LOS E does not automatically imply available unused capacity.

The morning and evening peak hour levels of service were determined for the signalized key intersections with the methodology outlined in the 1994 HCM. A brief discussion of this methodology is provided in Appendix 4 in conjunction with the corresponding LOS criteria and HCS worksheets. The peak hour intersection delay, volume-to-capacity ratios, and levels of service for key intersections that will be signalized by the year 2004 are provided in Table V-3.

As shown in Table V-3, all ten of the signalized key intersections are projected to operate at acceptable levels of service (LOS C or better) during peak hours with or without the initial phase of the proposed project. The peak hour level of service will drop at three of the ten signalized key intersections, once site traffic is added to the street system. Two signalized key intersections will experience a drop from LOS A to LOS B (Madison Street @ Airport and Monroe Street @ Avenue 54). One key intersection (Jefferson Street @ Avenue 54) will experience a drop from LOS B to LOS C.

Year 2010 Ambient Conditions

Traffic Signal Warrants

Planning level signal warrants (in terms of daily traffic volumes) were checked for the unsignalized key intersections for 2010 peak season conditions without the proposed project. Rural warrants were applied because the speeds of traffic on the major streets are expected to be greater than 40 mph. As shown in Appendix 3, five intersections are projected to meet planning level daily signal warrants based upon year 2010 non-site (ambient) volumes including:

Monroe Street @
- Airport Boulevard
- Avenue 58

Madison Street @
- Avenue 50
- Avenue 52
- Avenue 60

Unsignalized Intersection Analysis

Tables V-4 and V-5 provide the delay values and levels of service at the key unsignalized and signalized intersections, respectively, for year 2010 conditions with and without the proposed project. The non-site traffic volumes included all of the traffic associated with buildout of the cumulative developments. Year 2010 lane geometrics assumed for all intersections are shown in Figure VI-3.

As shown in Table V-4, the unsignalized key intersections will provide LOS A operation in the year 2010 prior to the addition of site traffic. The movements with the most delay at the unsignalized key intersections are projected to experience LOS B or better, with average delays of up to 5.7 seconds/vehicle.

Signalized Intersection Analysis

The signalized key intersections will operate at acceptable levels of service (LOS C or better) in the year 2010 prior to the addition of site traffic. The intersection with the longest average delay is projected to be Jefferson Street @ Avenue 50 during the morning peak hour (with an average of 20.8 seconds/vehicle of delay which corresponds to LOS C).

Table V-4
Year 2010 Unsignalized Intersection Peak Hour Delay and LOS Summary[a]
(Peak Season Average Weekday)

Unsignalized Intersection	No-Project			With Project			Change In	
	Intersection Delay/LOS	Move w/ Most Delay Move	Delay/LOS	Intersection Delay/LOS	Move w/ Most Delay Move	Delay/LOS	Intersection Delay	LOS
Monroe Street @ Avenue 60								
- AM Peak Hour	1.8/LOS A	EB	5.6/LOS B	Signalized			NA	NA
- PM Peak Hour	1.5/LOS A	EB	5.7/LOS B	(See Table V-5)			NA	NA
Monroe Street @ S. Primary Village Access								
- AM Peak Hour	NA	NA	NA	1.8/LOS A	WB	4.5/LOS A	NA	NA
- PM Peak Hour	NA	NA	NA	1.4/LOS A	WB	3.5/LOS A	NA	NA
Monroe Street @ Active Adult Village Access								
- AM Peak Hour	NA	NA	NA	1.4/LOS A	EB	5.7/LOS B	NA	NA
- PM Peak Hour	NA	NA	NA	0.6/LOS A	EB	5.9/LOS B	NA	NA
Monroe Street @ Avenue 62								
- AM Peak Hour	2.2/LOS A	SB	4.3/LOS A	2.2/LOS A	SB	4.3/LOS A	0.0	No
- PM Peak Hour	2.8/LOS A	SB	4.4/LOS A	2.8/LOS A	SB	4.4/LOS A	0.0	No

a. Delay=Average Total Delay (seconds/vehicle). NA=Not Applicable (either this intersection does not exist with the "no project" scenario so a comparison between conditions with and without the project is not possible). EB=eastbound; WB=westbound; SB=southbound. LOS was deter-mined from the delay (0-5 sec./veh.=LOS A; 5-10 sec./veh.=LOS B; 10-20 sec./veh.=LOS C; 20-30 sec./veh.=LOS D; 30-45 sec./veh.= LOS E; 45+ sec./veh.=LOS F) per 1994 HCM page 10-12. Appendix 3 includes all of the HCS unsignalized intersection peak hour worksheets.

Table V-5
Year 2010 Signalized Intersection Peak Hour Delay and LOS Summary[a]
(Peak Season Average Weekday)

Signalized Intersection	No-Project			With Project			Change In	
	Avg. Delay (Sec./Veh.)	Critical V/C	LOS	Avg. Delay (Sec./Veh.)	Critical V/C	LOS	Avg. Delay (Sec./Veh.)	LOS
Jefferson Street @ Avenue 50								
- AM Peak Hour	20.8	0.814	LOS C	24.1	0.891	LOS C	3.3	No
- PM Peak Hour	17.1	0.740	LOS C	18.8	0.830	LOS C	1.7	No
Jefferson Street @ Avenue 52								
- AM Peak Hour	17.6	0.708	LOS C	21.2	0.861	LOS C	3.6	No
- PM Peak Hour	19.0	0.727	LOS C	21.5	0.838	LOS C	2.5	No
Jefferson Street @ Avenue 54								
- AM Peak Hour	9.4	0.641	LOS B	11.0	0.690	LOS B	1.6	No
- PM Peak Hour	11.6	0.726	LOS B	15.5	0.825	LOS C	3.9	B-C
Madison Street @ Avenue 50								
- AM Peak Hour	18.1	0.568	LOS C	20.7	0.733	LOS C	2.6	No
- PM Peak Hour	17.6	0.584	LOS C	20.4	0.748	LOS C	2.0	No
Madison Street @ Avenue 52								
- AM Peak Hour	16.5	0.565	LOS C	18.7	0.723	LOS C	2.2	No
- PM Peak Hour	17.4	0.675	LOS C	23.4	0.885	LOS C	6.0	No
Madison Street @ Avenue 54								
- AM Peak Hour	12.0	0.497	LOS B	16.2	0.775	LOS C	4.2	B-C
- PM Peak Hour	12.6	0.568	LOS B	17.7	0.855	LOS C	5.1	B-C

a. Average Delay=Average Stopped Delay (seconds per vehicle). Appendix 4 includes all of the HCS signalized intersection peak hour worksheets.

Table V-5 (Continued)
Year 2010 Signalized Intersection Peak Hour Delay and LOS Summary[a]
(Peak Season Average Weekday)

Signalized Intersection	No-Project			With Project			Change In	
	Avg. Delay (Sec./Veh.)	Critical V/C	LOS	Avg. Delay (Sec./Veh.)	Critical V/C	LOS	Avg. Delay (Sec./Veh.)	LOS
Madison Street @ Airport Boulevard								
- AM Peak Hour	3.7	0.511	LOS A	5.6	0.768	LOS B	1.9	A-B
- PM Peak Hour	5.2	0.522	LOS B	8.0	0.794	LOS B	2.8	No
Madison Street @ Avenue 58								
- AM Peak Hour	11.7	0.552	LOS B	17.3	0.859	LOS C	5.6	B-C
- PM Peak Hour	5.3	0.447	LOS B	9.3	0.936	LOS B	4.0	No
Madison Street @ Resort Village Access								
- AM Peak Hour	NA	NA	NA	9.2	0.729	LOS B	NA	NA
- PM Peak Hour	NA	NA	NA	4.3	0.619	LOS A	NA	NA
Madison Street @ Avenue 60								
- AM Peak Hour	3.4	0.618	LOS A	19.1	0.926	LOS C	15.7	A-C
- PM Peak Hour	5.6	0.637	LOS B	9.1	0.719	LOS B	5.7	No
Monroe Street @ Avenue 50								
- AM Peak Hour	18.2	0.613	LOS C	19.7	0.758	LOS C	1.5	No
- PM Peak Hour	20.1	0.720	LOS C	23.7	0.854	LOS C	3.6	No
Monroe Street @ Avenue 52								
- AM Peak Hour	18.8	0.587	LOS C	21.0	0.762	LOS C	2.2	No
- PM Peak Hour	17.4	0.581	LOS C	18.6	0.736	LOS C	1.2	No

a. Average Delay=Average Stopped Delay (seconds per vehicle). Appendix 4 includes all of the HCS signalized intersection peak hour worksheets. NA=Not Applicable (either this intersection does not exist with this scenario or a comparison between "no project" conditions and "with project" conditions is inappropriate since the intersection would not exist without the project).

Table V-5 (Continued)
Year 2010 Signalized Intersection Peak Hour Delay and LOS Summary[a]
(Peak Season Average Weekday)

Signalized Intersection	No-Project			With Project			Change In	
	Avg. Delay (Sec./Veh.)	Critical V/C	LOS	Avg. Delay (Sec./Veh.)	Critical V/C	LOS	Avg. Delay (Sec./Veh.)	LOS
Monroe Street @ Avenue 54								
- AM Peak Hour	15.8	0.356	LOS C	20.1	0.709	LOS C	4.3	No
- PM Peak Hour	15.2	0.378	LOS C	19.9	0.727	LOS C	4.7	No
Monroe Street @ Airport Boulevard								
- AM Peak Hour	12.4	0.379	LOS B	14.0	0.788	LOS B	1.6	No
- PM Peak Hour	7.8	0.364	LOS B	11.0	0.816	LOS B	3.2	No
Monroe Street @ Avenue 58								
- AM Peak Hour	9.1	0.255	LOS B	11.3	0.713	LOS B	2.2	No
- PM Peak Hour	8.5	0.355	LOS B	11.2	0.831	LOS B	2.7	No
Monroe Street @ Avenue 60								
- AM Peak Hour	Unsignalized			10.4	0.504	LOS B	8.6	A-B
- PM Peak Hour	(See Table V-4)			10.8	0.644	LOS B	9.3	A-B
Monroe Street @ N. Primary Housing Access								
- AM Peak Hour	NA	NA	NA	24.4	0.976	LOS C	NA	NA
- PM Peak Hour	NA	NA	NA	7.5	0.651	LOS B	NA	NA
Active Adult Village Access @ Avenue 60								
- AM Peak Hour	NA	NA	NA	10.2	0.506	LOS B	NA	NA
- PM Peak Hour	NA	NA	NA	15.0	0.610	LOS B	NA	NA

a. Average Delay=Average Stopped Delay (seconds per vehicle). Appendix 4 includes all of the HCS signalized intersection peak hour worksheets. NA=Not Applicable (either this intersection does not exist with this scenario or a comparison between "no project" conditions and "with project" conditions is inappropriate since the intersection would not exist without the project).

Year 2010 Plus Project Traffic Conditions

Traffic Signal Warrants

Planning level signal warrants (in terms of daily traffic volumes) were checked for the unsignalized key intersections for 2010 peak season conditions without the proposed project. Rural warrants were applied because the speeds of traffic on the major streets are expected to be greater than 40 mph. As shown in Appendix 3, three intersections are projected to meet planning level daily signal warrants based upon year 2010+project (total) volumes including: Monroe Street @ Avenue 60, Monroe Street @ the North Primary Housing Village Access, and Avenue 60 @ the Village Commons Access.

Unsignalized Intersection Analysis

With the addition of site traffic, the unsignalized key intersections will provide LOS A operation in the project buildout year 2010, as shown in Table V-4. The movements with the most delay at these intersections are projected to operate at LOS B or better.

Signalized Intersection Analysis

As shown in Table V-5, the signalized key intersections will operate at acceptable levels of service (LOS C or better) in the year 2010 with or without site traffic. The peak hour level of service at six of the eighteen key signalized intersections are projected to change with the addition of project-related traffic. The intersection with the longest average delay is expected to be Monroe Street @ Primary Housing Village access located north of Avenue 60 during the morning peak hour. This intersection is projected to have an average delay of 24.4 seconds/vehicle under year 2010+project conditions, which corresponds to LOS C operation.

Level of Service Summary

Table V-6 summarizes the morning and evening peak hour LOS findings at each of the key intersections with each development scenario. As shown therein, acceptable levels of service are projected to occur for all scenarios, provided traffic signals are installed when warranted and roadway improvements consistent with Figures VI-2 and VI-3 are phased to coincide with projected increases in traffic volumes. These roadway improvements are generally consistent with the master planned cross-sections.

Table V-6
Level of Service Summary[a]

Key Intersection	1999 Peak Season	2004 Ambient	2004 +Project	2010 Ambient	2010 +Project
Jefferson Street					
- Avenue 50	F/C[b]	C/C	C/C	C/C	C/C
- Avenue 52	B/B	C/B	C/B	C/C	C/C
- Avenue 54	A/A	B/B	B/C	B/B	B/C
Madison Street					
- Avenue 50	A/A	A/A	A/A	C/C	C/C
- Avenue 52	A/A	A/A	A/A	C/C	C/C
- Avenue 54	A/A	B/B	B/B	B/B	C/C
- Airport Boulevard	A/A	A/A	A/B	A/B	B/B
- Avenue 58	A/A	B/B	B/B	B/B	C/B
Monroe Street					
- Avenue 50	B/B	B/B	B/B	C/C	C/C
- Avenue 52	B/A	B/B	B/B	C/C	C/C
- Avenue 54	A/A	A/A	B/B	C/C	C/C
- Airport Boulevard	A/A	B/A	C/C	B/B	B/B
- Avenue 58	A/A	A/A	A/B	B/B	B/B
- Avenue 60	A/A	A/A	A/A	A/A	B/B
Madison Street					
- Resort Village Access	NA	NA	B/A	NA	B/A
- Avenue 60	NA	B/A	C/B	A/B	C/B
Active Adult Village Access					
- Avenue 60	NA	NA	A/A	NA	B/B
Monroe Street					
- N. Primary Housing Access	NA	NA	NA	NA	C/B
- S. Primary Housing Access	NA	NA	A/A	NA	A/A
- Active Adult Village Access	NA	NA	NA	NA	A/A
- Avenue 62	NA	A/A	A/A	A/A	A/A

a. Format is AM/PM peak hour Level of Service.
b. This intersection warrants signalization and will operate at acceptable levels of service when signalized.

VI. FINDINGS AND CONCLUSIONS

VI.A Site Accessibility

The project has adequate access to serve the proposed land uses. No improvements beyond those shown in the Riverside General Plan Circulation Element (within unincorporated Riverside County) or in the La Quinta General Plan (within the City of La Quinta) are required to accommodate site traffic at LOS C or better.

VI.B Traffic Impacts

The following are the circulation impacts associated with the proposed project:

1. The proposed project represents an amendment to an approved Specific Plan and will reduce the site trip generation by approximately 20%.

2. The trip generation associated with the initial phase (year 2004) of the proposed project would total approximately 8,840 daily trips, of which 719 would occur during the morning peak hour (237 inbound and 481 outbound) and 868 would occur during the evening peak hour (540 inbound and 327 outbound).

3. The trip generation associated with build-out (year 2010) of the proposed project would total approximately 37,520 unadjusted daily trip-ends, of which 2,840 would occur during the morning peak hour (904 inbound and 1,936 outbound) and 3,839 would occur during the evening peak hour (2,270 inbound and 1,569 outbound).

4. The primary source for traffic increases in the project vicinity will be nine cumulative projects, which will generate a total of 93,660 daily trips by the year 2010 (approximately 3.4 times the proposed project's daily trip generation).

5. All of the key intersections are currently controlled by stop signs. Ten of the key intersections will require traffic signals to serve projected year 2004 total traffic volumes. Eighteen of the twenty-one key intersections will require traffic signals under year 2010 conditions with build-out of the proposed project and nine cumulative projects (as shown in Table VI-1). One of the key intersections currently requires signalization, and three of the eighteen traffic signals required by the year 2010, are for control of site access locations.

6. All of the key intersections are operating at LOS B or better with the existing lane geometrics shown in Figure VI-1. Figure VI-2 shows the minimum lane requirements for acceptable levels of service at the key intersections for the initial phase of the proposed development and cumulative development through the year 2004. As shown therein, most of the key access roadways (including Monroe Street and Madison Street) can remain two-lane facilities.

7. The minimum year 2010 intersection lane requirements shown in Figure VI-3 can be accommodated within the master planned cross-sections, with minor exceptions near some intersections. For example, the south leg of the intersection of Madison Street and Avenue 54 may need to flare at the intersection, or a reduced parkway section may be necessary to accommodate the dual northbound left-turn lanes and dedicated northbound right-turn lane.

Table VI-1
Traffic Signal Warrants Summary[a]

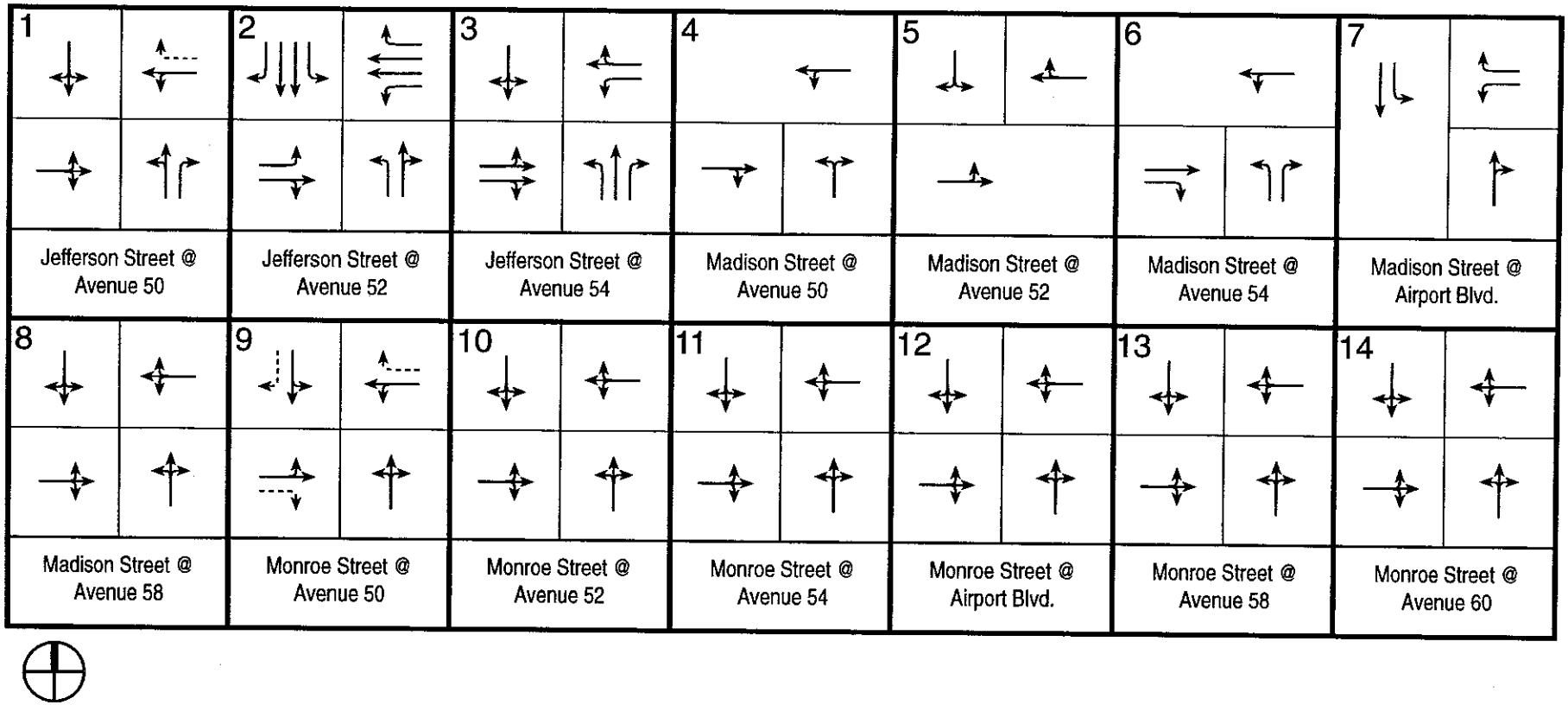
Intersection	Scenario When Daily Traffic Signal Volume Warrants Are First Met				
	Year 1999 Peak Season	Year 2004 Ambient	Year 2004 With Project	Year 2010 Ambient	Year 2010 With Project
Jefferson Street @					
• Avenue 50	●	--	--	--	--
• Avenue 52	--	●	--	--	--
• Avenue 54	--	●	--	--	--
Madison Street @					
• Avenue 50	--	--	--	●	--
• Avenue 52	--	--	--	●	--
• Avenue 54	--	●	--	--	--
• Airport Boulevard	--	●	--	--	--
• Avenue 58	--	●	--	--	--
• Resort Village	--	--	●	--	--
• Avenue 60	--	--	○	●	--

a. Based upon daily planning level volume warrants for use at new intersections or other locations where actual traffic volumes cannot be counted. The General Plan Buildout scenario includes the proposed project.
○ = Daily Planning Signal Warrants appear to be met, but the intersection operates adequately without signalization during peak hours.
● = Requires signalization to provide adequate levels of service during peak hours

Table VI-1 (Continued)
Traffic Signal Warrants Summary[a]

Intersection	Scenario When Daily Traffic Signal Volume Warrants Are First Met				
	Year 1999 Peak Season	Year 2004 Ambient	Year 2004 With Project	Year 2010 Ambient	Year 2010 With Project
Monroe Street @					
• Avenue 50	○	●	--	--	--
• Avenue 52	--	●	--	--	--
• Avenue 54	--	○	●	--	--
• Airport Boulevard	--	--	○	●	--
• Avenue 58	--	--	○	●	--
• Avenue 60	--	--	--	--	●
• North Primary Housing Village Access	--	--	--	--	●
• South Primary Housing Village Access	--	--	--	--	--
• Active Adult Village Access	--	--	--	--	--
• Avenue 62	--	--	--	--	--
Avenue 60 @					
• Village Commons	--	--	--	--	●

a. Based upon daily planning level volume warrants for use at new intersections or other locations where actual traffic volumes cannot be counted. The General Plan Buildout scenario includes the proposed project.
○ = Daily Planning Signal Warrants appear to be met, but the intersection operates adequately without signalization during peak hours.
● = Requires signalization to provide adequate levels of service during peak hours.



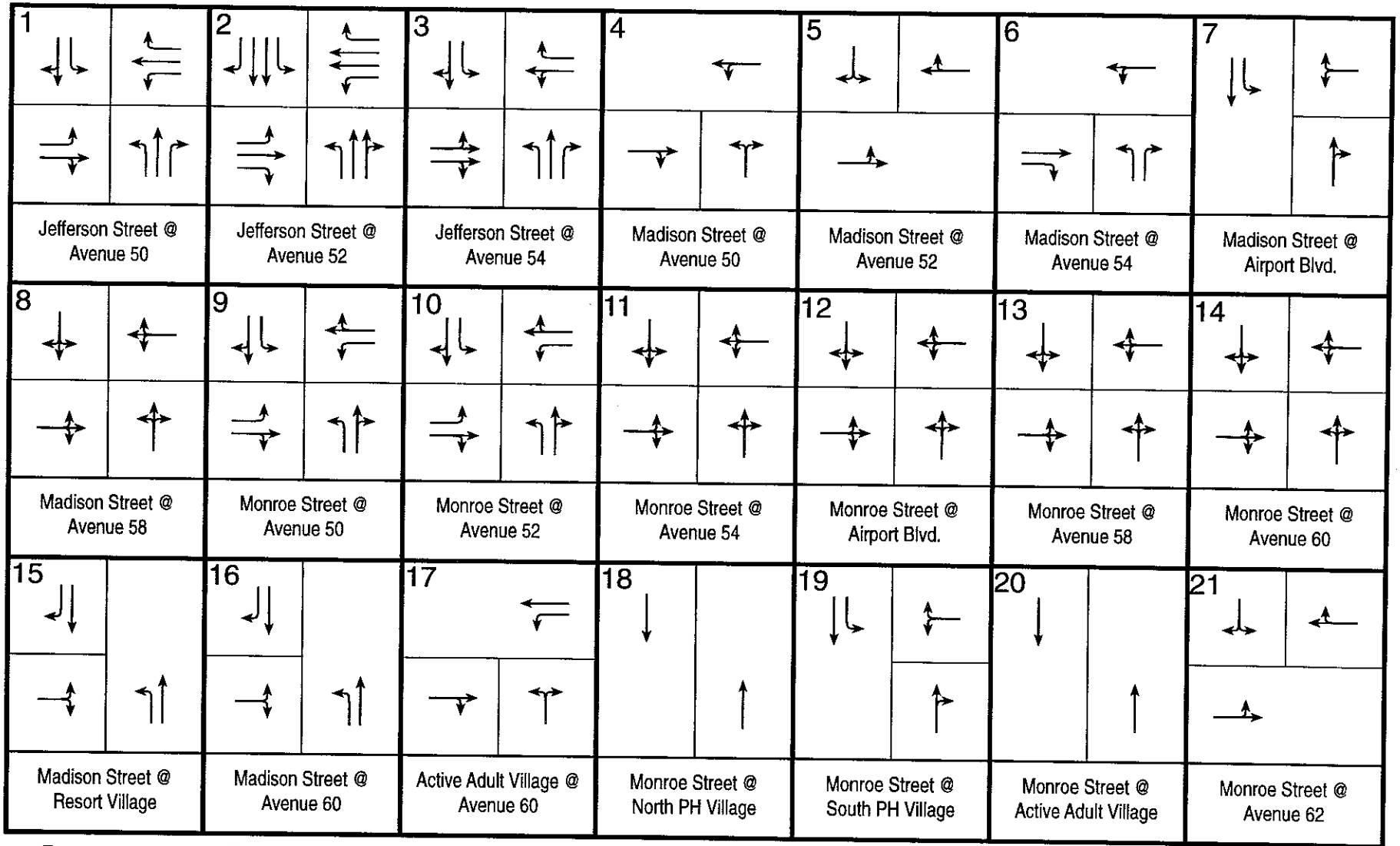
Legend

1 Intersection Number	Opt. Through/Right/Left Lane
Exclusive Right-Turn Lane	Optional Through/Right Lane
Through Lane	Optional Through/Left Lane
Exclusive Left-Turn Lane	Non-Striped Right-Turn Lane

Endo Engineering

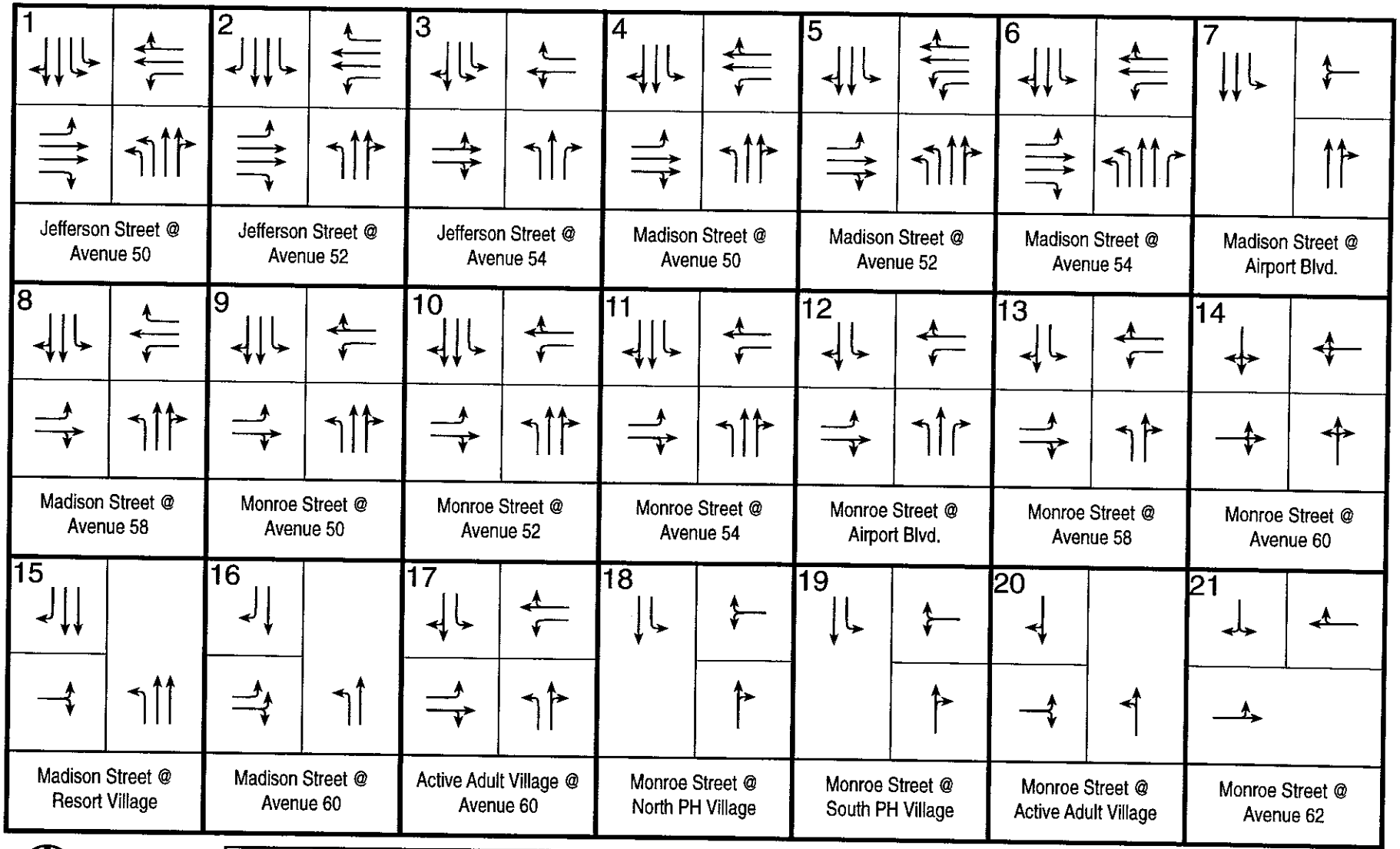
Figure VI-1
Existing Lane Geometrics
Year (1999)

Add Traffic Controls



Endo Engineering

Figure VI-2
Required Year 2004 Lane Geometrics
add Traffic Controls



Legend

- 1 Intersection Number
- Exclusive Right-Turn Lane
- Through Lane
- Exclusive Left-Turn Lane
- Opt. Through/Right/Left Lane
- Optional Through/Right Lane
- Optional Through/Left Lane

Endo Engineering

Figure VI-3
Required Year 2010 Lane Geometrics

Add Traffic Controls

VI.C Off-Site Improvements Needed

Figure VI-1 depicts the existing lane geometrics. Only one intersection, Jefferson Street @ Avenue 50, currently requires signalization to provide acceptable levels of service. None of the key intersections require additional lanes to provide acceptable levels of service (LOS C or better) for current traffic volumes.

Figure VI-2 illustrates the minimum lane requirements to accommodate year 2004 traffic volumes at acceptable levels of service (with or without the proposed project). Intersections which require signalization under 2004 no-project conditions were generally shown with left-turn lanes along the links with sizable traffic volumes to provide space for the turning vehicles to queue outside of the through travel lanes.

Figure VI-3 shows the minimum lane requirements for acceptable levels of service at the key intersections upon build-out of the proposed development and cumulative development (year 2010 conditions). As shown therein, Madison Street will need to be extended from Avenue 54 to north of Avenue 50. In addition, Madison Street will need to be extended from Avenue 62 to Avenue 60 to provide access for the Travertine Specific Plan. Madison Street will need to be fully improved as a 4-lane facility along its entire length through the study area.

Monroe Street will require widening to a 4-lane facility from a point south of Avenue 54 to a point north of Avenue 50 to provide adequate levels of service in the year 2010. In addition, Avenue 50, Avenue 52, and Avenue 54 will require improvements to their master planned cross-sections in the vicinity of Madison Street and Jefferson Street by the year 2010 (as shown in Figure VI-3).

Planning level daily traffic signal warrants were checked for the unsignalized key intersections in the study area, as shown in Table VI-1 and the worksheets in Appendix 3. One intersection, Jefferson Street @ Avenue 50, appears to warrant signalization with existing peak season traffic volumes. Eight additional key intersections off-site will require signalization by the year 2004 to accommodate the proposed project and cumulative development.[1] Four additional key intersections off-site will require signalization by the year 2010 to accommodate the proposed project and cumulative development.[2]

VI.D Compliance With General Plan Circulation Policies

The proposed circulation system is generally consistent with the Riverside County Circulation Element. A comparison of the roadway classifications on-site under the Riverside County General Plan and the Coral Mountain Specific Plan Amendment #1 is provided on page III-2 and in Table III-2. The project appears to comply with the General Plan policies (as shown in Appendix 5). See Appendix 5 for the response to each Riverside County General Plan Policy.

VI.E CMP System Improvements Needed

There are no CMP roadways in the study area.

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1. One of the eight intersections requiring signalization by the year 2004 is Madison Street @ Avenue 58. The site occupies one of the four corners at this intersection.
2. The intersection of Monroe Street and Avenue 60 will require signalization by the year 2010, with or without the project, and was assumed to be on-site although the site occupies only three of the four corners at this intersection.

VII. RECOMMENDATIONS

VII.A Site Access/Circulation Plan

The proposed development is served by a grid of master planned roadways as shown in Figure II-1. The primary project access is to the north along Madison Street, Jefferson Street and Monroe Street. Access to the east is provided along Avenue 50, 52, 54, 58, 60, 62, and Airport Boulevard. Access to the west is provided by Avenue 50 and 52.

The Coral Mountain Specific Plan focuses site traffic through five major entry points. As shown in Table VI-1, three of the five major entries will require signalization upon project buildout, and two will be controlled by stop signs. All of the internal site access roads will have adequate capacity with two through travel lanes.

The following mitigation measures are recommended to reduce potential circulation impacts associated with the proposed project and site access.

1. Specific design standards for internal streets shall be consistent with County street requirements for residential loop streets and residential cul-de-sacs.

2. The proposed internal circulation layout shall be subject to the review and approval of the County Transportation Department during the development review process to insure compliance with County minimum access and design standards.

3. Intersection spacing on-site shall comply with County of Riverside standards.

4. All internal streets shall be fully constructed to their master planned cross-section as adjacent on-site development occurs.

5. Sidewalks and streetlights shall be installed on-site as specified by the County.

6. Clear, unobstructed sight distance shall be provided at all internal street intersections on-site.

7. The project proponent shall provide (at a minimum) the lane geometrics shown in Figures VI-2 and VI-3 at the site access locations in conjunction with adjacent development.

8. The project proponent shall install a traffic signal when warranted at the intersection of: (1) the Resort Village access @ Madison Street, (2) the Active Adult Village @ Avenue 60, and (3) the north Primary Housing Village access @ Monroe Street.

9. The project proponent shall apply for an amendment of the Riverside County Circulation Element to redesignate portions of Madison Street and Avenue 60 to be consistent with the roadway widths shown in the Specific Plan.[1] In addition, the proposed transition between Madison Street and Avenue 60 will impact the access for the parcels located at the existing intersection of Madison Street and Avenue 60. Although most of these roadways lie within the Coral Mountain Specific Plan area,

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1. Although the Coral Mountain Specific Plan shows Avenue 62 as a Secondary Highway, a two-lane cross-section appears to be adequate to serve year 2010 total traffic volumes (6,420 ADT). Since this link is not on the Riverside County Circulation Element, the project proponent should consider revising the Specific Plan to show Avenue 62 as a Collector Street adjacent to the project site.

the rights-of-way of these roadways extends across parcels that are not part of the project site.

10. The project proponent shall participate in the Traffic Uniform Mitigation Fee (TUMF) Program and the County Traffic Signal Mitigation Program in an effort to make their "fair-share" contribution to future roadway improvements within the project vicinity.

VII.B Roadway Improvements

A number of roadway and traffic signal improvements will be required throughout the study area, as detailed in Figures VI-2 and VI-3 and Table VI-1 to provide adequate capacity for the proposed Coral Mountain Specific Plan and nine cumulative projects. The project should participate in any improvements of areawide benefit on a "fair share" basis based upon any established fee programs (e.g. Traffic Signal Mitigation Fee), or be responsible for the implementation of site specific mitigation required by Riverside County.

VII.C Transportation System Management Actions

The California Environmental Quality Act specifies that mitigation measures be identified which would further reduce the impacts of a project, even though the measures are not incorporated in the project. This allows local decision makers to decide whether or not the additional measures are warranted. Transportation System Management (TSM) actions fall into this category inasmuch as they would further reduce project-related impacts but are not incorporated in the project as proposed. The County of Riverside could require a TSM Plan as a condition of approval. Such a plan would include those measures which are feasible on-site.

However, the proposed project is located near the southern edge of development in the Coachella Valley. With the anticipated intensity of development in the area, TSM measures may be ineffective and difficult to implement. Since year 2010 total traffic volumes can be adequately served by the master planned roadways, TSM actions do not appear to be needed.

VII.D Other Considerations

The Resort Village is located south of Avenue 58 on both sides of Madison Street. The proposed project includes a grade separated vehicular crossing that connects both sides of the Resort Village. This crossing is located south of the proposed Resort Village access on Madison Street. When the intersection of the Resort Village access @ Madison Street requires signalization, the bridge needs to be designed such that approaching motorists from the south can see the traffic signal.

If the proponents of the Travertine Specific Plan pursue plans to upgrade Madison Street south of Avenue 60 to a 4-lane master planned roadway, provisions should be made at the intersection of Madison Street and Avenue 60 to accommodate projected traffic volumes. These provisions may include dedicating adequate roadway width at the intersection, including: (1) a free-flow southbound right-turn lane, (2) an acceptable minimum horizontal radius on Madison Street (south of Avenue 60) consistent with a higher roadway classification, and (3) adequate spacing between future signalized intersections on either side of Avenue 60. A determination of the ultimate development potential for the land south of the Coral Mountain Specific Plan is critical to reserving adequate right-of-way for Madison Street south of the proposed project.

Planning Level Daily Traffic Signal Warrants

(Based on Estimated Average Daily Traffic)

Urban ☐ Rural ☐ Major Street Speed Limit _____	**Minimum Requirements Estimated ADT**	
1. Minimum Vehicular Satisified ☐ Not Satisified ☐	Vehicles per day on major street (total of both approaches)	Vehicles per day on higher-volume minor-street approach (one direction only)
Number of lanes for moving traffic on each approach Major Street / Minor Street 1 / 1 2 or more / 1 2 or more / 2 or more 1 / 2 or more	Urban / Rural 8,000 / 5,600 9,600 / 6,720 9,600 / 6,720 8,000 / 5,600	Urban / Rural 2,400 / 1,680 2,400 / 1,680 3,200 / 2,240 3,200 / 2,240
2. Interruption of Continuous Traffic Satisified ☐ Not Satisified ☐	Vehicles per day on major street (total of both approaches)	Vehicles per day on higher-volume minor-street approach (one direction only)
Number of lanes for moving traffic on each approach Major Street / Minor Street 1 / 1 2 or more / 1 2 or more / 2 or more 1 / 2 or more	Urban / Rural 12,000 / 8,400 14,400 / 10,080 14,400 / 10,080 12,000 / 8,400	Urban / Rural 1,200 / 850 1,200 / 850 1,600 / 1,120 1,600 / 1,120
3. Combination of Warrants Satisfied ☐ Not Satisifed ☐ No one warrant satisified but following warrants fulfilled 80% or more: ☐ 1 ☐ 2	2 Warrants	2 Warrants

Source: "Traffic Manual" State of California Revised 4/20/77

Notes:
1. Left turn movements from the major street may be included with minor street volumes if a separate signal phase is to be provided for the left-turn movement.
2. To be used only for NEW INTERSECTIONS or other locations where actual traffic volumes cannot be counted.

Intersection	Major	Approach Lanes		Major Leg Vol		Minor Leg	Warrant 1		Warrant 2		Minor	Major
	Speed	Major	Minor	Leg 1	Leg 2	Volume	Major	Minor	Major	Minor	Approach	Approach
Existing												
Jefferson Street	45	1	1	10,914	7,312	6,262	Yes	Yes	Yes	Yes	3,131	9,113
Avenue 50												
Jefferson Street	45	2	2	6,860	6,541	7,498	No	Yes	No	Yes	3,749	6,701
Avenue 52							0.997		0.665			
Jefferson Street	45	1	2	6,554	5,198	2,685	Yes	No	No	Yes	1,343	5,876
Avenue 54								0.599	0.7			
Madison Street	55	1	1	6,302	6,238	258	Yes	No	No	No	129	6,270
Avenue 50								0.077	0.746	0.152		
Madison Street	55	1	1	4,498	4,555	228	No	No	No	No	114	4,527
Avenue 52							0.808	0.068	0.539	0.134		
Madison Street	55	1	2	1,064	1,781	2,765	No	No	No	Yes	1,383	1,423
Avenue 54							0.254	0.617	0.169			
Madison Street	55	1	1	1,755	1,196	851	No	No	No	No	426	1,476
Airport Blvd.							0.263	0.253	0.176	0.501		
Madison Street	55	1	1	1,160	210	806	No	No	No	No	403	685
Avenue 58							0.122	0.24	0.082	0.474		
Monroe Street	55	1	2	10,542	7,458	6,315	Yes	Yes	Yes	Yes	3,158	9,000
Avenue 50												
Monroe Street	55	1	1	4,321	4,427	4,932	No	Yes	No	Yes	2,466	4,374
Avenue 52							0.781		0.521			
Monroe Street	55	1	1	3,422	2,794	1,300	No	No	No	No	650	3,108
Avenue 54							0.555	0.387	0.37	0.765		
Monroe Street	55	1	1	2,632	2,154	1,848	No	No	No	Yes	924	2,393
Airport Blvd.							0.427	0.55	0.285			
Monroe Street	55	1	1	1,755	1,103	1,117	No	No	No	No	559	1,429
Avenue 58							0.255	0.332	0.17	0.657		
Monroe Street	55	1	1	1,104	1,056	284	No	No	No	No	142	1,080
Avenue 60							0.193	0.085	0.129	0.167		
Monroe Street	55	1	1	788	741	141	No	No	No	No	71	765
Avenue 62							0.137	0.042	0.091	0.083		

Intersection	Major	Approach Lanes		Major Leg Vol		Minor Leg	Warrant 1		Warrant 2		Minor	Major
	Speed	Major	Minor	Leg 1	Leg 2	Volume	Major	Minor	Major	Minor	Approach	Approach
Year 2004 Non-Site												
Jefferson Street	45	2	2	17,124	20,091	11,538	Yes	Yes	Yes	Yes	5,769	18,608
Avenue 52												
Jefferson Street	45	1	2	19,076	12,279	11,335	Yes	Yes	Yes	Yes	5,668	15,678
Avenue 54												
Madison Street	55	1	1	7,828	7,757	285	Yes	No	No	No	143	7,793
Avenue 50								0.085	0.928	0.168		
Madison Street	55	1	1	6,497	6,559	251	Yes	No	No	No	126	6,528
Avenue 52								0.075	0.777	0.148		
Madison Street	55	1	2	4,914	11,423	11,177	Yes	Yes	No	Yes	5,589	8,169
Avenue 54									0.972			
Madison Street	55	1	1	10,587	10,701	2,069	Yes	No	Yes	Yes	1,035	10,644
Airport Blvd.								0.616				
Madison Street	55	1	1	9,521	7,801	2,540	Yes	No	Yes	Yes	1,270	8,661
Avenue 58								0.756				
Monroe Street	55	1	1	9,745	7,952	6,418	Yes	Yes	Yes	Yes	3,209	8,849
Avenue 52												
Monroe Street	55	1	1	7,928	5,595	4,713	Yes	Yes	No	Yes	2,357	6,762
Avenue 54									0.805			
Monroe Street	55	1	1	5,416	4,588	2,730	No	No	No	Yes	1,365	5,002
Airport Blvd.							0.893	0.813	0.595			
Monroe Street	55	1	1	4,147	2,378	2,610	No	No	No	Yes	1,305	3,263
Avenue 58							0.583	0.777	0.388			
Monroe Street	55	1	1	2,378	2,146	736	No	No	No	No	368	2,262
Avenue 60							0.404	0.219	0.269	0.433		
Madison Street	55	1	1	7,801	741	7,840	No	Yes	No	Yes	3,920	4,271
Avenue 60							0.763		0.508			
Monroe Street	55	1	1	1,238	1,556	1,850	No	No	No	Yes	925	1,397
Avenue 62							0.249	0.551	0.166			

Intersection	Major	Approach Lanes		Major Leg Vol		Minor Leg	Warrant 1		Warrant 2		Minor	Major
	Speed	Major	Minor	Leg 1	Leg 2	Volume	Major	Minor	Major	Minor	Approach	Approach
Year 2004 with Project												
Madison Street	55	1	1	7,878	7,807	285	Yes	No	No	No	143	7,843
Avenue 50								0.085	0.934	0.168		
Madison Street	55	1	1	6,527	6,589	251	Yes	No	No	No	126	6,558
Avenue 52								0.075	0.781	0.148		
Monroe Street	55	1	1	8,126	7,608	3,500	Yes	Yes	No	Yes	1,750	7,867
Airport Blvd.									0.937			
Monroe Street	55	1	1	7,167	4,888	3,600	Yes	Yes	No	Yes	1,800	6,028
Avenue 58									0.718			
Monroe Street	55	1	1	4,888	4,296	2,616	No	No	No	Yes	1,308	4,592
Avenue 60							0.82	0.779	0.547			
Madison Street	55	1	1	13,901	11,131	3,070	Yes	No	Yes	Yes	1,535	12,516
Resort Vill								0.914				
Madison Street	55	1	1	11,131	4,071	7,840	Yes	Yes	No	Yes	3,920	7,601
Avenue 60									0.905			
Active Adult Vill	55	1	1	2,616	4,066	3,620	No	Yes	No	Yes	1,810	3,341
Avenue 60							0.597		0.398			
Monroe Street	55	1	1	4,296	2,146	2,150	No	No	No	Yes	1,075	3,221
S Primary Vill							0.575	0.64	0.383			
Monroe Street	55	1	1	1,238	1,556	1,850	No	No	No	Yes	925	1,397
Avenue 62							0.249	0.551	0.166			

Intersection	Major	Approach Lanes		Major Leg Vol		Minor Leg	Warrant 1		Warrant 2		Minor	Major
	Speed	Major	Minor	Leg 1	Leg 2	Volume	Major	Minor	Major	Minor	Approach	Approach
Year 2010 Non-Site												
Madison Street	55	2	2	9,540	14,941	13,156	Yes	Yes	Yes	Yes	6,578	12,241
Avenue 50												
Madison Street	55	2	2	14,903	22,450	13,646	Yes	Yes	Yes	Yes	6,823	18,677
Avenue 52												
Monroe Street	55	1	1	9,183	8,048	3,938	Yes	Yes	Yes	Yes	1,969	8,616
Airport Blvd.												
Monroe Street	55	1	1	7,552	4,192	4,873	Yes	Yes	No	Yes	2,437	5,872
Avenue 58									0.699			
Monroe Street	55	1	1	4,192	3,473	1,715	No	No	No	Yes	858	3,833
Avenue 60							0.684	0.51	0.456			
Madison Street	55	1	1	17,251	1,721	17,250	Yes	Yes	Yes	Yes	8,625	9,486
Avenue 60												
Monroe Street	55	1	1	1,842	3,256	3,140	No	No	No	Yes	1,570	2,549
Avenue 62							0.455	0.935	0.303			
Year 2010 with Project												
Monroe Street	55	1	1	10,042	7,453	6,415	Yes	Yes	Yes	Yes	3,208	8,748
Avenue 60												
Active Adult Vill	55	1	1	6,415	10,175	7,450	Yes	Yes	No	Yes	3,725	8,295
Avenue 60									0.988			
Monroe Street	55	1	1	13,782	10,042	4,150	Yes	Yes	Yes	Yes	2,075	11,912
N Primary Vill												
Monroe Street	55	1	1	7,453	4,793	2,660	Yes	No	No	Yes	1,330	6,123
S Primary Vill								0.792	0.729			
Monroe Street	55	1	1	4,793	3,473	1,320	No	No	No	No	660	4,133
Active Adult Vill.							0.738	0.393	0.492	0.776		
Monroe Street	55	1	1	1,842	3,256	3,140	No	No	No	Yes	1,570	2,549
Avenue 62							0.455	0.935	0.303			

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Riverside County LMS
CONDITIONS OF APPROVAL

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SPECIFIC PLAN Case #: SP00218A1

Parcel: 761-220-007

10. GENERAL CONDITIONS

TRANS DEPARTMENT

10.TRANS. 1 SP - SP/TS CONDITIONS RECOMMND

The Transportation Department has reviewed the traffic study submitted by Endo Engineering for the referenced project. The study has been prepared in accordance with accepted traffic engineering standards and practices, utilizing County-approved guidelines. We generally concur with the findings relative to traffic impacts.

The study indicates that it is possible to achieve a Level of Service "C" for the following intersections (some of which will require additional construction for mitigation at the time of development):

Jefferson Street (NS)/Avenue 50 (EW)
Jefferson Street (NS)/Avenue 52 (EW)
Jefferson Street (NS)/Avenue 54 (EW)
Madison Street (NS)/Avenue 50 (EW)
Madison Street (NS)/Avenue 52 (EW)
Madison Street (NS)/Avenue 54 (EW)
Madison Street (NS)/Airport Boulevard (EW)
Madison Street (NS)/Avenue 58 (EW)
Madison Street (NS)/Resort Village Access (EW)
Madison Street (NS)/Avenue 60 (EW)
Monroe Street (NS)/Avenue 50 (EW)
Monroe Street (NS)/Avenue 52 (EW)
Monroe Street (NS)/Avenue 54 (EW)
Monroe Street (NS)/Airport Boulevard (EW)
Monroe Street (NS)/Avenue 58 (EW)
Monroe Street (NS)/Avenue 60 (EW)
Monroe Street (NS)/North Primary Housing Access (EW)
Monroe Street (NS)/South Primary Housing Access (EW)
Monroe Street (NS)/Active Adult Village Access (EW)
Monroe Street (NS)/Avenue 62 (EW)
Active Adult Village Access (NS)/Avenue 60 (EW)

The Comprehensive General Plan circulation policies require a minimum of Level of Service "C". As such, the proposed project is consistent with this General Plan policy.

The associated conditions of approval incorporate mitigation measures identified in the traffic study which are necessary to achieve or maintain the required level of service.

SPECIFIC PLAN Case #: SP00218A1
Parcel: 761-220-007

10. GENERAL CONDITIONS

10.TRANS. 2 SP - SP/TUMF RECOMMND

The proposed project is within the boundaries of the Coachella Valley Transportation Uniform Mitigation Fee District. Prior to the issuance of any building permits, the project proponent shall pay the mitigation fees in effect at the time building permits are issued.

10.TRANS. 3 SP - SP/WARRANTED T SIGNLS RECOMMND

The project is responsible for the following traffic signals when warranted through subsequent traffic studies done for development applicants within the boundaries of the Specific Plan:

Madison Street/Avenue 58
Madison Street/Country Club Village Access
Madison Street/Avenue 60
Active Adult Village/Avenue 60
Monroe Street/ Avenue 58
Monroe Street/ Avenue 60
Monroe Street/North Primary Housing Village Access

10.TRANS. 4 SP - TS/TS REQUIRED RECOMMND

Site specific traffic studies will be required for all subsequent development proposals within the boundaries of Specific Plan No. 218 in accordance with Traffic Study Guidelines.

10.TRANS. 5 SP - TRAFFIC SIGNAL MIT FEE RECOMMND

In accordance with Riverside County Ordinance No. 748, this project shall be responsible for Traffic Signal Mitigation Program fees in effect at the time of final inspection.

30. PRIOR TO ANY PROJECT APPROVAL

TRANS DEPARTMENT

30.TRANS. 1 SP - AMEND GENERAL PLAN RECOMMND

The project proponent shall submit an application to amend the following General Plan Roads to the following classifications:

a. Downgrade Madison Avenue south of 58th Avenue from an Urban Arterial Highway (134'ROW) to an Arterial Highway

SPECIFIC PLAN Case #: SP00218A1 Parcel: 761-220-007

30. PRIOR TO ANY PROJECT APPROVAL

30.TRANS. 1 SP - AMEND GENERAL PLAN (cont.) RECOMMND

(110'ROW).

b. Downgrade Avenue 60 from an Arterial Highway (110'ROW) to a Secondary Highway (88' ROW) east of Monroe Street to the project boundary.